
MAIN CATALOGUE

PMA® Flexible cable protection systems

For applications with high requirements

PMA



PMA® cable protection products from ABB can be used in an extremely wide range of applications. The list is virtually endless, including rail vehicles and infrastructure, industrial machines, electrical systems on ships, solar and wind energy generation installations, telecommunications, construction and medical equipment. Wherever cables are installed and exposed to mechanical stresses and environmental hazards. Today and tomorrow we guarantee best quality regarding products, technical support, service and delivery.

Table of contents

004–007	Introduction
012–039	PMA® conduits
040–051	PMAFIX Pro fittings
052–107	PMAFIX fittings
108–115	PMA® Smart Line fittings
116–117	Special fittings
118–133	Accessories
134–141	PMA TRUST™ & system supports
142–147	PMA® JUMBO sizes
148–159	Robotics & Automation
160–165	PMA® Divisible System
166–173	PMA EMC System
174–177	Food & Beverage
178–185	PMAJACK Plastic and metal braids
186–198	Technical annex
199–215	Index
216	Additional information
217	Important information

Introduction

A swiss manufacturer with a global presence

There is no better reference than satisfied customers.

PMA® cable protection provides customized specific solutions for customers worldwide.

ABB's PMA manufacturing site is located in Uster (Switzerland), close to Zurich. The majority of what we produce for the world market is made at this location. Also our research and development department is located here.

ABB is focused on providing solutions that address the critical issues in every area of operations, allowing customers to focus on plant sustainability, cost, quality, flexibility, safety and regulatory challenges.

Thanks of our large network of professional partners in all of the major industrialised countries around the globe, we are able to guarantee best quality regarding products, technical support, service and fast delivery.





Setting new standards and trends

Customer needs are a top priority at ABB, and we work every day to ensure all our customer requirements are met in our products. We offer cable protection solutions and services that are tailored to meet requirements in every type of application. Our range extends from basic items right up to the most demanding high-tech products. We can develop system solutions and special products that are designed to meet specific customer requirements. Our intensive research and development activities, which include the field of new materials, are a major reason why PMA products from ABB continue to set new standards and trends in the cable protection marketplace. These efforts together with excellent quality and service have helped us build up an outstanding reputation with leading corporations around the world.

From pioneer to market leader

ABB has been developing, producing, and selling top-quality PMA cable protection systems since 1975. Our high-quality Swiss products have rapidly earned us an excellent reputation worldwide and established us as the market leader. Our range of more than 6,500 products gives customers the protection they need in railway, mechanical engineering, and shipbuilding applications worldwide. PMA products are also the solution of choice in automation, building installations and other projects where power and data cables require dependable protection.

Unique benefits of PMA products from ABB

Service to the customer is what motivates us. In addition to series production, PMA can build fittings and conduits to meet individual requirements as a special service to our customers.

- A safe, reliable system that is easy to install
- Vibration-proof connections
- System connection strength
- Ingress protection conforming to recognized test methods
- High impact strength even at low temperatures
- High compression strength (peak load)
- Long-term reversed-bending resistance
- Good chemical resistance
- Fire protection (flammability and smoke generation)
- Good weather resistance
- Long wearing
- ...and much more

Introduction

Areas of applications



Mechanical engineering

A considerable number of PMA cable protection systems are used in mechanical engineering. A few examples illustrate how varied the range of mechanical engineering applications are; you will find our products in machine tools, packaging machines, printing machines, as well as heating, ventilation, conveyer, and filling systems. PMA products also make a vital contribution to the smooth operation of high voltage and emergency power systems, can production machinery and woodworking machines, etc. PMA cable protection solutions safeguard cables, wires and data links against heat, cold, tensile stress, pressure stress, and other external influences in the important mechanical engineering industry.

Rail vehicles/Rail infrastructure

PMA products from ABB have proven their dependability in railway construction projects around the world. This is the reason why large corporations including Siemens, Alstom, Bombardier, PESA, CSR/CNR, Deutsche Bahn, and SNCF have chosen us as supplier over a period of many years. Our special railway engineering product line provides protection and safety on signalling systems, couplings, trucks, and gangways, as well as roof, and underfloor equipment.

The range of applications is very extensive. PMA products contribute to the safe operation of trams, locomotives, freight cars, high-speed trains, and even roller coasters.

Worldwide recognitions

All PMA products are rigorously tried and tested to meet the demands of industry worldwide.





Automation/Robotics

In the field of automation, there is a need for products that can withstand the stress of motion-intensive applications. Solutions developed by ABB for the automation industry fully meet these requirements. Special conduit designs, supports and abrasion protection sleeves provide optimal protection along the entire length of all moving elements, enabling engineers to achieve a massive reduction in torsional forces. There is good reason why leading robotics manufacturers rely on ABB technology.

Countless applications

PMA cable protection products from ABB can be used in an extremely wide range of applications. The list is virtually endless and includes industries such as telecommunications, construction equipment and medical equipment. Wherever there is a need for cable protection, the PMA product portfolio provides safe, dependable, forward-looking solutions or will develop them specially for you to meet your individual needs.

PMA® conduits

Conduit guide

PMAFLEX / PMAFLEX Multilayer / PMA Overextruded

Construction:	Monolayer	Blank	Railway/Infrastructure								Robotics/Automation	
	Multilayer	X...	XPCS	XPCS-OG	XPCSL	XPCSF	XVCSF	VAM	VAL	PLR	XVCS2H	XVCS1H
	Over extruded	J...										
	Over ext. & ML	JX...										
Application areas												
Traction vehicles		Outdoor applications with sunlight exposure	static	●	●	●	●					
			dynamic	●	●	●	●					
		Outdoor applications	static	●	●	●	●	●	●	●		
			dynamic	●	●	●	●	●	●	●		
		Indoor applications	static	●	●	●	●	●	●	●		
Rail infrastructure		Outdoor applications with sunlight exposure	static									● ●
		Indoor and tunnel applications	static								●	●
Automation/ Robotics		Moving systems	dynamic									● ●
		Systems with extreme movements	dynamic									● ●
		Moving systems with antistatic requirements	dynamic									
Machine building		General applications	static									●
			dynamic									
		Heavy loads	static									
			dynamic									
		Outdoor applications	static									
			dynamic									
		Antistatic requirements	static									
			dynamic									
Ship + Off-shore		Outdoor general applications	static								● ●	
			dynamic									
		Indoor applications	static								● ●	
			dynamic									
		Passenger area	static								● ●	
Energy		Outdoor applications with	static								●	●
		Indoor applications	static									
Food & Beverage		General applications	static									
			dynamic									
Others		Vehicle building	static									
		Telecommunications	indoor									
			outdoor									
		Building constructions	indoor									
			outdoor									
		+ High temperature applications	static									
		Ex hazardous areas (ATEX, IECEx)	static									

Key
 ● Recommended
 ○ Suitable (application details to be considered)

PIS / PIH	PUE	POS	ESD	Machine building	XPCL	XSQL	VCS	VOH	PCL	CYL	PEL	JLLPA	PMAFLEX Pro	PHT	POH	Ex-System	XESX	Food & Beverage	JFBD	UL-Listed products	CUS	PUS	Smart Line	LLPA	LLPF	Divisible System	PACOF	PPCOF	Overbraid Stainless Steel	XPCS.../S
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											
●	●	●	●																											

PMA® conduits

Conduit guide

PMAFLEX / PMAFLEX Multilayer / PMA Overextruded

Construction:	Monolayer	Blank	Railway/Infrastructure	XPCS	XPCS-OG	XPCSL	XPCSF	XVCSF	VAM	VAML	PLR	XVCS2H	XVCS1H	Robotics/Automation	XR90	XTPC															
	Multilayer	X...																													
	Over extruded	J...																													
	Over ext. & ML	JX...																													
Properties / Approvals																															
Material properties	Ductility																														
	Reversed bending resistance																														
	Compression resistance																														
	Low temperature performance																														
	High temperature performance																														
	Resistance to weathering																														
Approvals		EN 45545-2 NFPA 130 (ASTM E162 – ASTM E662) BSS 7239/SMP 800-C ASTM E1354 BS 6853 1a (interior) GOST 12.1.044-89	EN																												
		Bi-National Recognition File UL1696 & CSA C22.2 No. 227.3-05 CSA C22.2 No. 227.3-05 Bi-National Listing File UL1660 & CSA C22.2 No. 227.2.1 Free from halogens, REACH + RoHS compliant Non flame propagating EN61386																													
		DNV (Type approved) Lloyd's Register (Type approved) Bureau Veritas (Type approved)																													
Hazardous		ATEX IECEx																													
Food & Beverage		NSF Ecolab																													
Temperature range	Continuous operating temperature (acc. to DO 9.21-4510)		Min. (-)																												
	Short term max. operating temperature Max. 168h (acc. to DO 9.21-4360)		Max. (+)																												
Sizes	Nominal width		Min.																												
			Max.																												

Key
 • Correct

PIS / PIH	PUE	POS	ESD	Machine building	XPCCL	XSOL	VCS	VOH	PCL	CYL	PEL	JLLPA	PMAFLEX Pro	PHT	POH	Ex-System	XESX	Food & Beverage	JFBD	UL-Listed products	CUS	PUS	Smart Line	LLPA	LLPF	Divisible System	PACOF	PPCOF	Overbraid Stainless Steel	XPCS.../S
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•				
-50	-60	-25	-40		-50	-50	-50	-40	-50	-40	-50	-18		-50	-25	-50	-18	-40	-50	-40	-40	-40	-40	-20	-70					
95	50	95	90		105	95	105	105	105	105	60	105		135	95	90	90	105	95	105	105	105	105	105	1000					
150	-	130	150		160	150	160	160	160	160	-	-		180	120	150	120	160	150	160	160	160	160	150	-					
07	17	07	07		12	12	07	07	07	07	10	12		07	10	10	12	17	17	07	07	07	07	12						
125	70	95	95		48	48	95	125	125	125	48	48		48	48	48	48	48	48	125	48	70	70	48						
23	24	24	25		26	26	27	27	28	29	29	30		31	31	32	33	34	35	36	37	38	38	39						

PMA® conduits

Overview

Conduits to protect cables. We offer many different conduit types for diverse applications with various technical requirements.

The product groups:

- PMAFLEX Pro
- PMAFLEX
- PMAFLEX Plus
- PMAFLEX Multilayer
- PMA Divisible System
- PMA Smart Line
- PMA overbraided
- PMA overextruded

Many conduits are specially approved, e.g. CSA, UL Recognition, DNV, Lloyds, Bureau Veritas etc. All conduits are REACH and RoHS compliant.

Conduit sizes range from 6mm to 125mm Ø, from lightweight to heavyweight, and from pliable to highly flexible. PMA also offers slit and divisible conduits. Standard colours are black and grey.



PMA® CONDUITS

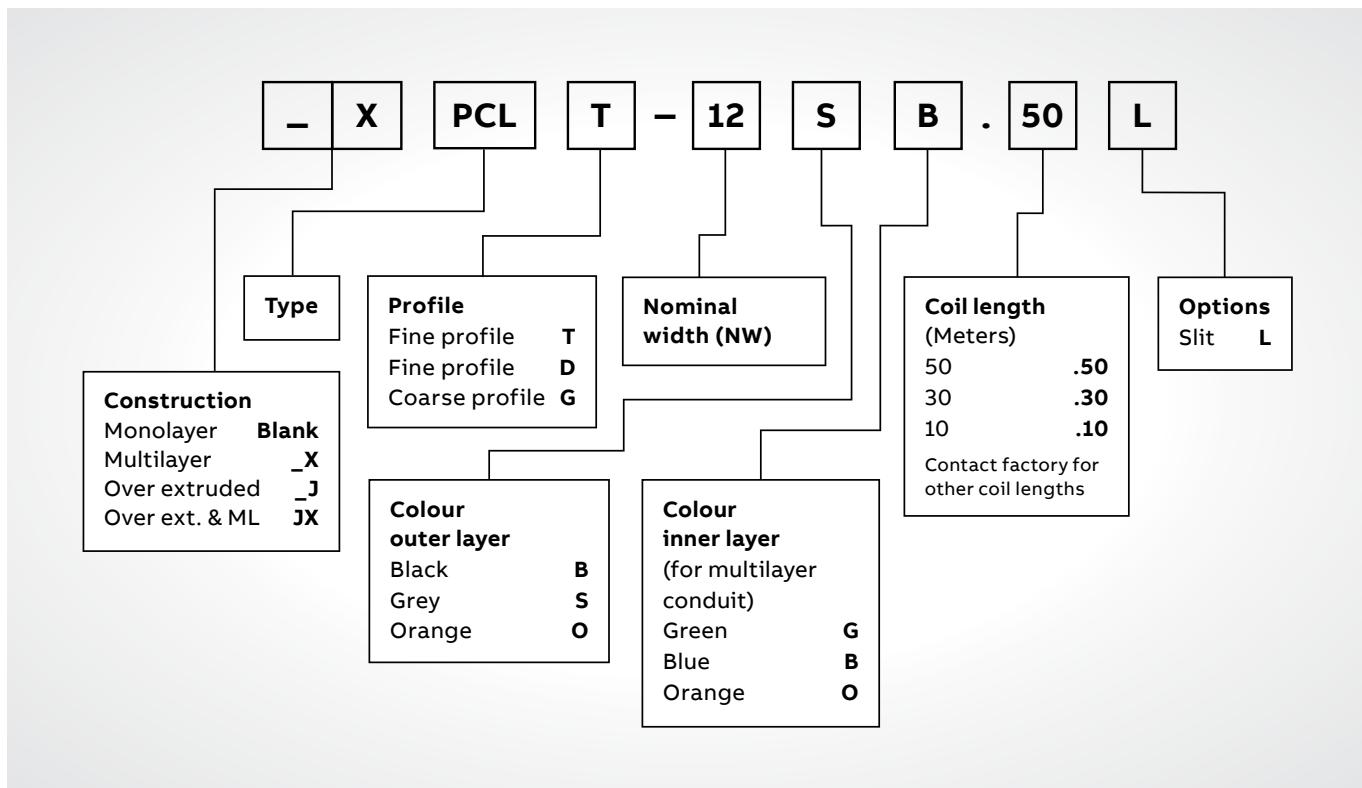
PMA offers a large range of very different mono- and multilayer conduit types which fulfill high technical demands to protect humans and cables.



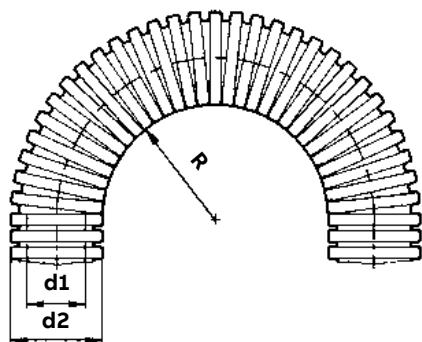
PMA conduits

Part number codes

For part number explanation only, not to be used as a configuration tool.



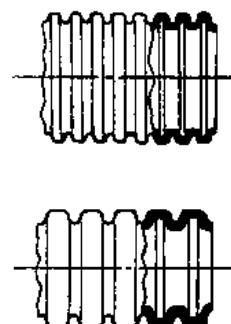
Radius



Stat. radius = Lowest recommended bending radius for static (fixed) installation.

Dyn. radius = Lowest recommended bending radius for dynamic (flexible) installation.

Profile



Fine profile T
Tight bending radius.

Coarse profile G
High pull-out strength.

PMA conduit for Rail/Infrastructure

Type XPCS conduit



Type XPCS / PMAFLEX Multilayer - Very flexible, medium-duty



	Order no. (black/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XPCS	XPCST-07BG.100	7	6.9	10.0	15/40	100
	XPCST-10BG.50	10	9.8	12.8	20/50	50
	XPCST-12BG.50	12	12.1	15.6	25/65	50
	XPCST-17BG.50	17	16.5	21.1	35/85	50
	XPCSG-17BG.50	17	15.8	21.1	35/85	50
	XPCSG-23BG.50	23	21.9	28.4	45/110	50
	XPCSG-29BG.50	29	27.7	34.5	55/135	50
	XPCSG-36BG.30	36	36.6	42.4	65/170	30
	XPCSG-48BG.30	48	47.5	54.5	85/220	30

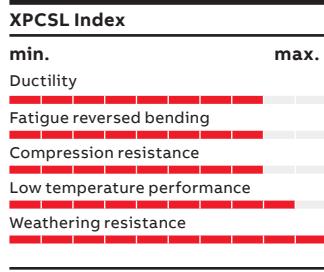
Static and dynamic external applications on railway vehicles. On the roof: PA12 outer layer has excellent UV resistance characteristics

On inter-carriage connections: Excellent resistance to fatigue when exposed to continuous bending

On bogies and undercarriage: Excellent resistance to impact at low temperatures

Excellent mechanical characteristics, also under extreme climatic conditions (low temperature and low humidity)

Very Good flexibility. Self-extinguishing. High fire safety specification



Materials	Temperature range	Colour
High-grade, specially formulated PA12/PA6	-50°C to +95°C	Black/Green
	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	Very high (black)

PMA conduit for Rail/Infrastructure

Type XPCS/OG & XPCSL conduit



Type XPCS/OG / PMAFLEX Multilayer - Very flexible, heavy-duty

	Order no. (orange/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XPCS/OG	XPCST-07OG.100	7	6.9	10.0	15/40	100
	XPCST-10OG.50	10	9.8	12.8	20/50	50
	XPCST-12OG.50	12	12.1	15.6	25/65	50
	XPCST-17OG.50	17	16.5	21.1	35/85	50
	XPCSG-17OG.50	17	15.8	21.1	35/85	50
	XPCSG-23OG.50	23	21.9	28.4	45/110	50
	XPCSG-29OG.50	29	27.7	34.5	55/135	50
	XPCSG-36OG.30	36	36.6	42.4	65/170	30
	XPCSG-48OG.30	48	47.5	54.5	85/220	30



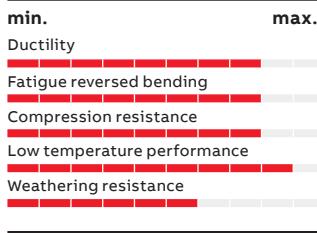
Static and dynamic external applications

Excellent mechanical characteristics, also under extreme climatic conditions (low temperature and low humidity)

Very Good flexibility / Self-extinguishing

High fire safety specification

XPCS/OG Index



Materials	Temperature range	Colour
High-grade, specially formulated PA12/PA6	-50°C to +95°C	Orange/Green
	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	High (orange)

Type XPCSL / PMAFLEX Multilayer - Very flexible, medium-duty



	Order no. (black/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XPCSL	XPCSLT-07BG.100	7	7.0	10.0	15/35	100
	XPCSLT-10BG.50	10	9.9	12.8	20/45	50
	XPCSLT-12BG.50	12	12.3	15.6	25/55	50
	XPCSLT-17BG.50	17	16.7	21.1	30/75	50
	XPCSLT-29BG.50	29	28.8	34.5	50/120	50
	XPCSLG-17BG.50	17	15.8	21.1	35/75	50
	XPCSLG-23BG.50	23	22.1	28.4	45/100	50
	XPCSLG-29BG.50	29	27.9	34.5	55/120	50
	XPCSLG-36BG.30	36	36.8	42.4	65/150	30
	XPCSLG-48BG.30	48	47.7	54.5	85/190	30



Static and dynamic external applications on railway vehicles

On the roof: PA12 outer layer has excellent UV resistance characteristics

On inter-carriage connections: Excellent resistance to fatigue when exposed to continuous bending

On bogies and undercarriage: Excellent resistance to impact at low temperatures

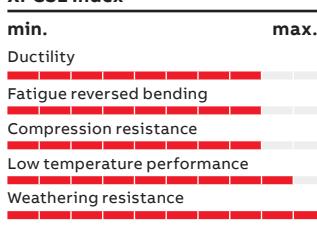
Excellent mechanical characteristics, also under extreme climatic conditions (low temperature and low humidity)

Very Good flexibility

Self-extinguishing

High fire safety specification

XPCSL Index



Materials	Temperature range	Colour
High-grade, specially formulated PA12/PA6	-50°C to +95°C	Black/Green
	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	Very high (black)

PMA conduit for Rail/Infrastructure

Type XPCSF conduit

Type XPCSF / PMAFLEX Multilayer - Very flexible, heavy-duty



	Order no. (black/orange)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XPCSF	XPCSF-07BO.100	07	6.5	10.0	15/40	100
	XPCSF-10BO.50	10	9.6	12.8	20/50	50
	XPCSF-12BO.50	12	11.8	15.6	25/65	50
	XPCSF-17BO.50	17	15.5	21.1	35/85	50
	XPCSF-23BO.50	23	21.5	28.4	45/110	50
	XPCSF-29BO.50	29	27.4	34.5	55/135	50
	XPCSF-36BO.30	36	36.0	42.4	65/170	30
	XPCSF-48BO.30	48	47.1	54.5	85/220	30

For dynamic outside applications in railway vehicles

For outdoor applications with highest requirements to UV and weathering resistance

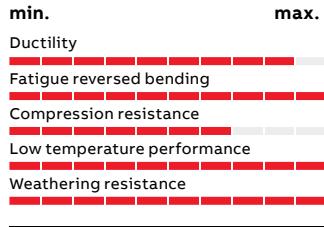
Extensive railway approvals

Excellent flexibility

Very good mechanical characteristics even under extreme conditions, such as low temperatures and low humidity

HL3 acc. to EN 45545-2

XPCSF Index



Materials	Temperature range	Colour
Outer layer: Specially formulated polyamide 12	-40°C to +95°C	Black/Orange
Inner layer: Specially formulated polyamide 12	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	Very high (black)

PMA conduit for Rail/Infrastructure

Type XVCSF conduit

Type XVCSF / PMAFLEX Multilayer - Flexible, heavy-duty



Multilayer conduit for external rail applications
 Rail static external applications such as under carriage, bogie, etc.
 High compression and impact strengths at low temperature and low humidity
 Good flexibility and very good UV resistance and weathering characteristics
 Compatible with PMAFIX Pro, PMAFIX, PMA Smart Line and accessories
 EN 45545-2 HL2 (R22 & R23)

XVCSF Index	
min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

	Order no. (black/blue)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
XVCSF	XVCSFT-07BB.50	7	6.7	10.0	15	50
	XVCSFT-10BB.50	10	9.6	12.8	20	50
	XVCSFT-12BB.50	12	11.9	15.6	25	50
	XVCSFG-17BB.50	17	15.6	21.1	40	50
	XVCSFG-23BB.50	23	21.5	28.4	50	50
	XVCSFG-29BB.50	29	27.7	34.5	60	50
	XVCSFG-36BB.30	36	35.9	42.4	75	30
	XVCSFG-48BB.30	48	46.8	54.5	90	30

Materials	Temperature range	Colour
Outer layer: Specially formulated polyamide 6	-50°C to +105°C	Black/Blue
Inner layer: Specially modified polyamide 6	Short-term to: +160°C	
Certification	Fire performance	UV Resistance
Free from halogens and cadmium	Self-extinguishing	Very high (black)
RoHS and REACH compliant		

PMA conduit for Rail/Infrastructure

Type VAM & VAML conduit



Type VAM / PMAFLEX - Flexible, heavy-duty

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
VAM	VAMT-10B.50	VAMT-10S.50	10	9.6	12.8	25	50
	VAMT-12B.50	VAMT-12S.50	12	12.0	15.6	30	50
	VAMG-17B.50	VAMG-17S.50	17	15.5	21.1	45	50
	VAMG-23B.50	VAMG-23S.50	23	21.6	28.4	60	50
	VAMG-29B.50	VAMG-29S.50	29	27.6	34.5	70	50
	VAMG-36B.30	VAMG-36S.30	36	35.8	42.4	85	30
	VAMG-48B.30	VAMG-48S.30	48	46.6	54.5	110	30



For high fire and passenger safety requirements in interior applications such as passenger areas or public buildings

HL3 acc. to EN 45545-2

NFPA 130 compliant

High impact and compression strength

High stiffness

VAM Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Materials	Temperature range	Colour
Specially formulated polyamide 6	-40°C to +105°C	Black/Grey
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Fire performance	UV Resistance
	Minimal development of smoke and gases	High (black)



Type VAML / PMAFLEX - Flexible, medium-duty

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
VAML	VAMLT-10B.50	VAMLT-10S.50	10	9.7	12.8	20	50
	VAMLT-12B.50	VAMLT-12S.50	12	12.1	15.6	25	50
	VAMLG-17B.50	VAMLG-17S.50	17	15.8	21.1	40	50
	VAMLG-23B.50	VAMLG-23S.50	23	21.9	28.4	50	50
	VAMLG-29B.50	VAMLG-29S.50	29	27.9	34.5	60	50
	VAMLG-36B.30	VAMLG-36S.30	36	36.2	42.4	75	30
	VAMLG-48B.30	VAMLG-48S.30	48	47.0	54.5	90	30
	VAMLG-56B.30	VAMLG-56S.30	56	56.9	67.5	120	30
	VAMLG-70B.10	VAMLG-70S.10	70	68.0	79.6	140	10
	VAMLG-95B.10	VAMLG-95S.10	95	92.5	107.0	190	10
	VAMLG-125B.06	VAMLG-125S.06	125	126.9	146.0	260	6

VAML Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

For high fire and passenger safety requirements in interior applications such as passenger areas or public buildings

HL3 acc. to EN 45545-2

NFPA 130 compliant

Good flexibility. Good impact strength

Materials	Temperature range	Colour
Specially formulated polyamide 6	-40°C to +105°C	Black/Grey
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Fire performance	UV Resistance
	Minimal development of smoke and gases	High (black)



PMA conduit for Rail/Infrastructure

Type PLR conduit

Type PLR / PMAFLEX - Flexible, medium-wall



PLR	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
	PLRT-07B.50	PLRT-07S.50	07	6.8	10.0	15	50
	PLRT-10B.50	PLRT-10S.50	10	9.8	12.8	20	50
	PLRT-12B.50	PLRT-12S.50	12	12.2	15.6	25	50
	PLRG-17B.50	PLRG-17S.50	17	15.9	21.1	40	50
	PLRG-23B.50	PLRG-23S.50	23	22.0	28.4	50	50
	PLRG-29B.50	PLRG-29S.50	29	28.0	34.5	60	50
	PLRG-36B.30	PLRG-36S.30	36	36.3	42.4	75	30
	PLRG-48B.30	PLRG-48S.30	48	47.2	54.5	90	30

In light rail rolling stock applications e.g. Tram, Metro, Monorail
HL2 acc. to EN 45545-2

Good pressure resistance

Very good fire safety characteristics

PLR Index

min. max.

Ductility

Fatigue reversed bending

Compression resistance

Low temperature performance

Weathering resistance

	Materials	Temperature range	Colour
	Specially modified polyamide 6	-40°C to +105°C	Black/Grey
	Certification		
	Free from halogens, REACH compliant and RoHS compliant	Short-term to: +160°C	
		Fire performance	UV Resistance
		Self-extinguishing / Very good	High (black)

PMA conduit for Rail/Infrastructure

Type XVCS1H & XVCS2H conduit

Type XVCS1H / PMAFLEX Multilayer - Flexible, heavy-duty

	Order no. (black/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
XVCS1H	XVCS1H-10BG.50	10	9.5	12.8	20	50
	XVCS1H-12BG.50	12	11.8	15.6	25	50
	XVCS1H-17BG.50	17	15.5	21.1	40	50
	XVCS1H-23BG.50	23	21.7	28.4	50	50
	XVCS1H-29BG.50	29	27.5	34.5	60	50
	XVCS1H-36BG.30	36	35.8	42.4	75	30
	XVCS1H-48BG.30	48	47.1	54.5	90	30



For track side applications and other exterior static applications
Easy layouting through: High conduit ductility and formability / Low friction inner layer facilitates cable insertion
Excellent impact characteristics at low temperatures



XVCS1H Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Outer layer: Specially formulated polyamide 6

Intermediate layer: Specially bonding compound

Inner layer: Specially modified polyolefin

Certification

Free from halogens, REACH compliant

and RoHS compliant

Materials	Temperature range	Colour
	-50°C to +90°C	Black/Green
	Short-term to: +120°C	

-50°C to +90°C

Black/Green

Short-term to: +120°C

UV Resistance

Very good

Very high (black)

Type XVCS2H / PMAFLEX Multilayer - Flexible, heavy-duty

	Order no. (black/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
XVCS2H	XVCS2H-10BG.50	10	9.2	12.8	20	50
	XVCS2H-12BG.50	12	11.7	15.6	25	50
	XVCS2H-17BG.50	17	15.2	21.1	35	50
	XVCS2H-23BG.50	23	22.0	28.4	40	50
	XVCS2H-29BG.50	29	27.7	34.5	50	50
	XVCS2H-36BG.30	36	35.8	42.4	60	30
	XVCS2H-48BG.30	48	46.8	54.5	70	30



For track side applications and other exterior static applications with high UV exposure
Easy layouting through: High conduit ductility and formability / Low friction inner layer facilitates cable insertion
Excellent impact characteristics at low temperatures



XVCS2H Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Outer layer: Specially formulated polyamide 12

Intermediate layer: Specially bonding compound

Inner layer: Specially modified polyolefin

Certification

Free from halogens, REACH compliant

and RoHS compliant

Materials	Temperature range	Colour
	-50°C to +90°C	Black/Green
	Short-term to: +120°C	
		UV Resistance
	Excellent	Very high (black)

-50°C to +90°C

Black/Green

Short-term to: +120°C

UV Resistance

Excellent

Very high (black)

PMA conduit for Robotics/Automation

Type XR90 & XTPC conduit



Type XR90 / PMAFLEX Multilayer - Very flexible, medium-duty

	Order no. (black/red)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XR90	XR90T-17BR.50	17	16.2	21.1	30/85	50
	XR90T-23BR.50	23	22.7	28.4	40/110	50
	XR90T-29BR.50	29	28.6	34.5	50/135	50
	XR90G-17BR.50	17	15.4	21.1	35/85	50
	XR90G-23BR.50	23	21.4	28.4	45/110	50
	XR90G-29BR.50	29	27.2	34.5	55/135	50
	XR90G-36BR.30	36	35.9	42.4	65/170	30
	XR90G-48BR.30	48	47.0	54.5	85/220	30
	XR90G-56BR.30	56	56.7	67.5	110/270	30
	XR90G-70BR.30	70	67.8	79.6	130/320	30
	XR90G-95BR.30	90	92.0	107.0	170/430	30



For dynamic conduit systems in robotics and automation industry

With wear indication function

High resistance to continuous bending, torsion, and elongation

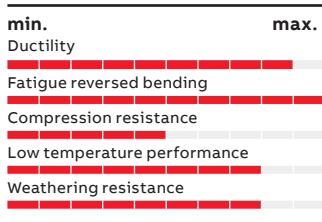
No abrupt conduit failure due to high tear propagation resistance

High abrasion resistance

Suitable for applications with a pullback system

Long service life

XR90 Index



Materials	Temperature range	Colour
Outer layer: Specially formulated polyamide 12	-40°C to +95°C	Black/Red
Intermediate layer: Specially formulated polyamide	Short-term to: +150°C	
Inner layer: Specially formulated polyamide 12		
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	High (black)



Type XTPC / PMAFLEX Multilayer- Highly flexible, medium-duty

	Order no. (black/orange)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
XTPC	XTPCG-17BB.50	17	15.2	21.1	30/75	50
	XTPCG-23BB.50	23	21.2	28.4	40/100	50
	XTPCG-29BB.50	29	26.8	34.5	50/120	50
	XTPCG-36BB.50	36	35.5	42.4	60/150	30
	XTPCG-48BB.30	48	46.5	54.5	80/190	30
	XTPCG-56BB.30	56	56.2	67.5	105/235	30
	XTPCG-70BB.30	70	67.3	79.6	120/280	30
	For dynamic conduit systems in robotics and automation industry					
	For outdoor applications with good requirements to UV and weathering resistance					
	With wear indication function. High resistance to continuous bending					



With wear indication function. High resistance to continuous bending

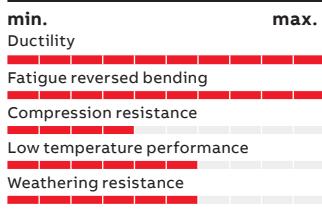
No abrupt conduit failure due to high tear propagation resistance

Very high abrasion resistance. High resistance to torsion

Suitable for tight bending-radii

Long service life

XTPC Index



Materials	Temperature range	Colour
Outer layer: Thermoplastic copolyester	-40°C to +105°C	Black/Blue
Inner layer: Thermoplastic copolyester	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	High (black)



PMA conduit for Robotics/Automation

Type PIS/PIH conduit



Type PIS/PIH / PMAFLEX - Highly flexible, medium- and heavy-duty

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./dyn. radius (mm)	PU (m)
PIS/PIH	PIST-07B.50	PIST-07S.50	07	6.7	10.0	15/40	50
	PIST-10B.50	PIST-10S.50	10	9.7	12.8	20/50	50
	PIST-12B.50	PIST-12S.50	12	12.0	15.6	25/65	50
	PIST-17B.50	PIST-17S.50	17	16.7	21.1	30/85	50
	PIST-23B.50	PIST-23S.50	23	23.2	28.4	40/110	50
	PIST-29B.50	PIST-29S.50	29	28.9	34.5	50/135	50
	PIST-36B.30	PIST-36S.30	36	36.8	42.4	60/170	30
	PIST-48B.30	PIST-48S.30	48	48.0	54.5	75/220	30
	PISG-17B.50	PISG-17S.50	17	15.8	21.1	35/85	50
	PISG-23B.50	PISG-23S.50	23	22.0	28.4	45/110	50
	PISG-29B.50	PISG-29S.50	29	27.8	34.5	55/135	50
	PISG-36B.30	PISG-36S.30	36	36.2	42.4	65/170	30
	PISG-48B.30	PISG-48S.30	48	47.1	54.5	85/220	30
	PIHG-56B.30	PIHG-56S.30	56	57.0	67.5	110/270	30
	PIHG-70B.30	PIHG-70S.30	70	68.0	79.6	130/320	30
	PIHG-95B.30	PIHG-95S.30	95	92.5	107.0	170/430	30
	PIHG-125B.20	PIHG-125S.20	125	126.9	146.0	230/580	20

Approvals



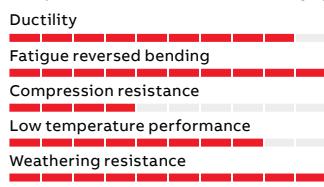
For robotics and automation applications. UL 94 V0. Excellent UV resistance and weathering characteristics

PIS: Medium-wall (Nominal width 07 to 48) / PIH: Heavy-wall (Nominal width 56 to 125)

Very good reversed bending characteristics. Good mechanical characteristics even under extreme conditions, such as low temperatures and low humidity

PIS/PIH Index

min. max.



Materials

Specially modified polyamide 12

Certification

Free from halogens, REACH compliant
and RoHS compliant

Temperature range

-50°C to +95°C

Colour

Black/Grey

Short-term to: +150°C

Weathering characteristics

Excellent

UV Resistance

Very high (black)

PMA conduit for Robotics/Automation

Type POS & PUE conduit



Type POS / PMAFLEX - Highly flexible, medium-duty

	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)	
POS	POST-10B.50	10	9.9	12.8	20/50	50	
	POST-12B.50	12	12.1	15.6	35/75	50	
	POST-17B.50	17	16.7	21.1	30/85	50	
	POST-23B.50	23	23.2	28.4	40/110	50	
	POST-29B.50	29	28.8	34.5	50/135	50	
	POST-36B.30	36	36.6	42.4	60/170	30	
	POST-48B.30	48	48.2	54.5	75/220	30	
	POSG-29B.30	29	27.8	34.4	55/135	50	
	POSG-36B.30	36	36.2	42.4	65/170	30	
	POSG-48B.30	48	47.2	54.5	85/220	30	
	POSG-70B.30	70	67.4	79.6	130/320	30	
	POSG-95B.30	95	92.3	106.0	170/430	30	
POS Index	For automation as well as for machine building and industrial installations, especially where continuous movements occur						
min.	max.	Excellent reversed bending performance and flexibility					
Ductility		Good impact resistance. Good resistance against strong acids					
Fatigue reversed bending		Materials					
Compression resistance		Specially modified polypropylene					
Low temperature performance		Certification					
Weathering resistance		Free from halogens, REACH compliant					
		and RoHS compliant					
		Temperature range					
		-25°C to +95°C					
		Colour					
		Black					
		Temperature range					
		Short-term to: +130°C					
		Colour					
		Black					
		Fatigue resistance					
		UV Resistance					
		-					
		Medium (black)					

Type PUE / PMAFLEX - Highly flexible, medium-duty

	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)	
PUE	PUET-23B.50	23	23.1	28.4	40/75	50	
	PUET-29B.30	29	29.0	34.5	45/90	30	
	PUET-36B.30	36	36.8	42.4	55/110	30	
	PUET-48B.21	48	48.4	54.5	70/140	21	
	PUEG-56B.30	56	57.2	67.5	90/170	30	
	PUEG-70B.30	70	68.4	79.6	105/220	30	
PUE Index	For robotic applications with multi-axial movements						
min.	max.	Specially suitable for tight bending-radii					
Ductility		Highest reversed bending resistance					
Fatigue reversed bending		Excellent chafing characteristics					
Compression resistance		Materials					
Low temperature performance		Specially formulated polyurethane					
Weathering resistance		Certification					
		Free from halogens, REACH compliant					
		and RoHS compliant					
		Temperature range					
		-60°C to +50°C					
		Colour					
		Black					
		Fatigue resistance					
		UV Resistance					
		-					
		High (black)					

PMA conduit for Robotics/Automation

Type ESD conduit

Type ESD / PMAFLEX - Very flexible, medium-duty conduit

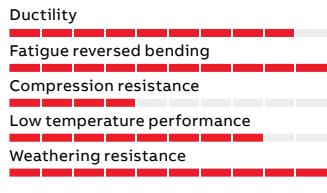


	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
ESD	ESDT-07B.50	07	6.7	10.0	15/40	50
	ESDT-10B.50	10	9.7	12.8	20/50	50
	ESDT-12B.50	12	12.0	15.6	25/65	50
	ESDT-17B.50	17	16.6	21.1	35/85	50
	ESDT-23B.50	23	23.0	28.4	40/110	50
	ESDT-29B.50	29	28.7	34.5	50/135	50
	ESDT-36B.30	36	36.8	42.4	60/170	30
	ESDT-48B.30	48	48.0	54.5	75/220	30
	ESDG-56B.30	56	55.8	67.5	110/270	30
	ESDG-70B.10	70	67.4	79.6	130/320	10
	ESDG-95B.10	95	91.5	107.0	170/430	10

For dynamic applications in robotics and automation where electrostatic charge and uncontrolled discharge need to be avoided
Prevents electrostatic charging. For indoor and outdoor use (very good cold temperature performance)

ESD Index

min. max.



Materials

Specially modified polyamide 12

Certification

Free from halogens, REACH compliant

and RoHS compliant

Temperature range

-40°C to +90°C

Short-term to: +150°C

Fatigue resistance

UV Resistance

Excellent fatigue resistance

Colour

Black

Very high (black)

PMA conduit for Machine Building

Type XPCL & XSOL conduit



Type XPCL / PMAFLEX Multilayer - Highly flexible, medium-duty

	Order no. (black/blue)	Order no. (grey/blue)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
XPCL	XPCLT-10BB.50	XPCLT-10SB.50	10	9.6	12.8	20	50
	XPCLT-12BB.50	XPCLT-12SB.50	12	11.9	15.6	25	50
	XPCLT-17BB.50	XPCLT-17SB.50	17	16.5	21.1	35	50
	XPCLG-17BB.50	XPCLG-17SB.50	17	15.7	21.1	40	50
	XPCLG-23BB.50	XPCLG-23SB.50	23	21.9	28.4	50	50
	XPCLG-29BB.50	XPCLG-29SB.50	29	27.6	34.5	60	50
	XPCLG-36BB.30	XPCLG-36SB.30	36	36.0	42.4	75	30
	XPCLG-48BB.30	XPCLG-48SB.30	48	47.1	54.5	90	30



For machine building and equipment with high requirements
Allows easy cable insertion due to low friction inner layer
Very good ductility and good reversed bending characteristics
Good mechanical characteristics even under extreme conditions, such as low temperatures and low humidity

XPCL Index	
min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Materials
Outer layer: Specially formulated polyamide 6
Intermediate layer: Specially bonding
Inner layer: Specially modified polyethylene
Certification
Free from halogens, REACH compliant and RoHS compliant

Temperature range	Colour
-50°C to +105°C	Black/Blue
Short-term to: +160°C	Grey/Blue
Fire performance	UV Resistance
Self-extinguishing	High (black)

Type XSOL / PMAFLEX Multilayer - Highly flexible, medium-duty

	Order no. (black/green)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
XSOL	XSOLT-10BG.50	10	9.5	12.8	20	50
	XSOLT-12BG.50	12	11.9	15.6	25	50
	XSOLG-17BG.50	17	15.6	21.1	40	50
	XSOLG-23BG.50	23	21.9	28.4	50	50
	XSOLG-29BG.50	29	27.7	34.5	60	50
	XSOLG-36BG.30	36	36.4	42.4	75	30
	XSOLG-48BG.30	48	47.2	54.5	90	30



All-purpose, especially in long-term external applications, e.g. energy technology

Very good resistance to UV and weathering
Very high ductility and reversed bending resistance
Very good mechanical strength
High impact resistance even under extreme conditions, such as low temperatures and low humidity

Approvals



XSOL Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Materials
Outer layer: Specially formulated polyamide 12
Intermediate layer: Specially bonding compound
Inner layer: Specially modified polyamide 6
Certification
Free from halogens, REACH compliant and RoHS compliant

Temperature range	Colour
-50°C to +95°C	Black/Green
Short-term to: +150°C	
Fire performance	UV Resistance
Good fire safety characteristics	High (black)
Self-extinguishing	

PMA conduit for Machine Building

Type VCS & VOH conduit



Type VCS / PMAFLEX - Flexible, heavy-duty

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
VCS	VCST-07B.100	VCST-07S.100	07	6.6	10.0	20	100
	VCST-10B.50	VCST-10S.50	10	9.6	12.8	25	50
	VCST-12B.50	VCST-12S.50	12	12.0	15.6	30	50
	VCST-17B.50	VCST-17S.50	17	16.5	21.1	40	50
	VCSG-17B.50	VCSG-17S.50	17	15.7	21.1	45	50
	VCSG-23B.50	VCSG-23S.50	23	21.8	28.4	60	50
	VCSG-29B.50	VCSG-29S.50	29	27.6	34.5	70	50
	VCSG-36B.30	VCSG-36S.30	36	35.7	42.4	85	30
	VCSG-48B.30	VCSG-48S.30	48	46.7	54.5	110	30
	VCSG-56B.30	VCSG-56S.30	56	56.2	67.5	135	30
	VCSG-70B.10	VCSG-70S.10	70	67.1	79.6	160	10
	VCSG-95B.10	VCSG-95S.10	95	91.0	107.0	220	10

VCS Index

min. Ductility max.

Fatigue reversed bending

Compression resistance

Low temperature performance

Weathering resistance

For static external installations

High compression and impact strengths at low temperatures and low humidity

Good ductility. Very good resistance to ultra violet rays and weathering

Materials

Specially formulated polyamide 6

Temperature range

-50°C to +105°C

Colour

Black/Grey

Certification

Free from halogens, REACH compliant
and RoHS compliant

Fatigue resistance

UV Resistance
High (black)

Type VOH / PMAFLEX - Pliable, very heavy-duty

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
VOH	VOHD-07B.50	VOHD-07S.50	07	6.3	10.0	20	50
	VOHD-10B.50	VOHD-10S.50	10	9.5	12.8	25	50
	VOHD-12B.50	VOHD-12S.50	12	11.9	15.6	30	50
	VOHG-17B.50	VOHG-17S.50	17	15.1	21.1	45	50
	VOHG-23B.50	VOHG-23S.50	23	21.6	28.4	60	50
	VOHG-29B.50	VOHG-29S.50	29	27.3	34.5	70	50
	VOHG-36B.30	VOHG-36S.30	36	35.6	42.4	85	30
	VOHG-48B.30	VOHG-48S.30	48	46.5	54.5	110	30
	VOHG-56B.10	VOHG-56S.10	56	55.7	67.5	135	10
	VOHG-70B.10	VOHG-70S.10	70	67.0	79.6	160	10
	VOHG-95B.10	VOHG-95S.10	95	91.3	107.0	220	10
	VOHG-125B.06	VOHG-125S.06	125	125.4	146.0	300	6

For applications in heavy machine and plant construction

High compression resistance

Highest degree of mechanical protection

Very good UV and weathering resistance

Good fire safety characteristics

min. Ductility max.

Fatigue reversed bending

Compression resistance

Low temperature performance

Weathering resistance

Materials

Specially modified polyamide 6

Temperature range

-40°C to +105°C

Colour

Black/Grey

Certification

Free from halogens, REACH compliant
and RoHS compliant

Fire performance

UV Resistance
Good
High (black)



PMA conduit for Machine Building

Type PCL conduit



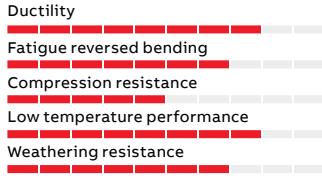
Type PCL / PMAFLEX - Very flexible, medium-duty

PCL	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
	PCLT-07B.50	PCLT-07S.50	07	6.6	10.0	15	50
	PCLT-10B.50	PCLT-10S.50	10	9.8	12.8	20	50
	PCLT-12B.50	PCLT-12S.50	12	12.1	15.6	25	50
	PCLT-17B.50	PCLT-17S.50	17	16.8	21.1	35	50
	PCLT-23B.50	PCLT-23S.50	23	23.2	28.4	45	50
	PCLT-29B.50	PCLT-29S.50	29	28.8	34.5	55	50
	PCLT-36B.30	PCLT-36S.30	36	36.7	42.4	65	30
	PCLT-48B.30	PCLT-48S.30	48	48.2	54.5	80	30
	PCLG-17B.50	PCLG-17S.50	17	15.8	21.1	40	50
	PCLG-23B.50	PCLG-23S.50	23	21.9	28.4	50	50
	PCLG-29B.50	PCLG-29S.50	29	27.8	34.5	60	50
	PCLG-36B.30	PCLG-36S.30	36	36.1	42.4	75	30
	PCLG-48B.30	PCLG-48S.30	48	46.9	54.5	90	30
	PCLG-56B.30	PCLG-56S.30	56	56.7	67.5	120	30
	PCLG-70B.10	PCLG-70S.10	70	67.5	79.6	140	10
	PCLG-95B.10	PCLG-95S.10	95	91.6	107.0	190	10
	PCLG-125B.06	PCLG-125S.06	125	125.5	146.0	260	6

PCL Index

For machine building, installation and vehicle building industries / static and slightly dynamic applications
Very good ductility and good reversed bending characteristics. Very good long-term properties
Very good mechanical characteristics even under extreme conditions, such as low temperatures and low humidity

min. Ductility max.



Materials	Temperature range	Colour
Specially formulated polyamide 6	-50°C to +105°C	Black/Grey
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Self extinguishing	UV Resistance
	acc. to UL 94 V2	High (black)

PMA conduit for Machine Building

Type CYL & PEL conduit



Type CYL / PMAFLEX - Very flexible, medium-duty conduit

	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
CYL	CYLT-07B.50	CYLT-07S.50	07	6.6	10.0	15	50
	CYLT-10B.50	CYLT-10S.50	10	9.8	12.8	20	50
	CYLT-12B.50	CYLT-12S.50	12	12.1	15.6	25	50
	CYLT-17B.50	CYLT-17S.50	17	16.8	21.1	35	50
	CYLT-23B.50	CYLT-23S.50	23	23.2	28.4	45	50
	CYLT-29B.50	CYLT-29S.50	29	28.8	34.5	55	50
	CYLT-36B.30	CYLT-36S.30	36	36.7	42.4	65	30
	CYLT-48B.30	CYLT-48S.30	48	48.2	54.5	80	30
	CYLG-23B.50	CYLG-23S.50	23	21.9	28.4	50	50
	CYLG-29B.50	CYLG-29S.50	29	27.8	34.5	60	50
	CYLG-36B.30	CYLG-36S.30	36	36.1	42.4	75	30
	CYLG-48B.30	CYLG-48S.30	48	46.9	54.5	90	30
	CYLG-56B.30	CYLG-56S.30	56	56.7	67.5	120	30
	CYLG-70B.10	CYLG-70S.10	70	67.5	79.6	140	10
	CYLG-95B.10	CYLG-95S.10	95	91.6	107.0	190	10
	CYLG-125B.06	CYLG-125S.06	125	125.5	146.0	260	06

Approvals



For machine building and installation industries / static and slightly dynamic applications

Very good ductility and good reversed bending characteristics

Good mechanical characteristics even under extreme conditions, such as low temperatures and low humidity

CYL Index

min. max.

Ductility



Fatigue reversed bending



Compression resistance



Low temperature performance



Weathering resistance



Materials

Temperature range

Colour

-40°C to +105°C

Black/Grey

Certification

Short-term to: +160°C

Free from halogens, REACH compliant

Self extinguishing

UV Resistance

and RoHS compliant

acc. to UL 94 V2

High (black)

Type PEL / PMAFLEX - Highly flexible, light-duty, soft



	Order no. (grey)	Order no. (grey, slit)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
PEL	PELT-10S.50	PELT-10SL.50	10	9.8	12.8	20	50
	PELT-12S.50	PELT-12SL.50	12	12.2	15.6	25	50
	PELT-17S.50	PELT-17SL.50	17	16.8	21.1	30	50
	PELT-23S.50	PELT-23SL.50	23	23.2	28.4	40	50
	PELT-29S.30	PELT-29SL.30	29	28.9	34.5	45	30
	PELT-36S.30	PELT-36SL.30	36	37.0	42.4	55	30
	PELT-48S.30	PELT-48SL.30	48	48.2	54.5	70	30

For electrical cabinets and appliance construction

Very good ductility

Suitable for small bending radii

Good resistance against strong acids and bases

PEL Index

min. max.

Ductility



Fatigue reversed bending



Compression resistance



Low temperature performance



Weathering resistance



Materials

Temperature range

-50°C to +60°C

Grey

Certification

UV Resistance

Free from halogens, REACH compliant

Medium (black)

and RoHS compliant

PMA conduit for Machine Building

Type JLLPA conduit



Type JLLPA / PMA Overextruded - Flexible, heavy-duty



	Order no. (black)	Conduit size NW	d1 (mm)	d2 (mm)	d3 (mm)	Stat. radius (mm)	PU (m)
JLLPA	JLLPA-12A.50	12	12.1	15.6	15.8	40	50
	JLLPAG-17A.50	17	15.8	21.1	21.2	55	50
	JLLPAG-23A.50	23	21.9	28.4	28.5	75	50
	JLLPAG-29A.50	29	27.8	34.5	34.7	90	50
	JLLPAG-36A.30	36	36.1	42.4	42.6	110	30
	JLLPAG-48A.30	48	46.9	54.5	54.6	140	30

Flexible, smooth over-extruded conduit for applications with cleaning requirements
For static applications in machine building, installation and construction industries

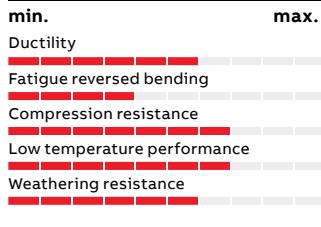
For general applications with cleaning requirements

Smooth outer layer for easy cleaning, good resistance to chemicals and cleaning agents. Corrosion free

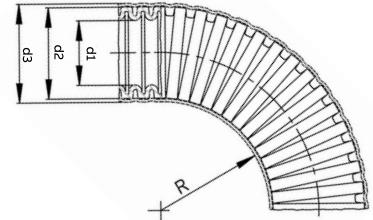
Flexibility in combination with high strength. Compatible with PMAFIX Pro

UL Recognition according to UL 1696 (file E80294)

JLLPA Index



Materials	Temperature range	Colour
Conduit: High-grade, specially formulated polyamide 6	-18°C to +105°C	Black
Overextrusion: modified polyamide 6	Short-term to: +160°C	
Certification	Fire performance	UV Resistance
Free from halogens and cadmium	Self-extinguishing	High (black)
RoHS and REACH compliant		



PMA conduits for special applications

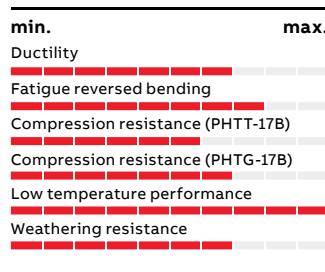
Type PHT & POH conduit



Type PHT / PMAFLEX Pro - Highly flexible, medium/heavy-duty

	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
PHT	PHTT-07B.50	07	6.7	10.0	15/40	50
	PHTT-10B.50	10	9.7	12.8	20/50	50
	PHTT-12B.50	12	12.1	15.6	25/65	50
	PHTT-17B.50	17	16.8	21.1	35/85	50
	PHTT-23B.50	23	23.3	28.4	45/110	50
	PHTG-17B.50	17	15.6	21.1	40/85	50
	PHTG-23B.50	23	22.0	28.4	50/110	50
	PHTG-29B.50	29	27.9	34.5	60/135	50
	PHTG-36B.30	36	36.2	42.4	75/170	30
	PHTG-48B.30	48	47.3	54.5	90/220	30

PHT Index



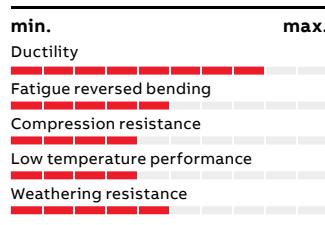
Materials	Temperature range	Colour
Specially formulated polyamide elastomer	-50°C to +135°C	Black
Certification	Short-term to: +180°C	
	Impact resistance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Extremely good at low temperatures	High (black)

Type POH / PMAFLEX Pro - Very flexible, medium-duty

	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
POH	POHT-10B.50	10	10.0	12.8	20	50
	POHT-12B.50	12	12.3	15.6	25	50
	POHG-17B.50	17	16.0	21.1	40	50
	POHG-23B.50	23	22.1	28.4	50	50
	POHG-29B.50	29	28.0	34.5	60	50
	POHG-36B.30	36	36.4	42.4	75	30
	POHG-48B.30	48	47.0	54.5	90	30

For highest fire and passenger safety requirements
Excellent fire safety characteristics acc. to BS 6853 1a (interior)
Good ductility and reversed bending characteristics

POH Index



Materials	Temperature range	Colour
Specially modified polypropylene	-25°C to +95°C	Black
Certification	Short-term to: +120°C	
Free from halogens, REACH compliant and RoHS compliant	Fire performance acc. to BS 6853 1a (interior)	UV Resistance
		High (black)

PMA conduit for hazardous area

Type XESX conduit

Type XESX / PMA Ex-System - Flexible, heavy-grade



Flexible, anti-static conduit ideal for hazardous areas such as explosion endangered zones
For indoor and outdoor applications in hazardous areas
Electrostatically discharging
Excellent mechanical characteristics, also under extreme climatic conditions as low temperature
High abrasion resistance

Approvals



EC TYPE Examination Certificate for use with EXPQ metallic fittings:

Baseefa 08 ATEX 0003X, IECEx BAS 8.0001X

Ex e IIC Gb

Ex tb IIIC Db

EC TYPE Examination Certificate for use with non metallic fittings and accessories:

SEV 15 ATEX 0121X, IECEx SEV 15.0009X

Ex eb IIC Gb

Ex tb IIIC Db

XESX Index

	min.	max.
Ductility		
Fatigue reversed bending		
Compression resistance		
Low temperature performance		
Weathering resistance		

Materials	Temperature range	Colour
Outer layer: Dissipative PA12	-50°C to +90°C	Black/Yellow
Inner layer: Impact resistant HDPE	Short-term to: +150°C	
Certification	Fire performance	UV Resistance
Free from halogens, REACH compliant and RoHS compliant	Self-extinguishing	Very high (black)

PMA conduit for Food & Beverage

Type JFBD conduit

Type JFBD / PMA Overextruded - Flexible, medium-duty

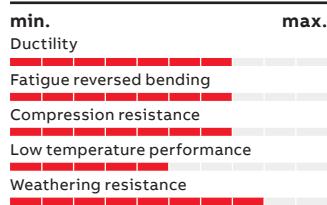


Smooth easy to clean out layer
High reversed bending stresses
Excellent flexibility in combination with high strength
High resistance to chemicals and cleaning agents
For indoor food zone – non contact
Outer layer made from FDA compliant material
Corrosion free

Approvals



JFBD Index



Materials	Colour
Conduit: made from high-grade, specially formulated polyamide 12	Corrugated conduit: blue
Overextrusion: made from modified polyamide elastomer	Overextrusion: blue, translucent
FDA 21 CFR / EU 10/2011 compliant outer layer material; ECOLAB certificate	UV Resistance Medium

PMA conduit for UL-Listing requirements

Type CUS conduit



Type CUS / PMA conduit for UL-Listing requirements - Very flexible, medium-duty

	Order no. (black)	Conduit size		Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m/ft)
		Inch	NW				
CUS	CUSG-17B.31	1/2	17	15.5	21.1	40	31/100
	CUSG-23B.31	3/4	23	21.7	28.4	50	31/100
	CUSG-29B.31	1	29	27.4	34.5	60	31/100
	CUSG-36B.31	1 1/4	36	35.5	42.4	75	31/100
	CUSG-48B.31	1 1/2	48	46.5	54.5	90	31/100

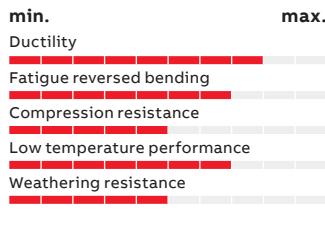


For machine building and installation industries
For electrical installations, especially in the US market
Inexpensive solution for requirements acc. to UL 1660 (UL Listing)
Good ductility and reversed bending characteristics
Very good mechanical properties even under extreme conditions, such as low temperatures and low humidity

Approvals



CUS Index



Materials	Temperature range	Colour
Specially modified polyamide 6	-40°C to +105°C	Black
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Fire protection	UV Resistance

PMA conduit for UL-Listing requirements

Type PUS conduit



Type PUS / PMAFLEX Plus - Very flexible, heavy-duty

	Order no. (black)	Conduit size		Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m/ft)
		Inch	NW				
PUS	PUSG-17B.31	1/2	17	15.5	21.1	35/85	31/100
	PUSG-23B.31	3/4	23	21.6	28.4	45/110	31/100
	PUSG-29B.31	1	29	27.5	34.5	55/135	31/100
	PUSG-36B.31	1 1/4	36	35.9	42.4	65/170	31/100
	PUSG-48B.31	1 1/2	48	47.0	54.5	85/220	31/100



For long-term external applications with approval acc. to UL 1660 (UL Listing)

For dynamic applications

Very good reversed bending resistance

Very good mechanical strength at low temperatures

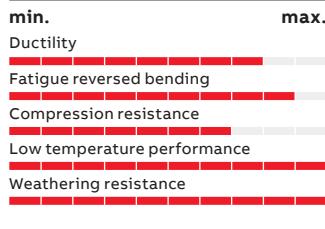
Excellent resistance to ultra violet rays and weathering

cULus listed

Approvals



PUS Index



Materials	Temperature range	Colour
Specially modified polyamide 12	-50°C to +95°C	Black
Certification	Short-term to: +150°C	
Free from halogens, REACH compliant and RoHS compliant	Fire protection	UV Resistance
	Self-extinguishing, acc. to UL 94 V2	Very high (black)

PMA conduit for general applications

Type LLPA conduit

Type LLPA / PMA Smart Line - Very flexible, medium-duty Smartline



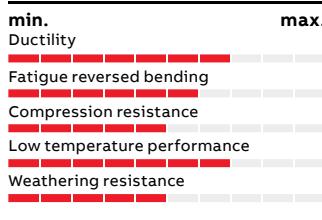
LLPA	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
	LLPA-07A.50	LLPA-07S.50	07	6.6	10.0	15	50
	LLPA-10A.50	LLPA-10S.50	10	9.8	12.8	20	50
	LLPA-12A.50	LLPA-12S.50	12	12.1	15.6	25	50
	LLPA-17A.50	LLPA-17S.50	17	16.8	21.1	35	50
	LLPA-23A.50	LLPA-23S.50	23	23.2	28.4	45	50
	LLPA-29A.50	LLPA-29S.50	29	28.8	34.5	55	50
	LLPA-36A.30	LLPA-36S.30	36	36.7	42.4	65	30
	LLPA-48A.30	LLPA-48S.30	48	48.2	54.5	80	30

Approvals



LLPAG-17A.50	LLPAG-17S.50	17	15.8	21.1	40	50
LLPAG-23A.50	LLPAG-23S.50	23	21.9	28.4	50	50
LLPAG-29A.50	LLPAG-29S.50	29	27.8	34.5	60	50
LLPAG-36A.30	LLPAG-36S.30	36	36.1	42.4	75	30
LLPAG-48A.30	LLPAG-48S.30	48	46.9	54.5	90	30
LLPAG-56A.30	LLPAG-56S.30	56	56.7	67.5	120	30
LLPAG-70A.10	LLPAG-70S.10	70	67.5	79.6	140	10
LLPAG-95A.10	LLPAG-95S.10	95	91.6	107.0	190	10
LLPAG-125A.06	LLPAG-125S.06	125	125.5	146.0	260	06

LLPA Index



For machine building, installation and construction industries

Good ductility

Good mechanical characteristics

Materials	Temperature range	Colour
Specially modified polyamide 6	-40°C to +105°C	Black/Grey
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Self extinguishing	UV Resistance
	acc. to UL 94 V2	High (black)

PMA conduit for general applications

Type LLPF conduit

Type LLPF / PMA Smart Line - Very flexible, medium-duty



	Order no. (black)	Order no. (grey)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
LLPF	LLPF-07A.50	LLPF-07S.50	7	6.8	10.0	15	50
	LLPF-10A.50	LLPF-10S.50	10	9.8	12.8	20	50
	LLPF-12A.50	LLPF-12S.50	12	12.2	15.6	25	50
	LLPF-17A.50	LLPF-17S.50	17	16.8	21.1	35	50
	LLPF-23A.50	LLPF-23S.50	23	23.4	28.4	45	50
	LLPF-29A.50	LLPF-29S.50	29	29.1	34.5	55	50
	LLPFG-17A.50	LLPFG-17S.50	17	15.8	21.1	40	50
	LLPFG-23A.50	LLPFG-23S.50	23	21.9	28.4	50	50
	LLPFG-29A.50	LLPFG-29S.50	29	27.8	34.5	60	50
	LLPFG-36A.30	LLPFG-36S.30	36	36.1	42.4	75	30
	LLPFG-48A.30	LLPFG-48S.30	48	46.9	54.5	90	30

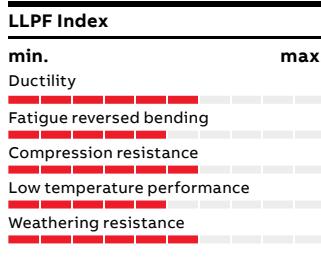
For machine building, installation and construction industries

For applications with high fire safety requirements

UL 94 VO

Good pressure resistance

Very good fire safety characteristics



Materials	Temperature range	Colour
Specially modified polyamide 6	-40°C to +105°C	Black/Grey
Certification	Short-term to: +160°C	
Free from halogens, REACH compliant and RoHS compliant	Fire protection	UV Resistance
	Self-extinguishing	High (black)

PMA conduits for retrofit applications

Type PACOF & PPCOF conduit



Type PACOF / PMA Divisible System - Flexible, divisible

	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
	PACOF-07B.50	07	5.6	10.0	30	50
	PACOF-10B.50	10	8.5	12.8	33	50
	PACOF-12B.50	12	11.0	15.6	35	50
	PACOF-17B.50	17	15.5	21.1	45	50
	PACOF-23B.50	23	22.1	28.4	70	50
	PACOF-29B.50	29	27.2	34.5	120	50
	PACOF-36B.30	36	32.0	42.4	145	30
	PACOF-48B.30	48	43.9	54.1	150	30
	PACOF-70B.10	70	62.0	79.0	190	10

HL3 according to EN45545-2

NFPA 130 compliant

For machine building and plant construction

For trouble-free retrofitting and applicable for repairs

Can be opened and closed again in longitudinal direction any time

Good ductility

Good compression resistance

PACOF Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Materials

Specially modified polyamide 6

Temperature range

-40°C to +105°C

Colour

Black

Certification

Short-term to: +160°C

Free from halogens, REACH compliant
and RoHS compliant

Fire performance

UV Resistance

–

High (black)

Type PPCOF / PMA Divisible System - Flexible, divisible



	Order no. (black)	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
	PPCOF-07B.50	07	5.6	10.0	25	50
	PPCOF-10B.50	10	8.5	12.8	28	50
	PPCOF-12B.50	12	11.0	15.6	35	50
	PPCOF-17B.50	17	15.1	21.1	45	50
	PPCOF-23B.50	23	22.1	28.4	60	50
	PPCOF-29B.50	29	26.6	34.5	100	50
	PPCOF-36B.30	36	31.8	42.4	120	30
	PPCOF-48B.30	48	43.9	54.1	140	30
	PPCOF-70B.10	70	60.5	78.0	200	10

For machine building and plant construction

For trouble-free retrofitting and applicable for repairs

Can be opened and closed again in longitudinal direction any time

Good reversed bending resistance

PPCOF Index

min.	max.
Ductility	
Fatigue reversed bending	
Compression resistance	
Low temperature performance	
Weathering resistance	

Materials

Specially modified polypropylene PP

Temperature range

-20°C to +105°C

Colour

Black

Certification

Short-term to: +150°C

Fire performance

UV Resistance

–

Medium (black)

Stainless steel overbraided conduit

Type XPCS.../S stainless steel overbraiding for conduits

Type XPCS.../S / PMAFLEX Overbraided - Stainless steel overbraided conduit



	Order no. (black)	Conduit size NW	fits to metal fitting	braid spec (mm)	d1 Ø (mm)	d2 Ø (mm)	PU (m)
XPCS.../S	XPCST-12BG/S.50	12	MONK-M162	24 x 8 x 0.30	*	17.5	50
	XPCST-17BG/S.50	17	MONK-M207	32 x 7 x 0.30	*	23.0	50
	XPCSG-23BG/S.50	23	MONK-M253	36 x 8 x 0.30	*	31.0	50
	XPCSG-29BG/S.50	29	MONK-M329	36 x 10 x 0.30	*	36.0	50
	XPCSG-36BG/S.50	36	MONK-M406	36 x 12 x 0.30	*	44.5	30
	XPCSG-48BG/S.50	48	MONK-M508	36 x 14 x 0.30	*	58.5	30



Our customer service or your local distribution partner will be pleased to help you concerning product availability and lead time

Application: in machine and railway construction; for high mechanical loads; in areas with hot swarf and flying sparks

Characteristics: increased mechanical conduit protection; extremely high abrasion resistance

Coverage: > 90%

Suitable for PMAFLEX, PMA Smart Line; Special metal fittings (MONK)

Materials	Temperature range	Colour
Braid made with stainless steel AISI	-70°C to +1000°C	Metal
Certification	Fire performance	UV Resistance
RoHS compliant	-	Very high

PMAFIX Pro

Introduction

Next generation cable protection. The extremely successful and technically proven PMAFIX System has been developed further to create the PMAFIX Pro product range.

The new generation fittings are the product of experience gained over many years in the most varied application areas. The PMAFIX Pro has two components, an outer body and an inner sealing element. The sealing element functions both as a seal and as a locking mechanism providing all ingress protection grades up to IP68 and IP69 even in applications where there is long term continuous movement. PMAFIX Pro is manufactured by using multiple component injection moulding process.

Key features

- Meets all ingress protection categories up to and including IP68 and IP69, also when the conduit connection is continually in motion
- Manufactured with newest 2-component injection moulding technology
- Fulfils highest international quality and standard requirements
- Intelligent safety locking mechanism
- Allows simple "push-in" installation of conduits
- Due to the integrated conduit supports, conduit remains centralised with little deformation even when bent sharply directly at the fitting





PMAFIX Pro

General technical details

—
01 patent

—
02 Up to 100 bar

Material

- Fittings made from specially modified polyamide 6
- Threads made from nickel-plated brass or polyamide 6
- Sealings made from cross linked polyester elastomer
- Self-extinguishing
- Free from halogens, REACH + RoHS compliant
- Temperature range: -50°C to +105°C, short-term to +160°C

Characteristics

- Highest assembly reliability – the fitting only locks when the sealing element is fully inserted
- Highest operational safety assured through visual and acoustic correct assembly controls
- Excellent resistance to ultra violet rays and weathering
- Highest impact resistance through fully closed design
- Highest conduit pull out strength
- Vibration-proof connection to PMA conduits
- Fits conduit profiles – fine (T) and coarse (G)
- To avoid accidental opening, disassembling only possible with a screwdriver



—
01



—
02

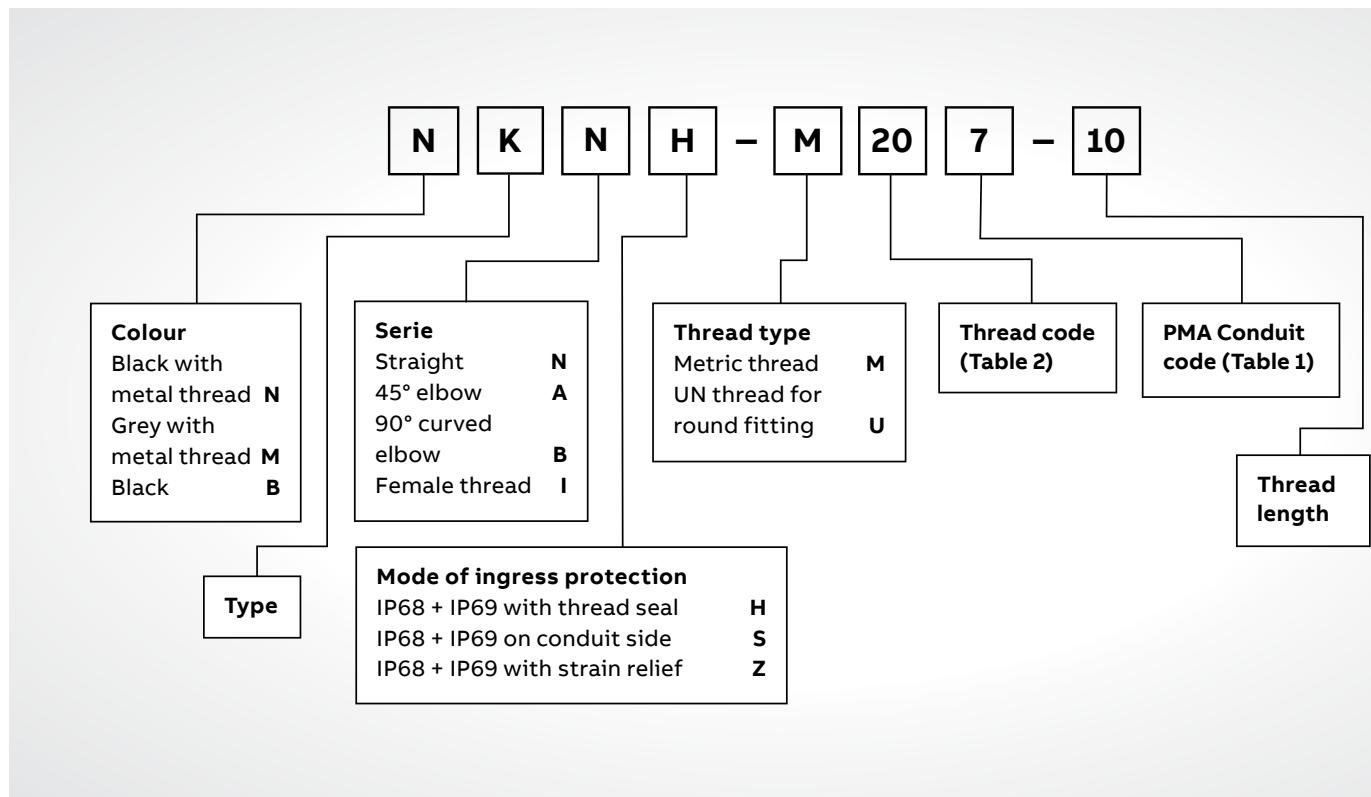
IP68 + IP69

Static + dynamic

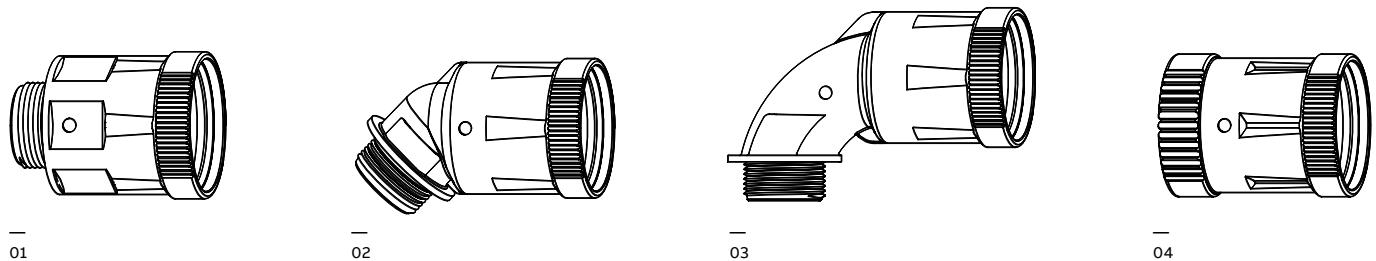
- Highest sealing through fully closed system also in highest dynamic applications
- Extra long ribbed sealing areas (cross linked material)
- 360° locking and sealing element shields against high pressure water jets (up to 100 bar)
- Content of delivery: Locking and sealing element and thread seal for male threads (O-Ring and/or flat gasket)

PMAFIX Pro

Part number codes



IP68 + IP69 PMAFIX Pro fittings



—
01 Straight (N)

—
02 45° elbow (A)

—
03 90° curved elbow (B)

—
04 Female thread (I)

PMAFIX Pro

Size codes, installation

Table 1: Conduit codes

Nominal width	Metric size	PMA code
10	12	0
12	16	2
17	20	7
23	25	3
29	32	9
36	40	6
48	50	8

Table 2: Thread codes

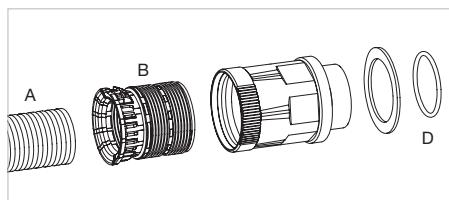
Thread Metric	PMA code
M12x1.5	M12
M16x1.5	M16
M20x1.5	M20
M25x1.5	M25
M32x1.5	M32
M40x1.5	M40
M50x1.5	M50
M63x1.5	M63

Thread UN	PMA code
7/8-20 UNEF	U21
1-20 UNEF	U24
1 1/16-18 UNEF	U29
1 7/16-18 UNEF	U35
1 3/4-18 UNS	U43
2-18 UNS	U50
2 1/4-16 UN	U56

Additional code for female thread fittings

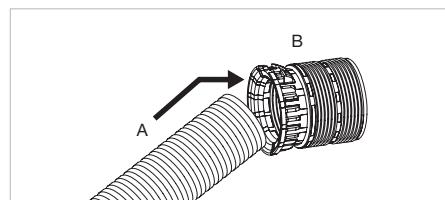
Type	PMA code
With O-ring groove (MIL C 5015)	G

Installation IP68 + IP69



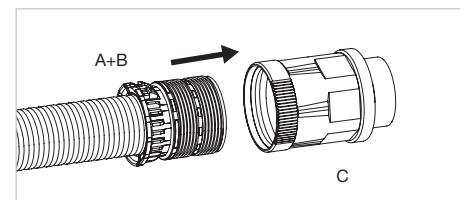
01

A = Corrugated conduit
B = Sealing and locking element
C = Fitting body
D = Thread seal (O-ring or flat gasket*)



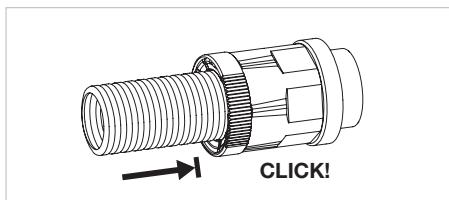
02

Place corrugated conduit (A) at a slight angle against the sealing element (B), then push right into the end.



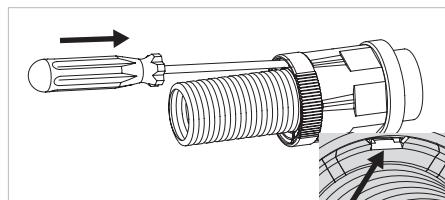
03

Push the conduit and sealing element (A+B) together into the outer body of the fitting (C). Water or a lubricating agent can help facilitate the push-in process.



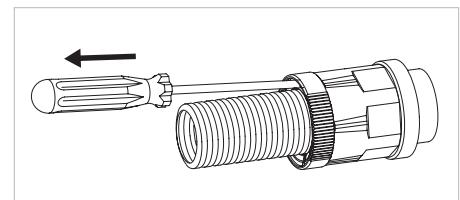
04

The locking mechanism engages when the sealing element is pushed in fully.



05

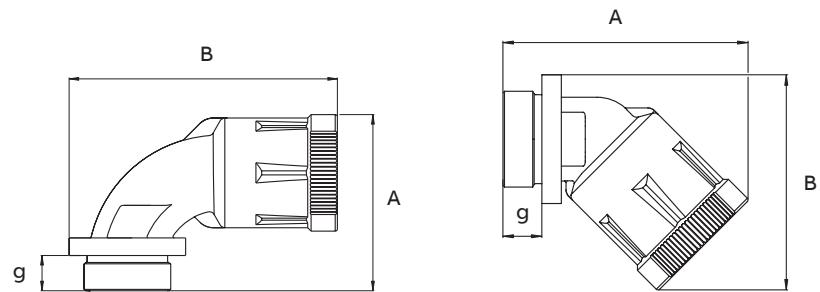
To disengage the locking mechanism introduce a size 1 screwdriver parallel to the conduit into the opening shown in the detail drawing.



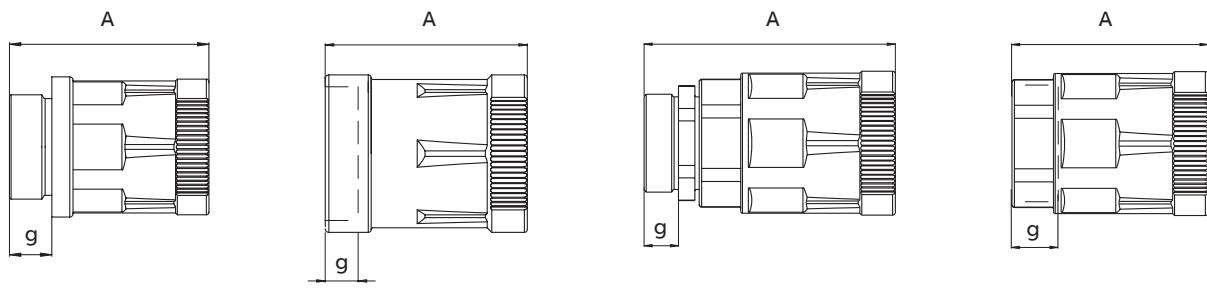
06

Pull the conduit and screwdriver out of the fitting together keeping the screwdriver parallel to the conduit.

Fitting dimensions



g = Thread length
A x B = External dimensions



g = Thread length
A = Overall length

PMAFIX Pro

Metric fittings, metal thread

Type KNH - Straight fitting, metric metal thread

	Order no. black IP68 + IP69	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
KNH, patent	NKNH-M120-10	M12 x 1.5	10	10.0	45.0	50
	NKNH-M160-10	M16 x 1.5	10	10.0	45.0	50
	NKNH-M162-10	M16 x 1.5	12	10.0	50.5	50
	NKNH-M202-10	M20 x 1.5	12	10.0	50.5	50
	NKNH-M207-10	M20 x 1.5	17	10.0	56.0	50
	NKNH-M257-11	M25 x 1.5	17	11.0	57.0	50
	NKNH-M253-11	M25 x 1.5	23	11.0	59.5	30
	NKNH-M323-13	M32 x 1.5	23	13.0	61.5	30
	NKNH-M329-13	M32 x 1.5	29	13.0	67.0	20
	NKNH-M409-13	M40 x 1.5	29	13.0	68.5	20
Approvals						
	NKNH-M406-13	M40 x 1.5	36	13.0	74.0	20
	NKNH-M506-14	M50 x 1.5	36	14.0	75.0	20
	NKNH-M508-14	M50 x 1.5	48	14.0	81.0	10
	NKNH-M638-14	M63 x 1.5	48	14.0	81.0	10



For applications in railway vehicles and heavy machine construction
 High thread and system connection strength



Metric fittings, metal thread

Type KNZ

Type KNZ - Straight fitting with strain relief, metric metal thread



	Order no. IP68 + IP69 Compl., black	Order no. fitting*	Order no. insert	Fits to Thread metric size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)		
KNZ, patent		NKNZ-M120/P1	NKNZ-M120R/P	EK150p7	M12 x 1.5	10	4.0–6.5	5.0	53.5	50
		NKNZ-M120/P2		EK150p8	M12 x 1.5	10	5.0–8.0	5.0	53.5	50
		NKNZ-M120/P3		EK150p9	M12 x 1.5	10	6.5–9.5	5.0	53.5	50
		NKNZ-M160/P1	NKNZ-M160R/P	E150p7	M16 x 1.5	10	4.0–6.5	6.0	54.5	50
		NKNZ-M160/P2		E150p8	M16 x 1.5	10	5.0–8.0	6.0	54.5	50
		NKNZ-M160/P3		E150p9	M16 x 1.5	10	6.5–9.5	6.0	54.5	50
		NKNZ-M202/P1	NKNZ-M202R/P	E152p7	M20 x 1.5	12	4.0–6.5	6.5	60.5	50
		NKNZ-M202/P3		E152p9	M20 x 1.5	12	6.5–9.5	6.5	60.5	50
		NKNZ-M202/P4		E152p11	M20 x 1.5	12	7.0–10.5	6.5	60.5	50
		NKNZ-M207/P3	NKNZ-M207R/P	E152p9	M20 x 1.5	17	6.5–9.5	6.5	66.5	50
		NKNZ-M207/P4		E152p11	M20 x 1.5	17	7.0–10.5	6.5	66.5	50
		NKNZ-M207/P5		E152p13	M20 x 1.5	17	9.0–13.0	6.5	66.5	50
		NKNZ-M257/P4	NKNZ-M257R/P	E153p11	M25 x 1.5	17	7.0–10.5	7.5	67.5	50
		NKNZ-M257/P5		E153p13	M25 x 1.5	17	9.0–13.0	7.5	67.5	50
		NKNZ-M257/P6		E153p16	M25 x 1.5	17	11.5–15.5	7.5	67.5	50
		NKNZ-M253/P5	NKNZ-M253R/P	EK154p13	M25 x 1.5	23	9.0–13.0	7.5	75.0	30
		NKNZ-M253/P6	NKNZ-M253R1/P	EK154p16	M25 x 1.5	23	11.5–15.5	7.5	75.0	30
		NKNZ-M323/P2	NKNZ-M323R/P	E154p13	M32 x 1.5	23	9.0–13.0	8.0	76.0	30
		NKNZ-M323/P4		E154p18	M32 x 1.5	23	14.0–18.0	8.0	76.0	30
		NKNZ-M323/P5	NKNZ-M323R1/P	E154p20	M32 x 1.5	23	17.0–20.5	8.0	76.0	30
		NKNZ-M329/P2	NKNZ-M329R/P	EK155p18	M32 x 1.5	29	14.0–18.0	8.0	83.0	20
		NKNZ-M329/P3		EK155p20	M32 x 1.5	29	17.0–20.5	8.0	83.0	20
		NKNZ-M329/P4		EK155p25	M32 x 1.5	29	20.0–25.0	8.0	83.0	20
		NKNZ-M409/P1	NKNZ-M409R/P	E155p16	M40 x 1.5	29	11.5–15.5	8.0	83.0	20
		NKNZ-M409/P2		E155p18	M40 x 1.5	29	14.0–18.0	8.0	83.0	20
		NKNZ-M409/P3		E155p20	M40 x 1.5	29	17.0–20.5	8.0	83.0	20
		NKNZ-M409/P4		E155p25	M40 x 1.5	29	20.0–25.0	8.0	83.0	20
		NKNZ-M409/P5		E155p28	M40 x 1.5	29	24.0–28.0	8.0	83.0	20
		NKNZ-M406/P1	NKNZ-M406R/P	E156p25HF	M40 x 1.5	36	20.0–25.0	9.0	87.5	20
		NKNZ-M406/P2		EK156p28	M40 x 1.5	36	24.0–28.0	9.0	87.5	20
		NKNZ-M506/P1	NKNZ-M506R/P	E156p32	M50 x 1.5	36	27.0–32.0	10.0	90.0	20
		NKNZ-M506/P3		E156p36	M50 x 1.5	36	32.0–36.0	10.0	90.0	20
		NKNZ-M508/P2	NKNZ-M508R/P	E157p36HF	M50 x 1.5	48	32.0–36.0	10.0	100.0	10
		NKNZ-M508/P3		E157p40HF	M50 x 1.5	48	36.0–40.0	10.0	100.0	10
		NKNZ-M638/P1	NKNZ-M638R/P	E158pm1x35	M63 x 1.5	48	32.0–35.0	10.0	100.0	10
		NKNZ-M638/P2		E158p44	M63 x 1.5	48	39.0–44.0	10.0	100.0	10

* without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available. R/P version of fitting has to be used in combination with multiple sealing inserts



Approvals



Metric fittings, metal thread

Type KNZ

Type KNZ - Straight fitting with strain relief, metric long metal thread



	Order no. IP68 + IP69 Compl., black	Order no. fitting*	Order no. insert	Fits to Thread metric conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
KNZ, patent		NKNZ-M160/P1-L NKNZ-M160R/P-L	E150p7	M16 x 1.5	10	4.0–6.5	15.0	63.5 50
		NKNZ-M160/P2-L	E150p8	M16 x 1.5	10	5.0–8.0	15.0	63.5 50
		NKNZ-M160/P3-L	E150p9	M16 x 1.5	10	6.5–9.5	15.0	63.5 50
		NKNZ-M202/P1-L NKNZ-M202R/P-L	E152p7	M20 x 1.5	12	4.0–6.5	15.0	69.0 50
		NKNZ-M202/P3-L	E152p9	M20 x 1.5	12	6.5–9.5	15.0	69.0 50
		NKNZ-M202/P4-L	E152p11	M20 x 1.5	12	7.0–10.5	15.0	69.0 50
		NKNZ-M207/P3-L NKNZ-M207R/P-L	E152p9	M20 x 1.5	17	6.5–9.5	15.0	75.0 50
		NKNZ-M207/P4-L	E152p11	M20 x 1.5	17	7.0–10.5	15.0	75.0 50
		NKNZ-M207/P5-L	E152p13	M20 x 1.5	17	9.0–13.0	15.0	75.0 50
		NKNZ-M257/P5-L NKNZ-M257R/P-L	E153p13	M25 x 1.5	17	9.0–13.0	15.0	75.0 50
		NKNZ-M257/P6-L	E153p16	M25 x 1.5	17	11.5–15.5	15.0	75.0 50
		NKNZ-M323/P2-L NKNZ-M323R/P-L	E154p13	M32 x 1.5	23	9.0–13.0	15.0	83.0 30
		NKNZ-M323/P4-L	E154p18	M32 x 1.5	23	14.0–18.0	15.0	83.0 30
		NKNZ-M323/P5-L NKNZ-M323R1/P-L	E154p20	M32 x 1.5	23	17.0–20.5	15.0	83.0 30
		NKNZ-M329/P2-L NKNZ-M329R/P-L	EK155p18	M32 x 1.5	29	14.0–18.0	15.0	90.0 20
		NKNZ-M329/P3-L	EK155p20	M32 x 1.5	29	17.0–20.5	15.0	90.0 20
		NKNZ-M409/P3-L NKNZ-M409R/P-L	E155p20	M40 x 1.5	29	17.0–20.5	15.0	90.0 20
		NKNZ-M409/P4-L	E155p25	M40 x 1.5	29	20.0–25.0	15.0	90.0 20
		NKNZ-M409/P5-L	E155p28	M40 x 1.5	29	24.0–28.0	15.0	90.0 20
		NKNZ-M506/P1-L NKNZ-M506R/P-L	E156p32	M50 x 1.5	36	27.0–32.0	15.0	95.0 20
		NKNZ-M506/P3-L	E156p36	M50 x 1.5	36	32.0–36.0	15.0	95.0 20
		NKNZ-M508/P2-L NKNZ-M508R/P-L	E157p36HF	M50 x 1.5	48	32.0–36.0	15.0	105.0 10
		NKNZ-M508/P3-L	E157p40HF	M50 x 1.5	48	36.0–40.0	15.0	105.0 10
		NKNZ-M638/P1-L NKNZ-M638R/P-L	E158pm1x35	M63 x 1.5	48	32.0–35.0	15.0	105.0 10
		NKNZ-M638/P2-L	E158p44	M63 x 1.5	48	39.0–44.0	15.0	105.0 10

* without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available. R/P version of fitting has to be used in combination with multiple sealing inserts



SAFETY

Approvals



Metric fittings, metal thread

Type KNZ

Type KNZ - Straight fitting with strain relief, metric metal thread

	Order no. IP68 + IP69 Compl., black	Thread metric	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
KNZ, patent	NKNZ-M160S-5	M16 x 1.5	10	5.0–9.0	5.0	59.0	50
	NKNZ-M162S-5	M16 x 1.5	12	5.0–9.0	5.0	64.5	50
	NKNZ-M202S-10	M20 x 1.5	12	9.0–13.0	10.0	72.0	50
	NKNZ-M202S-6	M20 x 1.5	12	9.0–13.0	6.0	68.0	50
	NKNZ-M207S-10	M20 x 1.5	17	9.0–13.0	10.0	77.5	50
	NKNZ-M207S-6	M20 x 1.5	17	9.0–13.0	6.0	73.5	50
	NKNZ-M257S-11	M25 x 1.5	17	11.0–16.0	11.0	79.0	50
	NKNZ-M257S-7	M25 x 1.5	17	11.0–16.0	7.0	75.0	50
	NKNZ-M253S-11	M25 x 1.5	23	11.0–16.0	11.0	81.0	30
	NKNZ-M253S-7	M25 x 1.5	23	11.0–16.0	7.0	77.0	30
	NKNZ-M323S-13	M32 x 1.5	23	14.0–21.0	13.0	90.0	30
	NKNZ-M323S-8	M32 x 1.5	23	14.0–21.0	8.0	85.0	30
	NKNZ-M329S-13	M32 x 1.5	29	14.0–21.0	13.0	94.5	20
	NKNZ-M329S-8	M32 x 1.5	29	14.0–21.0	8.0	89.5	20
	NKNZ-M409S-13	M40 x 1.5	29	19.0–27.0	13.0	95.5	20
	NKNZ-M409S-8	M40 x 1.5	29	19.0–27.0	8.0	90.5	20
	NKNZ-M406S-13	M40 x 1.5	36	19.0–27.0	13.0	100.0	20
	NKNZ-M406S-8	M40 x 1.5	36	19.0–27.0	8.0	95.0	20
	NKNZ-M506S-14	M50 x 1.5	36	24.0–35.0	14.0	108.5	20
	NKNZ-M506S-9	M50 x 1.5	36	24.0–35.0	9.0	103.5	20
	NKNZ-M508S-14	M50 x 1.5	48	24.0–35.0	14.0	114.5	10
	NKNZ-M508S-9	M50 x 1.5	48	24.0–35.0	9.0	109.5	10
	NKNZ-M638S-14	M63 x 1.5	48	32.0–42.0	14.0	116.0	10
	NKNZ-M638S-10	M63 x 1.5	48	32.0–42.0	10.0	112.0	10

Approvals

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Very high impact resistance

With integrated strain relief for optimal ingress protection at the cable (up to IP68 / 5 bar)

High thread and system connection strength

Vibration-resistant connection to PMA conduits

Easy push-in assembly for maximum installation reliability

Screwdriver required for dismantling, impeding unauthorised or accidental opening

Space-saving dismantling

Excellent conduit pull-out strength



Metric fittings, metal thread

Type KAH & KBH

Type KAH - 45° elbow fitting, metric metal thread

	Order no. black IP68 + IP69	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
KAH, patent	NKAH-M120-10	M12 x 1.5	10	10.0	55.5 x 43.0	50
	NKAH-M160-10	M16 x 1.5	10	10.0	55.5 x 45.0	50
	NKAH-M162-10	M16 x 1.5	12	10.0	62.5 x 50.0	50
	NKAH-M202-10	M20 x 1.5	12	10.0	62.5 x 52.0	50
	NKAH-M207-10	M20 x 1.5	17	10.0	71.0 x 59.5	50
	NKAH-M257-11	M25 x 1.5	17	11.0	72.0 x 62.5	50
	NKAH-M253-11	M25 x 1.5	23	11.0	80.0 x 68.0	30
	NKAH-M323-13	M32 x 1.5	23	13.0	82.0 x 72.0	30
	NKAH-M329-13	M32 x 1.5	29	13.0	93.0 x 79.5	20
	NKAH-M409-13	M40 x 1.5	29	13.0	94.5 x 85.5	20
Approvals	NKAH-M406-13	M40 x 1.5	36	13.0	105.5 x 93.5	20
	NKAH-M506-14	M50 x 1.5	36	14.0	106.5 x 98.5	20
	NKAH-M508-14	M50 x 1.5	48	14.0	120.0 x 111.0	10
	NKAH-M638-14	M63 x 1.5	48	14.0	120.0 x 114.0	10

For applications in railway vehicles and heavy machine construction
High thread and system connection strength

Type KBH - 90° curved elbow fitting, metric metal thread

	Order no. black IP68 + IP69	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
KBH, patent	NKBH-M120-10	M12 x 1.5	10	10.0	44.0 x 62.5	50
	NKBH-M160-10	M16 x 1.5	10	10.0	44.0 x 64.5	50
	NKBH-M162-10	M16 x 1.5	12	10.0	47.5 x 72.0	50
	NKBH-M202-10	M20 x 1.5	12	10.0	47.5 x 74.0	50
	NKBH-M207-10	M20 x 1.5	17	10.0	53.0 x 81.0	50
	NKBH-M257-11	M25 x 1.5	17	11.0	54.0 x 84.0	50
	NKBH-M253-11	M25 x 1.5	23	11.0	63.0 x 92.0	30
	NKBH-M323-13	M32 x 1.5	23	13.0	65.0 x 96.0	30
	NKBH-M329-13	M32 x 1.5	29	13.0	75.0 x 108.0	20
	NKBH-M409-13	M40 x 1.5	29	13.0	76.5 x 114.0	20
Approvals	NKBH-M406-13	M40 x 1.5	36	13.0	87.5 x 126.0	20
	NKBH-M506-14	M50 x 1.5	36	14.0	88.5 x 131.0	20
	NKBH-M508-14	M50 x 1.5	48	14.0	101.0 x 145.5	10
	NKBH-M638-14	M63 x 1.5	48	14.0	101.0 x 148.5	10

For applications in railway vehicles and heavy machine construction
High thread and system connection strength
Smooth elbow allows easy threading of wires and cables

UNEF fittings, female polyamide thread

Type KIHG

Type KIHG - Straight fitting, UN female polyamide thread for MIL-C5015

	Order no. black IP68 + IP69	Thread UN	Shell size MIL	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
KIHG, patent	BKIHG-U212	7/8"-20 UNEF	16	12	9.0	47.0	50
	BKIHG-U217	7/8"-20 UNEF	16	17	9.0	52.5	50
	BKIHG-U242	1"-20 UNEF	18	12	9.0	47.0	50
	BKIHG-U247	1"-20 UNEF	18	17	9.0	52.5	30
	BKIHG-U243	1"-20 UNEF	18	23	9.0	55.5	50
	BKIHG-U292	1 3/16"-18 UNEF	20	12	9.0	50.5	50
	BKIHG-U297	1 3/16"-18 UNEF	20	17	9.0	52.5	30
	BKIHG-U293	1 3/16"-18 UNEF	20	23	9.0	55.5	50
	BKIHG-U299	1 3/16"-18 UNEF	20	29	9.0	61.0	20
	BKIHG-U357	1 7/16"-18 UNEF	24	17	9.0	58.0	30
	BKIHG-U353	1 7/16"-18 UNEF	24	23	9.0	55.5	50
	BKIHG-U359	1 7/16"-18 UNEF	24	29	9.0	61.0	20
	BKIHG-U433	1 3/4"-18 UNS	32	23	10.0	62.5	30
	BKIHG-U439	1 3/4"-18 UNS	32	29	10.0	62.0	20
	BKIHG-U503	2"-18 UNS	36	23	10.0	67.0	30
	BKIHG-U509	2"-18 UNS	36	29	10.0	67.5	20
Approvals	BKIHG-U506	2"-18 UNS	36	36	10.0	67.0	10
	BKIHG-U508	2"-18 UNS	36	48	10.0	73.5	20
	BKIHG-U566	2 1/4"-16 UN	40	36	10.0	72.0	20
	BKIHG-U568	2 1/4"-16 UN	40	48	10.0	73.5	10

For applications in railway vehicles and heavy machine construction

Suitable for MIL fittings, series C5015



Metric fittings, female metal thread

Type KIS

Type KIS - Straight fitting, metric metal female thread

	Order no. black IP68 + IP69	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
KIS, patent	NKIS-M162	M16 x 1.5	12	9.0	49.0	50
	NKIS-M207	M20 x 1.5	17	10.5	56.0	50
	NKIS-M253	M25 x 1.5	23	10.5	58.5	30
	NKIS-M329	M32 x 1.5	29	11.0	65.5	20
	NKIS-M406	M40 x 1.5	36	13.5	72.0	20
	NKIS-M508	M50 x 1.5	48	15.0	83.0	10
	NKIS-M638	M63 x 1.5	48	17.5	84.0	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength
No seal on female thread side

PMAFIX IP66, IP68 (IP69)

General technical details

PMAFIX IP66, IP68 (IP69) fittings. The designation PMAFIX describes a very large range of fittings for PMA conduits with the patented PMA safety clip system.

Fittings are available for degrees of ingress protection IP66 and IP68 according to IEC 60529. IP66 fittingss are fitted with a pre-installed universal safety clip which ensures a quick "push-in" installation. IP68 fittings for increased requirements will be delivered with a special conduit seal cap. The new PMAFIX IP68GT fittings combine simplest push-in assembly with highest sealing performance. It is also possible to upgrade to IP69 by retrofitting water impact protection.

Material

- Fittings made from specially formulated polyamide 6
- Threads made from nickel-plated brass or polyamide 6
- Self-extinguishing
- Free from halogens, REACH + RoHS compliant
- Very good chemical properties
- Temperature range: -40°C to +105°C, short-term to +160°C

Characteristics

- Excellent conduit pull-out strength
- High impact resistance
- Vibration-proof connection to PMA corrugated conduits
- Fits conduit profiles – fine (T) and coarse (G)
- To avoid accidental opening, disassembly is only possible with a screwdriver





PMAFIX

General technical details



Patent

IP66

IP66 static

IP54 dynamic

- One piece fitting
- Conical sealing method
- Easy “push-in” installation
- Pre-installed safety clip AFN2
- Content of delivery: Fitting with pre-installed safety clip



Patent

IP68GT

IP68, IP69 static

IP67, IP69 dynamic

- The single piece PMAFIX IP68GT fitting with integrated sealing cap and pre-installed locking clip
- Simple push-in assembly (as with the proven PMAFIX IP66 system)
- The extra long sealing cap guarantees the highest level of ingress protection
- Identical approvals as for the PMAFIX IP68 system component version
- Fast modification of specification drawings through simple addition of “GT” to the existing order number (e.g. BVNV-M257 → BVNV-M257GT)
- Additional water protection ring WPS for IP69 ingress protection in conjunction with the IP68 system to be applied right after the IP68 fitting onto the conduit
- Content of delivery: Fitting with integrated sealing cap, pre-installed safety clip and thread seal for male thread (O-ring and/or flat gasket)



Patent

IP68

IP68, IP69 static

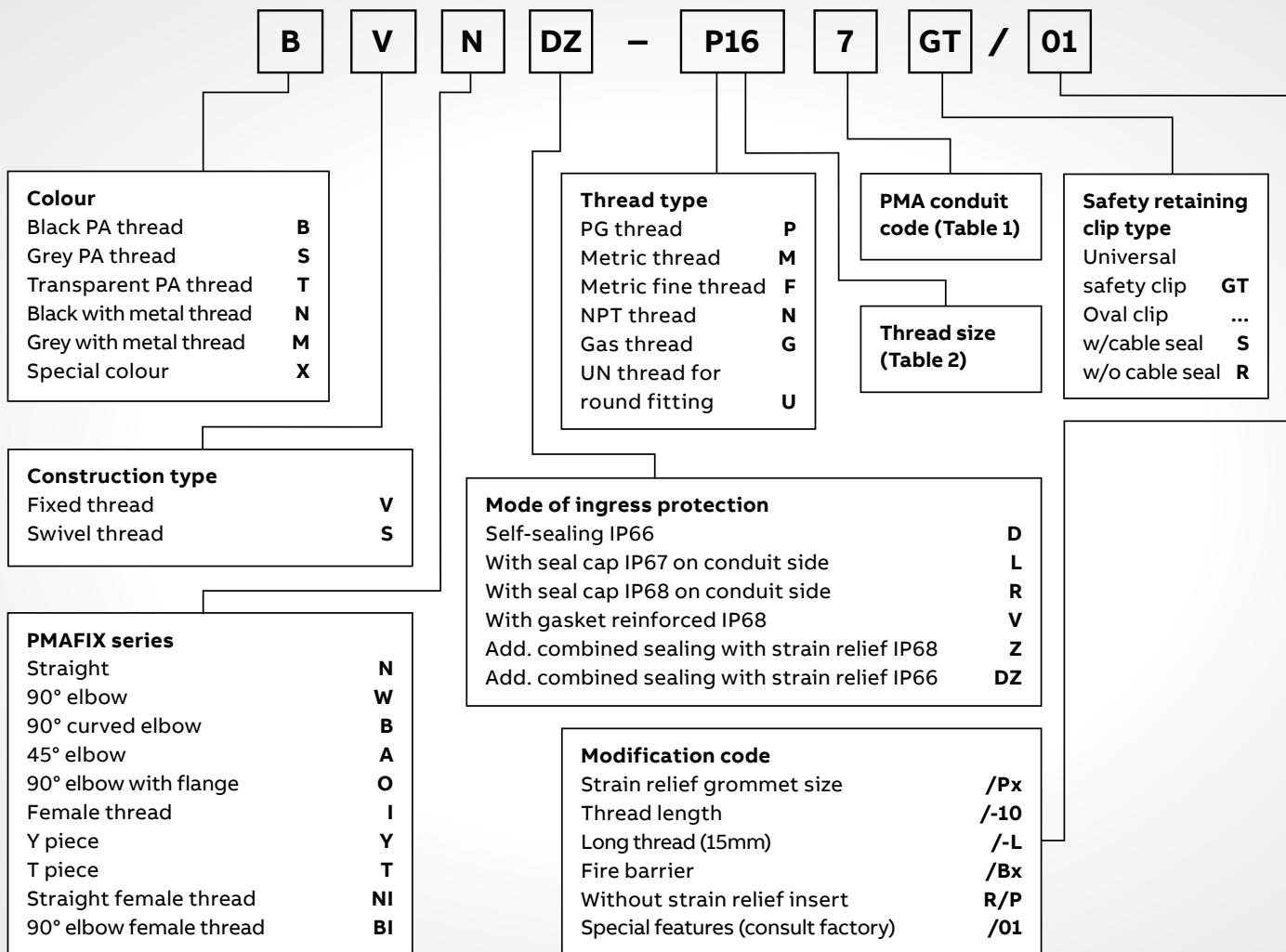
IP67, IP69 dynamic

- High sealing through additional seal cap
- For highest dynamic applications
- Additional water protection ring WPS for IP69 ingress protection in conjunction with the IP68 system to be applied right after the IP68 fitting onto the conduit
- Content of delivery: Fitting with sealing cap, safety clip and thread seal for male thread (O-ring and/or flat gasket)

PMAFIX fittings

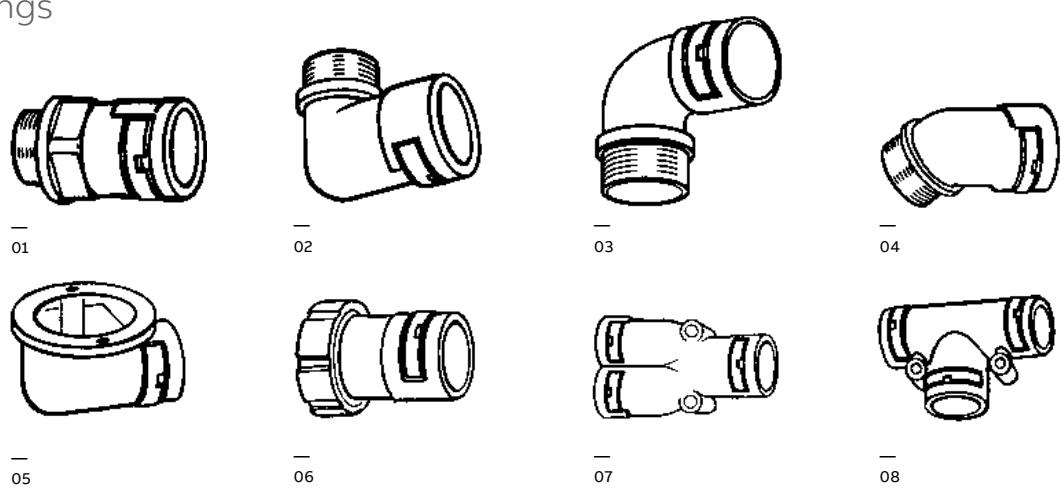
Part number codes

For part number explanation only, not to be used as a configuration tool.



PMAFIX series fittings

- 01 Serie N
- 02 Serie W
- 03 Serie B
- 04 Serie A
- 05 Serie O
- 06 Serie I
- 07 Serie Y
- 08 Serie T



PMAFIX

Size codes

Table 1: Conduit codes

Nominal width	Metric size	PMA code
07	10	M
10	12	0
12	16	2
17	20	7
23	25	3
29	32	9
36	40	6
48	50	8

Additional code for female thread fittings

Type	PMA code
AMP	A
Souriau (ex Burndy) UTG 6	B
With O-ring groove (MIL C 5015)	G
Souriau UTO/UTS	S

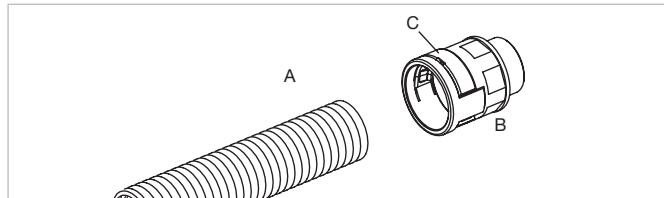
Table 2: Thread codes

Thread metric	PMA code	Thread PG	PMA code	Thread Gas	PMA code	Thread NPT	PMA code	Thread UN	PMA code
		PG07	P07	G 1/4	G00				
M12 x 1.5	M12	PG09	P09	G 3/8	G01				
M16 x 1.5	M16	PG11	P11	G 1/2	G02	N 1/2	N02	1/2-28 UNEF	U12
M20 x 1.5	M20	PG13.5	P13	G 3/4	G04	N 3/4	N04	5/16-24 UNEF	U13
		PG16	P16	G 1	G06	N 1	N06	5/16-24 UNEF	U15
M25 x 1.5	M25	PG21	P21	G 1 1/4	G07	N 1 1/4	N07	1 1/16-24 UNEF	U16
M32 x 1.5	M32	PG29	P29	G 1 1/2	G08	N 1 1/2	N08	3/4-20 UNEF	U18
M40 x 1.5	M40	PG36	P36	G 2	G09	N 2	N09	1 3/16-20 UNEF	U20
M50 x 1.5	M50	PG42	P42	G 2 1/4	G10			7/8-20 UNEF	U21
M63 x 1.5	M63	PG48	P48	G 2 1/2	G11			1 5/16-20 UNEF	U23
								1-20 UNEF	U24
								1 1/16-18 UNEF	U26
M 8 x 1.0	F08							1 3/16-18 UNEF	U29
M12 x 1.0	F12							1 1/4-18 UNEF	U30
M18 x 1.0	F18							1 5/16-18 UNEF	U32
								1 3/8-18 UNEF	U34
								1 7/16-18 UNEF	U35
								1 1/8-18 UNEF	U40
								1 3/4-18 UNS	U43
								2-18 UNS	U50
								2 1/4-16 UN	U56
								2 3/8-12 UN	U57
								2 1/2-12 UN	U62

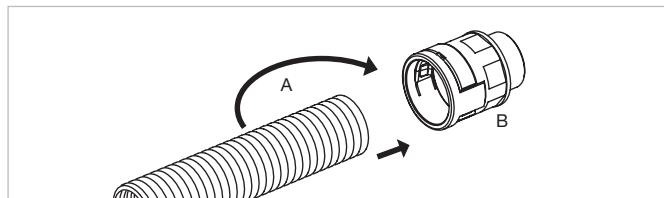
PMAFIX

Installation

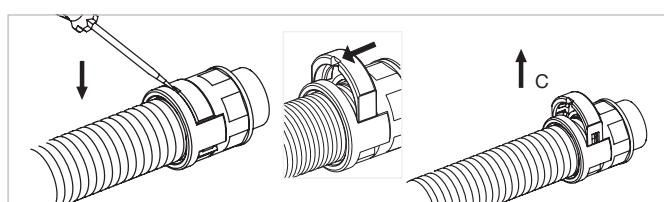
Installation IP66

—
01

A = Conduit
 B = Fitting
 C = Universal safety clip

—
02

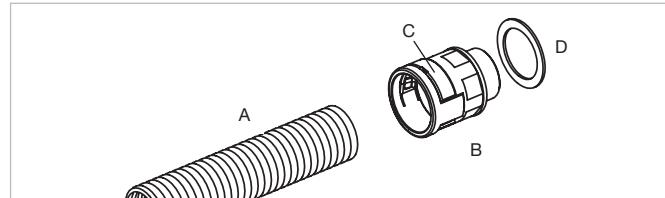
Push in the conduit (A) with a slight twist until the stop.

—
03

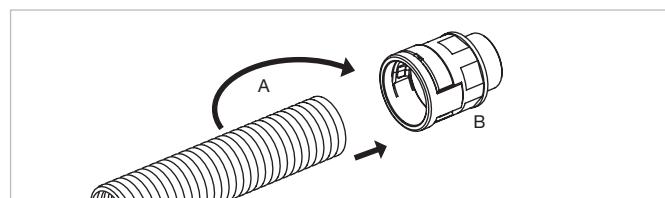
To re-open use a screwdriver.
 The screwdriver slot in the oval clip (C) should be on the conduit side.

Locking clip pre-installed in all IP66 fittings.

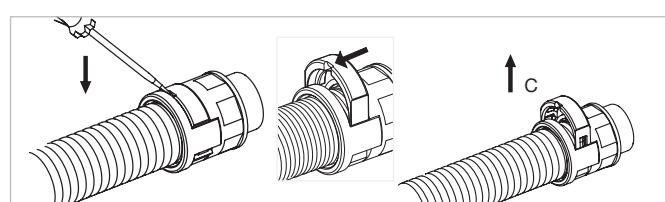
Installation IP68GT

—
01

A = Conduit
 B = Fitting with integrated sealing cap
 C = Universal safety clip
 D = Thread seal (either O-ring or flat gasket*, not both)

—
02

Push in the conduit (A) right into the end of the fitting (B) with a slight twist.
 Additional insertion resistance will be felt when the end of the fitting has been reached.

—
03

To re-open use a screwdriver.
 The screwdriver slot in the oval clip (C) should be on the conduit side.

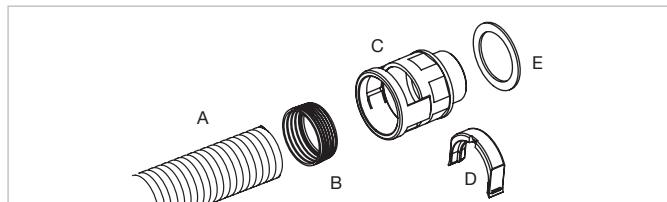
Pre-installed sealing cap and locking clip in all IP68GT fittings.

* Ensure to follow O-ring manufacturers guidelines when using O-rings for sealing purposes.

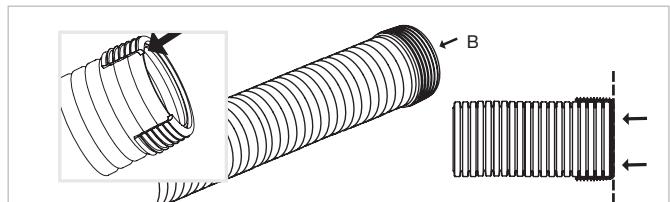
PMAFIX

Installation

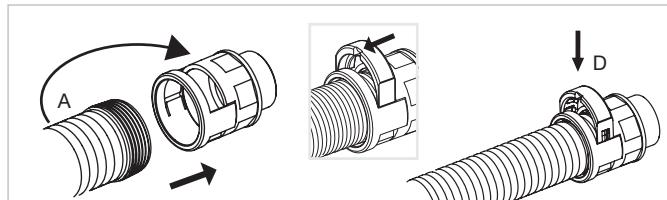
Installation IP68 (IP69)

—
01

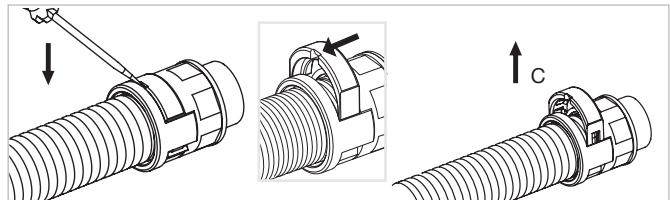
A = Conduit
 B = Sealing cap
 C = Fitting
 D = Oval clip
 E = Thread seal (O-ring or flat seal *)

—
02

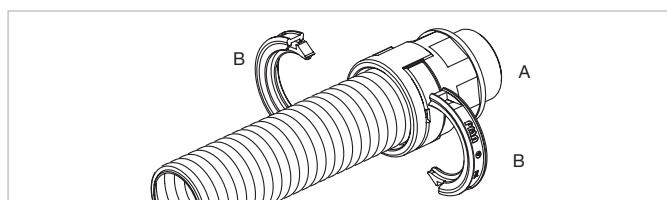
Push sealing cap (B) completely onto the conduit in order to achieve IP68.

—
03

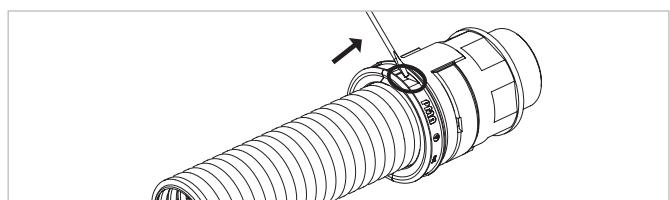
Push in the conduit (A) with a slight twist until the stop. Insert oval clip (D) in the locking element window and click into place. Screwdriver slot in the oval clip should be on conduit side.

—
04

To re-open use a screwdriver.

—
05

For IP69:
 Based on IP68 System
 A = Conduit with IP68 fitting
 B = WPS half shells

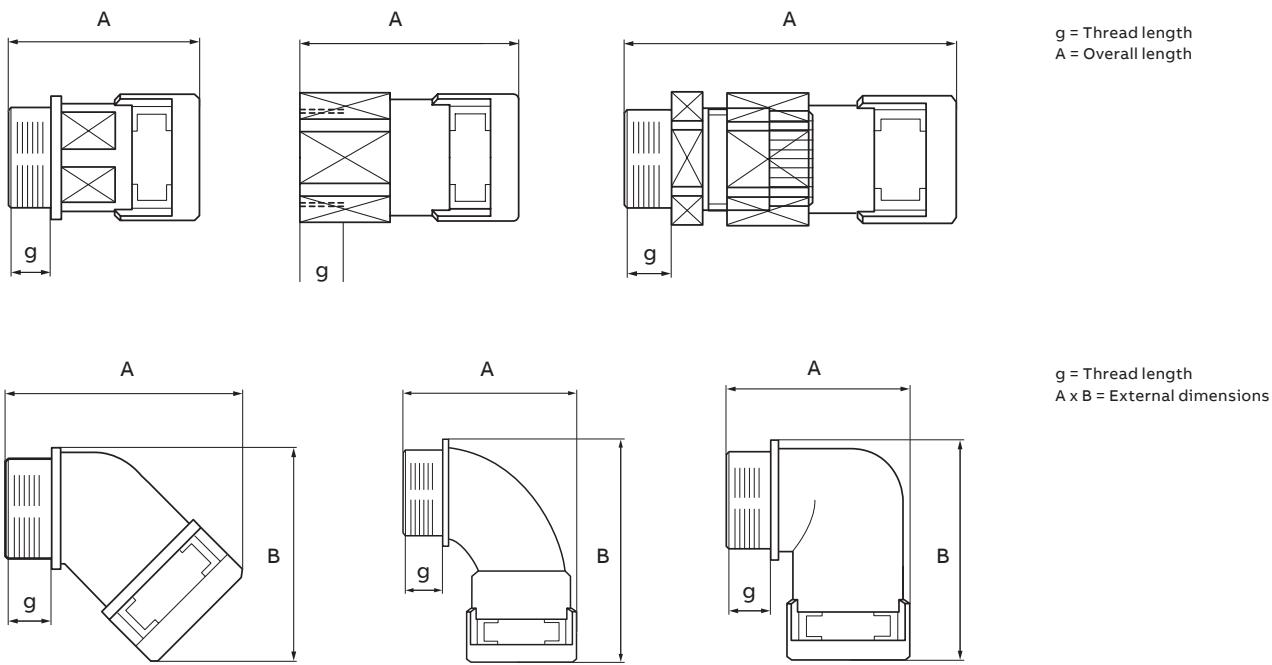
—
06

To re-open use a screwdriver.

* For safety reasons, oval clip will not fit if seal cap is not fully installed.

Ensure to follow O-ring manufacturers guidelines when using O-rings for sealing purposes.

Fitting dimensions



Metric fittings, polyamide thread

Type VN

Type VN - Straight fitting, metric thread

	Order no. IP66 ①	Order no. IP68* ① ②	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VN		BVND-M12MGT BVNV-M12M	M12 x 1.5	07	11.0	34.5	100
		BVND-M120GT BVNV-M120	M12 x 1.5	10	11.0	36.5	100
		BVND-M160GT BVNV-M160	M16 x 1.5	10	11.0	36.5	100
		BVND-M162GT BVNV-M162	M16 x 1.5	12	11.0	39.5	100
		BVND-M200GT BVNV-M200	M20 x 1.5	10	11.0	36.5	100
		BVND-M202GT BVNV-M202	M20 x 1.5	12	11.0	39.5	100
		BVND-M207GT BVNV-M207	M20 x 1.5	17	11.0	47.5	100
		BVND-M203GT BVNV-M203	M20 x 1.5	23	11.0	51.0	50
		BVND-M257GT BVNV-M257	M25 x 1.5	17	12.0	48.5	100
		BVND-M253GT BVNV-M253	M25 x 1.5	23	12.0	52.0	50
		BVND-M323GT BVNV-M323	M32 x 1.5	23	15.0	55.5	50
		BVND-M329GT BVNV-M329	M32 x 1.5	29	15.0	56.0	30
		BVND-M409GT BVNV-M409	M40 x 1.5	29	19.0	60.0	30
		BVND-M406GT BVNV-M406	M40 x 1.5	36	19.0	72.5	20
		BVND-M506GT BVNV-M506	M50 x 1.5	36	19.0	72.0	20
		BVND-M508GT BVNV-M508	M50 x 1.5	48	19.0	72.5	10
		BVND-M638GT BVNV-M638	M63 x 1.5	48	19.0	72.0	10

For cable protection systems in a wide range of applications

① Please replace "B" for black with "S" for grey in front of the order no.

② IP68GT available. Please add "GT" after the order no.



Metric UL fittings, polyamide thread

Type UNV-M-UL

Type UNV - Straight fitting, metric thread

	Order no. black	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
UNV-M-UL	BUNV-M207-UL	M20 x 1.5	17	11.0	47.5	50
	BUNV-M257-UL	M25 x 1.5	17	12.0	48.5	50
	BUNV-M253-UL	M25 x 1.5	23	12.0	52.0	30
	BUNV-M323-UL	M32 x 1.5	23	15.0	55.5	30
	BUNV-M329-UL	M32 x 1.5	29	15.0	56.0	20
	BUNV-M409-UL	M40 x 1.5	29	19.0	60.0	20
	BUNV-M406-UL	M40 x 1.5	36	19.0	72.5	20
	BUNV-M506-UL	M50 x 1.5	36	19.0	72.0	20
	BUNV-M508-UL	M50 x 1.5	48	19.0	72.5	10
	BUNV-M638-UL	M63 x 1.5	48	19.0	72.0	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPLUS conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nut delivered with the fitting

Metric fittings, metal thread

Type VNV

Type VNV - Straight fitting, metric metal thread

	Order no. IP68, black ①	Order no. IP68, grey ①	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VNV	NVNV-M120-10	MVNV-M120-10	M12 x 1.5	10	10.0	40.0	50
	NVNV-M120-5	–	M12 x 1.5	10	5.0	35.0	50
	NVNV-M160-10	–	M16 x 1.5	10	10.0	40.0	50
	NVNV-M160-5	–	M16 x 1.5	10	5.0	35.0	50
	NVNV-M162-10	–	M16 x 1.5	12	10.0	43.0	50
	NVNV-M162-5	–	M16 x 1.5	12	5.0	38.0	50
	NVNV-M202-10	MVNV-M202-10	M20 x 1.5	12	10.0	43.0	50
	NVNV-M202-6	–	M20 x 1.5	12	6.0	39.0	50
	NVNV-M207-10	MVNV-M207-10	M20 x 1.5	17	10.0	51.0	50
	NVNV-M207-6	–	M20 x 1.5	17	6.0	47.0	50
	NVNV-M257-11	MVNV-M257-11	M25 x 1.5	17	11.0	52.0	50
	NVNV-M257-7	–	M25 x 1.5	17	7.0	48.0	50
	NVNV-M253-11	MVNV-M253-11	M25 x 1.5	23	11.0	54.0	30
	NVNV-M253-7	–	M25 x 1.5	23	7.0	50.0	30
	NVNV-M323-13	MVNV-M323-13	M32 x 1.5	23	13.0	56.0	30
	NVNV-M323-8	–	M32 x 1.5	23	8.0	51.0	30
	NVNV-M329-13	MVNV-M329-13	M32 x 1.5	29	13.0	57.3	20
	NVNV-M329-8	–	M32 x 1.5	29	8.0	52.3	20
	NVNV-M409-13	MVNV-M409-13	M40 x 1.5	29	13.0	57.3	20
	NVNV-M409-8	–	M40 x 1.5	29	8.0	52.3	20
	NVNV-M406-13	MVNV-M406-13	M40 x 1.5	36	13.0	71.4	20
	NVNV-M406-8	–	M40 x 1.5	36	8.0	66.4	20
	NVNV-M506-14	–	M50 x 1.5	36	14.0	72.4	20
	NVNV-M506-9	–	M50 x 1.5	36	9.0	67.4	20
Approvals	NVNV-M508-14	MVNV-M508-14	M50 x 1.5	48	14.0	72.4	10
	NVNV-M508-9	–	M50 x 1.5	48	9.0	67.4	10
	NVNV-M638-14	MVNV-M638-14	M63 x 1.5	48	14.0	72.4	10
	NVNV-M638-10	–	M63 x 1.5	48	10.0	68.4	10

For applications in railway vehicles and heavy machine construction
High thread and system connection strength

① IP68GT available. Please add
“GT” prior to the thread length
(for example NVNV-M120GT-10)



Swivel fittings, metric, metal thread

Type SNV

Type SNV - Swivel metal thread fitting, metric thread, IP68

SNV	Order no. black	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
	NSNV-M120-10	M12 x 1.5	10	10.0	50.5	1
	NSNV-M162-10	M16 x 1.5	12	10.0	53.5	1
	NSNV-M207-10	M20 x 1.5	17	10.0	62.5	1
	NSNV-M253-11	M25 x 1.5	23	11.0	67.5	1
	NSNV-M329-13	M32 x 1.5	29	13.0	72.0	1
	NSNV-M329-7	M32 x 1.5	29	7.0	66.0	1
	NSNV-M406-13	M40 x 1.5	36	13.0	85.5	1
	NSNV-M406-7	M40 x 1.5	36	7.0	79.5	1
	NSNV-M409-13	M40 x 1.5	29	13.0	72.0	1
	NSNV-M508-14	M50 x 1.5	48	14.0	87.5	1
	NSNV-M638-14	M63 x 1.5	48	14.0	84.0	1

Approvals



- For applications with high technical requirements
- Very high impact resistance
- High thread and system connection strength
- Vibration-proof connection to PMA conduits
- Suitable for occasional rotation
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Fits both conduit profiles - fine (T) and coarse (G)

Metric fittings, polyamide thread

Type VNDZ/VNZ

Type VNDZ/VNZ - Straight fitting with strain relief, metric thread

	Order no. IP66 ①	Order no. IP68* ① ②	Thread metric	Fits to conduit size NW	Terminal range	Thread length (mm)	Overall length (mm)	PU (pcs)
VNDZ/VNZ								
	BVNDZ-M160GT	–	M16 x 1.5	10	5.0–10.0	8.0	62.0	50
	BVNDZ-M162GT	BVNZ-M162S	M16 x 1.5	12	5.0–10.0	8.0	62.0	50
	BVNDZ-M207GT	BVNZ-M207S	M20 x 1.5	17	10.0–14.0	8.0	72.0	50
	BVNDZ-M253GT	BVNZ-M253S	M25 x 1.5	23	13.0–18.0	8.0	81.0	30
	BVNDZ-M329GT	BVNZ-M329S	M32 x 1.5	29	18.0–25.0	10.0	85.0	20
	BVNDZ-M406GT	BVNZ-M406S	M40 x 1.5	36	22.0–32.0	10.0	108.5	20
	BVNDZ-M508GT	BVNZ-M508S	M50 x 1.5	48	30.0–38.0	12.0	119.5	10
	BVNDZ-M638GT	BVNZ-M638S	M63 x 1.5	48	34.0–44.0	12.0	119.5	10



For machine and plant construction
 For separation of damp and dry areas
 Integrated strain relief optimally holds and seals cables
 If several conductors are used with the fitting multiple sealing inserts should be considered
Note: For several conductors multiple sealing inserts MDE are available

① Please replace “B” for black with
 “S” for grey in front of the order no.

② IP68GT available. Please replace “S” at
 the end with “GT” (e.g. BVNZ-M207GT)

Fittings with strain relief, metric, metal thread

Type VNZ

Type VNZ - Straight fitting with strain relief, metric metal thread



	Order no. IP68 Compl., black ①	Order no. fitting* ①	Order no. insert	Thread metric	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
VNZ	NVNZ-M120S/P1	NVNZ-M120R/P	EK150p7	M12 x 1.5	10	4.0–6.5	5.0	48.5	50
	NVNZ-M120S/P2		EK150p8	M12 x 1.5	10	5.0–8.0	5.0	48.5	50
	NVNZ-M120S/P3		EK150p9	M12 x 1.5	10	6.5–9.5	5.0	48.5	50
	NVNZ-M160S/P1	NVNZ-M160R/P	E150p7	M16 x 1.5	10	4.0–6.5	6.0	49.5	50
	NVNZ-M160S/P2		E150p8	M16 x 1.5	10	5.0–8.0	6.0	49.5	50
	NVNZ-M160S/P3		E150p9	M16 x 1.5	10	6.5–9.5	6.0	49.5	50
	NVNZ-M202S/P1	NVNZ-M202R/P	E152p7	M20 x 1.5	12	4.0–6.5	6.0	54.0	50
	NVNZ-M202S/P3		E152p9	M20 x 1.5	12	6.5–9.5	6.0	54.0	50
	NVNZ-M202S/P4		E152p11	M20 x 1.5	12	7.0–10.5	6.0	54.0	50
	NVNZ-M207S/P3	NVNZ-M207R/P	E152p9	M20 x 1.5	17	6.5–9.5	6.5	60.0	50
	NVNZ-M207S/P4		E152p11	M20 x 1.5	17	7.0–10.5	6.5	60.0	50
	NVNZ-M207S/P5		E152p13	M20 x 1.5	17	9.0–13.0	6.5	60.0	50
	NVNZ-M253S/P5	NVNZ-M253R/P	EK154p13	M25 x 1.5	23	9.0–13.0	7.5	72.5	30
	NVNZ-M253S/P6		EK154p16	M25 x 1.5	23	11.5–15.5	7.5	72.5	30
	NVNZ-M257S/P4	NVNZ-M257R/P	E153p11	M25 x 1.5	17	7.0–10.5	7.5	61.5	50
	NVNZ-M257S/P5		E153p13	M25 x 1.5	17	9.0–13.0	7.5	61.5	50
	NVNZ-M257S/P6		E153p16	M25 x 1.5	17	11.5–15.5	7.5	61.5	20
	NVNZ-M323S/P4	NVNZ-M323R/P	E154p18	M32 x 1.5	23	14.0–18.0	8.0	73.0	30
	NVNZ-M323S/P5	NVNZ-M323R1/P	E154p20	M32 x 1.5	23	17.0–20.5	8.0	73.0	30
	NVNZ-M329S/P2	NVNZ-M329R/P	EK155p18	M32 x 1.5	29	14.0–18.0	8.0	73.0	20
	NVNZ-M329S/P3		EK155p20	M32 x 1.5	29	17.0–20.5	8.0	73.0	20
	NVNZ-M329S/P4		EK155p25	M32 x 1.5	29	20.0–25.0	8.0	73.0	20
	NVNZ-M406S/P1	NVNZ-M406R/P	E156p25HF	M40 x 1.5	36	20.0–25.0	9.0	87.0	20
	NVNZ-M406S/P2		EK156p28	M40 x 1.5	36	24.0–28.0	9.0	87.0	20
	NVNZ-M409S/P1	NVNZ-M409R/P	E155p16	M40 x 1.5	29	11.5–15.5	8.0	73.0	20
	NVNZ-M409S/P2		E155p18	M40 x 1.5	29	14.0–18.0	8.0	73.0	20
	NVNZ-M409S/P3		E155p20	M40 x 1.5	29	17.0–20.5	8.0	73.0	20
	NVNZ-M409S/P4		E155p25	M40 x 1.5	29	20.0–25.0	8.0	73.0	20
	NVNZ-M409S/P5		E155p28	M40 x 1.5	29	24.0–28.0	8.0	73.0	20
	NVNZ-M506S/P1	NVNZ-M506R/P	E156p32	M50 x 1.5	36	27.0–32.0	9.0	89.5	20
	NVNZ-M506S/P3		E156p36	M50 x 1.5	36	32.0–36.0	9.0	89.5	20
	NVNZ-M508S/P2	NVNZ-M508R/P	E157p36HF	M50 x 1.5	48	32.0–36.0	9.0	92.0	10
	NVNZ-M508S/P3		E157p40HF	M50 x 1.5	48	36.0–40.0	9.0	92.0	10
	NVNZ-M638S/P1	NVNZ-M638R/P	E158pm1x35	M63 x 1.5	48	32.0–35.0	10.0	90.5	10
	NVNZ-M638S/P2		E158p44	M63 x 1.5	48	39.0–44.0	10.0	90.5	10

* without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfälzsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available

R/P version of fitting has to be used in combination with multiple sealing inserts

① IP68GT available. Please replace "S" or "R" with "GT"
(e.g. NVNZ-M120GT/P1,
NVNZ-M120GT/P)

Fire barrier fittings with strain relief, metric, metal thread

Type VNZ

Type VNZ - Fire barrier straight fitting with strain relief, metric metal thread



	Order no. IP68 Compl., black ①	Thread metric	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
VNZ	NVNZ-M120S/B1	M12 x 1.5	10	4.0–6.5	5.0	48.5	50
	NVNZ-M120S/B2	M12 x 1.5	10	5.0–8.0	5.0	48.5	50
	NVNZ-M120S/B3	M12 x 1.5	10	6.5–9.5	5.0	48.5	50
	NVNZ-M160S/B1	M16 x 1.5	10	4.0–6.5	6.0	49.5	50
	NVNZ-M160S/B2	M16 x 1.5	10	5.0–8.0	6.0	49.5	50
	NVNZ-M160S/B3	M16 x 1.5	10	6.5–9.5	6.0	49.5	50
	NVNZ-M202S/B1	M20 x 1.5	12	4.0–6.5	6.0	54.0	50
	NVNZ-M202S/B3	M20 x 1.5	12	6.5–9.5	6.0	54.0	50
	NVNZ-M202S/B4	M20 x 1.5	12	7.0–10.5	6.0	54.0	50
	NVNZ-M207S/B1	M20 x 1.5	17	4.0–6.5	6.5	60.0	50
	NVNZ-M207S/B2	M20 x 1.5	17	5.0–8.0	6.5	60.0	50
	NVNZ-M207S/B3	M20 x 1.5	17	6.5–9.5	6.5	60.0	50
	NVNZ-M207S/B4	M20 x 1.5	17	7.0–10.5	6.5	60.0	50
	NVNZ-M207S/B5	M20 x 1.5	17	9.0–13.0	6.5	60.0	50
	NVNZ-M253S/B5	M25 x 1.5	23	9.0–13.0	7.5	72.5	30
	NVNZ-M253S/B6	M25 x 1.5	23	11.5–15.5	7.5	72.5	30
	NVNZ-M257S/B4	M25 x 1.5	17	7.0–10.0	7.5	61.5	50
	NVNZ-M257S/B5	M25 x 1.5	17	9.0–13.0	7.5	61.5	50
	NVNZ-M257S/B6	M25 x 1.5	17	11.5–15.5	7.5	61.5	50
	NVNZ-M323S/B4	M32 x 1.5	23	14.0–18.0	8.0	73.0	30
	NVNZ-M323S/B5	M32 x 1.5	23	17.0–20.5	8.0	73.0	30
	NVNZ-M329S/B2	M32 x 1.5	29	14.0–18.0	8.0	73.0	50
	NVNZ-M329S/B3	M32 x 1.5	29	17.0–20.5	8.0	73.0	50
	NVNZ-M329S/B4	M32 x 1.5	29	20.0–25.0	8.0	73.0	50
	NVNZ-M406S/B1	M40 x 1.5	36	20.0–25.0	9.0	87.0	30
	NVNZ-M406S/B2	M40 x 1.5	36	24.0–28.0	9.0	87.0	30
	NVNZ-M409S/B1	M40 x 1.5	29	11.5–15.5	8.0	73.0	20
	NVNZ-M409S/B2	M40 x 1.5	29	14.0–18.0	8.0	73.0	20
	NVNZ-M409S/B3	M40 x 1.5	29	17.0–20.5	8.0	73.0	20
	NVNZ-M409S/B4	M40 x 1.5	29	20.0–25.0	8.0	73.0	20
	NVNZ-M409S/B5	M40 x 1.5	29	24.0–28.0	8.0	73.0	20
	NVNZ-M506S/B1	M50 x 1.5	36	27.0–32.0	9.0	89.5	20
	NVNZ-M506S/B3	M50 x 1.5	36	32.0–36.0	9.0	89.5	20
	NVNZ-M508S/B2	M50 x 1.5	48	32.0–36.0	9.0	92.0	10
	NVNZ-M508S/B3	M50 x 1.5	48	36.0–40.0	9.0	92.0	10
	NVNZ-M638S/B1	M63 x 1.5	48	32.0–35.0	10.0	90.5	10
	NVNZ-M638S/B2	M63 x 1.5	48	39.0–44.0	10.0	90.5	10

*without insert

Fire barrier function, according to standard EN45545-2/-3

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from T805

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available

R/P version of fitting has to be used in combination with multiple sealing inserts

① IP68GT available. Please
replace "S" or "R" with "GT"
(e.g. NVNZ-M120GT/P1,
NVNZ-M120GT/P)

Metric fittings with strain relief, long metal thread

Type VNZ

Type VNZ - Straight fitting with strain relief, metric long metal thread



	Order no. IP68 Compl., black ①	Order no. fitting* ①	Order no. insert	Fits to conduit		Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
				Thread metric	size NW				
VNZ	NVNZ-M120S/P1-L	NVNZ-M120R/P-L	EK150p7	M12 x 1.5	10	4.0–6.5	15.0	66.5	50
	NVNZ-M120S/P3-L			M12 x 1.5	10	6.5–9.5	15.0	66.5	50
	NVNZ-M160S/P1-L	NVNZ-M160R/P-L	E150p7	M16 x 1.5	10	4.0–6.5	15.0	58.5	50
	NVNZ-M160S/P2-L		E150p8	M16 x 1.5	10	5.0–8.0	15.0	58.5	50
	NVNZ-M160S/P3-L		E150p9	M16 x 1.5	10	6.5–9.5	15.0	58.5	50
	NVNZ-M202S/P1-L	NVNZ-M202R/P-L	E152p7	M20 x 1.5	12	4.0–6.5	15.0	62.5	50
	NVNZ-M202S/P3-L		E152p9	M20 x 1.5	12	6.5–9.5	15.0	62.5	50
	NVNZ-M202S/P4-L		E152p11	M20 x 1.5	12	7.0–10.5	15.0	62.5	50
	NVNZ-M207S/P3-L	NVNZ-M207R/P-L	E152p9	M20 x 1.5	17	6.5–9.5	15.0	68.5	50
	NVNZ-M207S/P4-L		E152p11	M20 x 1.5	17	7.0–10.5	15.0	68.5	50
	NVNZ-M207S/P5-L		E152p13	M20 x 1.5	17	9.0–13.0	15.0	68.5	50
	NVNZ-M257S/P5-L	NVNZ-M257R/P-L	E153p13	M25 x 1.5	17	9.0–13.0	15.0	69.0	50
	NVNZ-M257S/P6-L		E153p16	M25 x 1.5	17	11.5–15.5	15.0	69.0	50
	NVNZ-M323S/P4-L	NVNZ-M323R/P-L	E154p18	M32 x 1.5	23	14.0–18.0	15.0	80.0	30
	NVNZ-M323S/P5-L	NVNZ-M323R1/P-L	E154p20	M32 x 1.5	23	17.0–20.5	15.0	80.0	30
	NVNZ-M329S/P2-L	NVNZ-M329R/P-L	E155p18	M32 x 1.5	29	14.0–18.0	15.0	91.0	20
	NVNZ-M329S/P3-L		E155p20	M32 x 1.5	29	17.0–20.5	15.0	91.0	20
	NVNZ-M409S/P3-L	NVNZ-M409R/P-L	E155p20	M40 x 1.5	29	17.0–20.5	15.0	80.0	20
	NVNZ-M409S/P4-L		E155p25	M40 x 1.5	29	20.0–25.0	15.0	80.0	20
	NVNZ-M409S/P5-L		E155p28	M40 x 1.5	29	24.0–28.0	15.0	80.0	20
	NVNZ-M506S/P1-L	NVNZ-M506R/P-L	E156p32	M50 x 1.5	36	27.0–32.0	15.0	94.5	20
	NVNZ-M506S/P3-L		E156p36	M50 x 1.5	36	32.0–36.0	15.0	94.5	20
	NVNZ-M508S/P2-L	NVNZ-M508R/P-L	E157p36HF	M50 x 1.5	48	32.0–36.0	15.0	97.0	10
	NVNZ-M508S/P3-L		E157p40HF	M50 x 1.5	48	36.0–40.0	15.0	97.0	10
	NVNZ-M638S/P1-L	NVNZ-M638R/P-L	E158pm1X35	M63 x 1.5	48	32.0–35.0	15.0	95.5	10
	NVNZ-M638S/P2-L		E158p44	M63 x 1.5	48	39.0–44.0	15.0	95.5	10

*without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available

R/P version of fitting has to be used in combination with multiple sealing inserts

① IP68GT available. Please replace "S" or "R" with "GT"
(e.g. NVNZ-M120GT/P1-L)

Metric fittings with strain relief, long metal thread

Type VNZ

Type VNZ - Straight fitting with strain relief, metric long metal thread

	Order no. IP68 Compl., black	Thread metric	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
VNZ	NVNZ-M120S-10	M12 x 1.5	10	3.0–6.0	10.0	54.5	50
	NVNZ-M120S-5	M12 x 1.5	10	3.0–6.0	5.0	49.5	50
	NVNZ-M160S-10	M16 x 1.5	10	5.0–9.0	10.0	58.0	50
	NVNZ-M160S-5	M16 x 1.5	10	5.0–9.0	5.0	53.0	50
	NVNZ-M162S-10	M16 x 1.5	12	5.0–9.0	10.0	61.0	50
	NVNZ-M162S-5	M16 x 1.5	12	5.0–9.0	5.0	56.0	50
	NVNZ-M202S-10	M20 x 1.5	12	9.0–13.0	10.0	64.5	50
	NVNZ-M202S-6	M20 x 1.5	12	9.0–13.0	6.0	60.5	50
	NVNZ-M207S-10	M20 x 1.5	17	9.0–13.0	10.0	72.0	50
	NVNZ-M207S-6	M20 x 1.5	17	9.0–13.0	6.0	68.0	50
	NVNZ-M257S-11	M25 x 1.5	17	11.0–16.0	10.0	74.0	50
	NVNZ-M257S-7	M25 x 1.5	17	11.0–16.0	6.0	70.0	50
	NVNZ-M253S-11	M25 x 1.5	23	11.0–16.0	11.0	78.5	30
	NVNZ-M253S-7	M25 x 1.5	23	11.0–16.0	7.0	74.5	30
	NVNZ-M323S-13	M32 x 1.5	23	14.0–21.0	11.0	87.5	30
	NVNZ-M323S-8	M32 x 1.5	23	14.0–21.0	7.0	82.5	30
	NVNZ-M329S-13	M32 x 1.5	29	14.0–21.0	13.0	84.0	20
	NVNZ-M329S-8	M32 x 1.5	29	14.0–21.0	8.0	79.0	20
	NVNZ-M409S-13	M40 x 1.5	29	19.0–27.0	13.0	86.0	20
	NVNZ-M409S-8	M40 x 1.5	29	19.0–27.0	8.0	81.0	20
	NVNZ-M406S-13	M40 x 1.5	36	19.0–27.0	13.0	99.0	20
	NVNZ-M406S-8	M40 x 1.5	36	19.0–27.0	8.0	94.0	20
	NVNZ-M506S-14	M50 x 1.5	36	24.0–35.0	14.0	106.0	20
	NVNZ-M506S-9	M50 x 1.5	36	24.0–35.0	9.0	101.0	20
	NVNZ-M508S-14	M50 x 1.5	48	24.0–35.0	14.0	104.5	10
	NVNZ-M508S-9	M50 x 1.5	48	24.0–35.0	9.0	99.5	10
	NVNZ-M638S-14	M63 x 1.5	48	32.0–42.0	14.0	110.0	10
	NVNZ-M638S-10	M63 x 1.5	48	32.0–42.0	10.0	106.0	10

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Very high impact resistance

With integrated strain relief for optimal ingress protection at the cable (up to IP68 / 5 bar)

High thread and system connection strength

Vibration-resistant connection to PMA conduits

Easy assembly

High conduit pull-out strength

Very good chemical properties



Metric fittings, female polyamide thread

Type VI

Type VI - Straight fitting, metric female polyamide thread

	Order no. IP66, black	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VI	BVID-M12MGT	-	M12 x 1.5	07	8.0	32.0	100
	BVID-M160GT	BVIR-M160	M16 x 1.5	10	8.0	33.5	50
	BVID-M162GT	BVIR-M162	M16 x 1.5	12	8.0	36.5	50
	-	BVIR-M202	M20 x 1.5	12	8.0	36.5	50
	BVID-M207GT	BVIR-M207	M20 x 1.5	17	8.0	44.5	50
	BVID-M253GT	BVIR-M253	M25 x 1.5	23	8.0	48.5	30
	-	BVIR-M257	M25 x 1.5	17	8.0	44.5	50
	BVID-M329GT	BVIR-M329	M32 x 1.5	29	10.0	51.5	20
	BVID-M406GT	BVIR-M406	M40 x 1.5	36	10.0	65.5	20
	BVID-M508GT	BVIR-M508	M50 x 1.5	48	10.0	65.5	10
	BVID-M638GT	BVIR-M638	M63 x 1.5	48	10.0	65.5	10

Approvals



For cable protection systems in a wide range of applications
 VID: IP66 static/IP54 dynamic, conduit side
 VIR: IP68 static/IP67 dynamic, conduit side
 No seal on female thread side

① IP68GT available. Please add "GT" after the order no.

Metric fittings, female metal thread

Type VIR

Type VIR - Straight fitting, female metric metal thread

	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VIR	NVIR-M120	M12 x 1.5	10	7.5	35.0	50
	NVIR-M160	M16 x 1.5	10	9.0	40.5	50
	NVIR-M162	M16 x 1.5	12	9.0	42.0	50
	NVIR-M207	M20 x 1.5	17	10.0	50.0	50
	NVIR-M253	M25 x 1.5	23	10.0	56.0	30
	NVIR-M329	M32 x 1.5	29	11.0	55.5	20
	NVIR-M406	M40 x 1.5	36	13.0	71.0	20
	NVIR-M508	M50 x 1.5	48	15.0	75.0	10
	NVIR-M638	M63 x 1.5	48	17.5	76.0	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strengths
VIR: IP68 static/IP67 dynamic, conduit side
No seal on female thread side

① IP68GT available. Please add "GT" after the order no.

Metric fittings, polyamide thread

Type VA

Type VA - 45° elbow fitting, metric thread

	Order no. IP66 ①	Order no. IP68* ① ②	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VA	BVAD-M120GT	–	M12 x 1.5	10	11.0	43.5 x 37.0	50
		BVAD-M160GT	BVAV-M160	M16 x 1.5	10	43.5 x 38.0	50
		BVAD-M162GT	BVAV-M162	M16 x 1.5	12	48.0 x 40.0	50
		BVAD-M202GT	BVAV-M202	M20 x 1.5	12	48.0 x 41.5	50
		BVAD-M207GT	BVAV-M207	M20 x 1.5	17	55.5 x 51.5	50
		BVAD-M253GT	BVAV-M253	M25 x 1.5	23	65.0 x 58.5	30
		BVAD-M329GT	BVAV-M329	M32 x 1.5	29	73.5 x 66.5	20
		BVAD-M406GT	BVAV-M406	M40 x 1.5	36	92.5 x 85.5	20
		BVAD-M506GT	BVAV-M506	M50 x 1.5	36	92.5 x 89.5	20
		BVAD-M508GT	BVAV-M508	M50 x 1.5	48	100.0 x 96.0	10
		BVAD-M638GT	BVAV-M638	M63 x 1.5	48	100.0 x 104.0	10

Approvals



① Please replace "B" for black with "S" for grey in front of the order no.
 ② IP68GT available. Please add "GT" after the order no.

Metric UL fittings, polyamide thread

Type UAV-M-UL

Type UAV - 45° elbow fitting, metric thread

	Order no. black	Thread metric	Fits to conduit size NW	Thread length (mm)	Outside Ø (mm)	Overall height (mm)	PU (pcs)
UAV-M-UL	BUAV-M207-UL	M20 x 1.5	17	11.0	29.5	51.5	50
	BUAV-M253-UL	M25 x 1.5	23	12.0	37.0	58.5	30
	BUAV-M329-UL	M32 x 1.5	29	15.0	44.0	66.5	20
	BUAV-M406-UL	M40 x 1.5	36	19.0	53.5	85.5	20
	BUAV-M506-UL	M50 x 1.5	36	19.0	53.5	89.5	20
	BUAV-M508-UL	M50 x 1.5	48	19.0	66.0	96.0	10
	BUAV-M638-UL	M63 x 1.5	48	19.0	66.0	104.0	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPlus conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nut delivered with the fitting

Metric fittings, metal thread

Type VAV

Type VAV - 45° elbow fitting, metric metal thread

VAV	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
	NVAV-M120-10	M12 x 1.5	10	10.0	48.5 x 37.0	50
	NVAV-M120-5	M12 x 1.5	10	5.0	43.5 x 37.0	50
	NVAV-M162-10	M16 x 1.5	12	10.0	53.0 x 40.5	50
	NVAV-M162-5	M16 x 1.5	12	5.0	48.0 x 40.5	50
	NVAV-M207-10	M20 x 1.5	17	10.0	60.5 x 51.5	50
	NVAV-M207-6	M20 x 1.5	17	6.0	56.5 x 51.5	50
	NVAV-M253-11	M25 x 1.5	23	11.0	70.0 x 60.5	30
	NVAV-M253-7	M25 x 1.5	23	7.0	66.0 x 60.5	30
	NVAV-M329-13	M32 x 1.5	29	13.0	77.0 x 68.0	20
	NVAV-M329-8	M32 x 1.5	29	8.0	72.0 x 68.0	20
	NVAV-M406-13	M40 x 1.5	36	13.0	94.0 x 87.5	20
	NVAV-M406-8	M40 x 1.5	36	8.0	89.0 x 87.5	20
	NVAV-M508-14	M50 x 1.5	48	14.0	102.0 x 101.0	10
	NVAV-M508-9	M50 x 1.5	48	9.0	97.0 x 101.0	10
	NVAV-M638-14	M63 x 1.5	48	14.0	102.0 x 104.0	10
	NVAV-M638-10	M63 x 1.5	48	10.0	98.0 x 104.0	10

Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength

① IP68GT available. Please add "GT" prior to the thread length (e.g. NVAV-M120GT-10, NVBV-M120GT-10)

Metric fittings, polyamide thread

Type VB

Type VB - 90° curved elbow fitting, metric thread

	Order no. IP66 ①	Order no. IP68* ① ②	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)	
VB		BVBD-M207GT	BVBV-M207	M20 x 1.5	17	11.0	47.5 x 73.0	50
		BVBD-M257GT	BVBV-M257	M25 x 1.5	17	12.0	48.5 x 76.0	50
		BVBD-M253GT	BVBV-M253	M25 x 1.5	23	12.0	57.5 x 83.0	30
		BVBD-M323GT	BVBV-M323	M32 x 1.5	23	15.0	61.0 x 87.5	30
		BVBD-M329GT	BVBV-M329	M32 x 1.5	29	15.0	70.5 x 93.0	20
		BVBD-M409GT	BVBV-M409	M40 x 1.5	29	19.0	74.5 x 98.5	20
		BVBD-M406GT	BVBV-M406	M40 x 1.5	36	19.0	85.0 x 121.0	20
		BVBD-M506GT	BVBV-M506	M50 x 1.5	36	19.0	85.0 x 125.0	20
		BVBD-M508GT	BVBV-M508	M50 x 1.5	48	19.0	98.5 x 130.0	10
		BVBD-M638GT	BVBV-M638	M63 x 1.5	48	19.0	98.5 x 138.0	10

Approvals



For cable protection systems in a wide range of applications

Smooth elbow allows easy threading of wires and cables

Note: For smaller conduit sizes NW 10 to NW 12 appropriate standard elbows of type VW are also available

① Please replace "B" for black with "S" for grey in front of the order no.
 ② IP68GT available. Please add "GT" after the order no.

Metric fittings, metal thread

Type VBV

Type VBV - 90° curved elbow fitting, metric metal thread

	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VBV	NVBV-M207-10	M20 x 1.5	17	10.0	51.0 x 73.0	50
	NVBV-M207-6	M20 x 1.5	17	6.0	47.0 x 73.0	50
	NVBV-M257-11	M25 x 1.5	17	11.0	52.0 x 76.0	50
	NVBV-M257-7	M25 x 1.5	17	7.0	48.0 x 76.0	50
	NVBV-M253-11	M25 x 1.5	23	11.0	62.5 x 85.0	30
	NVBV-M253-7	M25 x 1.5	23	7.0	58.5 x 85.0	30
	NVBV-M323-13	M32 x 1.5	23	13.0	64.5 x 89.0	30
	NVBV-M323-8	M32 x 1.5	23	8.0	59.5 x 89.0	30
	NVBV-M329-13	M32 x 1.5	29	13.0	74.0 x 94.5	20
	NVBV-M329-8	M32 x 1.5	29	8.0	69.0 x 94.5	20
	NVBV-M409-13	M40 x 1.5	29	13.0	75.5 x 100.5	20
	NVBV-M409-8	M40 x 1.5	29	8.0	70.5 x 100.5	20
	NVBV-M406-13	M40 x 1.5	36	13.0	86.5 x 123.0	20
	NVBV-M406-8	M40 x 1.5	36	8.0	81.5 x 123.0	20
	NVBV-M506-14	M50 x 1.5	36	14.0	87.5 x 130.0	20
	NVBV-M506-9	M50 x 1.5	36	9.0	82.5 x 130.0	20
Approvals	NVBV-M508-14	M50 x 1.5	48	14.0	100.5 x 135.0	10
	NVBV-M508-9	M50 x 1.5	48	9.0	95.5 x 135.0	10
	NVBV-M638-10	M63 x 1.5	48	14.0	100.5 x 138.0	10
	NVBV-M638-14	M63 x 1.5	48	10.0	96.5 x 138.0	10



Approvals



For applications in railway vehicles and heavy machine construction

High thread and system connection strength

Smooth elbow allows easy threading of wires and cables

Note: Appropriate standard elbows of type VW are available for smaller conduit sizes NW 10 to NW 12

① IP68GT available. Please add "GT" prior to the thread length (e.g. NVAV-M120GT-10, NVBV-M120GT-10)

Swivel fittings, metric metal thread

Type SBV

Type SBV - Swivel 90° curved elbow fitting, metric metal thread

	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
SBV	NSBV-M207-10	M20 x 1.5	17	10.0	62.5 x 74.5	1
	NSBV-M253-11	M25 x 1.5	23	11.0	73.0 x 87.5	1
	NSBV-M329-13	M32 x 1.5	29	13.0	86.5 x 98.0	1
	NSBV-M406-13	M40 x 1.5	36	13.0	98.5 x 127.5	1
	NSBV-M409-13	M40 x 1.5	29	13.0	86.5 x 98.0	1
	NSBV-M508-14	M50 x 1.5	48	14.0	113.5 x 139.0	1
	NSBV-M638-14	M63 x 1.5	48	14.0	110.0 x 139.0	1



Approvals



For applications with high technical requirements mainly in machine building
 Suitable for occasional rotation
 Thread and integrated swivel adapter made from nickel-plated brass
 High thread and system connection strength
 Smooth elbow allows easy threading of wires and cables

① IP68GT available. Please add "GT" prior to the thread length (for example NSBV-M329GT-13)

Metric fittings, polyamide thread

Type VW

Type VW - 90° elbow fitting, metric thread

	Order no. IP66 ①	Order no. IP68* ① ②	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VW	BVWD-M12MGT	BVVW-M12M	M12 x 1.5	07	11.0	32.0 x 35.0	100
	BVWD-M120GT	BVVW-M120	M12 x 1.5	10	11.0	34.0 x 39.5	50
	BVWD-M160GT	BVVW-M160	M16 x 1.5	10	11.0	34.0 x 40.5	50
	BVWD-M162GT	BVVW-M162	M16 x 1.5	12	11.0	38.5 x 46.0	50
	BVWD-M200GT	-	M20 x 1.5	10	11.0	34.0 x 42.5	50
	BVWD-M202GT	BVVW-M202	M20 x 1.5	12	11.0	38.5 x 47.5	50
	BVWD-M207GT	BVVW-M207	M20 x 1.5	17	11.0	43.5 x 58.5	50
	BVWD-M253GT	BVVW-M253	M25 x 1.5	23	12.0	54.0 x 65.0	30
	BVWD-M329GT	BVVW-M329	M32 x 1.5	29	15.0	64.5 x 73.0	20
	BVWD-M406GT	BVVW-M406	M40 x 1.5	36	19.0	78.0 x 96.0	20
	BVWD-M508GT	BVVW-M508	M50 x 1.5	48	19.0	91.5 x 106.0	10

Approvals



For cable protection systems in a wide range of applications

Note: For sizes NW 17 to NW 48 curved elbows of type VB are also available

① Please replace "B" for black with "S" for grey in front of the order no.
 ② IP68GT available. Please add "GT" after the order no.

Metric UL fittings, polyamide thread

Type UWV-M-UL

Type UWV-M-UL - 90° elbow fitting, metric thread

	Order no. black	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	Overall height (mm)	PU (pcs)
UWV-M-UL	BUWV-M207-UL	M20 x 1.5	17	11.0	58.5	43.5	50
	BUWV-M253-UL	M25 x 1.5	23	12.0	65.0	54.0	30
	BUWV-M329-UL	M32 x 1.5	29	15.0	73.0	64.5	20
	BUWV-M406-UL	M40 x 1.5	36	19.0	69.0	78.0	20
	BUWV-M508-UL	M50 x 1.5	48	19.0	106.0	91.5	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPlus conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nut delivered with the fitting

Metric fittings, metal thread

Type VWV

Type VWV - 90° elbow fitting, metric metal thread

	Order no. IP68, black ①	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VWV	NVVV-M120-10	M12 x 1.5	10	10.0	37.5 x 39.5	50
	NVVV-M120-5	M12 x 1.5	10	5.0	32.5 x 39.5	50
	NVVV-M160-10	M16 x 1.5	10	10.0	37.5 x 41.5	50
	NVVV-M160-5	M16 x 1.5	10	5.0	32.5 x 41.5	50
	NVVV-M162-10	M16 x 1.5	12	10.0	42.0 x 46.5	50
	NVVV-M162-5	M16 x 1.5	12	5.0	37.0 x 46.5	50
	NVVV-M202-10	M20 x 1.5	12	10.0	42.0 x 49.0	50
	NVVV-M202-6	M20 x 1.5	12	6.0	38.0 x 49.0	50
	NVVV-M207-10	M20 x 1.5	17	10.0	47.0 x 58.5	30
	NVVV-M207-6	M20 x 1.5	17	6.0	43.0 x 58.5	30
	NVVV-M253-11	M25 x 1.5	23	11.0	59.0 x 67.0	20
	NVVV-M253-7	M25 x 1.5	23	7.0	55.0 x 67.0	20
	NVVV-M329-13	M32 x 1.5	29	13.0	68.0 x 74.5	20
	NVVV-M329-8	M32 x 1.5	29	8.0	63.0 x 74.5	20
	NVVV-M406-13	M40 x 1.5	36	13.0	80.5 x 98.0	20
	NVVV-M406-8	M40 x 1.5	36	8.0	75.5 x 98.0	20
Approvals	NVVV-M508-14	M50 x 1.5	48	14.0	95.5 x 111.0	10
	NVVV-M508-9	M50 x 1.5	48	9.0	90.5 x 111.0	10
	NVVV-M638-14	M63 x 1.5	48	14.0	94.5 x 114.0	10
	NVVV-M638-10	M63 x 1.5	48	10.0	90.5 x 114.0	10



Approvals



For applications in railway vehicles and heavy machine construction

High thread and system connection strength

Note: Curved elbows of type VB are also available for sizes NW 17 to NW 48

① IP68GT available. Please add "GT" prior to the thread length (e.g. NVVV-M120GT-10)

Metric fittings with strain relief, metal thread

Type VWZ

Type VWZ - 90° elbow fitting with strain relief, metric metal thread



	Order no. IP68 Compl., black ①	Order no. fitting* ①	Order no. insert	Thread metric	Fits to conduit		Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
					size NW	10				
VWZ	NVWZ-M160S/P1	NVWZ-M160R/P	E150p7	M16 x 1.5	10	4.0–6.5	8.0	65.0	50	
	NVWZ-M160S/P2	–	E150p8	M16 x 1.5	10	5.0–8.0	8.0	65.0	50	
	NVWZ-M160S/P3	–	E150p9	M16 x 1.5	10	6.5–9.5	8.0	65.0	50	
	NVWZ-M202S/P1	NVWZ-M202R/P	E152p7	M20 x 1.5	12	4.0–6.5	8.0	74.5	50	
	NVWZ-M202S/P3	–	E152p9	M20 x 1.5	12	6.5–9.5	8.0	74.5	50	
	NVWZ-M202S/P4	–	E152p11	M20 x 1.5	12	7.0–10.5	8.0	74.5	50	
	NVWZ-M207S/P1	NVWZ-M207R/P	E152p7	M20 x 1.5	17	4.0–6.5	8.0	81.0	50	
	NVWZ-M207S/P3	–	E152p9	M20 x 1.5	17	6.5–9.5	8.0	81.0	50	
	NVWZ-M207S/P4	–	E152p11	M20 x 1.5	17	7.0–10.5	8.0	81.0	50	
	NVWZ-M207S/P5	–	E152p13	M20 x 1.5	17	9.0–13.0	8.0	81.0	50	
	NVWZ-M257S/P5	NVWZ-M257R/P	E153p13	M25 x 1.5	17	9.0–13.0	8.0	84.0	50	
	NVWZ-M257S/P6	–	E153p16	M25 x 1.5	17	11.5–15.5	8.0	84.0	50	

*without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Straight fitting: Specially formulated polyamide 6

90° elbow: Zinc diecast

Female thread and locknut: Nickel-plated brass

Pfleitsch sealing insert: TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

① IP68GT available. Please replace "S" or "R" with "GT"
(e.g. NVWZ-M160GT/P1)

PG fittings, polyamide thread

Type VN

Type VN - Straight fitting, PG thread

	Order no. IP66 ①	Order no. IP68 ① ②	Thread PG	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VN							
	BVND-P07MGT-11	BVNV-P07M	07	07	11.0	34.5	100
	BVND-P070GT-11	BVNV-P070	07	10	11.0	36.5	100
	BVND-P072GT-11	BVNV-P072	07	12	11.0	39.0	100
	BVND-P09MGT-11	BVNV-P09M	09	07	11.0	34.5	100
	BVND-P090GT-11	BVNV-P090	09	10	11.0	36.5	100
	BVND-P092GT-11	BVNV-P092	09	12	11.0	39.0	100
	BVND-P097GT-11	BVNV-P097	09	17	11.0	47.5	100
	BVND-P11MGT-11	BVNV-P11M	11	07	11.0	34.5	100
	BVND-P110GT-11	BVNV-P110	11	10	11.0	36.5	100
	BVND-P112GT-11	BVNV-P112	11	12	11.0	39.0	100
	BVND-P117GT-11	BVNV-P117	11	17	11.0	47.5	100
	BVND-P13MGT-11	BVNV-P13M	13.5	07	11.0	34.5	100
	BVND-P130GT-11	BVNV-P130	13.5	10	11.0	36.5	100
	BVND-P132GT-11	BVNV-P132	13.5	12	11.0	39.0	100
	BVND-P137GT-11	BVNV-P137	13.5	17	11.0	47.5	100
	BVND-P160GT-11	—	16	10	11.0	36.5	100
	BVND-P162GT-11	BVNV-P162	16	12	11.0	39.0	100
	BVND-P163GT-11	BVNV-P163	16	23	11.0	51.0	100
	BVND-P167GT-11	BVNV-P167	16	17	11.0	47.5	50
	BVND-P213GT	BVNV-P213	21	23	12.0	52.0	50
	BVND-P296GT	BVNV-P296	29	36	12.0	67.5	20
	BVND-P299GT	BVNV-P299	29	29	12.0	53.0	30
	BVND-P366GT	BVNV-P366	36	36	13.0	66.0	20
	BVND-P368GT	BVNV-P368	36	48	13.0	68.5	10
	BVND-P428GT	BVNV-P428	42	48	13.0	68.5	10
	BVND-P488GT	BVNV-P488	48	48	13.0	66.5	10

For cable protection systems in a wide range of applications

Approvals



- ① Please replace "B" for black with "S" for grey in front of the order no.
- ② IP68GT available. Please add "GT" after the order no.

PG fittings, metal thread

Type VNV

Type VNV - Straight fitting, PG metal thread

	Order no. IP68, black ①	Order no. IP68, grey ①	Thread PG	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VNV	NVNV-P090	MVNV-P090	09	10	12.0	42.0	50
	NVNV-P112	MVNV-P112	11	12	12.0	45.0	50
	NVNV-P137	MVNV-P137	13.5	17	13.0	54.0	50
	NVNV-P167	MVNV-P167	16	17	13.0	54.0	50
	NVNV-P213	MVNV-P213	21	23	14.0	57.0	30
	NVNV-P293	MVNV-P293	29	23	14.0	57.0	30
	NVNV-P299	MVNV-P299	29	29	14.0	58.5	20
	NVNV-P366	MVNV-P366	36	36	17.0	75.5	20
	NVNV-P488	MVNV-P488	48	48	17.0	75.5	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength

① IP68GT available. Please add "GT" prior to the thread length (for example NVNV-N022GT)

PG fittings, polyamide thread

Type VNDZ/VNZ

Type VNDZ/VNZ - Straight fitting with strain relief, PG thread

	Order no. IP66 ①	Order no. IP68 ② ③	Thread PG	Fits to conduit size NW	Terminal range	Thread length (mm)	Overall length (mm)	PU (pcs)
VNDZ/VNZ								
	BVNDZ-P090GT	BVNZ-P090S	09	10	4.0–8.0	7.5	56.0	50
	BVNDZ-P112GT	BVNZ-P112S	11	12	5.0–10.0	8.0	60.5	50
	BVNDZ-P132GT	BVNZ-P132S	13.5	12	6.0–12.0	9.0	62.0	50
	BVNDZ-P167GT	BVNZ-P167S	16	17	10.0–14.0	10.0	72.0	50
	BVNDZ-P213GT	BVNZ-P213S	21	23	13.0–18.0	11.0	82.0	30
	BVNDZ-P299GT	BVNZ-P299S	29	29	18.0–25.0	11.0	85.0	20
	BVNDZ-P366GT	BVNZ-P366S	36	36	22.0–32.0	13.0	112.0	20
	BVNDZ-P488GT	BVNZ-P488S	48	48	34.0–44.0	14.0	112.0	10



For machine and plant construction
 For separation of damp and dry areas
 Integrated strain relief optimally holds and seals cables
 If several conductors are used with the fitting multiple sealing inserts should be considered
Note: For several conductors multiple sealing inserts MDE are available

PG fittings with strain relief, metal thread

Type VNZ

Type VNZ - Straight fitting with strain relief, PG metal thread



	Order no. IP68 Compl., black ①	Order no. fitting* ①	Order no. insert	Thread PG	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
VNZ	NVNZ-P090S/P1	NVNZ-P090R/P	E150p7	09	10	4.0–6.5	6.0	49.5	50
	NVNZ-P090S/P3	–	E150p9	09	10	6.5–9.5	6.0	49.5	50
	NVNZ-P110S/P1	NVNZ-P110R/P	E151p7	11	10	4.0–6.5	6.0	52.0	50
	NVNZ-P110S/P3	–	E151p9	11	10	6.5–9.5	6.0	52.0	50
	NVNZ-P112S/P1	NVNZ-P112R/P	E151p7	11	12	4.0–6.5	6.0	53.5	50
	NVNZ-P112S/P3	–	E151p9	11	12	6.5–9.5	6.0	53.5	50
	NVNZ-P112S/P4	–	E151p11	11	12	7.0–10.5	6.0	53.5	50
	NVNZ-P160S/P1	NVNZ-P160R/P	E152p11	16	10	4.0–6.5	6.5	52.5	50
	NVNZ-P167S/P3	NVNZ-P167R/P	E153p9	16	17	6.5–9.5	6.5	61.0	50
	NVNZ-P167S/P4	–	E153p11	16	17	7.0–10.5	6.5	61.0	50
	NVNZ-P167S/P5	–	E153p13	16	17	9.0–13.0	6.5	61.0	50
	NVNZ-P167S/P6	–	E153p16	16	17	11.5–15.5	6.5	61.0	50
	NVNZ-P213S/P1	NVNZ-P213R/P	E154p11	21	23	7.0–10.5	7.0	72.0	30
	NVNZ-P213S/P4	–	E154p18	21	23	14.0–18.0	7.0	72.0	30
	NVNZ-P213S/P5	NVNZ-P213R1/P	E154p20	21	23	17.0–20.5	7.0	72.0	30
	NVNZ-P299S/P3	NVNZ-P299R/P	E155p20	29	29	17.0–20.5	8.0	73.5	20
	NVNZ-P299S/P4	–	E155p25	29	29	20.0–25.0	8.0	73.5	20
	NVNZ-P299S/P5	–	E155p28	29	29	24.0–28.0	8.0	73.5	20
	NVNZ-P366S/P1	NVNZ-P366R/P	E156p32	36	36	27.0–32.0	9.0	88.0	20
	NVNZ-P366S/P2	–	E156p34	36	36	29.0–34.0	9.0	88.0	20
	NVNZ-P366S/P3	–	E156p36	36	36	32.0–36.0	9.0	88.0	20
	NVNZ-P488S/P1	NVNZ-P488R/P	E158pm 1x35	48	48	32.0–35.0	10.0	90.5	10
	NVNZ-P488S/P2	–	E158p44	48	48	39.0–44.0	10.0	90.5	10

*without insert

For applications in railway vehicles and heavy machine construction

For the separation of damp and dry areas

Sealing inserts are made from TPE-V

With integrated strain relief and optimal ingress protection at the cable (up to IP68/10 bar)

High thread and system connection strength

Temperature range sealing insert Pfleitsch: -40°C to +135°C

Note: For several conductors multiple sealing inserts MDE are available

R/P version of fitting has to be used in combination with multiple sealing inserts

① IP68GT available. Please replace "S" or "R" with "GT"
(e.g. NVNZ-P112GT/P1)

PG fittings with strain relief, metal thread

Type VNZ

Type VNZ - Straight fitting with strain relief, PG metal thread

	Order no. IP68 Compl., black	Thread PG	Fits to conduit size NW	Terminal range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
VNZ	NVNZ-P07MS	07	7	3.0–6.5	5.0	45.0	100
	NVNZ-P090S	09	10	4.0–8.0	6.0	53.0	50
	NVNZ-P110S	11	10	5.0–10.0	6.0	54.5	50
	NVNZ-P112S	11	12	5.0–10.0	6.0	57.0	50
	NVNZ-P167S	16	17	10.0–14.0	6.5	64.5	50
	NVNZ-P213S	21	23	13.0–18.0	7.0	73.0	30
	NVNZ-P299S	29	29	18.0–25.0	8.0	78.0	20
	NVNZ-P366S	36	36	24.0–32.0	9.0	94.0	20
	NVNZ-P368S/01	36	48	29.0–35.0	9.0	116.0	10
	NVNZ-P488S	48	48	34.0–44.0	10.0	102.0	10



For applications in railway vehicles and heavy machine construction
 For the separation of damp and dry areas
 Very high impact resistance
 With integrated strain relief for optimal ingress protection at the cable (up to IP68 / 5 bar)
 High thread and system connection strength
 Vibration-resistant connection to PMA conduits
 Easy assembly
 High conduit pull-out strength
 Very good chemical properties

PG fittings, female metal thread

Type VIZR

Type VIZR - Straight fitting, PG female metal thread

	Order no. IP68, black ①	Thread PG	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VIZR	NVIZR-P07M	07	07	6.0	35.0	100
	NVIZR-P090	09	10	9.0	38.5	50
	NVIZR-P110	11	10	9.0	41.0	50
	NVIZR-P112	11	12	9.0	42.0	50
	NVIZR-P137	13.5	17	8.0	46.5	50
	NVIZR-P167	16	17	9.5	48.0	50
	NVIZR-P213	21	23	10.0	58.0	30
	NVIZR-P299	29	29	12.5	57.0	20
	NVIZR-P366	36	36	13.0	76.0	20
	NVIZR-P488	48	48	14.0	75.0	20



For applications in railway vehicles and heavy machine construction
 High thread and system connection strengths
 VIZR: IP68 static/IP67 dynamic, conduit side
 No seal on female thread side

① IP68GT available. Please add "GT" after the order no.

PG fittings, polyamide thread

Type VA

Type VA - 45° elbow fitting, PG thread

	Order no. IP66 ①	Order no. IP68 ① ②	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VA	BVAD-P090GT	BVAV-P090	09	10	11.0	43.5 x 37.0	50
	BVAD-P112GT	BVAV-P112	11	12	11.0	48.0 x 40.0	50
	BVAD-P167GT	BVAV-P167	16	17	11.0	55.5 x 51.5	50
	BVAD-P213GT	BVAV-P213	21	23	11.0	63.0 x 58.0	30
	BVAD-P299GT	BVAV-P299	29	29	12.0	69.0 x 66.0	20
	BVAD-P366GT	BVAV-P366	36	36	13.0	86.0 x 86.0	20
	BVAD-P488GT	BVAV-P488	48	48	13.0	94.0 x 100.0	10



Approvals



For cable protection systems in a wide range of applications

① Please replace "B" for black with "S" for grey in front of the order no.
 ② IP68GT available. Please add "GT" after the order no.

PG fittings, metal thread

Type VAV

Type VAV - 45° elbow fitting, PG metal thread

	Order no. IP68, black ②	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VAV	NVAV-P090	09	10	12.0	50.5 x 37.0	50
	NVAV-P112	11	12	12.0	55.0 x 40.5	50
	NVAV-P137	13.5	17	13.0	63.5 x 50.0	50
	NVAV-P167	16	17	13.0	63.5 x 50.0	50
	NVAV-P213	21	23	14.0	73.0 x 60.5	30
	NVAV-P299	29	29	14.0	78.0 x 68.0	20
	NVAV-P366	36	36	17.0	98.0 x 87.5	20
	NVAV-P488	48	48	17.0	105.0 x 101.0	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength

PG fittings, polyamide thread

Type VB

Type VB - 90° curved elbow fitting, PG thread

	Order no. IP66 ①	Order no. IP68 ① ②	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)	
VB		BVBD-P167GT	BVBV-P167	16	17	11.0	47.5 x 73.0	50
		BVBD-P213GT	BVBV-P213	21	23	12.0	57.5 x 85.0	30
		BVBD-P299GT	BVBV-P299	29	29	12.0	67.5 x 96.0	20
		BVBD-P366GT	BVBV-P366	36	36	13.0	79.0 x 123.0	20
		BVBD-P488GT	BVBV-P488	48	48	13.0	92.5 x 135.0	10

Approvals



For cable protection systems in a wide range of applications

Smooth elbow allows easy threading of wires and cables

Note: For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VW are also available

① Please replace "B" for black with "S" for grey in front of the order no.
 ② IP68GT available. Please add "GT" after the order no.

PG fittings, metal thread

Type VBV

Type VBV - 90° curved elbow fitting, PG metal thread

	Order no. IP68, black ①	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VBV	NVBV-P167	16	17	13.0	54.0 x 73.0	50
	NVBV-P213	21	23	14.0	65.5 x 85.0	30
	NVBV-P299	29	29	14.0	75.0 x 96.0	20
	NVBV-P366	36	36	17.0	90.5 x 123.0	20
	NVBV-P488	48	48	17.0	103.5 x 135.0	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength
Smooth elbow allows easy threading of wires and cables

Note: For smaller conduit sizes NW 10 to NW 12 appropriate standard elbows of type VW are also available

① IP68GT available. Please add "GT" after the order no.

Swivel fittings, PG metal thread

Type SBV

Type SBV - Swivel 90° curved elbow fitting, PG metal thread

	Order no. IP68, black ①	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
SBV	NSBV-P167-6.5	16	17	6.5	58.0 x 74.5	1
	NSBV-P213-7	21	23	7.0	69.0 x 87.5	1
	NSBV-P299-8	29	29	8.0	80.0 x 98.0	1
	NSBV-P366-9	36	36	9.0	91.5 x 127.5	1
	NSBV-P488-10	48	48	10.0	106.0 x 139.0	1



Approvals



For applications with high technical requirements mainly in machine building
 Suitable for occasional rotation
 Thread and integrated swivel adapter made from nickel-plated brass
 High thread and system connection strength
 Smooth elbow allows easy threading of wires and cables

① IP68GT available. Please add "GT" prior to the thread length (for example NSBV-NSBV-P366GT-9)

PG fittings, polyamide thread

Type VW

Type VW - 90° elbow fitting, PG thread

	Order no. IP66 ①	Order no. IP68 ① ②	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VW	BVWD-P07MGT-11 –		07	07	11.0	32.0 x 35.0	100
	BVWD-P070GT-11 BVWV-P070		07	10	11.0	34.0 x 39.5	50
	BVWD-P09MGT-11 –		09	07	11.0	32.0 x 36.5	100
	BVWD-P090GT-11 BVWV-P090		09	10	11.0	34.0 x 39.5	50
	BVWD-P092GT-11 –		09	12	11.0	38.5 x 44.5	50
	BVWD-P11MGT-11 –		11	07	11.0	32.0 x 38.0	100
	BVWD-P110GT-11 BVWV-P110		11	10	11.0	34.0 x 41.0	50
	BVWD-P112GT-11 BVWV-P112		11	12	11.0	38.5 x 46.0	50
	BVWD-P13MGT-11 BVWV-P13M		13.5	07	11.0	32.0 x 39.5	50
	BVWD-P130GT-11 BVWV-P130		13.5	10	11.0	34.0 x 42.5	50
	BVWD-P132GT-11 BVWV-P132		13.5	12	11.0	38.5 x 47.5	50
	BVWD-P137GT-11 BVWV-P137		13.5	17	11.0	43.5 x 58.5	50
	BVWD-P167GT-11 BVWV-P167		16	17	11.0	43.5 x 58.5	50
	BVWD-P213GT	BVWV-P213	21	23	12.0	54.0 x 67.0	30
	BVWD-P299GT	BVWV-P299	29	29	12.0	61.5 x 74.5	20
	BVWD-P366GT	BVWV-P366	36	36	13.0	72.0 x 98.0	20
	BVWD-P488GT	BVWV-P488	48	48	13.0	85.5 x 111.0	10

Approvals



For cable protection systems in a wide range of applications

Note: For sizes NW 17 to NW 48 curved elbows of type VB are also available

- ① Please replace "B" for black with "S" for grey in front of the order no.
- ② IP68GT available. Please add "GT" after the order no.

PG fittings, metal thread

Type VWV

Type VWV - 90° elbow fitting, PG metal thread

	Order no. IP68, black ①	Order no. IP68, grey ①	Thread PG	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VWV	NVWV-P090	MVWV-P090	09	10	12.0	39.5 x 39.5	50
	NVWV-P112	MVWV-P112	11	12	12.0	45.5 x 45.0	50
	NVWV-P137	MVWV-P137	13.5	17	13.0	50.0 x 58.5	50
	NVWV-P167	MVWV-P167	16	17	13.0	50.0 x 58.5	50
	NVWV-P213	MVWV-P213	21	23	14.0	62.0 x 67.0	30
	NVWV-P299	MVWV-P299	29	29	14.0	69.0 x 74.5	20
	NVWV-P366	MVWV-P366	36	36	17.0	83.5 x 98.0	20
	NVWV-P488	MVWV-P488	48	48	17.0	96.5 x 111.0	10



Approvals



For applications in railway vehicles and heavy machine construction

High thread and system connection strength

Note: Curved elbows of type VB are also available for sizes NW 17 to NW 48

① IP68GT available. Please add "GT" after the order no.

NPT fittings, polyamide thread

Type VN

Type VN - Straight fitting, NPT thread

	Order no. IP66, black	PU (pcs)	Order no. IP68, black ①	PU (pcs)	Thread NPT	Fits to conduit size NW	Thread length (mm)	Overall length (mm)
VN	BVND-N022GT	100	BVNV-N022	50	1/2"	12	13.0	41.5
	BVND-N027GT	100	BVNV-N027	50	1/2"	17	13.0	49.5
	BVND-N043GT	30	BVNV-N043	30	3/4"	23	14.0	54.0
	BVND-N069GT	20	BVNV-N069	20	1"	29	15.0	56.0
	BVND-N076GT	20	BVNV-N076	20	1 1/4"	36	18.0	71.0
	BVND-N088GT	10	BVNV-N088	10	1 1/2"	48	18.0	71.5
	BVND-N098GT	10	BVNV-N098	10	2"	48	18.0	71.5



Approvals



For cable protection systems in a wide range of applications

① IP68GT available. Please add "GT" after the order no.

NPT UL fittings, polyamide thread

Type UNV-N-UL

Type UNV-N-UL - Straight fitting, NPT polyamide thread

	Order no. black	Thread size NPT	Fits to conduit size NW	Thread length (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
UNV-N-UL	BUNV-N027-UL	1/2"	17	13.0	29.5	49.5	50
	BUNV-N043-UL	3/4"	23	14.0	37.0	54.0	30
	BUNV-N069-UL	1"	29	15.0	44.0	56.0	20
	BUNV-N076-UL	1 1/4"	36	18.0	55.0	71.0	20
	BUNV-N088-UL	1 1/2"	48	18.0	69.0	71.5	10
	BUNV-N098-UL	2"	48	18.0	69.0	71.5	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPlus conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nuts available on request

NPT fittings, metal thread

Type VNV

Type VNV - Straight fitting, NPT metal thread

	Order no. IP68, black ①	Thread NPT	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VNV	NVNV-N022	½"	12	15.4	48.1	50
	NVNV-N027	½"	17	15.4	56.4	50
	NVNV-N043	¾"	23	15.7	58.7	30
	NVNV-N069	1"	29	19.6	63.9	20
	NVNV-N076	1¼"	36	20.2	78.6	20
	NVNV-N088	1½"	48	20.6	79.0	10
	NVNV-N098	2"	48	21.4	79.8	10



Approvals



For applications in railway vehicles and heavy machine construction
High thread and system connection strength

① IP68GT available. Please add "GT" prior to the thread length (for example NVNV-N022GT)

Swivel fittings, NPT, metal thread

Type SNV

Type SNV - Swivel metal thread fitting, NPT thread, IP68

	Order no. black	Thread NPT	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
SNV	NSNV-N022/01	1/2 "	12	11.8	57.4	1
	NSNV-N027/01	1/2 "	17	11.8	66.2	1
	NSNV-N043/01	3/4 "	23	12.1	72.0	1
	NSNV-N069/01	1 "	29	15.2	77.4	1
	NSNV-N076/01	1 1/4 "	36	15.8	91.4	1
	NSNV-N088/01	1 1/2 "	48	16.2	92.8	1
	NSNV-N098/01	2 "	48	17.0	95.1	1



Approvals



For applications with high technical requirements
 Very high impact resistance
 High thread and system connection strength
 Vibration-proof connection to PMA conduits
 Suitable for occasional rotation
 Easy installation
 High conduit pull-out strength
 Very good chemical properties
 Fits both conduit profiles - fine (T) and coarse (G)

NPT fittings, polyamide thread

Type VA

Type VA - 45° elbow fitting, NPT thread

	Order no. IP66, black	Order no. IP68, black ①	Thread NPT	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VA	BVAD-N022GT	BVAV-N022	½ "	12	13.0	50.0 x 41.5	50
	BVAD-N027GT	BVAV-N027	½ "	17	13.0	57.5 x 51.5	50
	BVAD-N043GT	BVAV-N043	¾ "	23	14.0	67.0 x 60.0	30
	BVAD-N069GT	BVAV-N069	1 "	29	15.0	73.5 x 67.0	20
	BVAD-N076GT	BVAV-N076	1¼ "	36	18.0	91.5 x 85.5	20
	BVAD-N088GT	BVAV-N088	1½ "	48	18.0	99.0 x 96.0	10
	-	BVAV-N098	2 "	48	18.0	99.0 x 101.0	10

Approvals



For cable protection systems in a wide range of applications

① IP68GT available. Please add "GT" after the order no.

NPT UL fittings, polyamide thread

Type UAV-N-UL

Type UAV-N-UL - 45° elbow fitting, NPT polyamide thread

	Order no. black	Thread size NPT	Fits to conduit size NW	Thread length (mm)	Outside Ø (mm)	Overall length (mm)	Overall height (mm)	PU (pcs)
UNV-N-UL	BUAV-N027-UL	1/2"	17	13.0	29.5	57.5	51.5	50
	BUAV-N043-UL	3/4"	23	14.0	37.0	67.0	60.0	30
	BUAV-N069-UL	1"	29	15.0	44.0	73.5	67.0	20
	BUAV-N076-UL	1 1/4"	36	18.0	53.5	91.5	85.5	20
	BUAV-N088-UL	1 1/2"	36	18.0	66.0	99.0	96.0	10
	BUAV-N098-UL	2"	48	18.0	66.0	99.0	101.0	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPlus conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nuts available on request

Swivel fittings, NPT metal thread

Type SWV/SBV

Type SWV/SBV - Swivel 90° curved elbow fitting, NPT metal thread

	Order no. IP68, black ①	Thread NPT	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
SWV/SBV	NSWV-N022/01	1/2 "	12	15.4	57.0 x 48.5	1
	NSBV-N027/01	1/2 "	17	15.4	66.5 x 74.5	1
	NSBV-N043/01	3/4 "	23	15.7	77.5 x 87.5	1
	NSBV-N069/01	1 "	29	19.6	92.0 x 98.0	1
	NSBV-N076/01	1 1/4 "	36	20.2	104.5 x 125.5	1
	NSBV-N088/01	1 1/2 "	48	20.6	118.5 x 138.5	1
	NSBV-N098/01	2 "	48	21.4	119.5 x 138.5	1



Approvals



For applications with high technical requirements mainly in heavy machine building and rail applications
 Suitable for occasional rotation
 Thread and integrated swivel adapter made from colourless anodized aluminium
 High thread and system connection strength
 Smooth elbow allows easy threading of wires and cables

① IP68GT available. Please add "GT" prior to the thread length (for example NSBV-M329GT-13)

NPT fittings, polyamide thread

Type VW

Type VW - 90° elbow fitting, NPT polyamide thread

	Order no. IP66, black	Order no. IP68, black ①	Thread NPT	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VW	BVWD-N022GT	BVVV-N022	1/2 "	12	13.0	40.5 x 47.5	50
	BVWD-N027GT	BVVV-N027	1/2 "	17	13.0	45.5 x 58.5	50
	BVWD-N043GT	BVVV-N043	3/4 "	23	14.0	56.0 x 66.5	30
	BVWD-N069GT	BVVV-N069	1 "	29	15.0	64.5 x 73.5	20
	BVWD-N076GT	BVVV-N076	1 1/4 "	36	18.0	77.0 x 96.0	20
	BVWD-N088GT	BVVV-N088	1 1/2 "	48	18.0	90.5 x 106.0	10
	BVWD-N098GT	BVVV-N098	2 "	48	18.0	90.5 x 111.0	10



Approvals



For applications in railway vehicles and heavy machine construction

High thread and system connection strength

Note: Curved elbows of type VB are also available for sizes NW 17 to NW 48

① IP68GT available. Please add "GT" after the order no.

NPT UL fittings, polyamide thread

Type UWV-N-UL

Type UWV-M-UL - 90° elbow fitting, NPT polyamide thread

	Order no. black	Thread size NPT	Fits to conduit size NW	Thread length (mm)	Outside Ø (mm)	Overall length (mm)	Overall height (mm)	PU (pcs)
UWV-N-UL	BUWV-N027-UL	1/2"	17	13.0	29.5	58.5	45.5	50
	BUWV-N043-UL	3/4"	23	14.0	37.0	66.5	56.0	30
	BUWV-N069-UL	1"	29	15.0	44.0	73.5	64.5	20
	BUWV-N076-UL	1 1/4"	36	18.0	53.5	96.0	77.0	20
	BUWV-N088-UL	1 1/2"	48	18.0	66.0	106.0	90.5	10
	BUWV-N098-UL	2"	48	18.0	66.0	111.0	90.5	10



Approvals



- Extremely high impact resistance
- Vibration-resistant connection to PMA FLEXPLus conduits
- Easy installation
- High conduit pull-out strength
- Very good chemical properties
- Free from halogens and cadmium
- Fits conduit profile coarse (G)
- Lock nuts available on request

GAS fittings, polyamide thread

Type VN & VW

Type VN - Straight fitting, GAS thread

	Order no. IP66, black	Order no. IP68, black	Thread GAS	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VN	BVND-G00MGT	BVNV-G00M	1/4"	07	11.0	34.5	100
	BVND-G000GT	BVNV-G000	1/4"	10	11.0	36.5	100
	BVND-G010GT	BVNV-G010	3/8"	10	11.0	36.5	100
	BVND-G012GT	BVNV-G012	3/8"	12	11.0	39.0	100
	BVND-G022GT	BVNV-G022	1/2"	12	13.0	41.0	100
	BVND-G027GT	BVNV-G027	1/2"	17	13.0	49.5	100
	BVND-G043GT	BVNV-G043	3/4"	23	14.0	54.0	50
	BVND-G069GT	BVNV-G069	1"	29	15.0	56.0	30
	BVND-G076GT	BVNV-G076	1 1/4"	36	18.0	71.0	20
	BVND-G088GT	BVNV-G088	1 1/2"	48	18.0	71.5	10
	BVND-G098GT	BVNV-G098	2"	48	18.0	71.5	10

For cable protection systems in a wide range of applications

Type VW - 90° elbow fitting, GAS thread

	Order no. IP66, black	Thread GAS	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
VW	BVWD-G00MGT	1/4"	07	11.0	32.0 x 36.5	50
	BVWD-G000GT	1/4"	10	11.0	34.0 x 39.5	50
	BVWD-G010GT	3/8"	10	11.0	34.0 x 40.5	50
	BVWD-G012GT	3/8"	12	11.0	38.5 x 46.0	50
	BVWD-G022GT	1/2"	12	13.0	40.5 x 47.5	50
	BVWD-G027GT	1/2"	17	13.0	45.5 x 58.5	50
	BVWD-G043GT	3/4"	23	14.0	56.0 x 66.5	30
	BVWD-G069GT	1"	29	15.0	64.5 x 73.5	20
	BVWD-G076GT	1 1/4"	36	18.0	77.0 x 96.0	20
	BVWD-G088GT	1 1/2"	48	18.0	90.5 x 106.0	10
	BVWD-G098GT	2"	48	18.0	90.5 x 111.0	10

For cable protection systems in a wide range of applications

UNEF fittings, female polyamide thread

Type VI

Type VI - Straight fitting, UNEF female polyamide thread for AMP fittings

	Order no. IP66, black	Order no. IP68, black ①	Thread UNEF	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VI	BVIDA-U15MGT	BVIRA-U15M	5/8"-24	07	8.0	31.5	100
	BVIDA-U150GT	BVIRA-U150	5/8"-24	10	8.0	33.5	50
	BVIDA-U152GT	BVIRA-U152	5/8"-24	12	8.0	36.5	50
	BVIDA-U180GT	BVIRA-U180	3/4"-20	10	8.0	33.5	50
	BVIDA-U182GT	BVIRA-U182	3/4"-20	12	8.0	36.5	50
	BVIDA-U187GT	BVIRA-U187	3/4"-20	17	8.0	44.5	50
	BVIDA-U232GT	BVIRA-U232	15/16"-20	12	8.0	38.5	50
	BVIDA-U237GT	BVIRA-U237	15/16"-20	17	8.0	46.5	50
	BVIDA-U347GT	BVIRA-U347	13/8"-18	17	8.0	46.5	50
	BVIDA-U343GT	BVIRA-U343	13/8"-18	23	8.0	48.5	30
	BVIDA-U402GT	BVIRA-U402	13/8"-18	12	7.0	55.5	50
	BVIDA-U407GT	BVIRA-U407	13/8"-18	17	7.0	61.5	50
	BVIDA-U403GT	BVIRA-U403	13/8"-18	23	7.0	60.5	30

For cable protection systems in a wide range of applications

Suitable for the AMP series CPC fitting

VIDA: IP66 static/IP54 dynamic, conduit side. VIRA: IP68 static/IP67 dynamic, conduit side

No seal on female thread side

Type VI - Straight fitting, UNEF female polyamide thread for Souriau fittings

	Order no. IP66, black	Order no. IP68, black ①	Thread UNEF	Fits to NW	Shell size UTG-6	Thread length (mm)	Overall length (mm)	PU (pcs)
VI	BVIDB-U162GT	BVIRB-U162	11/16"-24	12	12-8	4.0	43.5	50
	BVIDB-U202GT	BVIRB-U202	13/16"-20	12	14-12	4.5	44.0	50
	BVIDB-U232GT	BVIRB-U232	15/16"-20	12	16-19	4.5	49.0	50
	BVIDB-U237GT	BVIRB-U237	15/16"-20	17	16-19	4.5	52.0	50
	BVIDB-U267GT	BVIRB-U267	11/16"-18	17	18-23	4.5	52.0	50
	BVIDB-U297GT	BVIRB-U297	13/16"-18	17	20-28	6.5	55.5	50
	BVIDB-U293GT	BVIRB-U293	13/16"-18	23	20-28	6.5	52.0	30
	BVIDB-U323GT	BVIRB-U323	15/16"-18	23	22-35	6.5	52.0	30
	BVIDB-U357GT	BVIRB-U357	17/16"-18	17	24-48	6.5	58.5	50
	BVIDB-U353GT	BVIRB-U353	17/16"-18	23	24-48	6.5	54.0	30
	BVIDB-U359GT	BVIRB-U359	17/16"-18	29	24-48	6.5	50.5	20

For cable protection systems in a wide range of applications

Suitable for the Souriau fitting series UTG-6/ITT Cannon Trident

VIDB: IP66 static/IP54 dynamic, conduit side. VIRB: IP68 static/IP67 dynamic, conduit side

No seal on female thread side

	Order no. IP68, black ①	Thread UNEF	Fits to NW	Shell size UTG-6	Thread length (mm)	Overall length (mm)	PU (pcs)
	BVIRS-U162	11/16"-24	12	12	9.4	47.5	50
	BVIRS-U202	13/16"-20	12	14	9.4	47.5	50
	BVIRS-U237	15/16"-20	17	16	10.0	56.0	50
	BVIRS-U267	11/16"-18	17	18	9.2	55.5	50
	BVIRS-U323	15/16"-18	23	22	9.8	56.0	30
	BVIRS-U359	17/16"-18	29	24	9.7	55.5	20

For cable protection systems in a wide range of applications

Suitable for the Souriau fitting series UTO and UTS

VIRS: IP68 static/IP67 dynamic, conduit side. No seal on female thread side

① IP68GT available. Please add
"GT" after the order no.

UNEF fittings, female polyamide thread

Type VI

Type VI - Straight fitting, UN female polyamide thread for MIL-C5015

	Order no. IP66, black	Order no. IP68, black 	Thread UN	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
VI	–	BVIVG-U152*	5/8" –24 UNEF	12	8.0	36.5	50
	–	BVIVG-U187*	3/4" –20 UNEF	17	9.0	46.5	50
	–	BVIVG-U210*	7/8" –20 UNEF	10	9.0	37.0	50
	BVIDG-U212GT	BVIVG-U212*	7/8" –20 UNEF	12	9.0	38.5	50
	BVIDG-U217GT	BVIVG-U217*	7/8" –20 UNEF	17	9.0	46.5	50
	BVIDG-U242GT	BVIVG-U242*	1" –20 UNEF	12	9.0	40.5	50
	–	BVIVG-U243*	1" –20 UNEF	23	9.0	55.0	30
	BVIDG-U247GT	BVIVG-U247*	1" –20 UNEF	17	9.0	47.5	50
	–	BVIVG-U292*	1 1/16" –18 UNEF	12	9.0	40.5	50
	BVIDG-U293GT	BVIVG-U293*	1 1/16" –18 UNEF	23	9.0	55.0	30
	BVIDG-U297GT	BVIVG-U297*	1 1/16" –18 UNEF	17	9.0	47.5	50
	–	BVIVG-U299*	1 1/16" –18 UNEF	29	9.0	47.0	20
	–	BVIVG-U349*	1 1/8" –18 UNEF	29	9.0	52.0	20
	–	BVIVG-U352*	1 1/16" –18 UNEF	12	9.0	39.0	50
	BVIDG-U353GT	BVIVG-U353*	1 1/16" –18 UNEF	23	9.0	52.0	30
	–	BVIVG-U356*	1 1/16" –18 UNEF	36	9.0	63.0	20
	BVIDG-U357GT	BVIVG-U357*	1 1/16" –18 UNEF	17	9.0	46.5	50
	BVIDG-U359GT	BVIVG-U359*	1 1/16" –18 UNEF	29	9.0	52.0	20
	BVIDG-U433GT	BVIVG-U433*	1 3/4" –18 UNS	23	10.0	52.0	30
	BVIDG-U436GT	BVIVG-U436*	1 3/4" –18 UNS	36	10.0	62.5	20
	–	BVIVG-U437*	1 3/4" –18 UNS	17	10.0	46.5	50
	BVIDG-U439GT	BVIVG-U439*	1 3/4" –18 UNS	29	10.0	51.5	20
	–	BVIVG-U503*	2" –18 UNS	23	10.0	51.5	30
	BVIDG-U506GT	BVIVG-U506*	2" –18 UNS	36	10.0	62.5	20
	–	BVIVG-U508*	2" –18 UNS	48	10.0	64.5	10
	BVIDG-U509GT	BVIVG-U509*	2" –18 UNS	29	10.0	55.0	20
	–	BVIVG-U563*	2 1/4" –16 UN	23	10.0	51.0	30
	BVIDG-U566GT	BVIVG-U566*	2 1/4" –16 UN	36	10.0	62.0	20
	–	BVIVG-U568*	2 1/4" –16 UN	48	10.0	64.0	10
	BVIDG-U569GT	BVIVG-U569*	2 1/4" –16 UN	29	10.0	51.0	20
	–	BVIVG-U628*	2 1/2" –16 UN	48	10.0	64.0	10

Approvals



For applications in machine, vehicle and traction building industries
Suitable for MIL fitting series C5015

VIDG: IP66 static/IP54 dynamic, conduit- and thread side
BVVG: IP68 static/IP67 dynamic, conduit- and thread side

No seal on female thread side

* UL Recognition according to UL 1619

 IP68GT available. Please add "GT" after the order no.

Y, T piece

Type VY & VT

Type VY - Y piece

	Order no. IP66 ①	Order no. IP68 ① ②	1 x conduit size NW	2 x conduit size NW	PU (pcs)
VY	BVYD-100707GT BVYD-121010GT BVYD-171212GT BVYD-231717GT BVYD-292323GT BVYD-362929GT BVYD-483636GT	BVYR-100707 BVYR-121010 BVYR-171212 BVYR-231717 BVYR-292323 BVYR-362929 BVYR-483636	10 12 17 23 29 36 48	07 10 12 17 23 29 36	20 20 20 20 10 5 5

Approvals



Sizes can be adapted with AV conduit adapters to fit smaller conduit dimensions

Type VT - T piece

	Order no. IP66 ①	Order no. IP68 ① ②	3 x conduit size NW	PU (pcs)
VT	BVTD-101010GT BVTD-121212GT BVTD-171717GT BVTD-232323GT BVTD-292929GT BVTD-363636GT BVTD-484848GT	BVTR-101010 BVTR-121212 BVTR-171717 BVTR-232323 BVTR-292929 BVTR-363636 BVTR-484848	10 12 17 23 29 36 48	20 20 20 20 10 5 5

Approvals



Sizes can be adapted with AV conduit adapters to fit smaller conduit dimensions

- ① Please replace "B" for black with "S" for grey in front of the order no.
- ② IP68GT available. Please add "GT" after the order no.

Conduit adapters, flange 90°

Type AV & VO

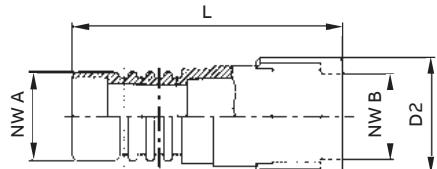
Type AV - Conduit adapter

	Order no. IP66, black	PU (pcs)	Order no. IP68, black	Fits to conduit size		Overall length (mm)	PU (pcs)
				NW (A)	NW (B)		
AV	-	-	BAVR-10/07	10	07	43.0	50
	BAVD-12/10GT	50	BAVR-12/10	12	10	46.0	50
	BAVD-17/10GT	50	BAVR-17/10	17	10	53.0	50
	BAVD-17/12GT	50	BAVR-17/12	17	12	54.0	50
	BAVD-23/10GT	30	BAVR-23/10	23	10	54.0	30
	BAVD-23/12GT	30	BAVR-23/12	23	12	53.0	30
	BAVD-23/17GT	30	BAVR-23/17	23	17	62.0	30
	BAVD-29/10GT	30	BAVR-29/10	29	10	56.5	20
	BAVD-29/12GT	30	BAVR-29/12	29	12	55.0	20
	BAVD-29/17GT	30	BAVR-29/17	29	17	61.0	20
	BAVD-29/23GT	30	BAVR-29/23	29	23	64.0	20
	BAVD-36/29GT	20	BAVR-36/29	36	29	81.0	20
	BAVD-48/36GT	10	BAVR-48/36	48	36	88.5	10

Approvals



Allows conduit size reduction of PMA fittings, particularly of T and Y pieces



Type VO - Flange 90°

	Order no. IP66 ①	Order no. IP68 ① ②	Fits to conduit size		Width x Length x Depth (mm)	Screw sizes	PU (pcs)
			NW	NW			
VO	BVOD-P167GT	BVOV-P167	17	46.0 x 65.5 x 35.8	2 x M5	50	
	BVOD-P213GT	BVOV-P213	23	65.5 x 70.5 x 43.2	2 x M6	30	
	BVOD-P299GT	BVOV-P299	29	67.0 x 78.0 x 49.5	4 x M6	20	
	BVOD-P366GT	BVOV-P366	36	85.0 x 102.0 x 65.5	4 x M6	10	
	BVOD-P488GT	BVOV-P488	48	86.0 x 119.0 x 77.5	4 x M6	10	

For cable protection systems in a wide range of applications
Flange seal FGO4 made from EPDM, flange seal FGO4/01 made from NBR
Temperature range with FGO4: -40°C to +105°C
Temperature range with FGO4/01: -25°C to +70°C

- ① Please replace "B" for black with "S" for grey in front of the order no.
- ② IP68GT available. Please add "GT" after the order no.

Connection, splice fittings, metric and PG

Type VNR-RE & VSG

Type VNR-RE - Connection fitting to solid metal tube, metric/PG

	Order no. IP66 without clamp ① ②	Order no. IP68 with clamp ① ②	Fits to conduit size NW	Steel tube metric	Inside Ø (mm)	Overall length (mm)	PU (pcs)
VNR-RE							
	BVNR-REM162	BVNR-REM162-24	12	M16	16.0	54.0	50
	BVNR-REM187	BVNR-REM187-28	17	M18	18.5	65.0	50
	BVNR-REM207	BVNR-REM207-28	17	M20	20.0	65.0	50
	BVNR-REM253	BVNR-REM253-32	23	M25	26.0	71.0	30
	BVNR-REM329	BVNR-REM329-44	29	M32	32.0	71.0	20
	BVNR-REM406	BVNR-REM406-50	36	M40	40.0	90.0	20
	BVNR-REM508	BVNR-REM508-65	48	M50	50.0	90.0	10

	Order no. IP66 without clamp ① ②	Order no. IP68 with clamp ① ②	Fits to conduit size NW	Steel tube PG	Inside Ø (mm)	Overall length (mm)	PU (pcs)
VNR-RE							
	BVNR-RE12	BVNR-RE12-24	12	PG11	18.5	56.0	50
	BVNR-RE1317	BVNR-RE1317-28	17	PG13	20.4	65.0	50
	BVNR-RE17	BVNR-RE17-28	17	PG16	22.5	65.0	50
	BVNR-RE23	BVNR-RE23-32	23	PG21	28.5	71.0	30
	BVNR-RE29	BVNR-RE29-44	29	PG29	37.0	71.0	20
	BVNR-RE36	BVNR-RE36-50	36	PG36	47.0	84.0	20
	BVNR-RE48	BVNR-RE48-65	48	PG48	59.3	90.0	10

Quick connection of solid metal tubes with flexible PMA conduits

Jubilee clip made of galvanised bright steel

Available with or without jubilee clip

IP68 on corrugated conduit side, on tube side up to IP68 with sealant

Type VSG - Connection splice fitting for flexible conduits

	Order no. IP66 ①	Order no. IP68 ①	Conduit size 2 x NW	Outside Ø (mm)	Overall length (mm)	PU (pcs)	
VSG							
	BVSGD-1212GT	BVSGR-1212	12	23.5	66.0	50	
	BVSGD-1717GT	BVSGR-1717	17	29.5	87.0	50	
	BVSGD-2323GT	BVSGR-2323	23	37.0	103.0	30	
	BVSGD-2929GT	BVSGR-2929	29	44.0	100.0	20	
	BVSGD-3636GT	BVSGR-3636	36	53.5	130.0	10	
	BVSGD-4848GT	BVSGR-4848	48	66.0	133.0	10	

Approvals



Designed for optimal connection of PMA conduits

① Please replace "B" for black with "S" for grey in front of the order no.

② IP68GT available. Please add "GT" to order no. or insert before clamp size (e.g. BVNR-REM162GT, BVNR-REM162GT-24)

PMA Smart Line IP66

General technical details

Modern, versatile and attractive. Functional and modern design, providing excellent value for money. Suitable for machine building, installation and construction industries.

One-piece design, IP66 protection and simple, fast installation are the outstanding features of the Smart Line. Other characteristics including a modern, functional design and an excellent price/performance ratio make this product line a very attractive solution.

Material

- Fittings made from specially formulated polyamide 6
- Self-extinguishing
- Free from halogens, REACH + RoHS compliant
- Temperature range:
-45°C to +105°C, short-term to +150°C

Characteristics

- High impact resistance
- Good conduit pull-out strength
- Vibration-proof connection to PMA conduits
- Fits conduit profiles – fine (T) and coarse (G)
- To avoid accidental opening, disassembling only possible with a screwdriver





PMA Smart Line

General technical details

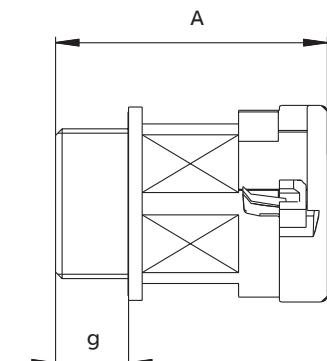


IP66

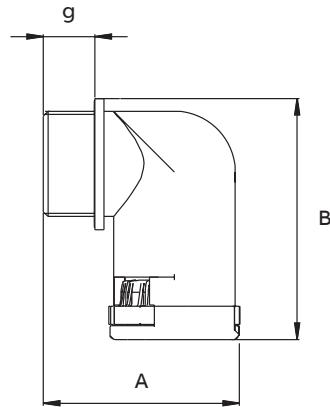
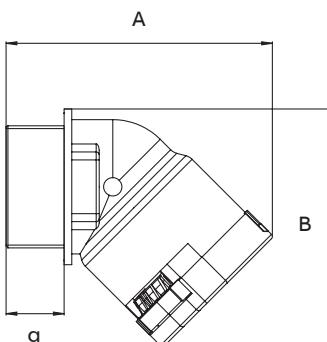
IP66 static

IP54 dynamic

- One piece fitting
- Conical sealing method
- Integrated sealing lip in thread flange
- Easy “push-in” installation
- Ready for installation (fitting gets delivered with engaged locking elements)



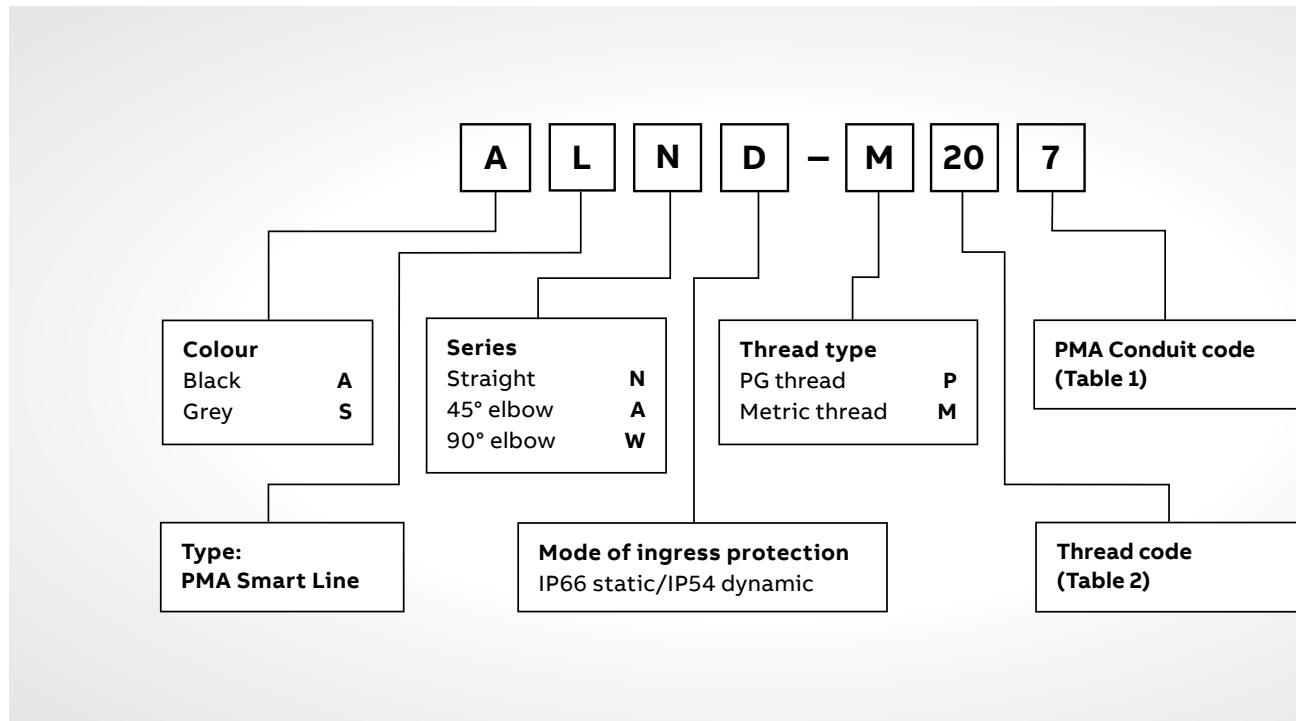
g = Thread length A = Overall length



g = Thread length A x B = External dimensions

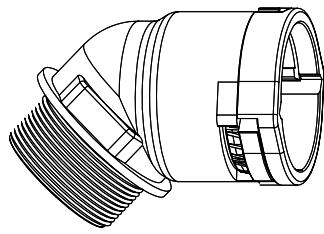
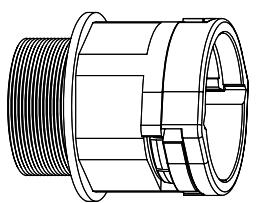
PMA Smart Line

Part number codes



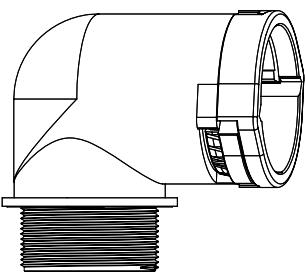
PMA Smart Line series fittings

- 01 Straight (N)
- 02 45° elbow (A)
- 03 90° elbow (W)



01

02



03

PMA Smart Line

Size codes, installation

Table 1: Conduit codes

Nominal width	Metric size	PMA code
07	10	M
10	12	0
12	16	2
17	20	7
23	25	3
29	32	9
36	40	6
48	50	8

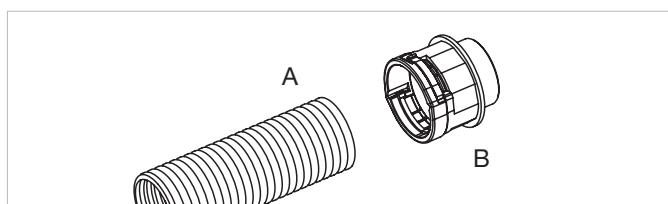
Table 2: Thread codes

Thread Metric	PMA code
M12 x 1.5	M12
M16 x 1.5	M16
M20 x 1.5	M20
M25 x 1.5	M25
M32 x 1.5	M32
M40 x 1.5	M40
M50 x 1.5	M50
M63 x 1.5	M63

Thread PG	PMA code
PG07	P07
PG09	P09
PG11	P11
PG13.5	P13
PG16	P16
PG21	P21
PG29	P29
PG36	P36
PG48	P48

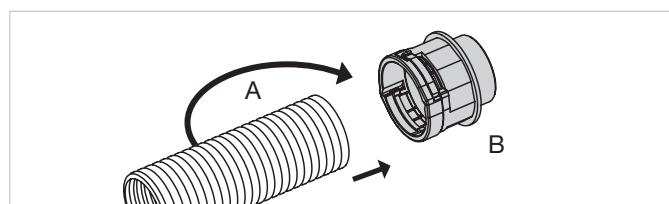
Installation IP66

Ready for installation (fitting gets delivered with engaged locking elements).



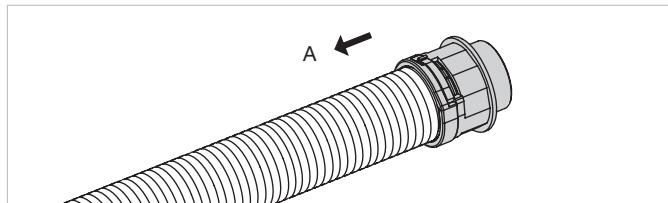
01

A = Conduit
B = Fitting



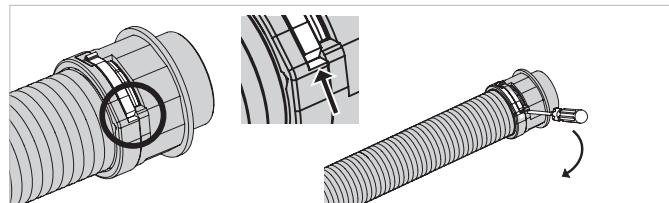
02

Push in the conduit (A) with a slight twist until the stop.



03

Pull back the conduit (A) slightly to ensure the locking mechanism is fully engaged.



04

To disengage the locking mechanism use a size 1 screwdriver.

Metric fittings, polyamide thread

Type LND & LAD

Type LND - Straight fitting, metric thread

	Order no. black, IP66	Order no. grey, IP66	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
LND, patent							
	ALND-M120	SLND-M120	M12 x 1.5	10	11.0	34.0	100
	ALND-M160	SLND-M160	M16 x 1.5	10	11.0	34.0	100
	ALND-M162	SLND-M162	M16 x 1.5	12	11.0	38.0	100
	ALND-M200	SLND-M200	M20 x 1.5	10	11.0	34.0	100
	ALND-M202	SLND-M202	M20 x 1.5	12	11.0	38.0	100
	ALND-M207	SLND-M207	M20 x 1.5	17	11.0	41.0	100
	ALND-M257	SLND-M257	M25 x 1.5	17	12.0	42.0	100
	ALND-M253	SLND-M253	M25 x 1.5	23	12.0	45.5	50
	ALND-M323	SLND-M323	M32 x 1.5	23	15.0	48.5	50
	ALND-M329	SLND-M329	M32 x 1.5	29	15.0	50.5	30
	ALND-M409	SLND-M409	M40 x 1.5	29	19.0	54.5	30
	ALND-M406	SLND-M406	M40 x 1.5	36	19.0	60.5	20
	ALND-M506	SLND-M506	M50 x 1.5	36	19.0	61.0	20
	ALND-M508	SLND-M508	M50 x 1.5	48	19.0	61.0	10
	ALND-M638	SLND-M638	M63 x 1.5	48	19.0	61.0	10

Easy "push-in" installation

Ready for installation (fitting gets delivered
with engaged locking elements)

Type LAD - 45° elbow fitting, metric thread

	Order no. black, IP66	Order no. grey, IP66	Thread metric	Fits to conduit size NW	Thread length (mm)	External Dimensions (mm)	PU (pcs)
LAD, patent							
	ALAD-M120	SLAD-M120	M12 x 1.5	10	11.0	42.5 x 33.0	100
	ALAD-M160	SLAD-M160	M16 x 1.5	10	11.0	42.5 x 35.0	100
	ALAD-M162	SLAD-M162	M16 x 1.5	12	11.0	47.5 x 39.5	100
	ALAD-M202	SLAD-M202	M20 x 1.5	12	11.0	47.5 x 41.5	100
	ALAD-M207	SLAD-M207	M20 x 1.5	17	11.0	54.0 x 46.0	100
	ALAD-M257	SLAD-M257	M25 x 1.5	17	12.0	55.0 x 48.5	50
	ALAD-M253	SLAD-M253	M25 x 1.5	23	12.0	63.5 x 55.5	100
	ALAD-M323	SLAD-M323	M32 x 1.5	23	15.0	67.0 x 60.0	50
	ALAD-M329	SLAD-M329	M32 x 1.5	29	15.0	72.5 x 63.5	30
	ALAD-M409	SLAD-M409	M40 x 1.5	29	19.0	76.5 x 66.5	20
	ALAD-M406	SLAD-M406	M40 x 1.5	36	19.0	87.5 x 78.0	30
	ALAD-M506	SLAD-M506	M50 x 1.5	36	19.0	88.0 x 82.0	20
	ALAD-M508	SLAD-M508	M50 x 1.5	48	19.0	97.5 x 88.0	10
	ALAD-M638	SLAD-M638	M63 x 1.5	48	19.0	97.5 x 94.5	10

Easy "push-in" installation

Ready for installation (fitting gets delivered
with engaged locking elements)

Metric fittings, polyamide thread

Type LWD

Type LWD - 90° elbow fitting, metric thread

	Order no. black, IP66	Order no. grey, IP66	Thread metric	Fits to conduit size NW	Thread length (mm)	External dimensions (mm)	PU (pcs)
LWD, patent							
	ALWD-M120	SLWD-M120	M12 x 1.5	10	11.0	33.0 x 36.5	100
	ALWD-M160	SLWD-M160	M16 x 1.5	10	11.0	33.0 x 38.5	100
	ALWD-M162	SLWD-M162	M16 x 1.5	12	11.0	37.5 x 43.0	100
	ALWD-M202	SLWD-M202	M20 x 1.5	12	11.0	37.5 x 45.0	100
	ALWD-M207	SLWD-M207	M20 x 1.5	17	11.0	42.0 x 50.5	100
	ALWD-M257	SLWD-M257	M25 x 1.5	17	12.0	43.0 x 53.0	100
	ALWD-M253	SLWD-M253	M25 x 1.5	23	12.0	52.5 x 59.0	50
	ALWD-M323	SLWD-M323	M32 x 1.5	23	15.0	56.0 x 62.5	50
	ALWD-M329	SLWD-M329	M32 x 1.5	29	15.0	62.5 x 69.0	30
	ALWD-M409	SLWD-M409	M40 x 1.5	29	19.0	66.5 x 72.0	30
	ALWD-M406	SLWD-M406	M40 x 1.5	36	19.0	76.0 x 83.0	20
	ALWD-M506	SLWD-M506	M50 x 1.5	36	19.0	76.0 x 87.0	20
	ALWD-M508	SLWD-M508	M50 x 1.5	48	19.0	89.0 x 92.5	10
	ALWD-M638	SLWD-M638	M63 x 1.5	48	19.0	89.0 x 99.0	10

Easy "push-in" installation

Ready for installation (fitting gets delivered
with engaged locking elements)





Special fittings

Introduction

Meeting the demands of our customers. We are always looking for ways to offer our best services.

In addition to the broad ranges of fittings offered within the PMAFIX Pro, PMAFIX and Smartline product lines, PMA offers further application specific fitting solutions such as the MPNK-M series for high temperatures applications and the MONK-M to terminate an overbraided conduit.



Metal fittings, metric

Type MPNK & MONK

Type MPNK - Metal fitting for PMA conduits, metric thread

	Order no. metal	Thread metric	Fits to conduit size NW	Thread length (mm)	PU (pcs)
MPNK	MPNK-M160	M16 x 1.5	10	12.0	1
	MPNK-M162	M16 x 1.5	12	12.0	1
	MPNK-M207	M20 x 1.5	17	14.0	1
	MPNK-M253	M25 x 1.5	23	15.0	1
	MPNK-M329	M32 x 1.5	29	18.0	1



For high temperature applications

Suitable for high mechanical loads

Nickel-plated brass

Seals made from silicon

Easy introduction of wires and cables

Vibration-proof connection to PMAFLEX conduits

Very good chemical properties

IP68

Type MONK - Metal fitting for overbraided conduits, metric thread

	Order no. metal	Thread metric	Fits to conduit size NW	Thread length (mm)	PU (pcs)
MONK	MONK-M162	M16 x 1.5	12	12.0	1
	MONK-M207	M20 x 1.5	17	14.0	1
	MONK-M253	M25 x 1.5	23	15.0	1
	MONK-M329	M32 x 1.5	29	18.0	1
	MONK-M406	M40 x 1.5	36	15.0	1
	MONK-M508	M50 x 1.5	48	16.0	1

For termination of overbraided conduits

For high temperature applications and applications in areas with hot metal shavings and flying sparks

Nickel-plated brass

Seals made from silicon

Accessories

Introduction

For flexible and application friendly solutions. PMA offers a vast array of practical accessories in order to complete the PMA cable protection system.

We offer lock nuts produced from polyamide or metal, thread reducers and enlargers, conduit adapters, swivel adapters as well as different mounting clips for conduits. All these practical products will help to create the PMA line for our customers even more flexible and application friendly.





Conduit terminations

Type RKS & CT

Type RKS - Conduit terminal sleeve

	Order no. black	Fits to conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Length (mm)	PU (pcs)
RKS	RKS-07	07	4.5	12.5	16.0	100
	RKS-10	10	8.0	15.5	16.0	100
	RKS-12	12	10.0	19.0	20.0	100
	RKS-17	17	13.0	24.0	21.0	100
	RKS-23	23	20.0	32.0	22.0	50
	RKS-29	29	25.0	38.0	22.0	30
	RKS-36	36	33.0	46.0	25.0	20
	RKS-48	48	45.0	58.0	25.0	10
	RKS-56	56	54.0	71.0	28.0	10

For clean conduit end termination where no fitting is required

PA 6

Type BCT - Conduit termination

	Order no. black	Fits to conduit size NW	Clamping range (mm)	Length (mm)	Height (mm)	PU (pcs)
BCT	BCT-10	10	4–8	28.0	13.0	10
	BCT-12	12	5–9	35.0	16.0	10
	BCT-17	17	7–14	42.0	21.0	10
	BCT-23	23	14–22	51.0	28.0	10
	BCT-29	29	16–22	53.0	34.0	10
	BCT-36	36	16–29	55.0	42.0	10

For sealing of cables and wires at the exit from PMA corrugated conduits

Avoids ingress of dirt and liquids

Can be fixed additionally with cable ties

Neoprene rubber

Temperature range: -30°C to +120°C

Abrasion protection, support sleeves

Type SS/SV, BES & BAS

Type SS/SV - Abrasion protection sleeve

	Order no. black	Fits to conduit size NW	Outside Ø (mm)	Length (mm)	PU (pcs)
SS/SV	BSS-17	17	42.0	22.0	50
	BSS-23	23	49.0	26.0	30
	BSS-29	29	55.0	26.0	20
	BSS-36	36	63.0	30.0	20
	BSS-48	48	75.0	30.0	10
	BSS-56G	56	90.0	33.0	10
	BSV-70G	70	108.0	60.0	10



Abrasion protection for corrugated conduits in positions exposed to chafing
Increases the life time of moving conduits
PA 6

Type BES - Conduit terminal support sleeve

	Order no. black	Fits to conduit size NW	Outer diameter x height (mm)	PU (pcs)
BES	BES-48G	48	51 x 18	10
	BES-70G	70	80 x 23	10



Mostly used in automation applications
Compatible with XR90, XTPC, PIS/PIH and PUE conduit
Increases the maximum system pull-out strength
Fits coarse profile (G-profile)

Type BAS - Conduit support sleeve

	Order no. black	Fits to conduit size NW	Outer diameter x height (mm)	PU (pcs)
BAS	BAS-29T	29	30 x 34	20
	BAS-36T	36	38 x 47	20
	BAS-48T	48	50 x 47	10



For PMA conduit PUET in connection with PMA connecting parts
Increases the maximum system pull-out strength
Protects cables and wires against damage due to sharp edges where no fittings are installed
Material: High-grade, specially formulated polyamide 6

Tools

Type PMACUT & EWZ

Type PMACUT - Cutting tool for conduits, NW 07–48

	Order no. Cutting tool	Order no. Spare blade	For conduit size NW	Cutting range	PU (pcs)
PMACUT	PMACUT-38	FP-38	07–29	0–38	1
	PMACUT-52	FP-52	23–48	0–52	1



Can be used to cut all PMA conduits
 Enables a precise and straight cut around the corrugation
 Metal
 Colour: Red

Type PMACUT - Cutting tool for conduits, NW 56–125

	Order no. black	Fits to conduit size NW	Length x Width x Depth (mm)	PU (pcs)
PMACUT	PMACUT-NW56	56	337 x 101 x 15	1
	PMACUT-NW70	70	350 x 110 x 15	1
	PMACUT-NW95	95	400 x 142 x 20	1
	PMACUT-NW125	125	443 x 182 x 20	1



Can be used to cut all PMA conduits with large nominal widths
 Enables a precise and straight cut at the top of the corrugation
 High level of safety through retractable blade
 Aluminium

Type EWZ - Draw-in tool

	Order no. black with hole	Order no. black with handle	Fits to conduit size NW	Width x Length x Depth (mm)	PU (pcs)
EWZ	EWZ-02	EWZ-03	7.5–34	117.7 x 45.2 x 71.9	100/50



Suitable for drawing in cables or wires into PMA Divisible System conduits or other slit conduits
 Designed in a handy shape and equipped with a practical hand grip for wedging or with hole for direct holding of the wires
 Polyamide 6.6
 Colour: black

Elbow adapters, metal swivel adapter, metric, PG

Type MAVI, MAVIK & SWA/01

Type MAVI - Special 45° elbow adapter, metric thread

	Order no.	Thread metric		Thread length outside (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
		Inside	Outside				
	MAVI-M20/01	M20 x 1.5	M20 x 1.5	10.0	35.0	45.0	10
	MAVI-M25/01	M25 x 1.5	M25 x 1.5	11.0	39.0	51.0	10
	MAVI-M32/01	M32 x 1.5	M32 x 1.5	13.0	46.0	54.0	10
	MAVI-M40/01	M40 x 1.5	M40 x 1.5	13.0	55.0	62.0	10
	MAVI-M50/01	M50 x 1.5	M50 x 1.5	14.0	65.0	75.0	10
	MAVI-M63/01	M63 x 1.5	M63 x 1.5	14.0	80.0	84.0	10

Where a certain cable outlet angle is required

In connection with PMA fittings, especially fittings with strain relief VNZ

Enables different mounting positions: With a lock nut behind a clearance hole / In threaded holes (lock nut on MAVI side for positioning) / With SCA spin-coupler

Nickel-plated aluminium (other materials e.g. stainless steel or nickel-plated brass available on request)

High thread and system connection strength

IP68 static/IP67 dynamic

Temperature range: -60°C to +105°C

Type MAVIK - Positioning 45° elbow adapter, metric thread

	Order no.	Thread metric		Thread length outside (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
		Inside	Outside				
	MAVIK-M20/01	M20 x 1.5	M20 x 1.5	10.0	35.0	52.0	10
	MAVIK-M25/01	M25 x 1.5	M25 x 1.5	11.0	39.0	58.0	10
	MAVIK-M32/01	M32 x 1.5	M32 x 1.5	13.0	46.0	61.0	10
	MAVIK-M40/01	M40 x 1.5	M40 x 1.5	13.0	55.0	69.5	10
	MAVIK-M50/01	M50 x 1.5	M50 x 1.5	14.0	65.0	83.0	10
	MAVIK-M63/01	M63 x 1.5	M63 x 1.5	14.0	80.0	92.0	10

Where a certain cable outlet angle is required

In connection with PMA fittings, especially fittings with strain relief VNZ

The counter nut allows accurate positioning of the outlet direction in threaded holes

Adapter made from nickel-plated aluminium (other materials e.g. stainless steel or nickel-plated brass available on request), counter nut made from nickel-plated brass

High thread and system connection strength

IP68 static/IP67 dynamic

Temperature range: -60°C to +105°C

Type SWA/01 - Metal swivel adapter with ball bearing

	Order no.	Thread size		Outer diameter x height (mm)	PU (pcs)
		Metric	PG		
	SWA-M32-15/01	M32 x 1.5	M32 x 1.5	50 x 53.5	1
	SWA-M40-13/01	M40 x 1.5	M40 x 1.5	60 x 51.5	1
	SWA-M50-14/01	M50 x 1.5	M50 x 1.55	73 x 54.5	1
	SWA-P21/01	PG21	PG21	19 x 50	1

Used in connection with PMA fittings with metal thread

Allows PMA fittings to swivel freely in applications where high movement necessary

With thread edge protection

Swivel and positioning adapters, metric, PG

Type SWA & SCA

Type SWA - Swivel adapter with special sealing, metric/PG metal thread

Order no.	Thread metric		Thread length (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
	Inside	Outside				
SWA	SWA-M16-10	M16 x 1.5	M16 x 1.5	10.0	23.0	37.5
	SWA-M20-10	M20 x 1.5	M20 x 1.5	10.0	27.0	38.5
	SWA-M25-11	M25 x 1.5	M25 x 1.5	11.0	32.0	41.0
	SWA-M32-13	M32 x 1.5	M32 x 1.5	13.0	45.0	46.5
	SWA-M40-13	M40 x 1.5	M40 x 1.5	13.0	55.0	47.5
	SWA-M50-14	M50 x 1.5	M50 x 1.5	14.0	59.0	49.5
	SWA-M63-14	M63 x 1.5	M63 x 1.5	14.0	75.0	52.0



Order no.	Thread PG		Thread length (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
	Inside	Outside				
SWA	SWA-P09	09	09	15.0	23.0	44.5
	SWA-P11	11	11	15.0	27.0	45.5
	SWA-P16	16	16	15.0	32.0	48.0
	SWA-P21	21	21	15.0	40.0	51.0
	SWA-P29	29	29	15.0	50.0	52.0
	SWA-P36	36	36	15.0	59.0	55.0
	SWA-P48	48	48	15.0	70.0	55.0

Allow PMA fittings to swivel freely in applications where such movement is occasionally necessary

In connection with PMA fittings with metal thread

Nickel-plated brass with thread edge protection

IP68 and IP69

Temperature range: -40°C to +105°C

Type SCA - Positioning adapter, metric/PG metal thread

Order no.	Thread metric		Thread length (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
	Inside	Outside				
SCA	SCA-M16-10	M16 x 1.5	M16 x 1.5	10.0	22.0	32.0
	SCA-M20-10	M20 x 1.5	M20 x 1.5	10.0	26.0	33.0
	SCA-M25-11	M25 x 1.5	M25 x 1.5	11.0	32.0	35.0
	SCA-M32-13	M32 x 1.5	M32 x 1.5	13.0	39.0	39.5
	SCA-M40-13	M40 x 1.5	M40 x 1.5	13.0	50.0	41.0
	SCA-M50-14	M50 x 1.5	M50 x 1.5	14.0	59.0	43.5
	SCA-M63-14	M63 x 1.5	M63 x 1.5	14.0	75.0	45.5



Order no.	Thread metric		Thread length (mm)	Outside Ø (mm)	Overall length (mm)	PU (pcs)
	Inside	Outside				
SCA	SCA-P09	09	09	12.0	22.0	35.0
	SCA-P11	11	11	12.0	26.0	36.0
	SCA-P16	16	16	13.0	29.0	38.0
	SCA-P21	21	21	14.0	39.0	41.0
	SCA-P29	29	29	14.0	44.0	42.5
	SCA-P36	36	36	17.0	59.0	49.0
	SCA-P48	48	48	17.0	69.0	50.5

Allows easy positioning of elbow fittings with metal thread

In connection with PMA fittings with metal thread (Metric: Metal long thread)

Nickel-plated brass

High fastening torque with thread edge protection

IP68 and IP69

Temperature range: -40°C to +105°C

Flat gaskets, metric, PG, NPT, GAS

Type SVN4

Type SVN4 - Flat thread gasket, metric/NPT/PG/GAS

Order no.	Fits to thread metric	Inside Ø (mm)	Outside Ø (mm)	Thickness (mm)	PU (pcs)
SVN4	SVN4-M12.50	M12 x 1.5	12.0	20.0	1.5
	SVN4-M12/02.50	M12 x 1.5	12.0	23.0	1.5
	SVN4-M16.50	M16 x 1.5	16.0	22.0	1.5
	SVN4-M16/02.50	M16 x 1.5	16.0	25.0	1.5
	SVN4-M20.50	M20 x 1.5	20.0	27.0	1.5
	SVN4-M20/02.50	M20 x 1.5	20.0	33.0	1.5
	SVN4-M25.30	M25 x 1.5	25.0	35.0	1.5
	SVN4-M25/01.30	M25 x 1.5	25.0	31.0	1.5
	SVN4-M25/02.30	M25 x 1.5	25.0	39.0	1.5
	SVN4-M32.20	M32 x 1.5	32.0	43.0	1.5
	SVN4-M32/02.20	M32 x 1.5	32.0	49.0	1.5
	SVN4-M40.20	M40 x 1.5	40.0	55.0	1.5
	SVN4-M40/01.20	M40 x 1.5	40.0	51.0	1.5
	SVN4-M40/02.20	M40 x 1.5	40.0	64.0	1.5
	SVN4-M50.10	M50 x 1.5	50.0	69.0	1.5
SVN4	SVN4-M50/01.10	M50 x 1.5	50.0	59.0	1.5
	SVN4-M50/02.10	M50 x 1.5	50.0	74.0	1.5
	SVN4-M63.10	M63 x 1.5	63.0	75.0	1.5
					10
Order no.	Fits to thread PG	Inside Ø (mm)	Outside Ø (mm)	Thickness (mm)	PU (pcs)
SVN4-07.50	07	12.5	16.5	1.5	50
SVN4-09.50	07	15.2	20.0	1.5	50
SVN4-11.50	11	18.6	24.0	1.5	50
SVN4-13.50	13.5	20.4	31.0	1.5	50
SVN4-16.50	16	22.5	31.0	1.5	50
SVN4-21.30	21	28.3	37.0	1.5	30
SVN4-29.30	29	37.0	48.0	1.5	20
SVN4-36.20	36	47.0	57.0	1.5	20
SVN4-42.10	42	54.0	60.0	1.5	10
SVN4-48.10	48	59.3	69.0	1.5	10
Order no.	Fits to thread NPT	Inside Ø (mm)	Outside Ø (mm)	Thickness (mm)	PU (pcs)
SVN4-N02/01.50	1/2"	21.6	28.0	1.5	50
SVN4-N04/01.30	3/4"	27.0	36.0	1.5	30
SVN4-N06/01.20	1"	33.7	46.0	1.5	20
SVN4-N07/01.20	1 1/4"	42.5	55.0	1.5	20
SVN4-N08/01.10	1 1/2"	48.6	70.0	1.5	10
SVN4-N09/01.10	2"	60.7	70.0	1.5	10
Order no.	Fits to thread GAS	Inside Ø (mm)	Outside Ø (mm)	Thickness (mm)	PU (pcs)
SVN4-G00.50	1/4"	13.2	20.0	1.5	50
SVN4-G01.50	3/8"	16.7	22.0	1.5	50
SVN4-G02.50	1/2"	21.0	28.0	1.5	50
SVN4-G04.30	3/4"	26.5	34.0	1.5	30
SVN4-G06.20	1"	33.3	42.0	1.5	20
SVN4-G07.20	1 1/4"	41.9	53.0	1.5	10
SVN4-G08.10	1 1/2"	47.8	62.0	1.5	20
SVN4-G09.10	2"	59.6	69.0	1.5	10

For sealing of polyamide or metal threads of PMA fittings. For ingress protection at the thread up to IP68

For solid sealing of uneven rough contact areas around the thread hole or when no constructive measures for O-Rings are provided

NBR reinforced with aramide fibres (asbestos-free). Temperature range: -50°C to +200°C, short-term to +350°C

Note: Depending on flange sizes flat thread gaskets can have different widths. Please indicate fitting for which gasket is needed for replacement orders

Locking clips, water impact protection

Type AFN2, OVN2 & WPS

Type AFN2 - Universal safety clip for PMAfix fittings IP66

	Order no. dark grey	Fits to conduit size NW	Width (mm)	Length (mm)	Thickness (mm)	PU (pcs)
AFN2	AFN2-07GT.Lose	07	14.0	14.0	7.0	1
	AFN2-10GT.Lose	10	17.5	17.0	8.0	1
	AFN2-12GT.Lose	12	20.5	20.0	7.3	1
	AFN2-17GT.Lose	17	26.5	22.0	8.0	1
	AFN2-23GT.Lose	23	34.0	27.5	11.8	1
	AFN2-29GT.Lose	29	40.5	32.0	11.8	1
	AFN2-36GT.Lose	36	50.0	39.0	9.5	1
	AFN2-48GT.Lose	48	62.0	47.0	9.5	1

Pre-installed in PMA fittings IP66 and IP68GT

Allows simple push-in assembly of PMA conduits

Type OVN2 - Oval clip for PMAfix fittings IP66

	Order no. dark grey	Fits to conduit size NW	Width (mm)	Length (mm)	Thickness (mm)	PU (pcs)
OVN2	OVN2-07.100	07	14.0	14.0	6.0	100
	OVN2-10.50	10	17.5	17.0	7.0	50
	OVN2-12.50	12	21.0	19.0	6.0	50
	OVN2-17.50	17	26.5	22.5	7.0	50
	OVN2-23.30	23	34.0	27.5	10.5	30
	OVN2-29.20	29	40.5	32.0	10.5	20
	OVN2-36.40	36	49.5	39.0	8.5	40
	OVN2-48.20	48	62.0	47.0	8.5	20

Provides reliable fixation of PMA conduits within PMA IP68 fittings

Type WPS - Water impact protection

	Order no. black	Fits to conduit size NW	Outside Ø (mm)	Thickness (mm)	PU (pcs)
WPS	WPS-NW10	10	22.0	8.0	50
	WPS-NW12	12	26.0	8.0	50
	WPS-NW17	17	33.0	8.0	50
	WPS-NW23	23	40.0	9.0	30
	WPS-NW29	29	47.0	9.5	20
	WPS-NW36	36	59.0	10.0	20
	WPS-NW48	48	71.0	10.0	10

Increased protection of PMAfix fittings against water jet impact – increased protection up to IP69

For increased ingress protection requirements regarding high pressure/steam jet cleaning

Based on PMAfix IP68 system

Two-piece water impact protection with click cap

Retrofit installation possible

Sealing caps

Type NVN3 & KNH2

Type NVN3 - Sealing cap, reinforced

Order no.	Fits to conduit size NW	Length (mm)	PU (pcs)
NVN3			
NVN3-07.100	07	9.0	100
NVN3-09.50	10	9.0	50
NVN3-11.50	12	12.0	50
NVN3-16.50	17	16.5	50
NVN3-21.30	23	13.0	30
NVN3-29.20	29	14.0	20
NVN3-36.20	36	17.5	20
NVN3-48.10	48	17.5	10

In connection with PMAFIX fittings ("V" series) and PMA corrugated conduits

For ingress protection IP68 static/IP67 dynamic

Specially modified polyesterelastomer

Free from halogens and cadmium

Fits both conduit profiles: fine (T) and coarse (G)

Temperature range: -40°C to +105°C

Type KNH2 - PMAFIX Pro sealing and locking element

Order no.	Fits to conduit size NW	Outside Ø (mm)	Overall length (mm)	PU (pcs)
KNH2				
KNH2-NW10.50	10	22.0	28.0	50
KNH2-NW12.50	12	25.5	33.5	50
KNH2-NW17.50	17	31.5	38.5	50
KNH2-NW23.30	23	38.5	41.0	30
KNH2-NW29.20	29	46.5	46.5	20
KNH2-NW36.20	36	55.5	50.5	20
KNH2-NW48.10	48	68.0	56.5	10

For use in connection with PMAFIX PRO fittings PMA corrugated conduits for ingress protection IP68 and IP69 static and dynamic

Specially modified PA6/Polyester-elastomer

Free from halogens and cadmium

Fits conduit profiles: fine (T) and coarse (G)

Temperature range: -40°C to +105°C

Enlargers, reducers, metric and PG

Type ME, MR & NR

Type ME - Enlarger, brass, metric thread

	Order no.	Thread outside		Thread inside		Wrench size (mm)	Inside Ø (mm)	Overall length (mm)	PU (pcs)
		Metric	Length (mm)	Metric	Length (mm)				
ME	M12M16M	M12 x 1.5	5.0	M16 x 1.5	7.0	18	8.0	16.0	100
	M16M20M	M16 x 1.5	5.0	M20 x 1.5	7.5	22	12.0	16.5	100
	M20M25M	M20 x 1.5	6.0	M25 x 1.5	8.0	27	15.0	18.5	50
	M25M32M	M25 x 1.5	7.0	M32 x 1.5	9.0	34	21.0	20.5	25
	M32M40M	M32 x 1.5	8.0	M40 x 1.5	10	42	26.0	23.5	25
	M40M50M	M40 x 1.5	8.0	M50 x 1.5	13	52	34.0	30.0	10
	M50M63M	M50 x 1.5	9.0	M63 x 1.5	16	65	44.0	32.5	10

For enlargement of an existing thread

Nickel-plated brass

Hexagonal form

Temperature range: -60°C to +200°C

Type MR - Reducer, brass, metric thread

	Order no. standard	PU (pcs)	Order no. hexagonal	PU (pcs)	Thread outside	Thread inside
					metric	metric
MR	M16M12M	100	M16M12M/6	100	M16 x 1.5	M12 x 1.5
	M20M12M	100	M20M12M/6	100	M20 x 1.5	M12 x 1.5
	M20M16M	100	M20M16M/6	100	M20 x 1.5	M16 x 1.5
	M25M16M	100	M25M16M/6	100	M25 x 1.5	M16 x 1.5
	M25M20M	100	M25M20M/6	100	M25 x 1.5	M20 x 1.5
	M32M20M	50	M32M20M/6	50	M32 x 1.5	M20 x 1.5
	M32M25M	50	M32M25M/6	50	M32 x 1.5	M25 x 1.5
	M40M25M	50	M40M25M/6	25	M40 x 1.5	M25 x 1.5
	M40M32M	50	M40M32M/6	25	M40 x 1.5	M32 x 1.5
	M50M32M	25	M50M32M/6	10	M50 x 1.5	M32 x 1.5
	M50M40M	25	M50M40M/6	10	M50 x 1.5	M40 x 1.5
	M63M40M	10	M63M40M/6	10	M63 x 1.5	M40 x 1.5
	M63M50M	10	M63M50M/6	10	M63 x 1.5	M50 x 1.5

Reduction of threaded or clearance holes to smaller thread sizes

Nickel-plated brass

Temperature range: -60°C to +200°C

Round form without O-ring, XXXX/6 hexagonal form with O-ring

Type NR - Reducer, PG

	Order no.	Thread outside	Thread inside	Length (mm)	Inside Ø (mm)	Outside Ø (mm)	PU (pcs)
		PG	PG				
NR	1109N	11	09	22.5	10.5	24.5	100
	1309N	13.5	09	15.0	10.0	26.0	100
	1311N	13.5	11	24.0	11.5	26.0	100
	1609N	16	09	16.0	10.0	29.0	100
	1611N	16	11	16.0	11.5	29.0	100
	1613N	16	13.5	27.0	13.5	29.0	100
	2113N	21	13.5	16.0	13.5	35.5	100
	2116N	21	16	16.0	15.5	35.5	100
	2921N	29	21	17.0	22.0	43.0	50
	3629N	36	29	24.0	30.5	54.0	50

Reduction of threaded or clearance holes to smaller PG thread sizes

High-grade, glass fibre reinforced Polyamid 6

Temperature range: -30°C to +100°C

Firewall element, adapters

Type MA/B, MI-30 & MI-60

Type MA/B - Firewall element, brass, metric thread

Order no.	Inside and Outside thread size Metric	Overall length (mm)	PU (pcs)
MA/B	M16MI16M-10/B	M16 x 1.5	34.5
	M20MI20M-10/B	M20 x 1.5	34.5
	M25MI25M-11/B	M25 x 1.5	37.0
	M32MI32M-13/B	M32 x 1.5	41.0
	M40MI40M-13/B	M40 x 1.5	41.5
	M50MI50M-14/B	M50 x 1.5	43.5
	M63MI63M-14/B	M63 x 1.5	43.5

Nickel-plated brass

Element including intumescent material at the ends one female and one male thread

Designed to terminate a cable protection system at a fire barrier

Allowing cables to be fed through the barrier without loss of fire integrity

IP68 + IP69K

Type MI-30 - Firewall adapter, brass, metric thread

Order no.	Inside thread size Metric	Overall length (mm)	PU (pcs)
MI-30	MI20MI20M-30	M20 x 1.5	40.0
	MI25MI25M-30	M25 x 1.5	40.0
	MI32MI32M-30	M32 x 1.5	40.0
	MI40MI40M-30	M40 x 1.5	40.0
	MI50MI50M-30	M50 x 1.5	42.0
	MI63MI63M-30	M63 x 1.5	42.0

Nickel-plated brass

Thread adapter including intumescent material

Designed for use in combination with Roxtec modules, providing a solution allowing a cable

protection system to be fed through a firewall without loss of fire integrity

IP68 + IP69K

Type MI-60 - Firewall adapter, brass, metric thread

Order no.	Inside thread size Metric	Overall length (mm)	PU (pcs)
MI-60	MI20MI20M-60	M20 x 1.5	70.0
	MI25MI25M-60	M25 x 1.5	70.0
	MI32MI32M-60	M32 x 1.5	70.0
	MI40MI40M-60	M40 x 1.5	70.0
	MI50MI50M-60	M50 x 1.5	70.0
	MI63MI63M-60	M63 x 1.5	70.0

Nickel-plated brass

Thread adapter including intumescent material

Designed for use in combination with Roxtec modules, providing a solution allowing a cable

protection system to be fed through a firewall without loss of fire integrity

IP68 + IP69K

Enlargers, reducers, PG

Type ME & MR

Type ME - Enlarger, brass, PG thread

	Order no. metal, standard	Thread outside		Thread inside		Overall length (mm)	PU (pcs)
		PG	Length (mm)	PG	Length (mm)		
ME	0709M	07	5.0	09	7.0	17.0	15.0
	0911M	09	6.0	11	7.0	20.0	16.5
	0913M	09	6.0	13	7.5	22.0	17.5
	1113M	11	6.0	13	8.0	22.0	17.5
	1116M	11	6.5	16	8.5	24.0	19.0
	1121M	11	6.5	21	10.0	30.0	21.0
	1316M	13.5	6.5	16	7.5	24.0	19.0
	1321M	13.5	6.5	21	8.5	30.0	21.0
	1621M	16	6.5	21	8.5	30.0	21.0
	1629M	16	6.5	29	11.0	39.0	22.5
	2129M	21	7.0	29	11.5	39.0	23.0
	2936M	29	8.0	36	12.0	50.0	27.5
	4248M	42	10.0	48	17.0	64.0	33.0
							10

For enlargement of an existing thread

Nickel-plated brass

Temperature range: -60°C to +200°C

Type MR - Reducer, brass, PG thread

	Order no. metal, standard	Thread outside		Thread inside PG	Outside Ø (mm)	Overall length (mm)	PU (pcs)
		PG	Length (mm)				
MR	0907M	09	6.0	07	17.0	8.5	100
	1107M	11	6.0	07	20.0	8.5	100
	1109M	11	6.0	09	20.0	8.5	100
	1307M	13.5	6.5	07	22.0	9.0	100
	1309M	13.5	6.5	09	22.0	9.0	100
	1311M	13.5	6.5	11	22.0	9.0	100
	1607M	16	6.5	07	24.0	9.5	100
	1609M	16	6.5	09	24.0	9.5	100
	1611M	16	6.5	11	24.0	9.5	100
	1613M	16	6.5	13.5	24.0	9.5	100
	2111M	21	7.0	11	30.0	10.0	100
	2113M	21	7.0	13.5	30.0	10.0	100
	2116M	21	7.0	16	30.0	10.0	100
	2916M	29	8.0	16	39.0	11.5	50
	2921M	29	8.0	21	39.0	11.5	50
	3621M	36	9.0	21	50.0	12.5	25
	3629M	36	9.0	29	50.0	12.5	25
	4229M	42	10	29	57.0	14.0	10
	4236M	42	10	36	57.0	14.0	10
	4836M	48	10	36	64.0	14.0	10
	4842M	48	10	42	64.0	14.0	10

Reduction of threaded or clearance holes to smaller thread sizes

Nickel-plated brass

Temperature range: -60°C to +200°C

Plug screws, metric, PG

Type 514

Type 514 - Plug screw, metric/PG thread

	Order no. grey	Fits to thread metric	Outside Ø (mm)	Height (mm)	Thread length (mm)	PU (pcs)
514	514-M12	M12 x 1.5	15.0	10.0	6.0	100
	514-M16	M16 x 1.5	20.0	10.5	6.0	100
	514-M20	M20 x 1.5	24.0	10.5	6.0	100
	514-M25	M25 x 1.5	30.0	13.0	8.0	100
	514-M32	M32 x 1.5	37.0	13.5	8.0	100
	514-M40	M40 x 1.5	46.0	14.0	8.0	50
	514-M50	M50 x 1.5	56.0	16.5	10.0	50
	514-M63	M63 x 1.5	70.0	17.0	12.0	50

	Order no. grey	Fits to thread PG	Outside Ø (mm)	Height (mm)	Thread length (mm)	PU (pcs)
	514-07	07	15.0	10.0	6.0	100
	514-09	09	19.0	10.0	6.0	100
	514-11	11	22.0	10.0	6.0	100
	514-13	13.5	25.0	10.0	6.0	100
	514-16	16	27.0	10.0	6.0	100
	514-21	21	33.0	12.5	8.0	100
	514-29	29	44.5	13.0	8.0	100
	514-36	36	55.5	15.0	10.0	50
	514-48	48	69.5	17.0	12.0	50

For closing off unused threaded holes

Polyamide 6 glass fibre reinforced

Free from halogens and cadmium

IP54

Temperature range: -30°C to +100°C



Lock nuts, metric, PG

Type MN

Type MN - Hexagonal lock nut, polyamide, metric/PG thread

MN	Order no. black	Order no. grey	Fits to thread metric	Wrench size (mm)	Height (mm)	PU (pcs)
	BMN-M12	GMN-M12	M12 x 1.5	17	5.0	100
	BMN-M16	GMN-M16	M16 x 1.5	22	5.0	100
	BMN-M20	GMN-M20	M20 x 1.5	26	5.6	100
	BMN-M25	GMN-M25	M25 x 1.5	32	6.0	100
	BMN-M32	GMN-M32	M32 x 1.5	41	7.0	25
	BMN-M40	GMN-M40	M40 x 1.5	50	7.0	10
	BMN-M50	GMN-M50	M50 x 1.5	60	8.0	10
	BMN-M63	GMN-M63	M63 x 1.5	75	8.0	5

MN	Order no. black	Order no. grey	Fits to thread PG	Wrench size (mm)	Height (mm)	PU (pcs)
	BMN-07	GMN-07	07	19	5.0	100
	BMN-09	GMN-09	09	22	5.0	100
	BMN-11	GMN-11	11	24	5.0	100
	BMN-13	GMN-13	13.5	27	6.0	100
	BMN-16	GMN-16	16	30	6.0	100
	BMN-21	GMN-21	21	36	7.0	50
	BMN-29	GMN-29	29	46	7.0	25
	BMN-36	GMN-36	36	60	8.0	10
	BMN-48	GMN-48	48	70	8.0	10

Glass fibre reinforced Polyamid 6
High tightening torques



Lock nuts, metric, PG

Type MM

Type MM - Hexagonal lock nut, brass, metric/PG thread

Order no.	Fits to thread metric	Wrench size (mm)	Height (mm)	PU (pcs)
MM	GMM-M12	M12 x 1.5	15	2.8
	GMM-M16	M16 x 1.5	19	2.8
	GMM-M20	M20 x 1.5	24	3.0
	GMM-M25	M25 x 1.5	30	3.5
	GMM-M32	M32 x 1.5	36	4.0
	GMM-M40	M40 x 1.5	46	4.5
	GMM-M50	M50 x 1.5	60	5.0
	GMM-M63	M63 x 1.5	70	5.5

Order no.	Fits to thread PG	Wrench size (mm)	Height (mm)	PU (pcs)
GMM-07	07	15	2.8	100
GMM-09	09	18	2.8	100
GMM-11	11	21	3.0	100
GMM-13	13.5	23	3.0	100
GMM-16	16	26	3.0	50
GMM-21	21	32	3.5	50
GMM-29	29	41	4.0	25
GMM-36	36	51	5.0	10
GMM-42	42	60	5.0	5
GMM-48	48	64	5.5	5

Nickel-plated brass

Maximum possible torque

Safe system connection

Type MM - Hexagonal lock nut, brass, metric thread for EMC applications

Order no.	Fits to thread metric	Wrench size (mm)	Height (mm)	PU (pcs)
MM	GMM-M12/EMV	M12 x 1.5	16.6	3.5
	GMM-M16/EMV	M16 x 1.5	21.0	3.5
	GMM-M20/EMV	M20 x 1.5	26.7	3.7
	GMM-M25/EMV	M25 x 1.5	33.5	4.2
	GMM-M32/EMV	M32 x 1.5	39.0	4.7
	GMM-M40/EMV	M40 x 1.5	50.0	5.7
	GMM-M50/EMV	M50 x 1.5	66.0	5.7
	GMM-M63/EMV	M63 x 1.5	78.0	6.7

Nickel-plated brass

Maximum possible torque

Safe system connection

PMA TRUST & system supports

Introduction

For flexible and application friendly solutions. PMA offers a vast array of practical accessories in order to complete the PMA cable protection system.

We offer lock nuts produced from polyamide or metal, thread reducers and enlargers, conduit adapters, swivel adapters as well as different mounting clips for conduits. All these practical products will help to create the PMA line for our customers even more flexible and application friendly.





PMA TRUST™

Modular support system

For use in rolling stock applications.
The most versatile, compact and lightest
design of its kind on the market.



PMA® TRUST™ modular support system is a lightweight, compact solution with high impact resistance. Thanks to the new design, external dimensions are reduced to the very minimum and internal spacing between adjoining conduits is very small. The system is specifically designed for use in railway vehicle construction and other applications where fixation of parallel running conduits and cables is required.

Type BGPM - PMA TRUST™ modular support system

	Order no. black	Conduit size NW	No. of conduits	Nom. dimensions (mm)			PU (pcs)
BGPM	BGPM-1x10	10	1	39.5	30.0	24.5	10
	BGPM-1x12	12	1	42.5	30.0	28.0	10
	BGPM-2x12	12	2	61.0	30.0	28.0	10
	BGPM-3x12	12	3	79.5	30.0	28.0	5
	BGPM-4x12	12	4	98.0	30.0	28.0	5
	BGPM-1x17	17	1	48.0	30.0	33.0	10
	BGPM-2x17	17	2	72.5	30.0	33.0	10
	BGPM-3x17	17	3	97.0	30.0	33.0	5
	BGPM-4x17	17	4	121.5	30.0	33.0	5
	BGPM-1x23	23	1	55.0	30.0	40.0	10
	BGPM-2x23	23	2	87.0	30.0	40.0	10
	BGPM-3x23	23	3	119.0	30.0	40.0	5
	BGPM-4x23	23	4	151.0	30.0	40.0	5
	BGPM-1x29	29	1	61.0	30.0	46.0	10
	BGPM-2x29	29	2	99.5	30.0	46.0	10
	BGPM-3x29	29	3	137.5	30.0	46.0	5
	BGPM-4x29	29	4	176.0	30.0	46.0	5
	BGPM-1x36	36	1	70.0	30.0	55.0	10
	BGPM-2x36	36	2	116.5	30.0	55.0	10
	BGPM-3x36	36	3	163.0	30.0	55.0	5
	BGPM-4x36	36	4	209.5	30.0	55.0	5
	BGPM-1x48	48	1	82.0	30.0	66.0	10
	BGPM-2x48	48	1	141.0	30.0	66.0	10
	BGPM-3x48	48	3	199.5	30.0	66.0	5
	BGPM-4x48	48	4	258.5	30.0	66.0	5

For applications in rail vehicle construction and other applications where fixation of parallel running conduits and cables is required

Light weight and compact design

Conduit rotation possible preventing torsion

Axial fixation of conduit and/or cables

Quick installation, possible with one hand

PMA TRUST™ modular support system

Type BGPM, BGPMR & BGPMK

Type BGPMR - PMA TRUST™ reducers

	Order no. black	Conduit size NW	Fits to multiple holder BGPM (NW)	Fits to reduction BGPMR	Depth (mm)	PU (pcs)
	BGPMR-10T/17	10	17	17	30.0	5
	BGPMR-12T/17	12	17	17	30.0	5
	BGPMR-17GT/23	17	23	23	30.0	5
	BGPMR-23GT/29	23	29	29	30.0	5
	BGPMR-29GT/36	29	36	36	30.0	5
	BGPMR-36GT/48	36	48	-	30.0	5

Reducers for BGPM modular system support for downsizing corrugated conduits

Provides axial strain relief for conduits, but allows rotation

Combination of multiple reductions possible

Easy installation

Type BGPMK - PMA TRUST™ cable clamping adapter

	Order no. black	Clamping range		Fits to multiple holder BGPM & reduction BGPMR (NW)	Depth (mm)	PU (pcs)
		1 fold BGPM & BGMPR	2, 3 & 4 fold BGPM & BGPMR*			
	BGPMK-10/7-3	7-3	6-4	10	30.0	5
	BGPMK-12/9-5	9-5	8-6	12	30.0	5
	BGPMK-17/15-11	15-11	14-12	17	30.0	5
	BGPMK-17/12-8	12-8	11-9	17	30.0	5
	BGPMK-23/20-16	20-16	19-17	23	30.0	5
	BGPMK-23/18-14	18-14	17-15	23	30.0	5
	BGPMK-29/25-21	25-21	24-22	29	30.0	5
	BGPMK-29/22-18	22-18	21-19	29	30.0	5
	BGPMK-36/34-30	34-30	33-31	36	30.0	5
	BGPMK-36/31-27	31-27	30-28	36	30.0	5
	BGPMK-36/28-24	28-24	27-25	36	30.0	5
	BGPMK-48/46-42	46-42	45-43	48	30.0	5
	BGPMK-48/43-39	43-39	42-40	48	30.0	5
	BGPMK-48/40-36	40-36	39-37	48	30.0	5
	BGPMK-48/37-33	37-33	36-34	48	30.0	5

*We recommend to use cable with the slight reduced clamping range to ensure both optimum cable clamping as well as pre-assembly

Cable clamping adapters for BGPM Multiple Holders and BGPMR reduction half-shells for supporting and holding cables

Provides axial strain relief for cables

Flexible configuration in multiple holders & reductions possible

Easy installation

System supports, half-shells

Type VH & GN

Type VH - System support

	Order no. support ①	Order no. clip ①	Order no. complete ①	Fits to conduit size NW	Width x Height x Depth (mm)	Fixing screws	PU (pcs)
VH	BVH-17-010	BVH-17-020	BVH-17-000	17	35 x 36 x 36	6 x M5	100
	BVH-23-010	BVH-23-020	BVH-23-000	23	35 x 44 x 36	6 x M5	100
	BVH-29-010	BVH-29-020	BVH-29-000	29	46 x 52 x 40	6 x M5	100
	BVH-36-010	BVH-36-020	BVH-36-000	36	53 x 58 x 60	6 x M5	100
	BVH-48-010	BVH-48-020	BVH-48-000	48	66 x 72 x 60	6 x M5	60



For applications in machine building and installation
Optimal axial strain relief due to integrated rib
Variable fixation possible due to six holes, safe against turning
With safety lid suitable for overhead installation
High retention forces
PA 6

Type GN - Half shell

	Order no. fine profile, black	Order no. coarse profile, black	Order no. fine and coarse profile, black	Fits to conduit size NW	Outside Ø (mm)	Width (mm)	PU (pcs)
GN	BGN-S12T	–	–	12	26.5	34.0	50
	–	–	BGN-S17GT	17	32.0	34.0	50
	BGN-S23T	BGN-S23G	–	23	39.5	34.0	30
	–	–	BGN-S29GT	29	47.0	34.0	30
	–	–	BGN-S36GT	36	55.0	34.0	20
	BGN-S48T	BGN-S48G	–	48	66.5	34.0	20
	–	BGN-S70G	–	70	93.5	38.0	10

For conduit fixation in conjunction with beam systems, particularly in traction and machine applications
Fixes conduit against axial movements
Allows radial turning of conduit
Especially suitable for dynamic applications due to rounded edges
PA 6

① Please replace "B" for black with "S" for grey in front of the order no.

System supports, rails for system supports

Type FH-0, FHS & GPS

Type FH-0 - System support, one-piece

	Order no. black	Order no. grey	Fits to conduit size NW	Width x Height x Depth (mm)	Fixing screws	PU (pcs)
FH-0	BFH-07-0	SFH-07-0	07	17.0 x 21.5 x 20.0	1 x M4	100
	BFH-10-0	SFH-10-0	10	20.5 x 24.5 x 20.0	1 x M5	100
	BFH-12-0	SFH-12-0	12	24.0 x 27.0 x 20.0	1 x M5	100
	BFH-17-0	SFH-17-0	17	30.0 x 34.0 x 20.0	1 x M6	100
	BFH-23-0	SFH-23-0	23	38.5 x 42.0 x 20.0	1 x M6	100
	BFH-29-0	SFH-29-0	29	45.5 x 48.0 x 20.0	1 x M6	100
	BFH-36-0	SFH-36-0	36	55.5 x 56.0 x 20.0	1 x M6	50
	BFH-48-0	SFH-48-0	48	67.5 x 68.0 x 20.0	1 x M6	20



For applications in machine building and installation

Optimal axial strain relief due to integrated rib

Suitable for overhead installations due to safety lid

High retention forces

Quick mounting due to single hole fixing

Fits to rail for system support FHS

PA 6

Type FHS - Rail for system support

	Order no. black	Order no. grey	Fits to system supports	Length x Height x Depth (mm)	PU (pcs)
FHS	BFHS-00	SFHS-00	FH-NW-0	275.0 x 15.5 x 25.0	10
Additional position supports or distance spacers					
	BFHS-PH	SFHS-PH	Position support with screws		20
	BFHS-PH1	SFHS-PH1	Distance spacers		100



For flexible assembly of one-piece system supports and/or fixation of various conduit sizes

Glass fibre reinforced polyamide 6

Extremely robust construction

High stiffness

Positioning and distance spacers available

Glass fibre reinforced PA6

Type GPS - System support, one-piece, stackable

	Order no. black	Fits to conduit size NW	Width (mm)	Height (mm)	Depth (mm)	PU (pcs)
GPS	BGPS-12/01*	12	70.0	51.0	30.0	30
	BGPS-17	17	70.0	51.0	30.0	30
	BGPS-23	23	70.0	51.0	30.0	30
	BGPS-29	29	85.0	65.0	30.0	20
	BGPS-36	36	85.0	65.0	30.0	10
	BGPS-48	48	115.0	92.5	30.0	10
	BGPS-56	56	115.0	92.5	30.0	10

*This size will be delivered with a half-shell insert

In railway vehicle construction, heavy machine building industry and other applications with increased mechanical requirements

Heavy design, high retention forces. Applicable with standard metal C rails

Clasp for easy pre-mounting and final assembly. Especially suitable for dyn. applic. due to rounded edges

The following nominal widths can be combined for stacking: NW 12 with NW 17 + 23, NW 17 with NW 23,

NW 29 with NW 36, NW 48 with NW 56

Content of delivery: System support and 2 screws for securing of the lid (optional); without mounting accessories

PA 6

Tube clamps

Type GL & GH

Type GL - Tube clamp, one-piece

	Order no. black	Fits to conduit size NW	Width (mm)	Fixing screws	PU (pcs)
GL	BGL-07	07	25.0	1 x M4	100
	BGL-10	10	27.0	1 x M4	100
	BGL-12	12	31.0	1 x M4	100
	BGL-17	17	39.5	1 x M5	100
	BGL-23	23	49.0	1 x M5	100
	BGL-29	29	57.0	1 x M6	100



Used in general machine and installation applications

Integrated rib provides axial strain relief

Allows turning of the conduit, thus avoiding torsion stresses

Pre-fixation on the conduit possible

PA 6

Type GH - Tube clamp, one-piece

	Order no. black	Thread outside NW	Width (mm)	Fixing screws	PU (pcs)
GH	BGH-23	23	16.0	2 x M5	50
	BGH-29	29	19.0	2 x M6	50
	BGH-36	36	24.0	2 x M6	50
	BGH-48	48	24.0	2 x M6	50
	BGH-56	56	26.0	2 x M8	10
	BGH-70	70	30.0	2 x M8	10
	BGH-95	95	30.0	2 x M8	10

Used in general machine and installation applications

Integrated rib provides axial strain relief

Allows turning of the conduit, thus avoiding torsion stresses

Pre-fixation on the conduit possible

Allows solid fixation with 2 screws

PA 6

Tube clamps

Type SGB & SGS

Type SGB - Tube clamp

	Order no. black	Fits to conduit size NW	Width (mm)	Fixing screws	PU (pcs)
SGB	SGB-07	07	13.0	1 x M4	100
	SGB-09	10	13.0	1 x M4	100
	SGB-11	12	13.0	1 x M4	100
	SGB-16	17	16.0	1 x M5	100
	SGB-21	23	16.0	1 x M5	50
	SGB-29	29	19.0	1 x M6	30
	SGB-36	36	19.0	1 x M6	20
	SGB-48	48	19.0	1 x M6	20

For fixation of static conduits

Galvanized steel

Elastomer profile (EPDM) free from halogens

Smooth connection to PMA conduits

Good resistance to ozone and ageing

Temperature range: -40°C to +120°C

Type SGS - Tube clamp

	Order no. black	Fits to conduit size NW	Width x Height x Depth (mm)	Fixing screws	PU (pcs)
SGS	SGS-36	36	80.0 x 48.0 x 19.0	2 x M6	20
	SGS-48	48	94.0 x 58.0 x 19.0	2 x M6	20
	SGS-56	56	118.0 x 72.0 x 24.0	2 x M8	10
	SGS-70	70	130.0 x 85.0 x 24.0	2 x M8	10
	SGS-95	95	156.0 x 110.0 x 24.0	2 x M8	10
	SGS-125	125	200.0 x 152.0 x 24.0	2 x M8	10

For fixation of static conduits

Galvanized steel

Elastomer profile (EPDM) free from halogens

Smooth connection to PMA conduits

Good resistance to ozone and ageing

Temperature range: -40°C to +120°C

Galvanized steel/EPDM

PMA JUMBO sizes

General technical details

Larger sizes for big solutions. When you need conduits with larger sizes for your cable protection, we provide you with a comprehensive selection of large size conduits including fittings and flanges.

* All conduits are REACH and RoHS compliant

The PMA JUMBO product line includes a range of large size cable protection products. Seven different conduit types using a variety of raw materials, to provide optimal performance in various applications and compatible fittings.

- PMA JUMBO conduits polyamide and polyurethane conduits in the large nominal width sizes NW56, 70, 95, 125 (PA6 conduits – PCL, CYL, VCS, VOH) (PA12 conduits – PIS) (PU conduits – PUE)
- PMAGRIP flange and threaded fittings plus accessories BGG (straight), BGO (90°) flange fittings achieve a sealing rating of IP50 and IP65 with a conduit sealing ring BGGV (straight), BGOV (90°) flange fittings achieve a sealing rating of IP68

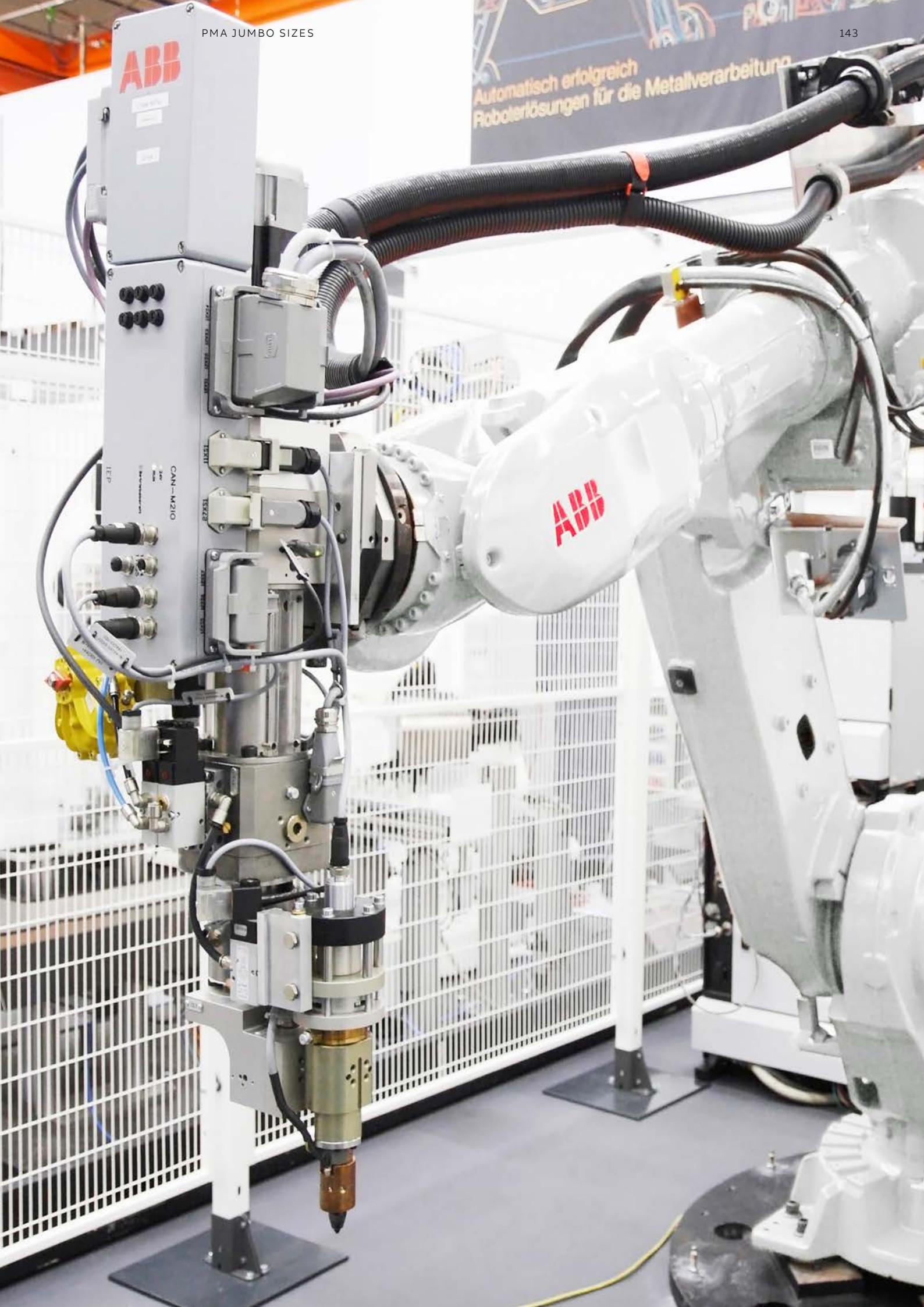
Material

- Conduits made from specially formulated PA6, PA12 and PU
- Fittings made from specially formulated polyamide 6
- Self-extinguishing
- Free from halogens, REACH + RoHS compliant*
- Very good chemical properties
- Temperature range:
PA6 -40°C to +105°C, short-term to +160°C
PA12 -40°C to +95°C, short-term to +150°C
PU -60°C to +50°C

Characteristics

- Excellent conduit pull-out strength
- High impact resistance
- All PMA Jumbo conduits have a coarse (G) profile
- The conduit types PIS and VCS are UL recognized in jumbo sizes for use with the flange type fittings.





Conduits, large sizes

Type PMAFLEX JUMBO conduits

Type PMAFLEX JUMBO conduits

	Order no. black	Order no. grey	Conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat./Dyn. radius (mm)	PU (m)
PMAFLEX JUMBO conduits							
	PCLG-56B.30	PCLG-56S.30	56	56.3	67.2	130/-	30
	PCLG-70B.10	PCLG-70S.10	70	67.5	80.0	160/-	10
	PCLG-95B.10	PCLG-95S.10	95	91.5	106.0	210/-	10
	PCLG-125B.06	PCLG-125S.06	125	126.5	146.5	450/-	6
	PIHG-56B.30	PIHG-56S.30	56	56.3	67.2	110/270	30
	PIHG-70B.30	PIHG-70S.30	70	67.2	79.6	150/350	30
	PIHG-95B.30	PIHG-95S.30	95	91.3	106.0	170/450	30
	PIHG-125B.20	PIHG-125S.20	125	126.5	146.5	350/480	20
	VCSG-56B.30	VCSG-56S.30	56	56.1	67.2	150/-	30
	VCSG-70B.10	VCSG-70S.10	70	66.5	80.0	200/-	10
	VCSG-95B.10	VCSG-95S.10	95	91.0	106.0	300/-	10
	LLPAG-56A.30	LLPAG-56S.30	56	56.3	67.2	120/-	30
	LLPAG-70A.10	LLPAG-70S.10	70	68.0	80.0	160/-	10
	LLPAG-95A.10	LLPAG-95S.10	95	91.9	106.0	210/-	10
	LLPAG-125A.06	LLPAG-125S.06	125	126.5	146.5	450/-	6
	VOHG-56B.10	VOHG-56S.10	56	55.5	67.2	135/-	10
	VOHG-70B.10	VOHG-70S.10	70	67.0	80.0	200/-	10
	VOHG-95B.10	VOHG-95S.10	95	90.5	106.0	300/-	10
	VOHG-125B.06	VOHG-125S.06	125	126.0	146.5	480/-	6
Approvals							
	PUEG-56B.30	-	56	56.3	67.2	90/170	30
	PUEG-70B.30	-	70	68.2	80.5	100/220	30

For further conduits and other sizes see conduit guide



PMAGRIP flange fittings

Type GG & GO

Type GG - Flange straight fitting IP65

	Order no. black	Order no. grey	Fits to conduit size NW	Width (mm)	Height (mm)	Depth (mm)	PU (pcs)
GG	BGG-56	SGG-56	56	82.0	97.0	42.0	10
	BGG-70	SGG-70	70	97.0	114.0	48.0	10
	BGG-95	SGG-95	95	126.0	146.0	53.0	10
	BGG-125	SGG-125	125	—	Ø 194.0	79.0	5



Approvals



Ingress protection: IP50 without conduit seal ring (IP65 with conduit seal ring)
 Flange seal FGO4 made from EPDM, standard for indoor and outdoor applications
 Flange seal FGO4/01 made from NBR, optional for indoor applications with special chemical requirements
 Temperature range with FGO4: -40°C to +105°C
 Temperature range with FGO4/01: -25°C to +70°C
 Content of delivery: Flange part, fixation clamps (incl. 2 screws), flange seal (FGO4 or FGO4/01), conduit seal ring (optional for IP65)

Type GO - Flange 90° elbow fitting IP65

	Order no. black	Order no. grey	Fits to conduit size NW	Width (mm)	Height (mm)	Depth (mm)	PU (pcs)
GO	BGO-56	SGO-56	56	82.0	97.0	101.0	10
	BGO-70	SGO-70	70	97.0	114.0	115.0	10
	BGO-95	SGO-95	95	126.0	146.0	149.0	10



Approvals



Ingress protection: IP50 without conduit seal ring (IP65 with conduit seal ring)
 Flange seal FGO4 made from EPDM, standard for indoor and outdoor applications
 Flange seal FGO4/01 made from NBR, optional for indoor applications with special chemical requirements
 Temperature range with FGO4: -40°C to +105°C
 Temperature range with FGO4/01: -25°C to +70°C
 Content of delivery: Flange part, fixation clamps (incl. 2 screws), flange seal (FGO4 or FGO4/01), conduit seal ring (optional for IP65)

PMAGRIP flange fittings

Type GGV & GOV

Type GGV - Flange straight fittings IP65

	Order no. black, IP68	Fits to conduit size NW	Width (mm)	Height (mm)	Depth (mm)	PU (pcs)
GGV	BGGV-56	56	82.0	97.0	42.0	10
	BGGV-70	70	97.0	114.0	48.0	10
	BGGV-95	95	126.0	146.0	53.0	10



Approvals



In railway vehicle construction as well as in a wide range of industrial applications with high sealing and safety requirements
 Flange seal FG04 made from EPDM, standard for indoor and outdoor applications
 Flange seal FG04/01 made from NBR on request, optional for indoor applications with special chemical requirements
 Ingress protection: IP68, IP69 with conduit sealing NVN3
 Temperature range with FG04: -40°C to +105°C
 Temperature range with FG04/01: -25°C to +70°C

Type GOV - Flange 90° elbow fittings

	Order no. black, IP68	Fits to conduit size NW	Width (mm)	Height (mm)	Depth (mm)	PU (pcs)
GOV	BGOV-56	56	82.0	97.0	101.0	10
	BGOV-70	70	97.0	114.0	115.0	10
	BGOV-95	95	126.0	146.0	149.0	10



Approvals



In railway vehicle construction as well as in a wide range of industrial applications with high sealing and safety requirements
 Flange seal FG04 made from EPDM, standard for indoor and outdoor applications
 Flange seal FG04/01 made from NBR on request, optional for indoor applications with special chemical requirements
 Ingress protection: IP68, IP69 with conduit sealing NVN3
 Temperature range with FG04: -40°C to +105°C
 Temperature range with FG04/01: -25°C to +70°C
 If the application temperature is above 70°C we rec. to use an additional internal conduit support sleeve (BES)

PMAGRIP threaded fittings, Conduit seal ring

Type GG & SG03

Type GG - Straight fitting with locking clamps, metric, IP65

	Order no. black	Thread	Fits to conduit size NW	Thread length (mm)	Outside \varnothing (mm)	Overall length (mm)	PU (pcs)
GG	BGG-M6356	M63 x 1.5	56	18.0	98.0	57.5	10



Ingress protection: IP50 without conduit seal ring (IP65 with conduit seal ring)

Content of delivery: Threaded part, fixation clamps (incl. 2 screws), conduit seal ring (optional for IP65)

Type SG03 - Conduit seal ring

	Order no.	Fits to conduit size NW	Inside \varnothing (mm)	Outside \varnothing (mm)	Thickness (mm)	PU (pcs)
SG03	SGO3-56.10	56	49.5	61.0	1.5	10
	SGO3-70.10	70	61.5	74.0	1.5	10
	SGO3-95.10	95	86.0	102.0	1.5	10
	SGO3-125.10	125	122.0	142.0	2.0	10



Used at the conduit end for sealing between the PMAGRIP flanges GG/GO/GI and PMA JUMBO conduits

Nitrile rubber NBR

Temperature range: -40°C to +105°C

Robotics & Automation

Robotic accessories

PMA® cable protection system for Automation has been developed to protect cables and wires in extreme automation and robotic installations.



Through different conduit types for various requirements, system supports and a range of special accessories, torsion can be avoided and the stresses upon the cables reduced to a minimum. Special conduit designs, supports and abrasion protection sleeves provide optimal protection along the entire length of all moving elements, enabling engineers to achieve a massive reduction in torsion forces.

Material

- Specially formulated polyamide 6
- Free from halogens, REACH + RoHS compliant
- Temperature range: -40 °C to +105 °C, short term to +160 °C

Characteristics

- Reduce wear to guidance and control elements
- Increase the degree of freedom of robotic installations
- Allow optimal layout of cables along moving elements
- Increase the lifetime of moving installations
- Allow quick and easy installation



Tube clamps, ball-joints, and half shell inserts

The range includes the BSH tube clamp, which serves as a fixation for functional inserts. The BTK ball joint sleeve offers additional flexibility and reduces mechanical stress on the conduit. BSSK ball joint half shells provide additional freedom of movement for corrugated conduits fixed in BSH automation tube clamps.



**Abrasion sleeves and other accessories**

Accessories include the BSS-OS screwless abrasion protection sleeve, providing abrasion protection for corrugated conduits in positions exposed to chafing. The BKS cable stars are tailored and designed-to-order.

Tube clamps

Type BSH

Type BSH - Tube clamp, one-piece

	Order no. black	Fits to conduit size NW	Width x Height x Depth (mm)	PU (pcs)
BSH	BSH-R23	23	63.3 x 60.5 x 26.0	30
	BSH-R29	29	70.3 x 67.0 x 26.0	30
	BSH-R36	36	81.6 x 77.5 x 26.0	20
	BSH-R48	48	95.8 x 91.0 x 26.0	20
	BSH-R56	56	112.6 x 109.8 x 30.0	20
	BSH-R70	70	148.0 x 142.5 x 39.5	20



In automation applications for guiding or fixing PMA conduits

Single-piece, robust construction

Easy installation, fixation via PT-screw

Combination with different inserts possible (e.g. BGN half-shells)

Material: High-grade, specially formulated polyamide 6

Half shell inserts, heavy duty swivel base

Type BGN & DKLK

Type BGN - Half shell inserts

	Order no. slide, black	Order no. strain relief, black	Conduit profile	Fits to conduit size NW	Outer diameter x height	Fits to	PU (pcs)
BGN	BGN-R29	–	–	29	47.0 x 34.0	BSH-R29	30
	BGN-R36	–	–	36	55.0 x 34.0	BSH-R36	20
	BGN-R48	–	–	48	66.5 x 34.0	BSH-R48	20
	BGN-R56	–	–	56	81.0 x 38.0	BSH-R56	10
	BGN-R70	–	–	70	103.5 x 45.0	BSH-R70	10
	–	BGN-S29GT	G+T	29	47.0 x 34.0	BSH-R29	30
	–	BGN-S36GT	G+T	36	55.0 x 34.0	BSH-R36	20
	–	BGN-S48T	T	48	66.5 x 34.0	BSH-R48	20
	–	BGN-S48G	G	48	66.5 x 34.0	BSH-R48	20
	–	BGN-S56G	G	56	81.0 x 38.0	BSH-R56	10
	–	BGN-S70G*	G	70	103.5 x 45.0	BLH-R70G	10

Half shell inserts for BSH and BLH tube clamp

Glide half-shells allow axial movement of the conduit, reducing stress

Strain relief half-shells fit the conduit against axial movement but allow rotation to prevent torsion

Material: High-grade, specially formulated polyamide 6

* BGN-R70G is only compatible with the BSH-R70

Type DKLK - Heavy duty swivel base

	Order no. black	Fits to	Dimensions			PU (pcs)
			Base (mm)	Swivel (Ømm)	Base fixation screws	
DKLK	DKLK-R56x56	BSH-R29 / -R36 / -R48	56 x 56	40	M6	1
	DKLK-R100x80	BSH-R56 / BSH-R70	100 x 80	72	M8	1

Sealed high quality bearing with minimal play

Allows rotation of cable pack supports

Easy installation of BSH tube clamp on bearing with center screw

Suitable for high mechanical forces in all assembly positions

Possible to block rotation with a cylinder pin (included in BSH tube clamp)

Material: Black anodized aluminum

Ball-joint sleeve, strain relief insert

Type BTK & BTR

Type BTK - Ball-joint sleeve

	Order no. glide, black	Order no. strain relief, black	Fits to conduit size NW	Trumpet diameter x height (mm)	Fits to	PU (pcs)
BTK	BTK-R36	BTK-R36 + BTR-R36GT	36	66.0 x 104.0	BSH-R48	1
	BTK-R48	BTK-R48 + BTR-R48GT	48	79.5 x 110.0	BSH-R56	1
	-	BTK-R70 + BTR-R70G + BGN-R56G/70G	56	121.0 x 138.5	BSH-R70	1
	BTK-R70	BTK-R70 + BTR-R70G	70	121.0 x 138.5	BSH-R70	1



* Reduction half-shell BGN-R56G/70G required to ensure usage for NW56 size conduit
 Ball joint sleeve allows fixation and mechanical guidance of PMA conduits
 Mostly used in combination with BSH tube clamps
 Suited for robotics dress pack installations
 Trumpet-shaped openings restricts conduit bending radius, increasing conduit lifetime
 Combination with strain relief insert (BTR) allows to block axial conduit movement/sliding
 Material: High-grade, specially formulated polyamide 6

Type BTR - Strain relief insert fits to BTK-R

	Order no. black	Fits to conduit size NW	Diameter x height (mm)	Fits to	PU (pcs)
BTR	BTR-R36GT	36	49.5 x 27.5	BTK-R36	1
	BTR-R48GT	48	61.5 x 31.5	BTK-R48	1
	BTR-R70G	70	91.0 x 24.5	BTK-R70	1

Strain relief insert for BTK-R
 Allows to block axial conduit movement/sliding
 Material: High-grade, specially formulated polyamide 6

Ball-joint termination, ball-joint half shells

Type BKE & BSSK

Type BKE - Ball-joint termination

	Order no. black	Fits to conduit size NW	Trumpet diameter x height (mm)	Fits to	PU (pcs)
BKE	BKE-R36GT	36	65.0 x 85.0	BSH-R36	1
	BKE-R48GT	48	78.5 x 90.0	BSH-R48	1
	BKE-R70G*	56	122.0 x 126.5	BSH-R70	1
	BGN-R56	70	122.0 x 126.5	BSH-R70	1



* Reduction half-shell BGN-R56G/70G required to ensure usage for NW56 size conduit

Ball joint termination allows fixation of a PMA conduit terminal

Mostly used in combination with BSH tube clamps

Suited for robotics dress pack installations, e.g. end piece of conduit at robot axis 6

Additional strain relief possible in combination with the BKS cable star

Material: High-grade, specially formulated polyamide 6

Type BSSK- Ball-joint half shells

	Order no. black	Fits to conduit size NW	Outer diameter x height (mm)	Fits to	PU (pcs)
BSSK	BSSK-23GT	23	42.2 x 27.0	BSH-R23	20
	BSSK-29GT	29	48.1 x 28.0	BSH-R29	20
	BSSK-36GT	36	55.0 x 30.0	BSH-R36	20
	BSSK-48GT	48	65.9 x 30.0	BSH-R48	20
	BSSK-56G	56	80.9 x 34.0	BSH-R56	20



Ball joint half shells allow fixation of PMA conduits

Mostly used in combination with BSH tube clamps

Ball joint design increases degree of freedom and reduces mechanical stress on conduit

Material: High-grade, specially formulated polyamide 6

Screwless abrasion protection sleeve, gliding bush

Type BSS-OS & BFE

Type BSS-OS - Screwless abrasion protection sleeve

	Order no. black	Fits to conduit size NW	Outer diameter x height (mm)	PU (pcs)
BSS-OS	BSS-36-OS	36	63.0 x 30.0	20
	BSS-48-OS	48	75.0 x 30.0	10
	BSS-70-OS	70	104.0 x 44.0	10



Increases lifetime of moving conduits in dynamic applications

No metal parts, no screws, tool-free installation

Easy (re-)positioning without full disassembly

Fits both conduit profiles - fine (T) and coarse (G)

Material: High-grade, specially formulated polyamide 6

Type BFE- Gliding bush

	Order no. black	Fits to conduit size NW	Diameter x height (mm)	PU (pcs)
BFE	BFE-R70	70	102.5 x 77.5	18



Mostly used in combination with SH tube clamp

Used as termination for springs in a pull-back/retraction system

Allows easy gliding of the conduit

Material: High-grade, specially formulated polyamide 6

Cable star, cable star holder, conduit marking ring

Type BKS, BGS & XMR

Type BKS - Cable star / Type BGS - Cable star holder

	Order no. black	Type	Fits to conduit size NW	Diameter x width (mm)	Fits to
BKS / BGS	BKS-R36/V*	Cable star	36	20 x 42	BKE-R36GT
	BKS-R48/V*	Cable star	48	20 x 53	BKE-R48GT
	BKS-R70/V*	Cable star	70	83 x 20	BKE-R70G BGS-R70
	BGS-R70	Cable star holder	70	—	BKS-R70/V* BSH-R70



* BKS cable star is a non-standard product and will be tailor made to customer specific needs
 BKS cable star is used for arrangement and slight strain relief of cables & tubes inside a PMA conduit
 Fixation via dedicated half shells (BGS-R70), or via BKE
 Customer specific design with minimum order quantity

Type XMR - Conduit marking ring

	Order no. red	Order no. yellow	Order no. white	Fits to conduit size NW	Outer diameter (mm)	PU (pcs)
XMR	XMR-NW48R	—	—	48	53.5	100
	XMR-NW70R	—	—	70	78.0	100
	—	XMR-NW48Y	—	48	53.5	100
	—	XMR-NW70Y	—	70	78.0	100
	—	—	XMR-NW48W	48	53.5	100
	—	—	XMR-NW70W	70	78.0	100

Marking for PMA conduits
 Extremely shock resistant
 Cut the ring to assemble to conduit corrugations



PMA® CobotProtect™

Accessories for collaborative robots

PMA® CobotProtect™ cable protection solution for collaborative robots (cobots) is designed to safely work directly and continuously alongside humans and to be very easy to install and use.

The PMA CobotProtect™ has been pre-engineered as a complete kit including XTPC multilayer conduit, BCCH conduit holder and BCSR strain relief ring. The highly flexible PMA® CobotProtect™ CobotKit with Velcro strap (included) and Ty-Rap® cable ties (optional) for fixation, incorporates features which ensures compatibility with most widely used collaborative robot on the market.





PMA CobotProtect™ kit / CobotKit+

Type KIT-CCH

Type KIT-CCH - PMA CobotProtect™ kit

	Order no. black	Fits to conduit size NW	Conduit part no. XTPC	Conduit holder part no. BCCH	Strain relief part no. BCSR	Kit contents		PU (pcs)
						Strain relief holder part no. BFH-0	PU (pcs)	
KIT-CCH	KIT-CCH-17	17	XTPCG-17BB.3	BCCH-17	BCSR-17	BFH-23-0	1	
	KIT-CCH-23	23	XTPCG-23BB.3	BCCH-23	BCSR-23	BFH-29-0	1	
	KIT-CCH-29	29	XTPCG-29BB.3	BCCH-29	BCSR-29	BFH-36-0	1	



PMA CobotProtect kit as easy-to-use dress pack solution for collaborative robots

Kit includes conduit holders (x2), strain relief ring (incl. holder) & 3 metres of XTPC multilayer conduit with wear indication function

Flexible holder base ensures compatibility with most cobot models of widely used brands (e.g. ABB™, UR™, Omron™, etc.)

Installation with Velcro® for cylindrical arm diameter 56mm - 120mm

Type KIT-CCH+ - PMA CobotProtect™ CobotKit+

	Order no. black	Fits to conduit size NW	Conduit part no. XTPC	Conduit holder part no. BCCH	Strain relief part no. BCSR	Kit contents		PU (pcs)
						Strain relief holder part no. BFH-0	PU (pcs)	
KIT-CCH+	KIT-CCH-17/01	17	XTPCG-17BB.4	BCCH-17/01	BCSR-17	BFH-23-0	1	
	KIT-CCH-23/01	23	XTPCG-23BB.4	BCCH-23/01	BCSR-23	BFH-29-0	1	
	KIT-CCH-29/01	29	XTPCG-29BB.4	BCCH-29/01	BCSR-29	BFH-36-0	1	



PMA CobotProtect kit as easy-to-use dress pack solution for collaborative robots

Kit includes conduit holders (x4) incl. 700mm Velcro®, strain relief ring (incl. holder) & 4 mteres of XTPC multilayer conduit with wear indication function

Flexible holder base ensures compatibility with most cobot models of widely used brands (e.g. ABB™, UR™, Omron™, etc.)

Installation with Velcro® for cylindrical arm diameter 56mm - 120mm

PMA CobotProtect™ conduit holder, strain relief ring, CobotClamp

Type BCCH, BCSR, EOA

Type BCCH - PMA CobotProtect™ conduit holder

	Order no. black	Fits to conduit size NW	Velcro® length (mm)	For robotic arms dia. (mm)		PU (pcs)
				Min	Max	
BCCH	BCCH-17	17	500	56.0	370.0	1
	BCCH-23	23	500	56.0	370.0	1
	BCCH-29	29	500	56.0	370.0	1
	BCCH-17/01	17	700	56.0	370.0	1
	BCCH-23/01	23	700	56.0	370.0	1
	BCCH-29/01	29	700	56.0	370.0	1



For fixing PMA conduits along a variety of cylindrical & elliptical shaped collaborative robot (cobot) arms
Flexible design of swivel base ensures compatibility with cobot models of most widely used brands (e.g. ABB™, UR™, Omron™, etc.)
Fastening along cobot arm with Velcro® and/or cables ties
360° swiveling of BFH-0 clip gives flexibility and reduces mechanical stress induced by cobot movements
10° tilt angle of FH-clip in any direction

Type BCSR - PMA CobotProtect™ strain relief ring

	Order no. black	Fits to conduit size NW	Fits to	Strain relief teeth (Qty)	PU (pcs)
BCSR	BCSR-17	17	BFH-23-0 BGPM-1X23	4	10
	BCSR-23	23	BFH-29-0 BGPM-1X29	6	10
	BCSR-29	29	BFH-36-0 BGPM-1X36	6	10

In automation applications to relieve strain and to fixate individual cables/tubes to a conduit terminal
Fastening of individual cables/tubes to a conduit terminal via cable ties (not included)
To be used freely rotating around conduit axis, or in "lock" mode using a BFH-0 or BGPM-1X
Easy to install and to exchange

Type EOA - PMA CobotProtect™ CobotClamp

	Order no.	Fits to conduit size NW	Compatible with	PU (pcs)
EOA-01	EOA-01	17	BFH-17-0	1
		23	BFH-23-0	
		29	BFH-29-0	
		36	BFH-36-0	

For collaborative robots (cobots) to fixate PMA CobotProtect™ – CobotKit & CobotKit+ at cobot end of arm (6th axis)
Allows mounting of PMACLIP – BFH-0 to fixate PMA conduit or PMA CobotProtect™ – Strain Relief
Ensures fixed spacing at 6th axis between dress pack and end- of-arm tool
Easy to install and assemble



PMA Divisible System

General technical details

One-piece Divisible System. The ideal solution for repairs, retrofit and pre-loomed applications. Equally all PMA conduits are compatible.

PMA offers a divisible system based upon PMA standard nominal widths.

This allows free combination of the PACOF and PPCOF divisible conduits with PMAFIX Pro, PMAFIX and PMA Smart Line fittings. Using the PMA Divisible System Fittings repairs can be easily made to existing installations without disconnecting cables. Equally all PMA conduits – also slit – are compatible with the fittings of the divisible system.

Material

- Conduits made from spec. formulated PA 6 and Polypropylene
- Fittings made from specially formulated polyamide 6
- Colour: Black
- Free from halogens, REACH + RoHS compliant
- Temperature range:
Conduits: -40°C to +160°C
Fittings: -40°C to min. +105°C

Characteristics

- Fast installation
- Conduit can be installed in fitting prior to closing the fitting
- High impact resistance
- High conduit pull-out strength
- Fits conduit profiles – fine (T) and coarse (G)





Divisible conduits

Type PACOF & PPCOF

Type PACOF - Flexible, divisible

	Order no. black	Fits to conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
PACOF	PACOF-07B.50	07	5.6	10.0	30	50
	PACOF-10B.50	10	8.5	12.8	33	50
	PACOF-12B.50	12	11.0	15.6	35	50
	PACOF-17B.50	17	15.5	21.1	45	50
	PACOF-23B.50	23	22.1	28.4	70	50
	PACOF-29B.50	29	27.2	34.5	120	50
	PACOF-36B.30	36	32.0	42.4	145	30
	PACOF-48B.30	48	43.9	54.1	150	30
	PACOF-70B.10	70	62.0	79.0	190	10

PACOF Index

min.	max.
Ductility	Can be opened and closed again in longitudinal direction any time
Fatigue reversed bending	Good reversed bending resistance
Compression resistance	Free from halogens, REACH + RoHS compliant
Low temperature performance	Temperature range: -40°C to +105°C, short-term to +160°C
Weathering resistance	IP50

Type PPCOF - Flexible, divisible

	Order no. black	Fits to conduit size NW	Inside Ø (mm)	Outside Ø (mm)	Stat. radius (mm)	PU (m)
PPCOF	PPCOF-07B.50	07	5.6	10.0	25	50
	PPCOF-10B.50	10	8.5	12.8	28	50
	PPCOF-12B.50	12	11.0	15.6	35	50
	PPCOF-17B.50	17	15.1	21.1	45	50
	PPCOF-23B.50	23	22.1	28.4	60	50
	PPCOF-29B.50	29	26.6	34.5	100	50
	PPCOF-36B.30	36	31.8	42.4	120	30
	PPCOF-48B.30	48	43.9	54.1	140	30
	PPCOF-70B.10	70	60.5	78.0	200	10

PPCOF Index

min.	max.
Ductility	Can be opened and closed again in longitudinal direction any time
Fatigue reversed bending	Good reversed bending resistance
Compression resistance	Temperature range: -20°C to +105°C, short-term to +150°C
Low temperature performance	IP50
Weathering resistance	

Divisible fittings, lock nuts

Type LNO & LN

Type LNO - Divisible one-piece straight fitting, metric thread

	Order no. black	Thread metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
LNO	BLNO-M160	M16 x 1.5	10	13.0	37.5	50
	BLNO-M162	M16 x 1.5	12	13.0	39.5	50
	BLNO-M202	M20 x 1.5	12	13.0	39.5	50
	BLNO-M207	M20 x 1.5	17	13.0	43.5	50
	BLNO-M257	M25 x 1.5	17	14.0	44.5	50
	BLNO-M253	M25 x 1.5	23	14.0	52.5	30
	BLNO-M323	M32 x 1.5	23	17.0	56.0	30
	BLNO-M329	M32 x 1.5	29	17.0	61.0	20
	BLNO-M409	M40 x 1.5	29	21.0	65.0	20
	BLNO-M406	M40 x 1.5	36	22.0	74.5	20
	BLNO-M508	M50 x 1.5	48	22.0	80.5	10



Divisible one-piece straight fitting, metric thread

Compatible with PMA standard, slit and divisible conduits with standard nominal widths
In industries, plant construction, machine building as well as in house and electrical installations
For retrofit installation or repair
IP54

Special: Push-in installation of conduit into pre-installed fitting also possible

Type LN - Divisible lock nut, metric thread

	Order no. black	Thread metric	Fits with divisible fitting	Wrench size (mm)	PU (pcs)
LN	BLN-M16	M16 x 1.5	BLNO-M160	22.0	50
	BLN-M20	M20 x 1.5	BLNO-M202	26.0	50
	BLN-M25	M25 x 1.5	BLNO-M257	32.0	10
	BLN-M32	M32 x 1.5	BLNO-M323	41.0	10
	BLN-M40	M40 x 1.5	BLNO-M409	50.0	10
	BLN-M50	M50 x 1.5	BLNO-M508	60.0	10

Compatible with divisible PMA fittings, type BLNO

For retrofit installation or repair

Temperature range: -40°C to +100°C, short-term: +130°C

T, Y pieces, splice fittings

Type LTO & LYO

Type LTO - Divisible T piece, one-piece fitting

	Order no. black, IP40	3x conduit sizes		Width (mm)	Height (mm)	PU (pcs)
		NW	NW			
LTO, patent	BLTO-070707	07	45.2	31.1	10	
	BLTO-101010	10	45.2	31.1	10	
	BLTO-121212	12	49.1	34.8	10	
	BLTO-171717	17	56.6	41.0	10	
	BLTO-232323	23	64.5	48.6	10	
	BLTO-292929	29	72.0	55.3	10	

Compatible with PMA standard, slit and divisible conduits with standard nominal widths

In industries, plant construction, machine building as

well as in house and electrical installations

For retrofit installation or repair

IP40

Type LYO - Divisible Y piece, one-piece fitting

	Order no. black, IP40	1x conduit size		2x conduit sizes		Width (mm)	Height (mm)	PU (pcs)
		NW	NW	NW	NW			
LYO	BLYO-100707	10	07	54.6	37.1	10		
	BLYO-121010	12	10	54.9	39.8	10		
	BLYO-171212	17	12	63.6	47.5	10		
	BLYO-231717	23	17	76.5	60.0	10		
	BLYO-292917	29	17	100.6	76.0	10		

Compatible with PMA standard, slit and divisible conduits with standard nominal widths

In industries, plant construction, machine building as well as in house and electrical installations

For retrofit installation or repair

IP40

Conduit can be installed in fitting prior to closing the fitting

T, Y pieces, splice fittings

Type LSGO

Type LSGO - Divisible one-piece fitting

	Order no. black, IP40	Fits to conduit size NW	Overall length (mm)	Outer Ø (mm)	PU (pcs)
LSGO	BLSGO-1010	10	36	16	10
	BLSGO-1212	12	36	21	10
	BLSGO-1717	17	38	26	10
	BLSGO-2323	23	39	33	10



Compatible with PMA standard, slit and divisible conduits with standard nominal widths
 In industries, plant construction, machine building as well as in house and electrical installations
 For retrofit installation or repair
 Polyamide (Nylon) 66
 IP40 rated

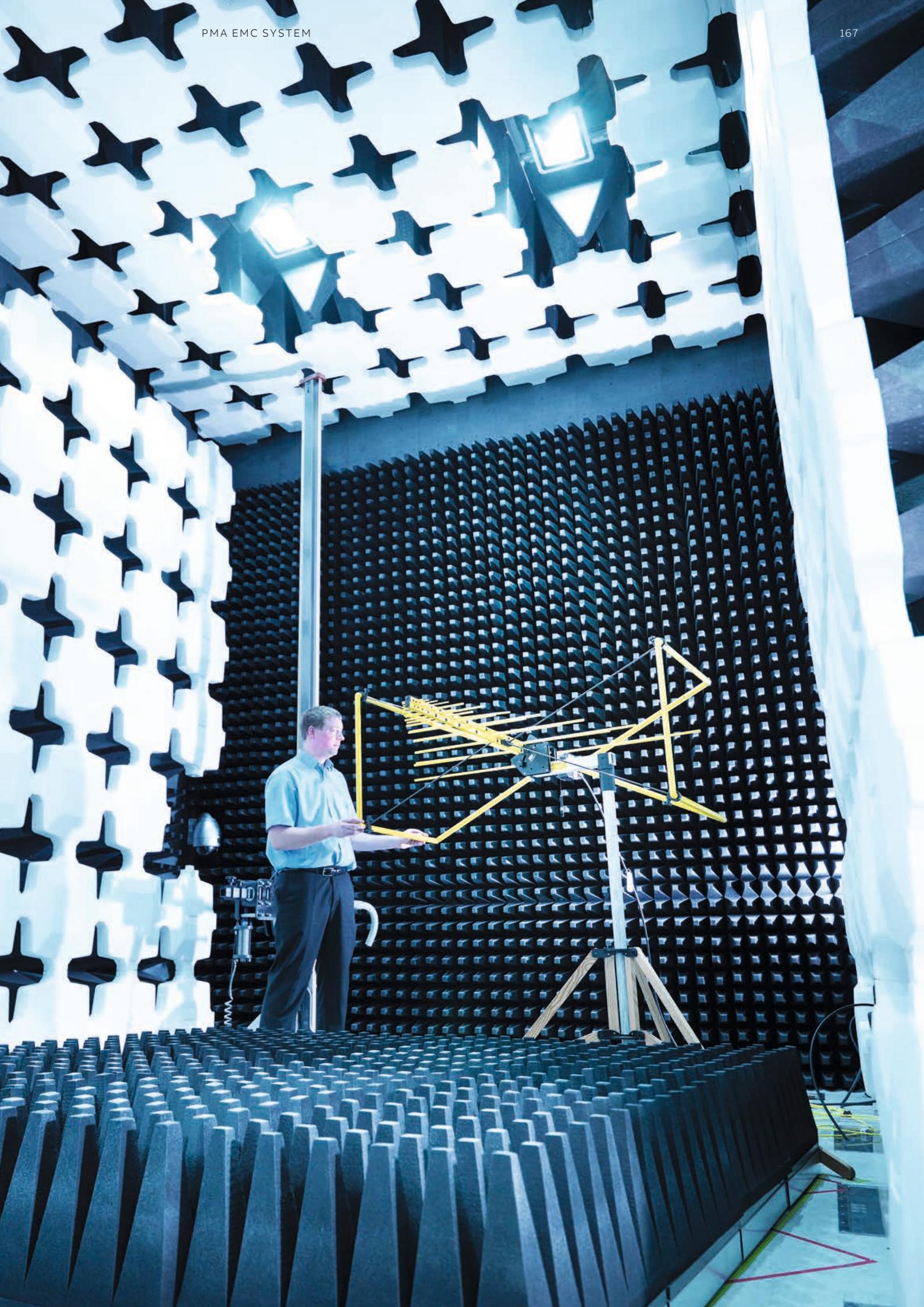
PMA EMC System

High-grade shielding protection

The PMA EMC System provides an additional function within the PMA Cable Protection System, offering high quality shielding against electro-magnetic signals over and above the mechanical cable protection.

The EMC product line includes screening braids (tin-plated copper and hybrid braids) and a range of patented termination fittings (metallic components in nickel plated aluminium or nickel plated brass). The EMC system can be combined with any type of PMA conduit to provide the mechanical protection.





PMA EMC System screening braid

Type F.CK, F.CU, F.HY

Type F.CK - PMA EMC System screening braid

	Order no.	Braid specification	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (pcs)
F.CK	F.CK.03	16 x 5 x 0.13		3.5	100
	F.CK.04	16 x 7 x 0.13	3.0	5.0	100
	F.CK.06	24 x 7 x 0.13	4.5	7.0	100
	F.CK.10	24 x 11 x 0.13	7.0	12.0	100
	F.CK.12.5	24 x 14 x 0.13	11.0	13.0	100
	F.CK.15	24 x 14 x 0.15	13.0	18.0	100
	F.CK.20	48 x 10 x 0.15	16.0	35.0	50
	F.CK.25	48 x 13 x 0.15	22.0	40.0	50
	F.CK.30	48 x 20 x 0.15	27.0	44.0	50
	F.CK.35	48 x 20 x 0.15	35.0	50.0	50
	F.CK.50	36 x 14 x 0.30	40.0	60.0	25

Typical screening values: 65 – 75 dB at 100 MHz

Surface coverage: >90%

Temperature range: -65°C to +150°C

Type F.CU - PMA EMC System screening braid

	Order no.	Braid specification	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (pcs)
F.CU	F.CU.01	16 x 4 x 0.10	1.0	3.0	100
	F.CU.04	24 x 7 x 0.10	3.0	8.0	100
	F.CU.10	24 x 11 x 0.10	4.0	10.0	100
	F.CU.12	36 x 11 x 0.10	6.0	15.0	100
	F.CU.20	36 x 8 x 0.15	12.0	25.0	100
	F.CU.40	48 x 7 x 0.25	24.0	49.0	50
	F.CU.50	48 x 9 x 0.30	45.0	55.0	25

Typical screening values: 60 – 70 dB at 100 MHz

Surface coverage: >65%

Temperature range: -65°C to +150°C

Type F.HY - PMA EMC Hybrid screening braid, very flexible, lightweight

	Order no.	Braid specification	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (pcs)
F.HY	F.HY.10*	48 x 8 x 0.1	8.0	13.0	50
	F.HY.12*	56 x 8 x 0.1	10.0	15.0	50
	F.HY.15	68 x 10 x 0.1	12.0	18.0	50
	F.HY.20	72 x 10 x 0.1	19.0	27.0	50
	F.HY.35	120 x 10 x 0.1	30.0	40.0	50
	F.HY.40	120 x 16 x 0.1	30.0	50.0	50

Typical screening values: 45 - 67 dB at 100 MHz

Surface coverage: >95%

Temperature range: -40°C to +150°C

* with tube former

PMA EMC FIX fittings

Type BVEMV, BVEMV-SW

Type BVEMV / PMA EMC FIX - Straight fitting, metric metal thread, long and short

	Order no. black, IP68	Thread size Metric	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Fits to F.HY	Thread length (mm)	Overall length (mm)	PU (pcs)
BVEMV	BVEMV-M120-5	M12 x 1.5	10	10	10	-	5.0	65.0	1
	BVEMV-M120-10	M12 x 1.5	10	10	10	-	10.0	70.0	1
	BVEMV-M162-5	M16 x 1.5	12	12.5	12	12	5.0	70.0	1
	BVEMV-M162-10	M16 x 1.5	12	12.5	12	12	10.0	75.0	1
	BVEMV-M207-6	M20 x 1.5	17	15	20	15	6.0	80.0	1
	BVEMV-M207-10	M20 x 1.5	17	15	20	15	10.0	84.0	1
	BVEMV-M253-7	M25 x 1.5	23	20/(25)	20	20	7.0	86.0	1
	BVEMV-M253-11	M25 x 1.5	23	20/(25)	20	20	11.0	90.0	1
	BVEMV-M329-8	M32 x 1.5	29	25/(30)	20/(40)	35	8.0	90.0	1
	BVEMV-M329-13	M32 x 1.5	29	25/(30)	20/(40)	35	13.0	95.0	1
	BVEMV-M409-13	M40 x 1.5	29	25/(30)	20/(40)	35	13.0	97.0	1
	BVEMV-M406-8	M40 x 1.5	36	30/(35)	40	40	8.0	100.0	1
	BVEMV-M406-13	M40 x 1.5	36	30/(35)	40	40	13.0	105.0	1
	BVEMV-M508-9	M50 x 1.5	48	35	40	40	9.0	105.0	1
	BVEMV-M508-14	M50 x 1.5	48	35	40	40	14.0	110.0	1
	BVEMV-M638-10	M63 x 1.5	48	35	40	40	10.0	106.0	1
	BVEMV-M638-14	M63 x 1.5	48	35	40	40	14.0	110.0	1

Very high impact resistance

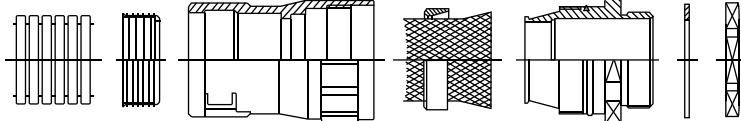
Vibration-proof connection to PMAFLEX conduits

High shielding values and low coupling resistance, low transfer impedances

Can be used with either PMA screening braids or shielded cables

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)



Type BVEMV-SW / PMA EMC FIX - Straight fitting, metric metal thread, positionable

	Order no. black, IP68	Thread size Metric	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Fits to F.HY	Thread length (mm)	Overall length (mm)	PU (pcs)
BVEMV-SW	BVEMV-M207SW-10	M20 x 1.5	17	15	20	15	10.0	107.0	1
	BVEMV-M329SW-13	M32 x 1.5	29	25/(30)	20/(40)	35	13.0	124.0	1
	BVEMV-M406SW-13	M40 x 1.5	36	30/(35)	40	40	13.0	139.0	1
	BVEMV-M638SW-14	M63 x 1.5	48	35	40	40	14.0	146.5	1

Very high impact resistance

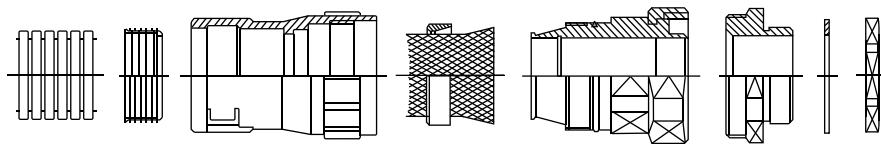
Vibration-proof connection to PMAFLEX conduits

High shielding values and low coupling resistance, low transfer impedances

Can be used with either PMA screening braids or shielded cables

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)



PMA EMC System fittings with female thread

Type BVIMV

Type VIMV / PMA EMC System - Straight fitting, female UN thread for MIL-C5015

	Order no. black, IP68	Thread size UN	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Fits to F.HY	Thread length (mm)	Overall length (mm)	PU (pcs)
VIMV	BVIMV-U182	3/4" - 20	12	12.5	12	12	10.0	75.0	1
	BVIMV-U212	7/8" - 20	12	12.5	12	12	10.0	75.0	1
	BVIMV-U247	1" - 20	17	15	20	15	10.0	85.0	1
	BVIMV-U353	1 7/16" - 18	23	20/(25)	20	20	10.0	92.5	1
	BVIMV-U357	1 7/16" - 18	17	15	20	15	10.0	87.0	1
	BVIMV-U433	1 3/4" - 18	23	20/(25)	20	20	10.0	95.0	1
	BVIMV-U569	2 1/4" - 16	29	25/(30)	20/(40)	35	10.0	95.0	1
	BVIMV-U566	2 1/4" - 16	36	30/(35)	40	40	10.0	110.0	1
	BVIMV-U568	2 1/4" - 16	48	35	40	40	10.0	110.0	1

Very high impact resistance

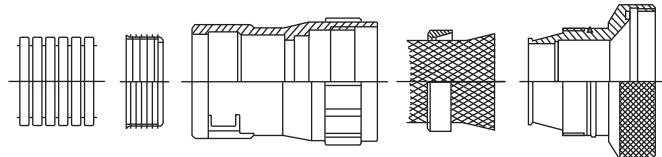
Vibration-proof connection to PMAFLEX conduits

High shielding values and low coupling resistance, low transfer impedances

Can be used with either PMA screening braids or shielded cables

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)



Type VIMV / PMA EMC System - Straight fitting, female UNEF thread for MIL-C26482G

	Order no. black	Thread size UNEFT	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Fits to F.HY	Thread length (mm)	Overall length (mm)	PU (pcs)
VIMV	BVIMV-U212-14	7/8" - 20	12	12.5	12	12	14.0	75.0	1
	BVIMV-U247-14	1" - 20	17	15	20	15	14.0	90.0	1
	BVIMV-U267-14	1 1/16" - 18	17	15	20	15	14.0	90.0	1
	BVIMV-U293-14	1 3/16" - 18	23	20	20	20	14.0	90.0	1
	BVIMV-U303-14	1 1/4" - 18	23	20	20	20	14.0	90.0	1
	BVIMV-U323-14	1 7/16" - 18	23	20	20	20	14.0	90.0	1
	BVIMV-U359-14	1 7/16" - 18	29	20	20	35	14.0	95.0	1

Very high impact resistance

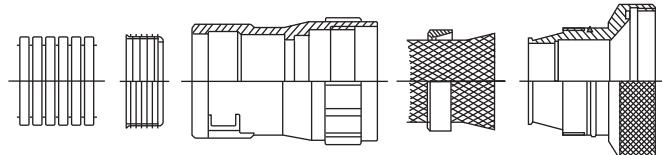
Vibration-proof connection to PMAFLEX conduits

High shielding values and low coupling resistance, low transfer impedances

Can be used with either PMA screening braids or shielded cables

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)



PMA EMC System adapter

Type HFAK-M

Type HFAK-M - PMA EMC System adapter with conical braid clamp, metric thread

Order no. black, IP68	Thread size metric		Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Fits to F.HY	ID min.	Thread length (mm)	Overall length (mm)	PU (pcs)	
	1	2									
HFAK-M	HFAK-M20/M20-10	M20 x 1.5	M20 x 1.5	12	15	12/20	12/15	9.6	10.0	34.0	1
	HFAK-M25/M25-11	M25 x 1.5	M25 x 1.5	17	20	20	15/20	14.6	11.0	36.5	1
	HFAK-M32/M32-13	M32 x 1.5	M32 x 1.5	23	20/25	40	20	20.3	13.0	42.5	1
	HFAK-M40/M40-13	M40 x 1.5	M40 x 1.5	29	25/30	40	35/40	28.1	13.0	47.0	1
	HFAK-M50/M50-14	M50 x 1.5	M50 x 1.5	36	30/50	40	40	37.3	14.0	48.5	1
	HFAK-M63/M63-14	M63 x 1.5	M63 x 1.5	48	35/50	-	40	47.0	14.0	49.0	1

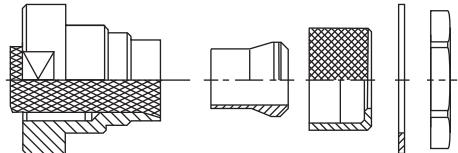


Low impedance braid connection

High system shielding attenuation in combination with F.CU, F.CK and F.HY

Disturbance signals such as electrical signals and magnetic fields will be discharged to the housing/casing

Allows complete pre-assembly of the cable loom



PMA EMCFIX Pro EMC System fittings with strain relief IP69

Type NKEZ-M

Type NKEZ-M / PMA EMCFIX Pro EMC System - Straight fitting with strain relief, metric metal thread (Pflitsch system UNI HF DICHT)

	Order no. black, IP68 + IP69	Thread size metric	Fits to conduit size NW	Clamping range (mm)	Screen Ø (mm)	Ø max. (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
	NKEZ-M160/P2	M16 x 1.5	10	5.0 – 8.0	2.5 – 6.0	25.0	6.0	54.5	1
	NKEZ-M160/P3	M16 x 1.5	10	6.5 – 9.5	2.5 – 6.0	25.0	6.0	54.5	1
	NKEZ-M202/P1	M20 x 1.5	12	4.0 – 6.5	2.5 – 6.5	29.0	6.5	61.0	1
	NKEZ-M202/P3	M20 x 1.5	12	6.5 – 9.5	3.5 – 6.5	29.0	6.5	61.5	1
	NKEZ-M207/P3	M20 x 1.5	17	6.5 – 9.5	3.5 – 6.5	35.5	6.5	66.0	1
	NKEZ-M207/P5	M20 x 1.5	17	9.0 – 13.0	6.5 – 10.5	35.5	6.5	66.0	1
	NKEZ-M257/P3	M25 x 1.5	17	6.5 – 9.5	3.0 – 8.0	35.5	7.5	67.5	1
	NKEZ-M257/P5	M25 x 1.5	17	9.0 – 13.0	6.5 – 10.5	35.5	7.5	67.5	1
	NKEZ-M406/P4	M40 x 1.5	36	20.0 – 25.0	18.5 – 25.5	60.5	8.0	99.0	1

Very high impact resistance

Vibration-proof connection to PMAFLEX conduits

Can be used with either PMA screening braids or shielded cables

Integrated strain relief

High conduit pull-out strength

Very good chemical properties

Fits both conduit profiles - fine (T) and coarse (G)

Type NKEZ-M / PMA EMCFIX Pro EMC System - Straight fitting with strain relief, metric metal thread (PERFECT sealing ring made from NBR)

	Order no. black, IP68 + IP69	Thread size metric	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Clamping range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
	NKEZ-M160-10	M16 x 1.5	10	06	06/10	5.0 – 9.0	10.0	63.0	1
	NKEZ-M162-10	M16 x 1.5	12	10/12.5/15	10/12	5.0 – 9.0	10.0	68.5	1
	NKEZ-M202-10	M20 x 1.5	12	10/12.5/15	10/12	9.0 – 13.0	10.0	70.5	1
	NKEZ-M207-10	M20 x 1.5	17	12.5/15	12/20	9.0 – 13.0	10.0	76.0	1
	NKEZ-M253-11	M25 x 1.5	23	15/20/25	20	11.0 – 16.0	11.0	80.0	1
	NKEZ-M257-11	M25 x 1.5	17	12.5/15	12/20	11.0 – 16.0	11.0	78.5	1
	NKEZ-M323-13	M32 x 1.5	23	15/20/25	20	14.0 – 21.0	13.0	85.5	1
	NKEZ-M329-13	M32 x 1.5	29	20/25/30	20	14.0 – 21.0	13.0	90.0	1
	NKEZ-M406-13	M40 x 1.5	36	25/30/35	40	19.0 – 27.0	13.0	98.5	1
	NKEZ-M409-13	M40 x 1.5	29	20/25/30	20	19.0 – 27.0	13.0	93.0	1
	NKEZ-M506-14	M50 x 1.5	36	25/30/35	40	24.0 – 35.0	14.0	106.5	1
	NKEZ-M508-14	M50 x 1.5	48	30/35	40	24.0 – 35.0	14.0	112.5	1
	NKEZ-M638-14	M63 x 1.5	48	35	40	32.0 – 42.0	14.0	113.5	1

Very high impact resistance

Vibration-proof connection to PMAFLEX conduits

Can be used with either PMA screening braids or shielded cables

Integrated strain relief

High conduit pull-out strength

Very good chemical properties

Fits both conduit profiles - fine (T) and coarse (G)

PMA EMC FIX EMC System fittings with strain relief IP68

Type NVEZ-M

Type NVEZ-M / PMA EMC FIX EMC System - Straight fitting with strain relief, metric metal thread (Pflitsch system UNI HF DICHT)

	Order no. black, IP68	Thread size metric	Fits to conduit size NW	Clamping range (mm)	Screen Ø (mm)	Ø max. (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
NVEZ-M	NVEZ-M160V/P2	M16 x 1.5	10	5.0 – 8.0	2.5 – 6.0	23.0	6.0	49.5	1
	NVEZ-M160V/P3	M16 x 1.5	10	6.5 – 9.5	2.5 – 6.0	23.0	6.0	49.5	1
	NVEZ-M160V/P3/1	M16 x 1.5	10	6.5 – 9.5	3.5 – 8.5	26.5	6.0	60.0	1
	NVEZ-M202V/P1	M20 x 1.5	12	4.0 – 6.5	2.5 – 6.5	26.5	6.5	54.0	1
	NVEZ-M202V/P3	M20 x 1.5	12	6.5 – 9.5	3.5 – 6.5	28.5	6.5	54.0	1
	NVEZ-M202V/P5	M20 x 1.5	12	9.0 – 13.0	6.5 – 10.5	26.0	6.5	54.0	1
	NVEZ-M207V/P3	M20 x 1.5	17	6.5 – 9.5	3.5 – 6.5	31.0	6.5	60.0	1
	NVEZ-M207V/P5	M20 x 1.5	17	9.0 – 13.0	6.5 – 10.5	31.0	6.5	60.0	1
	NVEZ-M257V/P3	M25 x 1.5	17	6.5 – 9.5	3.0 – 8.0	31.0	7.5	61.5	1
	NVEZ-M257V/P5	M25 x 1.5	17	9.0 – 13.0	6.5 – 10.5	31.0	7.5	61.5	1
	NVEZ-M406V/P4	M40 x 1.5	36	20.0 – 25.0	18.5 – 25.5	60.5	8.0	98.5	1

Very high impact resistance

Vibration-proof connection to PMAFLEX conduits

To be used with shielded cables

Integrated strain relief

High conduit pull-out strength

Very good chemical properties

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)

Type NVEZ-M / PMA EMC FIX EMC System - Straight fitting with strain relief, metric metal thread (PERFECT sealing ring made from NBR)

	Order no. black, IP68	Thread size metric	Fits to conduit size NW	Fits to F.CK	Fits to F.CU	Clamping range (mm)	Thread length (mm)	Overall length (mm)	PU (pcs)
NVEZ-M	NVEZ-M120V-10	M12 x 1.5	10	06	12	3.0 – 6.0	10.0	53.5	1
	NVEZ-M160V-10	M16 x 1.5	10	06	20	5.0 – 9.0	10.0	60.0	1
	NVEZ-M162V-10	M16 x 1.5	12	10/12.5/15	20	5.0 – 9.0	10.0	61.5	1
	NVEZ-M202V-10	M20 x 1.5	12	10/12.5/15	20	9.0 – 13.0	10.0	64.0	1
	NVEZ-M207V-10	M20 x 1.5	17	12.5/15	20	9.0 – 13.0	10.0	70.0	1
	NVEZ-M253V-11	M25 x 1.5	23	15/20/25	20	11.0 – 16.0	11.0	78.5	1
	NVEZ-M257V-11	M25 x 1.5	17	12.5/15	20	11.0 – 16.0	11.0	72.5	1
	NVEZ-M323V-13	M32 x 1.5	23	15/20/25	20	14.0 – 21.0	13.0	83.0	1
	NVEZ-M329V-13	M32 x 1.5	29	20/25/30	20	14.0 – 21.0	13.0	80.0	1
	NVEZ-M406V-13	M40 x 1.5	36	25/30/35	20	19.0 – 27.0	13.0	97.0	1
	NVEZ-M409V-13	M40 x 1.5	29	20/25/30	20	19.0 – 27.0	13.0	83.0	1
	NVEZ-M506V-14	M50 x 1.5	36	25/30/35	20	24.0 – 35.0	14.0	106.0	1
	NVEZ-M508V-14	M50 x 1.5	48	30/35	20	24.0 – 35.0	14.0	105.0	1
	NVEZ-M638V-14	M63 x 1.5	48	358	20	32.0 – 42.0	14.0	106.0	1

Very high impact resistance

Vibration-proof connection to PMAFLEX conduits

To be used with shielded cables

Integrated strain relief

High conduit pull-out strength

Very good chemical properties

Self-extinguishing, free from halogens and cadmium

Fits both conduit profiles - fine (T) and coarse (G)

Food & Beverage

Cable protection solutions

Flexibility and cleanability for the Food and Beverage industry.

The IP69-rated PMA cable protection range for the food and beverage industry offers a choice of two high specification fittings. The JKNH nylon fitting is made from FDA-compliant material, and offers both excellent chemical resistance and quick installation, without the need for tools. The JENQ single-piece fitting is made from 316L stainless steel and is ideally suited to areas with the highest hygienic demands.

Material

- Stainless Steel 316L material (Type JENQ)
- FDA 21 CFR and EU 10/2011 compliant PA6 material (Type JKNH & JKBH)

Features

- IP69 rating according to EN60529
- UL Recognition according to UL1696
- NSF169 and NSF14159-1 certification
- High resistance to cleaning agents and chemicals
- Time savings, thanks to easy cleaning
- Outstanding flexibility combined with tight bending radii
- Efficient, space-saving assembly





Stainless steel, liquid tight fitting IP69

Type JENQ

Type JENQ - Stainless steel, liquid tight fitting for overextruded conduit, IP69

	Order no.	Thread size metric	Fits to conduit size NW	Thread length (mm)	PU (pcs)
JENQ	JENQ-M162-10	M16 x 1.5	12	10.0	1
	JENQ-M207-10	M20 x 1.5	17	10.0	1
	JENQ-M253-11	M25 x 1.5	23	11.0	1
	JENQ-M329-13	M32 x 1.5	29	13.0	1
	JENQ-M406-13	M40 x 1.5	36	13.0	1
	JENQ-M508-14	M50 x 1.5	48	14.0	1

Approvals



ECOLAB®

- IP 69 rating
- For termination of overextruded conduits
- For high hygienic requirements
- Suitable for food & beverage industry
- Unique single piece design Stainless Steel 316L material
- Seals made from FDA compliant material
- Easy cleaning
- High thread and system connection strengths
- High resistance to chemicals and cleaning agents
- Easy assembly

Metric fittings, polyamide thread IP69

Type JKNH & JKBH

Type JKNH - Straight fitting, IP69, metric polyamide thread

	Order no. blue	Thread size metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
JKNH	JKNH-M162	M16 x 1.5	12	11.0	47.5	10
	JKNH-M202	M20 x 1.5	12	11.0	47.5	10
	JKNH-M207	M20 x 1.5	17	11.0	53.5	10
	JKNH-M257	M25 x 1.5	17	12.0	54.5	10
	JKNH-M253	M25 x 1.5	23	12.0	57.0	10
	JKNH-M323	M32 x 1.5	23	15.0	60.5	10
	JKNH-M329	M32 x 1.5	29	15.0	65.5	10
	JKNH-M409	M40 x 1.5	29	19.0	69.5	10
	JKNH-M406	M40 x 1.5	36	19.0	75.0	10
	JKNH-M506	M50 x 1.5	36	19.0	75.0	10
Approvals	JKNH-M508	M50 x 1.5	48	19.0	81.0	10
	JKNH-M638	M63 x 1.5	48	19.0	81.0	10



Very high impact resistance – easy push-in assembly
Corrosion-free
Excellent conduit pull-out strength
IP69 system protection for indoor splash zone areas

Type JKBH - 90° curved elbow fitting, IP69, metric polyamide thread

	Order no. blue	Thread size metric	Fits to conduit size NW	Thread length (mm)	Overall length (mm)	PU (pcs)
JKBH	JKBH-M162	M16 x 1.5	12	11.0	72.0	10
	JKBH-M202	M20 x 1.5	12	11.0	74.0	10
	JKBH-M207	M20 x 1.5	17	11.0	81.0	10
	JKBH-M257	M25 x 1.5	17	12.0	84.0	10
	JKBH-M253	M25 x 1.5	23	12.0	92.0	10
	JKBH-M323	M32 x 1.5	23	15.0	94.5	10
	JKBH-M329	M32 x 1.5	29	15.0	108.0	10
	JKBH-M409	M40 x 1.5	29	19.0	112.0	10
	JKBH-M406	M40 x 1.5	36	19.0	126.0	10
	JKBH-M506	M50 x 1.5	36	19.0	128.0	10
Approvals	JKBH-M508	M50 x 1.5	48	19.0	145.5	10
	JKBH-M638	M63 x 1.5	48	19.0	148.5	10



Very high impact resistance – easy push-in assembly
Corrosion-free
Excellent conduit pull-out strength
IP69 system protection for indoor splash zone areas

PMAJACK Plastic and metal braids

General technical details

Bundling and abrasion protection. Polyamide, polyester and steel braids – an alternative way to bundle and protect electrical cables.

Plastic braids manufactured from polyester and polyamide filaments – the other alternative solution for protecting and bundling cables.

This PMA cable protection system provides simple bundling and abrasion protection for cables and wires.

Various braid types to fulfill different requirements complimented by a range of braid terminations for simple and clean assembly.

Material

- Braids made from polyamide 6.6 or polyester
- Terminations made from PA 6, aluminium or brass
- Free from halogens, REACH + RoHS compliant

Characteristics

- Flammability of braids:
polyamide 6.6 UL 94 V2,
polyester UL 94 V0
- Braid design: Following DIN 65 164 part 1+2
- EN 45545-2 HL3





Plastic braided hoses

Type F.66 & C.66

Type F.66 - Polyamide 6.6 braided hose



	Order no. black	Order no. grey	NW	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (m)
F.66	F.66.04SW	F.66.04GR	4	3.0	7.0	100
	F.66.06SW	F.66.06GR	6	5.0	8.0	100
	F.66.08SW	F.66.08GR	8	7.0	10.0	100
	F.66.10SW	F.66.10GR	10	9.0	13.0	50
	F.66.12SW	F.66.12GR	12	11.0	16.0	50
	F.66.16SW	F.66.16GR	16	15.0	21.0	50
	F.66.20SW	F.66.20GR	20	20.0	26.0	50
	F.66.25SW	F.66.25GR	25	24.0	31.0	50
	F.66.30SW	F.66.30GR	30	28.0	38.0	50
	F.66.40SW	F.66.40GR	40	38.0	49.0	50
	F.66.50SW	F.66.50GR	50	48.0	65.0	50
	F.66.70SW	F.66.70GR	70	48.0	85.0	50

Approvals



Monofil Ø: 0.28mm for increased abrasion properties

Coverage: > 90%

Polyamide 6.6

Specifications: DIN 5510 (S4/SR2/ST2), UL-File E 125 619, EN45545-2 HL3

Temperature range: -55°C to +135°C, short-term to +160°C

Type C.66 - Polyamide 6.6 braided hose



	Order no. black	Order no. grey	NW	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (m)
C.66	C.66.10SW	C.66.10GR	10	8.0	14.0	50
	C.66.12SW	C.66.12GR	12	9.0	18.0	50
	C.66.16SW	C.66.16GR	16	11.0	22.0	50
	C.66.20SW	C.66.20GR	20	14.0	26.0	50
	C.66.25SW	C.66.25GR	25	18.0	28.0	50
	C.66.30SW	C.66.30GR	30	25.0	43.0	50
	C.66.40SW	C.66.40GR	40	30.0	52.0	50
	C.66.45SW.60	-	45	40.0	73.0	60

Monofil Ø: 0.28mm for increased abrasion properties

Coverage: > 75%

Polyamide 6.6

Specifications: DIN 5510 (S4/SR2/ST2), EN45545-2 HL3

Temperature range: -55°C to +135°C, short-term to +160°C

Plastic braided hoses

Type L.66 & G.PX

Type L.66 - Polyamide 6.6 braided hose



	Order no. black	Order no. grey	NW	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (m)
L.66	L.66.04SW	L.66.04GR	04	4.0	5.0	100
	L.66.08SW	L.66.08GR	08	5.0	10.0	100
	L.66.10SW	L.66.10GR	10	7.0	13.0	50
	L.66.16SW	L.66.16GR	16	11.0	20.0	50
	L.66.20SW	L.66.20GR	20	17.0	33.0	50
	L.66.25SW	L.66.25GR	25	21.0	34.0	50
	L.66.30SW	L.66.30GR	30	25.0	45.0	50
	L.66.40SW	L.66.40GR	40	31.0	55.0	50
	L.66.50SW	L.66.50GR	50	58.0	70.0	50

Monofil Ø: 0.25mm

Coverage: > 65%

Polyamide 6.6

Specifications: DIN 5510 (S4/SR2/ST2), NF F 16-101/102 (I3/F2), EN45545-2 HL3

Temperature range: -55°C to +135°C, short-term to +160°C

Type G.PX - Polyester braided hose



	Order no. black	NW	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (m)
G.PX	G.PX.05SW	05	4.5	5.5	25
	G.PX.08SW	08	7.0	9.0	25
	G.PX.10SW	10	9.0	11.0	25
	G.PX.13SW	13	11.5	13.0	25
	G.PX.16SW	16	14.5	17.5	25
	G.PX.19SW	19	17.0	21.0	25
	G.PX.25SW	25	22.5	27.5	25
	G.PX.29SW	29	26.0	32.0	25
	G.PX.32SW	32	29.0	35.0	25
	G.PX.38SW	38	34.0	42.0	25
	G.PX.50SW	50	45.0	55.0	25

Open, self winding construction

For retrofit installation.

Overlapping: 90° (+40°/-25°)

Polyester

Specifications: DIN 5510 (S4/SR2/ST2), NF F 16-101/102 (I3/F2), EN45545-2 HL3

Temperature range: -55°C to +150°C

Braid terminations

Type RER/REV

Type RER/REV - Braid termination for braided hose

	Order no. grey	NW	AI (mm)	AA (mm)	BI (mm)	BA (mm)	S (mm)	C (mm)	PU (pcs)
RER/REV	SRER-06 (x)	06	6.5	13	—	—	13	6	50
	SRER-16 (x)	16	16	24	—	—	15	7	50
	SRER-21 (x)	21	22	32	—	—	15	7	50
	SRER-29 (z)	29	30	40	—	—	39	7	50
	SRER-50 (z)	50	50	61	—	—	50	7	50
	SREV-40 (y)	40	47	58	34	44	38	10	50



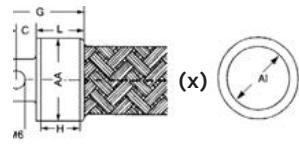
For termination and fixation of plastic braided hoses

Suitable for: F.66, C.66, L.66 braids

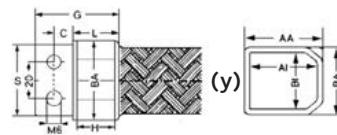
Polyamide 6

For exact braid and termination fitting configuration please refer to PMAJACK data sheets

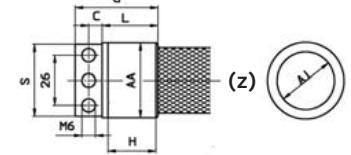
RER
x = with one mounting hole



REV
y = with two mounting holes



RER
z = with three mounting holes



Stainless steel braids

Type F.304

Type F.304 - Stainless steel braided hose

	Order no.	Braid specification	Fits to conduit size NW	Operative range min. Ø (mm)	Operative range max. Ø (mm)	PU (m)
F.304	F.304.10	24 x 7 x 0.3	10	11.0	17.0	20
	F.304.12	24 x 8 x 0.3	12	11.0	23.0	20
	F.304.17	24 x 12 x 0.3	17	16.0	27.0	20
	F.304.23	36 x 9 x 0.3	23	23.0	32.0	20
	F.304.29	36 x 11 x 0.3	29	27.0	38.0	20
	F.304.36	36 x 9 x 0.4	36	34.0	45.0	20
	F.304.48	48 x 10 x 0.4	48	57.0	80.0	20

Surface coverage: >90%

Temperature range: -70°C to +1000°C





PMA® CABLE PROTECTION

PMA provides information and guidance on application specific challenges, and develops products to meet the needs of the industry.



Technical annex

Introduction

Conforms with standards. Intensive research and testing is the reason PMA continues to set new standards and trends in cable protection.

PMA products conform to worldwide standards and regulations.

As a pioneer in the field of cable protection, we have always given high priority to our own testing facilities, and we have consciously introduced stringent in-house standards. This approach has enabled PMA to exercise a significant influence on the development of international standards. Standards committees with responsibility for cable systems regularly ask our company to provide advice or participate as an active member.

High quality product from A-Z

From basic items to high-tech products, all of our products meet the most stringent quality requirements.

Some of the outstanding are:

- Resistance to temperature, weathering, UV radiation and chemical agents
- High system pull-out resistance
- Excellent fire protection characteristics (flammability, smoke density and toxicity)
- Excellent system ingress protection up to IP68 and IP69
- Extremely long service life
- Conformance to all major international product standards



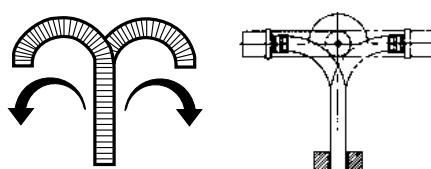
Resistance to fatigue

when exposed to Continuous Bending Test

According to EC EN 61386 and PMA DO 9.21-4425 test procedures. Both procedures describe tests designed to evaluate conduit resistance to fatigue when exposed to continuous cycles of repetitive bending. The test procedure involves bending back and forth around a central pivotal point. Although the test procedure is the same for both standards there are differences in the test parameters and the classification of results.



Smartphone
for detailed
product
information.



Technical annex

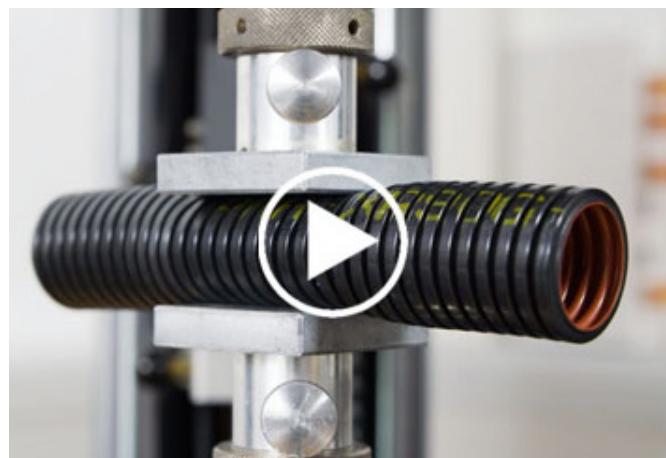
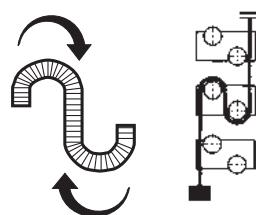
Testing methods according to IEC EN01386 and PMA internal procedures



Resistance to fatigue when exposed to Continuous Bending Test 2

According to PMA DO 9.21-4420 test procedures.

The PMA DO 9.21-4420 test procedures describes a demanding test for conduit fatigue when exposed to continuous repetitive bending. The conduit is fixed at the top of the apparatus, it passes over and under two pulley wheels. A weight is suspended at the bottom end simulating the weight of cables within the conduit. The pulley wheels move up and down continuously bending the conduit twice through 180° over its entire length.

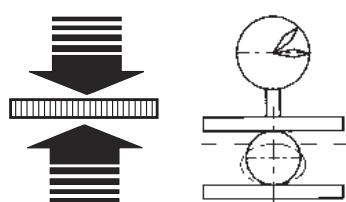


Compression Strength Test

According to IEC EN 61386 standard and PMA DO 9.21-4320 test procedures.

Both, procedures describe a test designed to evaluate conduit resistance to compression forces.

Excessive deformation of a conduit under compression could potentially cause damage to cables being protected within it. The force required to compress the conduit between two square plates to a specific % of its original diameter is measured. Relaxation over time and recovery after removal of the force are evaluated.



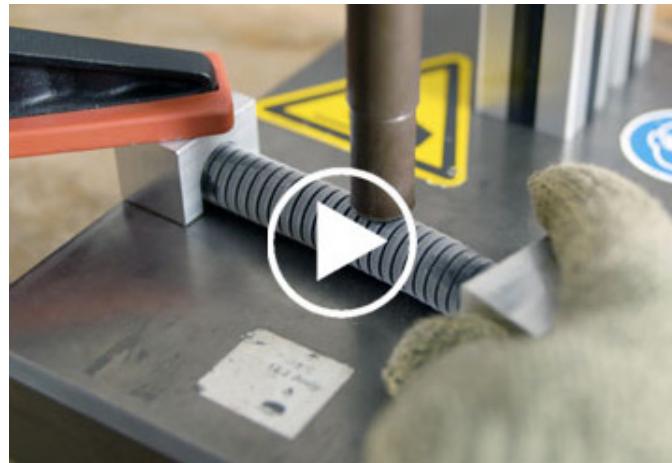
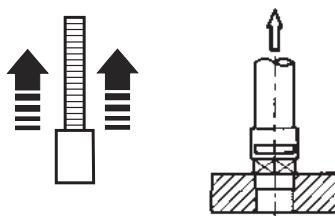
Technical annex

Testing methods according to IEC EN01386 and PMA internal procedures



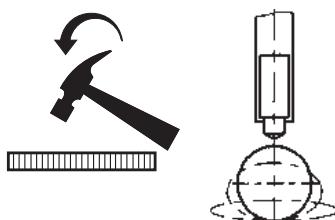
System Security - Pull-Out Strength Test

According to IEC EN 61386 and PMA DO 9.21-4610 test procedures. IEC EN 61386 and PMA DO 9.21-4610 are designed to test the security of the connection between conduit and fitting. Two fittings with a piece of conduit between them are pulled apart with steadily increasing force. Extension of the conduit is recorded graphically against the force applied. The force required to pull the conduit out of the fitting is determined. The tests are performed at +23°C and 50% r.h.



Resistance to Impact Test

According to IEC EN 61386 standard and PMA DO 9.21-4330 test procedures. IEC EN 61386 and PMA DO 9.21-4330 describe tests to evaluate the resistance of conduits to high energy impacts. They can be performed on conduits at various temperatures. Weights of different mass are dropped from an adjustable height directly onto a conduit sample which has been conditioned at the specified temperature.



Technical annex

Testing methods according to IEC EN01386 and PMA internal procedures

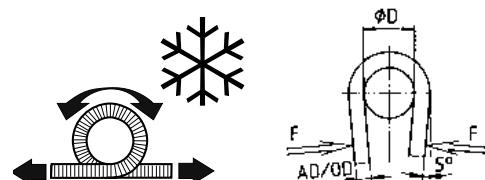


Smartphone
for detailed
product
information.

Flexibility at Low Temperature Test

According to PMA DO 9.21-4380 test procedures.

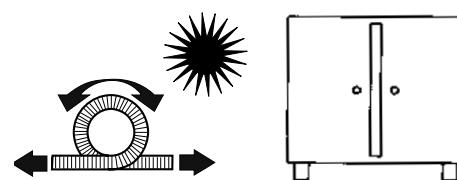
This standard describes a test procedure to evaluate the flexibility of conduits at low temperatures. The conduit under test is placed in a climatic chamber at the lowest specified operating temperature for four hours. It is then removed and immediately bent around a mandrel of diameter related to the outside diameter (OD) of the conduit.



Resistance to thermal ageing test

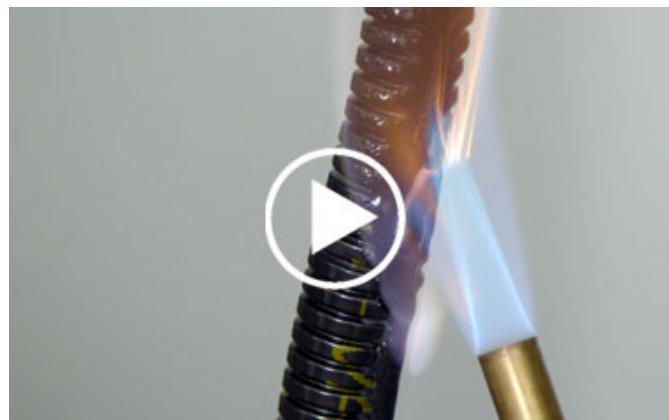
According to PMA DO 9.21-4360 test procedures.

This standard describes a procedure designed to evaluate the thermal stability of a conduit and its resistance to thermal ageing. The conduit is exposed to a temperature significantly above the maximum recommended continuous operating temperature for 168 hours, +160°C (PA6) or +150°C (PA12). The Flexibility at Low Temperature procedure DO 9.21-4380 is performed both before and after the thermal ageing procedure. The results are compared to detect any change in material characteristics.



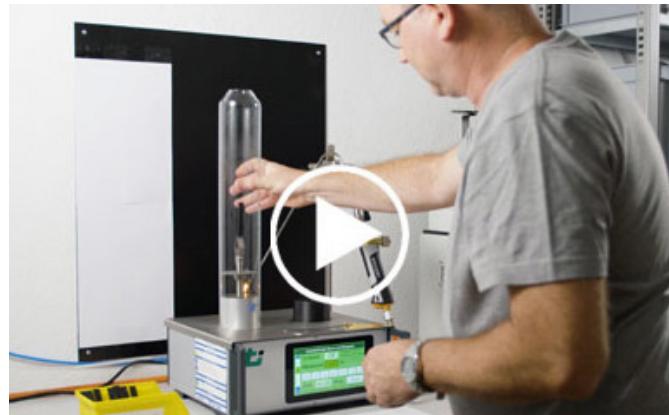
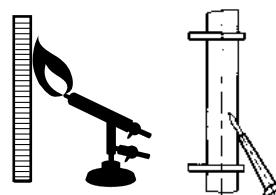
Technical annex

Testing methods according to IEC EN01386 and PMA internal procedures



Flammability tests

According to IEC EN 61386 and PMA DO 9.21-4430 test procedures. DO 9.21-4430 evaluates flammability characteristics using a defined flame from a standard burner. The time before ignition, fire propagation behaviour and extinguishing time after removal of the heat source are all factors in evaluating the flammability of conduits for a Self-Extinguishing Classification IEC 61386 uses the IEC 60695-2-11 glow wire test procedure for fittings and the IEC 60695-11-2 1 kW flame test for conduits to evaluate the flame Propagation behavior of the cable protection system allocating the classifications. Non-flame propagating or Flame Propagating.



Flammability test - Limited oxygen supply

According to EN ISO 4589-2 standard. The limited oxygen index test is a commonly used method for assessing the flammability of materials. Samples of material are exposed to a flame within a chamber. The oxygen content within the controlled environment within the chamber can be varied to within 0.1%. Through an iterative method the maximum percentage of oxygen in the air at which the sample of material extinguishes is determined. This percentage of oxygen can be used as an indication of how easily a material burns. The higher the Limited Oxygen Index % value the less flammable a material is.

Resistance to chemicals test

According to ISO 175:210 standard. In many real application cable protection systems are exposed to chemicals. Extensive data is available for the compatibility of various plastic materials with many different chemicals. This data can be used for assessment of compatibility for specific applications. PMA publishes a compatibility list for the most commonly occurring combinations of plastic and chemical. If chemicals are mixed or if no data is available for an assessment PMA recommends a compatibility test. Changes to appearance, dimensions and mechanical characteristics are assessed after long term exposure to the chemical to confirm compatibility.



PMA® (DO) test procedures

PMA® has more than 15 test procedures (PMA DO) that enables us to perform cable protection-related, application-specific material and product tests.

Customers' application-specific needs are a top priority at PMA. That's why the company, as a leading manufacturer of cable protection products, voluntarily defined various supplementary in-house test procedures, which are consistently used to test PMA products to uniform criteria. This helps us safeguard the high quality and safety of PMA cable protection solutions and supply our customers with the best, most reliable products. It gives our customer the confidence that our products perform without failure or problems and meet their expectations.

The PMA test procedures apply not only to the general product properties usual for overarching standards but also to specific applications,

such as impact resistance in low-temperature rail applications, ingress protection in dynamic outdoor applications or abrasion resistance in automation applications. PMA test procedures are primarily used in areas where the market has yet to define overarching binding standards for specific applications. Many of our bespoke test procedures are geared to existing overarching standards wherever possible, and often correspond to other international standards in terms of structure, procedure and results assessment.

Scope of a PMA test procedures:

- Detailed description of the content of testing
- Definition of samples in terms of material and quantity, distinction from other products
- Definition of the test environment, e.g. climate conditions and temperature
- Definition of devices and apparatus used in testing
- Precise definition of each relevant test parameter, such as mass, temperature, time or drop height
- Exact step-by step definition of the test procedure
- Parameters for assessing the test result, such as the onset of mechanical losses, changes in the material, number of cycles, etc.
- List of contiguous overarching standards such as UL or IEC

For more information on the PMA test procedures (DO), please contact your PMA supplier

Technical annex

Ingress protections according to IEC 60529



Ingress Protection Test for Static Applications

According to IEC EN 60529 standard and PMA DO 7.3-1160-00 test procedures. IEC EN 60529 describes various levels of system ingress protection against both water and dust. IP*7 and IP*8 are sealing ratings for a system fully immersed under water. IP*7 is precisely defined as immersion to a depth of 1 meter for 30 minutes. An IP*8 rating indicates that the system remains dry after immersion to a depth > 1m and/or duration >30minutes. It is the intention of the standard that the time and depth of the test should agree between customer and supplier according to the requirements of the application.

Ingress Protection Test for Dynamic Applications

According to PMA DO 9.21-4440 test procedures. This PMA internal procedure allows the sealing performance of a cable protection system which is in continuous motion to be tested. It is significantly more difficult to achieve an efficient and long-lasting seal against ingress of water for a dynamic system than for a static system. The test equipment simulates typical movement of a cable protection system while it is submerged under water.



PMA Products

			PMAFIX Pro	PMAFIX IP68+ WPS	PMAFIX IP68/ IP68GT	PMAFIX IP66	PMA Smart Line
	IPx4	Splash water from all directions	●	●	●	●	●
	IPx5	Jet water at any angle	●	●	●	●	●
	IPx6	Powerful jet water from any angle	●	●	●	●	●
	IPx7	Submersion (1m, 30 min.)	●	●	●	-	-
	IPx8	Submersion at time and pressure >IPx7	●	●	●	-	-
	IPx9	High pressure (up to 100 bar, 80°C) water from any angle	●	●*	●*	●*	●*

*IEC 60529 can be fulfilled without WPS (Water impact protection ring). PMA recommends the use of the WPS ring for trouble free practical applications

Technical annex

Ingress protections according to IEC 60529

Dust

Protection against contact and penetration of foreign objects
Degree of protection
(contact/foreign bodies)

		0	No protection
		1	Objects greater than 50mm Ø, accidental touch by hands
		2	Objects greater than 12.5mm Ø, accidental touch by fingers
		3	Objects greater than 2.5mm Ø, e.g. tools/wires
		4	Objects greater than 1mm Ø, e.g. tools/wires
		5	Protected against dust - limited ingress (no harmful deposits)
		6	Totally protected against dust (dust-tight)

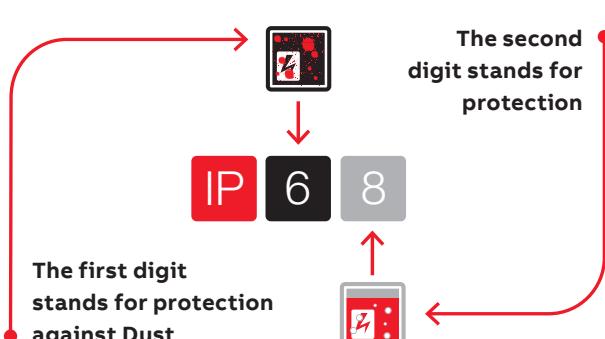
Water

Protection against fluids
Degree of protection (water)

		0	No protection
		1	Protected against vertically falling drops of water
		2	Protected against direct sprays of water 15° from vertical
		3	Protected against sprays of water to 60° from vertical
		4	Protected against water sprayed from all directions - limited ingress permitted
		5	Protected against low pressure jets of water from all directions - limited ingress permitted
		6	Protected against strong pressure jets of water, heavy seas - limited ingress permitted
		7	Protection against the effects of immersion between 15cm - 1m
		8	Protection against long periods of immersion under a quoted pressure, e.g. 2 bar at 24 hours
		9	IP69 Automotive standard DIN40050 and signifies resistance to high pressure jets of water (up to 80 bar) from any angle

IP Ratings

The higher the number, the greater the degree of protection;
they apply ONLY to properly installed equipment.

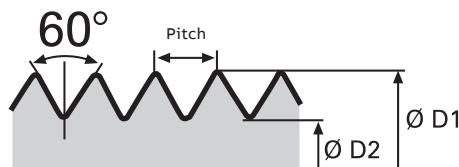


Technical annex

Table of thread dimensions

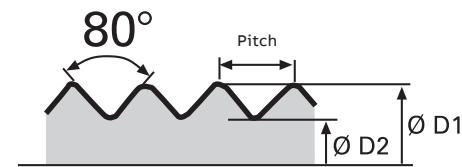
Metric fine thread - EN 60423

Metric	Pitch (mm)	$\varnothing D1$ (mm)	$\varnothing D2$ (mm)	Hole -0/+0.3 (mm)
12	1.5	12	10.16	12.0
16	1.5	16	14.16	16.0
20	1.5	20	18.16	20.0
25	1.5	25	23.16	25.0
32	1.5	32	30.16	32.0
40	1.5	40	38.16	40.0
50	1.5	50	48.16	50.0
63	1.5	63	61.16	63.0



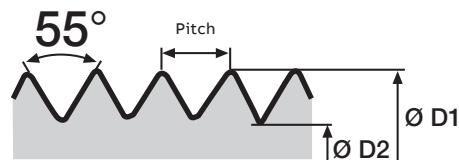
PG thread - DIN 40430

PG	Pitch (mm)	$\varnothing D1$ (mm)	$\varnothing D2$ (mm)	Hole (mm)
07	1.270	12.5	11.28	12.7
09	1.411	15.2	13.86	15.4
11	1.411	18.6	17.26	18.8
13	1.411	20.4	19.06	20.7
16	1.411	22.5	21.16	22.8
21	1.588	28.3	26.78	28.6
29	1.588	37.0	35.48	37.4
36	1.588	47.0	45.48	47.5
48	1.588	59.3	57.78	59.8



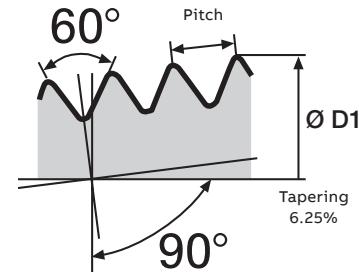
GAS pipe thread - DIN 259 Bl. 3, ISO 228/I

GAS	Pitch (mm)	$\varnothing D1$ (mm)	$\varnothing D2$ (mm)	Hole (mm)
1/4"	1.337	13.157	11.445	13.4
3/8"	1.337	16.662	14.950	17.0
1/2"	1.814	20.955	18.631	21.3
5/8"	1.814	26.441	24.117	26.8
1"	2.309	33.249	30.291	33.7
1 1/4"	2.309	41.910	38.952	42.4
1 1/2"	2.309	47.803	44.845	48.3
2"	2.309	59.614	56.656	60.2



American standard taper pipe thread - ANSI/ASME B1.20

NPT	Pitch (mm)	$\varnothing D1$ (mm)	Hole D2 (mm)
1/4"	1.411	13.716	13.9
3/8"	1.411	17.145	17.4
1/2"	1.814	21.336	21.6
5/8"	1.814	26.670	26.9
1"	2.209	33.401	33.7
1 1/4"	2.209	42.164	42.4
1 1/2"	2.209	48.260	48.5
2"	2.209	60.325	60.6



Technical annex

Comparison table

Conduit

Nominal width NW		
Standard	Metric	Inside Ø nom. (mm)
07	10	6.2
10	12	9.6
10	12	9.6
12	16	12.0
12	16	12.0
17	20	16.2
17	20	16.2
23	25	22.6
23	25	22.6
29	32	29.0
29	32	29.0
36	40	36.5
36	40	36.5
48	50	47.5
48	50	47.5

Metric fittings

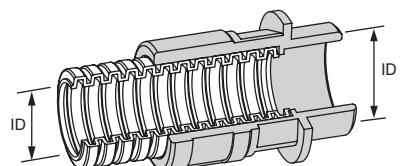
Inside diameter mm (nom.) ID		
Thread size	Metal thread	Polyamide thread
M12	–	8.0
M12	5.7	8.0
M16	9.6	11.0
M16	9.7	11.0
M20	13.5	13.0
M20	13.5	14.6
M25	18.3	19.0
M25	18.4	19.0
M32	24.2	24.0
M32	25.4	26.0
M40	31.4	32.0
M40	32.6	32.0
M50	39.5	39.0
M50	41.5	42.0
M63	51.4	53.0

Conduit

Nominal width NW		
Standard	Metric	Inside Ø nom. (mm)
07	10	6.2
10	12	9.6
12	16	12.0
–	–	–
17	20	16.2
23	25	22.6
29	32	29.0
36	40	36.5
–	–	–
48	50	47.5

PG fittings

Inside diameter mm (nom.) ID		
Thread size	Metal thread	Polyamide thread
PG07	–	8.0
PG09	9.5	10.0
PG11	12.5	13.0
PG13.5	14.5	14.5
PG16	16.5	17.5
PG21	22.0	22.5
PG29	30.0	30.5
PG36	40.0	37.5
PG42	–	46.0
PG48	49.5	50.0



Inside diameter threads to inside diameter conduits.

Technical annex

Tightening torques

Recommended tightening torques for PMA fittings - For threaded bore holes and with lock nuts

Thread	Metal* [Nm]	Polyamide** [Nm]
M12	4.0	1.5
M16	4.0	3.0
M20	6.0	4.0
M25	8.0	6.0
M32	10.0	8.0
M40	15.0	9.0
M50	15.0	10.0
M63	15.0	10.0

* Thread combination: Metal + metal

** Thread combination: Metal + polyamide or polyamide + polyamide

Thread	Metal* [Nm]	Polyamide [Nm]
PG07	3.5	1.5
PG09	4.0	1.5
PG11	6.0	2.0
PG13.5	6.0	2.5
PG16	7.0	4.0
PG21	8.0	5.0
PG29	10.0	9.0
PG36	15.0	15.0
PG48	15.0	15.0

Strain relief fittings - According to EN 50262

Thread	Metal NVNZ-Mxxxx NKNZ-Mxxxx [Nm] EN	Metal NVNZ-Mxxxx/P NKNZ-Mxxxx/P [Nm]	Polyamide S/BVNZ-Mxxxx [Nm] EN
M12	5.0	6.0	0.9
M16	5.0	8.0	3.0
M20	7.5	10.0	4.0
M25	10.0	10.0	7.5
M32	15.0	15.0	10.0
M40	20.0	20.0	10.0
M50	20.0	20.0	10.0
M63	20.0	20.0	10.0

Note: These values were gauged at standard climate (23°C/50% relative humidity)

According to DIN VDE 0619

Thread	Metal NVNZ-Pxxxx [Nm]	Metal NVNZ-Pxxxx/P [Nm]	Polyamide S/BVNZ-Pxxxx [Nm]
PG07	6.25	6.0	2.5
PG09	6.25	8.0	3.75
PG11	6.25	10.0	3.75
PG13.5	6.25	10.0	3.75
PG16	7.5	10.0	5.0
PG21	10.0	15.0	7.5
PG29	10.0	20.0	7.5
PG36	10.0	30.0	7.5
PG48	10.0	40.0	7.5

Technical annex

Applications engineering information

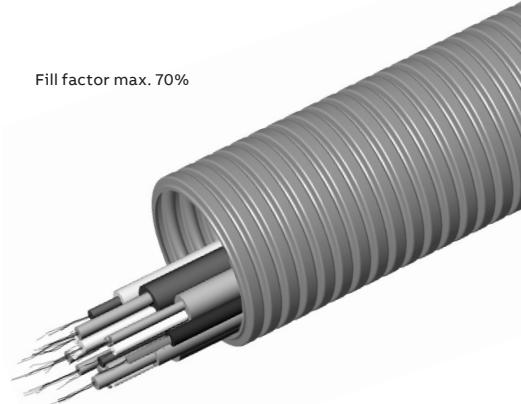
Fill factor, relevant guidelines

The question of conduit capacity or fill factor arises in the use of cable protection systems. This describes the extent to which a conduit can or should be filled with cables and/or conductors based on the available cross-sectional area.

In all cases, PMA recommends that a conduit **capacity of 70%** not be exceeded. (Application-specific procedures and standards must also be considered.)

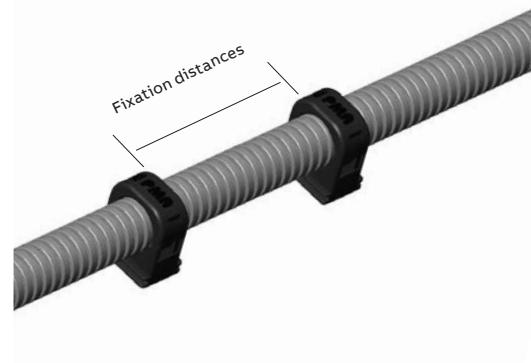
This ensures that operation is not unnecessarily impaired by increased friction between the individual conductors in dynamically moving systems. In addition, subsequent installation of additional conductors and/or cables is also possible if necessary.

Fill factor max. 70%



Wiring installation: fixation

PMA AG recommends that cable protection systems be fastened with a spacing of **300mm to 500mm** between supports. This spacing can be varied depending on the application and location. This recommendation applies for all available dimensions. For larger diameters, the increased load due to the cables and conductors in the conduit is accounted for by adherence to the support spacing. PMA supplies suitable system supports for various strength requirements and applications.



European standard **EN 50343:2003-5.15** "Railway applications – Rolling stock – Rules for installation of cabling" specifies the following spacing between supports for fastening conductors:

Horizontal wiring: 300mm

Vertical wiring: 500mm

(Application specific guidelines and standards should also be considered.)

Technical annex

Chemical resistance

Chemical resistance comparison table

Resistance against	Chemical formula	PA6, Polyamide 6 PA6.6, Polyamide 6.6	PA12, Polyamide 12 PA11, Polyamide 11	PP, Polypropylene PE, Polyethylene	TPU	PFA PVDF
Acetic acid (10%)	C2H4O2	1	2	3	0	3
Acetone	C3H6O	3	3	3	0	3
Ammonia (30%)	NH3	3	3	3	0	3
Benzine	—	3	3	2	1	3
Brake fluid	—	3	3	3	0	3
Caustic soda	NaOH	3	3	3	1	3
Ethyl alcohol (40%)	C2H6O	3	3	3	1	3
Glycol	C2H6O2	3	3	3	0	3
Hydrochloric acid (10%)	HCl	0	1	3	0	3
Methanol	CH4O	2	3	3	1	3
Methyl ethyl ketone	C4H8O	3	3	3	0	3
Nitric acid (10%)	HNO3	0	0	2	0	3
Ozone	O3	2	2	2	1	3
Paint thinner	—	3	3	1	0	3
Perchlorethylene	C2Cl4	2	2	2	0	3
Paraffin	—	3	3	1	0	3
Phosphoric acid (10%)	H3O4P	1	2	3	0	3
Sea water	—	3	3	3	2	3
Soap solution	—	3	3	3	2	3
Sodium chloride	NaCl	3	3	3	3	3
Sulphuric acid (10%)	H2SO4	1	2	3	0	3
Toluene	C7H8	3	3	1	0	3
Trichlorethylene	C2HCl3	1	2	0	0	3
Turpentine	—	3	3	0	0	3
Urine	—	3	3	3	3	3

Resistance against oils and greases	Chemical formula	PA6, Polyamide 6 PA6.6, Polyamide 6.6	PA12, Polyamide 12 PA11, Polyamide 11	PP, Polypropylene PE, Polyethylene	TPU	PFA PVDF
Cutting oils*	—	3	3	2	1	3
Diesel oil	—	3	3	2	2	3
ASTM Oil Nr. 3	—	3	3	2	1	3
Fuel oil	—	3	3	2	1	3
Hydraulic oils*	—	3	3	2	1	3
Mineral oils	—	3	3	2	3	3
Spark-erosion liquids	—	3	3	2	1	3
Skydrol	—	1	2	2	0	3
Transformer oils*	—	3	3	2	1	3

* Synthetic additives can affect the oil resistance of plastics. Please contact PMA for further information

Key:

3 = Excellent resistance/suitable for permanent contact

2 = Resistant/suitable for occasional contact

1 = Relatively resistant/suitable for short-term contact

0 = Not recommended

Important

The chemical resistance of plastic products is also dependant on factors such as temperature, amount of time exposed to chemicals (e.g. occasional contact or immersed) as well as the concentration of the specific chemicals.

The stated chemical resistances are valid for a temperature of 20°C. The chemical resistance table above serves only as a guide for the use of polyamide products in conjunction with the listed chemicals. Each specific application should be controlled for suitability by the end-user.

Index

Products in alphabetical order

Part. no.	GID no.	Page
0709M	7TAA292550R0000	130
0907M	7TAA292550R0001	130
0911M	7TAA292550R0002	130
0913M	7TAA292550R0003	130
1107M	7TAA292550R0004	130
1109M	7TAA292550R0005	130
1109N	7TAA292550R0006	128
1113M	7TAA292550R0007	130
1116M	7TAA292550R0008	130
1121M	7TAA292550R0009	130
1307M	7TAA292550R0010	130
1309M	7TAA292550R0011	130
1309N	7TAA292550R0012	128
1311M	7TAA292550R0013	130
1311N	7TAA292550R0014	128
1316M	7TAA292550R0015	130
1321M	7TAA292550R0016	130
1607M	7TAA292550R0017	130
1609M	7TAA292550R0018	130
1609N	7TAA292550R0019	128
1611M	7TAA292550R0020	130
1611N	7TAA292550R0021	128
1613M	7TAA292550R0022	130
1613N	7TAA292550R0023	128
1621M	7TAA292550R0024	130
1629M	7TAA292550R0025	130
2111M	7TAA292550R0026	130
2113M	7TAA292550R0027	130
2113N	7TAA292550R0028	128
2116M	7TAA292550R0029	130
2116N	7TAA292550R0030	128
2129M	7TAA292550R0031	130
2916M	7TAA292550R0032	130
2921M	7TAA292550R0033	130
2921N	7TAA292550R0034	128
2936M	7TAA292550R0035	130
3621M	7TAA292550R0036	130
3629M	7TAA292550R0037	130
3629N	7TAA292550R0038	128
4229M	7TAA292550R0039	130
4236M	7TAA292550R0040	130
4248M	7TAA292550R0041	130
4836M	7TAA292550R0042	130
4842M	7TAA292550R0043	130
514-07	7TAA292690R0000	131
514-09	7TAA292690R0001	131
514-11	7TAA292690R0002	131
514-13	7TAA292690R0003	131
514-16	7TAA292690R0004	131
514-21	7TAA292690R0005	131
514-29	7TAA292690R0006	131
514-36	7TAA292690R0007	131
514-48	7TAA292690R0008	131

Part. no.	GID no.	Page
514-M12	7TAA292690R0009	131
514-M16	7TAA292690R0010	131
514-M20	7TAA292690R0011	131
514-M25	7TAA292690R0012	131
514-M32	7TAA292690R0013	131
514-M40	7TAA292690R0014	131
514-M50	7TAA292690R0015	131
514-M63	7TAA292690R0016	131
AFN2-07GT.Lose	7TAA292700R0000	126
AFN2-10GT.Lose	7TAA292700R0001	126
AFN2-12GT.Lose	7TAA292700R0002	126
AFN2-17GT.Lose	7TAA292700R0003	126
AFN2-23GT.Lose	7TAA292700R0004	126
AFN2-29GT.Lose	7TAA292700R0005	126
AFN2-36GT.Lose	7TAA292700R0006	126
AFN2-48GT.Lose	7TAA292700R0007	126
ALAD-M120	7TAA292000R0000	113
ALAD-M160	7TAA292000R0001	113
ALAD-M162	7TAA292000R0002	113
ALAD-M202	7TAA292000R0003	113
ALAD-M207	7TAA292000R0004	113
ALAD-M253	7TAA292000R0005	113
ALAD-M257	7TAA292000R0006	113
ALAD-M323	7TAA292000R0007	113
ALAD-M329	7TAA292000R0008	113
ALAD-M406	7TAA292000R0009	113
ALAD-M409	7TAA292000R0010	113
ALAD-M506	7TAA292000R0011	113
ALAD-M508	7TAA292000R0012	113
ALAD-M638	7TAA292000R0013	113
ALAD-P090	7TAA292000R0014	145
ALAD-P112	7TAA292000R0015	145
ALAD-P132	7TAA292000R0016	145
ALAD-P137	7TAA292000R0017	145
ALAD-P167	7TAA292000R0018	145
ALAD-P213	7TAA292000R0019	145
ALAD-P299	7TAA292000R0020	145
ALAD-P366	7TAA292000R0021	145
ALAD-P488	7TAA292000R0022	145
ALND-M120	7TAA292000R0023	113
ALND-M160	7TAA292000R0024	113
ALND-M162	7TAA292000R0025	113
ALND-M200	7TAA292000R0026	113
ALND-M202	7TAA292000R0027	113
ALND-M207	7TAA292000R0028	113
ALND-M253	7TAA292000R0029	113
ALND-M257	7TAA292000R0030	113
ALND-M323	7TAA292000R0031	113
ALND-M329	7TAA292000R0032	113
ALND-M406	7TAA292000R0033	113
ALND-M409	7TAA292000R0034	113
ALND-M506	7TAA292000R0035	113
ALND-M508	7TAA292000R0036	113

Part. no.	GID no.	Page
ALND-M638	7TAA292000R0037	113
ALND-P070	7TAA292000R0038	144
ALND-P090	7TAA292000R0039	144
ALND-P092	7TAA292000R0040	144
ALND-P110	7TAA292000R0041	144
ALND-P112	7TAA292000R0042	144
ALND-P132	7TAA292000R0043	144
ALND-P137	7TAA292000R0044	144
ALND-P167	7TAA292000R0045	144
ALND-P213	7TAA292000R0046	144
ALND-P299	7TAA292000R0047	144
ALND-P366	7TAA292000R0048	144
ALND-P488	7TAA292000R0049	144
ALWD-M120	7TAA292000R0050	114
ALWD-M160	7TAA292000R0051	114
ALWD-M162	7TAA292000R0052	114
ALWD-M202	7TAA292000R0053	114
ALWD-M207	7TAA292000R0054	114
ALWD-M253	7TAA292000R0055	114
ALWD-M257	7TAA292000R0056	114
ALWD-M323	7TAA292000R0057	114
ALWD-M329	7TAA292000R0058	114
ALWD-M406	7TAA292000R0059	114
ALWD-M409	7TAA292000R0060	114
ALWD-M506	7TAA292000R0061	114
ALWD-M508	7TAA292000R0062	114
ALWD-M638	7TAA292000R0063	114
ALWD-P070	7TAA292000R0064	145
ALWD-P090	7TAA292000R0065	145
ALWD-P092	7TAA292000R0066	145
ALWD-P110	7TAA292000R0067	145
ALWD-P112	7TAA292000R0068	145
ALWD-P130	7TAA292000R0069	145
ALWD-P132	7TAA292000R0070	145
ALWD-P137	7TAA292000R0071	145
ALWD-P167	7TAA292000R0072	145
ALWD-P213	7TAA292000R0073	145
ALWD-P299	7TAA292000R0074	145
ALWD-P366	7TAA292000R0075	145
ALWD-P488	7TAA292000R0078	145
B.PX.12SW	7TCA292000R9915	150
B.PX.15SW	7TCA292000R9917	150
B.PX.30SW	7TCA292000R9916	150
BAS-29T	7TAA292850R0000	121
BAS-36T	7TAA292850R0001	121
BAS-48T	7TAA292850R0002	121
BAVD-12/10GT	7TAA292580R0000	106
BAVD-17/10GT	7TAA292580R0001	106
BAVD-17/12GT	7TAA292580R0002	106
BAVD-23/10GT	7TAA292580R0003	106
BAVD-23/12GT	7TAA292580R0004	106
BAVD-23/17GT	7TAA292580R0005	106
BAVD-29/10GT	7TAA292580R0006	106

Index

Products in alphabetical order

Part. no.	GID no.	Page
BAVD-29/12GT	7TAA292580R0007	106
BAVD-29/17GT	7TAA292580R0008	106
BAVD-29/23GT	7TAA292580R0009	106
BAVD-36/29GT	7TAA292580R0010	106
BAVD-48/36GT	7TAA292580R0011	106
BAVR-10/07	7TAA292580R0013	106
BAVR-12/10	7TAA292580R0014	106
BAVR-17/10	7TAA292580R0015	106
BAVR-17/12	7TAA292580R0016	106
BAVR-23/10	7TAA292580R0017	106
BAVR-23/12	7TAA292580R0018	106
BAVR-23/17	7TAA292580R0019	106
BAVR-29/10	7TAA292580R0020	106
BAVR-29/12	7TAA292580R0021	106
BAVR-29/17	7TAA292580R0022	106
BAVR-29/23	7TAA292580R0023	106
BAVR-36/29	7TAA292580R0024	106
BAVR-48/36	7TAA292580R0025	106
BCCH-17	7TCA292001R1104	159
BCCH-17/01	7TCA292001R1623	159
BCCH-23	7TCA292001R1105	159
BCCH-23/01	7TCA292001R1624	159
BCCH-29	7TCA292001R1106	159
BCCH-29/01	7TCA292001R1625	159
BCSR-17	7TCA292001R1128	159
BCSR-23	7TCA292001R1129	159
BCSR-29	7TCA292001R1130	159
BCT-10	7TAA292860R0045	120
BCT-12	7TAA292860R0046	120
BCT-17	7TAA292860R0047	120
BCT-23	7TAA292860R0048	120
BCT-29	7TAA292860R0049	120
BCT-36	7TAA292860R0050	120
BES-48G	7TAA292850R0011	121
BES-70G	7TAA292850R0012	121
BFE-R70	7TAA292890R0000	154
BFH-07-0	7TAA292700R0009	139
BFH-10-0	7TAA292700R0011	139
BFH-12-0	7TAA292700R0012	139
BFH-17-0	7TAA292700R0013	139
BFH-23-0	7TAA292700R0015	139
BFH-29-0	7TAA292700R0017	139
BFH-36-0	7TAA292700R0018	139
BFH-48-0	7TAA292700R0020	139
BFHS-00	7TAA292700R0022	139
BFHS-PH	7TAA292700R0024	139
BFHS-PH1	7TAA292700R0025	139
BGG-125	7TAA292860R0000	145
BGG-56	7TAA292860R0001	145
BGG-70	7TAA292860R0002	145
BGG-95	7TAA292860R0003	145
BGG-M6356	7TAA292860R0004	147
BGGV-56	7TAA292860R0006	146

Part. no.	GID no.	Page
BGGV-70	7TAA292860R0007	146
BGGV-95	7TAA292860R0008	146
BGH-23	7TAA292720R0014	140
BGH-29	7TAA292720R0015	140
BGH-36	7TAA292720R0016	140
BGH-48	7TAA292720R0017	140
BGH-56	7TAA292720R0018	140
BGH-70	7TAA292720R0019	140
BGH-95	7TAA292720R0020	140
BGL-07	7TAA292720R0021	140
BGL-10	7TAA292720R0022	140
BGL-12	7TAA292720R0023	140
BGL-17	7TAA292720R0024	140
BGL-23	7TAA292720R0025	140
BGL-29	7TAA292720R0026	140
BGN-R29	7TAA292890R0001	151
BGN-R36	7TCA292000R7436	151
BGN-R48	7TAA292890R0004	151
BGN-R56	7TCA292000R7437	151,153
BGN-R70	7TAA292890R0009	151
BGN-S12T	7TAA292680R0000	138
BGN-S23G	7TAA292680R0003	138
BGN-S23T	7TAA292680R0004	138
BGN-S29GT		–
BGN-S36GT		–
BGN-S48G	7TAA292680R0009	138,151
BGN-S48T	7TAA292680R0010	138,151
BGN-S56G	7TCA292000R7438	151
BGN-S70G	7TAA292680R0011	138
BGO-56	7TAA292860R0010	145
BGO-70	7TAA292860R0011	145
BGO-95	7TAA292860R0012	145
BGOV-56	7TAA292860R0013	146
BGOV-70	7TAA292860R0014	146
BGOV-95	7TAA292860R0015	146
BGP-12/01	7TCA292000R6631	118
BGP-17	7TCA292000R6632	118
BGP-23	7TCA292000R6633	118
BGP-29	7TCA292000R6634	118
BGP-3x48	7TCA292000R8706	118
BGP-36	7TCA292000R6635	118
BGP-48	7TCA292000R6636	118
BGP-56G	7TAA292860R0026	118
BGPM-1x10	7TCA292001R0384	136
BGPM-1x12	7TCA292001R0082	136
BGPM-1x17	7TCA292000R9956	136
BGPM-1x23	7TCA292000R9957	136
BGPM-1x29	7TCA292001R0083	136
BGPM-1x36	7TCA292000R9958	136
BGPM-1x48	7TCA292000R9959	136
BGPM-2x12	7TCA292001R0416	136
BGPM-2x17	7TCA292001R0417	136
BGPM-2x23	7TCA292000R9960	136

Part. no.	GID no.	Page
BGPM-2x29	7TCA292001R0418	136
BGPM-2x36	7TCA292001R0084	136
BGPM-2x48	7TCA292001R0399	136
BGPM-3x12	7TCA292001R0419	136
BGPM-3x17	7TCA292001R0085	136
BGPM-3x23	7TCA292001R0086	136
BGPM-3x29	7TCA292001R0087	136
BGPM-3x36	7TCA292000R9961	136
BGPM-3x48	7TCA292001R0088	136
BGPM-4x12	7TCA292001R0420	136
BGPM-4x17	7TCA292001R0421	136
BGPM-4x23	7TCA292001R0089	136
BGPM-4x29	7TCA292001R0422	136
BGPM-4x36	7TCA292001R0090	136
BGPM-4x48	7TCA292001R0091	136
BGPMK-10/7-3	7TCA292001R0471	137
BGPMK-12/9-5	7TCA292001R0474	137
BGPMK-17/12-8	7TCA292001R0477	137
BGPMK-17/15-11	7TCA292001R0480	137
BGPMK-23/18-14	7TCA292001R0483	137
BGPMK-23/20-16	7TCA292001R0486	137
BGPMK-29/22-18	7TCA292001R0489	137
BGPMK-29/25-21	7TCA292001R0492	137
BGPMK-36/28-24	7TCA292001R0192	137
BGPMK-36/31-27	7TCA292001R0517	137
BGPMK-36/34-30	7TCA292001R0193	137
BGPMK-48/37-33	7TCA292001R0513	137
BGPMK-48/40-36	7TCA292001R0514	123
BGPMK-48/43-39	7TCA292001R0515	123
BGPMK-48/46-42	7TCA292001R0516	123
BGPMR-10T/17	7TCA292000R9962	137
BGPMR-12T/17	7TCA292000R9963	137
BGPMR-17GT/23	7TCA292001R0092	137
BGPMR-23GT/29	7TCA292001R0093	137
BGPMR-29GT/36	7TCA292000R9964	137
BGPMR-36GT/48	7TCA292001R0094	137
BGPS-12/01	7TCA292000R5539	139
BGPS-17	7TAA292860R0027	139
BGPS-23	7TAA292860R0028	139
BGPS-29	7TAA292860R0029	139
BGPS-36	7TAA292860R0030	139
BGPS-48	7TAA292860R0031	139
BGPS-56	7TAA292860R0032	139
BGS-R70	7TAA292890R0011	155
BKE-R36GT	7TCA292001R1237	153
BKE-R48GT	7TCA292001R1231	153
BKE-R70G	7TAA292890R0012	153
BKIHG-U212	7TAA292400R0028	50
BKIHG-U217	7TAA292400R0029	50
BKIHG-U242	7TAA292400R0030	50
BKIHG-U243	7TAA292400R0031	50
BKIHG-U247	7TAA292400R0032	50
BKIHG-U292	7TAA292400R0033	50

Index

Products in alphabetical order

Part. no.	GID no.	Page
BKIHG-U293	7TAA292400R0034	50
BKIHG-U297	7TAA292400R0035	50
BKIHG-U299	7TAA292400R0036	50
BKIHG-U353	7TAA292400R0037	50
BKIHG-U357	7TAA292400R0038	50
BKIHG-U359	7TAA292400R0039	50
BKIHG-U433	7TAA292400R0040	50
BKIHG-U439	7TAA292400R0041	50
BKIHG-U503	7TAA292400R0042	50
BKIHG-U506	7TAA292400R0043	50
BKIHG-U508	7TAA292400R0044	50
BKIHG-U509	7TAA292400R0045	50
BKIHG-U566	7TAA292400R0046	50
BKIHG-U568	7TAA292400R0047	50
BKS-R36/V	-	155
BKS-R48/V	-	155
BKS-R70/V	-	155
BLN-M16	7TAA292740R0000	163
BLN-M20	7TAA292740R0001	163
BLN-M25	7TAA292740R0002	163
BLN-M32	7TAA292740R0003	163
BLN-M40	7TAA292740R0004	163
BLN-M50	7TAA292740R0005	163
BLNO-M160	7TAA292740R0006	163
BLNO-M162	7TAA292740R0007	163
BLNO-M202	7TAA292740R0008	163
BLNO-M207	7TAA292740R0009	163
BLNO-M253	7TAA292740R0010	163
BLNO-M257	7TAA292740R0011	163
BLNO-M323	7TAA292740R0012	163
BLNO-M329	7TAA292740R0013	163
BLNO-M406	7TAA292740R0014	163
BLNO-M409	7TAA292740R0015	163
BLNO-M508	7TAA292740R0016	163
BLSGO-1010	7TCA292000R9460	165
BLSGO-1212	7TCA292000R9461	165
BLSGO-1717	7TCA292000R9462	165
BLSGO-2323	7TCA292000R9463	165
BLTO-070707	7TCA292000R4700	164
BLTO-101010	7TCA292000R4701	164
BLTO-121212	7TCA292000R4702	164
BLTO-171717	7TCA292000R4703	164
BLTO-232323	7TAA292460R0011	164
BLTO-292929	7TCA292000R4705	164
BLYO-100707	7TCA292000R4706	164
BLYO-121010	7TCA292000R4707	164
BLYO-171212	7TCA292000R4708	164
BLYO-231717	7TCA292000R4709	164
BLYO-292917	7TCA292000R4710	164
BMN-07	7TAA292670R0008	132
BMN-09	7TAA292670R0009	132
BMN-11	7TAA292670R0010	132
BMN-13	7TAA292670R0011	132

Part. no.	GID no.	Page
BMN-16	7TAA292670R0012	132
BMN-21	7TAA292670R0013	132
BMN-29	7TAA292670R0014	132
BMN-36	7TAA292670R0015	132
BMN-48	7TAA292670R0016	132
BMN-M12	7TAA292670R0020	132
BMN-M16	7TAA292670R0021	132
BMN-M20	7TAA292670R0022	132
BMN-M25	7TAA292670R0023	132
BMN-M32	7TAA292670R0024	132
BMN-M40	7TAA292670R0025	132
BMN-M50	7TAA292670R0026	132
BMN-M63	7TAA292670R0027	132
BSH-R23	7TCA292000R9833	150
BSH-R29	7TAA292890R0015	150
BSH-R36	7TCA292000R7433	150
BSH-R48	7TAA292890R0016	150
BSH-R56	7TCA292000R7435	150
BSH-R70	7TAA292890R0017	150
BSS-17	7TAA292850R0013	121
BSS-23	7TAA292850R0014	121
BSS-29	7TAA292850R0015	121
BSS-36	7TAA292850R0016	121
BSS-36-OS	7TCA292001R1247	154
BSS-48	7TAA292850R0017	121
BSS-48-OS	7TCA292001R1250	154
BSS-56G	7TAA292850R0018	121
BSS-70-OS	7TCA292001R1525	154
BSSK-23GT	7TCA292000R9835	153
BSSK-29GT	7TCA292000R9729	153
BSSK-36GT	7TCA292000R9731	153
BSSK-48GT	7TCA292000R9818	153
BSSK-56G	7TCA292000R9820	153
BSV-70G	7TAA292850R0019	121
BTK-R36	7TCA292001R1229	152
BTK-R48	7TCA292001R1240	152
BTK-R70	7TAA292890R0018	152
BTR-R36GT	7TCA292001R1274	152
BTR-R48GT	7TCA292001R1272	152
BTR-R70G	7TAA292780R0022	152
BUAV-M207-UL	7TAA292460R0000	71
BUAV-M253-UL	7TAA292460R0001	71
BUAV-M329-UL	7TAA292460R0002	71
BUAV-M406-UL	7TAA292460R0003	71
BUAV-M506-UL	7TAA292460R0004	71
BUAV-M508-UL	7TAA292460R0021	71
BUAV-M638-UL	7TAA292460R0006	71
BUAV-N027-UL	7TAA292460R0007	98
BUAV-N043-UL	7TAA292460R0008	98
BUAV-N069-UL	7TAA292460R0009	98
BUAV-N076-UL	7TAA292460R0010	98
BUAV-N088-UL	7TAA292460R0011	98
BUAV-N098-UL	7TAA292460R0012	98

Part. no.	GID no.	Page
BUNV-M207-UL	7TAA292460R0013	60
BUNV-M253-UL	7TAA292460R0014	60
BUNV-M257-UL	7TAA292460R0015	60
BUNV-M323-UL	7TAA292460R0016	60
BUNV-M329-UL	7TAA292460R0017	60
BUNV-M406-UL	7TAA292460R0018	60
BUNV-M409-UL	7TAA292460R0019	60
BUNV-M506-UL	7TAA292460R0020	60
BUNV-M508-UL	7TAA292460R0021	60
BUNV-M638-UL	7TAA292460R0022	60
BUNV-N027-UL	7TAA292460R0023	94
BUNV-N043-UL	7TAA292460R0024	94
BUNV-N069-UL	7TAA292460R0025	94
BUNV-N076-UL	7TAA292460R0026	94
BUNV-N088-UL	7TAA292460R0027	94
BUNV-N098-UL	7TAA292460R0028	94
BUWV-M207-UL	7TAA292460R0029	77
BUWV-M253-UL	7TAA292460R0030	77
BUWV-M329-UL	7TAA292460R0031	77
BUWV-M406-UL	7TAA292460R0032	77
BUWV-M508-UL	7TAA292460R0033	77
BUWV-N027-UL	7TAA292460R0034	101
BUWV-N043-UL	7TAA292460R0035	101
BUWV-N069-UL	7TAA292460R0036	101
BUWV-N076-UL	7TAA292460R0037	101
BUWV-N088-UL	7TAA292460R0038	101
BUWV-N098-UL	7TAA292460R0039	101
BVAD-M120GT	7TAA292150R0032	70
BVAD-M160GT	7TAA292150R0033	70
BVAD-M162GT	7TAA292150R0034	70
BVAD-M202GT	7TAA292150R0035	70
BVAD-M207GT	7TAA292150R0036	70
BVAD-M253GT	7TAA292150R0037	70
BVAD-M329GT	7TAA292150R0038	70
BVAD-M406GT	7TAA292150R0039	70
BVAD-M506GT	7TAA292150R0040	70
BVAD-M508GT	7TAA292150R0041	70
BVAD-M638GT	7TAA292150R0042	70
BVAD-N022GT	7TAA292150R0043	97
BVAD-N027GT	7TAA292150R0044	97
BVAD-N043GT	7TAA292150R0045	97
BVAD-N069GT	7TAA292150R0046	97
BVAD-N088GT	7TAA292150R0048	97
BVAD-P090GT	7TAA292150R0049	86
BVAD-P112GT	7TAA292150R0050	86
BVAD-P137GT	7TAA292150R0052	86
BVAD-P167GT	7TAA292150R0053	86
BVAD-P213GT	7TAA292150R0054	86
BVAD-P299GT	7TAA292150R0055	86
BVAD-P366GT	7TAA292150R0056	86
BVAD-P488GT	7TAA292150R0057	86
BVAV-M160	7TAA292150R0065	70
BVAV-M162	7TAA292150R0066	70

Index

Products in alphabetical order

Part. no.	GID no.	Page
BVAV-M202	7TAA292150R0067	70
BVAV-M207	7TAA292150R0068	70
BVAV-M253	7TAA292150R0069	70
BVAV-M329	7TAA292150R0070	70
BVAV-M406	7TAA292150R0071	70
BVAV-M506	7TAA292150R0072	70
BVAV-M508	7TAA292150R0073	70
BVAV-M638	7TAA292150R0074	70
BVAV-N022	7TAA292150R0075	97
BVAV-N027	7TAA292150R0078	97
BVAV-N043	7TAA292150R0077	97
BVAV-N069	7TAA292150R0078	97
BVAV-N088	7TAA292150R0080	97
BVAV-N098	7TAA292150R0081	97
BVAV-P090	7TAA292150R0082	86
BVAV-P112	7TAA292150R0083	86
BVAV-P132	7TAA292150R0084	86
BVAV-P137	7TAA292150R0085	86
BVAV-P167	7TAA292150R0086	86
BVAV-P213	7TAA292150R0087	86
BVAV-P299	7TAA292150R0088	86
BVAV-P366	7TAA292150R0089	86
BVAV-P488	7TAA292150R0090	86
BVBD-M207GT	7TAA292150R0091	73
BVBD-M253GT	7TAA292150R0092	73
BVBD-M257GT	7TAA292150R0093	73
BVBD-M323GT	7TAA292150R0094	73
BVBD-M329GT	7TAA292150R0095	73
BVBD-M406GT	7TAA292150R0096	73
BVBD-M409GT	7TAA292150R0097	73
BVBD-M506GT	7TAA292150R0098	73
BVBD-M508GT	7TAA292150R0099	73
BVBD-M638GT	7TAA292150R0100	73
BVBD-P167GT	7TAA292150R0101	88
BVBD-P213GT	7TAA292150R0102	88
BVBD-P299GT	7TAA292150R0103	88
BVBD-P366GT	7TAA292150R0104	88
BVBD-P488GT	7TAA292150R0105	88
BVBV-M207	7TAA292150R0106	73
BVBV-M253	7TAA292150R0107	73
BVBV-M257	7TAA292150R0108	73
BVBV-M323	7TAA292150R0109	73
BVBV-M329	7TAA292150R0110	73
BVBV-M406	7TAA292150R0111	73
BVBV-M409	7TAA292150R0112	73
BVBV-M506	7TAA292150R0113	73
BVBV-M508	7TAA292150R0114	73
BVBV-M638	7TAA292150R0115	73
BVBV-P167	7TAA292150R0116	88
BVBV-P213	7TAA292150R0117	88
BVBV-P299	7TAA292150R0118	88
BVBV-P366	7TAA292150R0119	88
BVBV-P488	7TAA292150R0120	88

Part. no.	GID no.	Page
BVEMV-M120-10	7TAA292330R0000	169
BVEMV-M120-5	7TCA292000R0949	169
BVEMV-M162-10	7TAA292330R0001	169
BVEMV-M162-5	7TCA292000R0950	169
BVEMV-M207-10	7TAA292330R0002	169
BVEMV-M207-6	7TAA292330R0003	169
BVEMV-M253-11	7TAA292330R0004	169
BVEMV-M253-7	7TAA292330R0005	169
BVEMV-M329-13	7TAA292330R0006	169
BVEMV-M329-8	7TAA292330R0007	169
BVEMV-M406-13	7TAA292330R0008	169
BVEMV-M406-8	7TAA292330R0009	169
BVEMV-M409-13	7TAA292330R0010	169
BVEMV-M508-14	7TAA292330R0011	169
BVEMV-M508-9	7TAA292330R0012	169
BVEMV-M638-10	7TAA292330R0013	169
BVEMV-M638-14	7TAA292330R0014	169
BVH-17-000	7TAA292700R0027	138
BVH-17-010	7TAA292700R0028	138
BVH-17-020	7TAA292700R0029	138
BVH-23-000	7TAA292700R0030	138
BVH-23-010	7TAA292700R0031	138
BVH-23-020	7TAA292700R0032	138
BVH-29-000	7TAA292700R0033	138
BVH-29-010	7TAA292700R0034	138
BVH-29-020	7TAA292700R0035	138
BVH-36-000	7TAA292700R0036	138
BVH-36-010	7TAA292700R0037	138
BVH-36-020	7TAA292700R0038	138
BVH-48-000	7TAA292700R0039	138
BVH-48-010	7TAA292700R0040	138
BVH-48-020	7TAA292700R0041	138
BVID-M12MGT	7TAA292610R0016	68
BVID-M160GT	7TAA292610R0017	68
BVID-M162GT	7TAA292610R0018	68
BVID-M207GT	7TAA292610R0019	68
BVID-M253GT	7TAA292610R0020	68
BVID-M329GT	7TAA292610R0021	68
BVID-M406GT	7TAA292610R0022	68
BVID-M508GT	7TAA292610R0023	68
BVID-M638GT	7TAA292610R0024	68
BVIDA-U150GT	7TAA292610R0025	103
BVIDA-U152GT	7TAA292610R0026	103
BVIDA-U15MGT	7TAA292610R0027	103
BVIDA-U180GT	7TAA292610R0028	103
BVIDA-U182GT	7TAA292610R0029	103
BVIDA-U187GT	7TAA292610R0030	103
BVIDA-U232GT	7TAA292610R0031	103
BVIDA-U237GT	7TAA292610R0033	103
BVIDA-U343GT	7TAA292610R0034	103
BVIDA-U347GT	7TAA292610R0035	103
BVIDA-U402GT	7TAA292610R0036	103
BVIDA-U403GT	7TAA292610R0037	103

Part. no.	GID no.	Page
BVIDA-U407GT	7TAA292610R0038	103
BVIDB-U162GT	7TAA292610R0039	103
BVIDB-U202GT	7TAA292610R0040	103
BVIDB-U232GT	7TAA292610R0041	103
BVIDB-U237GT	7TAA292610R0042	103
BVIDB-U267GT	7TAA292610R0043	103
BVIDB-U293GT	7TAA292610R0044	103
BVIDB-U297GT	7TAA292610R0045	103
BVIDB-U323GT	7TAA292610R0046	103
BVIDB-U353GT	7TAA292610R0047	103
BVIDB-U357GT	7TAA292610R0048	103
BVIDB-U359GT	7TAA292610R0049	103
BVIDG-U212GT	7TAA292610R0050	104
BVIDG-U217GT	7TAA292610R0051	104
BVIDG-U242GT	7TAA292610R0052	104
BVIDG-U247GT	7TAA292610R0053	104
BVIDG-U293GT	7TAA292610R0054	104
BVIDG-U297GT	7TAA292610R0055	104
BVIDG-U353GT	7TAA292610R0056	104
BVIDG-U357GT	7TAA292610R0057	104
BVIDG-U359GT	7TAA292610R0058	104
BVIDG-U433GT	7TAA292610R0059	104
BVIDG-U436GT	7TAA292610R0060	104
BVIDG-U439GT	7TAA292610R0061	104
BVIDG-U506GT	7TAA292610R0062	104
BVIDG-U509GT	7TAA292610R0063	104
BVIDG-U566GT	7TAA292610R0064	104
BVIDG-U569GT	7TAA292610R0065	104
BVIMV-U182	7TCA292000R0988	170
BVIMV-U212	7TCA292000R0989	170
BVIMV-U212-14	7TAA292330R0029	170
BVIMV-U247	7TCA292000R0990	170
BVIMV-U247-14	7TAA292330R0030	170
BVIMV-U267-14	7TAA292330R0031	170
BVIMV-U293-14	7TAA292330R0032	170
BVIMV-U303-14	7TAA292330R0033	170
BVIMV-U323-14	7TAA292330R0034	170
BVIMV-U353	7TAA292330R0035	170
BVIMV-U357	7TAA292330R0036	170
BVIMV-U359-14	7TAA292330R0037	170
BVIMV-U433	7TCA292000R0992	170
BVIMV-U566	7TCA292000R0993	170
BVIMV-U568	7TAA292330R0038	170
BVIMV-U569	7TCA292000R0994	170
BVIR-M160	7TAA292610R0066	68
BVIR-M162	7TAA292610R0067	68
BVIR-M202	7TAA292610R0068	68
BVIR-M207	7TAA292610R0069	68
BVIR-M253	7TAA292610R0070	68
BVIR-M257	7TAA292610R0071	68
BVIR-M329	7TAA292610R0072	68
BVIR-M406	7TAA292610R0073	68
BVIR-M508	7TAA292610R0074	68

Index

Products in alphabetical order

Part. no.	GID no.	Page
BVIR-M638	7TAA292610R0075	68
BVIRA-U150	7TAA292610R0080	103
BVIRA-U152	7TAA292610R0081	103
BVIRA-U15M	7TAA292610R0082	103
BVIRA-U180	7TAA292610R0083	103
BVIRA-U182	7TAA292610R0084	103
BVIRA-U187	7TAA292610R0085	103
BVIRA-U232	7TAA292610R0086	103
BVIRA-U237	7TAA292610R0088	103
BVIRA-U343	7TAA292610R0089	103
BVIRA-U347	7TAA292610R0090	103
BVIRA-U402	7TAA292610R0091	103
BVIRA-U403	7TAA292610R0092	103
BVIRA-U407	7TAA292610R0093	103
BVIRB-U162	7TAA292610R0094	103
BVIRB-U202	7TAA292610R0095	103
BVIRB-U232	7TAA292610R0096	103
BVIRB-U237	7TAA292610R0097	103
BVIRB-U267	7TAA292610R0098	103
BVIRB-U293	7TAA292610R0099	103
BVIRB-U297	7TAA292610R0100	103
BVIRB-U323	7TAA292610R0101	103
BVIRB-U353	7TAA292610R0102	103
BVIRB-U357	7TAA292610R0103	103
BVIRB-U359	7TAA292610R0104	103
BVIKS-U162	7TCA292000R0041	103
BVIKS-U202	7TCA292000R0042	103
BVIKS-U237	7TCA292000R0043	103
BVIKS-U267	7TCA292000R0044	103
BVIKS-U323	7TCA292000R0046	103
BVIKS-U359	7TCA292000R0047	103
BVIVG-U152	7TAA292610R0105	104
BVIVG-U187	7TAA292610R0106	104
BVIVG-U210	7TAA292610R0107	104
BVIVG-U212	7TAA292610R0108	104
BVIVG-U217	7TAA292610R0109	104
BVIVG-U242	7TAA292610R0110	104
BVIVG-U243	7TAA292610R0111	104
BVIVG-U247	7TAA292610R0112	104
BVIVG-U292	7TAA292610R0113	104
BVIVG-U293	7TAA292610R0114	104
BVIVG-U297	7TAA292610R0115	104
BVIVG-U299	7TAA292610R0116	104
BVIVG-U349	7TCA292000R1035	104
BVIVG-U352	7TAA292610R0169	104
BVIVG-U353	7TAA292610R0117	104
BVIVG-U356	7TAA292610R0118	104
BVIVG-U357	7TAA292610R0119	104
BVIVG-U359	7TAA292610R0120	104
BVIVG-U433	7TAA292610R0121	104
BVIVG-U436	7TAA292610R0122	104
BVIVG-U437	7TAA292610R0123	104
BVIVG-U439	7TAA292610R0124	104

Part. no.	GID no.	Page
BVIVG-U503	7TAA292610R0125	104
BVIVG-U506	7TAA292610R0126	104
BVIVG-U508	7TAA292610R0127	104
BVIVG-U509	7TAA292610R0128	104
BVIVG-U563	7TAA292610R0129	104
BVIVG-U566	7TAA292610R0130	104
BVIVG-U568	7TAA292610R0131	104
BVIVG-U569	7TAA292610R0132	104
BVIVG-U628	7TCA292000R1039	104
BVND-G000GT	7TAA292150R0127	102
BVND-G000MGT	7TAA292150R0128	102
BVND-G010GT	7TAA292150R0129	102
BVND-G012GT	7TAA292150R0130	102
BVND-G022GT	7TAA292150R0131	102
BVND-G027GT	7TAA292150R0132	102
BVND-G043GT	7TAA292150R0133	102
BVND-G069GT	7TAA292150R0134	102
BVND-G078GT	7TAA292150R0135	102
BVND-G088GT	7TAA292150R0136	102
BVND-G098GT	7TAA292150R0137	102
BVND-M120GT	7TAA292150R0138	59
BVND-M12MGT	7TAA292150R0139	59
BVND-M160GT	7TAA292150R0140	59
BVND-M162GT	7TAA292150R0141	59
BVND-M200GT	7TAA292150R0142	59
BVND-M202GT	7TAA292150R0144	59
BVND-M203GT	7TAA292150R0150	59
BVND-M207GT	7TAA292150R0147	59
BVND-M253GT	7TAA292150R0149	59
BVND-M257GT	7TAA292150R0150	59
BVND-M323GT	7TAA292150R0152	59
BVND-M329GT	7TAA292150R0154	59
BVND-M406GT	7TAA292150R0156	59
BVND-M409GT	7TAA292150R0157	59
BVND-M506GT	7TAA292150R0159	59
BVND-M508GT	7TAA292150R0160	59
BVND-M638GT	7TAA292150R0161	59
BVND-N022GT	7TAA292150R0162	93
BVND-N027GT	7TAA292150R0163	93
BVND-N043GT	7TAA292150R0164	93
BVND-N069GT	7TAA292150R0165	93
BVND-N078GT	7TAA292150R0166	93
BVND-N088GT	7TAA292150R0167	93
BVND-N098GT	7TAA292150R0168	93
BVND-P070GT-11	7TAA292150R0169	80
BVND-P070GT-8	7TAA292150R0170	80
BVND-P072GT-11	7TAA292150R0171	80
BVND-P072GT-8	7TAA292150R0172	80
BVND-P07MGT-11	7TAA292150R0173	80
BVND-P07MGT-8	7TAA292150R0174	80
BVND-P090GT-11	7TAA292150R0178	80
BVND-P090GT-8	7TAA292150R0177	80
BVND-P092GT-11	7TAA292150R0178	80

Part. no.	GID no.	Page
BVND-P092GT-8	7TCA292000R1057	80
BVND-P097GT-11	7TAA292150R0179	80
BVND-P097GT-8	7TCA292000R5693	80
BVND-P09MGT-11	7TAA292150R0180	80
BVND-P09MGT-8	7TCA292000R1058	80
BVND-P110GT-11	7TAA292150R0181	80
BVND-P110GT-8	7TAA292150R0182	80
BVND-P112GT-11	7TAA292150R0183	80
BVND-P112GT-8	7TAA292150R0184	80
BVND-P117GT-11	7TAA292150R0185	80
BVND-P117GT-8	7TCA292000R1060	80
BVND-P11MGТ-11	7TAA292150R0186	80
BVND-P11MGТ-8	7TCA292000R5694	80
BVND-P130GT-11	7TAA292150R0187	80
BVND-P130GT-8	7TCA292000R1061	80
BVND-P132GT-11	7TAA292150R0188	80
BVND-P132GT-8	7TCA292000R1062	80
BVND-P137GT-11	7TAA292150R0189	80
BVND-P137GT-8	7TCA292000R1064	80
BVND-P13MGТ-11	7TAA292150R0190	80
BVND-P13MGТ-8	7TCA292000R1065	80
BVND-P160GT-11	7TAA292150R0191	80
BVND-P160GT-8	7TCA292000R5695	80
BVND-P162GT-11	7TAA292150R0192	80
BVND-P163GT-11	7TAA292150R0193	80
BVND-P163GT-8	7TCA292000R1066	80
BVND-P167GT-11	7TAA292150R0194	80
BVND-P167GT-8	7TAA292150R0195	80
BVND-P213GT	7TAA292150R0196	80
BVND-P296GT	7TAA292150R0197	80
BVND-P299GT	7TAA292150R0198	80
BVND-P366GT	7TAA292150R0199	80
BVND-P368GT	7TAA292150R0200	80
BVND-P428GT	7TAA292150R0201	80
BVND-P488GT	7TAA292150R0202	80
BVNDZ-M160GT	7TAA292150R0204	63
BVNDZ-M162GT	7TAA292150R0205	63
BVNDZ-M207GT	7TAA292150R0206	63
BVNDZ-M253GT	7TAA292150R0207	63
BVNDZ-M329GT	7TAA292150R0208	63
BVNDZ-M406GT	7TAA292150R0209	63
BVNDZ-M508GT	7TAA292150R0210	63
BVNDZ-M638GT	7TAA292150R0211	63
BVNDZ-P090GT	7TAA292150R0212	82
BVNDZ-P112GT	7TAA292150R0213	82
BVNDZ-P132GT	7TAA292150R0214	82
BVNDZ-P167GT	7TAA292150R0217	82
BVNDZ-P213GT	7TAA292150R0218	82
BVNDZ-P299GT	7TAA292150R0219	82
BVNDZ-P366GT	7TAA292150R0220	82
BVNDZ-P488GT	7TAA292150R0221	82
BVNR-RE12	7TAA292150R0222	107
BVNR-RE12-24	7TAA292150R0223	107

Index

Products in alphabetical order

Part. no.	GID no.	Page
BVNR-RE1317	7TAA292150R0224	107
BVNR-RE1317-28	7TAA292150R0225	107
BVNR-RE17	7TAA292150R0226	107
BVNR-RE17-28	7TAA292150R0227	107
BVNR-RE23	7TAA292150R0229	107
BVNR-RE23-32	7TAA292150R0230	107
BVNR-RE29	7TAA292150R0232	107
BVNR-RE29-44	7TAA292150R0233	107
BVNR-RE36	7TAA292150R0235	107
BVNR-RE36-50	7TAA292150R0236	107
BVNR-RE48	7TAA292150R0238	107
BVNR-RE48-65	7TAA292150R0239	107
BVNR-REM162	7TAA292150R0240	107
BVNR-REM162-24	7TAA292150R0241	107
BVNR-REM187	7TAA292150R0242	107
BVNR-REM187-28	7TAA292150R0243	107
BVNR-REM207	7TAA292150R0244	107
BVNR-REM207-28	7TAA292150R0245	107
BVNR-REM253	7TAA292150R0246	107
BVNR-REM253-32	7TAA292150R0247	107
BVNR-REM329	7TAA292150R0248	107
BVNR-REM329-44	7TAA292150R0249	107
BVNR-REM406	7TAA292150R0250	107
BVNR-REM406-50	7TAA292150R0251	107
BVNR-REM508	7TAA292150R0252	107
BVNR-REM508-65	7TAA292150R0253	107
BVNV-G000	7TAA292150R0256	102
BVNV-G00M	7TAA292150R0257	102
BVNV-G010	7TAA292150R0258	102
BVNV-G012	7TAA292150R0259	102
BVNV-G022	7TAA292150R0260	102
BVNV-G027	7TAA292150R0261	102
BVNV-G043	7TAA292150R0262	102
BVNV-G069	7TAA292150R0263	102
BVNV-G088	7TAA292150R0265	102
BVNV-G098	7TAA292150R0266	102
BVNV-M120	7TAA292150R0267	59
BVNV-M12M	7TAA292150R0268	59
BVNV-M160	7TAA292150R0269	59
BVNV-M162	7TAA292150R0270	59
BVNV-M200	7TAA292150R0272	59
BVNV-M202	7TAA292150R0273	59
BVNV-M203	7TAA292150R0274	59
BVNV-M207	7TAA292150R0275	59
BVNV-M253	7TAA292150R0277	59
BVNV-M257	7TAA292150R0279	59
BVNV-M323	7TAA292150R0281	59
BVNV-M329	7TAA292150R0282	59
BVNV-M406	7TAA292150R0283	59
BVNV-M409	7TAA292150R0284	59
BVNV-M506	7TAA292150R0285	59
BVNV-M508	7TAA292150R0286	59
BVNV-M638	7TAA292150R0287	59

Part. no.	GID no.	Page
BVNV-N022	7TAA292150R0289	93
BVNV-N027	7TAA292150R0290	93
BVNV-N043	7TAA292150R0291	93
BVNV-N069	7TAA292150R0292	93
BVNV-N078	7TAA292150R0293	93
BVNV-N088	7TAA292150R0294	93
BVNV-N098	7TAA292150R0295	93
BVNV-P070	7TAA292150R0296	80
BVNV-P072	7TCA292000R1118	80
BVNV-P07M	7TAA292150R0297	80
BVNV-P090	7TAA292150R0298	80
BVNV-P092	7TAA292150R0299	80
BVNV-P097	7TAA292150R1288	80
BVNV-P09M	7TAA292150R0300	80
BVNV-P110	7TAA292150R0301	80
BVNV-P112	7TAA292150R0302	80
BVNV-P117	7TAA292150R0303	80
BVNV-P11M	7TAA292150R0304	80
BVNV-P130	7TAA292150R0305	80
BVNV-P132	7TAA292150R0306	80
BVNV-P137	7TAA292150R0307	80
BVNV-P13M	7TAA292150R0308	80
BVNV-P162	7TAA292150R0309	80
BVNV-P163	7TCA292000R1137	80
BVNV-P167	7TAA292150R0310	80
BVNV-P213	7TAA292150R0311	80
BVNV-P296	7TAA292150R0312	80
BVNV-P299	7TAA292150R0313	80
BVNV-P366	7TAA292150R0314	80
BVNV-P368	7TCA292000R1147	80
BVNV-P428	7TAA292150R0315	80
BVNV-P488	7TAA292150R0316	80
BVNZ-M162S	7TAA292150R0317	63
BVNZ-M207S	7TAA292150R0318	63
BVNZ-M253S	7TAA292150R0319	63
BVNZ-M329S	7TAA292150R0320	63
BVNZ-M406S	7TAA292150R0321	63
BVNZ-M508S	7TAA292150R0322	63
BVNZ-M638S	7TAA292150R0323	63
BVNZ-P090S	7TAA292150R0327	82
BVNZ-P112S	7TAA292150R0328	82
BVNZ-P132S	7TAA292150R0329	82
BVNZ-P137S	7TAA292150R0330	82
BVNZ-P163S	7TAA292150R0331	82
BVNZ-P167S	7TAA292150R0332	82
BVNZ-P213S	7TAA292150R0333	82
BVNZ-P299S	7TAA292150R0334	82
BVNZ-P366S	7TAA292150R0335	82
BVNZ-P488S	7TAA292150R0336	82
BVOD-P167GT	7TAA292150R0337	106
BVOD-P213GT	7TAA292150R0338	106
BVOD-P299GT	7TAA292150R0339	106
BVOD-P366GT	7TAA292150R0340	106

Part. no.	GID no.	Page
BVOD-P488GT	7TAA292150R0341	106
BVOV-P167	7TAA292150R0342	106
BVOV-P213	7TAA292150R0343	106
BVOV-P299	7TAA292150R0344	106
BVOV-P366	7TAA292150R0345	106
BVOV-P488	7TAA292150R0346	106
BVSGD-1212GT	7TAA292300R0000	107
BVSGD-1717GT	7TAA292300R0001	107
BVSGD-2323GT	7TAA292300R0002	107
BVSGD-2929GT	7TAA292300R0003	107
BVSGD-3636GT	7TAA292300R0004	107
BVSGD-4848GT	7TAA292300R0005	107
BVSGR-1212	7TAA292300R0006	107
BVSGR-1717	7TAA292300R0007	107
BVSGR-2323	7TAA292300R0008	107
BVSGR-2929	7TAA292300R0009	107
BVSGR-3636	7TAA292300R0010	107
BVSGR-4848	7TAA292300R0011	107
BVTD-101010GT	7TAA292150R1292	105
BVTD-121212GT	7TAA292150R1293	105
BVTD-171717GT	7TAA292150R1294	105
BVTD-232323GT	7TAA292150R0347	105
BVTD-292929GT	7TAA292150R0348	105
BVTD-363636GT	7TAA292150R0349	105
BVTD-484848GT	7TAA292150R0350	105
BVTR-101010	7TAA292150R0351	105
BVTR-121212	7TAA292150R0353	105
BVTR-171717	7TAA292150R0355	105
BVTR-232323	7TAA292150R0358	105
BVTR-292929	7TAA292150R0359	105
BVTR-363636	7TAA292150R0361	105
BVTR-484848	7TAA292150R0363	105
BVWD-G000GT	7TAA292150R0364	102
BVWD-G00MGT	7TAA292150R0365	102
BVWD-G010GT	7TAA292150R0366	102
BVWD-G012GT	7TAA292150R0367	102
BVWD-G022GT	7TAA292150R0368	102
BVWD-G027GT	7TAA292150R0369	102
BVWD-G043GT	7TAA292150R0370	102
BVWD-G069GT	7TAA292150R0371	102
BVWD-G088GT	7TAA292150R0373	102
BVWD-G098GT	7TAA292150R0374	102
BVWD-M120GT	7TAA292150R0375	76
BVWD-M12MGT	7TAA292150R0378	76
BVWD-M160GT	7TAA292150R0377	76
BVWD-M162GT	7TAA292150R0378	76
BVWD-M200GT	7TAA292150R0379	76
BVWD-M202GT	7TAA292150R0380	76
BVWD-M207GT	7TAA292150R0381	76
BVWD-M253GT	7TAA292150R0382	76
BVWD-M329GT	7TAA292150R0383	76
BVWD-M406GT	7TAA292150R0384	76
BVWD-M508GT	7TAA292150R0385	76

Index

Products in alphabetical order

Part. no.	GID no.	Page
BVWD-N022GT	7TAA292150R0386	100
BVWD-N027GT	7TAA292150R0387	100
BVWD-N043GT	7TAA292150R0388	100
BVWD-N069GT	7TAA292150R0389	100
BVWD-N078GT	7TAA292150R0390	100
BVWD-N088GT	7TAA292150R0391	100
BVWD-N098GT	7TAA292150R0392	100
BVWD-P070GT-11	7TAA292150R0393	91
BVWD-P07MGT-11	7TAA292150R0395	91
BVWD-P090GT-11	7TAA292150R0396	91
BVWD-P092GT-11	7TAA292150R0397	91
BVWD-P09MGT-11	7TAA292150R0398	91
BVWD-P110GT-11	7TAA292150R0399	91
BVWD-P112GT-11	7TAA292150R0400	91
BVWD-P11MGT-11	7TAA292150R0402	91
BVWD-P130GT-11	7TAA292150R0403	91
BVWD-P132GT-11	7TAA292150R0404	91
BVWD-P137GT-11	7TAA292150R0405	91
BVWD-P13MGT-11	7TAA292150R0407	91
BVWD-P167GT-11	7TAA292150R0408	91
BVWD-P213GT	7TAA292150R0410	91
BVWD-P299GT	7TAA292150R0411	91
BVWD-P366GT	7TAA292150R0412	91
BVWD-P488GT	7TAA292150R0413	91
BVWV-M120	7TAA292150R0425	76
BVWV-M12M	7TAA292150R0426	76
BVWV-M160	7TAA292150R0427	76
BVWV-M162	7TAA292150R0428	76
BVWV-M202	7TAA292150R0429	76
BVWV-M207	7TAA292150R0430	76
BVWV-M253	7TAA292150R0431	76
BVWV-M329	7TAA292150R0432	76
BVWV-M406	7TAA292150R0433	76
BVWV-M508	7TAA292150R0434	76
BVWV-N022	7TAA292150R0435	100
BVWV-N027	7TAA292150R0436	100
BVWV-N043	7TAA292150R0437	100
BVWV-N069	7TAA292150R0438	100
BVWV-N088	7TAA292150R0440	100
BVWV-N098	7TAA292150R0441	100
BVWV-P070	7TAA292150R0442	91
BVWV-P090	7TAA292150R0444	91
BVWV-P110	7TAA292150R0447	91
BVWV-P112	7TAA292150R0448	91
BVWV-P130	7TAA292150R0449	91
BVWV-P132	7TAA292150R0450	91
BVWV-P137	7TAA292150R0451	91
BVWV-P13M	7TCA292000R1265	91
BVWV-P167	7TAA292150R0452	91
BVWV-P213	7TAA292150R0453	91
BVWV-P299	7TAA292150R0454	91
BVWV-P366	7TAA292150R0455	91
BVWV-P488	7TAA292150R0456	91

Part. no.	GID no.	Page
BVYD-100707GT	7TAA292150R0457	105
BVYD-121010GT	7TAA292150R0458	105
BVYD-171212GT	7TAA292150R0459	105
BVYD-231717GT	7TAA292150R0460	105
BVYD-292323GT	7TAA292150R0461	105
BVYD-362929GT	7TAA292150R0462	105
BVYD-483636GT	7TAA292150R0463	105
BVYR-100707	7TAA292150R0464	105
BVYR-121010	7TAA292150R0465	105
BVYR-171212	7TAA292150R0466	105
BVYR-231717	7TAA292150R0467	105
BVYR-292323	7TAA292150R0468	105
BVYR-362929	7TAA292150R0469	105
BVYR-483636	7TAA292150R0470	105
C.66.10GR	7TAA292910R0000	180
C.66.10SW	7TAA292910R0001	180
C.66.12GR	7TAA292910R0002	180
C.66.12SW	7TAA292910R0003	180
C.66.16GR	7TAA292910R0004	180
C.66.16SW	7TAA292910R0005	180
C.66.20GR	7TAA292910R0006	180
C.66.20SW	7TAA292910R0007	180
C.66.25GR	7TAA292910R0008	180
C.66.25SW	7TAA292910R0009	180
C.66.30GR	7TAA292910R0010	180
C.66.30SW	7TAA292910R0011	180
C.66.40GR	7TAA292910R0012	180
C.66.40SW	7TAA292910R0013	180
C.66.45SW.60	7TAA292910R0014	180
CUSG-17B.31	7TAA292490R0000	34
CUSG-23B.31	7TAA292490R0001	34
CUSG-29B.31	7TAA292490R0003	34
CUSG-36B.31	7TAA292490R0004	34
CUSG-48B.31	7TAA292490R0005	34
CYLG-125B.06	7TAA292360R0000	29
CYLG-125S.06	7TAA292360R0001	29
CYLG-23B.50	7TAA292240R0008	29
CYLG-23S.50	7TAA292240R0009	29
CYLG-29B.50	7TAA292240R0010	29
CYLG-29S.50	7TAA292240R0011	29
CYLG-36B.30	7TAA292240R0012	29
CYLG-36S.30	7TAA292240R0013	29
CYLG-48B.30	7TAA292240R0014	29
CYLG-48S.30	7TAA292240R0015	29
CYLG-56B.30	7TAA292360R0002	29
CYLG-56S.30	7TAA292360R0003	29
CYLG-70B.10	7TAA292360R0004	29
CYLG-70S.10	7TAA292360R0006	29
CYLG-95B.10	7TAA292360R0008	29
CYLG-95S.10	7TAA292360R0010	29
CYLT-07B.50	7TAA292240R0018	29
CYLT-07S.50	7TAA292240R0019	29
CYLT-10B.50	7TAA292240R0020	29

Part. no.	GID no.	Page
CYLT-10S.50	7TAA292240R0021	29
CYLT-12B.50	7TAA292240R0022	29
CYLT-12S.50	7TAA292240R0023	29
CYLT-17B.50	7TAA292240R0024	29
CYLT-17S.50	7TAA292240R0025	29
CYLT-23B.50	7TAA292240R0026	29
CYLT-23S.50	7TAA292240R0027	29
CYLT-29B.50	7TAA292240R0028	29
CYLT-29S.50	7TAA292240R0029	29
CYLT-36B.30	7TAA292240R0030	29
CYLT-36S.30	7TAA292240R0031	29
CYLT-48B.30	7TAA292240R0032	29
CYLT-48S.30	7TAA292240R0033	29
DKLK-R100x80	7TAA292890R0019	151
DKLK-R56x56	7TAA292890R0021	151
E150p7	7TCA292000R9071	46,47,66
E150p8	7TCA292000R9074	46,47,66
E150p9	7TCA292000R9075	46,47,66
E151p9	-	83
E151P11	7TCA292000R9117	83
E151P7	7TCA292000R9115	83
E152p11	7TCA292000R9081	46,47,66
E152p13	7TCA292000R9083	46,47,66
E152p7	7TCA292000R9078	46,47,66
E152p9	7TCA292000R9077	46,47,66
E153p11	7TCA292000R9090	46,79
E153p13	7TCA292000R9091	46,66,79
E153p16	7TCA292000R9092	46,66,79
E154p11	7TCA292000R9094	79
E154p13	7TCA292000R9095	46,47
E154p16	7TCA292000R9096	83
E154p18	7TCA292000R9097	46,47,66
E154p20	7TCA292000R9098	46,47,66
E155p16	7TCA292000R9107	46
E155p18	7TCA292000R9101	46,47,66
E155p20	7TCA292000R9138	46,47,66
E155p25	7TCA292000R9108	46,47,66
E155p28	7TCA292000R9109	46,47,66
E156p25HF	7TCA292000R9104	46
E156p32	7TCA292000R9110	46,47,66
E156p34	7TCA292000R9121	76
E156p36	7TCA292000R9111	46,47,66
E157p36HF	7TCA292000R9112	46,47,66
E157p40HF	7TCA292000R9113	46,47,66
E158p44	7TCA292000R9114	64
E158pm1X35	7TCA292000R9127	64
EK150p7	7TCA292000R9053	46
EK150p8	7TCA292000R9068	46
EK150p9	7TCA292000R9069	46
EK154p13	7TCA292000R9088	46
EK154p16	7TCA292000R9123	46
EK155p18	7TCA292000R9100	46
EK155p20	7TCA292000R9102	46

Index

Products in alphabetical order

Part. no.	GID no.	Page
EK155p25	7TCA292000R9103	46
EK156p28	7TCA292000R9105	46
EOA-01	7TCA292001R1714	159
ESDG-56B.30	7TCA292000R7720	25
ESDG-70B.10	7TCA292000R7722	25
ESDG-95B.10	7TCA292000R1850	25
ESDT-07B.50	7TAA292240R0049	25
ESDT-10B.50	7TAA292240R0050	25
ESDT-12B.50	7TAA292240R0051	25
ESDT-17B.50	7TAA292240R0052	25
ESDT-23B.50	7TAA292240R0053	25
ESDT-29B.50	7TAA292240R0054	25
ESDT-36B.30	7TAA292240R0055	25
ESDT-48B.30	7TAA292240R0056	25
EWZ-02	7TAA292880R0000	122
EWZ-03	7TAA292880R0001	122
F.304.10	7TAA292910R0015	183
F.304.12	7TAA292910R0016	183
F.304.17	7TAA292910R0017	183
F.304.23	7TAA292910R0018	183
F.304.29	7TAA292910R0019	183
F.304.36	7TAA292910R0020	183
F.304.48	7TAA292910R0021	183
F.66.04GR	7TAA292910R0024	180
F.66.04SW	7TAA292910R0025	180
F.66.06GR	7TAA292910R0026	180
F.66.06SW	7TAA292910R0027	180
F.66.08GR	7TAA292910R0028	180
F.66.08SW	7TAA292910R0029	180
F.66.10GR	7TAA292910R0030	180
F.66.10SW	7TAA292910R0031	180
F.66.12GR	7TAA292910R0032	180
F.66.12SW	7TAA292910R0033	180
F.66.16GR	7TAA292910R0034	180
F.66.16SW	7TAA292910R0035	180
F.66.20GR	7TAA292910R0036	180
F.66.20SW	7TAA292910R0037	180
F.66.25GR	7TAA292910R0038	180
F.66.25SW	7TAA292910R0039	180
F.66.30GR	7TAA292910R0040	180
F.66.30SW	7TAA292910R0041	180
F.66.40GR	7TAA292910R0042	180
F.66.40SW	7TAA292910R0043	180
F.66.50GR	7TAA292910R0044	180
F.66.50SW	7TAA292910R0045	180
F.66.70GR	7TAA292910R0046	180
F.66.70SW	7TAA292910R0047	180
F.CK.03	7TAA292910R0048	168
F.CK.04	7TAA292910R0049	168
F.CK.06	7TCA292000R0152	168
F.CK.10	7TAA292910R0050	168
F.CK.12.5	7TAA292910R0051	168
F.CK.15	7TAA292910R0052	168

Part. no.	GID no.	Page
F.CK.20	7TAA292910R0053	168
F.CK.25	7TAA292910R0054	168
F.CK.30	7TAA292910R0055	168
F.CK.35	7TAA292910R0056	168
F.CK.50	7TAA292910R0057	168
F.CU.01	7TAA292910R0058	168
F.CU.04	7TAA292910R0059	168
F.CU.10	7TAA292910R0060	168
F.CU.12	7TAA292910R0061	168
F.CU.20	7TAA292910R0062	168
F.CU.40	7TAA292910R0063	168
F.CU.50	7TAA292910R0064	168
F.HY.10	7TAA292910R0268	168
F.HY.12	7TAA292910R0269	168
F.HY.15	7TAA292910R0270	168
F.HY.20	7TAA292890R0021	168
F.HY.35	7TAA292910R0272	168
F.HY.40	7TAA292910R0273	168
FP-38	7TAA292880R0002	121
FP-52	7TAA292880R0003	121
G.PX.05SW	7TAA292910R0075	181
G.PX.08SW	7TAA292910R0078	181
G.PX.10SW	7TAA292910R0077	181
G.PX.13SW	7TAA292910R0078	181
G.PX.16SW	7TAA292910R0079	181
G.PX.19SW	7TAA292910R0080	181
G.PX.25SW	7TAA292910R0081	181
G.PX.29SW	7TAA292910R0082	181
G.PX.32SW	7TAA292910R0083	181
G.PX.38SW	7TAA292910R0084	181
G.PX.50SW	7TAA292910R0085	181
GMM-07	7TAA292670R0028	133
GMM-09	7TAA292670R0029	133
GMM-11	7TAA292670R0030	133
GMM-13	7TAA292670R0032	133
GMM-16	7TAA292670R0034	133
GMM-21	7TAA292670R0035	133
GMM-29	7TAA292670R0037	133
GMM-36	7TAA292670R0038	133
GMM-42	7TAA292670R0039	133
GMM-48	7TAA292670R0040	133
GMM-M12	7TAA292670R0041	133
GMM-M12/EMV	7TAA292670R0042	133
GMM-M16	7TAA292670R0043	133
GMM-M16/EMV	7TAA292670R0044	133
GMM-M20	7TAA292670R0045	133
GMM-M20/EMV	7TAA292670R0046	133
GMM-M25	7TAA292670R0047	133
GMM-M25/EMV	7TAA292670R0048	133
GMM-M32	7TAA292670R0049	133
GMM-M32/EMV	7TAA292670R0050	133
GMM-M40	7TAA292670R0051	133
GMM-M40/EMV	7TCA292000R0156	133

Part. no.	GID no.	Page
GMM-M50	7TAA292670R0052	133
GMM-M50/EMV	7TCA292000R0157	133
GMM-M63	7TAA292670R0053	133
GMM-M63/EMV	7TCA292000R6620	133
GMN-07	7TAA292670R0054	132
GMN-09	7TAA292670R0055	132
GMN-11	7TAA292670R0056	132
GMN-13	7TAA292670R0057	132
GMN-16	7TAA292670R0058	132
GMN-21	7TAA292670R0059	132
GMN-29	7TAA292670R0060	132
GMN-36	7TAA292670R0061	132
GMN-48	7TAA292670R0062	132
GMN-M12	7TAA292670R0063	132
GMN-M16	7TAA292670R0064	132
GMN-M20	7TAA292670R0065	132
GMN-M25	7TAA292670R0066	132
GMN-M32	7TAA292670R0067	132
GMN-M40	7TAA292670R0068	132
GMN-M50	7TAA292670R0069	132
GMN-M63	7TAA292670R0070	132
HFAK-M20/M20-10	7TCA292000R9635	171
HFAK-M25/M25-11	7TCA292000R9638	171
HFAK-M32/M32-13	7TCA292000R9639	171
HFAK-M40/M40-13	7TCA292000R9640	171
HFAK-M50/M50-14	7TCA292000R9641	171
HFAK-M63/M63-14	7TCA292000R9642	171
JENQ-M162-10	7TCA292000R0463	176
JENQ-M207-10	7TCA292000R0464	176
JENQ-M253-11	7TCA292000R0465	176
JENQ-M329-13	7TCA292000R0466	176
JENQ-M406-13	7TCA292000R0467	176
JENQ-M508-14	7TCA292000R0468	176
JFBDG-17C01.50	7TCA292000R7548	33
JFBDG-23C01.50	7TCA292000R7549	33
JFBDG-29C01.50	7TCA292000R7933	33
JFBDG-36C01.50	7TCA292000R7932	33
JFBDG-48C01.50	7TCA292000R7934	33
JFBDT-12C01.50	7TCA292000R7547	33
JKBH-M162	7TCA292000R9688	177
JKBH-M202	7TCA292000R9686	177
JKBH-M207	7TCA292000R9690	177
JKBH-M257	7TCA292000R9692	177
JKBH-M253	7TCA292000R9694	177
JKBH-M323	7TCA292000R9696	177
JKBH-M329	7TCA292000R9698	177
JKBH-M409	7TCA292000R9700	177
JKBH-M406	7TCA292000R9702	177
JKBH-M506	7TCA292000R9704	177
JKBH-M508	7TCA292000R9706	177
JKBH-M638	7TCA292000R9708	177
JKNH-M162	7TCA292000R9305	177
JKNH-M202	7TCA292000R9352	177

Index

Products in alphabetical order

Part. no.	GID no.	Page
JKNH-M207	7TCA292000R9306	177
JKNH-M253	7TCA292000R9307	177
JKNH-M257	7TCA292000R9357	177
JKNH-M323	7TCA292000R9358	177
JKNH-M329	7TCA292000R9308	177
JKNH-M406	7TCA292000R9309	177
JKNH-M409	7TCA292000R9359	177
JKNH-M506	7TCA292000R9360	177
JKNH-M508	7TCA292000R9310	177
JKNH-M638	7TCA292000R9361	177
JLLPA-12A.50	7TCA292000R9663	30
JLLPAG-17A.50	7TCA292000R9664	30
JLLPAG-23A.50	7TCA292000R9665	30
JLLPAG-29A.50	7TCA292000R9666	30
JLLPAG-36A.30	7TCA292000R9667	30
JLLPAG-48A.30	7TCA292000R9668	30
KIT-CCH-17	7TCA292001R1147	158
KIT-CCH-17/01	7TCA292001R1642	158
KIT-CCH-23	7TCA292001R1148	158
KIT-CCH-23/01	7TCA292001R1643	158
KIT-CCH-29	7TCA292001R1149	158
KIT-CCH-29/01	7TCA292001R1644	158
KNH2-NW10.50	7TAA292560R0000	127
KNH2-NW12.50	7TAA292560R0001	127
KNH2-NW17.50	7TAA292560R0002	127
KNH2-NW23.30	7TAA292560R0003	127
KNH2-NW29.20	7TAA292560R0004	127
KNH2-NW36.20	7TAA292560R0005	127
KNH2-NW48.10	7TAA292560R0006	127
L.66.04GR	7TAA292910R0175	181
L.66.04SW	7TAA292910R0178	181
L.66.08GR	7TAA292910R0177	181
L.66.08SW	7TAA292910R0178	181
L.66.10GR	7TAA292910R0179	181
L.66.10SW	7TAA292910R0180	181
L.66.16GR	7TAA292910R0181	181
L.66.16SW	7TAA292910R0182	181
L.66.20GR	7TAA292910R0183	181
L.66.20SW	7TAA292910R0184	181
L.66.25GR	7TAA292910R0185	181
L.66.25SW	7TAA292910R0186	181
L.66.30GR	7TAA292910R0187	181
L.66.30SW	7TAA292910R0188	181
L.66.40GR	7TAA292910R0189	181
L.66.40SW	7TAA292910R0190	181
L.66.50GR	7TAA292910R0191	181
L.66.50SW	7TAA292910R0192	181
LLPA-07A.50	7TAA292030R0000	36
LLPA-07S.50	7TAA292030R0001	36
LLPA-10A.50	7TAA292030R0002	36
LLPA-10S.50	7TAA292030R0003	36
LLPA-12A.50	7TAA292030R0005	36
LLPA-12S.50	7TAA292030R0006	36

Part. no.	GID no.	Page
LLPA-17A.50	7TAA292030R0007	36
LLPA-17S.50	7TAA292030R0008	36
LLPA-23A.50	7TAA292030R0009	36
LLPA-23S.50	7TAA292030R0010	36
LLPA-29A.50	7TAA292030R0011	36
LLPA-29S.50	7TAA292030R0012	36
LLPA-36A.30	7TAA292030R0013	36
LLPA-36S.30	7TAA292030R0014	36
LLPA-48A.30	7TAA292030R0015	36
LLPA-48S.30	7TAA292030R0016	36
LLPAG-125A.06	7TAA292030R0017	36,144
LLPAG-125S.06	7TAA292030R0018	36,144
LLPAG-17A.50	7TAA292030R0019	36
LLPAG-17S.50	7TAA292030R0020	36
LLPAG-23A.50	7TAA292030R0021	36
LLPAG-23S.50	7TAA292030R0022	36
LLPAG-29A.50	7TAA292030R0023	36
LLPAG-29S.50	7TAA292030R0024	36
LLPAG-36A.30	7TAA292030R0025	36
LLPAG-36S.30	7TAA292030R0026	36
LLPAG-48A.30	7TAA292030R0027	36
LLPAG-48S.30	7TAA292030R0028	36
LLPAG-56A.30	7TAA292030R0029	36,144
LLPAG-56S.30	7TAA292030R0030	36,144
LLPAG-70A.10	7TAA292030R0031	36,144
LLPAG-70S.10	7TAA292030R0032	36,144
LLPAG-95A.10	7TAA292030R0033	36,144
LLPAG-95S.10	7TAA292030R0034	36,144
LLPF-07A.50	7TAA292030R0035	37
LLPF-07S.50	7TAA292030R0036	37
LLPF-10A.50	7TAA292030R0037	37
LLPF-10S.50	7TAA292030R0038	37
LLPF-12A.50	7TAA292030R0039	37
LLPF-12S.50	7TAA292030R0040	37
LLPF-17A.50	7TAA292030R0041	37
LLPF-17S.50	7TAA292030R0042	37
LLPF-23A.50	7TAA292030R0043	37
LLPF-23S.50	7TAA292030R0044	37
LLPF-29A.50	7TAA292030R0045	37
LLPF-29S.50	7TAA292030R0046	37
LLPFG-17A.50	7TAA292030R0048	37
LLPFG-17S.50	7TAA292030R0049	37
LLPFG-23A.50	7TAA292030R0050	37
LLPFG-23S.50	7TAA292030R0051	37
LLPFG-29A.50	7TAA292030R0052	37
LLPFG-29S.50	7TAA292030R0053	37
LLPFG-36A.30	7TAA292030R0054	37
LLPFG-36S.30	7TAA292030R0055	37
LLPFG-48A.30	7TAA292030R0056	37
LLPFG-48S.30	7TAA292030R0057	37
M12M16M	7TAA292550R0044	128
M16M12M	7TAA292550R0045	128
M16M12M/6	7TAA292550R0046	128

Part. no.	GID no.	Page
M16M20M	7TAA292550R0047	128
M16MI16M-10/B	7TCA292000R5976	129
M20M12M	7TAA292550R0048	128
M20M12M/6	7TAA292550R0049	128
M20M16M	7TAA292550R0050	128
M20M16M/6	7TAA292550R0051	128
M20M25M	7TAA292550R0052	128
M20MI20M-10/B	7TCA292000R5977	129
M25M16M	7TAA292550R0053	128
M25M16M/6	7TAA292550R0054	128
M25M20M	7TAA292550R0055	128
M25M20M/6	7TAA292550R0056	128
M25M32M	7TAA292550R0057	128
M25MI25M-11/B	7TCA292000R5978	129
M32M20M	7TAA292550R0058	128
M32M20M/6	7TAA292550R0059	128
M32M25M	7TAA292550R0060	128
M32M25M/6	7TAA292550R0061	128
M32M40M	7TAA292550R0062	128
M32MI32M-13/B	7TCA292000R5979	129
M40M25M	7TAA292550R0063	128
M40M25M/6	7TAA292550R0064	128
M40M32M	7TAA292550R0065	128
M40M32M/6	7TAA292550R0066	128
M40M50M	7TAA292550R0067	128
M40MI40M-13/B	7TCA292000R5980	129
M50M32M	7TAA292550R0069	128
M50M32M/6	7TAA292550R0070	128
M50M40M	7TAA292550R0071	128
M50M40M/6	7TAA292550R0072	128
M50M63M	7TAA292550R0073	128
M50MI50M-14/B	7TCA292000R5981	129
M63M40M	7TCA292000R2520	128
M63M40M/6	7TCA292000R0162	128
M63M50M	7TAA292550R0074	128
M63M50M/6	7TAA292550R0075	128
M63MI63M-14/B	7TCA292000R5982	129
MAVI-M20/01	7TAA292660R0000	123
MAVI-M25/01	7TAA292660R0001	123
MAVI-M32/01	7TAA292660R0002	123
MAVI-M40/01	7TAA292660R0003	123
MAVI-M50/01	7TAA292660R0004	123
MAVI-M63/01	7TAA292660R0005	123
MAVIK-M20/01	7TAA292660R0006	123
MAVIK-M25/01	7TAA292660R0007	123
MAVIK-M32/01	7TAA292660R0008	123
MAVIK-M40/01	7TAA292660R0009	123
MAVIK-M50/01	7TAA292660R0010	123
MAVIK-M63/01	7TAA292660R0011	123
MI20MI20M-30	7TCA292000R5998	129
MI20MI20M-60	7TCA292000R6004	129
MI25MI25M-30	7TCA292000R5999	129
MI25MI25M-60	7TCA292000R6005	129

Index

Products in alphabetical order

Part. no.	GID no.	Page
MI32MI32M-30	7TCA292000R6000	129
MI32MI32M-60	7TCA292000R6006	129
MI40MI40M-30	7TCA292000R6001	129
MI40MI40M-60	7TCA292000R6007	129
MI50MI50M-30	7TCA292000R6002	129
MI50MI50M-60	7TCA292000R6008	129
MI63MI63M-30	7TCA292000R6003	129
MI63MI63M-60	7TCA292000R6009	129
MONK-M162	7TCA292000R4711	117
MONK-M207	7TCA292000R4712	117
MONK-M253	7TCA292000R4713	117
MONK-M329	7TCA292000R4714	117
MONK-M406	7TCA292000R4715	117
MONK-M508	7TCA292000R4716	117
MPNK-M160	7TCA292000R4717	117
MPNK-M162	7TCA292000R4718	117
MPNK-M207	7TCA292000R4719	117
MPNK-M253	7TCA292000R4720	117
MPNK-M329	7TCA292000R4721	117
MVNV-M120-10	7TAA292150R0520	61
MVNV-M202-10	7TAA292150R0526	61
MVNV-M207-10	7TAA292150R0528	61
MVNV-M257-11	7TAA292150R0532	61
MVNV-M323-13	7TAA292150R0534	61
MVNV-M329-13	7TAA292150R0536	61
MVNV-M406-13	7TAA292150R0538	61
MVNV-M409-13	7TAA292150R0540	61
MVNV-M508-14	7TAA292150R0544	61
MVNV-M638-14	7TAA292150R0547	61
MVNV-P090	7TAA292150R0548	81
MVNV-P112	7TAA292150R0549	81
MVNV-P137	7TAA292150R0550	81
MVNV-P167	7TAA292150R0551	81
MVNV-P213	7TAA292150R0552	81
MVNV-P293	7TAA292150R0553	81
MVNV-P299	7TAA292150R0554	81
MVNV-P366	7TAA292150R0555	81
MVNV-P488	7TAA292150R0556	81
MVWV-P090	7TAA292150R0577	92
MVWV-P112	7TAA292150R0578	92
MVWV-P137	7TAA292150R0579	92
MVWV-P167	7TAA292150R0580	92
MVWV-P213	7TAA292150R0581	92
MVWV-P299	7TAA292150R0582	92
MVWV-P366	7TAA292150R0583	92
MVWV-P488	7TAA292150R0584	92
NKAH-M120-10	7TAA292400R0104	49
NKAH-M160-10	7TAA292400R0105	49
NKAH-M162-10	7TAA292400R0106	49
NKAH-M202-10	7TAA292400R0107	49
NKAH-M207-10	7TAA292400R0108	49
NKAH-M253-11	7TAA292400R0109	49
NKAH-M257-11	7TAA292400R0110	49

Part. no.	GID no.	Page
NKAH-M323-13	7TAA292400R0111	49
NKAH-M329-13	7TAA292400R0112	49
NKAH-M406-13	7TAA292400R0113	49
NKAH-M409-13	7TAA292400R0114	49
NKAH-M506-14	7TAA292400R0115	49
NKAH-M508-14	7TAA292400R0116	49
NKAH-M638-14	7TAA292400R0117	49
NKBH-M120-10	7TAA292400R0118	49
NKBH-M160-10	7TAA292400R0119	49
NKBH-M162-10	7TAA292400R0120	49
NKBH-M202-10	7TAA292400R0121	49
NKBH-M207-10	7TAA292400R0122	49
NKBH-M253-11	7TAA292400R0123	49
NKBH-M257-11	7TAA292400R0124	49
NKBH-M323-13	7TAA292400R0125	49
NKBH-M329-13	7TAA292400R0126	49
NKBH-M406-13	7TAA292400R0127	49
NKBH-M409-13	7TAA292400R0128	49
NKBH-M506-14	7TAA292400R0129	49
NKBH-M508-14	7TAA292400R0130	49
NKBH-M638-14	7TAA292400R0131	49
NKEZ-M160-10	7TCA292001R1598	172
NKEZ-M160/P2	7TCA292000R6245	172
NKEZ-M160/P3	-	172
NKEZ-M162-10	7TCA292000R0170	172
NKEZ-M202-10	7TCA292000R8779	172
NKEZ-M202/P1	7TCA292000R0171	172
NKEZ-M202/P3	7TAA292400R0162	172
NKEZ-M207-10	7TCA292000R0175	172
NKEZ-M207/P3	7TCA292000R0174	172
NKEZ-M207/P5	7TCA292000R5586	172
NKEZ-M253-11	7TCA292000R0176	172
NKEZ-M257-11	7TCA292000R0178	172
NKEZ-M257/P3	7TCA292000R0177	172
NKEZ-M257/P5	7TCA292000R6162	172
NKEZ-M323-13	7TCA292000R0179	172
NKEZ-M329-13	7TCA292000R7908	172
NKEZ-M406-13	7TCA292000R0180	172
NKEZ-M406/P4	7TCA292000R6177	172
NKEZ-M409-13	7TAA292400R0149	172
NKEZ-M506-14	7TCA292000R0182	172
NKEZ-M508-14	7TCA292000R9554	172
NKEZ-M638-14	7TCA292000R9023	172
NKIS-M162	7TAA292400R0132	51
NKIS-M207	7TAA292400R0133	51
NKIS-M253	7TAA292400R0134	51
NKIS-M329	7TAA292400R0135	51
NKIS-M406	7TAA292400R0136	51
NKIS-M508	7TAA292400R0137	51
NKIS-M638	7TAA292400R0138	51
NKNH-M120-10	7TAA292400R0139	45
NKNH-M160-10	7TAA292400R0140	45
NKNH-M162-10	7TAA292400R0141	45

Part. no.	GID no.	Page
NKNH-M202-10	7TAA292400R0142	45
NKNH-M207-10	7TAA292400R0143	45
NKNH-M253-11	7TAA292400R0144	45
NKNH-M257-11	7TAA292400R0145	45
NKNH-M323-13	7TAA292400R0150	45
NKNH-M329-13	7TAA292400R0147	45
NKNH-M406-13	7TAA292400R0148	45
NKNH-M409-13	7TAA292400R0149	45
NKNH-M506-14	7TAA292400R0150	45
NKNH-M508-14	7TAA292400R0151	45
NKNH-M638-14	7TAA292400R0152	45
NKNZ-M120/P1	7TAA292400R0153	46
NKNZ-M120/P2	7TAA292400R0154	46
NKNZ-M120/P3	7TAA292400R0155	46
NKNZ-M120R/P	7TCA292001R0103	46
NKNZ-M160/P1	7TAA292400R0156	46
NKNZ-M160/P1-L	7TCA292000R7735	45
NKNZ-M160/P2	7TAA292400R0157	46
NKNZ-M160/P2-L	7TCA292001R1633	45
NKNZ-M160/P3	7TAA292400R0158	46
NKNZ-M160/P3-L	7TCA292000R5581	45
NKNZ-M160R/P	7TCA292000R0183	46
NKNZ-M160R/P-L	7TCA292000R9993	45
NKNZ-M160S-5	7TAA292400R0159	48
NKNZ-M162S-5	7TAA292400R0160	48
NKNZ-M202/P1	7TAA292400R0161	46
NKNZ-M202/P1-L	7TCA292000R0184	45
NKNZ-M202/P3	7TAA292400R0162	46
NKNZ-M202/P3-L	7TCA292000R7948	45
NKNZ-M202/P4	7TAA292400R0163	46
NKNZ-M202/P4-L	7TCA292000R8006	45
NKNZ-M202R/P	7TCA292000R0185	46
NKNZ-M202R/P-L	7TCA292000R7752	45
NKNZ-M202S-10	7TCA292001R1339	48
NKNZ-M202S-6	7TAA292400R0164	48
NKNZ-M207/P3	7TAA292400R0165	46
NKNZ-M207/P3-L	7TCA292000R0186	45
NKNZ-M207/P4	7TAA292400R0166	46
NKNZ-M207/P4-L	-	45
NKNZ-M207/P5	7TAA292400R0167	46
NKNZ-M207/P5-L	7TCA292000R8008	45
NKNZ-M207R/P	7TCA292000R6163	46
NKNZ-M207R/P-L	7TCA292000R0187	45
NKNZ-M207S-10	7TAA292400R0168	48
NKNZ-M207S-6	7TAA292400R0169	48
NKNZ-M253/P5	7TCA292000R0188	46
NKNZ-M253/P6	7TCA292000R0189	46
NKNZ-M253R/P	7TCA292000R6152	46
NKNZ-M253R1/P	7TCA292000R6288	46
NKNZ-M253S-11	7TAA292400R0170	48
NKNZ-M253S-7	7TAA292400R0171	48
NKNZ-M257/P4	7TCA292000R8813	46
NKNZ-M257/P5	7TAA292400R0172	46

Index

Products in alphabetical order

Part. no.	GID no.	Page
NKNZ-M257/P5-L	7TAA292400R0173	45
NKNZ-M257/P6	7TAA292400R0174	46
NKNZ-M257/P6-L	7TCA292000R0190	45
NKNZ-M257R/P	7TCA292000R0191	46
NKNZ-M257R/P-L	7TCA292000R6630	45
NKNZ-M257S-11	7TAA292400R0175	48
NKNZ-M257S-7	7TAA292400R0176	48
NKNZ-M323/P2	7TCA292000R0192	46
NKNZ-M323/P2-L	7TCA292000R0193	45
NKNZ-M323/P4	7TAA292400R0177	46
NKNZ-M323/P4-L	7TCA292000R0194	45
NKNZ-M323/P5	7TAA292400R0178	46
NKNZ-M323/P5-L	7TCA292000R9595	45
NKNZ-M323R/P	7TAA292400R0179	46
NKNZ-M323R/P-L	7TCA292000R8774	45
NKNZ-M323R1/P	7TAA292400R0180	46
NKNZ-M323R1/P-L	7TCA292000R6197	45
NKNZ-M323S-13	7TAA292400R0181	48
NKNZ-M323S-8	7TAA292400R0182	48
NKNZ-M329/P2	7TCA292000R0195	46
NKNZ-M329/P2-L	7TCA292000R9446	45
NKNZ-M329/P3	7TCA292000R6029	46
NKNZ-M329/P3-L	7TCA292000R9017	45
NKNZ-M329/P4	7TCA292000R0196	46
NKNZ-M329R/P	7TCA292000R6284	46
NKNZ-M329R/P-L	—	45
NKNZ-M329S-13	7TAA292400R0183	48
NKNZ-M329S-8	7TAA292400R0184	48
NKNZ-M406/P1	7TCA292000R5867	46
NKNZ-M406/P2	7TCA292000R0197	46
NKNZ-M406R/P	7TCA292000R6071	46
NKNZ-M406S-13	7TAA292400R0185	48
NKNZ-M406S-8	7TAA292400R0186	48
NKNZ-M409/P1	7TCA292000R9509	46
NKNZ-M409/P2	7TCA292000R9235	46
NKNZ-M409/P3	7TCA292000R6028	46
NKNZ-M409/P3-L	7TCA292001R0860	45
NKNZ-M409/P4	7TAA292400R0187	46
NKNZ-M409/P4-L	7TCA292000R0198	45
NKNZ-M409/P5	7TAA292400R0188	46
NKNZ-M409/P5-L	7TCA292000R8009	45
NKNZ-M409R/P	7TAA292400R0189	46
NKNZ-M409R/P-L	7TCA292000R0199	45
NKNZ-M409S-13	7TAA292400R0190	48
NKNZ-M409S-8	7TAA292400R0191	48
NKNZ-M506/P1	7TAA292400R0192	46
NKNZ-M506/P1-L	7TCA292000R9977	45
NKNZ-M506/P3	7TAA292400R0193	46
NKNZ-M506/P3-L	7TCA292000R8548	45
NKNZ-M506R/P	7TCA292000R0200	46
NKNZ-M506R/P-L	7TCA292000R0201	45
NKNZ-M506S-14	7TAA292400R0194	48
NKNZ-M506S-9	7TAA292400R0195	48

Part. no.	GID no.	Page
NKNZ-M508/P2	7TAA292400R0196	46
NKNZ-M508/P2-L	7TCA292000R8788	45
NKNZ-M508/P3	7TAA292400R0197	46
NKNZ-M508/P3-L	7TCA292000R9600	45
NKNZ-M508R/P	7TCA292000R0202	46
NKNZ-M508R/P-L	7TCA292001R0063	45
NKNZ-M508S-14	7TAA292400R0198	48
NKNZ-M508S-9	7TAA292400R0199	48
NKNZ-M638/P1	7TAA292400R0200	46
NKNZ-M638/P1-L	—	45
NKNZ-M638/P2	7TAA292400R0201	46
NKNZ-M638/P2-L	7TCA292000R8547	45
NKNZ-M638R/P	7TCA292000R9837	46
NKNZ-M638R/P-L	7TCA292000R9838	45
NKNZ-M638S-10	7TAA292400R0202	48
NKNZ-M638S-14	7TAA292400R0203	48
NSBV-M207-10	7TAA292150R0585	75
NSBV-M253-11	7TAA292150R0586	75
NSBV-M329-13	7TAA292150R0587	75
NSBV-M406-13	7TAA292150R0588	75
NSBV-M409-13	7TCA292000R2945	75
NSBV-M508-14	7TAA292150R0589	75
NSBV-M638-14	7TAA292150R0590	75
NSBV-N027/01	7TCA292000R8940	99
NSBV-N043/01	7TCA292000R8941	99
NSBV-N069/01	7TCA292000R8942	99
NSBV-N076/01	7TCA292000R8943	99
NSBV-N088/01	7TCA292000R8944	99
NSBV-N098/01	7TCA292000R8945	99
NSBV-P167-6.5	7TAA292150R0591	90
NSBV-P213-7	7TAA292150R0592	90
NSBV-P299-8	7TAA292150R0593	90
NSBV-P366-9	7TAA292150R0594	90
NSBV-P488-10	7TAA292150R0595	90
NSNV-M120-10	7TCA292000R5954	62
NSNV-M162-10	7TCA292000R5955	62
NSNV-M207-10	7TCA292000R5956	62
NSNV-M253-11	7TCA292000R5957	62
NSNV-M329-13	7TCA292000R5958	62
NSNV-M329-7	7TCA292000R5959	62
NSNV-M406-13	7TCA292000R5960	62
NSNV-M406-7	7TCA292000R5961	62
NSNV-M409-13	7TCA292000R5962	62
NSNV-M508-14	7TCA292000R5963	62
NSNV-M638-14	7TCA292000R5964	62
NSNV-N022/01	7TCA292000R8904	96
NSNV-N027/01	7TCA292000R8905	96
NSNV-N043/01	7TCA292000R8906	96
NSNV-N069/01	7TCA292000R8907	96
NSNV-N076/01	7TCA292000R8908	96
NSNV-N088/01	7TCA292000R8909	96
NSNV-N098/01	7TCA292000R8910	96
NSWV-N022/01	7TCA292000R8939	99

Part. no.	GID no.	Page
NVAV-M120-10	7TAA292150R0596	72
NVAV-M120-5	7TAA292150R0597	72
NVAV-M162-10	7TAA292150R0598	72
NVAV-M162-5	7TAA292150R0599	72
NVAV-M207-10	7TAA292150R0600	72
NVAV-M207-6	7TAA292150R0601	72
NVAV-M253-11	7TAA292150R0602	72
NVAV-M253-7	7TAA292150R0603	72
NVAV-M329-13	7TAA292150R0606	72
NVAV-M329-8	7TAA292150R0607	72
NVAV-M406-13	7TAA292150R0608	72
NVAV-M406-8	7TAA292150R0609	72
NVAV-M508-14	7TAA292150R0612	72
NVAV-M508-9	7TAA292150R0613	72
NVAV-M638-10	7TAA292150R0614	72
NVAV-M638-14	7TAA292150R0615	72
NVAV-P090	7TAA292150R0616	87
NVAV-P112	7TAA292150R0617	87
NVAV-P137	7TAA292150R0618	87
NVAV-P167	7TAA292150R0619	87
NVAV-P213	7TAA292150R0620	87
NVAV-P299	7TAA292150R0621	87
NVAV-P366	7TAA292150R0622	87
NVAV-P488	7TAA292150R0623	87
NVBV-M207-10	7TAA292150R0624	74
NVBV-M207-6	7TAA292150R0625	74
NVBV-M253-11	7TAA292150R0626	74
NVBV-M253-7	7TAA292150R0627	74
NVBV-M257-11	7TAA292150R0628	74
NVBV-M257-7	7TAA292150R0629	74
NVBV-M323-13	7TAA292150R0630	74
NVBV-M323-8	7TAA292150R0631	74
NVBV-M329-13	7TAA292150R0632	74
NVBV-M329-8	7TAA292150R0633	74
NVBV-M406-13	7TAA292150R0634	74
NVBV-M406-8	7TAA292150R0635	74
NVBV-M409-13	7TAA292150R0636	74
NVBV-M409-8	7TAA292150R0637	74
NVBV-M506-14	7TAA292150R0638	74
NVBV-M506-9	7TAA292150R0639	74
NVBV-M508-14	7TAA292150R0640	74
NVBV-M508-9	7TAA292150R0641	74
NVBV-M638-10	7TAA292150R0642	74
NVBV-M638-14	7TAA292150R0643	74
NVBV-P167	7TAA292150R0644	89
NVBV-P213	7TAA292150R0645	89
NVBV-P299	7TAA292150R0646	89
NVBV-P366	7TAA292150R0647	89
NVBV-P488	7TAA292150R0648	89
NVEZ-M120V-10	7TAA292210R0000	173
NVEZ-M160V-10	7TAA292210R0001	173
NVEZ-M160V/P2	7TAA292210R0002	173
NVEZ-M160V/P3	7TAA292210R0003	173

Index

Products in alphabetical order

Part. no.	GID no.	Page
NVEZ-M160V/P3/1	7TCA292000R0213	173
NVEZ-M162V-10	7TAA292210R0004	173
NVEZ-M202V-10	7TAA292210R0005	173
NVEZ-M202V/P1	7TAA292210R0006	173
NVEZ-M202V/P3	7TAA292210R0007	173
NVEZ-M202V/P5	7TCA292000R0214	173
NVEZ-M207V-10	7TAA292210R0008	173
NVEZ-M207V/P3	7TAA292210R0009	173
NVEZ-M207V/P5	7TAA292210R0010	173
NVEZ-M253V-11	7TAA292210R0011	173
NVEZ-M257V-11	7TAA292210R0012	173
NVEZ-M257V/P3	7TAA292210R0013	173
NVEZ-M257V/P5	7TAA292210R0014	173
NVEZ-M323V-13	7TAA292210R0015	173
NVEZ-M329V-13	7TAA292210R0016	173
NVEZ-M406V-13	7TAA292210R0017	173
NVEZ-M406V/P4	7TAA292210R0018	173
NVEZ-M409V-13	7TAA292210R0019	173
NVEZ-M506V-14	7TAA292210R0020	173
NVEZ-M638V-14	7TAA292210R0022	173
NVIR-M120	7TAA292610R0133	69
NVIR-M160	7TCA292000R0215	69
NVIR-M162	7TAA292610R0134	69
NVIR-M207	7TAA292610R0135	69
NVIR-M253	7TAA292610R0136	69
NVIR-M329	7TAA292610R0137	69
NVIR-M406	7TAA292610R0138	69
NVIR-M508	7TAA292610R0139	69
NVIR-M638	7TAA292610R0140	69
NVIZR-P07M	7TAA292610R0141	85
NVIZR-P090	7TAA292610R0142	85
NVIZR-P110	7TAA292610R0143	85
NVIZR-P112	7TAA292610R0144	85
NVIZR-P137	7TCA292000R0216	85
NVIZR-P167	7TAA292610R0145	85
NVIZR-P213	7TAA292610R0150	85
NVIZR-P299	7TAA292610R0147	85
NVIZR-P366	7TAA292610R0148	85
NVIZR-P488	7TAA292610R0149	85
NVN3-07.100	7TAA292800R0008	127
NVN3-09.50	7TAA292800R0009	127
NVN3-11.50	7TAA292800R0010	127
NVN3-16.50	7TAA292800R0011	127
NVN3-21.30	7TAA292800R0012	127
NVN3-29.20	7TAA292800R0013	127
NVN3-36.20	7TAA292800R0014	127
NVN3-48.10	7TAA292800R0015	127
NVN-M120-10	7TAA292150R0649	61
NVN-M120-5	7TAA292150R0650	61
NVN-M160-10	7TAA292150R0651	61
NVN-M160-5	7TAA292150R0652	61
NVN-M162-10	7TAA292150R0653	61
NVN-M162-5	7TAA292150R0654	61

Part. no.	GID no.	Page
NVNV-M202-10	7TAA292150R0655	61
NVNV-M202-6	7TAA292150R0656	61
NVNV-M207-10	7TAA292150R0657	61
NVNV-M207-6	7TAA292150R0658	61
NVNV-M253-11	7TAA292150R0659	61
NVNV-M253-7	7TAA292150R0660	61
NVNV-M257-11	7TAA292150R0661	61
NVNV-M257-7	7TAA292150R0662	61
NVNV-M323-13	7TAA292150R0663	61
NVNV-M323-8	7TAA292150R0664	61
NVNV-M329-13	7TAA292150R0665	61
NVNV-M329-8	7TAA292150R0666	61
NVNV-M406-13	7TAA292150R0667	61
NVNV-M406-8	7TAA292150R0668	61
NVNV-M409-13	7TAA292150R0669	61
NVNV-M409-8	7TAA292150R0670	61
NVNV-M506-14	7TAA292150R0671	61
NVNV-M506-9	7TAA292150R0672	61
NVNV-M508-14	7TAA292150R0673	61
NVNV-M508-9	7TAA292150R0674	61
NVNV-M638-10	7TAA292150R0675	61
NVNV-M638-14	7TAA292150R0678	61
NVNV-N022	7TCA292000R8980	95
NVNV-N027	7TCA292000R8981	95
NVNV-N043	7TCA292000R8985	95
NVNV-N069	7TCA292000R8986	95
NVNV-N078	7TCA292000R8982	95
NVNV-N088	7TCA292000R8983	95
NVNV-N098	7TCA292000R8984	95
NVNV-P090	7TAA292150R0677	81
NVNV-P112	7TAA292150R0678	81
NVNV-P137	7TAA292150R0679	81
NVNV-P167	7TAA292150R0680	81
NVNV-P213	7TAA292150R0681	81
NVNV-P293	7TAA292150R0682	81
NVNV-P299	7TAA292150R0683	81
NVNV-P366	7TAA292150R0684	81
NVNV-P488	7TAA292150R0685	81
NVNZ-M120R/P	7TAA292150R0686	64
NVNZ-M120R/P-L	-	66
NVNZ-M120S-10	7TAA292150R0687	67
NVNZ-M120S-5		67
NVNZ-M120S/B1		65
NVNZ-M120S/B2		65
NVNZ-M120S/B3		65
NVNZ-M120S/P1	7TAA292150R0689	64
NVNZ-M120S/P1-L	7TCA292000R0254	66
NVNZ-M120S/P2	7TAA292150R0690	64
NVNZ-M120S/P3	7TAA292150R0691	64
NVNZ-M120S/P3-L	7TCA292000R0255	66
NVNZ-M160R/P	7TAA292150R0692	64
NVNZ-M160R/P-L	7TAA292150R0693	66
NVNZ-M160S-10	7TAA292150R0694	67

Part. no.	GID no.	Page
NVNZ-M160S-5	7TAA292150R0695	67
NVNZ-M160S/B1	7TCA292001R1200	65
NVNZ-M160S/B2	7TCA292001R1091	65
NVNZ-M160S/B3	7TCA292001R0248	65
NVNZ-M160S/P1	7TAA292150R0696	64
NVNZ-M160S/P1-L	7TAA292150R0697	66
NVNZ-M160S/P2	7TAA292150R0698	64
NVNZ-M160S/P2-L	7TAA292150R0699	66
NVNZ-M160S/P3	7TAA292150R0700	64
NVNZ-M160S/P3-L	7TAA292150R0701	66
NVNZ-M162S-10	7TAA292150R0702	67
NVNZ-M162S-5	7TAA292150R0703	67
NVNZ-M202R/P	7TAA292150R0704	64
NVNZ-M202R/P-L	7TAA292150R0705	66
NVNZ-M202S-10	7TAA292150R0706	67
NVNZ-M202S-6	7TAA292150R0707	67
NVNZ-M202S/B1	7TCA292000R9839	65
NVNZ-M202S/B3	7TCA292000R9503	65
NVNZ-M202S/B4	-	65
NVNZ-M202S/P1	7TAA292150R0708	64
NVNZ-M202S/P1-L	7TAA292150R0709	66
NVNZ-M202S/P3	7TAA292150R0710	64
NVNZ-M202S/P3-L	7TAA292150R0711	66
NVNZ-M202S/P4	7TAA292150R0712	64
NVNZ-M202S/P4-L	7TAA292150R0713	66
NVNZ-M207R/P	7TAA292150R0714	64
NVNZ-M207R/P-L	7TAA292150R0715	66
NVNZ-M207S-10	7TAA292150R0716	67
NVNZ-M207S-6	7TAA292150R0717	67
NVNZ-M207S/B1	7TCA292000R9315	65
NVNZ-M207S/B2	7TCA292000R9316	65
NVNZ-M207S/B3	7TCA292000R9317	65
NVNZ-M207S/B4	7TCA292000R9318	65
NVNZ-M207S/B5	7TCA292000R9319	65
NVNZ-M207S/P3	7TAA292150R0718	64
NVNZ-M207S/P3-L	7TAA292150R0719	66
NVNZ-M207S/P4	7TAA292150R0720	64
NVNZ-M207S/P4-L	7TAA292150R0721	66
NVNZ-M207S/P5	7TAA292150R0722	64
NVNZ-M207S/P5-L	7TAA292150R0723	66
NVNZ-M253R/P	7TAA292150R0724	64
NVNZ-M253S-11	7TAA292150R0726	67
NVNZ-M253S-7	7TAA292150R0727	67
NVNZ-M253S/B5	7TCA292001R0653	65
NVNZ-M253S/B6	7TCA292001R0039	65
NVNZ-M253S/P5	7TAA292150R0728	64
NVNZ-M253S/P6	7TAA292150R0729	64
NVNZ-M257R/P	7TAA292150R0730	64
NVNZ-M257R/P-L	7TAA292150R0731	66
NVNZ-M257S-11	7TAA292150R0732	67
NVNZ-M257S-7	7TAA292150R0733	67
NVNZ-M257S/B4	7TCA292001R1760	65
NVNZ-M257S/B5	7TCA292000R9794	65

Index

Products in alphabetical order

Part. no.	GID no.	Page
NVNZ-M257S/B6	7TCA292001R1097	65
NVNZ-M257S/P4	7TAA292150R0734	64
NVNZ-M257S/P5	7TAA292150R0735	64
NVNZ-M257S/P5-L	7TAA292150R0736	66
NVNZ-M257S/P6	7TAA292150R0737	64
NVNZ-M257S/P6-L	7TAA292150R0738	66
NVNZ-M323R/P	7TAA292150R0739	64
NVNZ-M323R/P-L	7TAA292150R0740	66
NVNZ-M323R1/P	7TAA292150R0741	64
NVNZ-M323R1/P-L	7TAA292150R0742	66
NVNZ-M323S-13	7TAA292150R0743	67
NVNZ-M323S-8	7TAA292150R0744	67
NVNZ-M323S/B4	7TCA292000R9137	65
NVNZ-M323S/B5	7TCA292000R9795	65
NVNZ-M323S/P4	7TAA292150R0745	64
NVNZ-M323S/P4-L	7TAA292150R0746	66
NVNZ-M323S/P5	7TAA292150R0747	64
NVNZ-M323S/P5-L	7TAA292150R0748	66
NVNZ-M329R/P	7TCA292000R0278	64
NVNZ-M329R/P-L	7TAA292150R0749	66
NVNZ-M329S-13	7TAA292150R0750	67
NVNZ-M329S-8	7TAA292150R0751	67
NVNZ-M329S/B2	7TCA292001R1201	65
NVNZ-M329S/B3	-	65
NVNZ-M329S/B4	7TCA292000R9796	65
NVNZ-M329S/P2	7TAA292150R0752	64
NVNZ-M329S/P2-L	7TAA292150R0753	66
NVNZ-M329S/P3	7TAA292150R0754	64
NVNZ-M329S/P3-L	7TAA292150R0755	66
NVNZ-M329S/P4	7TAA292150R0756	64
NVNZ-M406R/P	7TAA292150R0757	64
NVNZ-M406S-13	7TAA292150R0758	67
NVNZ-M406S-8	7TAA292150R0759	67
NVNZ-M406S/B1	-	65
NVNZ-M406S/B2	7TCA292001R1202	65
NVNZ-M406S/P1	7TAA292150R0780	64
NVNZ-M406S/P2	7TAA292150R0781	64
NVNZ-M409R/P	7TAA292150R0782	64
NVNZ-M409R/P-L	7TAA292150R0783	66
NVNZ-M409S-13	7TAA292150R0764	67
NVNZ-M409S-8	7TAA292150R0765	67
NVNZ-M409S/B1	-	65
NVNZ-M409S/B2	-	65
NVNZ-M409S/B3	-	65
NVNZ-M409S/B4	-	65
NVNZ-M409S/B5	-	65
NVNZ-M409S/P1	7TAA292150R0786	64
NVNZ-M409S/P2	7TAA292150R0787	64
NVNZ-M409S/P3	7TCA292000R0288	64
NVNZ-M409S/P3-L	7TAA292150R0788	66
NVNZ-M409S/P4	7TAA292150R0789	64
NVNZ-M409S/P4-L	7TAA292150R0770	66
NVNZ-M409S/P5	7TAA292150R0771	64

Part. no.	GID no.	Page
NVNZ-M409S/P5-L	7TAA292150R0772	66
NVNZ-M506R/P	7TAA292150R0773	64
NVNZ-M506R/P-L	7TAA292150R0774	66
NVNZ-M506S-14	7TAA292400R0194	67
NVNZ-M506S-9	7TAA292150R0776	67
NVNZ-M506S/B1	-	65
NVNZ-M506S/B3	-	65
NVNZ-M506S/P1	7TAA292150R0777	64
NVNZ-M506S/P1-L	7TAA292150R0778	66
NVNZ-M506S/P3	7TAA292150R0779	64
NVNZ-M506S/P3-L	7TAA292150R0780	66
NVNZ-M508R/P	7TAA292150R0781	64
NVNZ-M508R/P-L	7TAA292150R0782	66
NVNZ-M508S-14	-	67
NVNZ-M508S-9	7TAA292150R0784	67
NVNZ-M508S/B2	-	65
NVNZ-M508S/B3	7TCA292000R9591	65
NVNZ-M508S/P2	7TAA292150R0785	64
NVNZ-M508S/P2-L	7TAA292150R0786	66
NVNZ-M508S/P3	7TAA292150R0787	64
NVNZ-M508S/P3-L	7TAA292150R0788	66
NVNZ-M638R/P	7TAA292150R0789	64
NVNZ-M638R/P-L	7TAA292150R0790	66
NVNZ-M638S-10	7TAA292150R0791	67
NVNZ-M638S-14	7TAA292150R0792	67
NVNZ-M638S/B1	-	65
NVNZ-M638S/B2	-	65
NVNZ-M638S/P1	7TAA292150R0793	64
NVNZ-M638S/P1-L	7TAA292150R0794	66
NVNZ-M638S/P2	7TAA292150R0795	64
NVNZ-M638S/P2-L	7TAA292150R0796	66
NVNZ-P07MS	7TAA292150R0799	84
NVNZ-P090R/P	7TAA292150R0803	83
NVNZ-P090S	7TAA292150R0804	84
NVNZ-P090S/P1	7TCA292000R0296	83
NVNZ-P090S/P3	7TAA292150R0806	83
NVNZ-P110R/P	7TAA292150R0809	83
NVNZ-P110S	7TAA292150R0810	84
NVNZ-P110S/P1	7TAA292150R0812	83
NVNZ-P110S/P3	7TAA292150R0813	83
NVNZ-P112R/P	7TAA292150R0816	83
NVNZ-P112S	7TAA292150R0817	84
NVNZ-P112S/P1	7TAA292150R0819	83
NVNZ-P112S/P3	7TAA292150R0820	83
NVNZ-P112S/P4	7TAA292150R0821	83
NVNZ-P160R/P	-	83
NVNZ-P160S/P1	7TAA292150R0822	83
NVNZ-P167R/P	7TAA292150R0825	83
NVNZ-P167S	7TAA292150R0826	84
NVNZ-P167S/P3	7TAA292150R0828	83
NVNZ-P167S/P4	7TAA292150R0829	83
NVNZ-P167S/P5	7TAA292150R0830	83
NVNZ-P167S/P6	7TAA292150R0831	83

Part. no.	GID no.	Page
NVNZ-P213R/P	7TAA292150R0834	83
NVNZ-P213R1/P	7TAA292150R0836	83
NVNZ-P213S	7TAA292150R0837	84
NVNZ-P213S/P1	7TCA292000R0301	83
NVNZ-P213S/P4	7TAA292150R0839	83
NVNZ-P213S/P5	7TAA292150R0840	83
NVNZ-P299R/P	7TAA292150R0843	83
NVNZ-P299S	7TAA292150R0844	84
NVNZ-P299S/P3	7TAA292150R0846	83
NVNZ-P299S/P4	7TAA292150R0847	83
NVNZ-P299S/P5	7TAA292150R0848	83
NVNZ-P366R/P	7TAA292150R0851	83
NVNZ-P366S	7TAA292150R0852	84
NVNZ-P366S/P1	7TAA292150R0854	83
NVNZ-P366S/P2	7TAA292150R0855	83
NVNZ-P368S/P3	7TAA292150R0856	83
NVNZ-P368S/01	7TCA292000R3228	84
NVNZ-P488R/P	7TAA292150R0859	83
NVNZ-P488S	7TAA292150R0860	84
NVNZ-P488S/P1	7TAA292150R0862	83
NVNZ-P488S/P2	7TAA292150R0863	83
NVWV-M120-10	7TAA292150R0864	78
NVWV-M120-5	7TAA292150R0865	78
NVWV-M160-10	7TAA292150R0866	78
NVWV-M160-5	7TAA292150R0867	78
NVWV-M162-10	7TAA292150R0868	78
NVWV-M162-5	7TAA292150R0869	78
NVWV-M202-10	7TAA292150R0870	78
NVWV-M202-6	7TAA292150R0871	78
NVWV-M207-10	7TAA292150R0872	78
NVWV-M207-6	7TAA292150R0873	78
NVWV-M253-11	7TAA292150R0874	78
NVWV-M253-7	7TAA292150R0875	78
NVWV-M329-13	7TAA292150R0878	78
NVWV-M329-8	7TAA292150R0877	78
NVWV-M406-13	7TAA292150R0878	78
NVWV-M406-8	7TAA292150R0879	78
NVWV-M508-14	7TAA292150R0880	78
NVWV-M508-9	7TAA292150R0881	78
NVWV-M638-10	7TAA292150R0882	78
NVWV-M638-14	7TAA292150R0883	78
NVWV-P090	7TAA292150R0884	92
NVWV-P112	7TAA292150R0885	92
NVWV-P137	7TAA292150R0886	92
NVWV-P167	7TAA292150R0887	92
NVWV-P213	7TAA292150R0888	92
NVWV-P299	7TAA292150R0889	92
NVWV-P366	7TAA292150R0890	92
NVWV-P488	7TAA292150R0891	92
NVWZ-M160R/P	7TAA292150R0892	79
NVWZ-M160S/P1	7TAA292150R0893	79
NVWZ-M160S/P2	7TAA292150R0894	79
NVWZ-M160S/P3	7TAA292150R0895	79

Index

Products in alphabetical order

Part. no.	GID no.	Page
NVWZ-M202R/P	7TAA292150R0896	79
NVWZ-M202S/P1	7TAA292150R0897	79
NVWZ-M202S/P3	7TAA292150R0898	79
NVWZ-M202S/P4	7TAA292150R0899	79
NVWZ-M207R/P	7TAA292150R0900	79
NVWZ-M207S/P1	7TCA292000R3285	79
NVWZ-M207S/P3	7TAA292150R0901	79
NVWZ-M207S/P4	7TAA292150R0902	79
NVWZ-M207S/P5	7TAA292150R0903	79
NVWZ-M257R/P	7TAA292150R0904	79
NVWZ-M257S/P5	7TAA292150R0905	79
NVWZ-M257S/P6	7TAA292150R0906	79
OVN2-07.100	7TAA292700R0042	126
OVN2-10.50	7TAA292700R0043	126
OVN2-12.50	7TAA292700R0044	126
OVN2-17.50	7TAA292700R0045	126
OVN2-23.30	7TAA292700R0046	126
OVN2-29.20	7TAA292700R0047	126
OVN2-36.40	7TAA292700R0048	126
OVN2-48.20	7TAA292700R0049	126
PACOF-07B.50	7TAA292730R0000	38,162
PACOF-10B.50	7TAA292730R0001	38,162
PACOF-12B.50	7TAA292730R0002	38,162
PACOF-17B.50	7TAA292730R0004	38,162
PACOF-23B.50	7TAA292730R0006	38,162
PACOF-29B.50	7TAA292730R0008	38,162
PACOF-36B.30	7TAA292730R0009	38,162
PACOF-48B.30	7TAA292730R0010	38,162
PACOF-70B.10	7TAA292730R0011	38,162
PCLG-125B.06	7TAA292360R0011	28,144
PCLG-125S.06	7TAA292360R0012	28,144
PCLG-17B.50	7TAA292240R0059	28
PCLG-17S.50	7TAA292240R0060	28
PCLG-23B.50	7TAA292240R0062	28
PCLG-23S.50	7TAA292240R0063	28
PCLG-29B.50	7TAA292240R0065	28
PCLG-29S.50	7TAA292240R0066	28
PCLG-36B.30	7TAA292240R0069	28
PCLG-36S.30	7TAA292240R0071	28
PCLG-48B.30	7TAA292240R0073	28
PCLG-48S.30	7TAA292240R0075	28
PCLG-56B.30	7TAA292360R0013	28,144
PCLG-56S.30	7TAA292360R0015	28,144
PCLG-70B.10	7TAA292360R0017	28,144
PCLG-70S.10	7TAA292360R0019	28,144
PCLG-95B.10	7TAA292360R0021	28,144
PCLG-95S.10	7TAA292360R0023	28,144
PCLT-07B.50	7TAA292240R0078	28
PCLT-07S.50	7TAA292240R0077	28
PCLT-10B.50	7TAA292240R0078	28
PCLT-10S.50	7TAA292240R0079	28
PCLT-12B.50	7TAA292240R0080	28
PCLT-12S.50	7TAA292240R0081	28

Part. no.	GID no.	Page
PCLT-17B.50	7TAA292240R0083	28
PCLT-17S.50	7TAA292240R0085	28
PCLT-23B.50	7TAA292240R0086	28
PCLT-23S.50	7TAA292240R0088	28
PCLT-29B.50	7TAA292240R0089	28
PCLT-29S.50	7TAA292240R0091	28
PCLT-36B.30	7TCA292000R3533	28
PCLT-48B.30	7TCA292000R3535	28
PCLT-48S.30	7TCA292000R3536	28
PELT-10S.50	7TAA292240R0123	29
PELT-10SL.50	7TAA292240R0124	29
PELT-12S.50	7TAA292240R0125	29
PELT-12SL.50	7TAA292240R0126	29
PELT-17S.50	7TAA292240R0127	29
PELT-17SL.50	7TAA292240R0128	29
PELT-23S.50	7TAA292240R0131	29
PELT-23SL.50	7TAA292240R0132	29
PELT-29S.30	7TAA292240R0133	29
PELT-29SL.30	7TAA292240R0134	29
PELT-36S.30	7TAA292240R0135	29
PELT-36SL.30	7TAA292240R0136	29
PELT-48S.30	7TAA292240R0137	29
PELT-48SL.30	7TAA292240R0138	29
PHTG-17B.50	7TAA292430R0000	31
PHTG-23B.50	7TAA292430R0001	31
PHTG-29B.50	7TAA292430R0002	31
PHTG-36B.30	7TAA292430R0003	31
PHTG-48B.30	7TAA292430R0004	31
PHTT-07B.50	7TAA292430R0005	31
PHTT-10B.50	7TAA292430R0006	31
PHTT-12B.50	7TAA292430R0007	31
PHTT-17B.50	7TAA292430R0008	31
PHTT-23B.50	7TAA292430R0009	31
PIHG-125B.20	7TAA292360R0031	23,144
PIHG-125S.20	7TAA292360R0032	23,144
PIHG-56B.30	7TAA292360R0033	23,144
PIHG-56S.30	7TAA292360R0034	23,144
PIHG-70B.30	7TAA292360R0036	23,144
PIHG-70S.30	7TAA292360R0038	23,144
PIHG-95B.30	7TAA292360R0040	23,144
PIHG-95S.30	7TAA292360R0042	23,144
PISG-17B.50	7TAA292240R0139	23
PISG-17S.50	7TAA292240R0140	23
PISG-23B.50	7TAA292240R0142	23
PISG-23S.50	7TAA292240R0143	23
PISG-29B.50	7TAA292240R0144	23
PISG-29S.50	7TAA292240R0145	23
PISG-36B.30	7TAA292240R0147	23
PISG-36S.30	7TAA292240R0149	23
PISG-48B.30	7TAA292240R0151	23
PISG-48S.30	7TAA292240R0152	23
PIST-07B.50	7TAA292240R0153	23

Part. no.	GID no.	Page
PIST-07S.50	7TAA292240R0154	23
PIST-10B.50	7TAA292240R0155	23
PIST-10S.50	7TAA292240R0156	23
PIST-12B.50	7TAA292240R0157	23
PIST-12S.50	7TAA292240R0158	23
PIST-17B.50	7TAA292240R0160	23
PIST-17S.50	7TAA292240R0161	23
PIST-23B.50	7TAA292240R0163	23
PIST-23S.50	7TAA292240R0164	23
PIST-29B.50	7TAA292240R0165	23
PIST-29S.50	7TAA292240R0166	23
PIST-36B.30	7TAA292240R0167	23
PIST-36S.30	7TAA292240R0168	23
PIST-48B.30	7TAA292240R0169	23
PIST-48S.30	7TAA292240R0170	23
PLRG-17B.50	7TCA292000R6231	20
PLRG-17S.50	7TCA292000R6259	20
PLRG-23B.50	7TCA292000R6232	20
PLRG-23S.50	7TCA292000R6260	20
PLRG-29B.50	7TCA292000R6233	20
PLRG-29S.50	7TCA292000R6261	20
PLRG-36B.30	7TCA292000R6234	20
PLRG-36S.30	7TCA292000R6262	20
PLRG-48B.30	7TCA292000R6235	20
PLRG-48S.30	7TCA292000R6263	20
PLRT-07B.50	7TCA292000R6236	20
PLRT-07S.50	7TCA292000R6264	20
PLRT-10B.50	7TCA292000R6237	20
PLRT-10S.50	7TCA292000R6265	20
PLRT-12B.50	7TCA292000R6238	20
PLRT-12S.50	7TCA292000R6266	20
PMACUT-38	7TAA292880R0006	122
PMACUT-52	7TAA292880R0007	122
PMACUT-NW125	7TAA292880R0011	122
PMACUT-NW56	7TAA292880R0008	122
PMACUT-NW70	7TAA292880R0009	122
PMACUT-NW95	7TAA292880R0010	122
POHG-17B.50	7TAA292430R0017	31
POHG-23B.50	7TAA292430R0019	31
POHG-29B.50	7TAA292430R0021	31
POHG-36B.30	7TAA292430R0023	31
POHG-48B.30	7TAA292430R0025	31
POHT-10B.50	7TAA292430R0027	31
POHT-12B.50	7TAA292430R0029	31
POSG-29B.30	7TCA292000R5823	24
POSG-36B.30	7TCA292000R3749	24
POSG-48B.30	7TCA292000R3750	24
POSG-70B.30	7TAA292900R0008	24
POSG-95B.30	7TCA292000R0304	24
POST-10B.50	7TAA292240R0171	24
POST-12B.50	7TAA292240R0172	24
POST-17B.50	7TAA292240R0173	24
POST-23B.50	7TAA292240R0174	24

Index

Products in alphabetical order

Part. no.	GID no.	Page
POST-29B.50	7TAA292240R0175	24
POST-36B.30	7TAA292240R0178	24
POST-48B.30	7TAA292240R0177	24
PPCOF-07B.50	7TAA292730R0012	38,162
PPCOF-10B.50	7TAA292730R0013	38,162
PPCOF-12B.50	7TAA292730R0014	38,162
PPCOF-17B.50	7TAA292730R0016	38,162
PPCOF-23B.50	7TAA292730R0018	38,162
PPCOF-29B.50	7TAA292730R0020	38,162
PPCOF-36B.30	7TAA292730R0021	38,162
PPCOF-48B.30	7TAA292730R0022	38,162
PPCOF-70B.10	7TAA292730R0023	38,162
PUEG-56B.30	7TAA292360R0043	24,144
PUEG-70B.30	7TAA292360R0044	24,144
PUET-23B.50	7TAA292900R0004	24
PUET-29B.30	7TAA292900R0005	24
PUET-36B.30	7TAA292900R0006	24
PUET-48B.21	7TAA292900R0007	24
PUSG-17B.31	7TAA292490R0006	35
PUSG-23B.31	7TAA292490R0007	35
PUSG-29B.31	7TAA292490R0008	35
PUSG-36B.31	7TAA292490R0009	35
PUSG-48B.31	7TAA292490R0010	35
RKS-07	7TAA292150R0907	120
RKS-10	7TAA292150R0908	120
RKS-12	7TAA292150R0909	120
RKS-17	7TAA292150R0910	120
RKS-23	7TAA292150R0911	120
RKS-29	7TAA292150R0912	120
RKS-36	7TAA292150R0913	120
RKS-48	7TAA292150R0914	120
RKS-56	7TAA292150R0915	120
SCA-M16-10	7TAA292630R0000	124
SCA-M20-10	7TAA292630R0001	124
SCA-M25-11	7TAA292630R0002	124
SCA-M32-13	7TAA292630R0003	124
SCA-M40-13	7TAA292630R0004	124
SCA-M50-14	7TAA292630R0005	124
SCA-M63-14	7TAA292630R0006	124
SCA-P09	7TAA292630R0007	124
SCA-P11	7TAA292630R0008	124
SCA-P16	7TAA292630R0009	124
SCA-P21	7TAA292630R0010	124
SCA-P29	7TAA292630R0011	124
SCA-P36	7TAA292630R0012	124
SCA-P48	7TAA292630R0013	124
SFH-07-0	7TAA292700R0050	139
SFH-10-0	7TAA292700R0051	139
SFH-12-0	7TAA292700R0052	139
SFH-17-0	7TAA292700R0053	139
SFH-23-0	7TAA292700R0054	139
SFH-29-0	7TAA292700R0055	139
SFH-36-0	7TAA292700R0056	139

Part. no.	GID no.	Page
SFH-48-0	7TAA292700R0057	139
SFHS-00	7TAA292700R0058	139
SFHS-PH	7TAA292700R0060	139
SFHS-PH1	7TAA292700R0061	139
SGB-07	7TAA292720R0027	141
SGB-09	7TAA292720R0029	141
SGB-11	7TAA292720R0031	141
SGB-16	7TAA292720R0036	141
SGB-21	7TAA292720R0039	141
SGB-29	7TAA292720R0043	141
SGB-36	7TAA292720R0044	141
SGB-48	7TAA292720R0046	141
SGG-125	7TAA292860R0033	145
SGG-56	7TAA292860R0034	145
SGG-70	7TAA292860R0035	145
SGG-95	7TAA292860R0036	145
SGO-56	7TAA292860R0037	145
SGO-70	7TAA292860R0038	145
SGO-95	7TAA292860R0039	145
SGO3-125.10	7TAA292980R0000	147
SGO3-56.10	7TAA292980R0001	147
SGO3-70.10	7TAA292980R0002	147
SGO3-95.10	7TAA292980R0003	147
SGS-125	7TAA292720R0060	141
SGS-36	7TAA292720R0061	141
SGS-48	7TAA292720R0062	141
SGS-56	7TAA292720R0063	141
SGS-70	7TAA292720R0064	141
SGS-95	7TAA292720R0065	141
SLND-M120	7TAA292000R0121	113
SLND-M160	7TAA292000R0122	113
SLND-M162	7TAA292000R0123	113
SLND-M200	7TAA292000R0124	113
SLND-M202	7TAA292000R0125	113
SLND-M207	7TAA292000R0126	113
SLND-M253	7TAA292000R0127	113
SLND-M257	7TAA292000R0128	113
SLND-M323	7TAA292000R0129	113
SLND-M329	7TAA292000R0130	113
SLND-M406	7TAA292000R0131	113
SLND-M409	7TAA292000R0132	113
SLND-M506	7TAA292000R0133	113
SLND-M508	7TAA292000R0134	113
SLND-M638	7TAA292000R0135	113
SRER-06	7TAA292920R0008	182
SRER-16	7TAA292920R0009	182
SRER-21	7TAA292920R0010	182
SRER-29	7TAA292920R0011	182
SRER-50	7TAA292920R0012	182
SREV-40	7TAA292920R0013	182
SVN4-07.50	7TAA292640R0000	125
SVN4-09.50	7TAA292640R0001	125
SVN4-11.50	7TAA292640R0002	125

Part. no.	GID no.	Page
SVN4-13.50	7TAA292640R0003	125
SVN4-16.50	7TAA292640R0004	125
SVN4-21.30	7TAA292640R0005	125
SVN4-29.30	7TAA292640R0006	125
SVN4-36.20	7TAA292640R0007	125
SVN4-42.10	7TAA292640R0008	125
SVN4-48.10	7TAA292640R0009	125
SVN4-G00.50	7TAA292640R0010	125
SVN4-G01.50	7TAA292640R0011	125
SVN4-G02.50	7TAA292640R0012	125
SVN4-G04.30	7TAA292640R0013	125
SVN4-G06.20	7TAA292640R0014	125
SVN4-G07.20	7TAA292640R0015	125
SVN4-G08.10	7TAA292640R0016	125
SVN4-G09.10	7TAA292640R0017	125
SVN4-M12.50	7TAA292640R0018	125
SVN4-M12/02.50	7TAA292640R0019	125
SVN4-M16.50	7TAA292640R0020	125
SVN4-M16/02.50	7TAA292640R0021	125
SVN4-M20.50	7TAA292640R0022	125
SVN4-M20/02.50	7TAA292640R0023	125
SVN4-M25.30	7TAA292640R0024	125
SVN4-M25/01.30	7TCA292000R4288	125
SVN4-M25/02.30	7TAA292640R0025	125
SVN4-M32.20	7TAA292640R0026	125
SVN4-M32/02.20	7TAA292640R0027	125
SVN4-M40.20	7TAA292640R0028	125
SVN4-M40/01.20	7TCA292000R4289	125
SVN4-M40/02.20	7TAA292640R0029	125
SVN4-M50.10	7TAA292640R0030	125
SVN4-M50/01.10	7TCA292000R4290	125
SVN4-M50/02.10	7TAA292640R0031	125
SVN4-M63.10	7TAA292640R0032	125
SVN4-N02/01.50	7TCA292000R9427	125
SVN4-N04/01.30	7TCA292000R9455	125
SVN4-N06/01.20	7TCA292000R9456	125
SVN4-N07/01.20	7TCA292000R9457	125
SVN4-N08/01.10	7TCA292000R9458	125
SVN4-N09/01.10	7TCA292000R9459	125
SVOD-P167GT	7TAA292150R1182	106
SVOD-P213GT	7TAA292150R1183	106
SVOD-P299GT	7TAA292150R1184	106
SVOD-P366GT	7TAA292150R1185	106
SVOD-P488GT	7TAA292150R1186	106
SVOV-P167	7TAA292150R1187	106
SVOV-P213	7TAA292150R1188	106
SVOV-P299	7TAA292150R1189	106
SVOV-P366	7TAA292150R1190	106
SVOV-P488	7TAA292150R1191	106
SWA-M16-10	7TAA292590R0000	124
SWA-M20-10	7TAA292590R0001	124
SWA-M25-11	7TAA292590R0002	124
SWA-M32-13	7TAA292590R0003	124

Index

Products in alphabetical order

Part. no.	GID no.	Page
SWA-M32-15/01	7TCA292000R9043	123
SWA-M40-13	7TAA292590R0004	124
SWA-M40-13/01	7TCA292000R5950	123
SWA-M50-14	7TAA292590R0005	124
SWA-M50-14/01	7TCA292000R8004	123
SWA-M63-14	7TAA292590R0006	124
SWA-P09	7TAA292590R0007	124
SWA-P11	7TAA292590R0008	124
SWA-P16	7TAA292590R0009	124
SWA-P21	7TAA292590R0010	124
SWA-P21/01	–	123
SWA-P29	7TAA292590R0011	124
SWA-P36	7TAA292590R0012	124
SWA-P48	7TAA292590R0013	124
VAMG-17B.50	7TAA292240R0195	19
VAMG-17S.50	7TAA292240R0196	19
VAMG-23B.50	7TAA292240R0197	19
VAMG-23S.50	7TAA292240R0198	19
VAMG-29B.50	7TAA292240R0199	19
VAMG-29S.50	7TAA292240R0200	19
VAMG-36B.30	7TAA292240R0201	19
VAMG-36S.30	7TAA292240R0202	19
VAMG-48B.30	7TAA292240R0203	19
VAMG-48S.30	7TAA292240R0204	19
VAMLG-125B.06	7TAA292360R0046	19
VAMLG-125S.06	7TAA292360R0047	19
VAMLG-17B.50	7TAA292240R0205	19
VAMLG-17S.50	7TAA292240R0206	19
VAMLG-23B.50	7TAA292240R0207	19
VAMLG-23S.50	7TAA292240R0208	19
VAMLG-29B.50	7TAA292240R0209	19
VAMLG-29S.50	7TAA292240R0210	19
VAMLG-36B.30	7TAA292240R0211	19
VAMLG-36S.30	7TAA292240R0212	19
VAMLG-48B.30	7TAA292240R0213	19
VAMLG-48S.30	7TAA292240R0214	19
VAMLG-56B.30	7TAA292360R0048	19
VAMLG-56S.30	7TAA292360R0049	19
VAMLG-70B.10	7TAA292360R0050	19
VAMLG-70S.10	7TAA292360R0051	19
VAMLG-95B.10	7TAA292360R0052	19
VAMLG-95S.10	7TAA292360R0053	19
VAMLT-10B.50	7TAA292240R0217	19
VAMLT-10S.50	7TAA292240R0218	19
VAMLT-12B.50	7TAA292240R0219	19
VAMLT-12S.50	7TAA292240R0220	19
VAMT-10B.50	7TAA292240R0223	19
VAMT-10S.50	7TAA292240R0224	19
VAMT-12B.50	7TAA292240R0225	19
VAMT-12S.50	7TAA292240R0226	19
VCSG-17B.50	7TAA292240R0230	27
VCSG-17S.50	7TAA292240R0231	27
VCSG-23B.50	7TAA292240R0232	27

Part. no.	GID no.	Page
VCSG-23S.50	7TAA292240R0233	27
VCSG-29B.50	7TAA292240R0234	27
VCSG-29S.50	7TAA292240R0235	27
VCSG-36B.30	7TAA292240R0236	27
VCSG-36S.30	7TAA292240R0237	27
VCSG-48B.30	7TAA292240R0238	27
VCSG-48S.30	7TAA292240R0239	27
VCSG-56B.30	7TAA292360R0054	27,144
VCSG-56S.30	7TAA292360R0055	27,144
VCSG-70B.10	7TAA292360R0056	27,144
VCSG-70S.10	7TAA292360R0057	27,144
VCSG-95B.10	7TAA292360R0058	27,144
VCSG-95S.10	7TAA292360R0059	27,144
VCST-07B.100	7TAA292240R0240	27
VCST-07S.100	7TAA292240R0241	27
VCST-10B.50	7TAA292240R0242	27
VCST-10S.50	7TAA292240R0243	27
VCST-12B.50	7TAA292240R0244	27
VCST-12S.50	7TAA292240R0245	27
VCST-17B.50	7TAA292240R0246	27
VCST-17S.50	7TAA292240R0247	27
VOHD-07B.50	7TAA292240R0248	27
VOHD-07S.50	7TAA292240R0249	27
VOHD-10B.50	7TAA292240R0250	27
VOHD-10S.50	7TAA292240R0251	27
VOHD-12B.50	7TAA292240R0252	27
VOHD-12S.50	7TAA292240R0253	27
VOHG-125B.06	7TAA292360R0060	27,144
VOHG-125S.06	7TAA292360R0061	27,144
VOHG-17B.50	7TAA292240R0255	27
VOHG-17S.50	7TAA292240R0257	27
VOHG-23B.50	7TAA292240R0259	27
VOHG-23S.50	7TAA292240R0261	27
VOHG-29B.50	7TAA292240R0263	27
VOHG-29S.50	7TAA292240R0265	27
VOHG-36B.30	7TAA292240R0266	27
VOHG-36S.30	7TAA292240R0267	27
VOHG-48B.30	7TAA292240R0269	27
VOHG-48S.30	7TAA292240R0271	27
VOHG-56B.10	7TAA292360R0062	27,144
VOHG-56S.10	7TAA292360R0063	27,144
VOHG-70B.10	7TAA292360R0064	27,144
VOHG-70S.10	7TAA292360R0065	27,144
VOHG-95B.10	7TAA292360R0066	27,144
VOHG-95S.10	7TAA292360R0067	27,144
WPS-NW10	7TAA292650R0000	126
WPS-NW12	7TAA292650R0001	126
WPS-NW17	7TAA292650R0002	126
WPS-NW23	7TAA292650R0003	126
WPS-NW29	7TAA292650R0004	126
WPS-NW36	7TAA292650R0005	126
WPS-NW48	7TAA292650R0006	126
XESX0250.50	7TCA297120R0330	32

Part. no.	GID no.	Page
XESX0350.50	7TCA297120R0331	32
XESX0450.50	7TCA297120R0332	32
XESX0550.50	7TCA297120R0333	32
XESX0650.50	7TCA297120R0334	32
XESX0730.30	7TCA297120R0335	32
XESX0830.30	7TCA297120R0336	32
XMR-NW48R	7TCA292000R5946	155
XMR-NW48W	7TCA292000R5947	155
XMR-NW48Y	7TCA292000R5945	155
XMR-NW70R	7TCA292000R4663	155
XMR-NW70W	7TCA292000R4664	155
XMR-NW70Y	7TCA292000R4665	155
XPCLG-17BB.50	7TAA292240R0290	26
XPCLG-17SB.50	7TAA292240R0291	26
XPCLG-23BB.50	7TAA292240R0292	26
XPCLG-23SB.50	7TAA292240R0293	26
XPCLG-29BB.50	7TAA292240R0294	26
XPCLG-29SB.50	7TAA292240R0295	26
XPCLG-36BB.30	7TAA292240R0296	26
XPCLG-36SB.30	7TAA292240R0297	26
XPCLG-48BB.30	7TAA292240R0298	26
XPCLG-48SB.30	7TAA292240R0299	26
XPCLT-10BB.50	7TCA292000R0334	26
XPCLT-10SB.50	7TCA292000R9338	26
XPCLT-12BB.50	7TAA292240R0300	26
XPCLT-12SB.50	7TAA292240R0301	26
XPCLT-17BB.50	7TAA292240R0302	26
XPCSFG-17BO.50	7TCA292000R8726	17
XPCSFG-23BO.50	7TCA292000R8802	17
XPCSFG-29BO.50	7TCA292000R8803	17
XPCSFG-36BO.30	7TCA292000R8804	17
XPCSFG-48BO.30	7TCA292000R8805	17
XPCSFT-07BO.100	7TCA292000R9467	17
XPCSFT-10BO.50	7TCA292000R8799	17
XPCSFT-12BO.50	7TCA292000R8801	17
XPCSG-17BG.50	7TCA292000R8829	15
XPCSG-17OG.50	7TCA292001R0235	16
XPCSG-23BG.50	7TCA292000R8831	15
XPCSG-23BG.S.50	7TCA292001R0775	39
XPCSG-23OG.50	7TCA292001R0237	16
XPCSG-29BG.50	7TCA292000R8832	15
XPCSG-29BG.S.50	7TCA292001R0778	39
XPCSG-29OG.50	7TCA292001R0238	16
XPCSG-36BG.30	7TCA292000R8834	15
XPCSG-36BG.S.30	–	39
XPCSG-36OG.30	7TCA292001R0239	16
XPCSG-48BG.30	7TCA292000R8835	15
XPCSG-48BG.S.30	7TCA292001R0783	39
XPCSG-48OG.30	7TCA292001R0240	16
XPCSLG-17BG.50	7TCA292001R0577	16
XPCSLG-23BG.50	7TCA292001R0578	16
XPCSLG-29BG.50	7TCA292001R0579	16
XPCSLG-36BG.30	7TCA292001R0580	16

Index

Products in alphabetical order

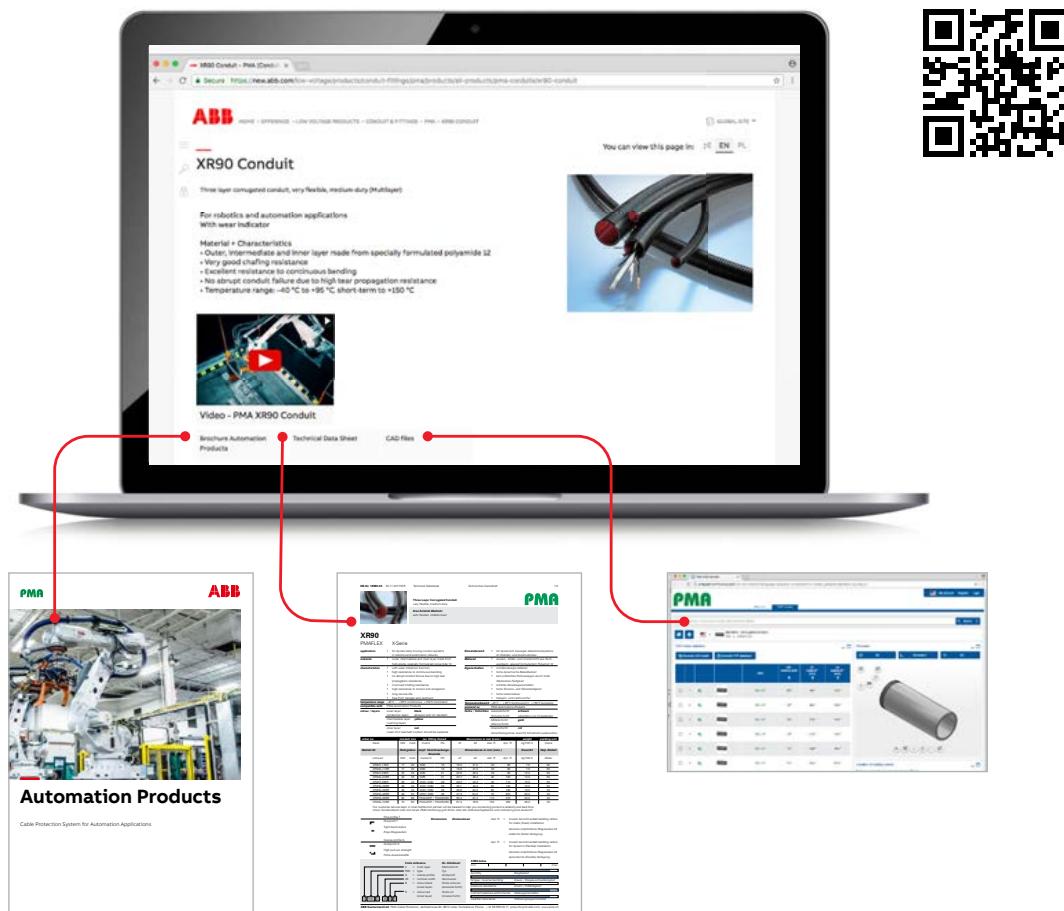
Part. no.	GID no.	Page	Part. no.	GID no.	Page
XPCSLG-48BG.30	7TCA292001R0581	16	XVCS2H-48BG.30	7TCA292000R4685	21
XPCSLT-07BG.100	7TCA292001R0560	26	XVCSFG-17BB.50	7TCA292000R9748	18
XPCSLT-10BG.50	7TCA292001R0563	26	XVCSFG-23BB.50	7TCA292000R9750	18
XPCSLT-12BG.50	7TCA292001R0566	26	XVCSFG-29BB.50	7TCA292000R9751	18
XPCSLT-17BG.50	7TCA292001R0569	26	XVCSFG-36BB.30	7TCA292000R9752	18
XPCSLT-29BG.50	7TCA292001R0583	26	XVCSFG-48BB.30	7TCA292000R9753	18
XPCST-07BG.100	7TCA292001R0959	15	XVCSFT-07BB.50	-	18
XPCST-07OG.100	7TCA292001R0337	16	XVCSFT-10BB.50	7TCA292000R9746	18
XPCST-10BG.50	7TCA292000R8827	15	XVCSFT-12BB.50	7TCA292000R9747	18
XPCST-10OG.50	7TCA292001R0658	16			
XPCST-12BG.50	7TCA292000R8828	15			
XPCST-12BG/S.50	7TCA292001R0766	39			
XPCST-12OG.50	7TCA292001R0234	16			
XPCST-17BG.50	7TCA292000R9733	15			
XPCST-17BG/S.50	7TCA292001R0769	39			
XPCST-17OG.50	7TCA292001R0301	16			
XR90G-17BR.50	7TAA292240R0321	22			
XR90G-23BR.50	7TAA292240R0325	22			
XR90G-29BR.50	7TAA292240R0322	22			
XR90G-36BR.30	7TAA292240R0323	22			
XR90G-48BR.30	7TAA292240R0324	22			
XR90G-56BR.30	7TCA292000R7415	22			
XR90G-70BR.30	7TCA292000R7414	22			
XR90T-17BR.50	7TCA292000R6078	22			
XR90T-23BR.50	7TCA292000R6074	22			
XR90T-29BR.50	7TCA292000R6075	22			
XSOLG-17BG.50	7TAA292240R0303	26			
XSOLG-23BG.50	7TAA292240R0304	26			
XSOLG-29BG.50	7TAA292240R0305	26			
XSOLG-36BG.30	7TAA292240R0306	26			
XSOLG-48BG.30	7TAA292240R0307	26			
XSOLT-10BG.50	7TCA292000R0335	26			
XSOLT-12BG.50	7TAA292240R0314	26			
XTPCG-17BB.50	7TCA292000R9985	22			
XTPCG-23BB.50	7TCA292000R9987	22			
XTPCG-29BB.50	7TCA292000R9988	22			
XTPCG-36BB.50	7TCA292000R9989	22			
XTPCG-48BB.30	7TCA292000R9990	22			
XTPCG-56BB.30	7TCA292000R9991	22			
XTPCG-70BB.30	7TCA292000R9992	22			
XVCS1H-10BG.50	7TCA292000R5547	21			
XVCS1H-12BG.50	7TAA292240R0315	21			
XVCS1H-17BG.50	7TAA292240R0316	21			
XVCS1H-23BG.50	7TAA292240R0317	21			
XVCS1H-29BG.50	7TAA292240R0318	21			
XVCS1H-36BG.30	7TAA292240R0319	21			
XVCS1H-48BG.30	7TAA292240R0320	21			
XVCS2H-10BG.50	7TCA292000R5547	21			
XVCS2H-12BG.50	7TCA292000R4679	21			
XVCS2H-17BG.50	7TCA292000R4681	21			
XVCS2H-23BG.50	7TCA292000R4682	21			
XVCS2H-29BG.50	7TCA292000R4683	21			
XVCS2H-36BG.30	7TCA292000R4684	21			

Additional information

Visit our website

Visit the PMA product web pages on pma.ch for our most up-to-date product lineup, and much more. This is the place to go to find all of the planning documents you need at your fingertips, including:

- Technical data sheets
- General technical details
- CAD files
- Brochures
- Videos



Important information

The specifications and instructions for our customers in this document reflect the product engineering level at the time of manufacturing. PMA accepts no liability for damages resulting from unprofessional installation or application or misuse for a purpose. This disclaimer also includes damages to third parties. It is the customer's responsibility to check the delivered products and immediately notify PMA of detected faults. It is also the customer's responsibility to test the delivered product on its applicability for the intended purpose. PMA will accept no liability or responsibility for their products if a product or a PMA system is combined or used together with third-party products, i.e. products from other companies than PMA.

Jurisdiction in all legal disputes concerning product liability have the courts of the canton of Zurich/Switzerland. Swiss law applies.

To guarantee punctual deliveries please check availability of products before ordering.

The text, pictures, drawings and application photos which are published in this document may not, in part, or totally, be copied or used by any third party in any form or way. Especially the downloading of text, pictures, drawings, and application photos onto Online Services is strictly forbidden, irrespective of if they are edited for this purpose or not. At all times PMA reserves the right to take all legal steps necessary.

For more information go to:
www.pma.ch

Additional information

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB AG does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB AG.



—

ABB Switzerland Ltd.

PMA Cable Protection
Aathalstrasse 90
CH-8610 Uster
Phone +41 58 585 00 11
pma-info@ch.abb.com

www.pma.ch

