



Cable protection conduit and fitting systems





Conversion from the Pg to the metric system

General

Conversion from Pg to metric essentially concerns the connecting threads. Flexible conduits (cable protection conduits) are not affected, as the manufacturer prescribes the outside diameter according to EN 50086, parts 2 and 3, whereby the existing standard dimensions can be retained.

Why convert?

The Pg thread system (Pg stands for the German words for heavy-gauge conduit thread), which has been standardised since 1926, has had its time! Safety standard VDE0619, with the DIN46319 standard for metric dimensions and DIN46320 standard for Pg dimensions cited in it, was withdrawn on 31.12.1999. The new DIN EN 50262 standard entered into force on 01.01.2000. It offers users throughout Europe a uniform connecting thread. The new standard determines the new metric sizes and lays down new safety requirements. No specifications are given for widths across corners, widths across flats etc.

Consequences of conversion

The Pg thread was permitted for use in the transition period up to 01.03.2001. Since that date, the use of Pg fittings in new developments should be dispensed with, as there will be no declaration of conformity and no CE or VDE marking is possible. Pg threads may still be used for replacement purposes.

What does that mean for our customers?

As we manufacture screwed fittings and deliver them all over the world, we will continue to offer fittings with Pg, NPT and metric threads for the time being. This means that you, as the customer, will still be able to supply your end customers with Pg systems where necessary.

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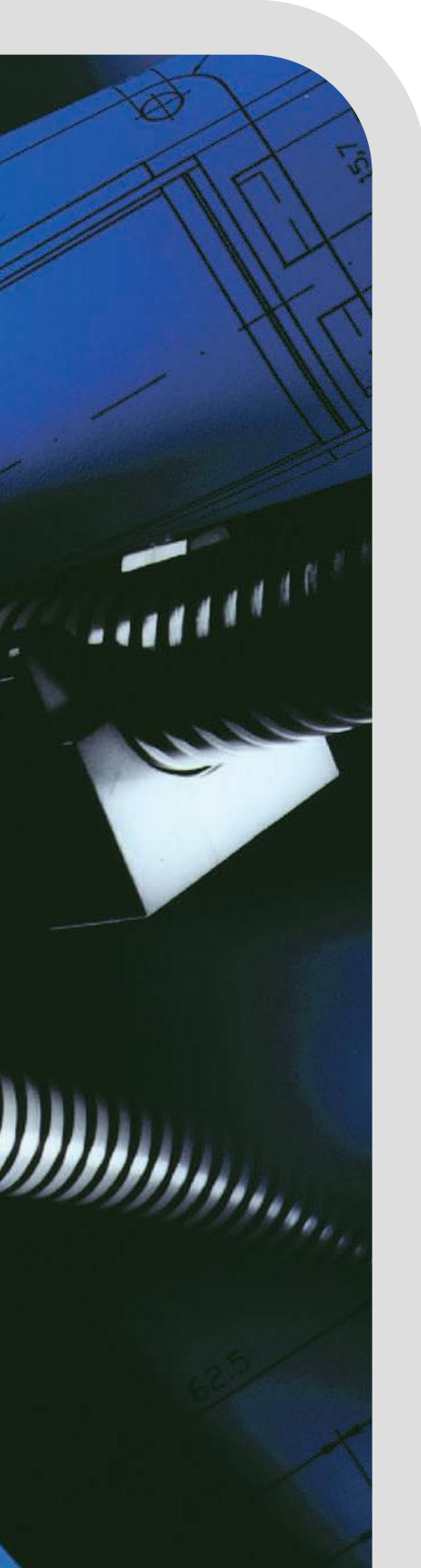
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Murrplastik Systemtechnik GmbH has been developing and manufacturing cable protection conduit and fitting systems for over 20 years.

Right from the beginning priority was given to a systematic approach. That is still the case today.

The last few years have seen increasing demands as regards sturdiness, strength, flexibility, ease of assembly, protection class, diversity and high availability placed on conduits and screw fittings. Developing these necessary parts and supplying them to the market has been and continues to be a challenge for Murrplastik.

The latest example is the new m-top family of fittings, which offers a large number of variants with a high protection class and is supplied ready to assemble with integrated seals and preassembled cap nut. This permits very rapid assembly and gives the customer the maximum possible process reliability when installing parts.

A further example are the cable protection conduits from Murrplastik Systemtechnik GmbH. Consistent enhancements have

yielded outstanding results through new forms and new material variants that offer our customers enormous advantages.

The EWX family of cable protection conduits have brought considerable benefits thanks to their special form alone. Much sturdier than standard conduits, it is also more flexible even though the material is the same. Even though the conduit is slit, it remains almost fully closed. This enables pre-assembled cables to be installed at any time without any great expense. The EWX conduit is made from tried-and-tested materials.

Murrplastik has developed a new material specifically for dynamic applications, e.g. in robotics, that enables the service life for this extreme environment to be lengthened many times over. That reduces maintenance costs.

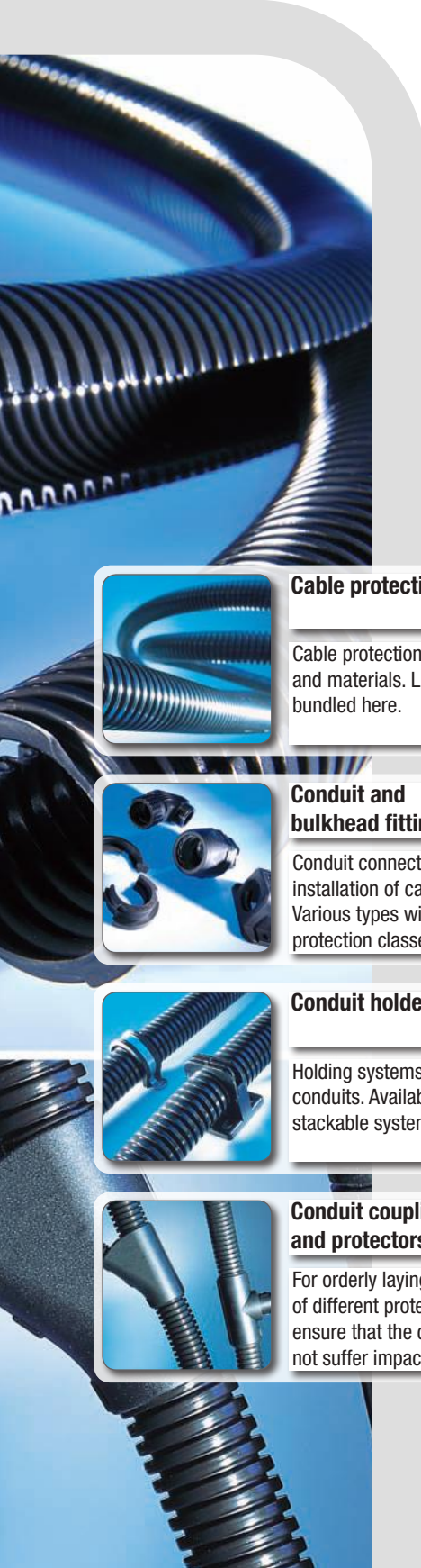
Our motto:

The product must offer definite application advantage to the customer



Product range





Cable protection conduit Murrflex

Cable protection conduits in various variants and materials. Lines can be protected or bundled here.

Page 38



Conduit and bulkhead fittings

Conduit connections for safe and quick installation of cable protection conduits. Various types with different protection classes.

Page 84



Conduit holders

Holding systems for fitting cable protection conduits. Available as single holders and as a stackable system.

Page 166



Conduit couplings, conduit distributors and protectors

For orderly laying/branching of cable looms of different protection classes. The protectors ensure that the cable protection conduits do not suffer impact and abrasion.

Page 180



Cable fittings

Fittings made of plastic and metal, also for EMV and EX applications. Multi-inserts increase versatility.

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Accessories

Lock nuts, dummy plugs, thread reducers, thread expanders, O-Rings, angle brackets, conduit clamps and much more.

Page 204



Tools

Tools for the safe and efficient installation of electrics e.g. cable stripping knives, stripping tongs and cable tie tools.

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Punching tools

For the creation of perfect round and corner cut-outs in steel and stainless steel. Special shapes for SUB-MIN-D plug etc. are available.

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Authorisations cable protection conduit Murrflex

		ATEX	UR	CSA	Railway authorities license			Airways authorities license	
		Guide- lines 94/9/EG	E148958	217843	Germany DIN 5510-2	Great Britain BS 6853:1999	France NF F 16-101	ABD 0031	FAR 25853
Cable protection conduit	EF								
	EW								
	EWf								
	EWS								
	EWX								
	EW-G								
	EW-HY								
	EW-LS								
	EW-PA		✓	✓					
	EW-PA-LS								
	EW-PA-UL		✓	✓	✓		✓		
	EW-PA-EX	✓							
	EW-PAB		✓	✓	✓		✓		
	EW-PAE								
	EW-PAL								
	EW-PAP								
	EW-PP								
	EW-PRF		✓		✓		✓	✓	✓
	EW-TEF								
	EWT-PA								
	EWT-PP								
	EWX-LS								
	EWX-PA								
	EWX-PA-LS								
	EWX-PA-UL		✓						
	EWX-PAE								
	EWX-PAE-LS								
	GF								

Authorisations conduit connection / conduit holder

			ATEX	UR	CSA	Railway authorities licenses			Airways authorities license	
			Guide- lines 94/9/EG	E148958	217843	Germany DIN 5510-2	Great Britain BS 6853:1999	France NF F 16-101	ABD 0031	FAR 25853
Conduit fitting	m-top	CVG		✓	✓	✓	✓	✓		
		CVW 45°		✓	✓	✓	✓	✓		
		CVW 90°		✓	✓	✓	✓	✓		
		DVW 45°		✓	✓	✓	✓	✓		
		DVW 90°		✓	✓	✓	✓	✓		
		IVG		✓	✓	✓	✓	✓		
		VG		✓	✓	✓	✓	✓		
		VW 45°		✓	✓	✓	✓	✓		
		VW 90°		✓	✓	✓	✓	✓		
	m-tec	CKW				✓	✓			
		CSKV		✓		✓	✓			
		ECSKV		✓		✓	✓			
		EH		✓		✓	✓			
		KW		✓		✓	✓			
		MCKW				✓	✓			
		MCSKV				✓	✓			
		MECSKV				✓	✓			
	m-fix	KSV		✓		✓	✓			
		MSV		✓		✓	✓			
		WSV		✓		✓	✓			
	Special	AT								
		EH-EMV								
Flange connection	Bulkhead fitting	KFW		✓		✓	✓	✓		
		KFW/D		✓		✓	✓			
		KFW/X				✓	✓			
	m-jumbo	SA-Jumbo								
		KFW-Jumbo								
Conduit coupling conduit distributor Protector		SVG								
		SVY								
		YPA-F								
		YTPE-F								
		VT								
		PR/SV								
Conduit holder		HS				✓	✓		✓	✓
		UH		✓		✓	✓	✓	✓	✓
		UHG				✓	✓			
		UHF		✓		✓	✓		✓	✓
		USH		✓						
		SS								
		SSG								
		BL		✓		✓	✓		✓	✓
Cable fittings		EF/B		✓		✓	✓			
		WKK		✓	✓					
		WKK-EX	✓	✓	✓					
		WKM		✓	✓					
		MWKM		✓	✓					
		WKM/EMV		✓	✓					
		KV-ME								



General information

Materials

The use and combination of a wide variety of materials, e.g. plastics of all kinds, elastomers or metals, means that Murrplastik's end products can be used in an infinite number of ways.

Forms

Different forms, e.g. of cable protection conduits, also bring with them changes in properties. The standard corrugation of type EW cable protection conduits, for instance, offers excellent properties with regard to flexibility, crush resistance and flexural fatigue strength.

The high corrugation of type EWX cable protection conduits offers further improvements in certain properties. Crush resistance in particular is greatly enhanced. Flexibility is also significantly improved.

Crush resistance

Crush resistance refers to the mechanical resistance of cable protection conduits. The value relates to the given dimension of a cable protection conduit.

Fire behaviour

The use of self-extinguishing materials and material variants enables applicability of plastics in critical areas. The products or the raw material are normally certified and classified according to UL 94 or DIN 5510. See also "FIRE CLASSIFICATIONS" in the APPENDIX.

Approvals

Our products boast a large number of approvals and certifications, e.g. VDE, UL/UR, CSA, DB, SNCF, BS,... Note the specifications in the catalogue and product data sheets.

Chemical properties

Reactions with chemical substances differ according to the individual plastics and elastomers. For more information, see "CHEMICAL RESISTANCES" in the APPENDIX.

A large database with more than 1800 chemical substances can be accessed on the internet at www.murrplastik.de.

Temperatures specifications

The temperature ranges quoted for the individual products must be noted in application. "SHORT PERIODS" refers to a total duration of up to 500 hours. Thereafter, the properties of the plastics may change.

IP protection class

The IP protection class indicates the tightness of products against solids and water. The values are also related to static applications. With dynamic applications, the protection class may change. For more information, see "PROTECTION CLASSES" in the APPENDIX.

Static/dynamic applications

Static applications are:

cables that are laid permanently and are not therefore exposed to persistent movement. Examples include permanently routed motor cables.

Dynamic applications are:

cables that are exposed to persistent movement. Examples include robot applications or controlled axes as well as applications producing a high frequency of flexural stresses for cables and cable protection conduits.

Cable protection conduit Murrflex



Advantages



Protecting and bundling cables

Cable protection conduits can be used to protect cables against dirt and moisture. They also offer mechanical protection and are suitable for bundling cables.

A large range of cable protection conduits, from those laid statically to those subject to extreme dynamic stresses, covers almost all requirements.

A large number of our conduits are certified and approved, e.g. to DIN5510, UL, CSA, NF F 16-101...



- ✓ Wide range of possible uses
- ✓ Many approvals/certificates
- ✓ Variety of profiles
- ✓ High quality

Murrflex product range



Standard cable protection conduits Murrflex

Round cable protection conduits for plant construction, mechanical engineering, control cabinet construction, vehicle construction and railway engineering.

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Special cable protection conduits Murrflex

Specially shaped cable protection conduits with particular properties, suited for special areas of application.

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One-piece cable protection conduits Murrflex

Slitted cable protection conduits in a range of versions and materials. Lines can be protected or bundled later.

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Multi-piece cable protection conduit Murrflex Split-Flex

Two-piece cable protection conduits in a range of versions and materials. Ideal for repairing existing systems.

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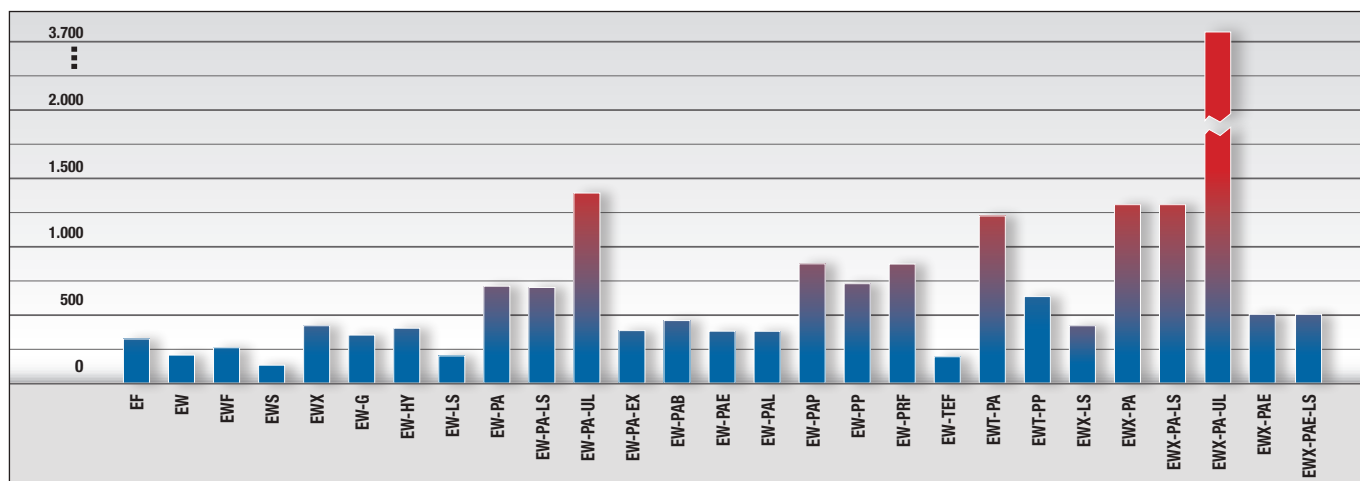
Recommendations for use

	EF	EW	EW-F	EWS	EWX	EW-G	EW-HY	EW-LS	EW-PA	EW-PA-LS	EW-PA-UL	EW-PA-EX	EW-PAB	EW-PAE	EW-PAL	EW-PAP	EW-PP	EW-PRF	EW-TEF	EW-T-PA	EW-T-PP	EWX-LS	EWX-PA	EWX-PA-LS	EWX-PA-UL	EWX-PAE	EWX-PAE-LS	GF
Bundling cables		✓	✓	✓	✓			✓														✓						✓
Light mechanical protection	✓	✓	✓	✓		✓		✓											✓									
Medium mechanical protection					✓		✓					✓	✓	✓	✓							✓				✓	✓	
High mechanical protection									✓	✓						✓	✓	✓		✓	✓							
Very high mechanical protection											✓												✓	✓				
Extremely high mechanical protection																									✓			
Persistent movements / dynamic applications (robotically controlled axes)	✓						✓						✓				✓	✓								✓	✓	
Protection against hot solids (e.g. chippings)																✓												
ATEX Guideline 94/9/EG												✓																
UL-listed conduits File No.: E148958									✓		✓		✓					✓								✓		
CSA-listed conduits File No.: 217843									✓		✓		✓															
Approved by German railways DIN 5510-2											✓		✓						✓									
Approved by French railways NF F 16-101											✓		✓						✓									
Airways approval ABD 0031																			✓									
Airways approval FAR 25853																			✓									
Very good chemical resistance	✓					✓	✓										✓		✓		✓							
Hygiene applications						✓																						
For pre-assembled cables and retrofitting of cables								✓		✓										✓	✓	✓		✓			✓	
Extreme temperature range																			✓									

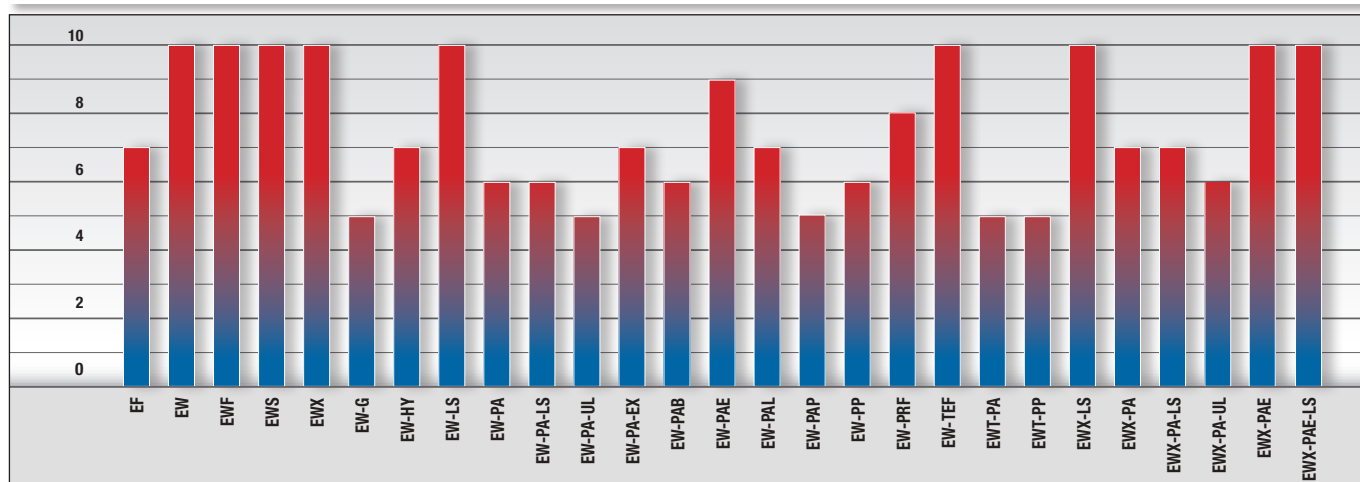
Material data

	Material	Temperature area [°C]			Fire specifications UL94	UL 224, type B	Self-extinguishing	UL File number E148958	Fire classification DIN 5510 S4	FMVSS Type A [<75 mm/min] type B [<100 mm /min]	CSA 217843	Crush resistance / N/100 mm EW-M25/P21 / EWX-M25/P21	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	PWS-free	RoHS Compliant
		Min.	Max.	Short periods																
EF	Thermoplastic elastomer	-50	160	180	HB							>300	✓	✓	✓	✓	✓	✓	✓	✓
EW	Polyethylene	-40	90	120	HB					B		>200	✓	✓	✓	✓	✓	✓	✓	✓
EWf	Polyethylene	-40	90	120	V2		✓					>250	✓	✓	✓	✓	✓	✓	✓	✓
EWS	Polyethylene	-40	90	120	HB							>100	✓	✓	✓	✓	✓	✓	✓	✓
EWX	Polyethylene	-40	90	120	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	Polypropylene, EPDM	-40	120	150	HB					A		>350		✓	✓	✓	✓	✓	✓	✓
EW-HY	Thermoplastic elastomer	-50	160	180	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-LS	Polyethylene	-40	90	120	HB					B		>200	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	Polyamide PA6	-40	140	160	HB			✓		B	✓	>700	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	Polyamide PA6	-40	140	160	HB					B		>700	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	Polyamide PA6	-40	140	160	V0		✓	✓	✓	A	✓	>1300	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	polyamide PA12	-40	110	150	HB					B		>350	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	Polyamide PA6	-40	140	160	V0		✓	✓	✓	B	✓	>450	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	polyamide PA12	-40	120	150	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	Polyamide PA6	-40	140	160	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	Polyamide PA6	-40	140	160	HB					B		>800	✓	✓	✓	✓	✓	✓	✓	
EW-PP	Polypropylene	-40	130	150	V2		✓			A		>700	✓	✓	✓	✓	✓	✓	✓	✓
EW-PRF	polyamide PA12	-50	105	150	V0		✓	✓	✓	B		>800		✓	✓	✓	✓	✓	✓	✓
EW-TEF	Fluoroplastic	-200	260		V0		✓			A		>200	✓	✓	✓	✓	✓	✓	✓	✓
EWt-PA	Polyamide PA6	-40	140	160	HB							>1200	✓	✓	✓	✓	✓	✓	✓	✓
EWt-PP	Polypropylene	-40	130	150	V2		✓					>600		✓	✓	✓	✓	✓	✓	✓
EWX-LS	Polyethylene	-40	90	120	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	Polyamide PA6	-40	140	160	HB					B		>1300	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	Polyamide PA6	-40	140	160	HB					B		>1300	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	Polyamide PA6	-40	140	160	V0		✓	✓				>3800	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	polyamide PA12	-40	120	150	HB					B		>500	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	polyamide PA12	-40	120	150	HB					B		>500	✓	✓	✓	✓	✓	✓	✓	✓
GF	Polyamide PA6	-40	150	175		✓	✓			B			✓	✓	✓	✓	✓	✓	✓	

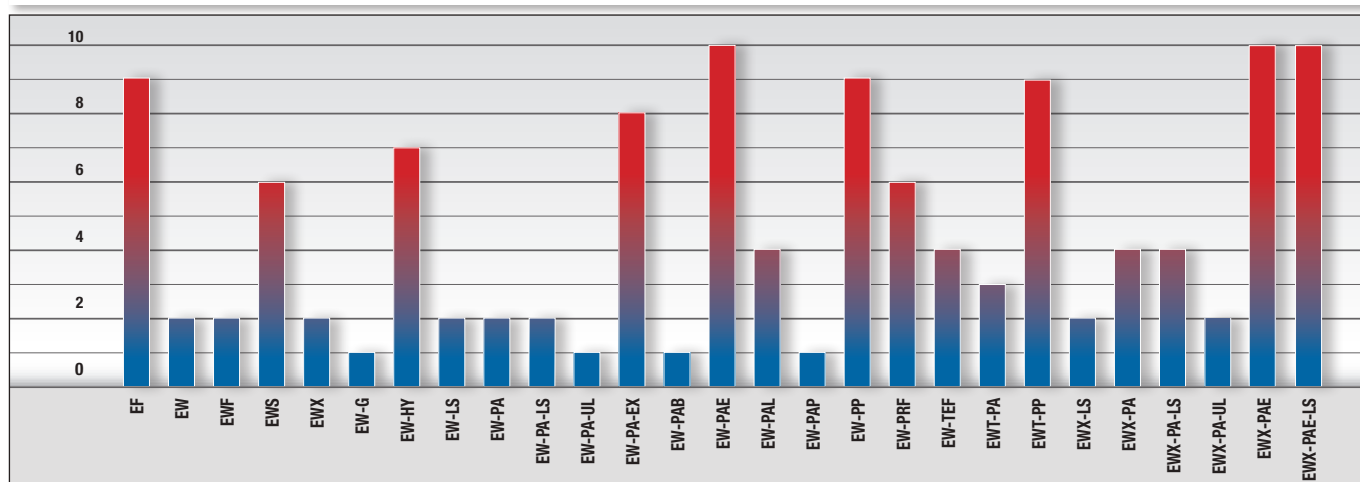
Selection diagrams



Crush resistance [N/100 mm]

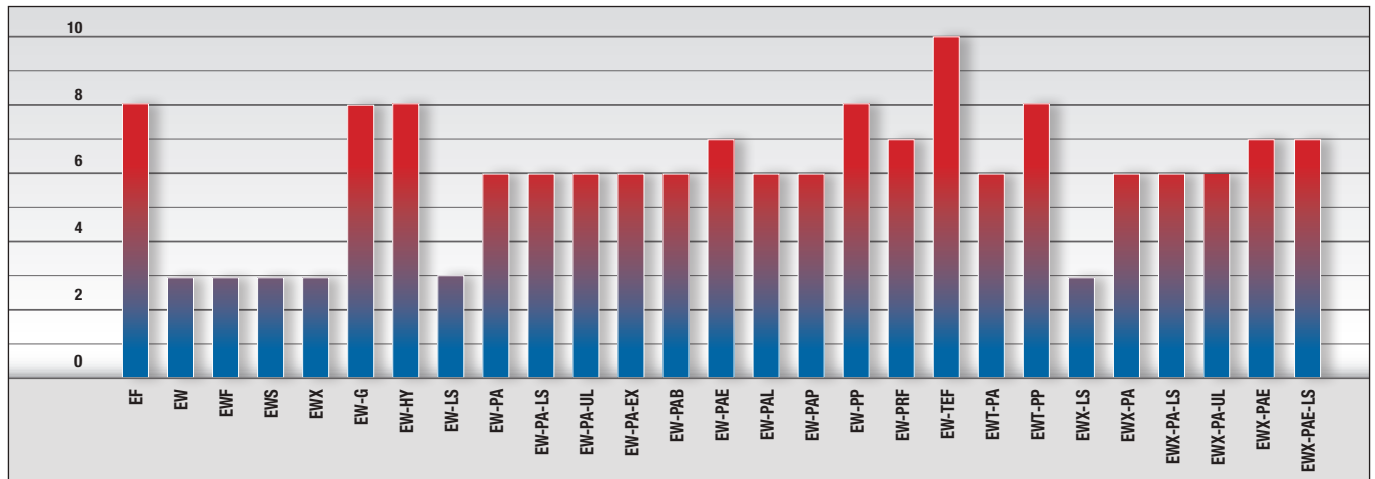


Flexibility

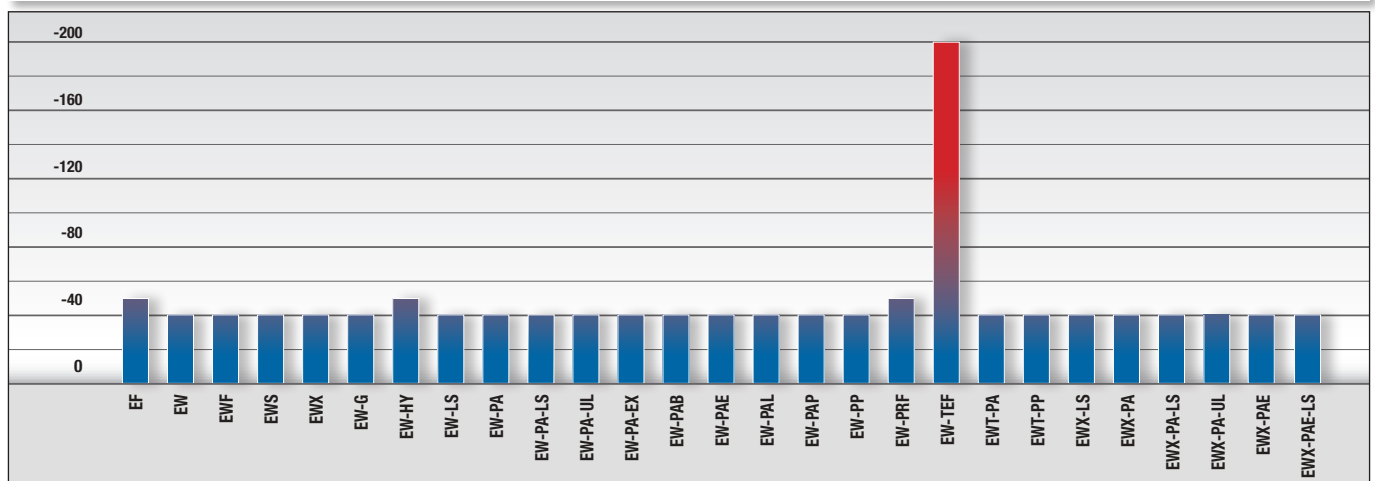


Flexural fatigue strength

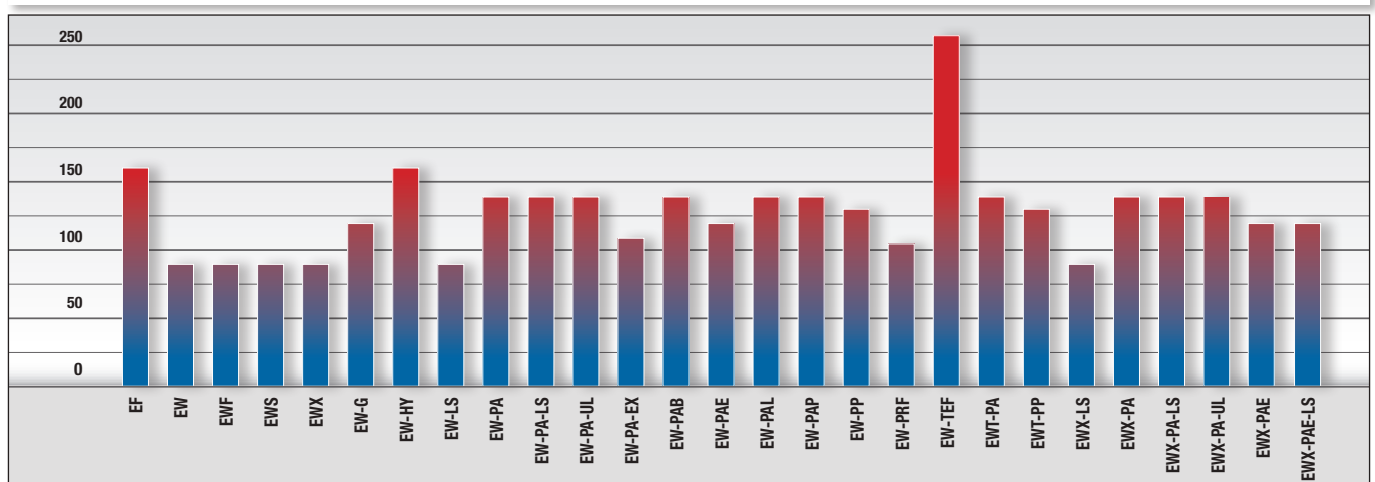
Selection diagrams



Chemical resistance



Lower temperature range [°C]



Higher temperature range [°C]

Combination options

Conduit fittings up to conduit size M50 / Pg48														
	m-top									m-tec				
	CVG	CVW 45°	CVW 90°	DWV 45°	DWV 90°	IVG	VG	VW 45°	VW 90°	EH	KW	CSKV	ECSKV	MECSKV
EF	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWf	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡
EW-HY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PRF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-TEF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GF	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Combination options

Conduit fittings up to conduit size M50 / Pg48									From NW 70		Special		
m-tec			m-fix			Bulkhead fitting			m-Jumbo		EH-EMV	AT	
CKW	MCSKV	MCKW	MSV	WSV	KSV	KFW *	KFW/D	KFW/X	SA-Jumbo	KFW-Jumbo			
×	×	×	×	×	×	×	×	×	×	×	×	×	EF
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EWf
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EWS
✓	✓	✓	*	*	*	✓	×	✓	✓	✓	×	✓	EWX
⋮	⋮	⋮	⋮	⋮	⋮	✓	⋮	×	⋮	⋮	×	⋮	EW-G
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-HY
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-LS
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PA
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PA-LS
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PA-UL
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PA-EX
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PAB
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PAE
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PAL
×	×	×	×	×	×	×	×	×	×	×	✓	×	EW-PAP
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PP
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-PRF
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EW-TEF
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EWT-PA
✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	EWT-PP
✓	✓	✓	*	*	*	✓	×	✓	✓	✓	×	✓	EWX-LS
✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	×	✓	EWX-PA
✓	✓	✓	*	*	*	✓	×	✓	✓	✓	×	✓	EWX-PA-LS
✓	✓	✓	✓	✓	✓	✓	×	✓	✓	✓	×	✓	EWX-PA-UL
✓	✓	✓	*	*	*	✓	×	✓	✓	✓	×	✓	EWX-PAE
✓	✓	✓	*	*	*	✓	×	✓	✓	✓	×	✓	EWX-PAE-LS
×	×	×	×	×	×	×	×	×	×	×	×	×	GF

✓ combinable

× not combinable

* combinable where extraction forces are low

⋮ combinable to an extent (remove sheathing)

* in connection with an additional conduit or cable fitting



Cable protection conduit Murrflex closed



System overview, standard cable protection conduit Murrflex

	Type EW EWX (high corrugation) Universal cable protection conduit for light mechanical stresses or for bundling cables. Page 36		 -40–90 °C short periods 120 °C  Polyethylene  Fire classification HB  EW: > 200 N/100 mm EWX: > 400 N/100 mm
	Type EWS Cable protection conduit for light mechanical stresses. Ideal for bundling cables at control cabinet doors. Page 38		 -40–90 °C short periods 120 °C  Polyethylene  Fire classification HB  > 100 N/100 mm
	Type EWF Universal self-extinguishing cable protection conduit for light mechanical stresses or bundling cables. Page 39		 -40–90 °C short periods 120 °C  Polyethylene  Fire classification V2  Self-extinguishing  > 250 N/100 mm
	Type EW-PP Self-extinguishing cable protection conduit for medium mechanical stresses with good chemical resistance. Page 40		 -40–130 °C short periods 150 °C  Polypropylene  Fire classification V2  Self-extinguishing  > 700 N/100 mm
	Type EW-PA EWX-PA (high corrugation) Most universal UR and CSA-listed cable protection conduit for medium to high mechanical stresses. Page 41	  	 -40–140 °C short periods 160 °C  Polyamide PA6  Fire classification HB  EW-PA: > 700 N/100 mm EWX-PA: > 1,300 N/100 mm
	Type EW-PAL Universal cable protection conduit for light to medium mechanical stresses. Page 43		 -40–140 °C short periods 160 °C  Polyamide PA6  Fire classification HB  > 400 N/100 mm

Cable protection conduit

Murrflex closed



Type EW-PAB

Cable protection conduit for medium to high mechanical stresses. UR and CSA-listed self-extinguishing conduit approved for use in railway engineering.

Page 44



-40 – 140 °C short period 160 °C

Polyamide PA6

Fire classification V0
Self-extinguishing
> 450 N/100 mm



Type EW-PA-UL EWX-PA-UL (high corrugation)

Self-extinguishing UR-listed cable protection conduit with **eX**remely high mechanical strength yet excellent flexibility.

Page 45



-40 – 140 °C short period 160 °C

Polyamide PA6

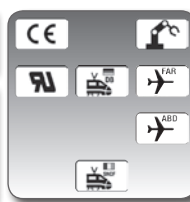
Fire classification V0
Self-extinguishing
EW-PA-UL: > 1300 N/100 mm
EWX-PA-UL: > 3,800 N/100 mm



Type EW-PRF

Self-extinguishing cable protection conduit for high mechanical and dynamic stresses with a high level of flexibility. UR-listed and self-extinguishing.

Page 47



-50 – 105 °C short period 150 °C

Polyamide PA12

Fire classification V0
Self-extinguishing
> 800 N/100 mm



Type EW-HY

Cable protection conduit for medium to high mechanical stresses and maximum flexibility. Ideal for robot applications at higher ambient temperatures.

Page 48



-50 – 160 °C short periods 180 °C

Thermo-plastic elastomer

Fire classification HB
> 400 N/100 mm



Type EW-PAE EWX-PAE (high corrugation)

Specially developed cable protection conduit for robot applications. For **eX**remely small bending radii with **eX**-tremely high flexibility and **eX**treme flexural fatigue strength.

Page 49



-40 – 120 °C short periods 150 °C

Polyamide PA12

Fire classification HB
EW-PAE: > 400 N/100 mm
EWX-PAE: > 500 N/100 mm

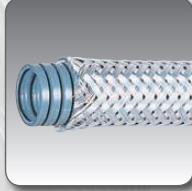


System overview, special cable protection conduit Murrflex



Cable protection conduit

Murrflex closed

	Type EW-PA-EX Conductive plastic conduit made from polyamide 12 for applications in areas at risk of explosion. Complies with the ATEX guideline 94/9/EG. Page 51	CE Ex 	 -40 – 110 °C short periods 150 °C  Polyamide PA12  Fire classification HB  > 350 N/100 mm
	Type EW-TEF Self-extinguishing cable protection conduit for extreme temperatures and light mechanical stresses. Page 52	CE	 -200 – 260 °C  Fluoroplastic  Fire classification V0  Self-extinguishing > 200 N/100 mm
	Type EW-PAP (with metal braiding) Cable protection conduit sheathed in metal braiding. For use in EMV applications and as protection for cables against flying sparks. Page 53	CE	 -40 – 140 °C short periods 160 °C  Polyamide PA6  Galvanised steel wire  Fire classification HB  > 800 N/100 mm
	Type EW-G (with EPDM sheathing) Cable protection conduit with smooth sheathing ensures easy cleaning and good chemical resistance. Standard connections can be used. Page 54	CE	 -40 – 120 °C short periods 150 °C  Polypropylene  EPDM  Fire classification HB  > 350 N/100 mm
	Type EF (rectangular conduit) Rectangular cable protection conduit for medium mechanical stresses and maximum flexibility. Ideal as an affordable alternative to cable drag chains. Page 55	CE 	 -50 – 160 °C short periods 180 °C  Thermoplastic elastomer  Fire classification HB  > 300 N/100 mm
	Type GF (braided conduit) Single wires and cables can be bundled together easily during assembly by pressing together the braided conduit. Page 56		 -50 – 150 °C short periods 175 °C  Polyamide PA6  Self-extinguishing

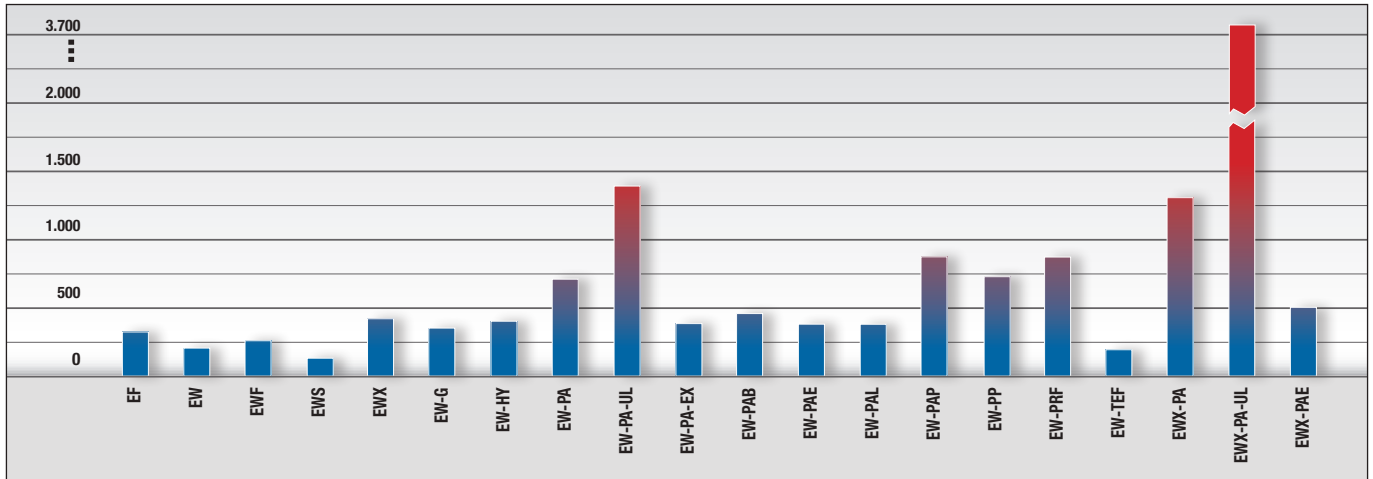
Recommendations for use

	EF	EW	EW-F	EWS	EWX	EW-G	EW-HY	EW-PA	EW-PA-UL	EW-PA-EX	EW-PAB	EW-PAE	EW-PAL	EW-PAP	EW-PP	EW-PRF	EW-TEF	EWX-PA	EWX-PA-UL	EWX-PAE	GF
Bundling cables		✓	✓	✓	✓																✓
Light mechanical protection	✓	✓	✓	✓		✓											✓				
Medium mechanical protection					✓		✓			✓	✓	✓	✓							✓	
High mechanical protection								✓						✓	✓	✓					
Very high mechanical protection									✓									✓			
Extremely high mechanical protection																			✓		
Persistent movements / dynamic applications (robotically controlled axes)	✓						✓				✓				✓	✓				✓	
Protection against hot solids (e.g. chippings)														✓							
ATEX Guideline 94/9/EG										✓											
UL-listed conduits File No.: E148958								✓	✓		✓					✓			✓		
CSA-listed conduits File No.: 217843								✓	✓		✓										
German railways approval DIN 5510-2									✓		✓					✓					
Approved by French railways NF F 16-101									✓		✓					✓					
Airways approval ABD 0031																✓					
Airways approval FAR 25853																✓					
Very good chemical resistance	✓					✓	✓								✓		✓				
Hygiene applications						✓															
For pre-assembled cables and retrofitting of cables																					
Extreme temperature range																	✓				

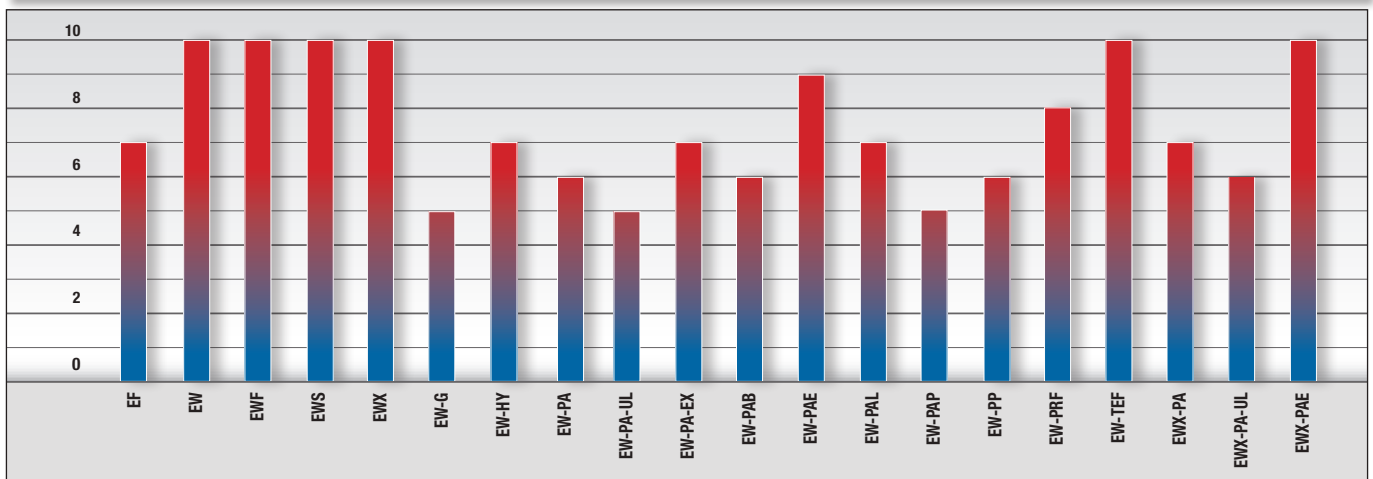
Material data

	Material	Temperature area [°C]			Fire specifications UL94	UL 224, type B	Self-extinguishing	UL File number E148958	Fire classification DIN 5510 S4	FMVSS Type A [<75 mm/min] type B [<100 mm/min]	CSA 217843	Crush resistance / N/100 mm EW-M25/P21 / EWX-M25/P21	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	PWS-free	RoHS Compliant
		Min.	Max.	Short periods																
EF	Thermoplastic elastomer	-50	160	180	HB							>300	✓	✓	✓	✓	✓	✓	✓	✓
EW	Polyethylene	-40	90	120	HB					B		>200	✓	✓	✓	✓	✓	✓	✓	✓
EWf	Polyethylene	-40	90	120	V2		✓					>250	✓	✓	✓	✓	✓	✓	✓	✓
EWS	Polyethylene	-40	90	120	HB							>100	✓	✓	✓	✓	✓	✓	✓	✓
EWX	Polyethylene	-40	90	120	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	Polypropylene, EPDM	-40	120	150	HB					A		>350		✓	✓	✓	✓	✓	✓	✓
EW-HY	Thermoplastic elastomer	-50	160	180	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	Polyamide PA6	-40	140	160	HB			✓		B	✓	>700	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	Polyamide PA6	-40	140	160	V0		✓	✓	✓	A	✓	>1300	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	Polyamide PA12	-40	110	150	HB					B		>350	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	Polyamide PA6	-40	140	160	V0		✓	✓	✓	B	✓	>450	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	Polyamide PA12	-40	120	150	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	Polyamide PA6	-40	140	160	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	Polyamide PA6	-40	140	160	HB					B		>800	✓	✓	✓	✓	✓	✓	✓	
EW-PP	Polypropylene	-40	130	150	V2		✓			A		>700		✓	✓	✓	✓	✓	✓	✓
EW-PRF	Polyamide PA12	-50	105	150	V0		✓	✓	✓	B		>800	✓	✓	✓	✓	✓	✓	✓	✓
EW-TEF	Fluoroplastic	-200	260		V0		✓			A		>200	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	Polyamide PA6	-40	140	160	HB					B		>1300	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	Polyamide PA6	-40	140	160	V0		✓	✓				>3800	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	Polyamide PA12	-40	120	150	HB					B		>500	✓	✓	✓	✓	✓	✓	✓	✓
GF	Polyamide PA6	-40	150	175		✓	✓			B			✓	✓	✓	✓	✓	✓	✓	

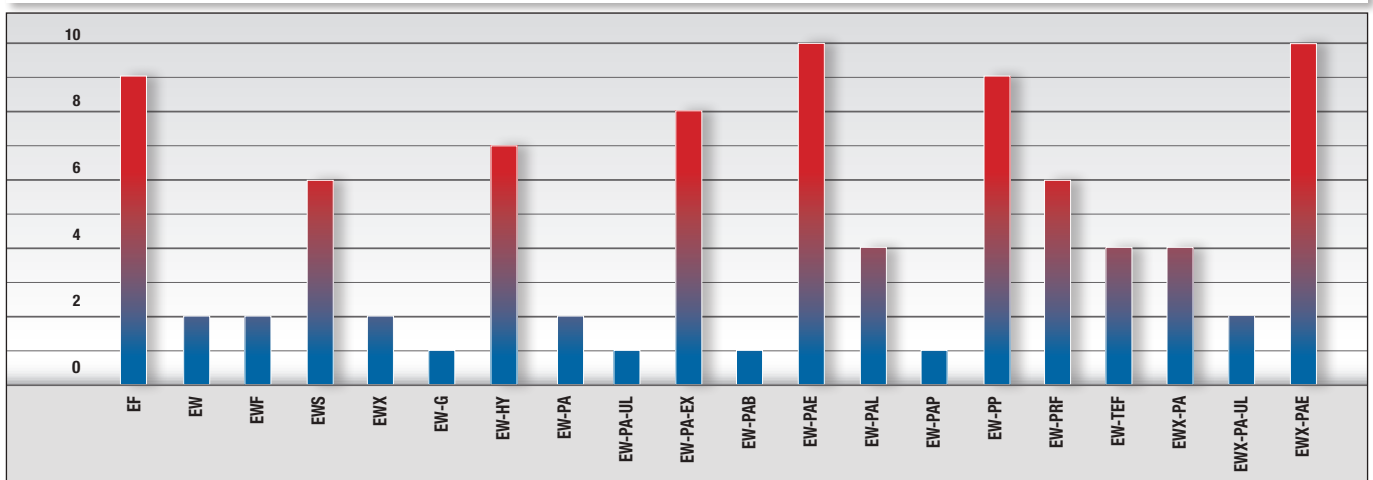
Selection diagrams



Crush resistance [N/100 mm]

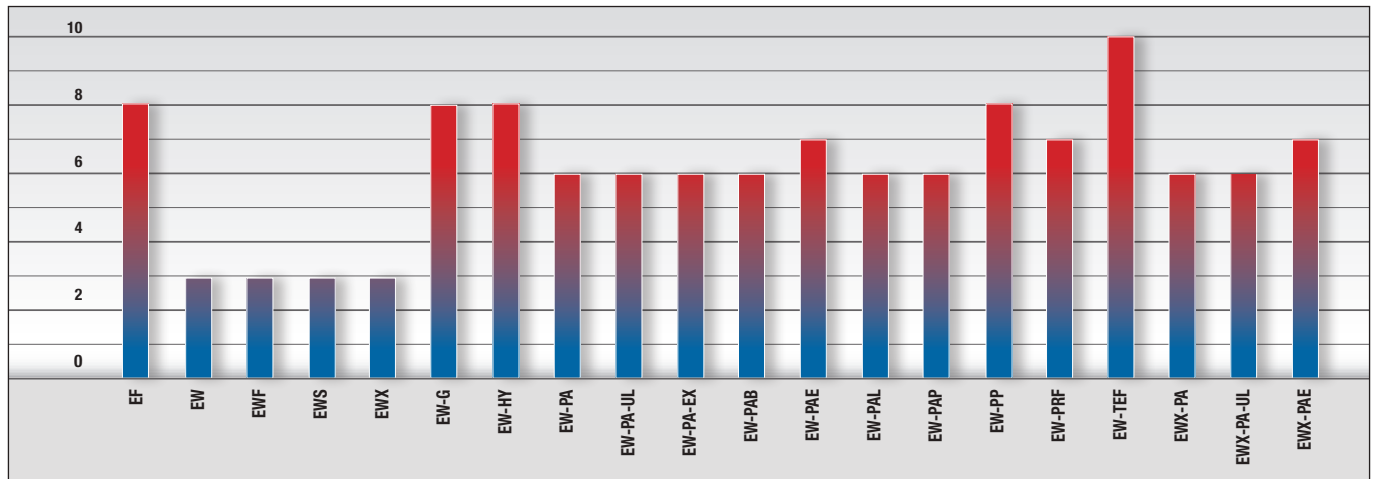


Flexibility

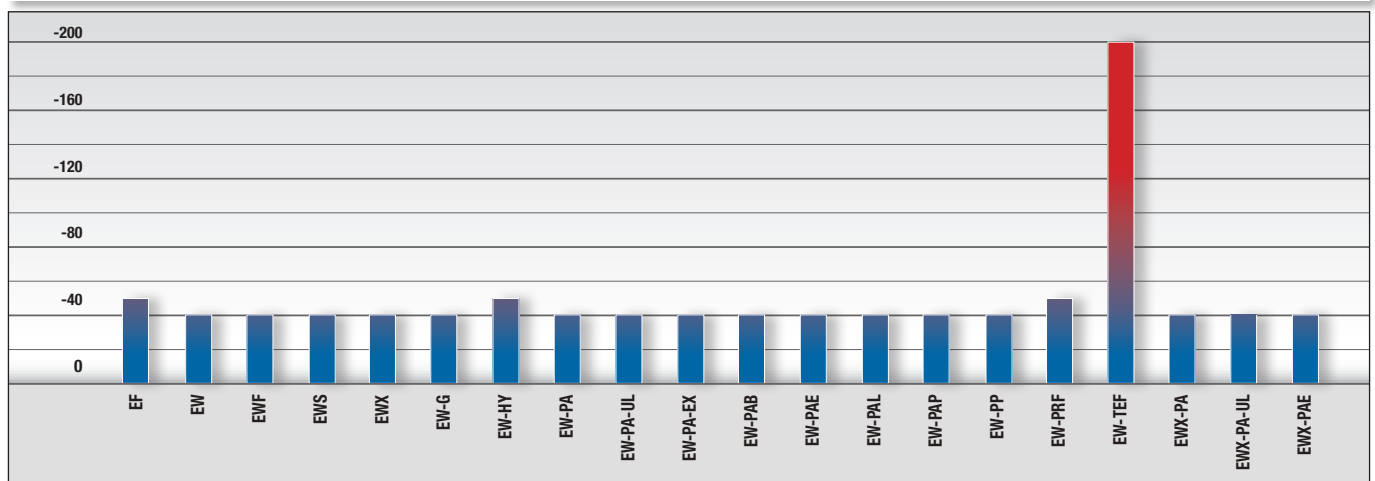


Flexural fatigue strength

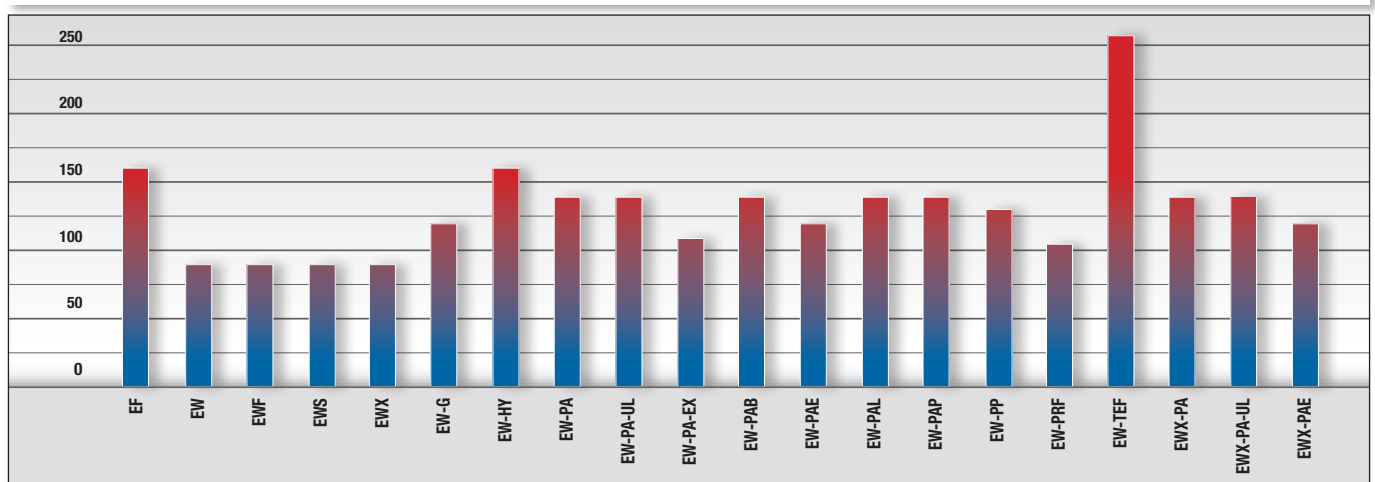
Selection diagrams



Chemical resistance



Lower temperature range [°C]



Higher temperature range [°C]

Combination options

	Conduit fittings up to conduit size M50 / Pg48													
	m-top									m-tec				
	CVG	CVW 45°	CVW 90°	DWV 45°	DWV 90°	IVG	VG	VW 45°	VW 90°	EH	KW	CSKV	ECSKV	MECSKV
EF	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWf	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡
EW-HY	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PRF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-TEF	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GF	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Combination options

Conduit fittings up to conduit size M50 / Pg48									Ab NW56		Special		
m-tec			m-fix			Bulkhead fitting			m-Jumbo				
CKW	MCSKV	MCKW	MSV	WSV	KSV	KFW ✦	KFW/D	KFW/X	SA-Jumbo	KFW-Jumbo	EH-EMV	AT	
✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	EF
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EWf
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EWS
✓	✓	✓	*	*	*	✓	✕	✓	✓	✓	✕	✓	EWX
⋮	⋮	⋮	⋮	⋮	⋮	✓	⋮	✕	⋮	⋮	✕	⋮	EW-G
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-HY
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PA
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PA-UL
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PA-EX
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PAB
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PAE
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PAL
✕	✕	✕	✕	✕	✕	✕	✕	✕	✓	✓	✓	✕	EW-PAP
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PP
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-PRF
✓	✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✕	✓	EW-TEF
✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✓	✕	✓	EWX-PA
✓	✓	✓	✓	✓	✓	✓	✕	✓	✓	✓	✕	✓	EWX-PA-UL
✓	✓	✓	*	*	*	✓	✕	✓	✓	✓	✕	✓	EWX-PAE
✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	GF

✓ combinable

✗ not combinable

* combinable where extraction forces are low

⋮ combinable to an extent (remove sheathing)

* in connection with an additional conduit or cable fitting



Cable protection conduit

Murrflex closed

Type EW / EWX (high corrugation)



-40 to 90 °C
transient 120 °C



Mod. polyethylene



HB



EW: > 200 N/100 mm
EWX: > 400 N/100 mm



Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

Universal cable protection conduit for light mechanical stresses or bundling cables with excellent flexibility.

Applications:

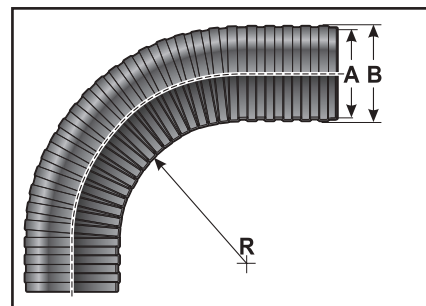
- Plant engineering
- Mechanical engineering
- Control cabinet construction



EW



EWX



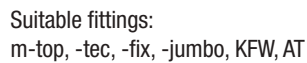
Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-M10/P7	83101050	black	8.5	11.5	30.0	-	2.2	50
EW-M12/P9	83101052	black	9.8	13.0	40.0	-	2.4	50
EW-M16/P11	83101054	black	12.0	15.8	45.0	-	3.4	50
EW-M20/P16	83101056	black	15.8	21.0	55.0	-	5.4	50
EW-M20/P16S*	83101058	black	16.8	21.0	60.0	-	6.4	50
EW-M25/P21	83101060	black	22.5	28.5	70.0	-	8.2	50
EW-M32/P29	83101062	black	29.0	34.5	80.0	-	9.6	25
EW-M40/P36	83101064	black	36.0	42.5	100.0	-	12.4	25
EW-M50/P48	83101066	black	47.5	54.5	115.0	-	20.0	25
EW-70 Jumbo	83101070	black	67.5	80.0	180.0	-	46.0	25
EW-95 Jumbo	83101074	black	91.5	106.0	200.0	-	65.0	10
EW-M10/P7	83101010	grey	8.5	11.5	30.0	-	2.2	50
EW-M12/P9	83101012	grey	9.8	13.0	40.0	-	2.4	50
EW-M16/P11	83101014	grey	12.0	15.8	45.0	-	3.4	50
EW-M20/P16	83101016	grey	15.8	21.0	55.0	-	5.4	50
EW-M20/P16S*	83101020	grey	16.8	21.0	60.0	-	6.4	50
EW-M25/P21	83101022	grey	22.5	28.5	70.0	-	8.2	50
EW-M25/P21S*	83103022	grey	23.0	28.5	70.0	-	8.2	50
EW-M32/P29	83101026	grey	29.0	34.5	80.0	-	9.6	25
EW-M40/P36	83101030	grey	36.0	42.5	100.0	-	12.4	25
EW-M50/P48	83101032	grey	47.5	54.5	115.0	-	20.0	25
EW-70 Jumbo	83101036	grey	67.5	80.0	180.0	-	46.0	25
EW-95 Jumbo	83101040	grey	91.5	106.0	200.0	-	65.0	10
* Narrow corrugation								

RoHS
compliant

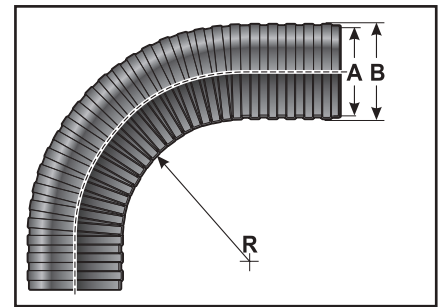


CE

RoHS
compliant



- Plant engineering
- Mechanical engineering
- Control cabinet construction



EWF

[illegible]



Cable protection conduit

Murrflex closed

Type EW-PP

RoHS
compliant



-40 to 130 °C
transient 150 °C



Mod. polypropylene



V2
Self-extinguishing



> 700 N/100 mm



Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

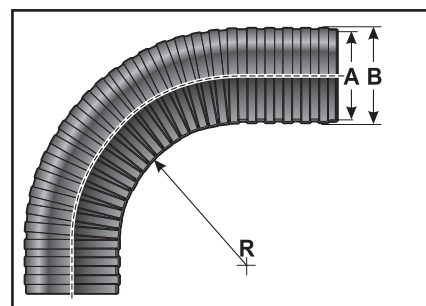
Self-extinguishing cable protection conduit for medium mechanical stresses with good chemical resistance.

Applications:

- Plant engineering
- Mechanical engineering
- Chemical plants



EW-PP



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PP-M10/P7	83201050	black	8.5	11.2	21.0	70.0	1.3	50
EW-PP-M12/P9	83201052	black	9.8	13.0	26.0	80.0	2.4	50
EW-PP-M16/P11	83201054	black	12.0	15.8	33.0	100.0	3.5	50
EW-PP-M20/P16	83201056	black	15.8	21.0	46.0	180.0	5.2	50
EW-PP-M20/P16S*	83201057	black	16.6	21.0	41.0	170.0	5.2	50
EW-PP-M25/P21	83201058	black	22.5	28.5	59.0	230.0	9.3	50
EW-PP-M32/P29	83201060	black	29.0	34.5	72.0	280.0	11.0	25
EW-PP-M40/P36	83201062	black	36.0	42.5	86.0	310.0	15.8	25
EW-PP-M50/P48	83201064	black	47.5	54.5	107.0	350.0	20.5	25
EW-PP-70 Jumbo	83201066	black	67.5	80.0	160.0	600.0	41.0	25
EW-PP-95 Jumbo	83201068	black	91.5	106.0	200.0	800.0	75.0	10
EW-PP-M10/P7	83201010	grey	8.5	11.2	21.0	70.0	1.3	50
EW-PP-M12/P9	83201012	grey	9.8	13.0	26.0	80.0	2.4	50
EW-PP-M16/P11	83201014	grey	12.0	15.8	33.0	100.0	3.5	50
EW-PP-M20/P16	83201016	grey	15.8	21.0	46.0	180.0	5.2	50
EW-PP-M25/P21	83201018	grey	22.5	28.5	59.0	230.0	9.3	50
EW-PP-M32/P29	83201020	grey	29.0	34.5	72.0	280.0	11.0	25
EW-PP-M40/P36	83201022	grey	36.0	42.5	86.0	310.0	15.8	25
EW-PP-M50/P48	83201024	grey	47.5	54.5	107.0	350.0	20.5	25
EW-PP-70 Jumbo	83201026	grey	67.5	80.0	160.0	600.0	41.0	25
EW-PP-95 Jumbo	83201028	grey	91.5	106.0	200.0	800.0	75.0	10
* Narrow corrugation								

Type EW-PA / EWX-PA (high corrugation)

RoHS
compliant



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



HB



EW-PA: > 700 N/100 mm
EWX-PA: > 1.300 N/100 mm

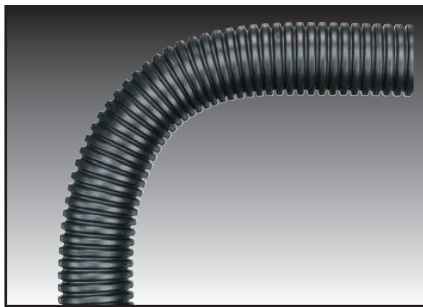


Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

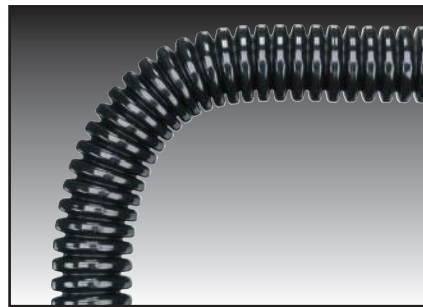
Most universal UR and CSA-listed cable protection conduit for medium to high mechanical stresses.

Applications:

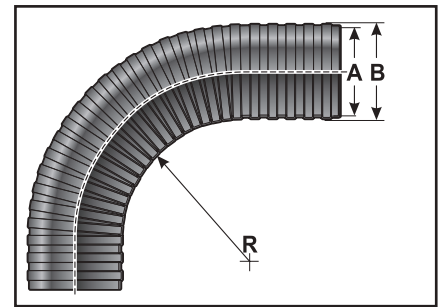
- Plant engineering
- Mechanical engineering
- Vehicle engineering



EW-PA



EWX-PA



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PA-06	83161050	black	6.6	10.0	21.0	-	2.2	50
EW-PA-M10/P7	83161052	black	8.5	11.4	24.0	-	2.5	50
EW-PA-M12/P9	83161054	black	9.8	13.0	26.0	-	2.6	50
EW-PA-M16/P11	83161056	black	12.3	15.8	38.0	-	3.4	50
EW-PA-M20/P16	83161060	black	15.8	21.0	55.0	-	5.4	50
EW-PA-M20/P16S*	83162062	black	16.6	21.0	50.0	-	6.3	50
EW-PA-M25/P21	83161064	black	22.4	28.5	64.0	-	9.0	50
EW-PA-M25/P21S*	83162064	black	23.0	28.5	59.0	-	9.0	50
EW-PA-M32/P29	83161072	black	28.0	34.5	72.0	-	12.5	25
EW-PA-M32/P29S*	83162072	black	28.9	34.5	67.0	-	13.5	25
EW-PA-M40/P36 **	83161076	black	35.5	42.5	81.0	-	14.8	25
EW-PA-M40/P36S*	83162076	black	36.0	42.5	76.0	-	15.0	25
EW-PA-M50/P48	83161078	black	46.5	54.5	97.0	-	20.0	25
EW-PA-M50/P48S*	83162080	black	47.5	54.5	92.0	-	21.8	25
EW-PA-70 Jumbo	83161082	black	67.5	80.0	160.0	-	46.0	25
EW-PA-95 Jumbo	83161086	black	91.5	106.0	200.0	-	83.0	10
EW-PA-06	83161010	grey	6.6	10.0	21.0	-	2.2	50
EW-PA-M10/P7	83161012	grey	8.5	11.4	24.0	-	2.5	50
EW-PA-M12/P9	83161014	grey	9.8	13.0	26.0	-	2.6	50
EW-PA-M16/P11	83161016	grey	12.3	15.8	38.0	-	3.4	50
EW-PA-M20/P16	83161018	grey	15.8	21.0	55.0	-	5.4	50
EW-PA-M20/P16S*	83162020	grey	16.6	21.0	50.0	-	6.3	50
EW-PA-M25/P21	83161022	grey	22.4	28.5	64.0	-	9.0	50
EW-PA-M25/P21S*	83162022	grey	23.0	28.5	59.0	-	9.0	50
EW-PA-M32/P29	83161026	grey	28.0	34.5	72.0	-	12.5	25
EW-PA-M32/P29S*	83162026	grey	28.9	34.5	67.0	-	13.5	25
EW-PA-M40/P36 **	83161028	grey	35.5	42.5	81.0	-	14.8	25





Type EW-PAL

RoHS
compliant



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



HB



> 400 N/100 mm

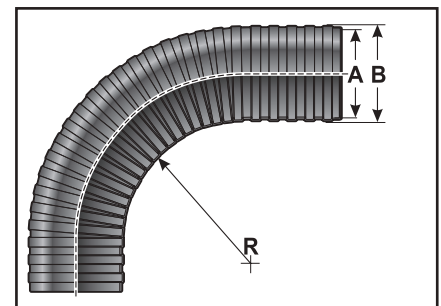
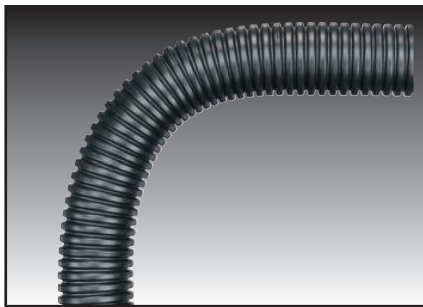


Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

Universal cable protection conduit for light to medium mechanical stresses.

Applications:

- Plant engineering
- Mechanical engineering
- Vehicle engineering



EW-PAL

Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PAL-M10/P7	83161450	black	8.7	11.2	20.0	-	1.6	50
EW-PAL-M12/P9	83161452	black	10.0	13.0	25.0	-	1.7	50
EW-PAL-M16/P11	83161454	black	12.5	15.8	35.0	-	2.4	50
EW-PAL-M20/P16	83161456	black	16.0	21.0	50.0	-	3.8	50
EW-PAL-M20/P16S*	83161458	black	17.0	21.0	50.0	-	4.0	50
EW-PAL-M25/P21	83161460	black	22.6	28.5	60.0	-	5.0	50
EW-PAL-M32/P29	83161464	black	28.7	34.5	70.0	-	7.0	25
EW-PAL-M40/P36	83161468	black	36.2	42.5	80.0	-	11.5	25
EW-PAL-M50/P48	83161470	black	46.7	54.5	95.0	-	15.0	25
EW-PAL-M10/P7	83161410	grey	8.7	11.2	20.0	-	1.6	50
EW-PAL-M12/P9	83161412	grey	10.0	13.0	25.0	-	1.7	50
EW-PAL-M16/P11	83161414	grey	12.5	15.8	35.0	-	2.4	50
EW-PAL-M20/P16	83161416	grey	16.0	21.0	50.0	-	3.8	50
EW-PAL-M20/P16S*	83161418	grey	17.0	21.0	50.0	-	4.0	50
EW-PAL-M25/P21	83161420	grey	22.6	28.5	60.0	-	5.0	50
EW-PAL-M32/P29	83161424	grey	28.7	34.5	70.0	-	7.0	25
EW-PAL-M32/P29 S *	83161426	grey	29.2	34.5	70.0	-	7.0	25
EW-PAL-M40/P36	83161428	grey	36.2	42.5	80.0	-	11.5	25
EW-PAL-M50/P48	83161430	grey	46.7	54.5	95.0	-	15.0	25
* Narrow corrugation								



Cable protection conduit

Murrflex closed

Type EW-PAB

RoHS
compliant



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



V0
Self-extinguishing



> 450 N/100 mm



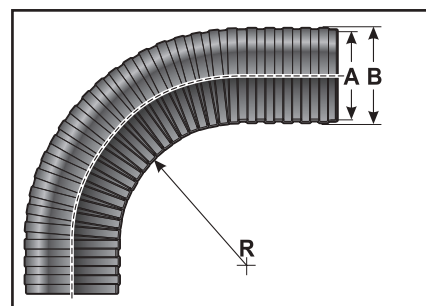
Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

Cable protection conduit for medium to high mechanical stresses. UR and CSA-listed self-extinguishing conduit approved for use in railway engineering.

For the static interior works in railway vehicles.

Applications:

- Railway engineering
- Plant engineering
- Mechanical engineering
- Vehicle engineering



EW-PAB



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PAB 06	83162250	black	6.8	9.9	23.0	-	2.3	50
EW-PAB-M12/P9	83162254	black	9.8	13.0	26.0	-	2.6	50
EW-PAB-M16/P11	83162256	black	12.0	15.8	38.0	-	3.4	50
EW-PAB-M20/P16	83162258	black	16.6	21.2	56.0	-	6.3	50
EW-PAB-M20/P16S*	83162260	black	16.8	21.0	56.0	-	6.3	50
EW-PAB-M25/P21	83162262	black	22.4	28.5	64.0	-	9.6	50
EW-PAB-M25/P21S*	83162462	black	23.0	28.5	64.0	-	9.6	50
EW-PAB-M32/P29	83162266	black	28.5	34.5	77.0	-	12.5	25
EW-PAB-M32/P29S*	83162466	black	28.9	34.5	77.0	-	12.5	25
EW-PAB-M40/P36 **	83162268	black	36.0	42.5	91.0	-	14.8	25
EW-PAB-M50/P48	83162270	black	46.5	54.5	117.0	-	20.0	25
EW-PAB-70 Jumbo	83162278	black	67.5	80.0	200.0	-	46.0	25
EW-PAB-95 Jumbo	83162282	black	91.5	106.0	265.0	-	80.0	10
EW-PAB-M12/P9	83162214	grey	9.8	13.0	26.0	-	2.6	50
EW-PAB-M16/P11	83162216	grey	12.0	15.8	38.0	-	3.4	50
EW-PAB-M20/P16S*	83162220	grey	16.8	21.0	56.0	-	6.3	50
EW-PAB-M25/P21	83162222	grey	22.4	28.5	64.0	-	9.6	50
EW-PAB-M25/P21S*	83162422	grey	23.0	28.5	64.0	-	9.6	50
EW-PAB-M32/P29	83162226	grey	28.5	34.5	77.0	-	12.5	25
EW-PAB-M32/P29S*	83162426	grey	28.9	34.5	77.0	-	12.5	25
EW-PAB-M40/P36 **	83162228	grey	36.0	42.5	91.0	-	14.8	25
EW-PAB-M50/P48	83162230	grey	46.5	54.5	117.0	-	20.0	25
EW-PAB-70 Jumbo	83162238	grey	67.5	80.0	200.0	-	46.0	25
EW-PAB-95 Jumbo	83162242	grey	91.5	106.0	265.0	-	80.0	10

* Narrow corrugation

** CSA authorisation

Type EW-PA-UL / EWX-PA-UL (high corrugation)

RoHS
compliant



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



V0
Self-extinguishing



EW-PA-UL: > 1,300 N/100 mm
EWX-PA-UL: > 3,800 N/100 mm



Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

Self-extinguishing UR-listed cable protection conduit with extremely high mechanical strength yet excellent flexibility. This cable protection conduit is notable for its extreme angle consistency. That makes it suitable for use wherever cables require heavy-duty mechanical protection. A real alternative to expensively installed metal conduits.

Applications:

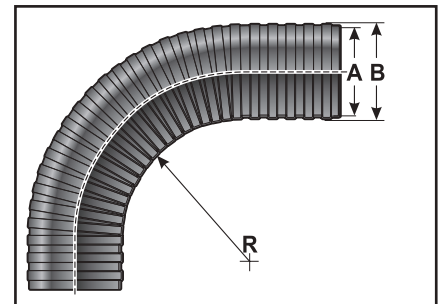
- Plant engineering
- Mining
- Vehicle engineering
- Mechanical engineering
- Railway engineering



EW-PA-UL



EWX-PA-UL



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PA-UL-06	83161250	black	6.4	10.0	23.0	-	2.3	50
EW-PA-UL-M10/P7	83161252	black	8.3	11.2	26.0	-	2.7	50
EW-PA-UL-M12/P9	83161254	black	9.0	13.0	36.0	-	3.5	50
EW-PA-UL-M16/P11	83161256	black	11.0	15.8	48.0	-	4.7	50
EW-PA-UL-M20/P16	83161258	black	15.3	21.0	55.0	-	7.5	50
EW-PA-UL-M20/P16S*	83161260	black	16.3	21.0	58.0	-	9.4	50
EW-PA-UL-M25/P21	83161262	black	21.6	28.5	65.0	-	14.1	50
EW-PA-UL-M32/P29	83161264	black	27.5	34.5	77.0	-	17.8	25
EW-PA-UL-M40/P36 **	83161266	black	35.0	42.5	96.0	-	24.2	25
EW-PA-UL-M50/P48	83161268	black	45.5	54.5	112.0	-	30.0	25
EW-PA-UL 70 Jumbo	83161280	black	66.0	79.3	160.0	-	60.0	25
EW-PA-UL-06	83161210	grey	6.4	10.0	23.0	-	2.3	50
EW-PA-UL-M10/P7	83161212	grey	8.3	11.2	26.0	-	2.7	50
EW-PA-UL-M12/P9	83161214	grey	9.0	13.0	36.0	-	3.5	50
EW-PA-UL-M16/P11	83161216	grey	11.0	15.8	48.0	-	4.7	50
EW-PA-UL-M20/P16	83161218	grey	15.3	21.0	55.0	-	7.5	50
EW-PA-UL-M20/P16S*	83161220	grey	16.3	21.0	58.0	-	9.4	50
EW-PA-UL-M25/P21	83161222	grey	21.6	28.5	65.0	-	14.1	50
EW-PA-UL-M25/P21S*	83163222	grey	21.6	28.5	65.0	-	14.1	50
EW-PA-UL-M32/P29	83161224	grey	27.5	34.5	77.0	-	17.8	25
EW-PA-UL-M40/P36 **	83161226	grey	35.0	42.5	96.0	-	24.2	25
EW-PA-UL-M50/P48	83161228	grey	45.5	54.5	112.0	-	30.0	25
* Narrow corrugation								
** CSA authorisation								



Type EW-PRF

RoHS
compliant



-50 to 105 °C
transient 150 °C



Mod. polyamide 12



V0
Self-extinguishing



> 800 N/100 mm

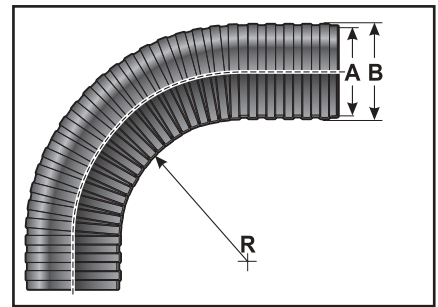


Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

Cable protection conduit for high mechanical stresses and maximum flexibility. UR-listed self-extinguishing conduit approved for use in railway engineering. Particularly suited for dynamic routing in railway vehicles. FAR / ABD authorisation for colour grey only.

Applications:

- Railway engineering
- Robots
- Handling systems
- In cable drag chains



EW-PRF

Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PRE-M10/P7	83181252	black	8.5	11.2	21.0	46.0	2.1	50
EW-PRF-M12/P9	83181254	black	9.8	13.0	22.0	51.0	2.6	50
EW-PRF-M16/P11	83181256	black	12.0	15.8	28.0	68.0	3.6	50
EW-PRF-M20/P16	83181258	black	15.8	21.0	38.0	95.0	5.3	50
EW-PRF-M20/P16S*	83181260	black	16.8	21.0	35.0	90.0	5.6	50
EW-PRF-M25/P21	83181262	black	22.0	28.5	49.0	109.0	9.6	50
EW-PRF-M25/P21S*	83181462	black	22.9	28.5	44.0	104.0	9.6	50
EW-PRF-M32/P29	83181264	black	28.0	34.5	67.0	142.0	12.2	25
EW-PRF-M32/P29S*	83181464	black	28.9	34.5	62.0	132.0	14.0	25
EW-PRF-M40/P36	83181266	black	36.0	42.5	81.0	191.0	16.2	25
EW-PRF-M50/P48	83181268	black	46.5	54.5	102.0	237.0	22.3	25
EW-PRF-70 Jumbo	83181272	black	67.5	80.0	200.0	390.0	48.0	25
EW-PRF-95 Jumbo	83181274	black	91.5	106.0	265.0	500.0	80.0	10
EW-PRE-M10/P7	83181212	grey	8.5	11.2	21.0	46.0	2.1	50
EW-PRF-M12/P9	83181214	grey	9.8	13.0	22.0	51.0	2.6	50
EW-PRF-M16/P11	83181216	grey	12.0	15.8	28.0	68.0	3.6	50
EW-PRF-M20/P16	83181218	grey	15.8	21.0	38.0	95.0	5.3	50
EW-PRF-M20/P16S*	83181220	grey	16.8	21.0	35.0	90.0	5.6	50
EW-PRF-M25/P21	83181222	grey	22.0	28.5	49.0	109.0	9.6	50
EW-PRF-M25/P21S*	83181422	grey	22.9	28.5	44.0	104.0	9.6	50
EW-PRF-M32/P29	83181224	grey	28.0	34.5	67.0	142.0	12.2	25
EW-PRF-M32/P29S*	83181424	grey	28.9	34.5	62.0	132.0	14.0	25
EW-PRF-M40/P36	83181226	grey	36.0	42.5	81.0	191.0	16.2	25
EW-PRF-M50/P48	83181228	grey	46.5	54.5	102.0	237.0	22.3	25
EW-PRF-70 Jumbo	83181232	grey	67.5	80.0	200.0	390.0	48.0	25
EW-PRF-95 Jumbo	83181234	grey	91.5	106.0	265.0	500.0	80.0	10

* Narrow corrugation



Type EW-PAE / EWX-PAE (high corrugation)

RoHS
compliant



-40 to 120 °C
transient 150 °C



Mod. polyamide 12



HB



EW-PAE: > 400 N/100 mm
EWX-PAE: > 500 N/100 mm



Suitable fittings:
m-top, -tec, -fix, -jumbo, KFW, AT

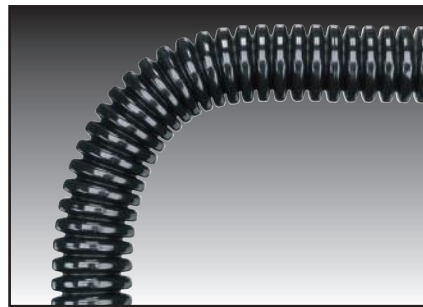
This cable protection conduit was developed specially for robot applications subject to extreme movements. Extremely small bending radii with extremely high flexibility and extreme flexural fatigue strength. It is also highly resistant to abrasion with low weight.

Applications:

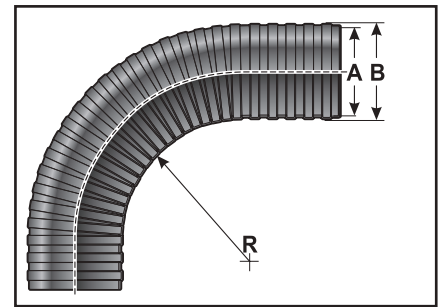
- Robots
- Handling systems
- In cable drag chains



EW-PAE



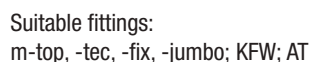
EWX-PAE



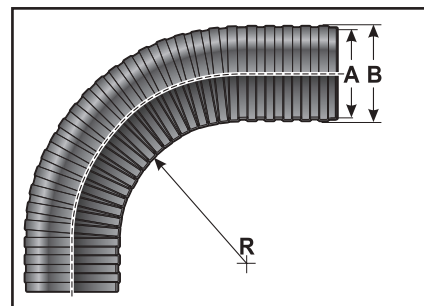
Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PAE-06	83181650	black	6.8	9.9	15.0	40.0	1.8	50
EW-PAE-M10/P7	83181652	black	8.5	11.2	20.0	45.0	2.1	50
EW-PAE-M12/P9	83181654	black	9.8	13.0	21.0	51.0	2.6	50
EW-PAE-M16/P11	83181656	black	12.0	15.8	28.0	68.0	3.6	50
EW-PAE-M20/P16	83181658	black	15.8	21.0	36.0	70.0	5.3	50
EW-PAE-M25/P21	83181660	black	22.0	28.5	49.0	109.0	9.0	50
EW-PAE-M32/P29	83181662	black	28.0	34.5	67.0	142.0	12.2	25
EW-PAE-M40/P36	83181664	black	36.0	42.5	81.0	191.0	16.2	25
EW-PAE-M50/P48	83181666	black	46.5	54.5	102.0	237.0	22.3	25
EW-PAE-70 Jumbo	83181680	black	66.5	80.0	200.0	390.0	48.0	25
EW-PAE-95 Jumbo	83181682	black	91.0	106.0	265.0	500.0	80.0	10
EW-PAE-06	83181610	grey	6.8	9.9	15.0	40.0	1.8	50
EW-PAE-M10/P7	83181612	grey	8.5	11.2	20.0	45.0	2.1	50
EW-PAE-M12/P9	83181614	grey	9.8	13.0	21.0	51.0	2.6	50
EW-PAE-M16/P11	83181616	grey	12.0	15.8	28.0	68.0	3.6	50
EW-PAE-M20/P16	83181618	grey	15.8	21.0	36.0	70.0	5.3	50
EW-PAE-M25/P21	83181620	grey	22.0	28.5	49.0	109.0	9.0	50
EW-PAE-M32/P29	83181622	grey	28.0	34.5	67.0	142.0	12.2	25
EW-PAE-M40/P36	83181624	grey	36.0	42.5	81.0	191.0	16.2	25
EW-PAE-M50/P48	83181626	grey	46.5	54.5	102.0	237.0	22.3	25
EW-PAE-70 Jumbo	83181640	grey	66.5	80.0	200.0	390.0	48.0	25
EW-PAE-95 Jumbo	83181642	grey	91.0	106.0	265.0	500.0	80.0	10

[illegible]

RoHS
compliant



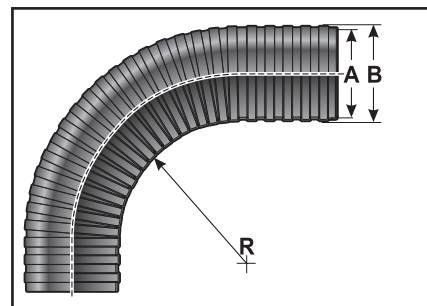
- Mining
- Refineries
- Chemical industry
- Robots



EW-PA-EX

[illegible]





Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PAP-M12/P9	83141010	grey	9.8	14.0	37.0	-	16	50
EW-PAP-M16/P11	83141012	grey	12.3	16.8	58.0	-	19	50
EW-PAP-M20/P16	83141014	grey	15.8	22.0	81.0	-	22	50
EW-PAP-M25/P21	83141016	grey	22.4	29.4	95.0	-	27	50
EW-PAP-M32/P29	83141018	grey	27.5	35.5	118.0	-	41	25
EW-PAP-M40/P36	83141020	grey	35.5	43.5	162.0	-	48	25
EW-PAP-M50/P48	83141022	grey	46.5	55.5	208.0	-	72	25

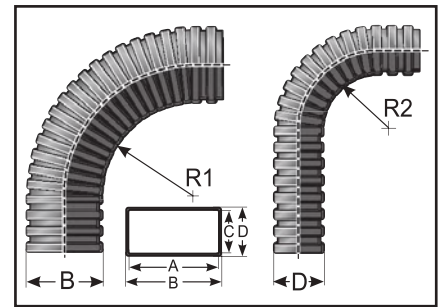
CE



RoHS
compliant

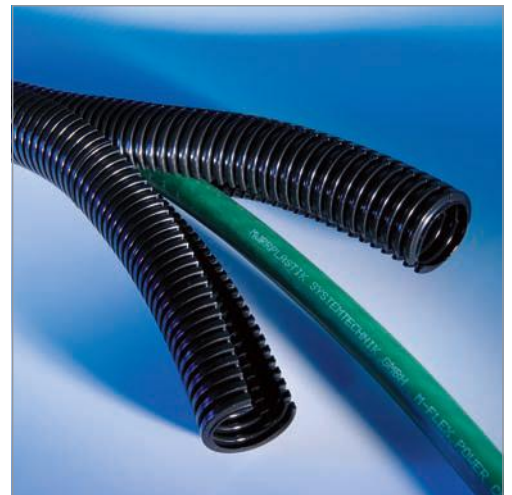


- Handling systems
- Plant engineering
- Controlled axes
- Robots

[illegible]



Cable protection conduit Murrflex open





System overview



Cable protection conduit

Murrflex open



One-piece cable protection conduits Murrflex



Type EW-LS EWX-LS (high corrugation)

Universal cable protection conduit for light mechanical stresses. The longitudinal slit enables laying of pre-assembled cables as well as repairs to existing systems.

Page 66



-40 – 90 °C short periods 120 °C
Polyethylene
Fire classification HB
EW-LS: > 200 N/100 mm
EWX-LS: > 400 N/100 mm



Type EW-PA-LS EWX-PA-LS (high corrugation)

Universal cable protection conduit for medium to high mechanical stress. The longitudinal slit enables the laying of pre-assembled cables.

Page 67



-40 – 140 °C short periods 160 °C
Polyamide PA6
Fire classification HB
EW-LS: > 700 N/100 mm
EWX-LS: > 1,300 N/100 mm



Type EWX-PAE-LS (high corrugation)

Specially design for robot applications: For eXtremely small bending radii with eXtremely high flexibility and eXtreme flexural fatigue strength. It is also highly resistant to abrasion with low weight.

Page 68



-40 – 120 °C short periods 150 °C
Polyamide PA12
Fire classification HB
> 500 N/100 mm

Multi-piece cable protection conduits Murrflex Split-Flex



Type EWT-PP Split-Flex

Two-piece, slitted cable protection conduit made of polyamide with high mechanical strength. For the installation of pre-assembled cables or for later installations.

Page 69



-40 – 140 °C short periods 160 °C
Polyamide PA6
Fire classification HB
> 1200 N/100 mm



Type EWT-PP Split-Flex

Two-section polypropylene slit cable protection conduit with average mechanical strength and good chemical stability.

Page 70



-40 – 130 °C short periods 150 °C
Polypropylene
Fire classification V2
Self-extinguishing
> 600 N/100 mm

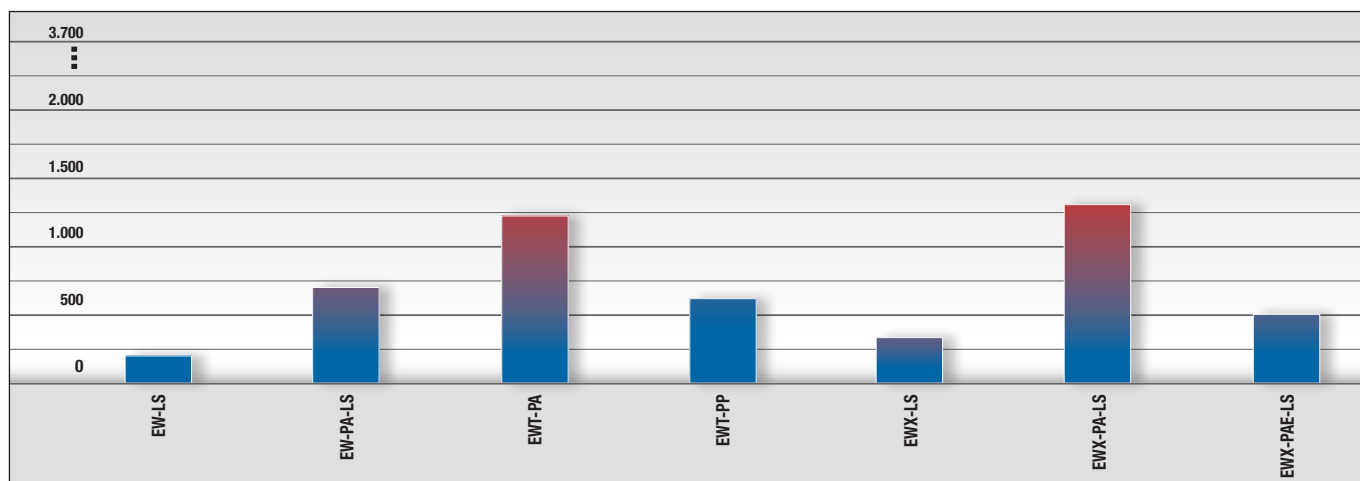
Recommendations for use

	EW-LS	EW-PA-LS	EWT-PA	EWT-PP	EWX-LS	EWX-PA-LS	EWX-PAE-LS
Bundling cables	✓				✓		
Light mechanical protection	✓						
Medium mechanical protection					✓		✓
High mechanical protection		✓	✓	✓			
Very high mechanical protection						✓	
Extremely high mechanical protection							
Persistent movements / dynamic applications (robotically controlled axes)							✓
Protection against hot solids (e.g. chippings)							
ATEX Guideline 94/9/EG							
UL-listed conduits File No.: E148958							
CSA-listed conduits File No.: 217843							
Approved by German railways DIN 5510-2							
Approved by French railways NF F 16-101							
Airways approval ABD 0031							
Airways approval FAR 25853							
Very good chemical resistance				✓			
Hygiene applications							
For pre-assembled cables and retrofitting of cables	✓	✓	✓	✓	✓	✓	✓
Extreme temperature range							

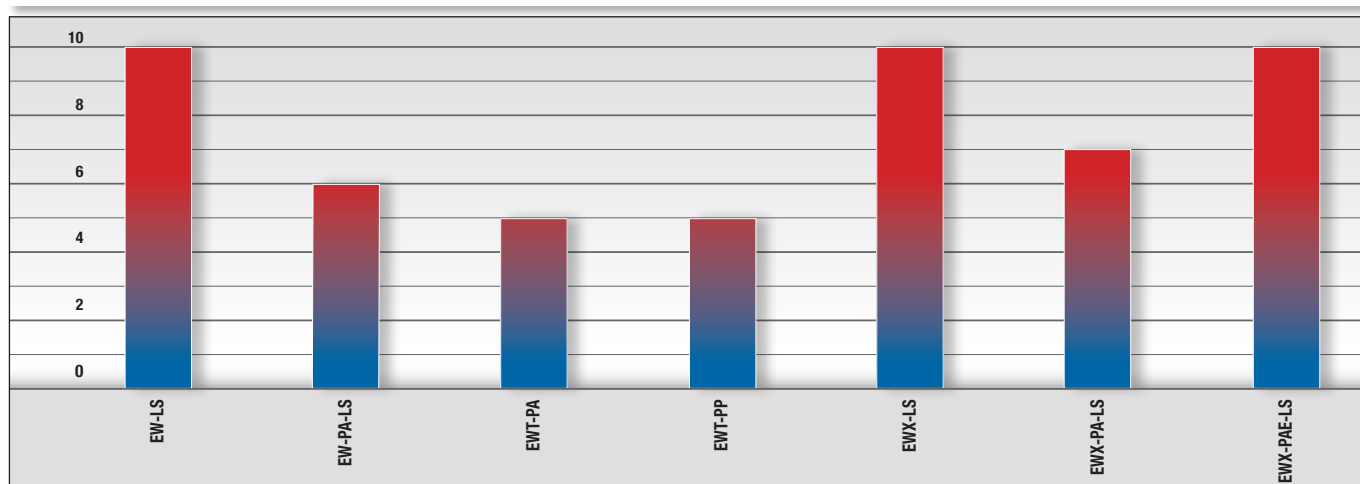
Material data

	Material	Temperature area [°C]			Fire specifications UL94	UL 224, type B	Self-extinguishing	UL File number E148958	Fire classification DIN 5510 S4	FMVSS Type A [<75 mm/min] Type B [<100 mm/min]	CSA 217843	Crush resistance / N/100 mm EW-M25/P21 / EWX-M25/P21	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	PWIS-free	RoHS Compliant
		Min.	Max.	Short periods																
EW-LS	Polyethylene	-40	90	120	HB					B		>200	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	Polyamide PA6	-40	140	160	HB					B		>700	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PA	Polyamide PA6	-40	140	160	HB							>1200	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PP	Polypropylene	-40	130	150	V2		✓					>600		✓	✓	✓	✓	✓	✓	✓
EWX-LS	Polyethylene	-40	90	120	HB					B		>400	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	Polyamide PA6	-40	140	160	HB					B		>1300	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	Polyamide PA12	-40	120	150	HB					B		>500	✓	✓	✓	✓	✓	✓	✓	✓

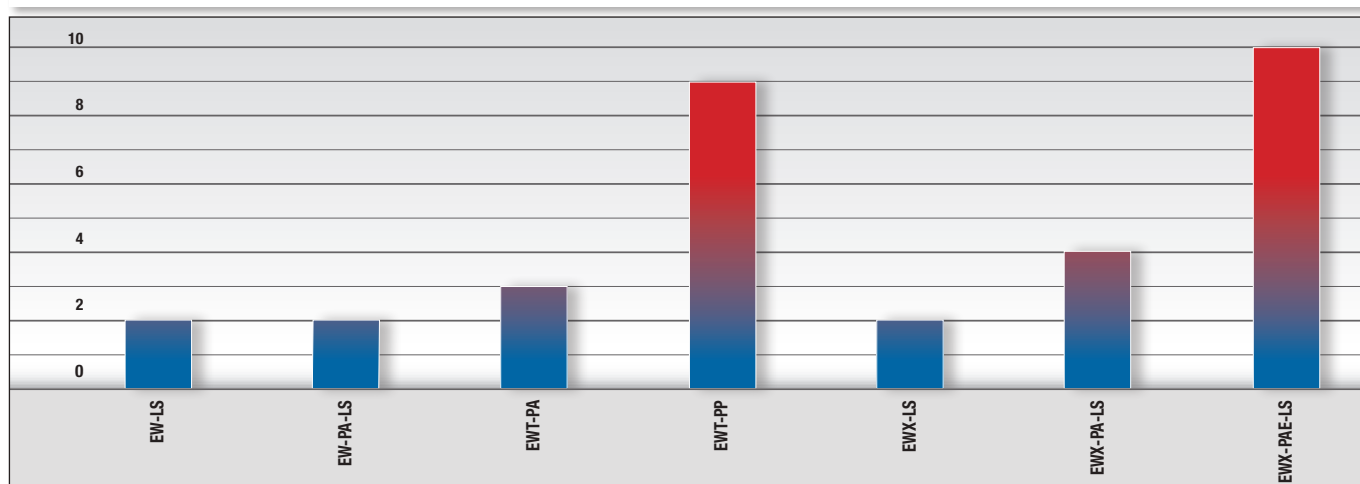
Selection diagrams



Crush resistance [N/100 mm]

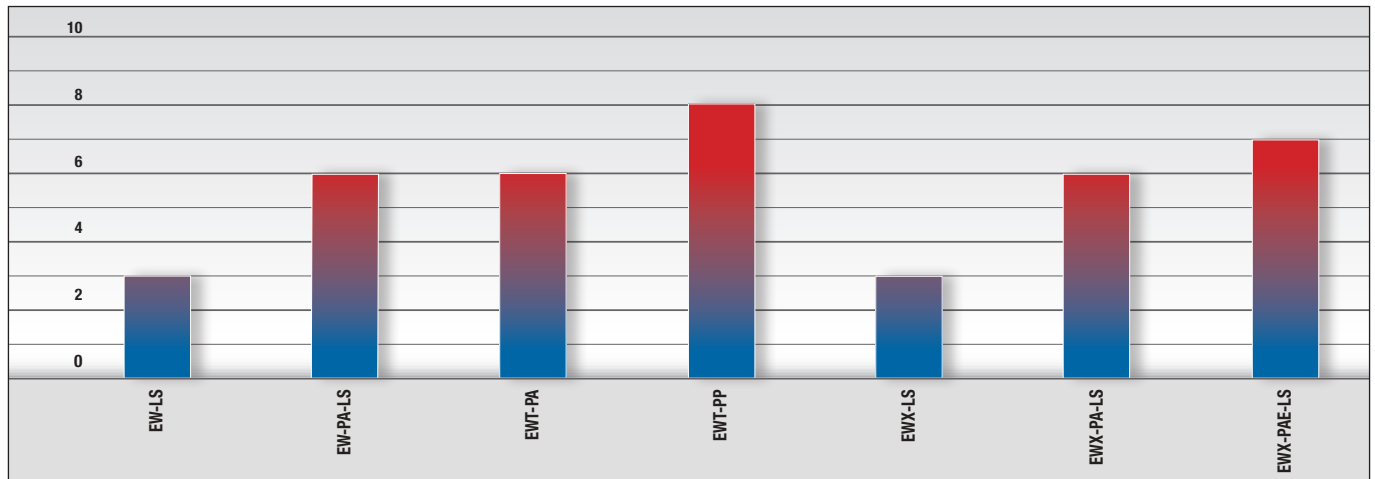


Flexibility

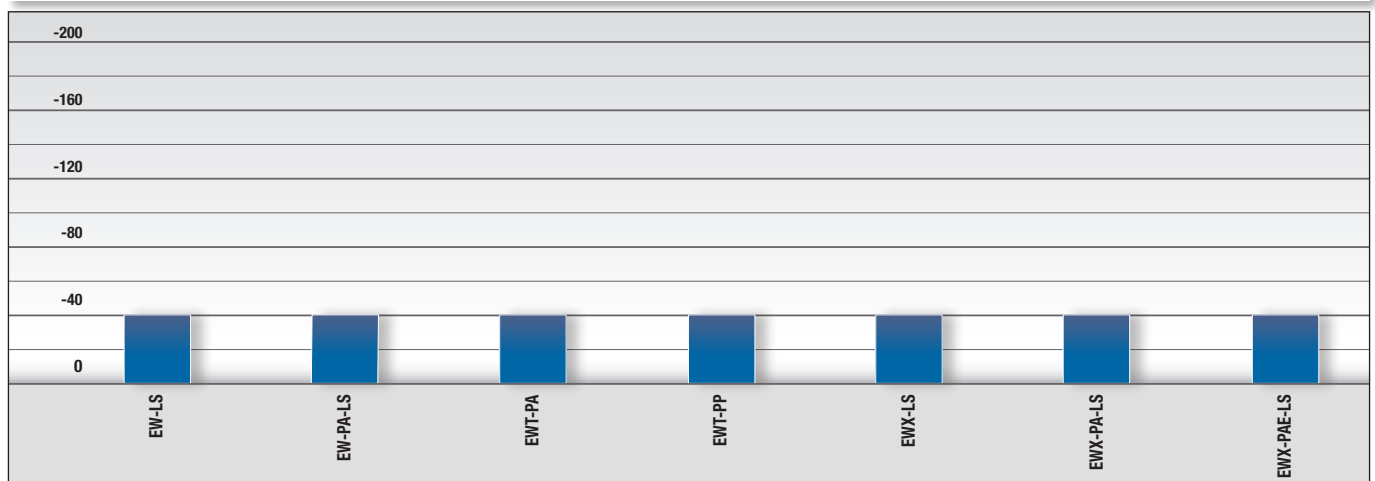


Flexural fatigue strength

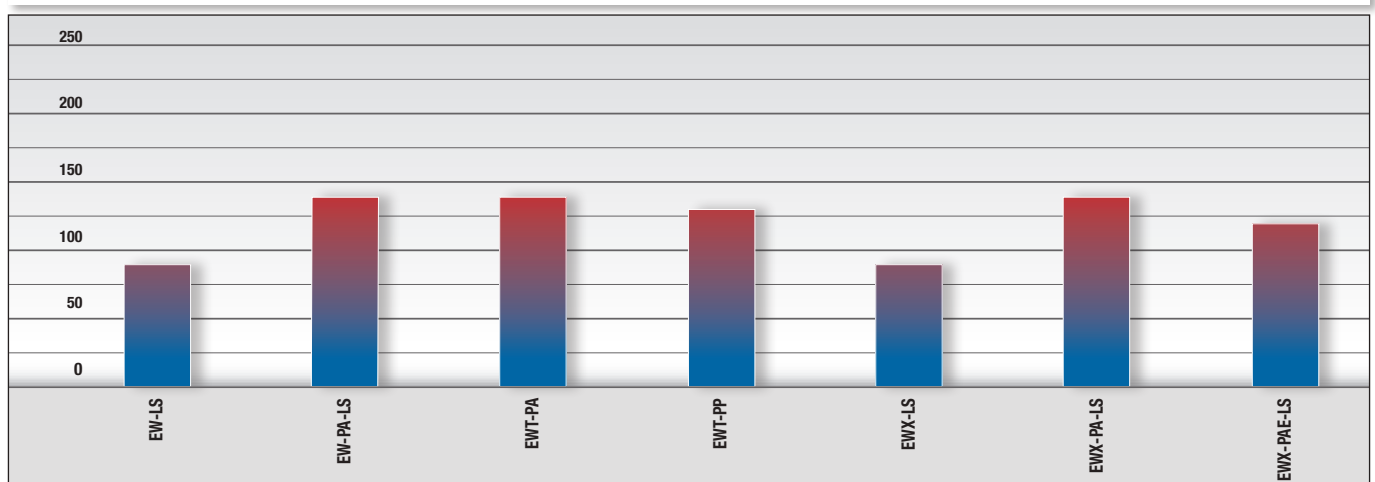
Selection diagrams



Chemical resistance



Lower temperature range [°C]



Higher temperature range [°C]

Combination options

Conduit fittings up to conduit size M50 / Pg48														
	m-top									m-tec				
	CVG	CVW 45°	CVW 90°	DWW 45°	DWW 90°	IVG	VG	VW 45°	VW 90°	EH	KW	CSKV	ECSKV	MECSKV
EW-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

✓ combinable

Combination options

Conduit fittings up to conduit size M50 / Pg48									From NW 70		Special		
m-tec			m-fix			Bulkhead fitting			m-Jumbo				
CKW	MCSKV	MCKW	MSV	WSV	KSV	KFW *	KFW/D	KFW/X	SA-Jumbo	KFW-Jumbo	EH-EMV	AT	
✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	EW-LS
✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	EW-PA-LS
✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	EWT-PA
✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✗	✓	EWT-PP
✓	✓	✓	*	*	*	✓	✗	✓	✓	✓	✗	✓	EWX-LS
✓	✓	✓	*	*	*	✓	✗	✓	✓	✓	✗	✓	EWX-PA-LS
✓	✓	✓	*	*	*	✓	✗	✓	✓	✓	✗	✓	EWX-PAE-LS

✓ combinable

✗ not combinable

* combinable where extraction forces are low

* in connection with an additional conduit or cable fitting

Type EW-LS / EWX-LS (high corrugation)

RoHS
compliant



-40 to 90 °C
transient 120 °C



Mod. polyethylene



HB



EW-LS: > 200 N/100 mm
EWX-LS: > 400 N/100 mm



Suitable fittings:
m-top, -tec, -fix, KFW, AT

Universal cable protection conduit for light mechanical stresses or bundling cables with excellent flexibility. The longitudinal slot enables pre-assembled cables to be easily fitted and existing systems to be repaired.

Applications:

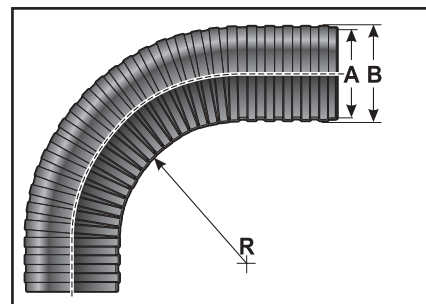
- Plant engineering
- Mechanical engineering
- Control cabinet construction



EW-LS



EWX-LS



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-LS-M12/P9	83102412	grey	9.8	13.0	40.0	-	2.4	50
EW-LS-M16/P11	83102414	grey	12.0	15.8	45.0	-	3.4	50
EW-LS-M20/P16	83102416	grey	15.8	21.0	55.0	-	5.4	50
with high corrugation								
EWX-LS M25/P21	83102218	grey	19.3	28.3	49.0	-	9.0	50
EWX-LS M32/P29	83102220	grey	23.0	34.2	57.0	-	13.5	25
EWX-LS M40/P36	83102222	grey	28.7	42.3	71.0	-	15.0	25
EWX-LS M50/P48	83102224	grey	37.5	54.0	87.0	-	20.2	25

KE installation aid for longitudinally slit conduit, see "Tools" chapter

Type EW-PA-LS / EWX-PA-LS (high corrugation)

RoHS
compliant



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



HB



EW-PA-LS: > 700 N/100 mm
EWX-PA-LS: > 1,300 N/100 mm

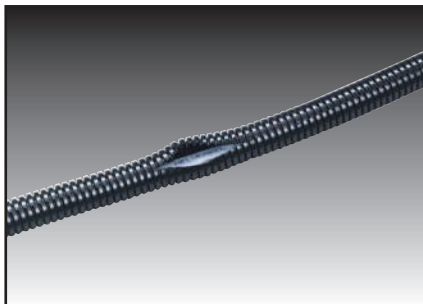


Suitable fittings:
m-top, -tec, -fix, KFW, AT

Universal cable protection conduit for medium to high mechanical stresses. The longitudinal slot enables pre-assembled cables to be easily fitted and existing systems to be repaired.

Applications:

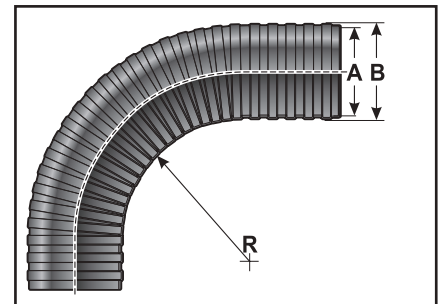
- Plant engineering
- Mechanical engineering
- Vehicle engineering



EW-PA-LS



EWX-PA-LS



Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EW-PA-LS 06	83163850	black	6.6	10.0	21.0	-	2.2	50
EW-PA-LS-M10/P7	83163851	black	8.5	11.4	24.0	-	2.5	50
EW-PA-LS-M12/P9	83163852	black	9.8	13.0	26.0	-	2.6	50
EW-PA-LS-M16/P11	83163854	black	12.3	15.8	38.0	-	3.4	50
EW-PA-LS-M20/P16	83163856	black	15.8	21.0	55.0	-	5.4	50
with high corrugation								
EWX-PA-LS M25/P21	83163058	black	19.8	28.1	49.0	-	9.0	50
EWX-PA-LS M32/P29	83163060	black	24.1	34.5	57.0	-	14.5	25
EWX-PA-LS M40/P36	83163062	black	29.7	42.1	71.0	-	20.5	25
EWX-PA-LS M50/P48	83163064	black	38.0	54.1	87.0	-	23.0	25

KE installation aid for longitudinally slit conduit, see "Tools" chapter



Murrflex cable protection conduit open

Type EWX-PAE-LS (high corrugation)

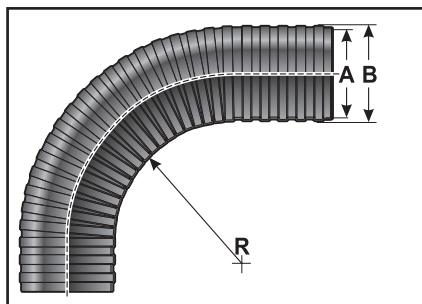


- 40 to 120 °C
transient 150 °C
- Mod. polyamide 12
- HB
- > 500 N/100 mm
- Suitable fittings:
m-top, -tec, -fix, KFW, AT

This cable protection conduit was developed specially for robot applications subject to extreme movements. Extremely small bending radii with extremely high flexibility and extreme flexural fatigue strength. It is also highly resistant to abrasion with low weight. The longitudinal slot enables pre-assembled cables to be easily fitted and existing systems to be repaired.

Applications:

- Robots
- Handling systems
- In cable drag chains



EWX-PAE-LS

Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EWX-PAE-LS M25/P21	83182258	black	19.8	28.1	49.0	104.0	9.0	50
EWX-PAE-LS M32/P29	83182260	black	24.1	34.5	57.0	117.0	12.2	25
EWX-PAE-LS M40/P36	83182262	black	29.7	42.1	71.0	146.0	17.8	25
EWX-PAE-LS M50/P48	83182264	black	38.0	54.1	87.0	167.0	22.5	25
EWX-PAE-LS 70 Jumbo	83182280	black	64.0	80.0	115.0	235.0	55.0	25

KE installation aid for longitudinally slit conduit, see "Tools" chapter

Type EWT-PA Split-Flex



-40 to 140 °C
transient 160 °C



Mod. polyamide 6



HB



> 1,200 N/100 mm

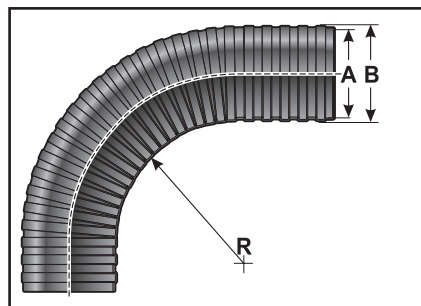
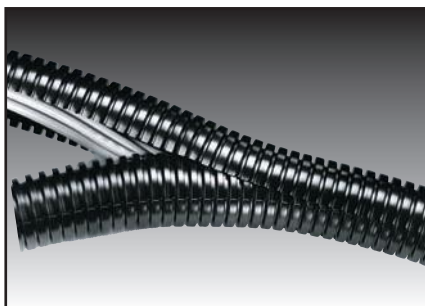


Suitable fittings:
m-top, -tec, -fix, KFW, AT

Two-section, slit cable protection conduit made of polyamide with average mechanical strength. Very suited for the installation or retrofitting of pre-assembled cables.

Applications:

- Easy routing of pre-assembled cables
- Repair of existing systems
- Easy to retrofit
- Particularly fast insertion of cables, especially over long stretches



EWT-PA

Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EWT-PA M10/P7	83164250	black	6.2	11.2	70.0	-	3.1	50
EWT-PA M12/P9	83164252	black	7.9	12.9	75.0	-	4.0	50
EWT-PA M16/P11	83164254	black	10.3	15.8	100.0	-	7.0	50
EWT-PA M20/P16	83164256	black	13.9	21.0	120.0	-	9.3	50
EWT-PA M25/P21	83164258	black	20.5	28.3	170.0	-	14.0	50
EWT-PA M32/P29	83164260	black	26.6	34.5	180.0	-	18.5	25
EWT-PA M40/P36	83164262	black	32.0	41.8	200.0	-	27.5	25
EWT-PA M50/P48	83164264	black	43.0	54.2	240.0	-	32.0	25

KE installation aid for longitudinally slit conduit, see "Tools" chapter



Murrflex cable protection conduit open

Type EWT-PP Split-Flex



-40 to 130 °C
transient 150 °C



Mod. polypropylene



V2
Self-extinguishing



> 600 N/100 mm

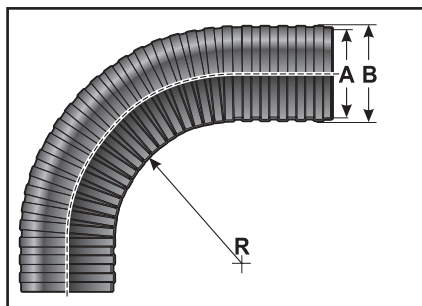
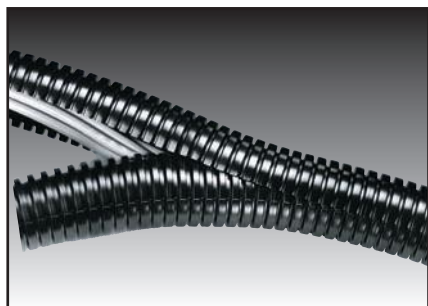


Suitable fittings:
m-top, -tec, -fix, KFW, AT

Two-section polypropylene slit cable protection conduit with average mechanical strength and good chemical stability. Very suited for the installation or retrofitting of pre-assembled cables.

Applications:

- Easy routing of pre-assembled cables
- Repair of existing systems
- Easy to retrofit
- Quick insertion of cables, especially over long stretches
- Good chemical resistance



EWT-PP



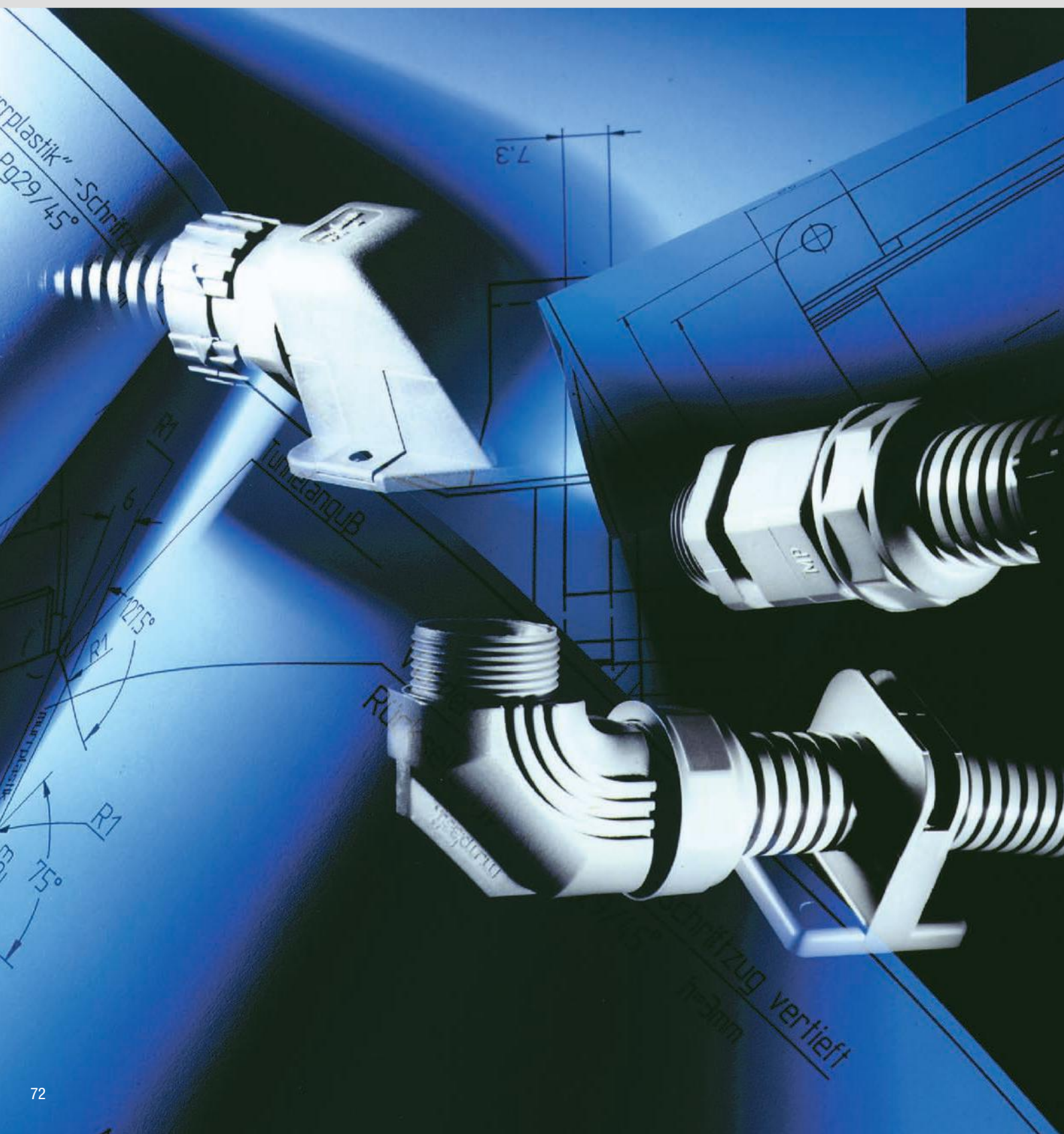
Type	Order no.	Colour	A Ø mm	B Ø mm	R mm static	R mm dyn.	Weight kg/100 m	Pack m
EWT-PP M10/P7	83204250	black	6.2	11.2	55.0	190.0	2.7	50
EWT-PP M12/P9	83204252	black	7.9	12.9	60.0	210.0	3.4	50
EWT-PP M16/P11	83204254	black	10.3	15.8	75.0	260.0	5.0	50
EWT-PP M20/P16	83204256	black	13.9	21.0	85.0	295.0	7.3	50
EWT-PP M25/P21	83204258	black	20.5	28.3	130.0	455.0	10.9	50
EWT-PP M32/P29	83204260	black	26.6	34.5	140.0	490.0	16.2	25
EWT-PP M40/P36	83204262	black	32.0	41.8	160.0	560.0	21.8	25
EWT-PP M50/P48	83204264	black	44.0	54.2	170.0	595.0	25.0	25

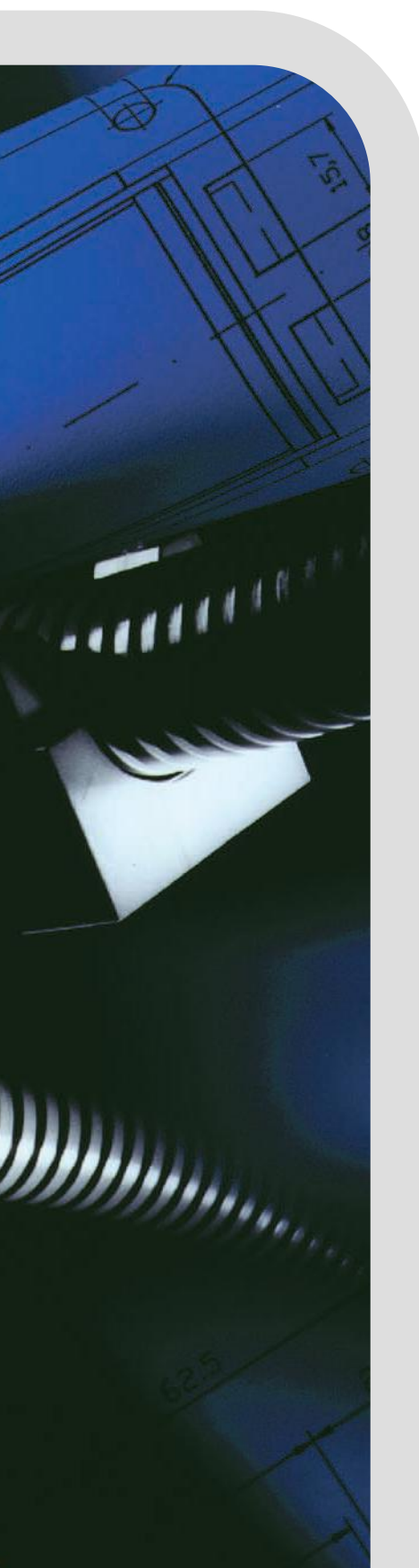
KE installation aid for longitudinally slit conduit, see "Tools" chapter

Conduit fitting Bulkhead fitting



Conduit and bulkhead fittings





Your cables are bound together with Murrplastik cable protection conduits and are secured against damage and environmental impact occurring to the control cabinet of the machine.

Now it is imperative that the safety chain is inserted into the housing very carefully.

This task is easily fulfilled by Murrplastik conduit connections and fittings exactly according to your requirements.

Our extensive range includes everything from simple conduit connections with protection class IP 54 through to highly dense, tear-out proof conduit fittings of class IP 68 or IP 69K.

The compatibility of conduits, fittings and flange connections emphasises the system idea, as with all Murrplastik product ranges.

Well-thought out design and quick, simple or even tool-less assembly are the characteristics of our products.

- No loose piece that can get lost, everything is pre-assembled and ready to install.
- Integrated vibration protection in the form of a latch prevents unintended loosening of the cap nut and increase process safety during assembly and when in use.
- Burr less and edgeless inner bends enable efficient work even with 90° angled fittings.
- Simple locking mechanisms make retrofits and/or maintenance to existing systems easy.
- Connection threads made of metal and plastic fitted with metric, Pg or NPT threads, greatly increase the application of your products all over the world.

Our conduit fitting system gives you great advantages: less working time and more process safety through the use of innovative Murrplastik products



Conduit and bulkhead fittings product range





Conduit connection bulkhead fittings

90° conduit connection. The large opening allows easy insertion of pre-assembled conduits.

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m-jumbo conduit fittings

Conduit connections for large cable protection conduits NW 70 and NW 95. The cable protection conduit remains rotatable in the fitting.

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m-top conduit fitting

Protection class IP 68. The variety of types with different thread types ensures almost any use.

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m-tec conduit fitting

Protection class IP 65. A conduit fitting in various models with different thread types.

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m-fix conduit fittings

Protection class IP 54/65. m-fix is a quick-plug-in fitting. Simply stick in the conduit. That's all there is to it!

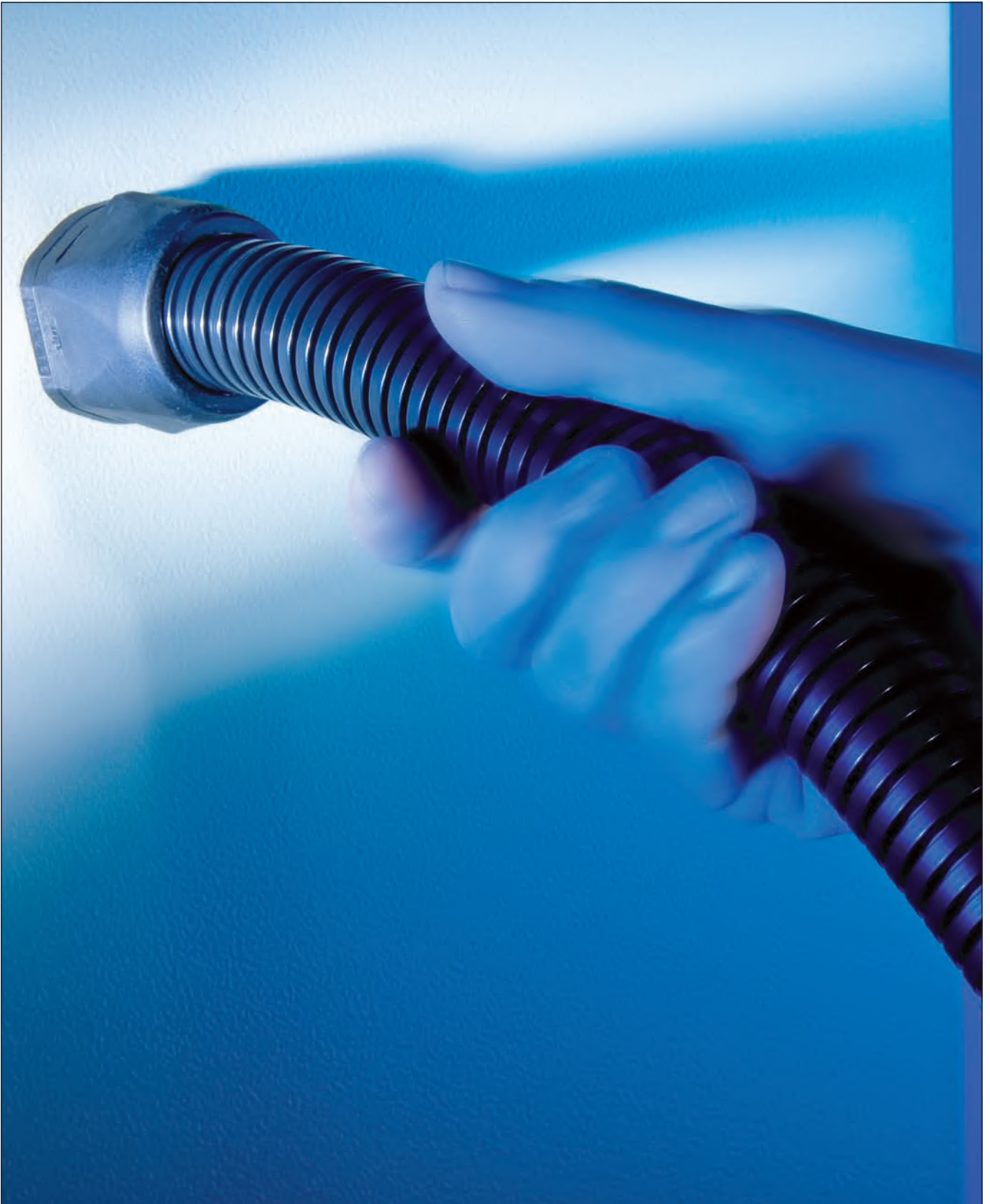
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Special fitting

Special fitting for the connection of standard and special conduits.

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m-top conduit fitting



Advantages



High protection class

The m-top family consists of conduit fittings manufactured from high-grade polyamide. Their design means that the fittings offer a high protection rating of IP 68 or IP 69K.

The fittings are completely pre-assembled and no additional parts such as cap nuts, gaskets, conduit seals etc. need to be fitted. This ensures the greatest possible process reliability in assembly.

The cable protection conduit can be assembled quickly and easily by simply inserting the conduit and turning the cap nut. The nut engages in the body, preventing unintentional opening. As the inside bends in the fittings have no edges, the introduction of cables through 45° and 90° fittings does not present any problem.



- ✓ High protection class
- ✓ One-piece fitting
- ✓ Quick assembly



Large variety

Thanks to its large range, the m-top family of fittings has the perfect solution for practically every requirement.

Thanks to its construction, the fitting has a very high tear-out strength.

The fitting is available in straight versions and 45° and 90° angled versions. The connection thread is available in metal and plastic and in metric, Pg or NPT versions.

Due to its listing with the Underwriters Laboratories (UL) and the Canadian Standards Association (CSA), the fitting m-top has been approved for the north American market.

In addition to this they are also approved by the German, British and French national railway companies.



- ✓ Huge variety of types
- ✓ High tear-out strength
- ✓ Optimal process safety



m-top series product range



EMV version



Type CVG EMV (conduit and cable fitting; metal thread)

Metric ISO thread (M)
EMV version

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Type CVW 45° EMV (conduit and cable fitting; metal thread)

Metric ISO thread (M)
EMV version

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Type CVW 90° EMV (conduit and cable fitting; metal thread)

Metric ISO thread (M)
EMV version

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Metal thread



Type VG (metal thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type VW 45° (metal thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type VW 90° (metal thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type DVW 45° (360° rotatable conduit fitting; metal thread)

Metric ISO thread (M)

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Type DVW 90° (360° rotatable conduit fitting; metal thread)

Metric ISO thread (M)

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Type IVG (metal internal thread)

Metric ISO thread (M)

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Plastic thread



Type VG (plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type VW 45° (plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type VW 90° (plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

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Type CVW 45° (conduit and cable fitting; plastic thread)

Metric ISO thread (M)

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Type CVW 90° (conduit and cable fitting; plastic thread)

Metric ISO thread (M)

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Type CVG (conduit and cable fitting; plastic thread)

Metric ISO thread (M)

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Combination options

	Conduit fittings up to conduit size M50 / Pg48								
	VG	IVG	CVG	VW 45°	CW 45°	DW 45°	VW 90°	CW 90°	DW 90°
EF	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWf	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWS	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡
EW-HY	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	✗	✗	✗	✗	✗	✗	✗	✗	✗
EW-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-PRF	✓	✓	✓	✓	✓	✓	✓	✓	✓
EW-TEF	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PP	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	✓	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	✓	✓	✓	✓	✓	✓	✓	✓	✓
GF	✗	✗	✗	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Material data

	Material			Temperature area [°C]			Protection rating on corrugated conduit	Protection class on cable with combined conduit and cable fittings	Fire specifications UL94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
	Fitting	Connection thread	Moulded seal	Min.	Max.	Short periods											
VG-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
VG-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
IVG	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
CVG-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
CVG-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
VW 45°-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
VW 45°-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
CVW 45°-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
CVW 45°-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
DVW 45°	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
VW 90°-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
VW 90°-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓
CVW 90°-K	Polyamide PA6	Polyamide	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
CVW 90°-M	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
DVW 90°	Polyamide PA6	Brass nickel-plated	TPE	-40	110	140	IP 68 up to 6 bar (IP 69K)		V0	✓	✓	✓	✓	✓	✓	✓	✓



Type VG (plastic thread)



-40 to 110 °C
transient 140 °C



Mod. polyamide



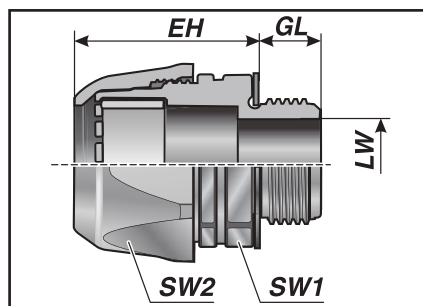
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IP 68 to 6 bar (IP 69K)

Straight conduit fitting with plastic thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



VG

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW 1/2 mm	Pack qty.
Metric plastic thread									
VG M12-K	83511052	black	M12x1.5	M12/P9	21.0	12.0	7.2	20/20	50
VG M16-K	83511054	black	M16x1.5	M16/P11	27.0	12.0	10.5	25/25	50
VG M20-K	83511056	black	M20x1.5	M20/P16	35.0	13.0	14.6	33/33	50
VG M25-K	83511058	black	M25x1.5	M25/P21	37.0	13.0	18.7	41/41	50
VG M32-K	83511060	black	M32x1.5	M32/P29	46.0	14.0	26.0	50/50	25
VG M40-K **	83511062	black	M40x1.5	M40/P36	53.0	17.0	33.0	60/60	25
VG M50-K	83511064	black	M50x1.5	M50/P48	60.0	17.0	41.2	75/75	10
VG M12-K	83511012	grey	M12x1.5	M12/P9	21.0	12.0	7.2	20/20	50
VG M16-K	83511014	grey	M16x1.5	M16/P11	27.0	12.0	10.5	25/25	50
VG M20-K	83511016	grey	M20x1.5	M20/P16	35.0	13.0	14.6	33/33	50
VG M25-K	83511018	grey	M25x1.5	M25/P21	37.0	13.0	18.7	41/41	50
VG M32-K	83511020	grey	M32x1.5	M32/P29	46.0	14.0	26.0	50/50	25
VG M40-K **	83511022	grey	M40x1.5	M40/P36	53.0	17.0	33.0	60/60	25
VG M50-K	83511024	grey	M50x1.5	M50/P48	60.0	17.0	41.2	75/75	10
Pg plastic thread									
VG P9-K	83511452	black	Pg 9	M12/P9	21.0	12.0	7.2	20/20	50
VG P11-K	83511454	black	Pg 11	M16/P11	27.0	12.0	10.5	25/25	50
VG P16-K	83511456	black	Pg 16	M20/P16	35.0	13.0	14.6	33/33	50
VG P21-K	83511458	black	Pg 21	M25/P21	37.0	13.0	19.0	41/41	50
VG P29-K	83511460	black	Pg 29	M32/P29	46.0	14.0	26.0	50/50	25
VG P36-K **	83511462	black	Pg 36	M40/P36	53.0	17.0	33.5	60/60	25
VG P48-K	83511464	black	Pg 48	M50/P48	60.0	17.0	41.2	75/75	10



Type VG (plastic thread)

RoHS
compliant

[illegible]

IP68





Type VG (metal thread)



IP68



-40 to 110 °C
transient 140 °C



Mod. polyamide
Brass, nickel-plated



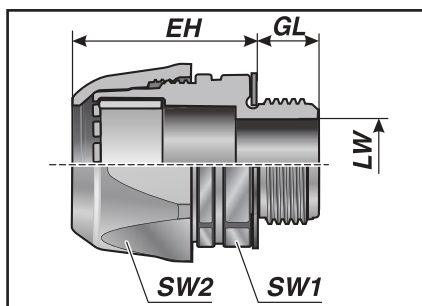
VO



IP 68 to 6 bar (IP 69K)

Straight conduit fitting with metal thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



VG

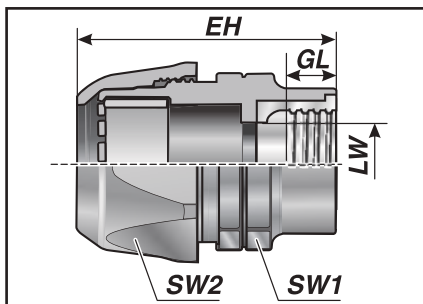
Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW 1/2 mm	Pack qty.
Metric metal thread									
VG M12-M	83511252	black	M12x1.5	M12/P9	21.0	12.0	7.2	20/20	50
VG M16x1.5/09-M	83511253	black	M16x1.5	M12/P9	27.0	12.0	10.5	25/25	50
VG M16-M	83511254	black	M16x1.5	M16/P11	27.0	12.0	10.5	25/25	50
VG M20x1.5/11-M	83511255	black	M20x1.5	M16/P11	35.0	13.0	14.6	33/33	50
VG M20-M	83511256	black	M20x1.5	M20/P16	35.0	13.0	14.6	33/33	50
VG M25x1.5/16-M	83511257	black	M25x1.5	M20/P16	37.0	13.0	19.0	41/41	50
VG M25-M	83511258	black	M25x1.5	M25/P21	37.0	13.0	19.0	41/41	50
VG M32x1.5/21-M	83511259	black	M32x1.5	M25/P21	46.0	14.0	26.0	50/50	25
VG M32-M	83511260	black	M32x1.5	M32/P29	46.0	14.0	26.0	50/50	25
VG M40x1.5/P29-M	83511261	black	M40x1.5	M32/P29	53.0	17.0	33.5	60/60	25
VG M40-M **	83511262	black	M40x1.5	M40/P36	53.0	17.0	33.5	60/60	25
VG M50x1.5/36-M	83511263	black	M50x1.5	M40/P36	60.0	17.0	41.2	75/75	10
VG M50-M	83511264	black	M50x1.5	M50/P48	60.0	17.0	41.2	75/75	10
VG M63-M	83511266	black	M63x1.5	M50/P48	76.0	17.0	50.3	75/75	10
VG M12-M	83511212	grey	M12x1.5	M12/P9	21.0	12.0	7.2	20/20	50
VG M16-M	83511214	grey	M16x1.5	M16/P11	27.0	12.0	10.5	25/25	50
VG M20-M	83511216	grey	M20x1.5	M20/P16	35.0	13.0	14.6	33/33	50
VG M25-M	83511218	grey	M25x1.5	M25/P21	37.0	13.0	19.0	41/41	50
VG M32-M	83511220	grey	M32x1.5	M32/P29	46.0	14.0	26.0	50/50	25
VG M40-M **	83511222	grey	M40x1.5	M40/P36	53.0	17.0	33.5	60/60	25
VG M50-M	83511224	grey	M50x1.5	M50/P48	60.0	17.0	41.2	75/75	10
VG M63-M	83511226	grey	M63x1.5	M50/P48	76.0	17.0	50.3	75/75	10



RoHS
compliance

IP 68 to 6 bar (IP 69K)

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



IVG



Type VW 45° (plastic thread)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide



V0

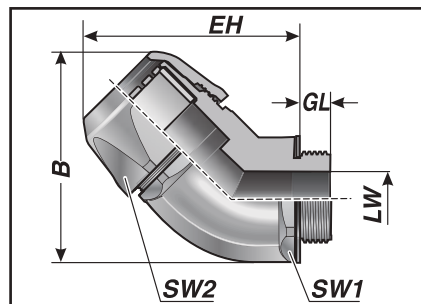


IP 68 to 6 bar (IP 69K)

Angled conduit fitting with plastic thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly

IP68



VW 45°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	B mm	SW 1/2 mm	Pack qty.
Metric plastic thread										
VW 45 M12-K	83513052	black	M12x1.5	M12/P9	38.0	12.0	7.2	36.0	21/21	50
VW 45 M16-K	83513054	black	M16x1.5	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 M20-K	83513056	black	M20x1.5	M20/P16	56.0	13.0	14.6	52.0	34/34	50
VW 45 M25-K	83513058	black	M25x1.5	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 M32-K	83513060	black	M32x1.5	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 M40-K **	83513062	black	M40x1.5	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 M50-K	83513064	black	M50x1.5	M50/P48	105.0	17.0	42.0	115.0	75/75	10
Pg plastic thread										
VW 45 M12-K	83513012	grey	M12x1.5	M12/P9	38.0	12.0	7.2	36.0	21/21	50
VW 45 M16-K	83513014	grey	M16x1.5	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 M20-K	83513016	grey	M20x1.5	M20/P16	56.0	13.0	14.6	52.0	34/34	50
VW 45 M25-K	83513018	grey	M25x1.5	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 M32-K	83513020	grey	M32x1.5	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 M40-K **	83513022	grey	M40x1.5	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 M50-K	83513024	grey	M50x1.5	M50/P48	105.0	17.0	42.0	115.0	75/75	10
Pg plastic thread										
VW 45 P9-K	83513452	black	Pg 9	M12/P9	38.0	12.0	7.2	36.0	21/21	50
VW 45 P11-K	83513454	black	Pg 11	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 P16-K	83513456	black	Pg 16	M20/P16	56.0	13.0	14.6	52.0	34/34	50
VW 45 P21-K	83513458	black	Pg 21	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 P29-K	83513460	black	Pg 29	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 P36-K **	83513462	black	Pg 36	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 P48-K	83513464	black	Pg 48	M50/P48	105.0	17.0	42.0	115.0	75/75	10





RoHS
compliant

IP68

[illegible]

Type VW 45° (metal thread)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide
Brass, nickel-plated



VO

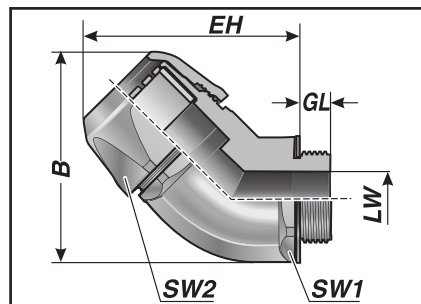


IP 68 to 6 bar (IP 69K)

Angled conduit fitting with metal thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly

IP68



VW 45°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	B mm	SW 1/2 mm	Pack qty.
Metric metal thread										
VW 45 M12-M	83513252	black	M12x1.5	M12/P9	38.0	12.0	7.20	36.0	21/21	50
VW 45 M16-M	83513254	black	M16x1.5	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 M20-M	83513256	black	M20x1.5	M20/P16	56.0	13.0	14.6	52.0	34/34	50
VW 45 M25-M	83513258	black	M25x1.5	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 M32-M	83513260	black	M32x1.5	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 M40-M **	83513262	black	M40x1.5	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 M50-M	83513264	black	M50x1.5	M50/P48	105.0	17.0	42.0	115.0	75/75	10
Pg metal thread										
VW 45 M12-M	83513212	grey	M12x1.5	M12/P9	38.0	12.0	7.20	36.0	21/21	50
VW 45 M16-M	83513214	grey	M16x1.5	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 M20-M	83513216	grey	M20x1.5	M20/P16	56.0	13.0	14.6	52.0	34/34	50
VW 45 M25-M	83513218	grey	M25x1.5	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 M32-M	83513220	grey	M32x1.5	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 M40-M **	83513222	grey	M40x1.5	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 M50-M	83513224	grey	M50x1.5	M50/P48	105.0	17.0	42.0	115.0	75/75	10
Pg metal thread										
VW 45 P9-M	83513652	black	Pg 9	M12/P9	38.0	12.0	7.2	36.0	21/21	50
VW 45 P11-M	83513654	black	Pg 11	M16/P11	45.0	12.0	10.5	43.0	27/27	50
VW 45 P16-M	83513656	black	Pg 16	M20/P16	56.0	13.0	14.7	52.0	34/34	50
VW 45 P21-M	83513658	black	Pg 21	M25/P21	65.0	13.0	18.7	65.0	41/41	25
VW 45 P29-M	83513660	black	Pg 29	M32/P29	77.0	14.0	25.5	79.0	50/50	25
VW 45 P36-M **	83513662	black	Pg 36	M40/P36	90.0	17.0	33.0	95.0	60/60	25
VW 45 P48-M	83513664	black	Pg 48	M50/P48	105.0	17.0	42.0	115.0	75/75	10

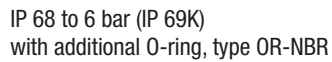
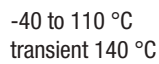




RoHS
compliant

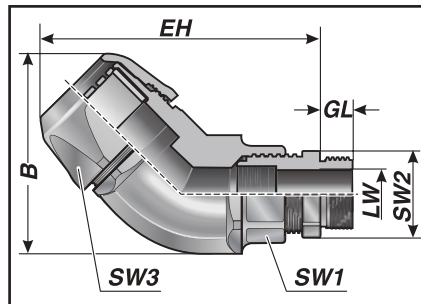
[illegible]

RoHS
compliant



- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly

IP68



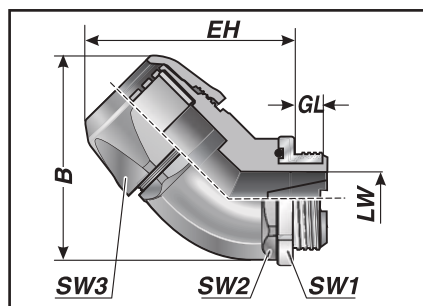
Technical drawing of a 90-degree elbow fitting. The drawing shows the profile of the elbow with the following dimensions labeled:

- EH**: Elbow height (total height from the base to the top of the elbow).
- B**: Bore diameter (inner diameter of the fitting).
- GL**: Gland length (length of the gland seal area).
- LW**: Locking width (width of the locking mechanism).
- SW2**: Second seal width (width of the second seal).
- SW3**: Third seal width (width of the third seal).
- SW1**: First seal width (width of the first seal).

RoHS
compliance



- Simple check that the conduit is assembled correctly



IP68





Type VW 90° (plastic thread)



IP68



-40 to 110 °C
transient 140 °C



Mod. polyamide



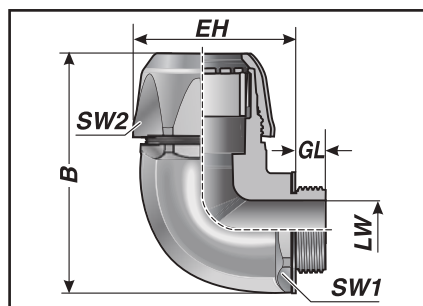
V0



IP 68 to 6 bar (IP 69K)

Angled conduit fitting with plastic thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- Inner bend without edges. This makes insertion of the cable easier.
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



VW 90°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	B mm	SW 1/2 mm	Pack qty.
Metric plastic thread										
VW 90 M12-K	83515052	black	M12x1.5	M12/P9	29.0	12.0	7.2	45.0	21/21	50
VW 90 M16-K	83515054	black	M16x1.5	M16/P11	35.0	12.0	10.5	55.0	27/27	50
VW 90 M20-K	83515056	black	M20x1.5	M20/P16	45.0	13.0	14.7	67.0	34/34	50
VW 90 M25-K	83515058	black	M25x1.5	M25/P21	55.0	13.0	18.7	78.0	41/41	25
VW 90 M32-K	83515060	black	M32x1.5	M32/P29	65.0	15.0	25.5	92.0	50/50	25
VW 90 M40-K **	83515062	black	M40x1.5	M40/P36	75.0	17.0	33.0	109.0	60/60	25
VW 90 M50-K	83515064	black	M50x1.5	M50/P48	93.0	17.0	42.0	134.0	75/75	10
Pg plastic thread										
VW 90 M12-K	83515012	grey	M12x1.5	M12/P9	29.0	12.0	7.2	45.0	21/21	50
VW 90 M16-K	83515014	grey	M16x1.5	M16/P11	35.0	12.0	10.5	55.0	27/27	50
VW 90 M20-K	83515016	grey	M20x1.5	M20/P16	45.0	13.0	14.7	67.0	34/34	50
VW 90 M25-K	83515018	grey	M25x1.5	M25/P21	55.0	13.0	18.7	78.0	41/41	25
VW 90 M32-K	83515020	grey	M32x1.5	M32/P29	65.0	15.0	25.5	92.0	50/50	25
VW 90 M40-K **	83515022	grey	M40x1.5	M40/P36	75.0	17.0	33.0	109.0	60/60	25
VW 90 M50-K	83515024	grey	M50x1.5	M50/P48	93.0	17.0	42.0	134.0	75/75	10
Pg plastic thread										
VW 90 P9-K	83515452	black	Pg 9	M12/P9	29.0	12.0	7.2	45.0	21/21	50
VW 90 P11-K	83515454	black	Pg 11	M16/P11	35.0	12.0	10.5	55.0	27/27	50
VW 90 P16-K	83515456	black	Pg 16	M20/P16	45.0	13.0	14.7	67.0	34/34	50
VW 90 P21-K	83515458	black	Pg 21	M25/P21	44.0	13.0	18.7	78.0	41/41	25
VW 90 P29-K	83515460	black	Pg 29	M32/P29	65.0	14.0	25.5	92.0	50/50	25
VW 90 P36-K **	83515462	black	Pg 36	M40/P36	75.0	17.0	33.0	109.0	60/60	25
VW 90 P48-K	83515464	black	Pg 48	M50/P48	93.0	17.0	42.0	134.0	75/75	10



Type VW 90° (plastic thread)

RoHS
compliant

[illegible]

IP68





Type VW 90° (metal thread)



IP68



-40 to 110 °C
transient 140 °C



Mod. polyamide
Brass, nickel-plated



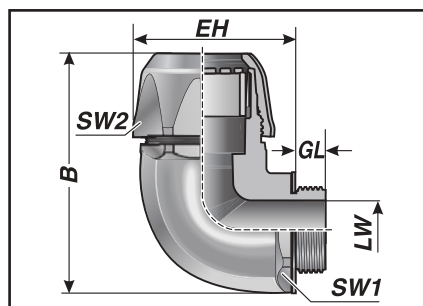
V0



IP 68 to 6 bar (IP 69K)

Angled conduit fitting with metal thread.

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- Inner bend without edges. This makes insertion of the cable easier.
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



VW 90°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	B mm	SW 1/2 mm	Pack qty.
Metric metal thread										
VW 90 M12-M	83515252	black	M12x1.5	M12/P9	29.0	12.0	7.2	45.0	21/21	50
VW 90 M16-M	83515254	black	M16x1.5	M16/P11	35.0	12.0	10.5	55.0	27/27	50
VW 90 M20-M	83515256	black	M20x1.5	M20/P16	45.0	13.0	14.7	67.0	34/34	50
VW 90 M25-M	83515258	black	M25x1.5	M25/P21	55.0	13.0	18.7	78.0	41/41	25
VW 90 M32-M	83515260	black	M32x1.5	M32/P29	65.0	14.0	25.5	92.0	50/50	25
VW 90 M40-M **	83515262	black	M40x1.5	M40/P36	75.0	17.0	33.0	109.0	60/60	25
VW 90 M50-M	83515264	black	M50x1.5	M50/P48	93.0	17.0	42.0	134.0	75/75	10
Pg metal thread										
VW 90 P9-M	83515652	black	Pg 9	M12/P9	29.0	12.0	7.2	45.0	21/21	50
VW 90 P11-M	83515654	black	Pg 11	M16/P11	35.0	12.0	10.5	55.0	27/27	50
VW 90 P16-M	83515656	black	Pg 16	M20/P16	45.0	13.0	14.7	67.0	34/34	50
VW 90 P21-M	83515658	black	Pg 21	M25/P21	55.0	14.0	18.7	78.0	41/41	25
VW 90 P29-M	83515660	black	Pg 29	M32/P29	65.0	14.0	25.5	92.0	50/50	25
VW 90 P36-M **	83515662	black	Pg 36	M40/P36	75.0	17.0	33.0	109.0	60/60	25
VW 90 P48-M	83515664	black	Pg 48	M50/P48	93.0	17.0	42.0	134.0	75/75	10



Type VW 90° (metal thread)

RoHS
compliant

[illegible]

IP68

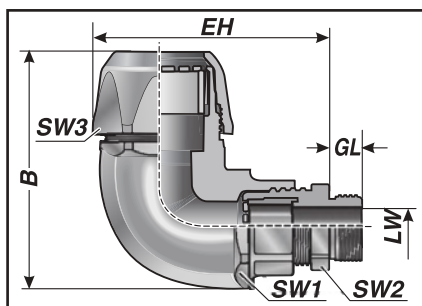




RoHS
compliance

IP 68 to 6 bar (IP 69K)
with additional O-ring, type OR-NBR

- Insert conduit → screw upper part tight → ready
- Reliable assembly because fitting is supplied pre-assembled.
No additional parts required
- Resistant to vibration due to lockable cap nut
- Clamping along entire circumference ensuring maximum tear-out strength
- Inner bend without edges. This makes insertion of the cable easier.
- High sealant properties corresponding to IP 68 to 6 bar (IP 69K) without additional parts
- Simple check that the conduit is assembled correctly



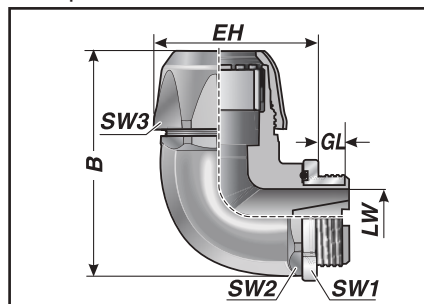
CVW 90°



RoHS
compliance

IP 68 to 6 bar (IP 69K)

- Simple check that the conduit is assembled correctly



DVW 90°



m-tec conduit fitting



Advantages



Universal

The m-tec family consists of conduit fittings manufactured from high-grade polyamide.

Thanks to their construction, the fitting provides a high protection class of IP 65. The fittings are completely pre-assembled and no parts such as lockable cap nuts and clamping rings have to be fitted retrospectively. This ensures the greatest possible process reliability in assembly.

The cable protection conduit can be assembled quickly and easily by simply inserting the conduit and turning the cap nut.

As the inner bends have no sharp edges, the introduction of cables through 90° fittings does not present any problems.



- ✓ High protection class IP 65
- ✓ One-piece fitting
- ✓ Quick assembly
- ✓ High tear-out strength
- ✓ Inner contours rounded for 90° variants

m-tec series product range



Type EH (plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

Page 110



Type CSKV (conduit and cable fitting, plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

Page 113



Type ECKV (conduit and cable fitting)

PG thread (Pg)

Page 117



Type KW 90° (plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

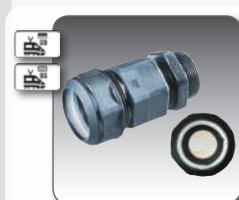
Page 119



Type CKW (conduit and cable fitting, plastic thread)

Metric ISO thread (M)
PG thread (Pg)

Page 121



Type MCSKV (conduit and cable fitting, plastic thread)

Metric ISO thread (M)
PG thread (Pg)
Multi-insert

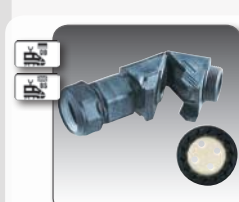
Page 115



Type MECKV (conduit and cable fitting)

PG thread (Pg)
multi-insert

Page 118



Type MCKW (conduit and cable fitting, plastic thread)

Metric ISO thread (M)
PG thread (Pg)
Multi-insert

Page 122

Combination options

	Conduit fittings up to conduit size M50 / Pg48							
	EH	CSKV	MCSKV	ECSKV	MECSKV	KW 90°	CKW	MCKW
EF	✗	✗	✗	✗	✗	✗	✗	✗
EW	✓	✓	✓	✓	✓	✓	✓	✓
EWf	✓	✓	✓	✓	✓	✓	✓	✓
EWS	✓	✓	✓	✓	✓	✓	✓	✓
EWX	✓	✓	✓	✓	✓	✓	✓	✓
EW-G	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡
EW-HY	✓	✓	✓	✓	✓	✓	✓	✓
EW-LS	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓
EW-PA-EX	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAB	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAE	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAL	✓	✓	✓	✓	✓	✓	✓	✓
EW-PAP	✗	✗	✗	✗	✗	✗	✗	✗
EW-PP	✓	✓	✓	✓	✓	✓	✓	✓
EW-PRF	✓	✓	✓	✓	✓	✓	✓	✓
EW-TEF	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PA	✓	✓	✓	✓	✓	✓	✓	✓
EWT-PP	✓	✓	✓	✓	✓	✓	✓	✓
EWX-LS	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-LS	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PA-UL	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE	✓	✓	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	✓	✓	✓	✓	✓	✓	✓	✓
GF	✗	✗	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Material data

	Material			Temperature area [°C]			Protection rating on corrugated conduit	Protection class on cable with combined conduit and cable fittings	Fire specifications UL 94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
	Fitting	Moulded seal	Clamping ring	Min.	Max.	Short periods											
EH	Polyamide PA6		POM	-40	110	140	IP 65		V0	✓	✓	✓	✓	✓	✓	✓	✓
CSKV	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓
MCSKV	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 65	V0		✓	✓	✓	✓	✓	✓	✓
ECSKV	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 65	V0	✓	✓	✓	✓	✓	✓	✓	✓
MECSKV	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 65	V0		✓	✓	✓	✓	✓	✓	✓
KW 90°	Polyamide PA6		POM	-40	110	140	IP 65		V0	✓	✓	✓	✓	✓	✓	✓	✓
CKW	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 68	V0		✓	✓	✓	✓	✓	✓	✓
MCKW	Polyamide PA6	CR	POM	-40	110	140	IP 65	IP 68	V0		✓	✓	✓	✓	✓	✓	✓



Type EH



-40 to 110 °C
transient 140 °C



Mod. polyamide
POM



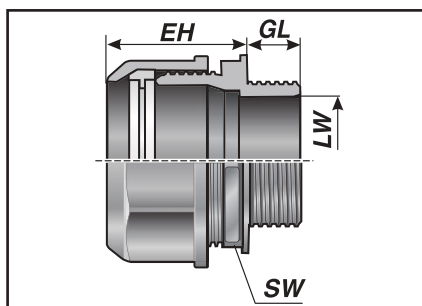
V0



IP 65

Straight conduit fitting with plastic thread.

- Reliable assembly because fitting is supplied pre-assembled.
- No additional parts required
- Integrated clamping ring ensures high tear-out strength
- High protection class IP 65 without additional parts
- Can be opened without tools



EH

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW mm	Pack qty.
Metric version									
EH-M12x1.5/9	83501452	black	M12x1.5	M12/P9	26.0	13.0	8.0	19	50
EH-M12x1.5/11	83501456	black	M12x1.5	M16/P11	26.0	13.0	8.0	22	50
EH-M16x1.5/9	83501454	black	M16x1.5	M12/P9	26.0	13.0	11.0	19	50
EH-M16x1.5/11	83501458	black	M16x1.5	M16/P11	26.0	13.0	11.0	22	50
EH-M20x1.5/13.5	83501459	black	M20x1.5	NW 13	26.0	14.0	15.0	27	50
EH-M20x1.5/16	83501460	black	M20x1.5	M20/P16(S)	26.0	14.0	15.0	27	50
EH-M25x1.5/21	83501462	black	M25x1.5	M25/P21(S)	33.0	10.0	21.0	37	50
EH-M32x1.5/29	83501464	black	M32x1.5	M32/P29(S)	33.0	10.0	27.0	45	25
EH-M40x1.5/36	83501466	black	M40x1.5	M40/P36(S)	44.0	15.0	35.0	55	25
EH-M50x1.5/48	83501468	black	M50x1.5	M50/P48(S)	50.0	17.0	44.0	65	10
EH-M63x1.5/48	83501470	black	M63x1.5	M50/P48(S)	50.0	15.0	50.0	65	10
EH-M12x1.5/9	83501412	grey	M12x1.5	M12/P9	26.0	13.0	8.0	19	50
EH-M12x1.5/11	83501416	grey	M12x1.5	M16/P11	26.0	13.0	8.0	22	50
EH-M16x1.5/9	83501414	grey	M16x1.5	M12/P9	26.0	13.0	11.0	19	50
EH-M16x1.5/11	83501418	grey	M16x1.5	M16/P11	26.0	13.0	11.0	22	50
EH-M20x1.5/13.5	83501419	grey	M20x1.5	NW 13	26.0	14.0	15.0	27	50
EH-M20x1.5/16	83501420	grey	M20x1.5	M20/P16(S)	26.0	14.0	15.0	27	50
EH-M25x1.5/21	83501422	grey	M25x1.5	M25/P21(S)	33.0	10.0	21.0	37	50
EH-M32x1.5/29	83501424	grey	M32x1.5	M32/P29(S)	33.0	10.0	27.0	45	25
EH-M40x1.5/36	83501426	grey	M40x1.5	M40/P36(S)	44.0	15.0	35.0	55	25
EH-M50x1.5/48	83501428	grey	M50x1.5	M50/P48(S)	50.0	17.0	44.0	65	10
EH-M63x1.5/48	83501430	grey	M63x1.5	M50/P48(S)	50.0	15.0	50.0	65	10

Type EH

RoHS
compliant

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW mm	Pack qty.
Pg version									
EH-Pg 07	83501050	black	Pg 07	M10/P7	26.0	8.0	8.5	19	50
EH-Pg 07/09	83501068	black	Pg 07	M12/P9	26.0	8.0	8.5	19	50
EH-Pg 09	83501052	black	Pg 09	M12/P9	26.0	8.0	11.0	19	50
EH-Pg 09/11	83501070	black	Pg 09	M16/P11	26.0	8.0	10.5	22	50
EH-Pg 09/13.5	83501072	black	Pg 09	NW 13	26.0	8.0	10.5	27	50
EH-Pg 09/16	83501074	black	Pg 09	M20/P16	26.0	8.0	10.5	27	50
EH-Pg 11	83501054	black	Pg 11	M16/P11	26.0	8.0	14.0	22	50
EH-Pg 11/09	83501076	black	Pg 11	M12/P09	26.0	8.0	14.0	19	50
EH-Pg 11/13.5	83501078	black	Pg 11	NW 13	26.0	8.0	14.0	27	50
EH-Pg 11/16	83501080	black	Pg 11	M20/P16	26.0	8.0	14.0	27	50
EH-Pg 13.5	83501055	black	Pg 13.5	NW 13	26.0	8.0	14.0	27	50
EH-Pg 13.5/16	83501056	black	Pg 13.5	M20/P16	26.0	8.0	14.0	27	50
EH-Pg 16	83501058	black	Pg 16	M20/P16	26.0	8.0	17.0	27	50
EH-Pg 16/13.5	83501082	black	Pg 16	NW 13	26.0	8.0	17.0	27	50
EH-Pg 21	83501060	black	Pg 21	M25/P21(S)	34.0	10.0	23.0	38	50
EH-Pg 21 long	83501061	black	Pg 21	M25/P21(S)	34.0	15.0	23.0	38	50
EH-Pg 29	83501062	black	Pg 29	M32/P29(S)	34.0	10.0	31.0	46	25
EH-Pg 29 long	83501063	black	Pg 29	M32/P29(S)	34.0	15.0	31.0	46	25
EH-Pg 36	83501064	black	Pg 36	M40/P36(S)	44.0	15.0	40.0	55	25
EH-Pg 48	83501066	black	Pg 48	M50/P48(S)	50.0	15.0	51.0	65	10
EH-Pg 07	83501010	grey	Pg 07	M10/P7	26.0	8.0	8.5	19	50
EH-Pg 07/09	83501028	grey	Pg 07	M12/P9	26.0	8.0	8.5	19	50
EH-Pg 09	83501012	grey	Pg 09	M12/P9	26.0	8.0	11.0	19	50
EH-Pg 09/11	83501030	grey	Pg 09	M16/P11	26.0	8.0	10.5	22	50
EH-Pg 09/13.5	83501032	grey	Pg 09	NW 13	26.0	8.0	10.5	27	50
EH-Pg 09/16	83501034	grey	Pg 09	M20/P16	26.0	8.0	10.5	27	50
EH-Pg 11	83501014	grey	Pg 11	M16/P11	26.0	8.0	14.0	22	50
EH-Pg 11/09	83501036	grey	Pg 11	M12/P09	26.0	8.0	14.0	19	50
EH-Pg 11/13.5	83501038	grey	Pg 11	NW 13	26.0	8.0	14.0	27	50
EH-Pg 11/16	83501040	grey	Pg 11	M20/P16	26.0	8.0	14.0	27	50
EH-Pg 13.5	83501015	grey	Pg 13.5	NW 13	26.0	8.0	14.0	27	50
EH-Pg 13.5/16	83501016	grey	Pg 13.5	M20/P16	26.0	8.0	14.0	27	50
EH-Pg 16	83501018	grey	Pg 16	M20/P16	26.0	8.0	17.0	27	50
EH-Pg 16/13.5	83501042	grey	Pg 16	NW 13	26.0	8.0	17.0	27	50
EH-Pg 21	83501020	grey	Pg 21	M25/P21(S)	34.0	10.0	23.0	38	50
EH-Pg 21 long	83501021	grey	Pg 21	M25/P21(S)	34.0	15.0	23.0	38	50
EH-Pg 29	83501022	grey	Pg 29	M32/P29(S)	34.0	10.0	31.0	46	25
EH-Pg 29 long	83501023	grey	Pg 29	M32/P29(S)	34.0	15.0	31.0	46	25
EH-Pg 36	83501024	grey	Pg 36	M40/P36(S)	44.0	15.0	40.0	55	25
EH-Pg 48	83501026	grey	Pg 48	M50/P48(S)	50.0	15.0	51.0	65	10
NPT version									
EH-NPT 3/8"/11	83501251	black	3/8"	M16/P11	26.0	14.0	12.0	22	50
EH-NPT 1/2"/16	83501250	black	1/2"	M20/P16(S)	26.0	13.0	14.0	27	50
EH-NPT 3/4"/21	83501252	black	3/4"	M25/P21(S)	31.0	14.0	19.0	37	50
EH-NPT 1"/29	83501254	black	1"	M32/P29(S)	32.0	19.0	26.0	46	25
EH-NPT 2"/48	83501258	black	2"	M50/P48(S)	50.0	18.0	51.0	65	10
EH-NPT 1 1/4" / 36	83501256	black	1 1/4"	M40/P36(S)	44.0	18.0	35.0	55	25

IP65





RoHS
compliant

IP65



Type CSKV (conduit and cable fitting)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide
Moulded seal: Buna N



V0



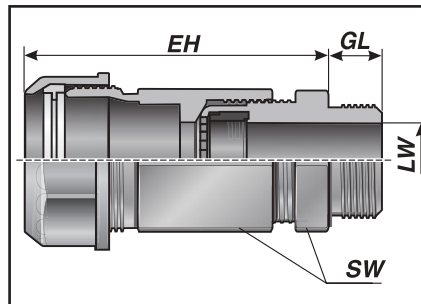
IP 65

Combined 2-in-1 conduit and cable fitting.

The CSKV is a combination of our proven WKK cable fitting and the EH conduit fitting.

- Clamping along entire circumference ensuring maximum tear-out strength
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- High protection class IP 65 without additional parts

IP65



CSKV

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW mm	Pack qty.
Metric version									
CSKV-M16x1.5/9	83581850	black	M16x1.5	M12/P9	45.0	8.0	4.0–8.0	19	50
CSKV-M16x1.5/11	83581852	black	M16x1.5	M16/P11	49.0	8.0	5.0–10.0	22	50
CSKV-M20x1.5/13.5-16	83581854	black	M20x1.5	M20/P16	50.0	9.0	6.0–12.0	24/27	50
CSKV-M20x1.5/16	83581856	black	M20x1.5	M20/P16(S)	52.0	9.0	10.0–14.0	27	50
CSKV-M25x1.5/21	83581858	black	M25x1.5	M25/P21(S)	60.0	11.0	13.0–18.0	33	50
CSKV-M32x1.5/29	83581860	black	M32x1.5	M32/P29(S)	69.0	11.0	18.0–25.0	42	25
CSKV-M40x1.5/36	83581862	black	M40x1.5	M40/P36(S)	88.0	13.0	22.0–32.0	53	10
CSKV-M63x1.5/48	83581864	black	M63x1.5	M50 / 48(S)	109.0	14.0	37.0–44.0	65	10
Pg version									
CSKV-Pg 09	83581250	black	Pg 09	M12/P9	45.0	8.0	4.0–8.0	19	50
CSKV-Pg 11	83581252	black	Pg 11	M16/P11	49.0	8.0	5.0–10.0	22	50
CSKV-Pg 13.5/16	83581254	black	Pg 13.5	M20/P16(S)	52.0	9.0	6.0–12.0	24/27	50
CSKV-Pg 16	83581256	black	Pg 16	M20/P16(S)	52.0	10.0	10.0–14.0	27	50
CSKV-Pg 21	83581258	black	Pg 21	M25/P21(S)	60.0	11.0	13.0–18.0	33	50
CSKV-Pg 29	83581260	black	Pg 29	M32/P29(S)	69.0	11.0	18.0–25.0	42	25
CSKV-Pg 36	83581262	black	Pg 36	M40/P36(S)	88.0	13.0	22.0–32.0	53	10
CSKV-Pg 48	83581264	black	Pg 48	M50/P48(S)	95.0	14.0	37.0–44.0	65	10





RoHS
compliant

IP65



Type MCSKV (conduit and cable fitting)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide
Moulded seal: Buna N



V0



IP 65

Combined conduit and cable fitting 2-in-1 with multi-insert.

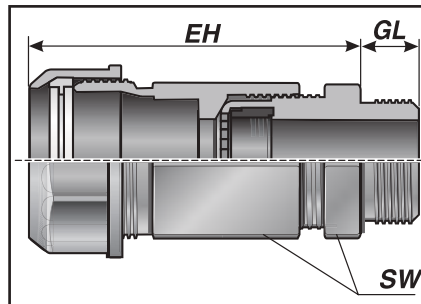
The MCSKV is a combination of our proven MWKK multi cable fitting and the m-tec EH.

- Clamping along entire circumference ensuring maximum tear-out strength
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- High protection class IP 65 without additional parts
- Several cables can be inserted at the same time

IP65



MCSKV



Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	Number x Ø mm	EH mm	GL mm	SW mm	Pack qty.
Metric version									
MCSKV-M16x1.5/9/4x1.4	83582850	black	M16x1.5	M12/P9	4 x 1.4	45.0	8.0	19	50
MCSKV-M16x1.5/9/2x3	83582852	black	M16x1.5	M12/P9	2 x 3.0	45.0	8.0	19	50
MCSKV-M20x1.5/16/3x2	83582854	black	M20x1.5	M20/P16	3 x 2.0	52.0	9.0	27	50
MCSKV-M20x1.5/16/6x3	83582856	black	M20x1.5	M20/P16	6 x 3.0	52.0	9.0	27	50
MCSKV-M20x1.5/16/3x4	83582858	black	M20x1.5	M20/P16	3 x 4.0	52.0	9.0	27	50
MCSKV-M20x1.5/16/2x5	83582860	black	M20x1.5	M20/P16	2 x 5.0	52.0	9.0	27	50
MCSKV-M25x1.5/21/4x2	83582862	black	M25x1.5	M25/P21	4 x 2.0	60.0	11.0	33	50
MCSKV-M25x1.5/21/3x7	83582864	black	M25x1.5	M25/P21	3 x 7.0	60.0	11.0	33	50
MCSKV-M25x1.5/21/2x8	83582866	black	M25x1.5	M25/P21	2 x 8.0	60.0	11.0	33	50
MCSKV-M32x1.5/29/6x6.5	83582868	black	M32x1.5	M32/P29	6 x 6.5	69.0	11.0	42	25
MCSKV-M32x1.5/29/4x9	83582870	black	M32x1.5	M32/P29	4 x 9.0	69.0	11.0	42	25
Pg version									
MCSKV-Pg 09 4x1.4	83582250	black	Pg 09	M12/P9	4 x 1.4	45.0	8.0	19	50
MCSKV-Pg 09 4x3	83582252	black	Pg 09	M12/P9	4 x 3.0	45.0	8.0	19	50
MCSKV-Pg 11 2x3	83582254	black	Pg 11	M16/P11	2 x 3.0	49.0	8.0	22	50
MCSKV-Pg 11 2x4	83582256	black	Pg 11	M16/P11	2 x 4.0	49.0	8.0	22	50
MCSKV-Pg 11 3x3	83582258	black	Pg 11	M16/P11	3 x 3.0	49.0	8.0	22	50
MCSKV-Pg 13.5 2x5	83582260	black	Pg 13.5	NW13	2 x 5.0	52.0	9.0	24/27	50
MCSKV-Pg 13.5 3x2	83582262	black	Pg 13.5	NW13	3 x 2.0	52.0	9.0	24/27	50
MCSKV-Pg 13.5 3x4	83582264	black	Pg 13.5	NW13	3 x 4.0	52.0	9.0	24/27	50
MCSKV-Pg 13.5 6x3	83582266	black	Pg 13.5	NW13	6 x 3.0	52.0	9.0	24/27	50
MCSKV-Pg 16 2x6	83582268	black	Pg 16	M20/P16	2 x 6.0	52.0	10.0	27	50
MCSKV-Pg 16 3x3	83582270	black	Pg 16	M20/P16	3 x 3.0	52.0	10.0	27	50
MCSKV-Pg 16 3x4	83582272	black	Pg 16	M20/P16	3 x 4.0	52.0	10.0	27	50
MCSKV-Pg 16 3x6	83582274	black	Pg 16	M20/P16	3 x 6.0	52.0	10.0	27	50
MCSKV-Pg 16 4x4	83582276	black	Pg 16	M20/P16	4 x 4.0	52.0	10.0	27	50





RoHS
compliant

[illegible]

Type ECSKV (conduit and cable fitting)

RoHS
compliant

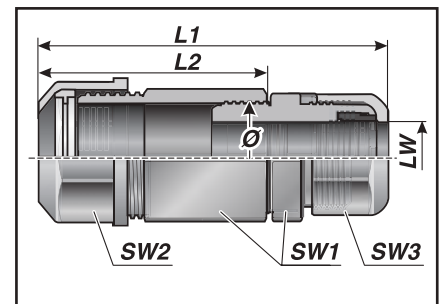
-  -40 to 110 °C
transient 140 °C
-  Mod. polyamide
Moulded seal: Buna N
-  V0
-  IP 65

- Combined 2-in-1 conduit and cable fitting.
The ECSKV is a combination of our proven WKK cable fitting and the m-tec EH conduit fitting.
- Clamping along entire circumference ensuring maximum tear-out strength
 - Optimum strain relief for the cable due to iris-shaped lamellae
 - No parts can get lost as the fitting does not have to be dismantled for assembly
 - High protection class IP 65 without additional parts
 - Optimal fixing with the angle bracket BWM

IP65



ECSKV



Type	Order no.	Colour	Suitable for Murrflex	L1 mm	L2 mm	LW mm	Ø mm	SW 1/2/3 mm	Pack qty.
------	-----------	--------	--------------------------	----------	----------	----------	---------	----------------	--------------

Pg version

ECSKV-Pg 09	83581650	black	M12/P9	62.0	36.0	4.0–8.0	15.2	19/22/19	50
ECSKV-Pg 11	83581652	black	M16/P11	68.0	40.0	5.0–10.0	18.5	22/24/22	50

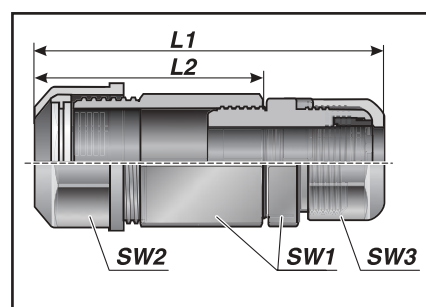




RoHS
compliance



- Clamping along entire circumference ensuring maximum tear-out strength
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- Several cables can be inserted at the same time
- Optimal fixing with the angle bracket BWM



MECSKV

Type KW 90° (conduit fitting)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide
POM



V0

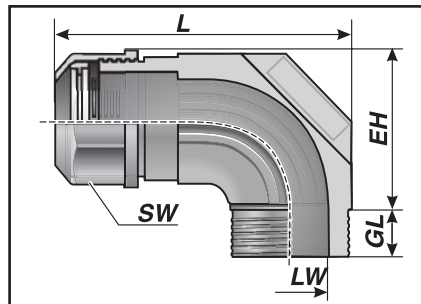


IP 65

90° angled conduit fitting with plastic thread.

- Reliable assembly because fitting is supplied pre-assembled.
- No additional parts required
- Integrated clamping ring ensures high tear-out strength
- High protection class IP 65 without additional parts
- Can be opened without tools
- The inner bend is rounded. Therefore easy insertion of the cables into the 90° angle

IP65



KW 90°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	L mm	GL mm	LW mm	SW mm	Pack qty.
Metric version										
KW-M16x1.5/9	83565050	black	M16x1.5	M12/P9	27.0	47.0	7.5	9.5	22.0	50
KW-M20x1.5/11	83565052	black	M20x1.5	M16/P11	29.0	51.0	8.0	13.0	24.0	50
KW-M25x1.5/16	83565054	black	M25x1.5	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-M32x1.5/21	83565056	black	M32x1.5	M25/P21(S)	41.0	67.0	12.0	22.0	38.0	25
KW-M40x1.5/29	83565058	black	M40x1.5	M32/P29(S)	53.0	82.0	12.0	28.0	46.0	25
Pg version										
KW-M16x1.5/9	83565010	grey	M16x1.5	M12/P9	27.0	47.0	7.5	9.5	22.0	50
KW-M20x1.5/11	83565012	grey	M20x1.5	M16/P11	29.0	51.0	8.0	13.0	24.0	50
KW-M25x1.5/16	83565014	grey	M25x1.5	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-M32x1.5/21	83565016	grey	M32x1.5	M25/P21(S)	41.0	67.0	12.0	22.0	38.0	25
KW-M40x1.5/29	83565018	grey	M40x1.5	M32/P29(S)	53.0	82.0	12.0	28.0	46.0	25
Pg version										
KW-Pg 09	83561050	black	Pg 09	M12/P9	27.0	45.0	7.5	9.5	22.0	50
KW-Pg 11	83561052	black	Pg 11	M16/P11	29.0	51.0	8.0	13.0	24.0	50
KW-Pg 13/16	83561054	black	Pg 13.5	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-Pg 16	83561056	black	Pg 16	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-Pg 21	83561058	black	Pg 21	M25/P21(S)	41.0	67.0	11.0	22.0	38.0	25
KW-Pg 29	83561060	black	Pg 29	M32/P29(S)	53.0	82.0	12.0	29.0	46.0	25
Pg version										
KW-Pg 09	83561010	grey	Pg 09	M12/P9	27.0	45.0	7.5	9.5	22.0	50
KW-Pg 11	83561012	grey	Pg 11	M16/P11	29.0	51.0	8.0	13.0	24.0	50
KW-Pg 13/16	83561014	grey	Pg 13.5	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-Pg 16	83561016	grey	Pg 16	M20/P16(S)	35.0	56.0	10.0	16.0	30.0	50
KW-Pg 21	83561018	grey	Pg 21	M25/P21(S)	41.0	67.0	11.0	22.0	38.0	25
KW-Pg 29	83561020	grey	Pg 29	M32/P29(S)	53.0	82.0	12.0	29.0	46.0	25





RoHS
compliant

IP65



RoHS
compliant



- Clamping along entire circumference ensuring maximum tear-out strength
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- High protection class IP 65 without additional parts
- Folding angle piece makes cable assembly easy

Technical drawing of a 90° elbow fitting. The drawing shows the side profile of the fitting with the following dimensions labeled:

- L**: Total length of the fitting.
- EH**: Elbow height (vertical distance from the centerline to the top of the elbow).
- GL**: Gasket length (vertical distance from the centerline to the bottom of the gasket).
- LW**: Leg width (horizontal distance from the centerline to the end of the leg).
- SW1**: Shoulder width (horizontal distance from the centerline to the start of the shoulder).
- SW2**: Shoulder width (horizontal distance from the centerline to the end of the shoulder).

[illegible]



Type MCKW (conduit and cable fitting)



-40 to 110 °C
transient 140 °C



mod. Polyamide/moulded seal: Buna N



V0

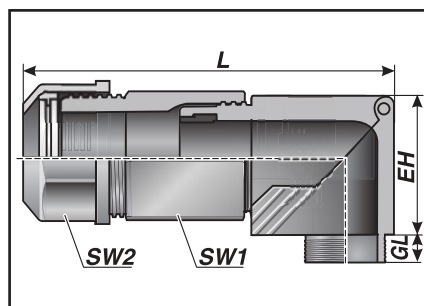
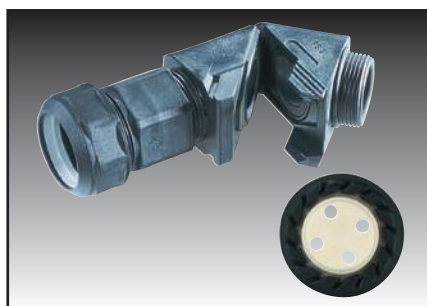


IP 65

90° angled and folding 2-in-1 combined conduit and cable fitting with multi-insert.

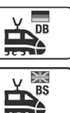
The MCKW is a combination of our proven multi-angle cable fitting and the EH conduit fitting

- Clamping along entire circumference ensuring maximum tear-out strength
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- High protection class IP 65 without additional parts
- Folding angle piece makes cable assembly easy



MCKW

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	Quantity x Ø [mm]	EH mm	L mm	GL mm	SW 1/2 mm	Pack qty.
Metric version										
MCKW-M16x1.5/9/4x1.4	83582650	black	M16x1.5	M12/P9	4 x 1.4	27.5	75.0	7.0	22/22	50
MCKW-M16x1.5/9/10x1.4	83582652	black	M16x1.5	M12/P9	10 x 1.4	27.5	75.0	7.0	22/22	50
MCKW-M16x1.5/9/5x1.6	83582654	black	M16x1.5	M12/P9	5 x 1.6	27.5	75.0	7.0	22/22	50
MCKW-M16x1.5/9/2x3	83582656	black	M16x1.5	M12/P9	2 x 3.0	27.5	75.0	7.0	22/22	50
MCKW-M20x1.5/16/3x2	83582658	black	M20x1.5	M20/P16	3 x 2.0	32.0	83.0	10.0	27/27	50
MCKW-M20x1.5/16/2x2.5	83582660	black	M20x1.5	M20/P16	2 x 2.5	32.0	83.0	10.0	27/27	50
MCKW-M20x1.5/16/3x3	83582662	black	M20x1.5	M20/P16	3 x 3.0	32.0	83.0	10.0	27/27	50
MCKW-M20x1.5/16/6x3	83582664	black	M20x1.5	M20/P16	6 x 3.0	32.0	83.0	10.0	27/27	50
MCKW-M20x1.5/16/3x4	83582666	black	M20x1.5	M20/P16	3 x 4.0	32.0	83.0	10.0	27/27	50
MCKW-M20x1.5/16/2x5	83582668	black	M20x1.5	M20/P16	2 x 5.0	32.0	83.0	10.0	27/27	50
MCKW-M25x1.5/21/4x5	83582670	black	M25x1.5	M25/P21	4 x 5.0	39.0	101.0	11.0	33/33	50
MCKW-M25x1.5/21/3x7	83582672	black	M25x1.5	M25/P21	3 x 7.0	39.0	101.0	11.0	33/33	50
MCKW-M25x1.5/21/2x8	83582674	black	M25x1.5	M25/P21	2 x 8.0	39.0	101.0	11.0	33/33	50
MCKW-M25x1.5/21/4x6	83582676	black	M25x1.5	M25/P21	4 x 6.0	39.0	101.0	11.0	33/33	50
MCKW-M32x1.5/29/6x6.5	83582678	black	M32x1.5	M32/P29	6 x 6.5	50.0	121.0	11.0	42/42	25
MCKW-M32x1.5/29/4x9	83582680	black	M32x1.5	M32/P29	4 x 9.0	50.0	121.0	11.0	42/42	25
Pg version										
MCKW-Pg 09 2 x 3	83582050	black	Pg 09	M12/P9	2 x 3.0	23.0	67.0	8.0	19/19	50
MCKW-Pg 09 4 x 1.4	83582052	black	Pg 09	M12/P9	4 x 1.4	23.0	67.0	8.0	19/19	50
MCKW-Pg 11 2 x 3	83582054	black	Pg 11	M16/P11	2 x 3.0	28.0	75.0	8.0	22/22	50
MCKW-Pg 11 2 x 4	83582056	black	Pg 11	M16/P11	2 x 4.0	28.0	75.0	8.0	22/22	50
MCKW-Pg 11 3 x 3	83582058	black	Pg 11	M16/P11	3 x 3.0	28.0	75.0	8.0	22/22	50
MCKW-Pg 16 2 x 6	83582068	black	Pg 16	M20/P16	2 x 6.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 16 3 x 3	83582070	black	Pg 16	M20/P16	3 x 3.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 16 3 x 4	83582072	black	Pg 16	M20/P16	3 x 4.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 16 3 x 6	83582074	black	Pg 16	M20/P16	3 x 6.0	37.0	85.0	11.0	27/27	50



Type MCKW (conduit and cable fitting)

RoHS
compliant

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	Quantity x Ø [mm]	EH mm	L mm	GL mm	SW 1/2 mm	Pack qty.
MCKW-Pg 16 4 x 4	83582076	black	Pg 16	M20/P16	4 x 4.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 16 5 x 4	83582078	black	Pg 16	M20/P16	5 x 4.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 16 6 x 4	83582080	black	Pg 16	M20/P16	6 x 4.0	37.0	85.0	11.0	27/27	50
MCKW-Pg 21 2 x 8	83582082	black	Pg 21	M25/P21	2 x 8.0	39.0	100.0	11.0	33/33	50
MCKW-Pg 21 3 x 7	83582084	black	Pg 21	M25/P21	3 x 7.0	39.0	100.0	11.0	33/33	50
MCKW-Pg 21 4 x 6	83582086	black	Pg 21	M25/P21	4 x 6.0	39.0	100.0	11.0	33/33	50
MCKW-Pg 29 6 x 6.5	83582088	black	Pg 29	M32/P29	6 x 6.5	50.0	120.0	12.0	42/42	25

The connecting angle piece can also be obtained separately. See accessories, type KAW.

IP65





m-fix conduit fittings



Advantages



Easy to connect

The m-fix family consists of conduit fittings manufactured from high-grade polyamide. Their design means that the fittings offer a high protection rating of IP 54.

The fittings are completely pre-assembled and no additional parts need to be assembled. This ensures the greatest possible process reliability in assembly. The protection rating can be increased to IP 65 where required by the use of an additional sealing ring.

The cable protection conduit can be assembled quickly and easily by simply inserting the conduit into the fitting. The clamping ring closes automatically. As the inner bends have no sharp edges, the introduction of cables through 90° fittings does not present any problems.



- ✓ Easy push-on connector
- ✓ Very quick assembly
- ✓ High packing density
- ✓ One-piece fitting
- ✓ Inner contours rounded for 90° variants

m-fix series product range



Type MSV
(push-on connector, plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

Page 130



Type KSV (conduit and cable fitting, plastic thread)

Metric ISO thread (M)
PG thread (Pg)
National Pipe Taper (NPT)

Page 132



Type WSV 90° (angle push-on connector, plastic thread)

PG thread (Pg)

Page 134



Type DR-NBR (sealing ring)

The sealing ring DR-NBR enables the protection rating on conduit fittings MSV, WSV and KSV to be increased from IP 54 to IP 65.

Page 136

Combination options

	Conduit fittings up to conduit size M50 / Pg48		
	MSV	KSV	WSV
EF	✗	✗	✗
EW	✓	✓	✓
EWf	✓	✓	✓
EWS	✓	✓	✓
EWX	*	*	*
EW-G	⚡	⚡	⚡
EW-HY	✓	✓	✓
EW-LS	✓	✓	✓
EW-PA	✓	✓	✓
EW-PA-LS	✓	✓	✓
EW-PA-UL	✓	✓	✓
EW-PA-EX	✓	✓	✓
EW-PAB	✓	✓	✓
EW-PAE	✓	✓	✓
EW-PAL	✓	✓	✓
EW-PAP	✗	✗	✗
EW-PP	✓	✓	✓
EW-PRF	✓	✓	✓
EW-TEF	✓	✓	✓
EWT-PA	✓	✓	✓
EWT-PP	✓	✓	✓
EWX-LS	*	*	*
EWX-PA	✓	✓	✓
EWX-PA-LS	*	*	*
EWX-PA-UL	✓	✓	✓
EWX-PAE	*	*	*
EWX-PAE-LS	*	*	*
GF	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

* combinable where extraction forces are low

Material data

	Material			Temperature area [°C]			Protection rating on corrugated conduit	Protection class on cable with combined conduit and cable fittings	Fire specifications UL94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
	Fitting	Moulded seal	Clamping ring	Min.	Max.	Short periods											
MSV	Polyamide PA6		POM	-40	110	140	IP 54 IP 65 with additional sealing ring		V1	✓	✓	✓	✓	✓	✓	✓	✓
KSV	Polyamide PA6	CR	POM	-40	110	140	IP 54 IP 65 with additional sealing ring	IP 68	V1	✓	✓	✓	✓	✓	✓	✓	✓
WSV	Polyamide PA6		POM	-40	110	140	IP 54 IP 65 with additional sealing ring		V1	✓	✓	✓	✓	✓	✓	✓	✓
DR-NBR	NBR			-25	120						✓	✓	✓	✓	✓	✓	✓



Type MSV (plug-in fitting)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide; POM



V1

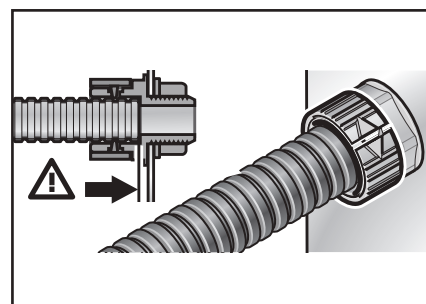
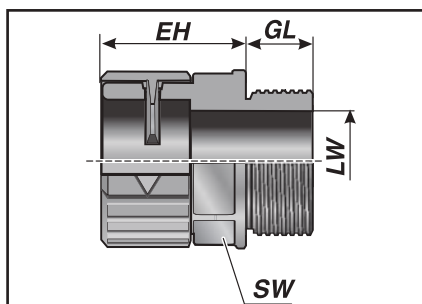


IP 54
IP 65 with sealing ring DR-NBR

- Cost reduction through simplification of assembly work
insert conduit → ready
- Extremely high packing density due to small installation dimensions
- Simple opening mechanism
- Can be opened without tool
- Protection rating IP 65 with additional sealing ring (type DR-NBR)
- Cable protection conduit can still be rotated in the fitting



MSV



Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW mm	Pack qty.
Metric version									
MSV-M12x1.5/7	83602450	black	M12x1.5	M10/P7	19.0	13.0	8.0	16	50
MSV-M12x1.5/9	83602452	black	M12x1.5	M12/P9	19.0	13.0	8.0	18	50
MSV-M12x1.5/11	83602456	black	M12x1.5	M16/P11	23.0	13.0	8.0	21	50
MSV-M16x1.5/9	83602454	black	M16x1.5	M12/P9	19.0	13.0	12.0	18	50
MSV-M16x1.5/11	83602458	black	M16x1.5	M16/P11	23.0	13.0	12.0	21	50
MSV-M20x1.5/11	83602459	black	M20x1.5	M16/P11	23.0	14.0	13.5	21	50
MSV-M20x1.5/16	83602460	black	M20x1.5	M20/P16(S)	27.0	14.0	15.0	27	50
MSV-M25x1.5/16	83602461	black	M25x1.5	M20/P16(S)	26.0	14.0	19.0	27	50
MSV-M25x1.5/21	83602462	black	M25x1.5	M25/P21(S)	32.0	14.0	21.0	36	50
MSV-M32x1.5/21	83602463	black	M32x1.5	M25/P21(S)	32.0	14.0	26.0	36	50
MSV-M32x1.5/29	83602464	black	M32x1.5	M32/P29(S)	35.0	16.0	27.0	40	25
MSV-M40x1.5/29	83602465	black	M40x1.5	M32/P29(S)	34.0	14.0	32.0	40	25
MSV-M40x1.5/36	83602466	black	M40x1.5	M40/P36(S)	38.0	16.0	34.0	49	10
MSV-M50x1.5/36	83602467	black	M50x1.5	M40/P36(S)	37.5	16.0	40.0	49	10
MSV-M50x1.5/48	83602468	black	M50x1.5	M50/P48(S)	39.0	16.0	44.0	60	10
MSV-M63x1.5/48	83602469	black	M63x1.5	M50/P48(S)	38.5	16.0	52.0	60	10
MSV-M12x1.5/7	83602410	grey	M12x1.5	M10/P7	19.0	13.0	8.0	16	50
MSV-M12x1.5/9	83602412	grey	M12x1.5	M12/P9	19.0	13.0	8.0	18	50
MSV-M12x1.5/11	83602416	grey	M12x1.5	M16/P11	23.0	13.0	8.0	21	50
MSV-M16x1.5/9	83602414	grey	M16x1.5	M12/P9	19.0	13.0	12.0	18	50
MSV-M16x1.5/11	83602418	grey	M16x1.5	M16/P11	23.0	13.0	12.0	21	50
MSV-M20x1.5/11	83602419	grey	M20x1.5	M16/P11	23.0	14.0	13.5	21	50
MSV-M20x1.5/16	83602420	grey	M20x1.5	M20/P16(S)	27.0	14.0	15.0	27	50
MSV-M25x1.5/16	83602421	grey	M25x1.5	M20/P16(S)	26.0	14.0	19.0	27	50
MSV-M25x1.5/21	83602422	grey	M25x1.5	M25/P21(S)	32.0	14.0	21.0	36	50
MSV-M32x1.5/21	83602423	grey	M32x1.5	M25/P21(S)	32.0	14.0	26.0	36	50



Type KSV (conduit and cable fitting)



-40 to 110 °C
transient 140 °C



Mod. polyamide; POM
Moulded seal: Buna N



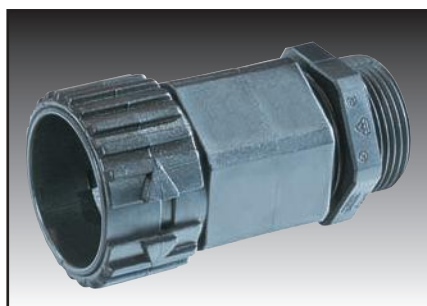
V1



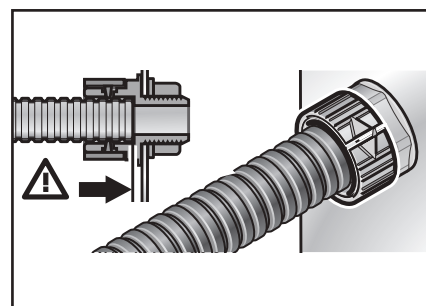
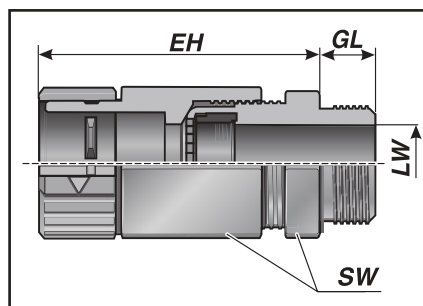
IP 54
IP 65 with sealing ring DR-NBR

The KSV is a combination of our proven WKK cable fitting and the m-fix MSV conduit fitting.

- Costs are reduced thanks to easy conduit assembly = insert conduit → ready
- Optimum strain relief for the cable due to iris-shaped lamellae
- No parts can get lost as the fitting does not have to be dismantled for assembly
- Protection rating IP 65 with additional sealing ring (type DR-NBR)
- Cable protection conduit can still be rotated in the fitting



KSV



Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	GL mm	LW mm	SW mm	Pack qty.
Metric version									
KSV-M16x1.5/9	83611450	black	M16x1.5	M12/P9	40.0	8.0	4.0–8.0	19	50
KSV-M16x1.5/11	83611452	black	M16x1.5	M16/P11	47.0	8.0	5.0–10.0	22	50
KSV-M20x1.5/16	83611456	black	M20x1.5	M20/P16(S)	52.0	9.0	10.0–14.0	24/27	50
KSV-M25x1.5/21	83611458	black	M25x1.5	M25/P21(S)	61.0	11.0	13.0–18.0	33	50
KSV-M32x1.5/29	83611460	black	M32x1.5	M32/P29(S)	73.0	11.0	18.0–25.0	42	25
Pg version									
KSV-Pg 09	83611250	black	Pg 09	M12/P9	40.0	8.0	4.0–8.0	19	50
KSV-Pg 11	83611252	black	Pg 11	M16/P11	47.0	8.0	5.0–10.0	22	50
KSV-Pg 13.5/11	86611253	black	Pg 13.5	M16/P11	47.0	9.0	6.0–12.0	24/27	50
KSV-Pg 13.5/16	83611254	black	Pg 13.5	M20/P16(S)	52.0	9.0	6.0–12.0	24/27	50
KSV-Pg 16	83611256	black	Pg 16	M20/P16(S)	53.0	9.0	10.0–14.0	27	50
KSV-Pg 16/21	83611257	black	Pg 16	M25/P21	61.0	10.0	13.0–18.0	33	50
KSV-Pg 21	83611258	black	Pg 21	M25/P21(S)	61.0	11.0	13.0–18.0	33	50
KSV-Pg 29	83611260	black	Pg 29	M32/P29(S)	73.0	11.0	18.0–25.0	42	25
Grey version									
KSV-Pg 09	83611210	grey	Pg 09	M12/P9	40.0	8.0	4.0–8.0	19	50
KSV-Pg 11	83611212	grey	Pg 11	M16/P11	47.0	8.0	5.0–10.0	22	50
KSV-Pg 13.5/11	86611213	grey	Pg 13.5	M16/P11	47.0	9.0	6.0–12.0	24/27	50
KSV-Pg 13.5/16	83611214	grey	Pg 13.5	M20/P16(S)	52.0	9.0	6.0–12.0	24/27	50
KSV-Pg 16	83611216	grey	Pg 16	M20/P16(S)	53.0	9.0	10.0–14.0	27	50



Type KSV (conduit and cable fitting)

RoHS
compliant

[illegible]

IP54





Type WSV 90° (angle plug-in fitting)



-40 to 110 °C
transient 140 °C



Mod. polyamide
POM

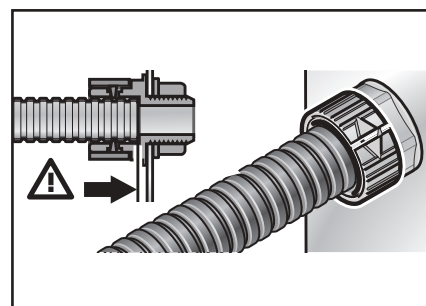
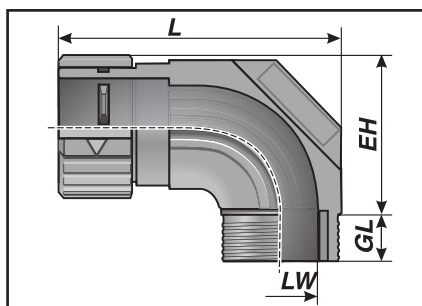


V1



IP 54
IP 65 with sealing ring DR-NBR

- Cost reduction through simplification of assembly work insert conduit → ready
- Extremely high packing density due to small installation dimensions
- Simple opening mechanism
- The interior is rounded, allowing easy insertion of the cable into the 90° angle
- Can be opened without tools
- Protection rating IP 65 with additional sealing ring (type DR-NBR)
- Cable protection conduit can still be rotated in the fitting



WSV 90°

Type	Order no.	Colour	Connecting thread	Suitable for Murrflex	EH mm	L mm	GL mm	LW mm	Pack qty.
Metric version									
WSV-M16x1.5/9	83605050	black	M16x1.5	M12/P9	26.0	42.0	7.5	10.0	50
WSV-M20x1.5/11	83605052	black	M20x1.5	M16/P11	29.0	50.0	8.0	12.0	50
WSV-M25x1.5/16	83605054	black	M25x1.5	M20/P16(S)	32.0	59.0	10.0	16.0	50
WSV-M32x1.5/21	83605056	black	M32x1.5	M25/P21(S)	39.0	69.0	11.0	22.0	25
WSV-M40x1.5/29	83605058	black	M40x1.5	M32/P29(S)	51.0	83.0	12.0	28.0	25
WSV-M50x1.5/36	83605060	black	M50x1.5	M40/P36(S)	70.0	107.0	15.0	35.0	10
WSV-M63x1.5/48	83605062	black	M63x1.5	M50/P48(S)	96.0	134.0	15.0	49.0	10
Pg version									
WSV-Pg 09	83601450	black	Pg 09	M12/P9	28.5	50.0	8.0	13.0	50
WSV-Pg 11	83601452	black	Pg 11	M16/P11	28.5	49.0	8.0	13.0	50
WSV-Pg 13.5/16	83601454	black	Pg 13.5	M20/P16(S)	32.0	59.0	10.0	16.0	50
WSV-Pg 16	83601456	black	Pg 16	M20/P16(S)	32.0	59.0	10.0	16.0	50
WSV-Pg 21	83601458	black	Pg 21	M25/P21(S)	38.5	69.0	11.5	22.0	25
WSV-Pg 29	83601460	black	Pg 29	M32/P29(S)	50.5	82.0	12.0	28.0	25
WSV-Pg 36	83601462	black	Pg 36	M40/P36(S)	70.0	106.0	15.5	35.0	10
WSV-Pg 48	83601464	black	Pg 48	M50/P48(S)	96.0	134.0	16.0	49.0	10

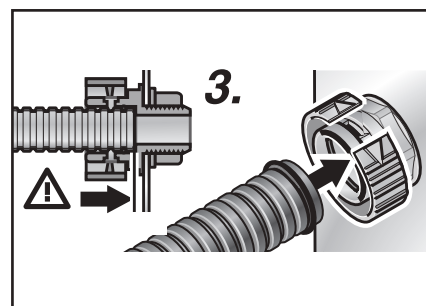


RoHS
compliance



IP54

Sealing ring for cable protection conduits with standard corrugation and crush resistance $> 400 \text{ N/100 mm}$.



DR-NBR

[illegible]

Conduit connection bulkhead fittings



Advantages



Split connection

The conduit connection bulkhead fittings are manufactured from high-grade polyamide.

As the bulkhead fittings are split and have a large cut-out size, pre-assembled cables can be easily and quickly inserted into a housing. Their design means that these bulkhead fittings offer a protection rating of IP54 or IP65.

Cable protection conduits can be assembled directly. The cable protection conduits remain rotatable. The higher IP 65 protection rating is achieved in combination with a suitable conduit fitting.



- ✓ Split system
- ✓ Enables installation of pre-assembled cables
- ✓ Easy assembly
- ✓ Conduit remains rotatable
- ✓ Suitable for EW and EWX cable protection conduits

Flange connection product range



Type KFW

Splitable 90° flange angle connection with a metric or a Pg thread.

Page 142



Types KFW/D and KFW/X

Splitable 90° flange angle connection for direct fixing of cable protection conduits.

Page 144

Combination options

	Conduit fittings up to conduit size M50 / Pg48		
	KFW	KFW/D	KFW/X
EF	✗	✗	✗
EW	✱	✓	✗
EWf	✱	✓	✗
EWS	✱	✓	✗
EWX	✱	✗	✓
EW-G	✱	?	✗
EW-HY	✱	✓	✗
EW-LS	✱	✓	✗
EW-PA	✱	✓	✗
EW-PA-LS	✱	✓	✗
EW-PA-UL	✱	✓	✗
EW-PA-EX	✱	✓	✗
EW-PAB	✱	✓	✗
EW-PAE	✱	✓	✗
EW-PAL	✱	✓	✗
EW-PAP	✱	✗	✗
EW-PP	✱	✓	✗
EW-PRF	✱	✓	✗
EW-TEF	✱	✓	✗
EWT-PA	✱	✓	✗
EWT-PP	✱	✓	✗
EWX-LS	✱	✗	✓
EWX-PA	✱	✗	✓
EWX-PA-LS	✱	✗	✓
EWX-PA-UL	✱	✗	✓
EWX-PAE	✱	✗	✓
EWX-PAE-LS	✱	✗	✓
GF	✗	✗	✗

✓ combinable

✗ not combinable

? combinable to an extent (remove sheathing)

✱ in connection with an additional conduit or cable fitting

Material data

	Material		Temperature area [°C]			Protection rating on corrugated conduit	Fire specifications UL94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
	Fitting	Moulded seal	Min.	Max.	Short periods										
KFW	Polyamide PA6	Neoprene	-40	110	140	IP 65	V0	✓	✓	✓	✓	✓	✓	✓	✓
KFW/D	Polyamide PA6	Neoprene	-40	110	140	IP 54	V0	✓	✓	✓	✓	✓	✓	✓	✓
KFW/X	Polyamide PA6	Neoprene	-40	110	140	IP 54	V0		✓	✓	✓	✓	✓	✓	✓



Type KFW



-40 to 110 °C
transient 140 °C



Mod. polyamide



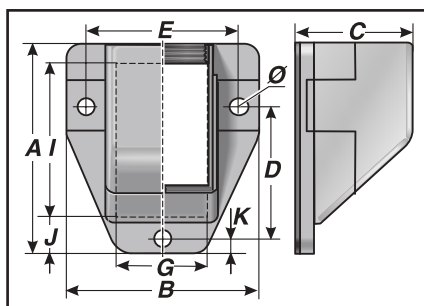
VO



IP 65

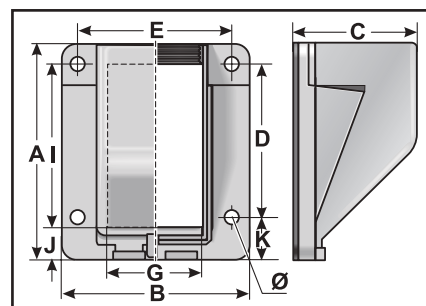
Easy-to-open bulkhead fitting conduit and cable fittings. Supplied with gasket for flange connection.

- Enables pre-assembled cables to be inserted by means of removable upper part
- Easy assembly
- High stability
- Internal thread for metric or Pg fittings



KFW

Up to M25/Pg21



From M32/Pg29

RU





Type KFW

RoHS
compliant

[illegible]



Conduit connection bulkhead fittings

Types KFW/D and KFW/X

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide



V0



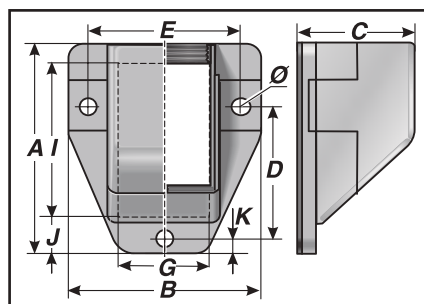
IP 54

Split 90° bulkhead fitting connection for cable protection conduits. Cable protection conduits can be mounted directly onto the bulkhead fitting without any additional fitting. The cable protection conduit can be turned in the bulkhead fitting. Large cut-out sizes make the plastic bulkhead fitting ideally suited for the installation of pre-assembled cables. Supplied with gasket for flange connection.

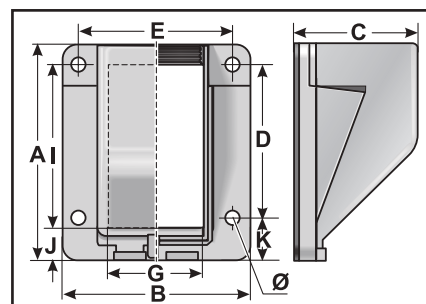
- Enables pre-assembled cables to be inserted by means of removable upper part
- Easy assembly
- Conduit remains rotatable



KFW



Up to D-21/ M25/P21



From D-29/M32/P29

Type	Order no.	Colour	Suitable for	A mm	B mm	C mm	D mm	E mm	G mm	I mm	J mm	K mm	Ø mm	Pack qty.
			Murrflex											

For cable protection conduits with standard corrugation, type EW-xx and EWT-xx

KFW/D-11	83561850	black	M16/P11	49.0	47.0	35.0	29.0	37.0	22.5	27.0	11.0	4.5	4.3	10
KFW/D-16	83561852	black	M20/P16(S)	49.0	47.0	35.0	29.0	37.0	22.5	27.0	11.0	4.5	4.3	10
KFW/D-21	83561854	black	M25/P21(S)	69.0	65.0	44.0	41.5	51.5	30.0	42.5	15.0	6.0	6.0	10
KFW/D-29	83561856	black	M32/P29(S)	90.0	78.0	55.0	64.5	64.5	40.0	68.0	9.0	16.0	6.5	10
KFW/D-36	83561858	black	M40/P36(S)	99.0	94.0	66.0	79.5	79.5	48.5	74.5	9.5	10.0	6.5	10
KFW/D-48	83561860	black	M50/P48(S)	116.0	101.0	76.0	87.5	87.5	68.5	89.5	9.5	16.0	6.5	10

For cable protection conduits with high corrugation, type EWX-xx

KFW/X M25/P21	83562654	black	M25/P21	69.0	65.0	44.0	41.5	51.5	30.0	42.5	15.0	6.0	6.0	10
KFW/X M32/P29	83562656	black	M32/P29	90.0	78.0	55.0	64.5	64.5	40.0	68.0	9.0	16.0	6.5	10
KFW/X M40/P36	83562658	black	M40/P36	99.0	94.0	66.0	79.5	79.5	48.5	74.5	9.5	10.0	6.5	10
KFW/X M50/P48	83562660	black	M50/P48	116.0	101.0	76.0	87.5	87.5	68.5	89.5	9.5	16.0	6.5	10

KFW/X M25/P21	83562614	grey	M25/P21	69.0	65.0	44.0	41.5	51.5	30.0	42.5	15.0	6.0	6.0	10
KFW/X M32/P29	83562616	grey	M32/P29	90.0	78.0	55.0	64.5	64.5	40.0	68.0	9.0	16.0	6.5	10
KFW/X M40/P36	83562618	grey	M40/P36	99.0	94.0	66.0	79.5	79.5	48.5	74.5	9.5	10.0	6.5	10
KFW/X M50/P48	83562620	grey	M50/P48	116.0	101.0	76.0	87.5	87.5	68.5	89.5	9.5	16.0	6.5	10

m-jumbo conduit connection



Advantages



Large connections

The m-jumbo family consists of conduit connections manufactured from high-grade polyamide and are designed for large conduits of sizes NW 70 and NW 95.

The connection has protection rating IP 52. In addition to this the conduit remains rotatable in the fitting.

The protection rating can be easily increased to IP 65 using an additional sealing ring.

The cable protection conduit can be easily fixed to the conduit connection by means of two half shells.

The connections are inherently stable and also provide a high level of tear-out strength.



- ✓ Easy assembly
- ✓ High protection class
- ✓ Conduit remains rotatable in the fitting
- ✓ Straight and 90° versions
- ✓ High tear-out strength

m-jumbo conduit connection product range



**Type SA-Jumbo
(flange connection)**

Straight flange connection for jumbo cable protection conduits.

Page 150



**Type KFW-Jumbo
(90° flange connection)**

Right-angled flange connection for jumbo cable protection conduits.

Page 151

Combination options

	Conduit connection from NW 70	
	SA-Jumbo	KFW-Jumbo
EF	✗	✗
EW	✓	✓
EWf	✓	✓
EWS	✓	✓
EWX	✓	✓
EW-G	✗	✗
EW-HY	✓	✓
EW-LS	✓	✓
EW-PA	✓	✓
EW-PA-LS	✓	✓
EW-PA-UL	✓	✓
EW-PA-EX	✓	✓
EW-PAB	✓	✓
EW-PAE	✓	✓
EW-PAL	✓	✓
EW-PAP	✗	✗
EW-PP	✓	✓
EW-PRF	✓	✓
EW-TEF	✓	✓
EW-T-PA	✓	✓
EW-T-PP	✓	✓
EWX-LS	✓	✓
EWX-PA	✓	✓
EWX-PA-LS	✓	✓
EWX-PA-UL	✓	✓
EWX-PAE	✓	✓
EWX-PAE-LS	✓	✓
GF	✗	✗

✓ combinable

✗ not combinable

Material data

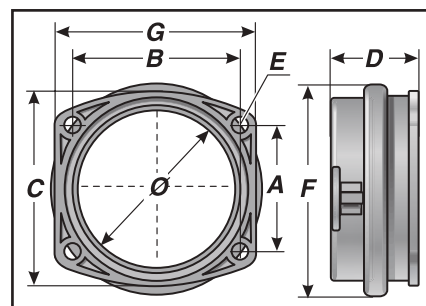
	Material	Temperature area [°C]			Protection rating on corrugated conduit	Fire specifications UL94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
		Min.	Max.	Short periods										
SA-Jumbo	Polyamide PA6	-40	110	140	IP 52 IP 65 with additional sealing ring	V0		✓	✓	✓	✓	✓	✓	✓
KFW-Jumbo	Polyamide PA6	-40	110	140	IP 52 IP 65 with additional sealing ring	V0		✓	✓	✓	✓	✓	✓	✓



RoHS
compliance



- Split ring makes assembly easy
- High tear-out strength thanks to inherently stable connection ring
- No sealing → conduit turns in the fitting
- With sealing → higher level of protection
- O-ring for flange/housing included in delivery



DS

150

Type KFW-Jumbo (90° flange connection)



-40 to 110 °C
transient 140 °C



Mod. polyamide



V0



IP 52

IP 65 with DS seal

Angled flange connection for Jumbo cable protection conduit

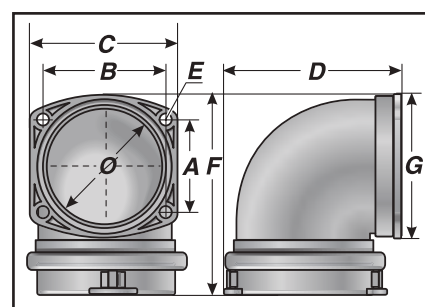
- Split ring makes assembly easy
- High tear-out strength thanks to inherently stabile connection ring
- No sealing → conduit turns in the fitting
- With sealing → higher level of protection
- O-ring for flange/housing included in delivery



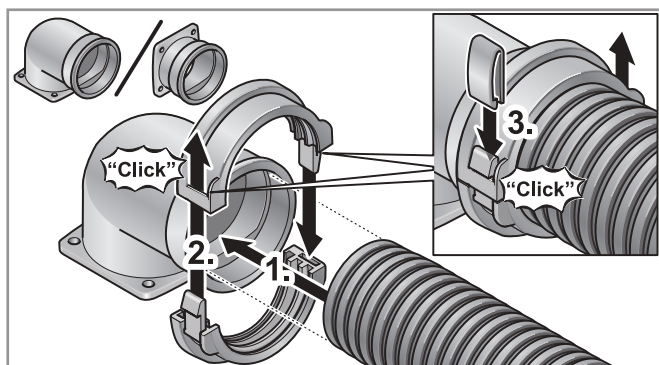
KFW-Jumbo



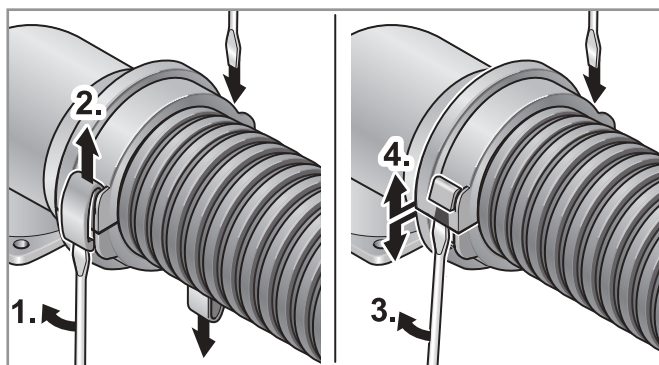
DS

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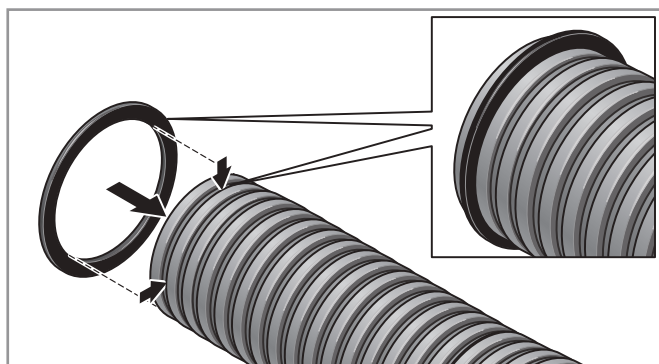
Assembly



Insert cable protection conduit into fitting. Position and fix half shells onto the fitting. Fit locking mechanisms on both sides.



Loosen and remove locking mechanisms on both sides with an appropriate tool. Loosen latching and remove half shells. Remove cable protection conduit from the fitting.



An addition sealing ring is needed on the cable protection conduit to achieve a protection rating of IP 65. To this end pull the seal onto the first recess on the cable protection conduit. Thereafter assemble according to step 1.

Special fitting



Advantages



Special Fittings

The special fittings are special solutions for cable protection conduits encased with metal braiding. For separable corrugated pipes with standard corrugations or closed cable protection conduits.

They are characterised by particular features such as their split design or the discharging of sheath currents.



- ✓ Split version
- ✓ EMC discharge
- ✓ Stable design
- ✓ Individual

Special fittings product range



Type EH-EMV

Metal fitting for the encased cable protection conduit type EW-PAP for discharge of sheath currents.

Page 160



Type AT

Split conduit connection to fix cable protection conduits to switch cabinets.

Page 161

Combination options

	EH-EMV	AT
EF	✗	✗
EW	✗	✓
EWf	✗	✓
EWS	✗	✓
EWX	✗	✓
EW-G	✗	⚡
EW-HY	✗	✓
EW-LS	✗	✓
EW-PA	✗	✓
EW-PA-LS	✗	✓
EW-PA-UL	✗	✓
EW-PA-EX	✗	✓
EW-PAB	✗	✓
EW-PAE	✗	✓
EW-PAL	✗	✓
EW-PAP	✓	✗
EW-PP	✗	✓
EW-PRF	✗	✓
EW-TEF	✗	✓
EWT-PA	✗	✓
EWT-PP	✗	✓
EWX-LS	✗	✓
EWX-PA	✗	✓
EWX-PA-LS	✗	✓
EWX-PA-UL	✗	✓
EWX-PAE	✗	✓
EWX-PAE-LS	✗	✓
GF	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Material data

	Material	Temperature area [°C]			Protection rating on corrugated conduit	Fire specifications UL94	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
		Min.	Max.	Short periods									
EH-EMV	Brass nickel-plated				IP 40								✓
AT	Polyamide PA6	-40	110	140		V0	✓	✓	✓	✓	✓	✓	✓

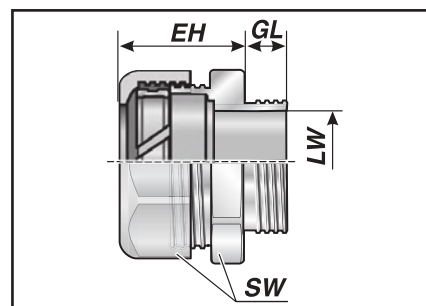


RoHS
compliance



Metal fitting for sheathed cable protection conduit type EW-PAP. This fitting discharges sheath currents on the cable protection conduit.

- For use with EMV applications



EH-EMV

158

Type AT



-40 to 110 °C
transient 140 °C



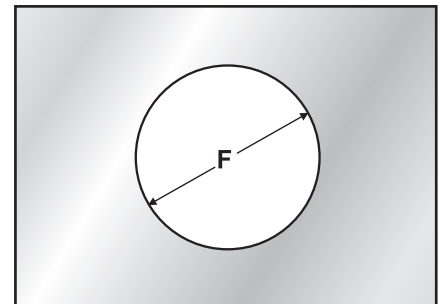
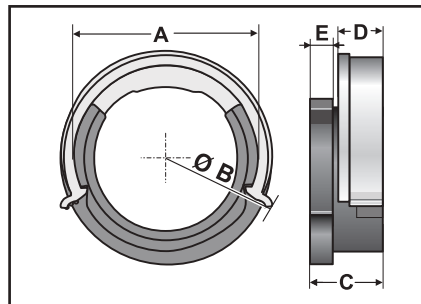
Mod. polyamide 6



VO

Split conduit connection to fix cable protection conduits to switch cabinets.
Suitable for switch cabinets with a wall thickness of 1.5–2.0 mm.

- Quick and easy to assemble and disassemble without tools.
- Conduits can still be rotated
- Compact construction
- Insertion of pre-assembled cables through split internal and external ring



AT

[illegible]



Cable protection conduit holders



Advantages



Holder systems

The various holder systems are manufactured from high-grade polyamide and polycarbonate.

The new HS family offers the facility to arrange holders in rows as well as stacking them.

A snap-on mechanism enables the actual conduit holders to be combined with a variety of fastening plates (feet). An optional bracket offers additional safety under high tear-out forces.

The proven holders remain in our product range. However, they can easily be substituted by the new HS family. Compatibility is guaranteed.



- ✓ Stackable
- ✓ Arrangable in rows
- ✓ Variable
- ✓ Snap-in conduits
- ✓ Different types

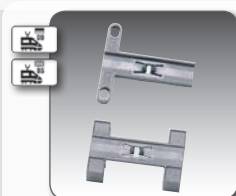
Cable protection conduit holders product range



Type HS (conduit holder)

Conduit holder system made from polyamide, arrangeable in rows and stacks. The holder can be screwed on directly.

Page 166



Type HS (accessories, fixing foot)

HS/F fixing foot (as UHF).
HS/C fixing foot (as KAF).

Page 167



Type HS (accessories, bracket, fixing foot)

HS/B bracket for HS/U holder for higher tear-out forces HS/S Fixing foot (as USH).

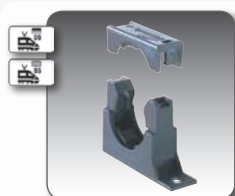
Page 168



Type UH

For fixing cable protection conduits to plants and machines.

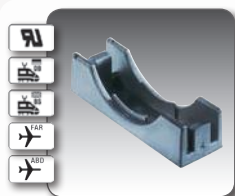
Page 169



Type UHG

For fixing cable protection conduits to plants and machines.

Page 170



Type BL (clamping bracket for types UH and UHG)

Optional clamping bracket for UH and UHG.

Page 171



Type UHF

For quick and easy connection of control cabinet to door.

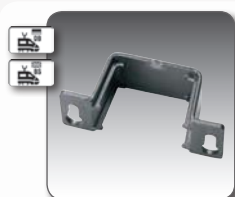
Page 172



Type USH

For quick and easy connection of control cabinet to door.

Page 173



Type EF/B

Holder for rectangular conduit type EF.

Page 174

Combination options

	HS/x	UH	UHG	UHF	USH	EF/B
EF	✗	✗	✗	✗	✗	✓
EW	✓	✓	✓	✓	✓	✗
EWf	✓	✓	✓	✓	✓	✗
EWS	✓	✓	✓	✓	✓	✗
EWX	✓	✓	✓	✓	✓	✗
EW-G	⚡	⚡	⚡	⚡	⚡	✗
EW-HY	✓	✓	✓	✓	✓	✗
EW-LS	✓	✓	✓	✓	✓	✗
EW-PA	✓	✓	✓	✓	✓	✗
EW-PA-LS	✓	✓	✓	✓	✓	✗
EW-PA-UL	✓	✓	✓	✓	✓	✗
EW-PA-EX	✓	✓	✓	✓	✓	✗
EW-PAB	✓	✓	✓	✓	✓	✗
EW-PAE	✓	✓	✓	✓	✓	✗
EW-PAL	✓	✓	✓	✓	✓	✗
EW-PAP	✓	✓	✓	✓	✓	✗
EW-PP	✓	✓	✓	✓	✓	✗
EW-PRF	✓	✓	✓	✓	✓	✗
EW-TEF	✓	✓	✓	✓	✓	✗
EWT-PA	✓	✓	✓	✓	✓	✗
EWT-PP	✓	✓	✓	✓	✓	✗
EWX-LS	✓	✓	✓	✓	✓	✗
EWX-PA	✓	✓	✓	✓	✓	✗
EWX-PA-LS	✓	✓	✓	✓	✓	✗
EWX-PA-UL	✓	✓	✓	✓	✓	✗
EWX-PAE	✓	✓	✓	✓	✓	✗
EWX-PAE-LS	✓	✓	✓	✓	✓	✗
GF	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Material data

	Material	Temperature area [°C]			Fire specifications UL94	UL File number E148958	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
		Min.	Max.	Short periods									
HS/x	Polyamide PA6	-40	110	140	V0		✓	✓	✓	✓	✓	✓	✓
UH	Polyamide PA6	-40	110	140	V0	✓	✓	✓	✓	✓	✓	✓	✓
UHG	Polyamide PA6	-40	110	140	V0		✓	✓	✓	✓	✓	✓	✓
BL	Polyamide PA6	-40	110	140	V0	✓	✓	✓	✓	✓	✓	✓	✓
UHF	Polyamide PA6	-40	110	140	V0	✓	✓	✓	✓	✓	✓	✓	✓
USH	Polycarbonate	-30	100		V2	✓	✓	✓	✓	✓	✓	✓	✓
EF/B	Polyamide PA6	-40	110	140	V0		✓	✓	✓	✓	✓	✓	✓

Type HS (conduit holder)

RoHS
compliant



-40 to 110 °C
transient 140 °C



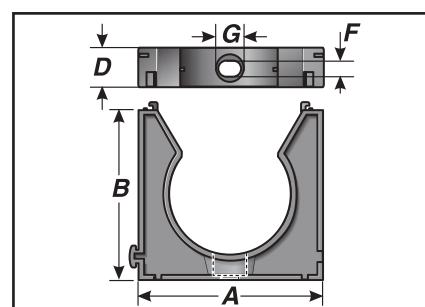
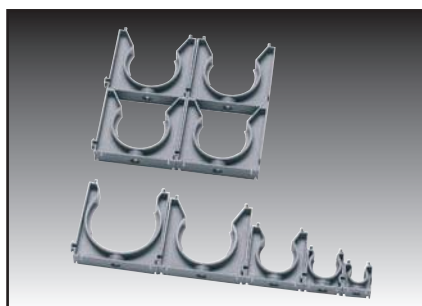
Mod. polyamide



V0

Conduit holder system made from polyamide, arrangible in rows and stacks. The holder can be screwed on directly. Optional accessories enable the bracket to be adapted to a wide variety of installation situations.

- Flexible system
- Stackable
- Arrangible in rows
- Compatible with single holder types UH, UHF and USH



HS/U

Type	Order no.	Colour	Suitable for Murrflex	A mm	B mm	D mm	F Ø mm	G Ø mm	Pack qty.
Conduit holder									
suitable for Murrflex EW and EWX									
HS/U 07	83631052	black	M10/P07	21.5	21.0	14.0	4.5	8.0	100
HS/U 09	83631054	black	M12/P09	21.5	21.0	14.0	4.5	8.0	100
HS/U 11	83631056	black	M16/P11	28.0	29.0	14.0	5.5	10.0	100
HS/U 16	83631060	black	M20/P16	28.0	29.0	14.0	5.5	10.0	100
HS/U 21	83631062	black	M25/P21	43.0	42.4	14.0	5.5	10.0	50
HS/U 29	83631064	black	M32/P29	43.0	42.4	14.0	5.5	10.0	50
HS/U 36	83631066	black	M40/P36	63.5	57.5	14.0	5.5	10.0	50
HS/U 48	83631068	black	M50/P48	63.5	62.5	14.0	5.5	10.0	50
HS/U 07	83631012	grey	M10/P07	21.5	21.0	14.0	4.5	8.0	100
HS/U 09	83631014	grey	M12/P09	21.5	21.0	14.0	4.5	8.0	100
HS/U 11	83631016	grey	M16/P11	28.0	29.0	14.0	5.5	10.0	100
HS/U 16	83631020	grey	M20/P16	28.0	29.0	14.0	5.5	10.0	100
HS/U 21	83631022	grey	M25/P21	43.0	42.4	14.0	5.5	10.0	50
HS/U 29	83631024	grey	M32/P29	43.0	42.4	14.0	5.5	10.0	50
HS/U 36	83631026	grey	M40/P36	63.5	57.5	14.0	5.5	10.0	50
HS/U 48	83631028	grey	M50/P48	63.5	62.5	14.0	5.5	10.0	50
FAR / ABD authorisation for colour grey only									

Type HS (accessories)

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide



VO

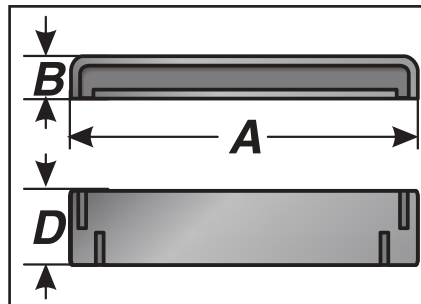
HS/B → Bracket for HS/U holder for higher tear-out forces.

HS/S → HS/S Fixing foot (as USH). HS/U conduit holder is simply snapped on.

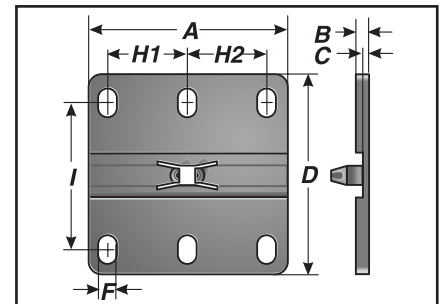
- Flexible system
- Stackable
- Arrangable in rows
- Compatible with single holder types UH, UHF and USH



HS/B HS/S



HS/B



HS/S

Type	Order no.	Colour	Suitable for holder	A mm	B mm	C mm	D mm	F Ø mm	H1/H2 mm	I mm	hole number (F)	Pack qty.
Clamping bracket												
HS/B 07-09	83631250	black	HS/U 07-09	21.5	5.0	-	14.0	-	-	-	-	100
HS/B 11-16	83631252	black	HS/U 11-16	28.0	5.0	-	14.0	-	-	-	-	100
HS/B 21-29	83631254	black	HS/U 21-29	43.0	6.0	-	14.0	-	-	-	-	50
HS/B 36-48	83631256	black	HS/U 36-48	63.5	7.0	-	14.0	-	-	-	-	50
HS/B 07-09	83631210	grey	HS/U 07-09	21.5	5.0	-	14.0	-	-	-	-	100
HS/B 11-16	83631212	grey	HS/U 11-16	28.0	5.0	-	14.0	-	-	-	-	100
HS/B 21-29	83631214	grey	HS/U 21-29	43.0	6.0	-	14.0	-	-	-	-	50
HS/B 36-48	83631216	grey	HS/U 36-48	63.5	7.0	-	14.0	-	-	-	-	50
Foot, type USH												
HS/S 07-09	83631450	black	HS/U 07-09	22.0	5.0	2.5	43.0	6.0	12.5/-	28.0	4	100
HS/S 11-16	83631452	black	HS/U 11-16	28.0	5.0	2.5	43.0	6.0	12.5/-	28.0	4	100
HS/S 21-29	83631454	black	HS/U 21-29	43.0	5.0	2.5	43.0	6.0	12.5/12.5	28.0	6	50
HS/S 36-49	83631456	black	HS/U 36-48	63.0	5.0	2.5	63.0	6.0	25.0/25.0	47.0	6	50
HS/S 07-09	83631410	grey	HS/U 07-09	22.0	5.0	2.5	43.0	6.0	12.5/-	28.0	4	100
HS/S 11-16	83631412	grey	HS/U 11-16	28.0	5.0	2.5	43.0	6.0	12.5/-	28.0	4	100
HS/S 21-29	83631414	grey	HS/U 21-29	43.0	5.0	2.5	43.0	6.0	12.5/12.5	28.0	6	50
HS/S 36-49	83631416	grey	HS/U 36-48	63.0	5.0	2.5	63.0	6.0	25.0/25.0	47.0	6	50



Type UH

RoHS
compliant



-40 to 110 °C
transient 140 °C



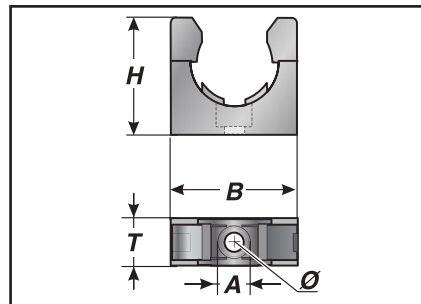
Mod. polyamide



v0

Fixing cable protection conduits to plants and machines.

- Quick assembly thanks to single-hole fixing
- Simply snap in conduits
- Optimum connection of conduit to holder thanks to double webs of holder
- Optional BL bracket for applications with high stresses



UH

Type	Order no.	Colour	Suitable for Murrflex	B mm	H mm	T mm	A mm	Ø mm	Pack qty.
suitable for Murrflex EW and EWX									
UH 07	83621210	black	M10/P7	29.0	23.0	11.0	7.5	4.0	100
UH 09/M4	83621212	black	M12/P9	30.0	23.0	12.5	8.5	4.0	100
UH 09/M5	83621213	black	M12/P9	30.0	23.0	12.5	8.5	5.0	100
UH 11/M4	83621214	black	M16/P11	30.0	23.0	12.5	8.5	4.0	100
UH 11/M5	83621215	black	M16/P11	30.0	23.0	12.5	8.5	5.0	100
UH 16/M5	83621216	black	M20/P16(S)	35.0	30.0	15.0	10.5	5.0	100
UH 16/M6	83621217	black	M20/P16(S)	35.0	30.0	15.0	10.5	6.0	100
UH 21	83621218	black	M25/P21(S)	42.0	38.0	16.0	11.0	6.0	100
UH 29	83621220	black	M32/P29(S)	51.0	43.0	16.0	11.5	6.0	50
UH 36	83621222	black	M40/P36(S)	61.0	51.0	18.0	13.5	6.0	50
UH 48	83621224	black	M50/P48(S)	74.0	64.0	19.0	13.5	6.0	50
UH 07	83621110	grey	M10/P7	29.0	23.0	11.0	7.5	4.0	100
UH 09/M4	83621112	grey	M12/P9	30.0	23.0	12.5	8.5	4.0	100
UH 09/M5	83621113	grey	M12/P9	30.0	23.0	12.5	8.5	5.0	100
UH 11/M4	83621114	grey	M16/P11	30.0	23.0	12.5	8.5	4.0	100
UH 11/M5	83621115	grey	M16/P11	30.0	23.0	12.5	8.5	5.0	100
UH 16/M5	83621116	grey	M20/P16(S)	35.0	30.0	15.0	10.5	5.0	100
UH 16/M6	83621117	grey	M20/P16(S)	35.0	30.0	15.0	10.5	6.0	100
UH 21	83621118	grey	M25/P21(S)	42.0	38.0	16.0	11.0	6.0	100
UH 29	83621120	grey	M32/P29(S)	51.0	43.0	16.0	11.5	6.0	50
UH 36	83621122	grey	M40/P36(S)	61.0	51.0	18.0	13.5	6.0	50
UH 48	83621124	grey	M50/P48(S)	74.0	64.0	19.0	13.5	6.0	50
FAR / ABD authorisation for colour grey only									



Type BL (clamping bracket for types UH and UHG)

RoHS
compliant



-40 to 110 °C
transient 140 °C



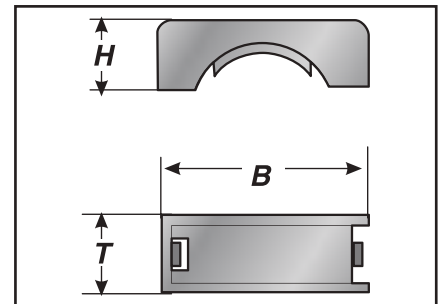
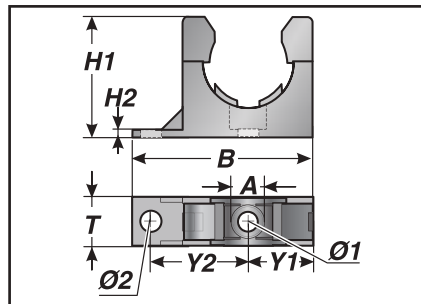
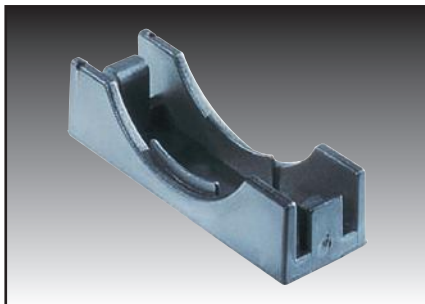
Mod. polyamide



V0

Optional bracket for UH and UHG.

- Additional mechanical retention of conduit when exposed to high stresses



BL

Type	Order no.	Colour	Suitable for UH/UHG	B mm	H mm	T mm	Pack qty.
BL 09	83621406	black	09	29.0	10.0	12.5	100
BL 11	83621408	black	11	29.0	11.0	12.5	100
BL 16	83621410	black	16	34.0	12.0	15.0	100
BL 21	83621412	black	21	41.0	13.0	15.5	100
BL 29	83621414	black	29	50.0	14.0	16.0	50
BL 36	83621416	black	36	60.0	17.0	18.0	50
BL 48	83621418	black	48	72.0	19.0	18.5	50
BL 09	83621146	grey	09	29.0	10.0	12.5	100
BL 11	83621148	grey	11	29.0	11.0	12.5	100
BL 16	83621150	grey	16	34.0	12.0	15.0	100
BL 21	83621152	grey	21	41.0	13.0	15.5	100
BL 29	83621154	grey	29	50.0	14.0	16.0	50
BL 36	83621156	grey	36	60.0	17.0	18.0	50
BL 48	83621158	grey	48	72.0	19.0	18.5	50

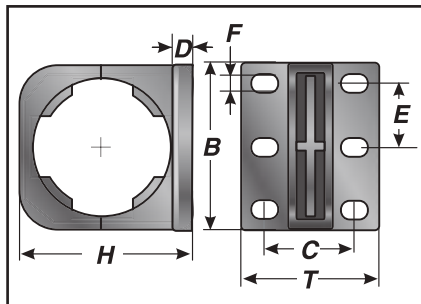
FAR / ABD authorisation for colour grey only



RoHS
compliant



- Most universal fastening possibilities
- Fixing holes fit horizontal and vertical bar system in the control cabinet
- Conduits can still be rotated
- Pre-assembly of lower part possible



Protectors

Conduit coupling

Conduit distributor



Advantages



Distribute, merge and extend

Conduit distributor, conduit coupling and protectors are made of high-quality polyamine and thermoplastic elastomer.

The large choice of distributors means a huge number of possible combinations and ways of splitting cable protection conduits.

Different protection ratings from IP 40 to IP 67 ensure an extensive range of applications.

The SVG type enables cable protection conduits of the same size to be connected together. Thus, any cable protection conduit can be extended however far you want.

The PR/SV protectors ensure that the cable protection conduits do not suffer from impact or abrasion. Additionally, cable protection conduits can be connected for repair work.



- ✓ Huge variety of types
- ✓ Different materials
- ✓ Different protection ratings
- ✓ Split version
- ✓ Easy installation

Protectors / conduit couplings / conduit distributors



Protectors / conduit couplings / conduit distributors product range



Type PR/SV

Protector as strike guard and Conduit coupling. Cable protection conduits are protected against impact and abrasion.

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Type SVG

For the extension and repair of cable protection conduits.

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Type VT

T distributor for cable protection conduits with different diameters.

Page 185



Type SVY

Y distributor for cable protection conduits with different diameters.

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Type YPA-F

Y distributor made from polyamide for cable protection conduits with high protection rating.

Page 185



Type YTPF-F

Y distributor made from thermoplastic elastomer for cable protection conduits with a high protection rating.

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Combination options

	PR/SV	SVG	VT	SVY	YPA-F	YTPE-F
EF	✗	✗	✗	✗	✗	✗
EW	✓	✓	✓	✓	✓	✓
EWf	✓	✓	✓	✓	✓	✓
EWS	✓	✓	✓	✓	✓	✓
EWX	✓	✓	✓	✓	✓	✓
EW-G	⚡	⚡	⚡	⚡	⚡	⚡
EW-HY	✓	✓	✓	✓	✓	✓
EW-LS	✓	✓	✓	✓	✓	✓
EW-PA	✓	✓	✓	✓	✓	✓
EW-PA-LS	✓	✓	✓	✓	✓	✓
EW-PA-UL	✓	✓	✓	✓	✓	✓
EW-PA-EX	✓	✓	✓	✓	✓	✓
EW-PAB	✓	✓	✓	✓	✓	✓
EW-PAE	✓	✓	✓	✓	✓	✓
EW-PAL	✓	✓	✓	✓	✓	✓
EW-PAP	✗	✗	✗	✗	✗	✗
EW-PP	✓	✓	✓	✓	✓	✓
EW-PRF	✓	✓	✓	✓	✓	✓
EW-TEF	✓	✓	✓	✓	✓	✓
EWT-PA	✓	✓	✓	✓	✓	✓
EWT-PP	✓	✓	✓	✓	✓	✓
EWX-LS	✓	✓	✓	✓	✓	✓
EWX-PA	✓	✓	✓	✓	✓	✓
EWX-PA-LS	✓	✓	✓	✓	✓	✓
EWX-PA-UL	✓	✓	✓	✓	✓	✓
EWX-PAE	✓	✓	✓	✓	✓	✓
EWX-PAE-LS	✓	✓	✓	✓	✓	✓
GF	✗	✗	✗	✗	✗	✗

✓ combinable

✗ not combinable

⚡ combinable to an extent (remove sheathing)

Protectors / conduit couplings / conduit distributors



Material data

	Material	Temperature area [°C]			Protection class	Fire specifications UL94	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	RoHS Compliant
		Min.	Max.	Short periods								
PR/SV	Polyamide PA6	-40	110	140		V0	✓	✓	✓	✓	✓	✓
SVG	Polyamide PA6	-40	110	140	IP 42 IP 54 screwed	V0	✓	✓	✓	✓	✓	✓
VT	Polyamide PA6	-40	110	140	IP 42	V0	✓	✓	✓	✓	✓	✓
SVY	Polyamide PA6	-40	110	140	IP 42	V0	✓	✓	✓	✓	✓	✓
YPA-F	Polyamide PA6	-30	100		IP 67	V0	✓	✓	✓	✓	✓	✓
YTPE-F	Thermoplastic elastomer	-30	100		IP 67	HB	✓	✓	✓	✓	✓	✓

Type PR/SV

RoHS
compliant



-40 to 110 °C
transient 140 °C



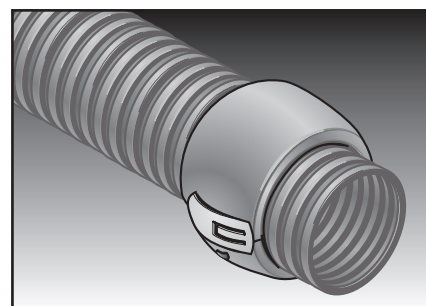
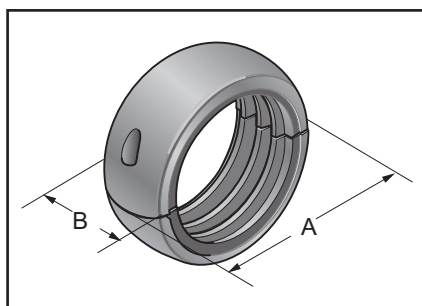
Mod. polyamide



V0

Protector as strike guard and conduit coupling. Cable protection conduits are protected against impact and abrasion. If required, cable protection conduits can also be connected.

- Flat construction method
- Simple assembly with a sliding lock, without the need for tools
- Optional stop screw (included in delivery)



PR/SV

Type	Order no.	Colour black	Suitable for Murrflex	A mm	B mm	Pack qty.
Flat design for cable protection conduits with standard corrugation, type EW-xx						
PR/SV-EW 21	83691058	black	M25/P21	51.6	51.2	10
PR/SV-EW 29	83691060	black	M32/P29	57.9	51.0	10
PR/SV-EW 36	83691062	black	M40/P36	66.0	51.5	10
PR/SV-EW 48	83691064	black	M50/P48	78.0	49.5	10
PR/SV-EW 56	83691065	black	NW56	90.8	51.0	5
PR/SV-EW 70	83691066	black	NW70	103.5	51.5	5
Flat design for cable protection conduits with standard corrugation, type EWX-xx						
PR/SV-EW 21	83691018	grey	M25/P21	51.6	51.2	10
PR/SV-EW 29	83691020	grey	M32/P29	57.9	51.0	10
PR/SV-EW 36	83691022	grey	M40/P36	66.0	51.5	10
PR/SV-EW 48	83691024	grey	M50/P48	78.0	49.5	10
PR/SV-EW 56	83691025	grey	NW56	90.8	51.0	5
PR/SV-EW 70	83691026	grey	NW70	103.5	51.5	5
Flat design for cable protection conduits with standard corrugation, type EWX-xx						
PR/SV-EWX 21	83691258	black	M25/P21	51.6	51.9	10
PR/SV-EWX 29	83691260	black	M32/P29	57.9	51.0	10
PR/SV-EWX 36	83691262	black	M40/P36	66.0	51.5	10
PR/SV-EWX 48	83691264	black	M50/P48	78.0	49.5	10
PR/SV-EWX 56	83691265	black	NW56	90.8	51.0	5
PR/SV-EWX 70	83691266	black	NW70	103.5	51.5	5

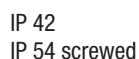
Type PR/SV

RoHS
compliant

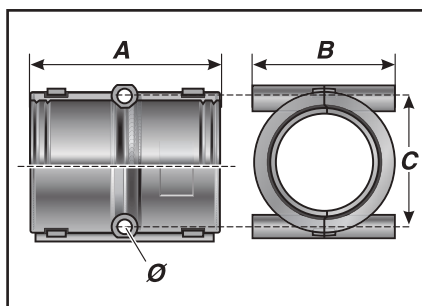
[illegible]



RoHS
compliance



- Easy assembly by latching
- Split version makes routing of cables easy
- Can also be screwed on



SVG

182

Type VT

RoHS
compliant



-40 to 110 °C
transient 140 °C



Mod. polyamide



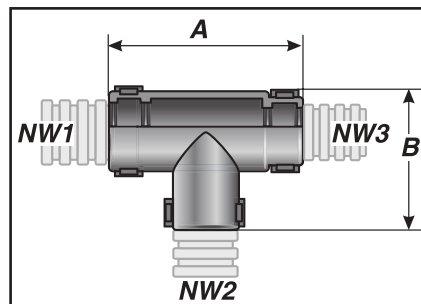
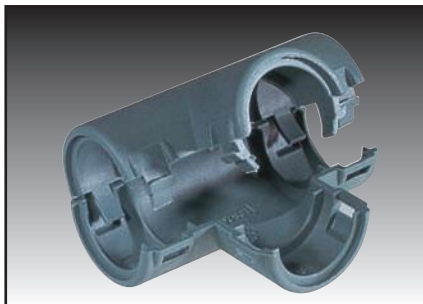
V0



IP 42

T distributor for cable protection conduits with different diameters.

- Easy assembly by latching
- Split version makes routing of cables easy
- The distributor envelops the conduit, which means that the entire inside diameter of the conduit is available



VT

Type	Order no.	Colour	for Murrflex with Standard corrugation NW1/NW2/NW3	A mm	B mm	Pack qty.
VT 080808	83702410	black	06/06/06	45.2	31.1	10
VT 120808	83702412	black	09/06/06	45.2	31.1	10
VT 120812	83702414	black	09/06/09	45.2	31.1	10
VT 121208	83702416	black	09/09/06	45.2	31.1	10
VT 121212	83702418	black	09/09/09	45.2	31.1	10
VT 160816	83702420	black	11/06/11	49.1	34.8	10
VT 161212	83702422	black	11/09/09	49.1	34.8	10
VT 161216	83702424	black	11/09/11	49.1	34.8	10
VT 161612	83702426	black	11/11/09	49.1	34.8	10
VT 161616	83702428	black	11/11/11	49.1	34.8	10
VT 200820	83702430	black	16/06/16	56.5	41.0	10
VT 201216	83702432	black	16/09/11	56.5	41.0	10
VT 201220	83702434	black	16/09/16	56.5	41.0	10
VT 201616	83702436	black	16/11/11	56.5	41.0	10
VT 201620	83702438	black	16/11/16	56.5	41.0	10
VT 202016	83702440	black	16/16/11	56.5	41.0	10
VT 202020	83702441	black	16/16/16	56.5	41.0	10
VT 281220	83702442	black	21/09/16	64.5	48.6	10
VT 281620	83702444	black	21/ 11/16	64.5	48.6	10
VT 282020	83702446	black	21/16/16	64.5	48.6	10
VT 281228	83702448	black	21/09/21	64.5	48.6	10
VT 281628	83702450	black	21/11/21	64.5	48.6	10
VT 282028	83702452	black	21/16/21	64.5	48.6	10
VT 282828	83702454	black	21/21/21	64.5	48.6	10
VT 321632	83702456	black	29/11/29	72.0	55.3	10
VT 322032	83702458	black	29/16/29	72.0	55.3	10





Protectors / conduit couplings / conduit distributors

Type SVY



-40 to 110 °C
transient 140 °C



Mod. polyamide



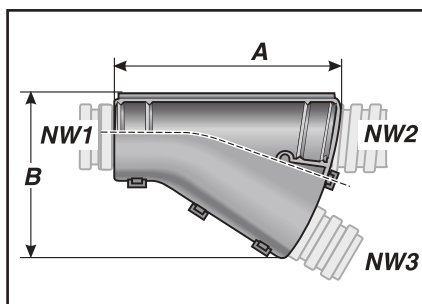
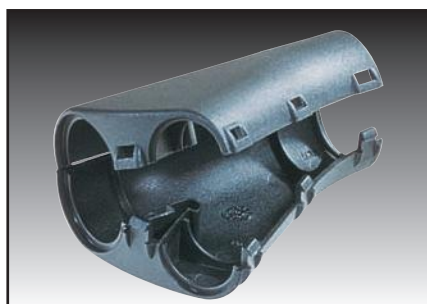
V0



IP 42

Y distributor for cable protection conduits with different diameters.

- Easy assembly by latching
- Split version makes routing of cables easy
- The distributor envelops the conduit, which means that the entire inside diameter of the conduit is available



SVY

Type	Order no.	Colour	for Murrflex with Standard corrugation NW1/NW2/NW3	A mm	B mm	Pack qty.
SVY 080808	83701410	black	06/06/06	54.6	37.1	10
SVY 120808	83701412	black	09/06/06	54.6	37.1	10
SVY 121208	83701414	black	09/06/06	54.6	37.1	10
SVY 121212	83701416	black	09/09/09	54.6	37.1	10
SVY 161208	83701418	black	11/09/06	54.6	39.8	10
SVY 161212	83701420	black	11/09/09	54.6	39.8	10
SVY 161608	83701422	black	11/11/06	54.9	39.8	10
SVY 161612	83701424	black	11/11/09	54.9	39.8	10
SVY 200808	83701426	black	16/06/06	42.8	39.8	10
SVY 201208	83701428	black	16/09/06	42.8	41.0	10
SVY 201212	83701430	black	16/09/09	42.8	41.0	10
SVY 201608	83701432	black	16/11/06	48.2	39.6	10
SVY 201612	83701434	black	16/11/09	48.2	39.6	10
SVY 202008	83701436	black	16/16/06	57.9	44.9	10
SVY 202012	83701438	black	16/16/09	57.9	44.9	10
SVY 202016	83701440	black	16/16/11	63.5	47.5	10
SVY 282012	83701442	black	21/16/09	53.5	49.0	10
SVY 282016	83701444	black	21/16/11	53.5	49.0	10
SVY 282812	83701446	black	21/21/09	67.0	56.5	10
SVY 282816	83701448	black	21/21/11	67.0	56.5	10
SVY 282820	83701450	black	21/21/16	76.5	50.0	10
SVY 282828	83701452	black	21/21/21	92.1	66.8	10

Type YPA-F



-30 to 100 °C



Mod. polyamide



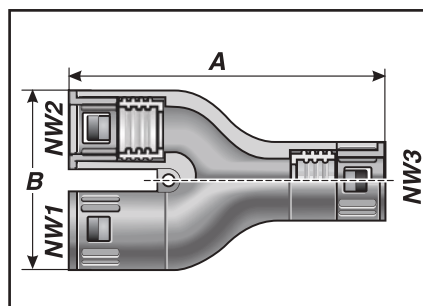
VO



IP 67

Y distributor made from polyamide for cable protection conduits with high protection rating.

- Easy assembly - just insert the cable protection conduit
- High protection class
- Closed design



YPA-F

[illegible]

Cable fittings



Material data

	Material				Temperature area [°C]			Protection class	Fire specifications UL94	Approvals			Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	RoHS Compliant
	Fitting	Clamping insert	Moulded seal	O-Ring	Min.	Max.	Short periods			VDE	UR / UL	CSA						
WKK	Polyamide PA6		NBR	NBR	-40	100	120	IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓	✓
WKK-Ex	Polyamide PA6		NBR	NBR	-20	105		IP 68	V0	✓	✓	✓	✓	✓	✓	✓	✓	✓
WKM	Brass nickel-plated	Polyamide PA6	NBR	NBR	-40	100	120	IP 68		✓	✓	✓						✓
MWKM	Brass nickel-plated	Polyamide PA6	Elastomer	NBR	-40	100	120	IP 65			✓	✓						✓
WKM-EMV	Brass nickel-plated	Polyamide PA6	NBR	NBR	-40	100	120	IP 68		✓	✓	✓						✓
KV-ME	Elastomer				-40	100	120	IP 65			✓		✓	✓	✓	✓	✓	✓

Cable fittings product range



Type WKK (plastic version)

Cable fittings with very good strain relief and vibration-resistant lockable cap nut. Combinable with multi-insert KV-ME.

Page 190



Type WKK-Ex (plastic version)

Cable fittings with very good strain relief for areas at risk of explosion. High protection class and large clamping range.

Page 192



Type WKM (metal version)

Cable fittings with very good strain relief and vibration-resistant lockable cap nut. Combinable with multi-insert KV-ME.

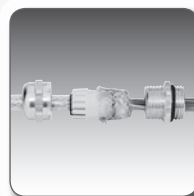
Page 194



Type MWKM (metal version with multi-insert)

The MWKM is a metal cable fitting with multi-insert that enables several cables to be routed through one cable fitting.

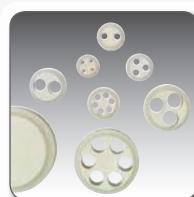
Page 195



Type WKM-EMV (metal version)

Shielded cables can be connected to earth potential using this cable fitting. Large clamping area.

Page 196



Type KV-ME (multi-insert)

Enables several cables to be routed through one fitting. The fitted seal insert in the cable fitting is simply swapped for the KV-ME multi-insert.

Page 197

Type WKK (plastic version)

RoHS
compliant



-40 to 100 °C
transient 120 °C



Mod. polyamide
Moulded seal: NBR



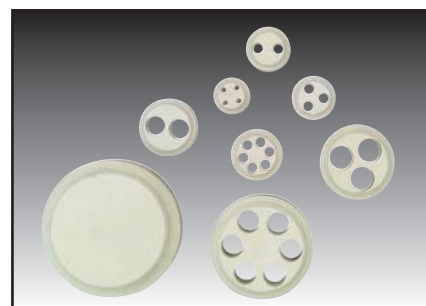
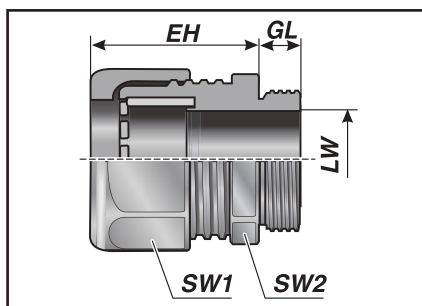
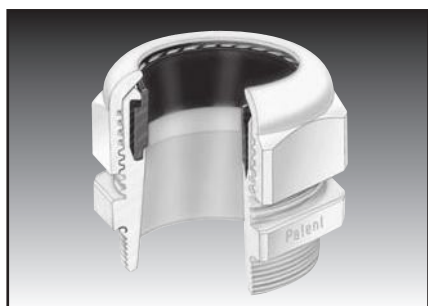
V0



IP 68 up to 10 bar
with additional O-ring, type OR

The cable fitting offers excellent strain relief and has a vibration-resistant cap nut. The multi-insert KV-ME enables several cables to be routed through one cable fitting.

- Very high protection class
- Easy to assemble
- Large clamping range
- An additional O-ring (type OR) is required in order to assure a protection rating of IP 68



WKK

Type	Order no.	Colour	Connecting thread	LW mm	EH mm	GL mm	SW 1/2 mm	Pack qty.
Metric version								
WKK-M12x1.5	84105050	black	M12x1.5	3.0–6.5	21.0	8.0	15/15	50
WKK-M16x1.5	84105056	black	M16x1.5	4.0–8.0	22.0	8.0	19/19	50
WKK-M20x1.5	84105062	black	M20x1.5	6.0–12.0	27.0	9.0	24/24	50
WKK-M25x1.5	84105068	black	M25x1.5	13.0–18.0	31.0	11.0	33/33	50
WKK-M32x1.5	84105074	black	M32x1.5	18.0–25.0	39.0	11.0	42/42	25
WKK-M40x1.5	84105080	black	M40x1.5	22.0–32.0	48.0	13.0	53/53	10
WKK-M50x1.5	84105086	black	M50x1.5	32.0–38.0	49.0	13.0	60/60	5
WKK-M63x1.5	84105092	black	M63x1.5	37.0–44.0	49.0	14.0	65/68	5
WKK-M12x1.5	84105000	grey	M12x1.5	3.0–6.5	21.0	8.0	15/15	50
WKK-M16x1.5	84105006	grey	M16x1.5	4.0–8.0	22.0	8.0	19/19	50
WKK-M20x1.5	84105012	grey	M20x1.5	6.0–12.0	27.0	9.0	24/24	50
WKK-M25x1.5	84105018	grey	M25x1.5	13.0–18.0	31.0	11.0	33/33	50
WKK-M32x1.5	84105024	grey	M32x1.5	18.0–25.0	39.0	11.0	42/42	25
WKK-M40x1.5	84105030	grey	M40x1.5	22.0–32.0	48.0	13.0	53/53	10
WKK-M50x1.5	84105036	grey	M50x1.5	32.0–38.0	49.0	13.0	60/60	5
WKK-M63x1.5	84105042	grey	M63x1.5	37.0–44.0	49.0	14.0	65/68	5
Metric version with extended thread								
WKK/L-M12x1.5	84105650	black	M12x1.5	3.0–6.5	21.0	15.0	15/15	100
WKK/L-M16x1.5	84105652	black	M16x1.5	4.0–8.0	22.0	15.0	19/19	100
WKK/L-M20x1.5	84105654	black	M20x1.5	6.0–12.0	27.0	15.0	24/24	100
WKK/L-M25x1.5	84105656	black	M25x1.5	13.0–18.0	31.0	15.0	33/33	100

Type WKK (plastic version)

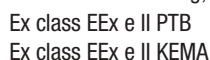
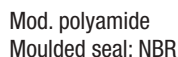
RoHS
compliant

Type	Order no.	Colour	Connecting thread	LW mm	EH mm	GL mm	SW 1/2 mm	Pack qty.
Pg version								
WKK-Pg 07	84101050	black	Pg 07	3.0–6.5	21.0	8.0	15/15	50
WKK-Pg 09	84101052	black	Pg 09	4.0–8.0	22.0	8.0	19/19	50
WKK-Pg 11	84101054	black	Pg 11	5.0–10.0	25.0	8.0	22/22	50
WKK-Pg 13.5	84101056	black	Pg 13.5	6.0–12.0	27.0	9.0	24/24	50
WKK-Pg 16	84101058	black	Pg 16	10.0–14.0	28.0	10.0	27/27	50
WKK-Pg 21	84101060	black	Pg 21	13.0–18.0	31.0	11.0	33/33	50
WKK-Pg 29	84101062	black	Pg 29	18.0–25.0	39.0	11.0	42/42	25
WKK-Pg 36	84101064	black	Pg 36	22.0–32.0	48.0	13.0	53/53	10
WKK-Pg 42	84101066	black	Pg 42	32.0–38.0	49.0	13.0	60/60	5
WKK-Pg 48	84101068	black	Pg 48	37.0–44.0	49.0	13.0	65/65	5
WKK-Pg 07	84101010	grey	Pg 07	3.0–6.5	21.0	8.0	15/15	50
WKK-Pg 09	84101012	grey	Pg 09	4.0–8.0	22.0	8.0	19/19	50
WKK-Pg 11	84101014	grey	Pg 11	5.0–10.0	25.0	8.0	22/22	50
WKK-Pg 13.5	84101016	grey	Pg 13.5	6.0–12.0	27.0	9.0	24/24	50
WKK-Pg 16	84101018	grey	Pg 16	10.0–14.0	28.0	10.0	27/27	50
WKK-Pg 21	84101020	grey	Pg 21	13.0–18.0	31.0	11.0	33/33	50
WKK-Pg 29	84101022	grey	Pg 29	18.0–25.0	39.0	11.0	42/42	25
WKK-Pg 36	84101024	grey	Pg 36	22.0–32.0	48.0	13.0	53/53	10
WKK-Pg 42	84101026	grey	Pg 42	32.0–38.0	49.0	13.0	60/60	5
WKK-Pg 48	84101028	grey	Pg 48	37.0–44.0	49.0	13.0	65/65	5
Pg version with extended thread								
WKK/L-Pg 07	84101650	black	Pg 07	3–6.5	21.0	15.0	15/15	50
WKK/L-Pg 09	84101652	black	Pg 09	4–8	22.0	15.0	19/19	50
WKK/L-Pg 11	84101654	black	Pg 11	5–10	25.0	15.0	22/22	50
WKK/L-Pg 13.5	84101656	black	Pg 13.5	6–12	27.0	15.0	24/24	50
WKK/L-Pg 16	84101658	black	Pg 16	10–14	28.0	15.0	27/27	50
WKK/L-Pg 21	84101660	black	Pg 21	13–18	31.0	15.0	33/33	50
WKK/L-Pg 29	84101662	black	Pg 29	18–25	39.0	15.0	42/42	25
WKK/L-Pg 36	84101664	black	Pg 36	22–32	48.0	18.0	53/53	10
WKK/L-Pg 42	84101666	black	Pg 42	32–38	49.0	18.0	60/60	5
WKK/L-Pg 48	84101668	black	Pg 48	37–44	49.0	18.0	65/65	5
WKK/L-Pg 07	84101610	grey	Pg 07	3–6.5	21.0	15.0	15/15	50
WKK/L-Pg 09	84101612	grey	Pg 09	4–8	22.0	15.0	19/19	50
WKK/L-Pg 11	84101614	grey	Pg 11	5–10	25.0	15.0	22/22	50
WKK/L-Pg 13.5	84101616	grey	Pg 13.5	6–12	27.0	15.0	24/24	50
WKK/L-Pg 16	84101618	grey	Pg 16	10–14	28.0	15.0	27/27	50
WKK/L-Pg 21	84101620	grey	Pg 21	13–18	31.0	15.0	33/33	50
WKK/L-Pg 29	84101622	grey	Pg 29	18–25	39.0	15.0	42/42	25
WKK/L-Pg 36	84101624	grey	Pg 36	22–32	48.0	18.0	53/53	10
WKK/L-Pg 42	84101626	grey	Pg 42	32–38	49.0	18.0	60/60	5
WKK/L-Pg 48	84101628	grey	Pg 48	37–44	49.0	18.0	65/65	5
NPT version								
WKK / NPT 3/8"	84102050	black	3/8"	2–6	22	15.0	19/22	50
WKK / NPT 3/8"	84102052	black	3/8"	4–8	22	15.0	19/22	50
WKK / NPT 1/2"	84102054	black	1/2"	5–9	27	13.0	24/24	50
WKK / NPT 1/2"	84102056	black	1/2"	9–12	28	13.0	24/24	50



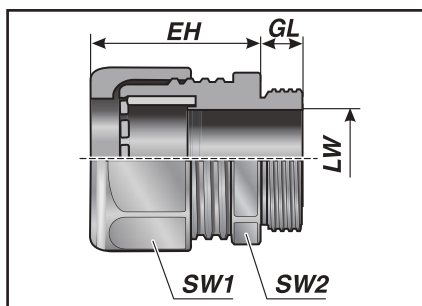


RoHS
compliance



Cable fitting with high protection class for areas at risk of explosion.
The cable fitting offers excellent strain relief and has a vibration-resistant cap nut.

- Very high protection class
- Approved for areas at risk of explosion
- Large clamping range
- An additional O-ring (type OR) is required in order to reach a protection rating of IP 68



WKK-EX

Type WKM (metal version)



-40 to 100 °C
transient 120 °C



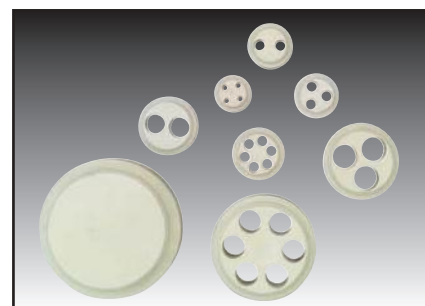
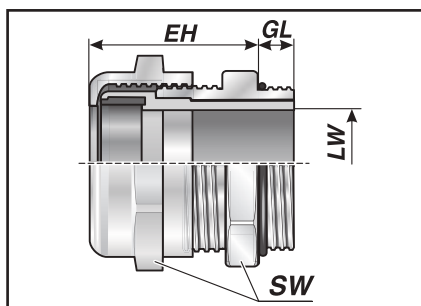
Brass, nickel-plated
mod. polyamide; NBR



IP 68 up to 10 bar

The cable fitting offers excellent strain relief and has a vibration-resistant cap nut. The multi-insert KV-ME enables several cables to be routed through one cable fitting.

- Very high protection class
- Easy to assemble
- Large clamping range
- Includes sealing ring on connecting thread



WKM

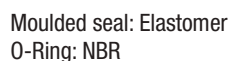
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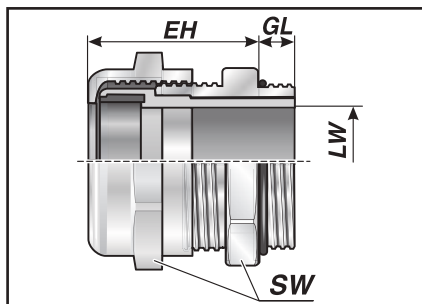
RoHS
compliant



RoHS
compliant



- Integrated multi-insert
- High tightness
- Easy to assemble
- Includes sealing ring on connecting thread



Type KV-ME (multi-insert)

RoHS
compliant



-40 to 100 °C
transient 120 °C



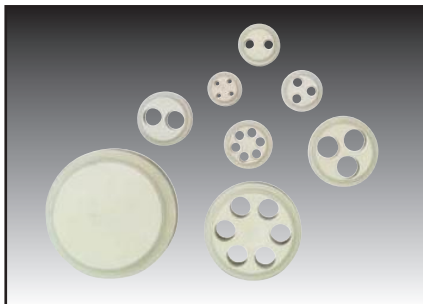
Elastomer



IP 65

The KV-ME multi-insert can be used both in WKK cable fittings and in WKM cable fittings. This enables several cables to be routed through one fitting. The fitted seal insert in the cable fitting is simply swapped for the KV-ME multi-insert. The cable diameter may be up to 20% less than the diameter of the hole, but must not undershoot the hole diameter by less than 1 mm.

- Variable
- More cables through one fitting
- High protection class



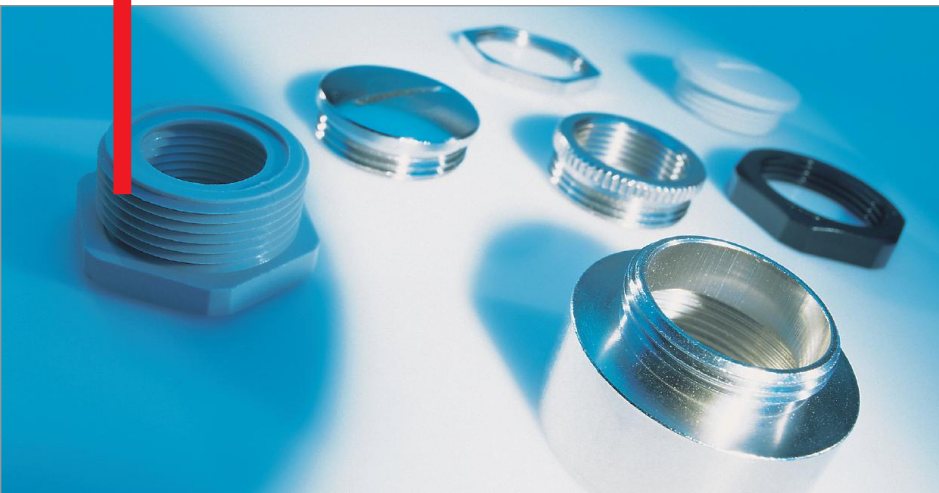
KV-ME

Type	Order no.	Number x Ø mm	Suitable for metric	Suitable for Pg	Suitable for NPT	Pack qty.
KV-ME M16/Pg09-4x1.4	8358221000	4 x 1.4	M 16	Pg 09	NPT 3/8"	50
KV-ME M16/Pg09-2x3	8358221200	2 x 3	M 16	Pg 09	NPT 3/8"	50
KV-ME M20/Pg13.5-2x5	8358222000	2 x 5	M 20	Pg 13.5	NPT 1/2"	50
KV-ME M20/Pg13.5-3x2	8358222200	3 x 2	M 20	Pg 13.5	NPT 1/2"	50
KV-ME M20/Pg13.5-3x4	8358222400	3 x 4	M 20	Pg 13.5	NPT 1/2"	50
KV-ME M20/Pg13.5-6x3	8358222600	6 x 3	M 20	Pg 13.5	NPT 1/2"	50
KV-ME Pg11-2x3	8358221400	2 x 3	-	Pg 11	-	50
KV-ME Pg11-2x4	8358221600	2 x 4	-	Pg 11	-	50
KV-ME Pg11-3x3	8358221800	3 x 3	-	Pg 11	-	50
KV-ME Pg16-2x6	8358222800	2 x 6	-	Pg 16	-	50
KV-ME Pg16-3x3	8358223000	3 x 3	-	Pg 16	-	50
KV-ME Pg16-3x4	8358223200	3 x 4	-	Pg 16	-	50
KV-ME Pg16-3x5.6	8358223400	3 x 5.6	-	Pg 16	-	50
KV-ME Pg16-4x4	8358223600	4 x 4	-	Pg 16	-	50
KV-ME Pg16-5x4	8358223800	5 x 4	-	Pg 16	-	50
KV-ME Pg16-6x4	8358224000	6x4	-	Pg 16	-	50
KV-ME M25/Pg21-2x8	8358224200	2 x 8	M 25	Pg 21	NPT 3/4"	50
KV-ME M25/Pg21-3x7	8358224400	3 x 7	M 25	Pg 21	NPT 3/4"	50
KV-ME M25/Pg21-4x6	8358224600	4 x 6	M 25	Pg 21	NPT 3/4"	50
KV-ME M32/Pg29-6x6.5	8358224800	6 x 6.5	M 32	Pg 29	-	50
KV-ME M32/Pg29-4x9	8358225000	4 x 9	M 32	Pg 29	-	25
KV-ME M40/Pg36-blank	8358228400	-	M 40	Pg 36	NPT 1 1/2"	25





Accessories



Accessories product range



Type SB/SBF (spiral tape)

Spiral tapes are used to bundle cable harnesses efficiently and simply. The spiral tapes also protect the insulation of the wires.

Page 222



Type BN (fixing rivets)

Plastic expansion rivets for the quick installation of components, e.g. cable ducts.

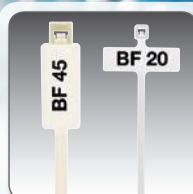
Page 223



Type KB/KBM (cable ties)

Cable ties are a reliable method for the economic bundling and fastening of cables. Metal cable ties KBM for EMV solutions.

Page 224



Type BF (cable tie)

Cable tie with title block. For use with ink pens or permanent waterproof markers.

Page 226



Type SH (screwed holders)

The SH screw-down holder is used to fix individual cables using screw or rivets cost-effectively.

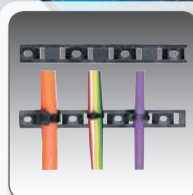
Page 227



Type KH (screwed and adhesive holders)

Adhesive holder, plastic. The retention force can be increased by additional fastening with a screw.

Page 228



Type KBL (cable tie rail)

Quick and easy fitting of cables. Cable ties may be pushed on if a rail is already fitted.

Page 229



Type OR-NBR (O-ring)

O-ring for sealing threaded connections resulting in higher protection ratings, e.g. on cable fittings.

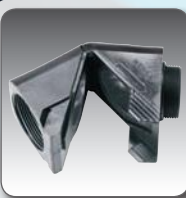
Page 216



Type ET (end sleeve)

The open end of a conduit can be closed using the end sleeve and protruding cables can be centred.

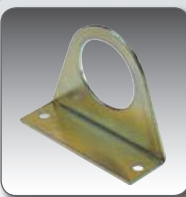
Page 217



Type KAW (plastic connection angle)

The KAW 90° plastic connection angle is a foldable angle connector. Combinable with cable or conduit fittings.

Page 218



Type BWM (angle bracket)

Universal holder for fastening fittings to equipment and machinery.

Page 219



Type SS (conduit clamp)

Conduit clamps for easy attachment of conduits from our conduit product range.

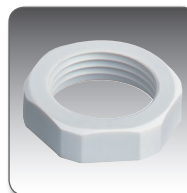
Page 220



Type SSG (conduit clamp)

Metal conduit clamp with halogen-free elastomer coating.

Page 221



Type KGM (plastic locknut)

Plastic locknut made from self-extinguishing polyamide with metric or Pg thread.

Page 204



Type GM (metal locknut)

Lock nut made of metal with metric or Pg thread.

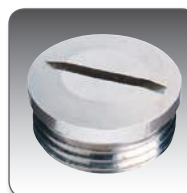
Page 206



Type BSTK (plastic dummy plug)

Dummy plug made of plastic with metric or Pg thread. IP 65 protection rating is achieved using additional O-ring type OR.

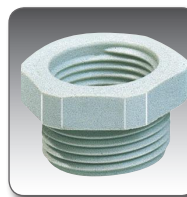
Page 207



Type BST (metal dummy plug)

Dummy plug made of metal with metric or Pg thread. IP 65 protection rating is achieved using additional O-ring type OR.

Page 209



Type KRR (plastic reducing bush)

Thread reducing bush made of plastic with metric or Pg thread.

Page 210



Type RR (metal reducing bush)

Thread reducing bush made of metal with metric or Pg thread. Knurled or hexagon version, depending on type.

Page 212

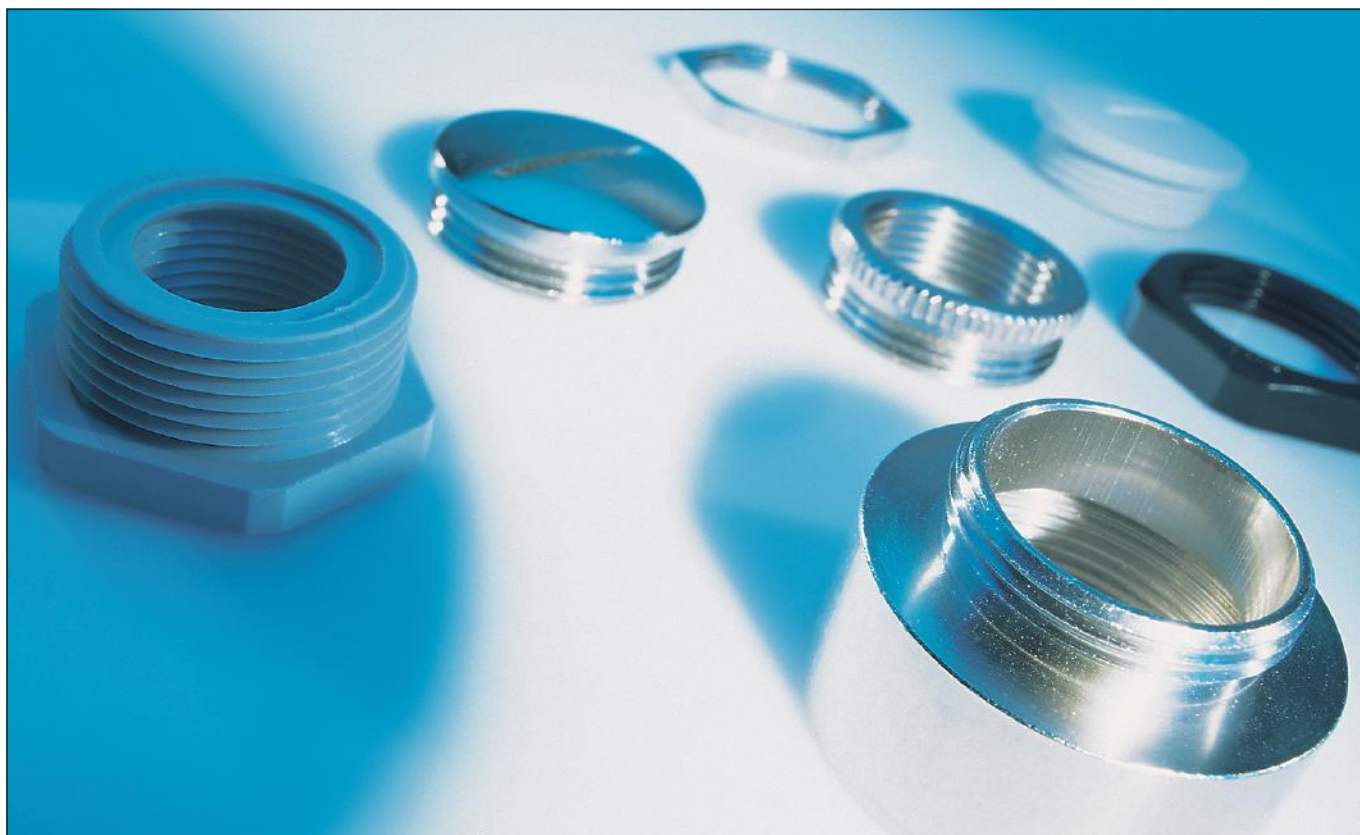


Type ER/EG (metal extension)

Thread extension made of metal with metric or Pg thread. Round or hexagonal version, depending on type.

Page 214

Advantages



Without accessories nothing works

A comprehensive range of accessories is available, including locknuts, reducing bushes, various fasteners, cable ties, etc.

Different materials, thread types and thread sizes ensure a wide range of uses for many applications.



- ✓ Large range of accessories
- ✓ Different materials
- ✓ Various thread types and sizes
- ✓ Universal
- ✓ Easy handling

Material data

	Material	Temperature area [°C]			Fire specifications UL94	Halogen-free	Phosphorous-free	Cadmium-free	Asbestos-free	Lead-free	Silicone-free	RoHS Compliant
		Min.	Max.	Short periods								
KGM	Polyamide PA6	-30	100	130	V0	✓	✓	✓	✓	✓	✓	✓
GM	Brass, nickel-plated											✓
BSTK	Polyamide PA6	-30	100	130	HB	✓	✓	✓	✓	✓	✓	✓
BST	Brass, nickel-plated											✓
KRR	Polyamide PA6	-30	100	130	HB	✓	✓	✓	✓	✓	✓	✓
RR	Brass, nickel-plated											✓
ER	Brass, nickel-plated											✓
EG	Brass, nickel-plated											✓
OR-NBR	NBR	-25	120			✓	✓	✓	✓	✓	✓	✓
ET	Thermoplastic elastomer	-40	120	150	HB	✓	✓	✓	✓	✓	✓	✓
KAW	Polyamide PA6 / NBR	-20	80		V0	✓	✓	✓	✓	✓	✓	✓
BWM	Galvanised sheet steel											✓
SS	Galvanised sheet steel											
SSG	Sheet steel, galvanised / EPDM											✓
SB	Polyethylene	-60	85			✓	✓	✓	✓	✓	✓	✓
SBF	Polyethylene	-60	85		V0	✓	✓	✓	✓	✓	✓	✓
BN	Hostalene	-40	80			✓	✓	✓	✓	✓	✓	✓
KB natural colour	Polyamide PA6.6	-25	85		V0	✓	✓	✓	✓	✓	✓	
KB black	Polyamide PA6.6 UV stabilized	-40	105		V0	✓	✓	✓	✓	✓	✓	
KKB	Polyamide PA6.6 UV stabilized	-40	105		V0	✓	✓	✓	✓	✓	✓	
KBM	Stainless steel 1.4301											
BF	Polyamide PA6.6	-25	85			✓	✓	✓	✓	✓	✓	
SH	Polyamide PA6.6	-40	85			✓	✓	✓	✓	✓	✓	
KH	Polyamide PA6.6	-40	85			✓	✓	✓	✓	✓	✓	
KBL	Polyamide PA6.6	-40	80		V0	✓	✓	✓	✓	✓	✓	✓

Type KGM (plastic lock nut)

RoHS
compliant



-30 to 100 °C
transient 130 °C

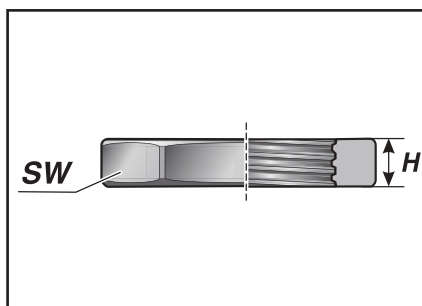
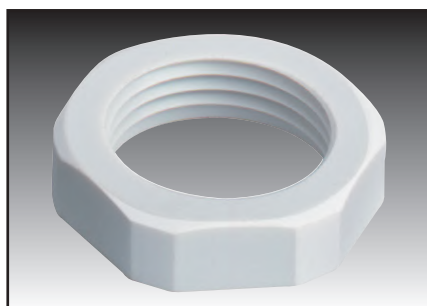


Mod. polyamide



V0

Plastic lock nut with self-extinguishing polyamide with metric or Pg thread.



KGM

Type	Order no.	Colour	Internal thread	H mm	SW mm	Pack qty.
Metric version						
KGM-M12x1.5	83727250	black	M12x1.5	5.0	17	100
KGM-M16x1.5	83727252	black	M16x1.5	5.0	22	100
KGM-M20x1.5	83727254	black	M20x1.5	6.0	26	100
KGM-M25x1.5	83727256	black	M25x1.5	6.0	32	100
KGM-M32x1.5	83727258	black	M32x1.5	7.0	41	100
KGM-M40x1.5	83727260	black	M40x1.5	7.0	50	50
KGM-M50x1.5	83727262	black	M50x1.5	8.0	60	50
KGM-M63x1.5	83727264	black	M63x1.5	8.0	75	50
KGM-M12x1.5	83727210	grey	M12x1.5	5.0	17	100
KGM-M16x1.5	83727212	grey	M16x1.5	5.0	22	100
KGM-M20x1.5	83727214	grey	M20x1.5	6.0	26	100
KGM-M25x1.5	83727216	grey	M25x1.5	6.0	32	100
KGM-M32x1.5	83727218	grey	M32x1.5	7.0	41	100
KGM-M40x1.5	83727220	grey	M40x1.5	7.0	50	50
KGM-M50x1.5	83727222	grey	M50x1.5	8.0	60	50
KGM-M63x1.5	83727224	grey	M63x1.5	8.0	75	50
Pg version						
KGM-Pg 07	83722250	black	Pg 07	5.0	19	100
KGM-Pg 09	83722252	black	Pg 09	5.0	22	100
KGM-Pg 11	83722254	black	Pg 11	5.0	24	100
KGM-Pg 13.5	83722256	black	Pg 13.5	6.0	27	100
KGM-Pg 16	83722258	black	Pg 16	6.0	30	100
KGM-Pg 21	83722260	black	Pg 21	6.5	36	100
KGM-Pg 29	83722262	black	Pg 29	7.0	46	50
KGM-Pg 36	83722264	black	Pg 36	7.5	60	25



Type KGM (plastic lock nut)

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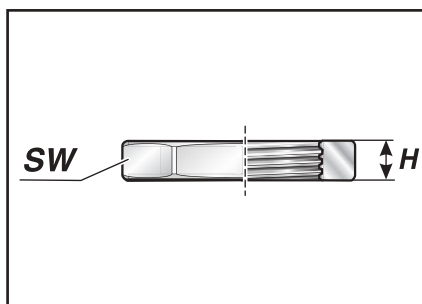
Type GM (metal lock nut)

RoHS
compliant



Brass, nickel-plated

Lock nut made of metal with metric or Pg thread.



GM

Type	Order no.	Internal thread	H mm	SW mm	Pack qty.
Metric version					
GM-M12x1.5	83727010	M12x1.5	2.8	15	100
GM-M16x1.5	83727012	M16x1.5	2.8	19	100
GM-M20x1.5	83727014	M20x1.5	3.0	24	100
GM-M25x1.5	83727016	M25x1.5	3.5	30	100
GM-M32x1.5	83727018	M32x1.5	4.5	36	100
GM-M40x1.5	83727020	M40x1.5	5.0	46	50
GM-M50x1.5	83727022	M50x1.5	5.0	60	50
GM-M63x1.5	83727024	M63x1.5	6.0	70	50
Pg version					
GM-Pg 07	83722010	Pg 07	2.8	15	100
GM-Pg 09	83722012	Pg 09	2.8	18	100
GM-Pg 11	83722014	Pg 11	3.0	21	100
GM-Pg 13.5	83722016	Pg 13.5	3.0	23	100
GM-Pg 16	83722018	Pg 16	3.0	26	100
GM-Pg 21	83722020	Pg 21	3.5	32	100
GM-Pg 29	83722022	Pg 29	4.0	41	100
GM-Pg 36	83722024	Pg 36	5.0	51	50
GM-Pg 42	83722026	Pg 42	5.0	60	50
GM-Pg 48	83722028	Pg 48	5.5	64	50

Type BSTK (plastic dummy plug)

RoHS
compliant



-30 to 100 °C
transient 130 °C



Mod. polyamide

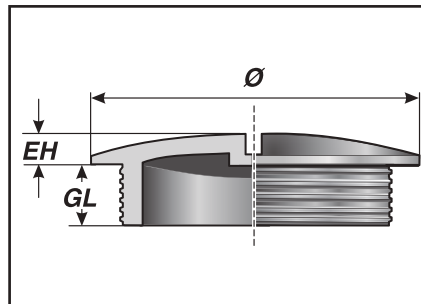


HB



IP 54
IP 65 with add. sealing ring type OR

Dummy plug made of plastic with metric or Pg thread.
IP 65 protection rating is achieved using additional O-ring type OR
(O-ring not included in delivery).



BSTK

Type	Order no.	Colour	Outside thread	EH mm	GL mm	Ø mm	Pack qty.
Metric version							
BSTK-M12x1.5	83726450	black	M12x1.5	3.0	6.0	15.0	100
BSTK-M16x1.5	83726452	black	M16x1.5	3.5	6.0	20.0	100
BSTK-M20x1.5	83726454	black	M20x1.5	4.0	6.0	24.0	100
BSTK-M25x1.5	83726456	black	M25x1.5	4.5	8.0	30.0	100
BSTK-M32x1.5	83726458	black	M32x1.5	4.5	8.0	37.0	100
BSTK-M40x1.5	83726460	black	M40x1.5	5.5	8.0	46.0	50
BSTK-M50x1.5	83726462	black	M50x1.5	5.5	10.0	56.0	50
BSTK-M63x1.5	83726464	black	M63x1.5	4.5	12.0	70.0	50
BSTK-M12x1.5	83726410	grey	M12x1.5	3.0	6.0	15.0	100
BSTK-M16x1.5	83726412	grey	M16x1.5	3.5	6.0	20.0	100
BSTK-M20x1.5	83726414	grey	M20x1.5	4.0	6.0	24.0	100
BSTK-M25x1.5	83726416	grey	M25x1.5	4.5	8.0	30.0	100
BSTK-M32x1.5	83726418	grey	M32x1.5	4.5	8.0	37.0	100
BSTK-M40x1.5	83726420	grey	M40x1.5	5.5	8.0	46.0	50
BSTK-M50x1.5	83726422	grey	M50x1.5	5.5	10.0	56.0	50
BSTK-M63x1.5	83726424	grey	M63x1.5	4.5	12.0	70.0	50
Pg version							
BSTK-Pg 07	83721410	grey	Pg 07	1.5	6.0	15.0	100
BSTK-Pg 09	83721412	grey	Pg 09	2.5	6.0	19.0	100
BSTK-Pg 11	83721414	grey	Pg 11	3.0	6.0	22.0	100
BSTK-Pg 13.5	83721416	grey	Pg 13.5	3.5	6.0	25.0	100
BSTK-Pg 16	83721418	grey	Pg 16	3.5	6.0	27.0	100
BSTK-Pg 21	83721420	grey	Pg 21	3.5	8.0	33.0	100
BSTK-Pg 29	83721422	grey	Pg 29	3.5	8.0	44.0	100
BSTK-Pg 36	83721424	grey	Pg 36	5.0	10.0	55.0	50





RoHS
compliant

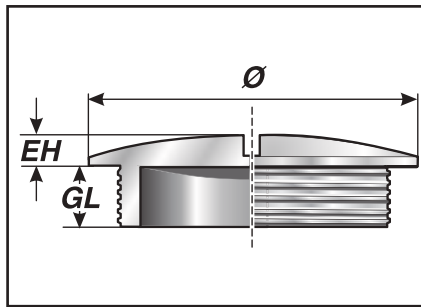


RoHS
compliant



IP 65 with add. sealing ring type OR

Dummy plug made of metal with metric or Pg thread.
IP 65 protection rating is achieved using additional O-ring type OR
(O-ring not included in delivery).

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Type KRR (plastic reducing bush)

RoHS
compliant



-30 to 100 °C
transient 130 °C

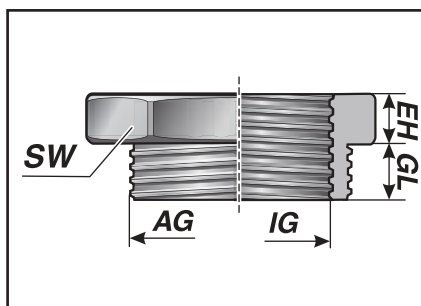
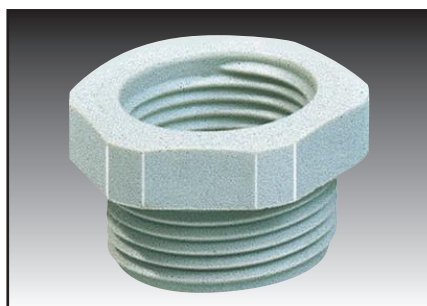


Mod. polyamide



HB

Thread reducing bush made of plastic with metric or Pg thread.
O-ring not included in delivery.



KRR

Type	Order no.	Colour	Outside thread AG	Internal thread IG	EH mm	GL mm	SW mm	Pack qty.
Metric/metric version								
KRR-M20/M12	83727450	black	M20x1.5	M12x1.5	4.0	8.0	24	100
KRR-M20/M16	83727452	black	M20x1.5	M16x1.5	4.0	8.0	24	100
KRR-M25/M12	83727454	black	M25x1.5	M12x1.5	6.0	8.0	30	100
KRR-M25/M16	83727456	black	M25x1.5	M16x1.5	6.0	8.0	30	100
KRR-M25/M20	83727458	black	M25x1.5	M20x1.5	6.0	8.0	30	100
KRR-M32/M12	83727460	black	M32x1.5	M12x1.5	6.0	10.0	36	50
KRR-M32/M16	83727462	black	M32x1.5	M16x1.5	6.0	10.0	36	50
KRR-M32/M20	83727464	black	M32x1.5	M20x1.5	6.0	10.0	36	50
KRR-M32/M25	83727466	black	M32x1.5	M25x1.5	6.0	10.0	36	50
KRR-M40/M16	83727468	black	M40x1.5	M16x1.5	6.0	10.0	46	50
KRR-M40/M20	83727470	black	M40x1.5	M20x1.5	6.0	10.0	46	50
KRR-M40/M25	83727472	black	M40x1.5	M25x1.5	6.0	10.0	46	50
KRR-M40/M32	83727474	black	M40x1.5	M32x1.5	6.0	10.0	46	50
KRR-M50/M20	83727476	black	M50x1.5	M20x1.5	6.0	12.0	55	25
KRR-M50/M25	83727478	black	M50x1.5	M25x1.5	6.0	12.0	55	25
KRR-M50/M32	83727480	black	M50x1.5	M32x1.5	6.0	12.0	55	25
KRR-M50/M40	83727482	black	M50x1.5	M40x1.5	6.0	12.0	55	25
KRR-M63/M25	83727484	black	M63x1.5	M25x1.5	6.0	12.0	68	25
KRR-M63/M32	83727486	black	M63x1.5	M32x1.5	6.0	12.0	68	25
KRR-M63/M40	83727488	black	M63x1.5	M40x1.5	6.0	12.0	68	25
KRR-M63/M50	83727490	black	M63x1.5	M50x1.5	6.0	12.0	68	25
KRR-M20/M12	83727400	grey	M20x1.5	M12x1.5	4.0	8.0	24	100
KRR-M20/M16	83727402	grey	M20x1.5	M16x1.5	4.0	8.0	24	100
KRR-M25/M12	83727404	grey	M25x1.5	M12x1.5	6.0	8.0	30	100
KRR-M25/M16	83727406	grey	M25x1.5	M16x1.5	6.0	8.0	30	100
KRR-M25/M20	83727408	grey	M25x1.5	M20x1.5	6.0	8.0	30	100

Type RR (metal reducing bush)

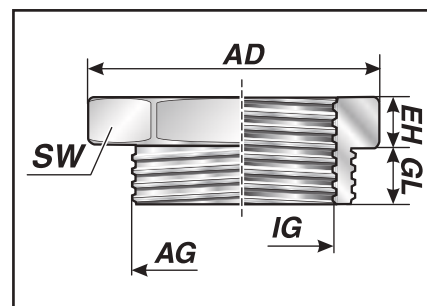
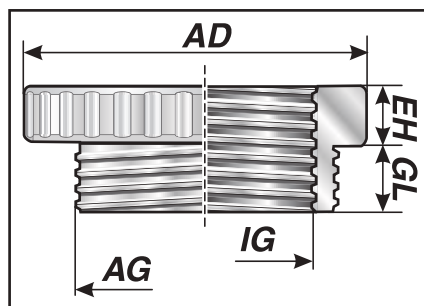
RoHS
compliant



Brass, nickel-plated

Thread reducing bush made of metal with metric or Pg thread.
Knurled or hexagon version, depending on type.

- Metric/metric
- Metric/Pg
- Pg/Pg



RR

Type	Order no.	Outside thread AG	Internal thread IG	EH mm	GL mm	AD mm	SW mm	Pack qty.
Metric/metric version (without O-ring)								
RR-M16/M12	83727610	M16x1.5	M12x1.5	2.5	6.0	20.0	-	100
RR-M20/M12	83727612	M20x1.5	M12x1.5	2.5	6.5	24.0	-	100
RR-M20/M16	83727614	M20x1.5	M16x1.5	2.5	6.5	24.0	-	100
RR-M25/M16	83727616	M25x1.5	M16x1.5	3.0	7.0	30.0	-	100
RR-M25/M20	83727618	M25x1.5	M20x1.5	3.0	7.0	30.0	-	100
RR-M32/M20	83727620	M32x1.5	M20x1.5	3.5	8.0	39.0	-	50
RR-M32/M25	83727622	M32x1.5	M25x1.5	3.5	8.0	39.0	-	50
RR-M40/M25	83727624	M40x1.5	M25x1.5	3.5	9.0	50.0	-	25
RR-M40/M32	83727626	M40x1.5	M32x1.5	3.5	9.0	50.0	-	25
RR-M50/M32	83727628	M50x1.5	M32x1.5	4.0	10.0	57.0	-	25
RR-M50/M40	83727630	M50x1.5	M40x1.5	4.0	10.0	57.0	-	25
RR-M63/M40	83727632	M63x1.5	M40x1.5	4.0	10.0	64.0	-	10
RR-M63/M50	83727634	M63x1.5	M50x1.5	4.0	10.0	64.0	-	10
Metric/Pg version (with O-ring on external thread)								
RR-M16/Pg7	83727810	M16x1.5	Pg 7	3.0	5.0	-	17	100
RR-M20/Pg9	83727812	M20x1.5	Pg 9	3.0	6.0	-	22	100
RR-M25/Pg9	83727814	M25x1.5	Pg 9	3.0	7.0	-	27	100
RR-M25/Pg11	83727816	M25x1.5	Pg 11	3.0	7.0	-	27	100
RR-M25/Pg13.5	83727818	M25x1.5	Pg 13.5	3.0	7.0	-	27	100
RR-M32/Pg13.5	83727820	M32x1.5	Pg 13.5	3.0	8.0	-	34	50
RR-M32/Pg16	83727822	M32x1.5	Pg 16	3.0	8.0	-	34	50
RR-M32/Pg21	83727824	M32x1.5	Pg 21	3.0	8.0	-	34	50
RR-M40/Pg16	83727826	M40x1.5	Pg 16	4.0	8.0	-	43	25
RR-M40/Pg21	83727828	M40x1.5	Pg 21	4.0	8.0	-	43	25
RR-M40/Pg29	83727830	M40x1.5	Pg 29	4.0	8.0	-	43	25
RR-M50/Pg21	83727832	M50x1.5	Pg 21	4.0	9.0	-	55	25

Type RR (metal reducing bush)

[illegible]

Type ER/EG (metal extension)

RoHS
compliant



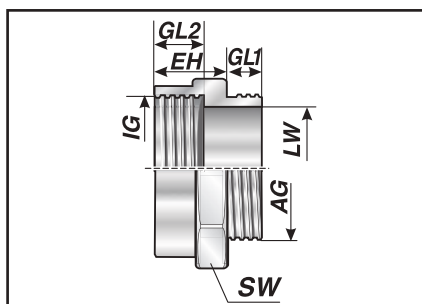
Brass, nickel-plated

Thread extension made of metal with metric or Pg thread.
Round or hexagon version, depending on type.
Some with O-ring on external thread.

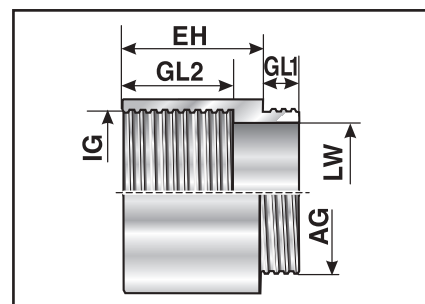
- Metric/metric
- Metric/Pg
- Pg/Pg



ER



ER



EG

Type	Order no.	Outside thread AG	Internal thread IG	EH mm	GL 1 mm	GL 2 mm	Ø mm	SW mm	Pack qty.
Metric/metric version									
ER-M12/M16	83728010	M12x1.5	M16x1.5	10.0	5.0	9.0	-	18	100
ER-M16/M20	83728012	M16x1.5	M20x1.5	10.5	5.0	9.5	-	22	100
ER-M20/M25	83728014	M20x1.5	M25x1.5	11.5	6.0	10.5	-	27	50
ER-M25/M32	83728016	M25x1.5	M32x1.5	12.5	7.0	11.0	-	34	50
ER-M32/M40	83728018	M32x1.5	M40x1.5	14.5	8.0	13.0	-	42	10
ER-M40/M50	83728020	M40x1.5	M50x1.5	19.5	8.0	18.0	-	52	10
ER-M50/M63	83728022	M50x1.5	M63x1.5	22.0	9.0	20.0	-	65	10
Metric/Pg version									
EG-M12/Pg 09	83726810	M12x1.5	Pg 09	10.0	5.0	9.0	17.0	-	100
EG-M16/Pg 11	83726812	M16x1.5	Pg 11	10.5	5.0	9.5	20.0	-	100
EG-M20/Pg 16 *	83726814	M20x1.5	Pg 16	12.5	6.0	10.5	24.0	-	100
EG-M25/Pg 21	83726816	M25x1.5	Pg 21	14.5	7.0	11.0	30.0	-	100
EG-M32/Pg 29 *	83726818	M32x1.5	Pg 29	22.0	8.0	13.0	39.0	-	50
EG-M40/Pg 36 *	83726820	M40x1.5	Pg 36	19.5	8.0	18.0	50.0	-	50
EG-M50/Pg 42 *	83726822	M50x1.5	Pg 42	22.0	9.0	20.0	57.0	-	25
EG-M50/Pg 48 *	83726824	M50x1.5	Pg 48	23.0	9.0	20.0	64.0	-	25
Pg/Pg version									
EG-Pg 07 / 09	83721810	Pg 07	Pg 09	10.0	5.0	9.0	17.0	-	100
EG-Pg 09/11	83721812	Pg 09	Pg 11	10.5	6.0	9.5	20.0	-	100
EG-Pg 09/13.5	83721814	Pg 09	Pg 13.5	10.5	6.0	10.5	22.0	-	100
EG-Pg 11/13.5	83721816	Pg 11	Pg 13.5	11.5	6.0	10.5	22.0	-	100
EG-Pg 11/16	83721818	Pg 11	Pg 16	11.5	6.0	11.0	24.0	-	100
EG-Pg 13.5/16	83721820	Pg 13.5	Pg 16	13.5	6.5	11.0	24.0	-	100
EG-Pg 16/21	83721822	Pg 16	Pg 21	15.5	6.5	13.0	30.0	-	100
EG-Pg 21/29	83721824	Pg 21	Pg 29	16.0	7.0	14.5	39.0	-	50

Type ER/EG (metal extension)

RoHS
compliant

Type	Order no.	Outside thread AG	Internal thread IG	EH mm	GL 1 mm	GL 2 mm	Ø mm	SW mm	Pack qty.
EG-Pg 29/36	83721826	Pg 29	Pg 36	19.5	8.0	18.0	50.0	-	25
EG-Pg 36/42	83721828	Pg 36	Pg 42	22.0	9.0	20.0	50.0	-	10
EG-Pg 42 / 48	83721830	Pg 42	Pg 48	23.0	10.0	21.0	64.0	-	10
Pg/metric version									
ER-Pg 07 / M12	83728210	Pg 07	M12x1.5	10.0	5.0	7.5	-	14	100
ER-Pg 09/M16	83728212	Pg 09	M16x1.5	10.0	6.0	7.5	-	19	100
ER-Pg 11/M16	83728214	Pg 11	M16x1.5	10.0	6.0	7.5	-	22	100
ER-Pg 13.5/M16	83728216	Pg13.5	M20x1.5	11.0	6.5	8.5	-	24	100
ER-Pg 16/M16	83728218	Pg 16	M20x1.5	11.0	6.5	8.5	-	27	100
ER-Pg 16/M25	83728220	Pg 16	M25x1.5	12.0	6.5	9.5	-	30	100
ER-Pg 21/M25	83728222	Pg 21	M25x1.5	12.0	7.0	9.5	-	32	100
ER-Pg 21/M32	83728224	Pg 21	M32x1.5	13.0	7.0	10.5	-	36	100
ER-Pg 29/M40	83728226	Pg 29	M40x1.5	13.0	8.0	11.0	-	43	50
ER-Pg 36/M50	83728228	Pg 36	M50x1.5	14.0	9.0	11.5	-	55	25
* with O-ring on external thread									



Type OR-NBR (O-ring)



-25 to 120 °C

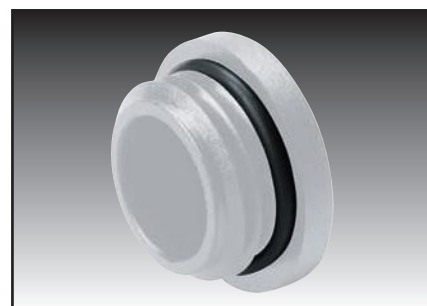


NBR

O-ring for sealing threaded connections resulting in higher protection ratings, e.g. on cable fittings.

For thread type:

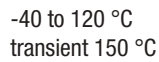
- Metric
- Pg
- NPT



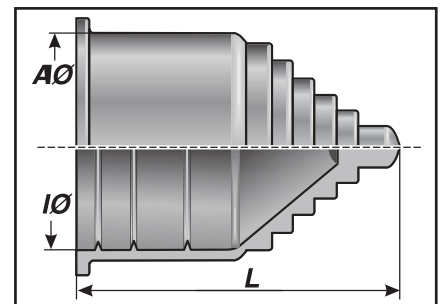
OR-NBR

216

Type ET (end sleeve)



- Opening of end sleeve variable (depending on the cable diameter used)
- Easy assembly
- Fixing of end sleeve to the cable protection conduit using ribs running round the inside

[illegible]

Type KAW (plastic connection angle)

RoHS
compliant



-20 to 80 °C



Mod. polyamide
NBR



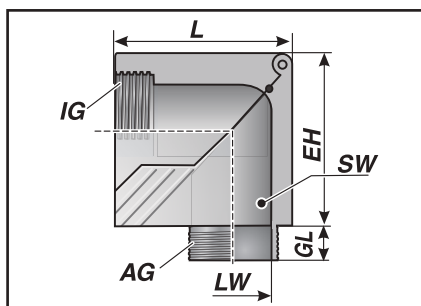
V0



IP 68

The KAW 90° plastic connection angle is a foldable angle connector. It can be combined freely with cable or conduit fittings.

- Easy cable insertion
- High protection rating IP 68
- Easy assembly
- Folds open
- Wide range of connection options
- Includes seal on connecting thread



KAW

Type	Order no.	Colour	AG	IG	EH mm	GL mm	L mm	LW mm	SW mm	Pack qty.
Metric version										
KAW-M 16x1.5	83661650	black	M 16x1.5	Pg 09	23.0	8.0	28.5	10.0	19	25
KAW-M 20x1.5	83661652	black	M 20x1.5	Pg 13.5	30.5	9.0	35.0	13.5	24	25
KAW-M 25x1.5	83661654	black	M 25x1.5	Pg 21	40.0	11.0	49.0	19.5	33	25
KAW-M 32x1.5	83661656	black	M 32x1.5	Pg 29	51.5	11.0	60.0	27.0	42	10
KAW-M 16x1.5	83661610	grey	M 16x1.5	Pg 09	23.0	8.0	28.5	10.0	19	25
KAW-M 20x1.5	83661612	grey	M 20x1.5	Pg 13.5	30.5	9.0	35.0	13.5	24	25
KAW-M 25x1.5	83661614	grey	M 25x1.5	Pg 21	40.0	11.0	49.0	19.5	33	25
KAW-M 32x1.5	83661616	grey	M 32x1.5	Pg 29	51.5	11.0	60.0	27.0	42	10
Pg version										
KAW-Pg 09	83661050	black	Pg 09	Pg 09	23.0	8.0	28.5	10.0	19	25
KAW-Pg 11	83661052	black	Pg 11	Pg 11	27.0	8.0	31.5	12.0	22	25
KAW-Pg 13.5	83661054	black	Pg 13.5	Pg 13.5	30.5	9.0	35.0	13.5	24	25
KAW-Pg 16	83661056	black	Pg 16	Pg 16	32.5	10.0	37.5	16.0	27	25
KAW-Pg 21	83661058	black	Pg 21	Pg 21	40.0	11.0	49.0	20.0	33	25
KAW-Pg 29	83661060	black	Pg 29	Pg 29	51.5	11.0	60.0	27.0	42	10
KAW-Pg 09	83661012	grey	Pg 09	Pg 09	23.0	8.0	28.5	10.0	19	25
KAW-Pg 11	83661014	grey	Pg 11	Pg 11	27.0	8.0	31.5	12.0	22	25
KAW-Pg 13.5	83661016	grey	Pg 13.5	Pg 13.5	30.5	9.0	35.0	13.5	24	25
KAW-Pg 16	83661018	grey	Pg 16	Pg 16	32.5	10.0	37.5	16.0	27	25
KAW-Pg 21	83661020	grey	Pg 21	Pg 21	40.0	11.0	49.0	20.0	33	25
KAW-Pg 29	83661022	grey	Pg 29	Pg 29	51.5	11.0	60.0	27.0	42	10

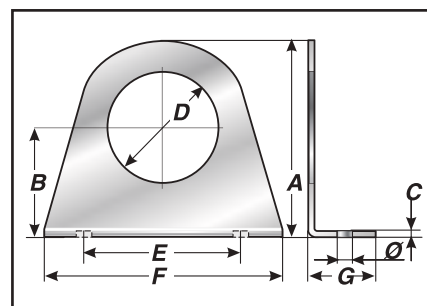
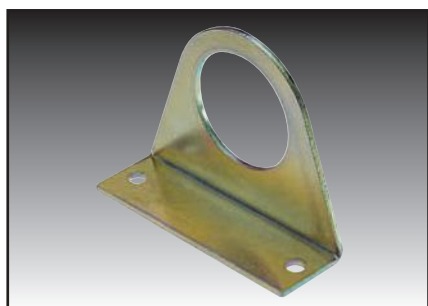
Type BWM (angle bracket)



Galvanised sheet steel

Universal holder for fastening fittings to equipment and machinery.

- Quick and easy fastening
- For Pg and metric fittings
- Fittings secured with lock nut



BWM

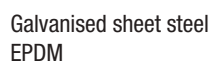
[illegible]



Conduit clamps for easy attachment of conduits from our conduit product range.

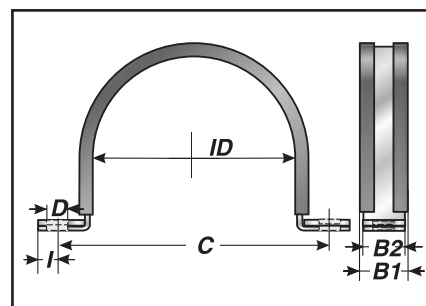
[illegible]

RoHS
compliant



Metal conduit clamp with halogen-free elastomer coating.

- Quick and easy assembly
- For all cable protection conduits



From SSG 70



Type BN (fixing rivets)

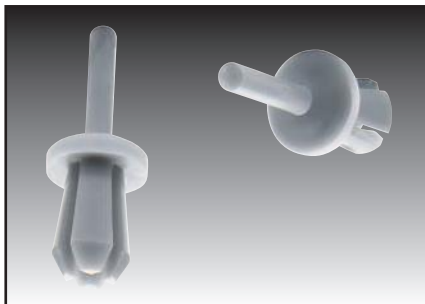


-40 to 80 °C



Hostalene

Plastic expansion rivets for the quick installation of components, e.g. cable ducts.



BN



BNW

[illegible]

Type KB/KBM (cable ties)



natural colours: -25 to 85 °C
black: -40 to 105 °C



KB: Polyamide 6.6
KBM: Stainless steel 1.4301



KB black: V0
KKB: V0



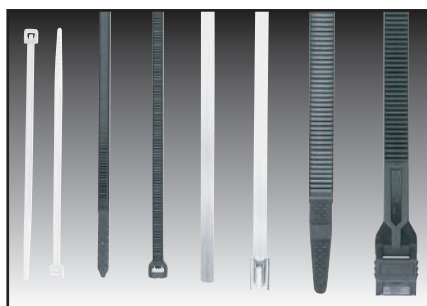
Cable ties in black
are UV stabilised

Cable ties are a reliable method for the economic bundling and fastening of cables, cable harnesses, tubes, conduits and other components.

The black cable ties are suitable for outdoor applications.

The cable tie KKB 28 is equipped with a special locking mechanism and is especially suitable for heavy-duty applications.

The KBM metal cable tie is ideally used for EMC solutions. It creates greater contact surface area for discharging sheath currents.



KB / KBM

Type	Order no.	Colour	Length mm	Width mm	Bundle range approx. mm	Tensile strength max. N	Pack qty.
KB 15	87661251	black	75	2.2	15	60	1000
KB 20	87661252	black	98	2.5	20	60	1000
KB 22	87661254	black	130	2.9	22	80	1000
KB 25	87661256	black	140	3.6	25	130	1000
KB 30	87661260	black	160	4.5	30	180	1000
KB 45	87661262	black	178	4.8	45	220	1000
KB 50	87661264	black	200	2.9	50	80	1000
KB 55	87661266	black	200	4.8	50	220	1000
KB 75	87661268	black	290	4.8	75	220	100
KB 100	87661270	black	360	4.8	100	220	100
KB 110	87661272	black	370	7.8	105	540	100
KB 15	87661210	natural colour	75	2.2	15	60	1000
KB 20	87661214	natural colour	98	2.5	20	60	1000
KB 22	87661218	natural colour	130	2.9	22	80	1000
KB 25	87661222	natural colour	140	3.6	25	130	1000
KB 30	87661226	natural colour	160	4.5	30	180	1000
KB 45	87661230	natural colour	178	4.8	45	220	1000
KB 50	87661234	natural colour	200	2.9	50	80	1000
KB 55	87661238	natural colour	200	4.8	50	220	1000
KB 75	87661242	natural colour	290	4.8	75	220	100
KB 100	87661246	natural colour	360	4.8	100	220	100
KB 110	87661248	natural colour	370	7.8	105	540	100
Recommended assembly tool for cable ties up to 6 mm wide: KBW 1K							
Recommended assembly tool for cable ties up to 8 mm wide: KKBW							

Type KB/KBM (cable ties)

[illegible]



Type BF (cable tie)



-25 to 85 °C



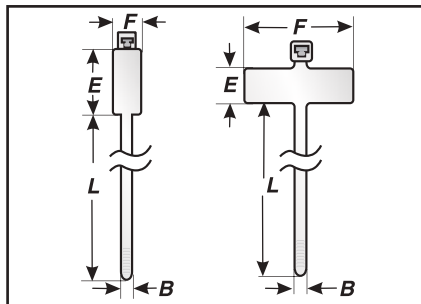
Mod. polyamide 6.6

Cable tie with title block.

For use with ink pens or permanent waterproof markers.

BF20 (Fig., right) title block lengthways along cable.

BF45 (Fig., left) title block across cable.



BF

Type	Order no. natural colour	Colour	L approx. mm	B approx. mm	E approx. mm	F approx. mm	Bundle range approx. mm	Tensile ity min. [N]	Pack qty.
BF 20	87681010	white	86.0	2.5	8.0	25.0	19.0	80.0	100
BF 45	87681012	transparent	157.0	4.7	28.0	13.0	45.0	222.0	100

The dimensions may deviate for technical or production reasons.

Type SH (screwed holders)

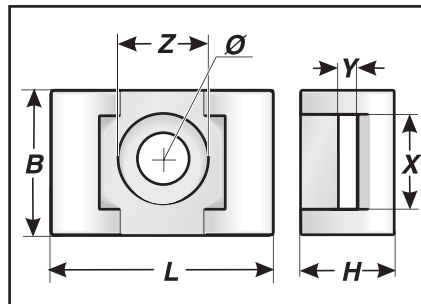


-40 to 85 °C



Mod. polyamide

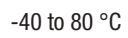
The SH screw-down holder is used to fix individual cables cost-effectively. It can be screwed or riveted to any surface.



SH

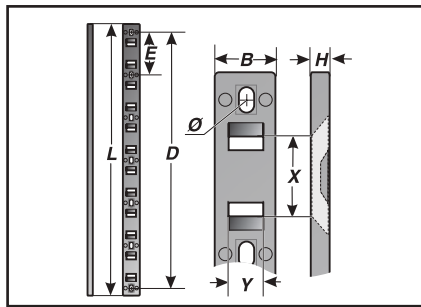
[illegible]

RoHS
compliant



Quick and easy fitting of cables.

Cable ties may be pushed on if a rail is already fitted.

[illegible]



Tools



Tools product range



Type KS (Cable shears)

Sturdy version of cable shears. Suitable for removing cable sheathing and braided shields.

Page 236



Type KM (Cable stripping knife)

Special cable stripping knife for stripping of wiring.

Page 237



Type UAZ (Stripping tongs)

Stripping tongs for single wires up to a diameter of 2.5 mm². A slider is used to adjust the stripping length.

Page 238



Type KBW/KKBW (Cable tie tools for plastic cable ties)

Tools for mounting of plastic cable ties. With manual cutting mechanism or automatic cutting mechanism.

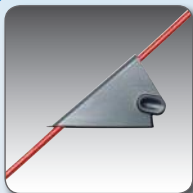
Page 240



Type KBW/M (Cable tie tool for metal ties)

Cable tie tools intended for metal cable ties of type KBM, robust tool made of metal with a manual cutting mechanism.

Page 241



Type KE
(Cable insertion tool)

Easy insertion of cables into split and slit cable protection conduits.

Page 234



Type BNW
(Riveting tool)

Only this tool brings out the full economical effect of the BN fixing rivet. The tools are matched to the size of the rivets.

Page 235



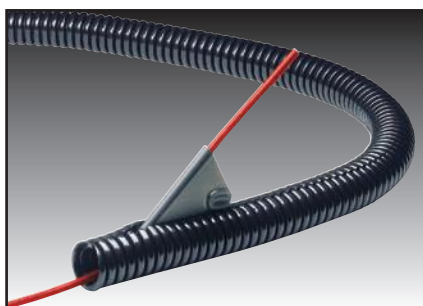
Type CrimmBoss
(Crimping tool for cable end sleeves)

Electromagnetic tool for crimping insulated cable end sleeves complete with accessories.

Page 239



Easy insertion of cables into split and slit cable protection conduits.

[illegible]



Type BNW (riveting tool)

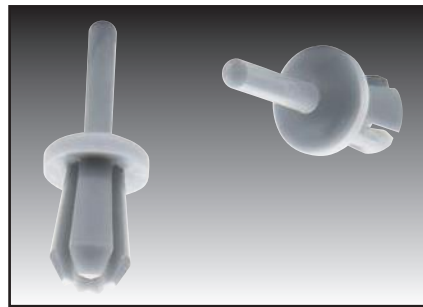


Steel

Only this tool brings out the full economical effect of the BN fixing rivet.
The tools are matched to the size of the rivets.
For type BN fixing rivets, see "Accessories" chapter.



BNW



BN

[illegible]



Sturdy version of cable shears. Suitable for removing cable sheathing and braided shields. EW-PAP cable protection conduit with metal braiding can be processed with these shears.

[illegible]

Type KM (Cable stripping knife)

Special cable stripping knife for stripping of wiring.



KM

[illegible]



Stripping tongs for single wires up to a diameter of 2.5 mm².
A slider is used to adjust the stripping length.
The stripping tongs possess an integrated cutting mechanism.

238

Type CrimmBoss (Crimping Tool for Cable End Sleeves)



- The CrimmBoss CB2 crimping process is only activated by mechanical contactors when the cable end sleeves have been completely and correctly inserted
- Magnetic holder MHC for simple assembly of the CrimmBoss
- Contact tongue, small, for diameter range 0.14–1.0 mm²
- Contact tongue, large, for diameter range 0.5–2.5 mm²
- Contact tongues included in delivery

- The Crimmboss CB2 crimping process is only activated by mechanical contactors when the cable end sleeves have been completely and correctly inserted
- Magnetic holder MHC for simple assembly of the Crimmboss
- Contact tongue, small, for diameter range 0.14–1.0 mm²
- Contact tongue, large, for diameter range 0.5–2.5 mm²
- Contact tongues included in delivery



Contact tongue

[illegible]

 Plastic
Steel

240

Type KBW/M (Cable tie tool for metal ties)



Steel

Cable tie tools intended for metal cable ties of type KBM, with manual cutting mechanism.
Robust metal tool.

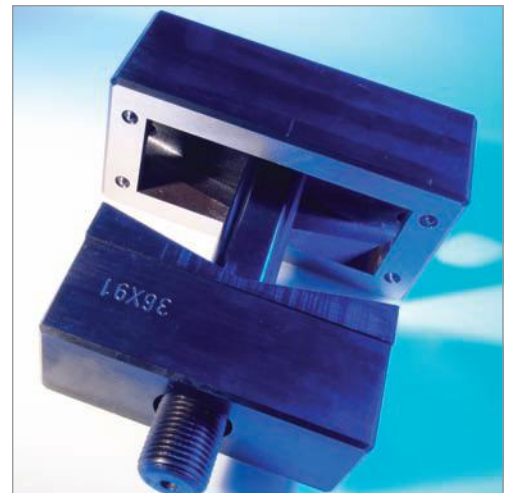
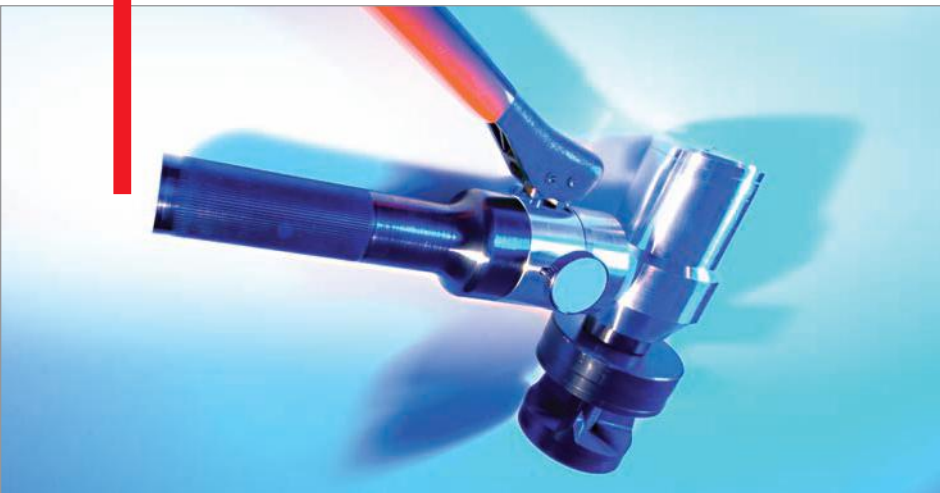


KBW/M

[illegible]



Punching tools



Advantages



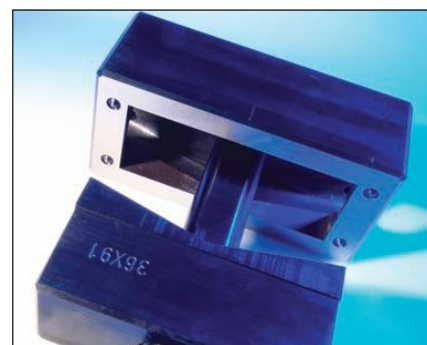
Punching tools

For years, Murrplastik Systemtechnik has been developing easy-to-assemble, maintenance-free connection systems for the routing of lines and cables.

Thanks to our practical punching tools, you now have the option of quickly and easily implementing the appropriate control cabinet cut-outs for our conduit and cable fittings, cable entry panels KDP and cable entry systems KDL and KDL/E.

You can choose between three different hydraulic punches and a wide range of punching tools.

Punching tools are available for sheet steel and for stainless steel applications.



- ✓ Compact construction
- ✓ For workshop and assembly
- ✓ Long service life
- ✓ Easy handling
- ✓ Compatible with many other systems

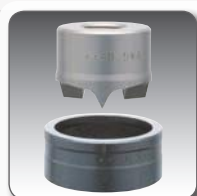
Punching tool product range



Type SW-WR / SW-WQ (Punching tools rectangular / square)

Several punching tools for the creation of square or rectangular cut-outs.

Page 248



Type SW-WE (Punching tools round)

Round hole punch, individual tools for steel or stainless steel plates.

Page 250



Type SW-WS (Set of punching tools)

Round hole perforator tool sets from M16 to M40 and/or to M63.

Page 252



Type SW-WD (Punching tools SUB-MIN-D)

Punching tool for creation of SUB-MIN-D plug cut-outs (9 to 50 poles).

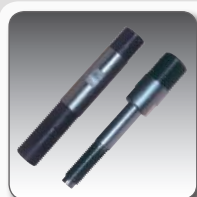
Page 253



Type SW-ASN (Special nibbling tool)

Universal punching tool for creation of various cut-out sizes and shapes.

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Spare part for punching tools

Replacement parts for the entire punching tool system.

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Type SW-HG and SW-HW (Hydraulic hand punch)

Practical manual punch without additional conduit and cylinder, ideal for workshop and assembly.

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Type SW-HF (Hydraulic punch with foot pump)

Practical hydraulic punch with foot pump; ideal for use in the workshop. Both hands remain free for exact positioning and punching.

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Type SW-HG und SW-HW (hydraulic manual punch)

Practical manual punch without additional conduit and cylinder, ideal for workshop and assembly.

- Hydraulic punch made of high-strength aluminium
- Overload protection provided by excess pressure valve
- Ergonomic handle, springs back automatically

SW-HW version:

- The angle head can be pivoted 360° for better handling.



SW-HG



SW-HW

Type	Order no.	Weight kg	Punching force kN	Operating pressure bar	Pack qty.
Compact hydraulic manual punch, straight					
SW-HG hydraulic manual punch	87801010	1.6	75	650	1
Compact hydraulic manual punch with pivoting head					
SW-HW hydraulic manual angle punch	87801012	1.9	75	650	1
consisting of:					
1 pce compact hydraulic manual punch					
1 pce tension bolt version A					
1 pce tension bolt version C					
1 pce spacer bushing set (3-pce.)					
1 pce tap drill 11.0 mm					
1 pce transport case					
Punching performance, round hole perforator:					
2.0 mm sheet steel (St37) max. Ø 84 mm					
3.0 mm sheet steel (St37) max. Ø 64 mm					
2.0 mm stainless steel (V2A) max. Ø 84 mm					
Punching performance, square hole perforator:					
2.0 mm sheet steel (St37) max. 36 x 112 mm					
Spare part see chapter "Spare part for punching tool"					

Type SW-HF (Hydraulic punch with foot pump)

Practical hydraulic punch with foot pump; ideal for use in the workshop.

The foot pump does not require use of the hands, leaving both hands free for exact positioning and punching at the control cabinet.

The support frame of the foot pump is splayed. This provides for stable, anti-tip working.

- Overload protection via installed pump safety valve
- Better punching performance than with a manual punch
- For larger punching tools



SW-HF

Type	Order no.	Weight kg	Punching force kN	Operating pressure bar	Pack qty.
Hydraulic punch with foot pump					
SW-HF Hydraulic punch with foot pump	87801014	13.9	100	700	1
consisting of:					
1 pce hydraulic cylinder with quick coupling					
1 pce Hydraulic conduit 2.8 m					
1 pce tension bolt version A					
1 pce tension bolt version C					
1 pce spacer bushing set (5-pce.)					
1 pce tap drill 11.0 mm					
1 pce sheet steel transport case					
Punching performance, round hole perforator:					
2.0 mm sheet steel (St37) max. Ø 150 mm					
3.0 mm sheet steel (St37) max. Ø 100 mm					
2.0 mm stainless steel (V2A) max. Ø 100 mm					
Punching performance, square hole perforator:					
2.0 mm sheet steel (St37) max. 138 x 138 mm					
2.0 mm stainless steel (V2A) max. 92 x 92 mm					
Spare part see chapter "Spare part for punching tool".					

 SteelA diagram of a rectangle with a horizontal dimension line below it labeled 'A' and a vertical dimension line to its right labeled 'B'.248

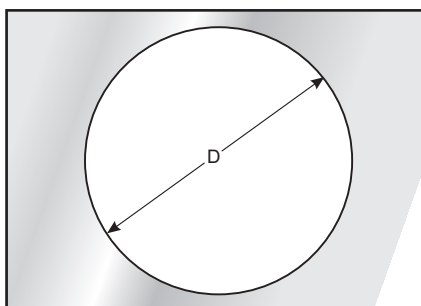
Type SW-WR / SW-WQ (Punching tool rectangular / square)

Type	Order no.	Press cut A mm	Press cut B mm	Suitable for	Suitable tensioning screw version	Cutting for	Suitable for hydraulic punch SW-HG(HW)/SW-HF	Pack qty.
Hole perforator (rectangular) for sheet steel with centring tips								
SW-WQ 12.7x12.7	87801300	12.7	12.7	Sheet steel ≤1.75 mm	H		●/●	1
SW-WQ 15.8x15.8	87801302	15.8	15.8	Sheet steel ≤1.75 mm	H		●/●	1
SW-WQ 19.0x19.0	87801304	19.0	19.0	Sheet steel ≤2 mm	G		●/●	1
SW-WQ 22.2x22.2	87801306	22.2	22.2	Sheet steel ≤2 mm	G		●/●	1
SW-WQ 24.0x24.0	87801308	24.0	24.0	Sheet steel ≤2 mm	G		●/●	1
SW-WQ 25.4x25.4	87801310	25.4	25.4	Sheet steel ≤2 mm	K		●/●	1
SW-WQ 45.8x15.8	87801312	45.5	45.5	Sheet steel ≤3 mm	F		●/●	1
SW-WQ 46.0x46.0	87801314	46.0	46.0	Sheet steel ≤3 mm	F		●/●	1
SW-WQ 50.8x50.8	87801316	50.8	50.8	Sheet steel ≤3 mm	D *		●/●	1
SW-WQ 68.0x68.0	87801318	68.0	68.0	Sheet steel ≤3 mm	D *		●/●	1
SW-WQ 92.0x92.0	87801320	92.0	92.0	Sheet steel ≤3 mm	E		-/●	1
SW-WQ 125.0x125.0	87801322	125.0	125.0	Sheet steel ≤3 mm	E		-/●	1
SW-WQ 138.0x138.0	87801324	138.0	138.0	Sheet steel ≤3 mm	E		-/●	1
* Suitable tool for forming the cut-out for the tension screw:								
Round hole perforator SW-WE-NS Pg 16								
Spare part see chapter "Spare part for punching tool"								



Round hole punch, individual tools for steel or stainless steel plates. Versions for punching holes in metric or Pg threaded connections.

Pg sizes from Pg 9 to Pg 48.

[illegible]

Type SW-WE (Punching tool round)

[illegible]

 Steel[illegible]



Type SW-WD (Punching tool SUB-MIN-D)



Steel

Punching tool for creation of SUB-MIN-D plug cut-outs (9 to 50 poles). Simple and quick creation of these cut-outs, e.g. for connection of data transmission cables.

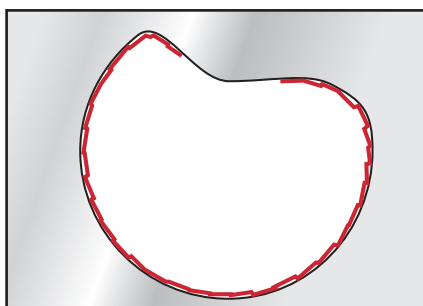


SW-WD...

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Universal punching tool for creation of various cut-out sizes and shapes. Tools with hole punch width 15 mm and 20 mm.

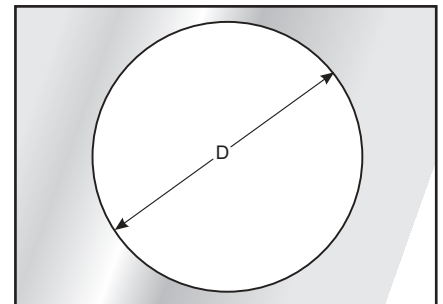
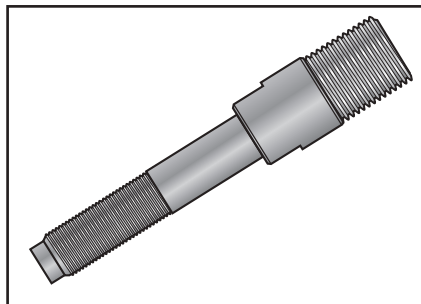
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Spare part for punching tools



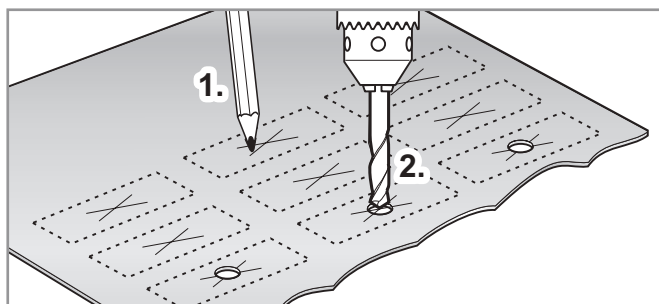
Steel

Replacement parts for the entire punching tool system.



Type	Order no.	Tensioning screw version	Length mm	Pilot hole D mm	Pack qty.
Tensioning screw					
SW-WE-ZS Type A	87801410	A	100.0	10.0	1
SW-WE-ZS Type B	87801412	B	100.0	11.5	1
SW-WE-ZS Type C	87801414	C	120.0	20.0	1
SW-WE-ZS Type D	87801416	D	165.0	24.0	1
SW-WE-ZS Type E	87801434	E	173.0	30.0	1
SW-WE-ZS Type F	87801436	F	141.0	20.0	1
SW-WE-ZS Type G	87801438	G	106.0	14.0	1
SW-WE-ZS Type H	87801440	H	87.0	10.0	1
SW-WE-ZS Type K	87801442	K	106.0	17.0	1
SW-WE-ZS Type L	87801444	L	87.0	10.0	1
spacer bushing set					
SW-WS-DS 3-pce.	87801430				1
SW-WS-DS 5-pce.	87801432				1
Predrill					
SW-WE-VB 10.0 mm	87801420				1
SW-WE-VB 11.0 mm	87801422				1
SW-WE-VB 11.5 mm	87801424				1
Replacement stamp for special nibbling tool					
SW-ASN 15 stamp	87801374				1
SW-ASN 20 stamp	87801376				1

Operating manual punching tool

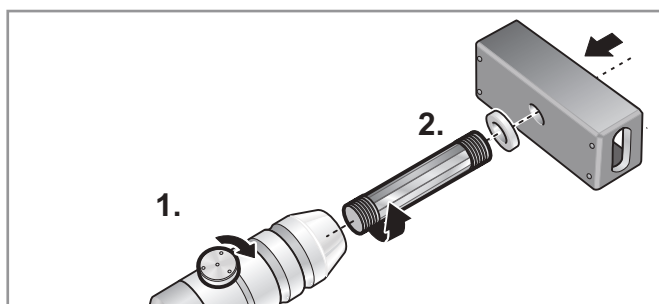


Establish and mark cut-outs.

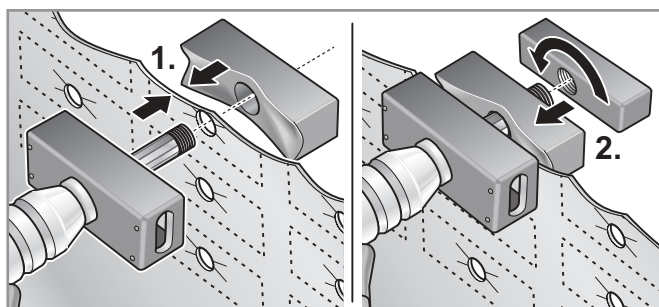
Caution:

Ensure sufficient distance between the press cuts!

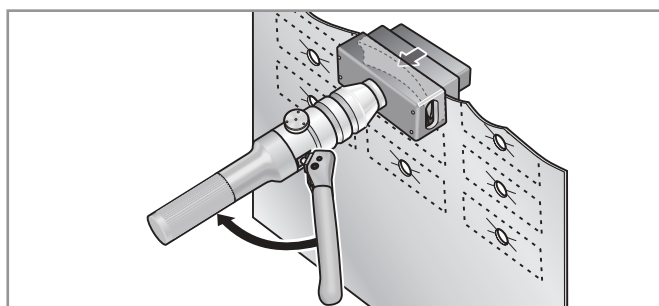
Mark drilling point for the pilot hole for the tension screw and punch out the pilot hole for the tension screw.



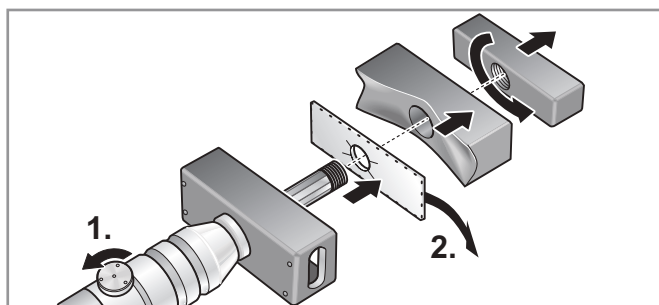
Screw in corresponding tension screw into the tool head and close the valve on the punching tool. Push on appropriate spacer and die.



Insert tension screw into pilot hole. Stick or screw stamp onto tension bolt. Secure with lock nut where needed. Align die and draw in lock nut by hand.

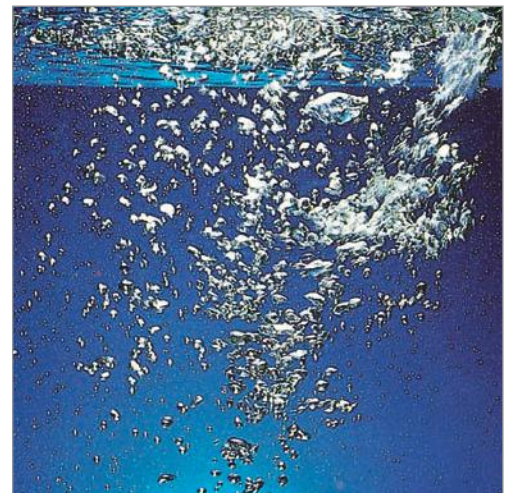


Activate hydraulic mechanism until the press cut is completed. Then actuate 3-4 further strokes. This ensures an easier removal of the plate from the die. Caution: If excessive force is required, inspect the hydraulic tool and punching tool! Observe the tool's operating instructions.



Remove hydraulic tool from the cut-out. Open valve and remove lock nut and stamp. Remove plate from the die.

Appendix



Protection classes according to DIN EN 60529

An important element for housings is protection of integrated elements against drilling, foreign particles and water. The different protective abilities are classified into IP protection ratings (IP = International Protection). The framework conditions that a protection class must guarantee are laid out in DIN 40050 and IEC-EN 60529.

IP protection classes are indicated through a two digit code (IPXX). The first digit indicates protection against contact and foreign particles, the second the water protection factor.

Class IP 65 is therefore completely protected against touching, is dust-proof (first digit = 6) and protected in all directions against water jets from a nozzle (second digit = 5).

First index no.	Touch-proof	Foreign particle protection	Second index no.	Brief description	Water protection
0	Unprotected		0	Unprotected	
1	Protected against solid foreign objects of 50 mm and larger	The object probe, a sphere of 50 mm in diameter, must not fully penetrate. 	1	Protected against vertically falling drops of water	Drops which fall vertically must not have any harmful effect. 
2	Protected against solid foreign objects 12.5 mm in diameter and larger	The object probe, a sphere of 12.5 mm in diameter, must not fully penetrate. 	2	Protection against water falling at an incline (up to 15°)	Drops which fall vertically must not have any harmful effects if the housing is inclined at an angle of up to 15° of either side of the perpendicular. 
3	Protected against solid foreign objects 2.5 mm in diameter and larger	The object probe, 2.5 mm in diameter, must not penetrate at all. 	3	Protection against spray falling at an incline (up to 60°)	Water which is sprayed at an angle of up to 60° of either side of the perpendicular must not have any harmful effects. 
4	Protected against solid foreign objects 1.0 mm in diameter and larger	The object probe, 1.0 mm in diameter, must not penetrate at all. 	4	Protection against general spray	Water which is splashed against the housing from all directions must not have any harmful effects. 
5	Dustproof	The penetration of dust is not fully prevented; however, it shall not penetrate to such an extent that satisfactory operation or safety are detracted. 	5	Protection against water jets (nozzles)	Water which is sprayed in a jet against the housing from any direction must not have any harmful effects. 
6	Dust-tight	No penetration of dust. 	6	Protected against strong water jets (overflow)	Water which is sprayed as a strong jet against the housing from any direction must not have any harmful effects. 
			7	Protected against the effect of temporary submersion in water	Water must not penetrate to an extent that will cause harmful effects if the housing is temporarily submerged in water under pressure and under time conditions. 
			8	Protected against the effect of temporary submersion in water	Water must not penetrate to such an extent that it will cause harmful effects if the housing is permanently submerged in water. 
			9 k	Protection against water during high-pressure or steam jet cleaning	IP x9K according to DIN 40050 Water jet at 0°, 30°, 60° and 90° Cycle: 30 seconds each Distance: 10 - 15 cm Water volume: 14 - 16 litres per minute Water temperature: 80 °C +/- 5 °C Water pressure: 80 - 100 bar 

Description of fire classifications according to UL 94

Fire classification HB

The material burns slowly in the horizontal combustion test. The rate of combustion must not exceed 3 inches/min. for wall thicknesses of up to 3 mm, and 1,5 inches/min. for wall thicknesses over 3 mm. Any materials exceeding these combustion rate limits are not registered by UL.

Fire classification V2

In the vertical combustion test, self-extinguishing must occur after an average of 25 seconds (individual values not to exceed 30 seconds). Any dripping material may ignite cotton wool located underneath. However, any afterglow must not exceed 60 seconds.

Fire classification V1

In the vertical combustion test, self-extinguishing must also occur after an average of 25 seconds (individual values not to exceed 30 seconds). However, any material dropping off must not ignite cotton wool placed underneath. Any afterglow must not exceed 30 seconds.

Fire classification V0

In the vertical combustion test, self-extinguishing must occur after an average of less than 5 seconds (individual values not to exceed 10 seconds). Any material dropping off must not ignite cotton wool placed underneath and any afterglow must not exceed 30 seconds.

Description of fire classification according to DIN 5510

Combustion class S4

Test procedure: as per DIN 54 837

Requirements:

- Length of the destroyed area: m 20 cm
- No afterburning

Products may also be assigned to combustion class S4 if afterburning occurs within the burnt testing area and the average duration of afterburning does not exceed 10 seconds. If afterburning occurs in the undamaged area of the test piece, the product must not be assigned to combustion class S4.

If the afterburning of a test object lasts longer 120 seconds, such products must not be assigned to combustion class S4 (note: according to DIN 54 837, a burning test piece must be extinguished immediately after an observation period of 120 seconds).

Thread dimensions

Metric threads (according to EN 60423)				
Size	Ø d ₁	Ø d ₂	p	Ø d ₃
M 12x1.5	10.38	12	1.5	12.2
M 16x1.5	14.38	16	1.5	16.2
M 20x1.5	18.38	20	1.5	20.2
M 25x1.5	23.38	25	1.5	25.2
M 32x1.5	30.38	32	1.5	32.2
M 40x1.5	38.38	40	1.5	40.2
M 50x1.5	48.38	50	1.5	50.2
M 63x1.5	61.38	63	1.5	64.2

Pg threads (according to DIN 40430)				
Size	Ø d ₁	Ø d ₂	p	Ø d ₃
Pg 7	11.28	12.5	1.27	12.7
Pg 9	13.86	15.2	1.41	15.4
Pg 11	17.26	18.6	1.41	18.8
Pg 13.5	19.06	20.4	1.41	20.6
Pg 16	21.16	22.5	1.41	22.7
Pg 21	26.78	28.3	1.588	28.5
Pg 29	35.48	37.0	1.588	37.2
Pg 36	45.48	47.0	1.588	47.2
Pg 42	52.48	54.0	1.588	54.2
Pg 48	57.78	59.3	1.558	59.5

NPT threads			
Size	Ø d ₂	p	Ø d ₃
3/8"	16.7	1.14	17.0+0.2
1/2"	21.0	1.18	21.3+0.2
3/4"	26.4	1.18	26.7+0.2
1"	33.3	2.21	33.6+0.2
1 1/4"	41.9	2.21	42.2+0.2
1 1/2"	47.8	2.21	48.1+0.3
2"	59.6	2.21	59.9+0.3

Index

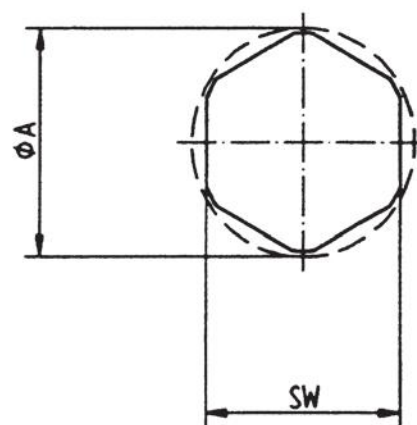
Ø d ₁	=	core diameter
Ø d ₂	=	exterior diameter
Ø d ₃	=	hole diameter
p	=	pitch

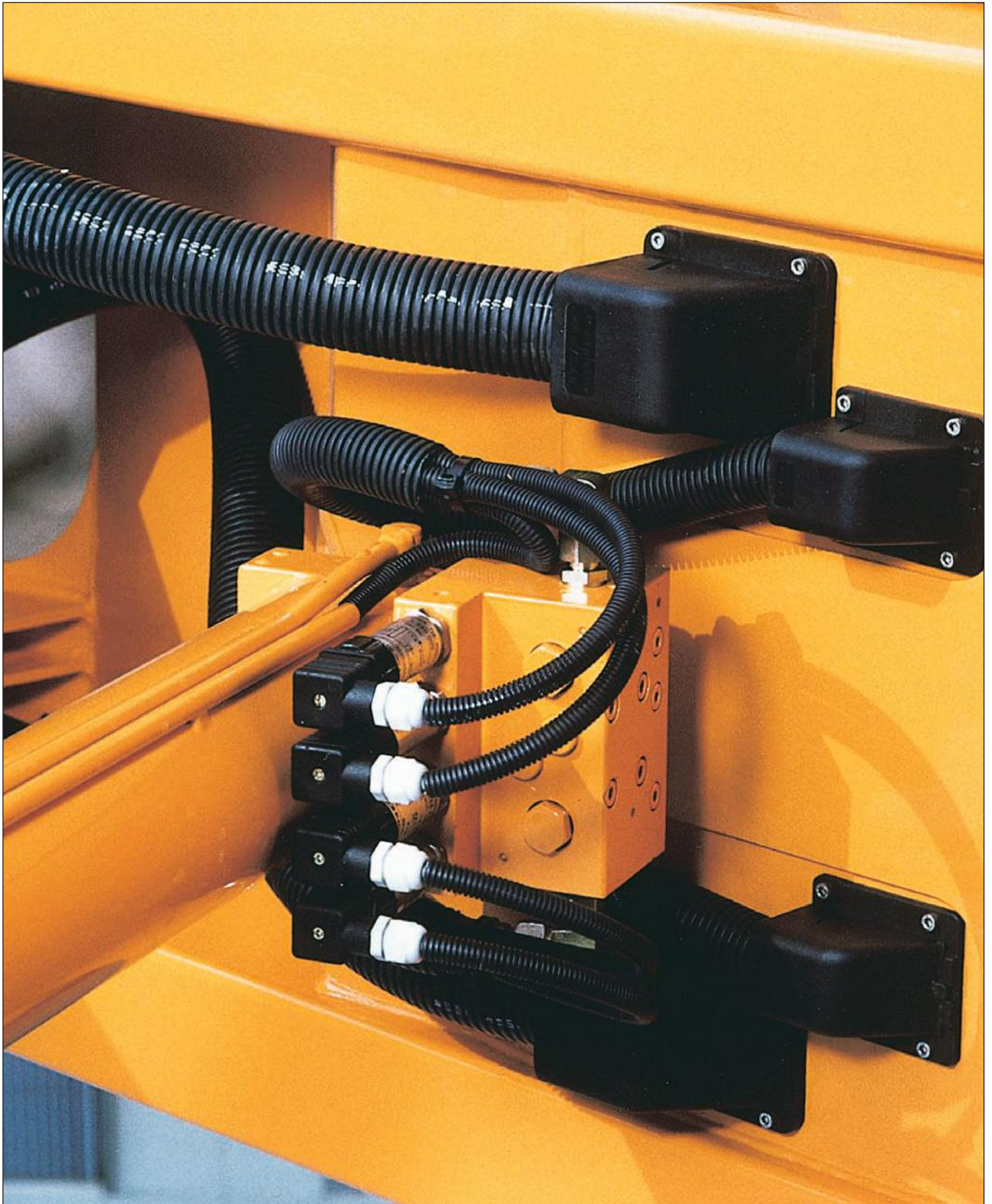
Installation dimensions and widths across flats

Diameter A indicates the assembly space required for the corresponding hexagon.

This diameter corresponds to the width across corners of the hexagon plus an assembly margin.

Width across flats (SW)	A (mm)		
9	10.4	37	41.5
11	12.5	39	44.0
13	14.9	40	45.2
14	16.0	41	46.1
15	17.1	42	47.0
16	18.2	45	51.2
17	19.4	46	52.5
19	22.0	47	53.5
20	22.7	50	58.3
21	23.9	53	60.0
22	25.0	54	61.0
24	27.3	55	62.0
27	30.6	57	64.4
28	31.8	60	67.5
29	32.5	64	72.3
30	34.0	65	73.1
32	36.2	66	74.5
33	37.2	67	75.5
36	40.5		







Chemical resistance of plastics

Reagent	Concen- tration %	At + °C	Polyethylene PE	Polyamide PA6	Polyamide PA 12	Polypropylene PP	Polyurethane PU
Exhaust gases containing carbon oxide	any	60				+	+
Exhaust gases containing carbon dioxide	any	60				+	+
Acetaldehyde	100	20	+	40 % o	+		+
Acetone	100	20	+	+	+	+	-
Ethyl acrylate/acrylic resin enamel	100	20	-	30 % -	-		
Ethyl ether	100	20		30 % +		o	-
Ethyl alcohol, aqueous	10	20		o		+	+
Ethylene chloride	100	20				o	-
Ethylene oxide, liquid	100	20					
Alum, aqueous	diluted	40			+	+	
Allyl alcohol	96	20		30 % o	o	+	-
Aluminium chloride, aqueous	diluted	40	+		+	+	+
Aluminium sulphate, aqueous	diluted	40	+			+	+
Formic acid, aqueous	100	20		10 % o	-	+	-
Ammonia, aqueous	any	20	+	20 % +		+	o
Ammonium chloride, aqueous	any	60	+		o	+	+
Ammonium nitrate, aqueous	diluted	40	+			+	+
Ammonium sulphate, aqueous	diluted	40	+			+	+
Aniline, pure	100	20	+	o	o	+	-
Aniline chlorohydrate, aqueous	saturated	20					
Benzaldehyde, aqueous	0,3	20	-	pure o	o	+	
Benzine	100	20	-	+	+	o	+
Benzol	100	20	-	+	+	o	-
Benzoic acid	any	40	+		o	+	+
Bleaching lye	12.5 Cl	20		-	o	o	
Boron	50	40		o			
Borax, aqueous	diluted	40		o	+	+	
Boracic acid, aqueous	diluted	40	+	o	+	+	-
Bromine, liquid	100	20	-	-	o	-	-
Hydrobromic acid, aqueous	10	40	+	-		+	-
Butane diol	10	20		pure +		+	o
Butanol	100	20				+	+
Butyl acetate	100	20				o	-
Butyl alcohol	100	20	-			+	o
Calcium chloride, aqueous	any	40	+	+	o	+	+
Calcium nitrate, aqueous	50	40	+			+	+
Chlorine	any	20	-	-	-	-	-
Methyl chloride	100	20					
Chromic alum, aqueous	diluted	40				+	
Cyclohexanol	100	20		+		+	-
Iron chloride, aqueous	10	40	+	o	+	+	+
Crystallisable acetic acid	100	20			o	+	
Acetic acid	10	20	+	o	o	+	o
Potassium ferrocyanide, aqueous	any	60	o			+	
Fluorine	50	40		-			
Formaldehyde, aqueous	diluted	40	+	pure +	o	+	o
Glucose, aqueous	any	20	+			+	+
Urea, aqueous	10	40		20 % +		+	+
Hydroxylamine sulphate, aqueous	12	35					+
Caustic potash solution	50	20		50 % +		+	o
Potassium bromide, aqueous	any	60	+	10 % +		+	o

The information provided above enables an initial choice to be made. However, it is not intended as a guarantee of particular properties of the products or their suitability for a particular application. It does not release the buyer from the duty of carrying out suitability checks.

+ means: resistant
o means: resistant to a limited extent
- means: not resistant

Reagent	Concentration %	At + °C	Polyethylene PE	Polyamide PA6	Polyamide PA 12	Polypropylene PP	Polyurethane PU
Potassium chloride, aqueous	any	20	+	10 % +		+	+
Potassium dichromate, aqueous	40	20				+	+
Potassium nitrate	any	20	+	10 % +	+	+	+
Potassium permanganate, aqueous	6	20	+		o	+	-
Potassium persulfate, aqueous	diluted	40	-		+	+	+
Hydrosilicofluoric acid	30	20	-				
Salt solution	any	40			+	+	+
Carbon oxide	100	60	+			+	+
Carbon dioxide	100	60	+			+	+
Cresol, aqueous	90	20	-	pure -	-	+	-
Copper chloride, aqueous	saturated	20	+			+	+
Copper sulphate, aqueous	any	40	+			+	+
Magnesium chloride, aqueous	any	20	+	10 % o		+	+
Magnesium carbonate	any	20					+
Methyl alcohol	100	20	+			+	o
Methylene chloride	100	20		o	o	-	-
Lactic acid, aqueous	50	20	o	pure +	o	+	o
Soda lye, aqueous	10	20	+	+	+	+	o
Sodium chlorate, aqueous	any	20	+	10 % o		+	
Nickel chloride, aqueous	any	20		10 % o		+	+
Nickel sulphate, aqueous	any	20	+	10 % o		+	+
Nitroglycerine	diluted	20					
Oils and greases		20	o	+	+	+	+
Oleic acid	100	20		+		+	o
Oxalic acid	saturated	20	+	10 % o		+	o
Ozone	100	20	o	o	+	o	o
Petroleum							+
Phosgene, liquid	100	20					-
Phosphorus pentoxide	100	20				+	
Phosphoric acid, aqueous	diluted	20	+	10 % -	o	+	o
Photographic developer		40				+	
Potash, aqueous	saturated	40			+		+
Mercury		60	+	+	+	+	+
Nitric acid, aqueous	6	20	+	50 % -	-	+	-
Hydrochloric acid	10	30-40					
Hydrochloric acid, aqueous	10	20	+	20 % -	o	+	-
Carbon bisulphide	100	20	-	o	+	+	+
Sodium sulphide, aqueous	diluted	40				+	
Sulphuric acid	10	20	+	40 - 80 % -	o	+	+
Seawater		40	+	+	o	+	+
Soap solution, aqueous	concentrated	20		o		+	+
Carbon tetrachloride	100	20		+	o	o	+
Trichloroethylene	100	20	-	o		o	-
Toluene	100	20	-	+	+	o	+
Vinyl acetate	100	20					-
Hydrogen	100	60		+			+
Xylene	100	20		+	+	o	+
Zinc chloride, aqueous	diluted	60	+	10 % o	o	+	+
Zinc sulphate, aqueous	diluted	60	+			+	+
Tin chloride, aqueous	diluted	40			+	+	+
Citric acid	10	40	+			+	o

German sales agencies



Postcode areas: Murrplastik Systemtechnik GmbH
20095–32609 Sales Region North
38100–38559 Phone: +49 7191 482-221
Fax: +49 7191 482-280
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Postcode areas: Murrplastik Systemtechnik GmbH
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07318–07989 Phone: +49 33762 819 74
08056–19417 Fax: +49 33762 819 75
36404–36469 info@murrplastik.de
39104–39649
98527–99998

Postcode areas: Murrplastik Systemtechnik GmbH
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36179–36289 Fax: +49 7191 482-280
37073–37699 info@murrplastik.de
38640–38899
44135–49849
58089–59969

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60308–69518
74706–74939
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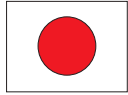
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It does not exempt the purchaser from the duty to carry out inspections and tests to determine the exact suitability of the products for the intended use.

The purchaser is solely liable for the application, use, and installation of the products. He must also comply with the legal and official provisions, and observe any possible property rights of third parties.

Our General Terms and Conditions shall apply.

Subject to technical alterations.

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0101BU



MP8902834000

Specifications



Temperature range



Material



Fire classification



Crush resistance



Protection class



**Additional information
for use and processing**

At the back you will find information
on markings and approvals.
Please open out if necessary.



Approvals/Explanations



CE

Products conforms to EU directives



UR

Product is UR/UL listed



CSA

Approved for the Canadian market



VDE

VDE certified product



Ex

Product can be used in areas at risk of explosion



DB

Certified for German railway engineering



BS

Certified for British railway engineering



SNCF

Certified for French railway engineering



Robot/handling systems

Product suitable for permanent movement



FAR

Approved for aerodynamic engineering



ABD

Approved for aerodynamic engineering