

LES
Cable entry systems

■ for indoor and outdoor installation, protected against weather influences

- material TPE
- colour light grey, similar to RAL 7035
- glow wire test IEC 60 695-2-1 750°C



Grommets
Degree of protection IP 55

ESM 16	for knockouts M 16	sealing range Ø 4,8-11 mm	bore-hole Ø 16.5 mm	wall thickness 1.5-3.5 mm
ESM 20	for knockouts M 20	sealing range Ø 6-13 mm	bore-hole Ø 20.5 mm	wall thickness 1.5-3.5 mm
ESM 25	for knockouts M 25	sealing range Ø 9-17 mm	bore-hole Ø 25.5 mm	wall thickness 1.5-3.5 mm
ESM 32	for knockouts M 32	sealing range Ø 9-23 mm	bore-hole Ø 32.5 mm	wall thickness 1.5-3.5 mm
ESM 40	for knockouts M 40	sealing range Ø 17-30 mm	bore-hole Ø 40.5 mm	wall thickness 1.5-3.5 mm

Stepped grommets
degree of protection IP 55

STM 16	for knockouts M 16	sealing range Ø 3.5-12 mm	bore-hole Ø 16.5 mm	wall thickness 1.5-4 mm
STM 20	for knockouts M 20	sealing range Ø 5-16 mm	bore-hole Ø 20.5 mm	wall thickness 1.5-4 mm
STM 25	for knockouts M 25	sealing range Ø 5-21 mm	bore-hole Ø 25.5 mm	wall thickness 1.5-4 mm
STM 32	for knockouts M 32	sealing range Ø 13-26.5 mm	bore-hole Ø 32.5 mm	wall thickness 1.5-4 mm
STM 40	for knockouts M 40	sealing range Ø 13-34 mm	bore-hole Ø 40.5 mm	wall thickness 1.5-4 mm

Grommets
degree of protection IP 65

EDK 16	for knockouts M 16	sealing range Ø 5-10 mm	bore-hole Ø 16.5 mm	wall thickness 1.5-3.5 mm
EDK 20	for knockouts M 20	sealing range Ø 6-13 mm	bore-hole Ø 20.5 mm	wall thickness 1.5-3.5 mm
EDK 25	for knockouts M 25	sealing range Ø 9-17 mm	bore-hole Ø 25.5 mm	wall thickness 1.5-3.5 mm
EDK 32	for knockouts M 32	sealing range Ø 12-23 mm	bore-hole Ø 32.5 mm	wall thickness 1.5-3.5 mm
EDK 40	for knockouts M 40	sealing range Ø 17-30 mm	bore-hole Ø 40.5 mm	wall thickness 1.5-3.5 mm

Grommets for conduits
degree of protection IP 65

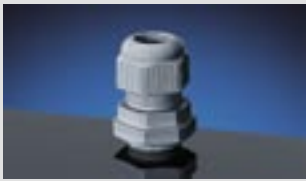
EDR 16	for knockouts M 16	conduit M 16	bore-hole Ø 16.5 mm	wall thickness 1.5-3.2 mm
EDR 20	for knockouts M 20	conduit M 20	bore-hole Ø 20.5 mm	wall thickness 1.5-3.2 mm
EDR 25	for knockouts M 25	conduit M 25	bore-hole Ø 25.5 mm	wall thickness 1.5-3.2 mm
EDR 32	for knockouts M 32	conduit M 32	bore-hole Ø 32.5 mm	wall thickness 1.5-3.2 mm
EDR 40	for knockouts M 40	conduit M 40	bore-hole Ø 40.5 mm	wall thickness 1.5-3.2 mm

Service
DK
KV
Mi
MC
LES
HENPAS
Technics
References/Types

- for indoor and outdoor installation
- material Polyamide
- with strain relief and counternut



Cable glands degree of protection IP 65 colour light grey, similar to RAL 7035 glow wire test IEC 60 695-1-2 750°C				
AKM 12	ISO thread M 12 x 1.5	sealing range Ø 3-6.5 mm	bore-hole Ø 12.5 mm	wall thickness 3 mm
AKM 16	ISO thread M 16 x 1.5	sealing range Ø 5-10 mm	bore-hole Ø 16.5 mm	wall thickness 3 mm
AKM 20	ISO thread M 20 x 1.5	sealing range Ø 6.5-13.5 mm	bore-hole Ø 20.5 mm	wall thickness 2 mm
AKM 25	ISO thread M 25 x 1.5	sealing range Ø 10-17 mm	bore-hole Ø 25.5 mm	wall thickness 2 mm
AKM 32	ISO thread M 32 x 1.5	sealing range Ø 14-21 mm	bore-hole Ø 32.5 mm	wall thickness 3 mm
AKM 40	ISO thread M 40 x 1.5	sealing range Ø 20-28.5 mm	bore-hole Ø 40.5 mm	wall thickness 3 mm
AKM 50	ISO thread M 50 x 1.5	sealing range Ø 25-35 mm	bore-hole Ø 50.5 mm	wall thickness 2 mm
AKM 63	ISO thread M 63 x 1.5	sealing range Ø 35-48 mm	bore-hole Ø 63.5 mm	wall thickness 2 mm



Cable glands degree of protection IP 65 colour slate grey, similar to RAL 7032 glow wire test IEC 60 695-1-2 960°C				
ASM 12	ISO thread M 12 x 1.5	sealing range Ø 3-6.5 mm	bore-hole Ø 12.5 mm	wall thickness 3 mm
ASM 16	ISO thread M 16 x 1.5	sealing range Ø 5-10 mm	bore-hole Ø 16.5 mm	wall thickness 3 mm
ASM 20	ISO thread M 20 x 1.5	sealing range Ø 6.5-13.5 mm	bore-hole Ø 20.5 mm	wall thickness 2 mm
ASM 25	ISO thread M 25 x 1.5	sealing range Ø 10-17 mm	bore-hole Ø 25.5 mm	wall thickness 2 mm
ASM 32	ISO thread M 32 x 1.5	sealing range Ø 14-21 mm	bore-hole Ø 32.5 mm	wall thickness 3 mm
ASM 40	ISO thread M 40 x 1.5	sealing range Ø 20-28.5 mm	bore-hole Ø 40.5 mm	wall thickness 3 mm
ASM 50	ISO thread M 50 x 1.5	sealing range Ø 25-35 mm	bore-hole Ø 50.5 mm	wall thickness 2 mm
ASM 63	ISO thread M 63 x 1.5	sealing range Ø 35-48 mm	bore-hole Ø 63.5 mm	wall thickness 2 mm

- for indoor and outdoor installation
- with strain relief and counter nut

- material Polyamide



Cable glands

degree of protection IP 65

colour similar to black, RAL 9005

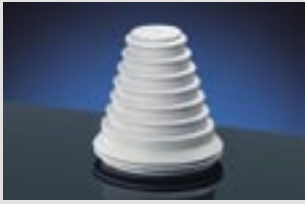
glow wire test IEC 60 695-1-2 960°C

ASS	ISO thread	sealing range	bore-hole	wall thickness
ASS 12	M 12 x 1.5	Ø 3-6.5 mm	Ø 12.5 mm	3 mm
ASS 16	M 16 x 1.5	Ø 5-10 mm	Ø 16.5 mm	3 mm
ASS 20	M 20 x 1.5	Ø 6.5-13.5 mm	Ø 20.5 mm	2 mm
ASS 25	M 25 x 1.5	Ø 10-17 mm	Ø 25.5 mm	2 mm
ASS 32	M 32 x 1.5	Ø 14-21 mm	Ø 32.5 mm	3 mm
ASS 40	M 40 x 1.5	Ø 20-28.5 mm	Ø 40.5 mm	3 mm
ASS 50	M 50 x 1.5	Ø 25-35 mm	Ø 50.5 mm	2 mm
ASS 63	M 63 x 1.5	Ø 35-48 mm	Ø 63.5 mm	2 mm

For cable glands for hazardous areas refer to index DK Cable junction boxes.

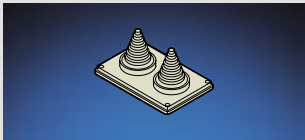
Assignment of cable outside diameters to cable entries
(glands, grommets etc.)

Cable entry metric	Outside diameters of cables	
	min. mm Ø	max. mm Ø
ASM/AKM/ASS 12	3	6.5
ASM/AKM/ASS 16	5	10
ASM/AKM/ASS 20	6.5	13.5
ASM/AKM/ASS 25	10	17
ASM/AKM/ASS 32	14	21
ASM/AKM/ASS 40	20	28.5
ASM/AKM/ASS 50	25	35
ASM/AKM 63	35	48
ESM 16	4.8	11
ESM 20	6	13
ESM 25	9	17
ESM 32	9	23
ESM 40	17	30
STM 16	3.5	12
STM 20	5	16
STM 25	5	21
STM 32	13	26.5
STM 40	13	34
EDK 16	5	10
EDK 20	6	13
EDK 25	9	17
EDK 32	12	23
EDK 40	17	30
	conduit connection	
EDR 16	M 16	
EDR 20	M 20	
EDR 25	M 25	
EDR 32	M 32	
EDR 40	M 40	



KST 70 Stepped grommets

for indoor installation and outdoor installation, protected against weather influences
 material TPE
 colour RAL 7035 grey
degree of protection IP 65
 sealing range Ø 30-72 mm
 bore-hole Ø 83 mm
 wall thickness 1.5-3 mm



MV FP 66 Flange

with cable entry glands and screws
 insulating material
 colour RAL 7032 grey
degree of protection IP 55
 sealing range Ø 30-72 mm
 material thickness min. 1.5 mm

Outside diameter of conventional cable cross sections. The outside diameters are average values of different products.

Cable cross section	NYM	NYY	NYCY NYCWY
mm ²	mm Ø	mm Ø	mm Ø
1x4	8	9	—
1x6	8.5	10	—
1x10	9.5	10.5	—
1x16	11	12	—
1x25	—	14	—
1x35	—	15	—
1x50	—	16.5	—
1x70	—	18	—
1x95	—	20	—
1x120	—	21	—
1x150	—	23	—
1x185	—	25	—
1x240	—	28	—
1x300	—	30	—
2x1.5	10	12	—
2x2.5	11	13	—
2x4	—	15	—
2x6	—	16	—
2x10	—	18	—
2x16	—	20	—
2x25	—	—	—
2x35	—	—	—
3x1.5	10.5	12.5	13
3x2.5	11	13	14
3x4	13	16	16
3x6	15	17	17
3x10	18	19	18
3x16	20	21	21
3x25	—	26	—
3x35	—	—	—
3x50	—	—	—
3x70	—	—	—
3x95	—	—	—
3x120	—	—	—
3x150	—	—	—
3x185	—	—	—
3x240	—	—	—
3x25/16	—	27	27
3x35/16	—	28	27
3x50/25	—	32	32
3x70/35	—	32-36	36
3x95/50	—	37-41	40
3x120/70	—	42	43
3x150/70	—	46	47
3x185/95	—	52	48-54
3x240/120	—	57-63	60
3x300/150	—	63-69	—

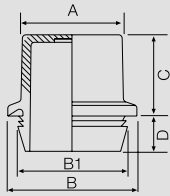
Cable cross section	NYM	NYY	NYCY NYCWY
mm ²	mm Ø	mm Ø	mm Ø
4x1.5	11	13.5	14
4x2.5	12.5	14.5	15
4x4	14.5	17.5	17
4x6	16.5	18	18
4x10	18.5	20	20
4x16	23.5	23	23
4x25	28.5	28	28
4x35	32	26-30	29
4x50	—	30-35	34
4x70	—	34-40	37
4x95	—	38-45	42
4x120	—	42-50	47
4x150	—	46-53	52
4x185	—	53-60	60
4x240	—	59-71	70
4x25/16	—	—	30
4x35/16	—	—	30
4x50/25	—	—	36.5
4x70/35	—	—	40
4x95/50	—	—	44.5
4x120/70	—	—	48.5
4x150/70	—	—	53
4x185/95	—	—	—
4x240/120	—	—	—
5x1.5	12	15	15
5x2.5	13.5	16	17
5x4	15.5	16.5	18
5x6	18	19	20
5x10	20	21	—
5x16	26	24	—
5x25	31.5	—	—
7x1.5	13	16	—
7x2.5	14.5	16.5	—
19x1.5	—	22	—
24x1.5	—	25	—



Dimensions	197
Operating and ambient conditions	198
Characteristics of the material	198

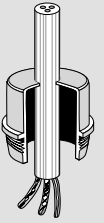
Grommets

in mm	A	B	B1	C	D
ESM 16	16.5	22	18.5	14.5	8.5
ESM 20	20.5	26	22.5	14.5	8.5
ESM 25	26.0	31	27.5	14.5	8.5
ESM 32	33.0	38	34.5	17.5	8.5
ESM 40	41.0	46	42.5	17.5	8.5



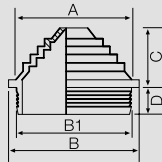
Grommets ESM

Degree of protection IP 55
Grommets ESM are inserted into knock-outs.



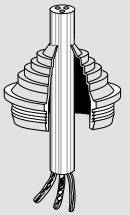
Stepped grommet

in mm	A	B	B1	C	D
STM 16	13.2	21.2	19	7.4	8.0
STM 20	18.0	25	23	9.2	8.0
STM 25	21.6	30	28	11.5	7.4
STM 32	27.6	37	35	11.5	8.6
STM 40	33.6	45	43	15.1	8.6



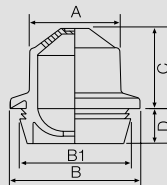
Stepped grommets STM

Degree of protection IP 55
Stepped glands STM are inserted into knockouts.



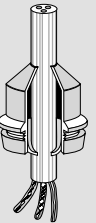
Grommets

in mm	A	B	B1	C	D
EDK 16	14.5	22	18.5	13.5	8.5
EDK 20	18.5	26	22.5	14.5	8.5
EDK 25	23.5	31	27.5	14.5	8.5
EDK 32	30.5	38	34.5	19.5	8.5
EDK 40	38.5	46	42.5	19.5	8.5



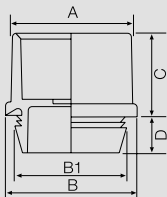
Grommets EDK

Degree of protection IP 65
Grommets EDK are inserted into knockouts.



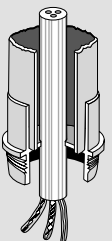
Grommets for conduits

in mm	A	B	B1	C	D
EDR 16	20	22	18.5	14.5	8.5
EDR 20	24	26	22.5	14.5	8.5
EDR 25	29	31	27.5	14.5	8.5
EDR 32	36	38	34.5	17.5	8.5
EDR 40	44	46	42.5	17.5	8.5



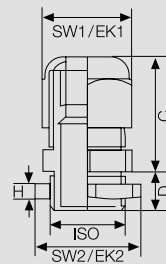
Grommets for conduits EDR

Degree of protection IP 65
Grommets for conduits EDR are inserted into knockouts.



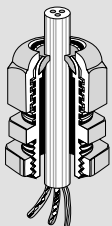
Threaded cable glands

in mm	ISO	SW1	EK1	C	D	SW2	EK2	H
		across flats	across corners Ø	max.		across flats	across corners Ø	
ASM/AKM/ASS 12	M 12	15	16.2	22	8	17	19	5
ASM/AKM/ASS 16	M 16	20	22.0	26	8	22	24	5
ASM/AKM/ASS 20	M 20	24	26.5	29	8	26	29	6
ASM/AKM/ASS 25	M 25	29	32.0	34	8	32	36	6
ASM/AKM/ASS 32	M 32	36	40.0	39	10	41	46	7
ASM/AKM/ASS 40	M 40	46	50.0	46	10	50	54	7
ASM/AKM/ASS 50	M 50	55	60.0	51	10	60	67	8
ASM/AKM/ASS 63	M 63	68	74.0	55	10	75	83	8



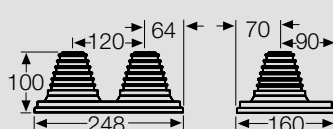
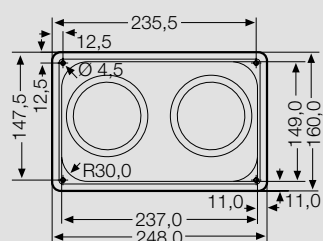
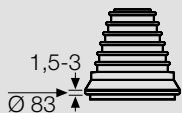
Cable glands ASM/AKM/ASS

with strain relief and counter nut, degree of protection IP 65.



Stepped grommet KST 70

Degree of protection IP 65



Flange MV FP 66

Degree of protection IP 55
for retrofitting onto boxes made of sheet steel material thickness ≥ 1.5 mm

Service	ESM ... STM ... EDK ... EDR ... KST ... MV FP 66	ASM ...	ASS ...	AKM ...
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Operating and ambient conditions

DK	Application area	Suitable for indoor installation and outdoor installation, protected against weather influences	Suitable for outdoor installation .		
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Resistant to occasional cleaning procedures (direct jet)

max. with high-pressure cleaner without additives
water pressure: max. 65 bar, water temperature: max. 50° C, distance ≥ 0.5 m
box and cable entries at least IP 65

KV	Ambient temperature				
	- Average value over 24 hours				
	- Maximum value	+ 35° C	+ 55° C	+ 55° C	+ 55° C
	- Minimum value	+ 40° C	+ 70° C	+ 70° C	+ 70° C
		- 25° C	- 40° C	- 40° C	- 40° C

Mi	Relative humidity				
	- short-time	50% at 40° C 100% at 25° C	50% at 40° C 100% at 25° C	50% at 40° C 100% at 25° C	50% at 40° C 100% at 25° C

Mi	Fire protection	Demands	Minimum requirements		
	in the event of internal faults	placed on electrical devices from standards and laws governing operational equipment	- Glow wire test in accordance with IEC 60 695-2-1 - 650° C for boxes and cable glands		

Characteristics of the material

MC	Material	TPE	PA Polyamide	PA Polyamide	PA Polyamide
	Temperature resistance	- 25° C to + 80° C	- 40° C to + 100° C	- 40° C to + 100° C	- 40° C to + 100° C
	Burning behaviour				
	- Glow wire test IEC 60 695-2-1	750° C	960° C	960° C	750° C
	- UL Subject 94	- flame-retardant	V-0 flame-retardant self-extinguishing	V-2 flame-retardant self-extinguishing	V-2 flame-retardant self-extinguishing
	Toxic behaviour	halogen-free ³⁾ silicone-free	halogen-free ³⁾ silicone-free	halogen-free ³⁾ silicone-free	halogen-free ³⁾ silicone-free

LES	Chemical resistance ²⁾	(+ = resistance 0 = partially resistance - = not resistant)			
	- Acid 10 %	+	+	+	+
	- Lye 10 %	+	0	0	0
	- Alcohol	+	+	+	+
	- Petrol (MAK) ¹⁾	0	+	+	+
	- Benzene (MAK) ¹⁾	0	+	+	+
	- Mineral oil	0	+	+	+

1) (MAK) - Maximum allowable concentration (work place)
2) The specifications on chemical resistance are a general guide. In individual cases it may be necessary to check resistance in combination with other chemicals and ambient conditions (temperature, concentration, etc.)
3) „Halogen-free“ in accordance with IEC 754-2 „Common test methods for cables - Determination of the amount of halogen acid gas“.