Cable entry systems

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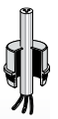
Further technical information can be found on the Internet
www.hensel-electric.de -> Products

ESM 16

Grommets
for knockouts M 16

IP 55

- sealing range: Ø 4.8-11 mm
- bore-hole: Ø 16.5 mm
- wall thickness 1.5-3.5 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- Colour: grey, RAL 7035

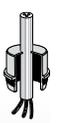


ESM 20

Grommets
for knockouts M 20

IP 55

- sealing range: Ø 6-13 mm
- bore-hole: Ø 20.5 mm
- wall thickness 1.5-3.5 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- Colour: grey, RAL 7035

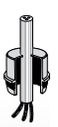


ESM 25

Grommets
for knockouts M 25

IP 55

- sealing range: Ø 9-17 mm
- bore-hole: Ø 25.5 mm
- wall thickness 1.5-3.5 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- Colour: grey, RAL 7035

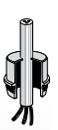


ESM 32

Grommets
for knockouts M 32

IP 55

- sealing range: Ø 9-23 mm
- bore-hole: Ø 32.5 mm
- wall thickness 1.5-3.5 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- Colour: grey, RAL 7035



ESM 40

Grommets
for knockouts M 40

IP 55

- sealing range: Ø 17-30 mm
- bore-hole: Ø 40.5 mm
- wall thickness 1.5-3.5 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- Colour: grey, RAL 7035

STM 16

Stepped grommet for knockouts M 16

IP 55

- sealing range: Ø 3.5-12 mm
- bore-hole: Ø 16.5 mm
- wall thickness 1.5-4 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- colour: grey, RAL 7035

STM 20

Stepped grommet for knockouts M 20

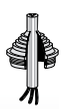
IP 55

- sealing range: Ø 5-16 mm
- bore-hole: Ø 20.5 mm
- wall thickness 1.5-4 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- colour: grey, RAL 7035

STM 25

Stepped grommet for knockouts M 25

IP 55

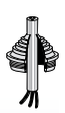


- sealing range: Ø 5-21 mm
- bore-hole: Ø 25.5 mm
- wall thickness 1.5-4 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- colour: grey, RAL 7035

STM 32

Stepped grommet for knockouts M 32

IP 55

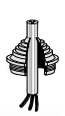


- sealing range: Ø 13-26.5 mm
- bore-hole: Ø 32.5 mm
- wall thickness 1.5-4 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- colour: grey, RAL 7035

STM 40

Stepped grommet for knockouts M 40

IP 55



- sealing range: Ø 13-34 mm
- bore-hole: Ø 40.5 mm
- wall thickness 1.5-4 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C
- colour: grey, RAL 7035

AKM 12

Cable glands for knockouts M 12

IP 66/67 IP 69

- sealing range: Ø 4-6 mm
- ISO thread M 12 x 1.5
- bore-hole:Ø 12.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	0,9 Nm

AKM 16

Cable glands for knockouts M 16

IP 66/67 IP 69

- sealing range: Ø 5-10 mm
- ISO thread M 16 x 1.5
- bore-hole: Ø 16.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	3.0 Nm

AKM 20

Cable glands for knockouts M 20

IP 66/67 IP 69

- sealing range Ø 6,5-13,5 mm
- ISO thread M 20 x 1.5
- bore-hole: Ø 20.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	4.0 Nm

AKM 25

Cable glands for knockouts M 25

IP 66/67 IP 69

- sealing range Ø 11-17 mm
- ISO thread M 25 x 1.5
- bore-hole: Ø 25.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	7,5 Nm

AKM 32

Cable glands for knockouts M 32

IP 66/67 IP 69

- sealing range Ø 15-21 mm
- ISO thread M 32 x 1.5
- bore-hole: Ø 32.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	10,0 Nm

AKM 40

Cable glands for knockouts M 40

IP 66/67 IP 69

- sealing range: Ø 19-28 mm
- ISO thread M 40 x 1.5
- bore-hole: Ø 40.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	10,0 Nm

AKM 50

Cable glands for knockouts M 50

IP 66/67 IP 69

- sealing range: Ø 27-35 mm
- ISO thread M 50 x 1.5
- bore-hole: Ø 50.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	10,0 Nm

AKM 63

Cable glands for knockouts M 63

IP 66/67 IP 69

- sealing range: Ø 35-42 mm
- ISO thread M 63 x 1.5
- bore-hole: Ø 63.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2-11: 960 °C
- Colour: grey, RAL 7035

tightening torque	10,0 Nm

ASS 12

Cable glands for knockouts M 12

IP 66/67 IP 69

- sealing range: Ø 2-5 mm
- ISO thread M 12 x 1.5
- bore-hole:Ø 12.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	0,9 Nm

ASS 16

Cable glands for knockouts M 16

IP 66/67 IP 69

- sealing range: Ø 3-10 mm
- ISO thread M 16 x 1.5
- bore-hole: Ø 16.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	3,0 Nm

ASS 20

Cable glands for knockouts M 20

IP 66/67 IP 69

- sealing range: Ø 5-13 mm
- ISO thread M 20 x 1.5
- bore-hole: Ø 20.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	4,0 Nm

ASS 25

Cable glands for knockouts M 25

IP 66/67 IP 69

- sealing range: Ø 8-17 mm
- ISO thread M 25 x 1.5
- bore-hole: Ø 25.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	7,5 Nm

ASS 32

Cable glands for knockouts M 32

IP 66/67 IP 69

- sealing range: Ø 12-21 mm
- ISO thread M 32 x 1.5
- bore-hole: Ø 32.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	10,0 Nm

ASS 40

Cable glands for knockouts M 40

IP 66/67 IP 69

- sealing range: Ø 16-28,5 mm
- ISO thread M 40 x 1.5
- bore-hole: Ø 40.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	10,0 Nm

ASS 50

Cable glands for knockouts M 50

IP 66/67 IP 69

- sealing range: Ø 21-35 mm
- ISO thread M 50 x 1.5
- bore-hole: Ø 50.3 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	10,0 Nm

ASS 63

Cable glands for knockouts M 63

IP 66/67 IP 69

- sealing range: Ø 20-48 mm
- ISO thread M 63 x 1.5
- bore-hole: Ø 63.3 mm
- wall thickness up to 3 mm
- with counter nut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- colour: black, RAL 9005

tightening torque	10,0 Nm

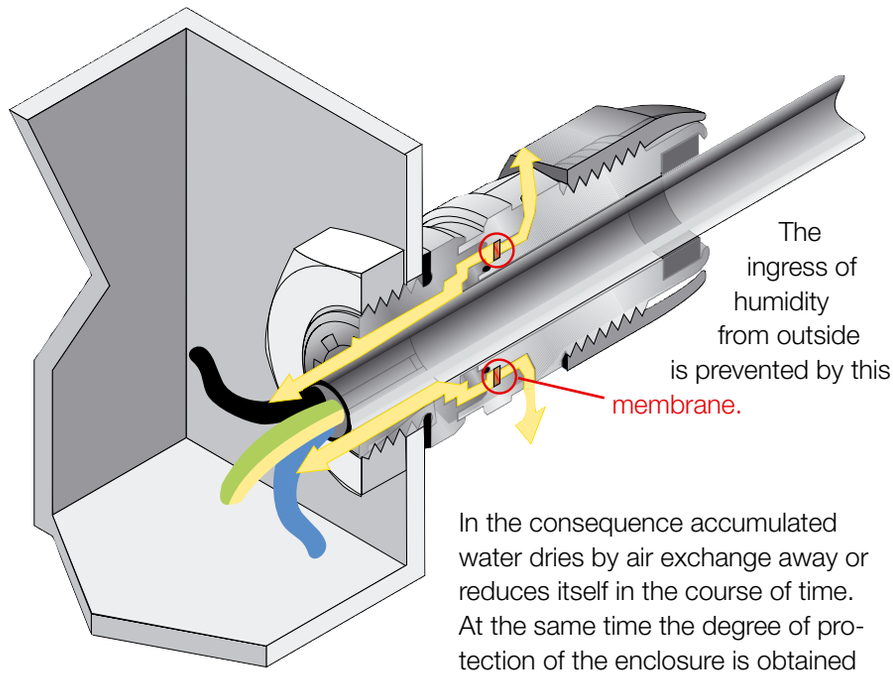
Ventilation and cable entry in one!
In general the formation of water in case of condensation in closed enclosures cannot be prevented in installation areas with high temperature differences!

The combi climate gland allows the cable entry and pressure compensation additionally.

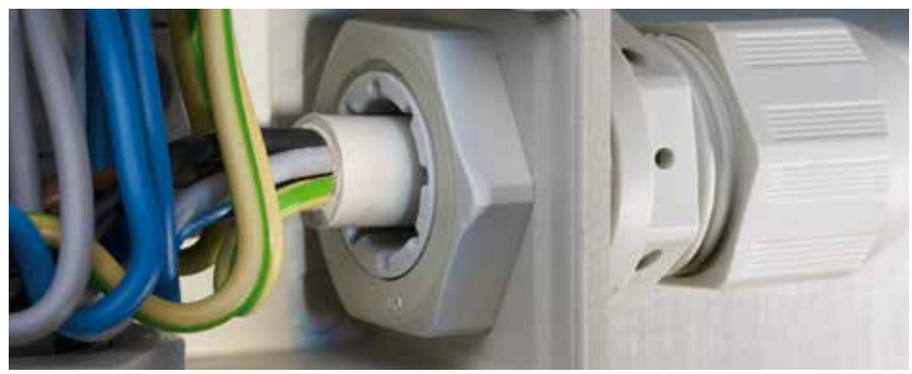
Combi climate glands prevent accumulations of condensation, which can form among others by large temperature fluctuations, like changing weather, intensive solar irradiation etc., in enclosures with high degree of protection.

For adherence to the requested degree of protection the ventilation of the enclosure is effected via a special combi climate gland.

Via an inserted, breathable membrane combi climate glands ensure pressure compensation between enclosure interior and ambient air.



In the consequence accumulated water dries by air exchange away or reduces itself in the course of time. At the same time the degree of protection of the enclosure is obtained (up to IP 67)!



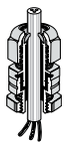
Your advantages with combi climate glands:

- **Cable entry and ventilation in one!**
- **Degree of protection of enclosure is obtained**

KBM 20

IP 66/67

Combi climate gland for knockouts M 20



- for the reduction of condensation by pressure compensation
- sealing range: Ø 6-13 mm
- ISO thread M 20 x 1.5
- bore-hole: Ø 20.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M20 must be used per 6 litres (6000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres. Number of necessary combi climate glands M20 ≥ 3 pieces.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- Colour: grey, RAL 7035

tightening torque	3.0 Nm

KBM 25

IP 66/67

Combi climate gland for knockouts M 25

- for the reduction of condensation by pressure compensation
- sealing range: Ø 9-17 mm
- ISO thread M 25 x 1.5
- bore-hole: Ø 25.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M25 must be used per 10 litres (10000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres. Number of necessary combi climate glands M25 ≥ 2 pieces
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- Colour: grey, RAL 7035

tightening torque	4.0 Nm

Combi climate glands

KBM 32

Combi climate gland for knockouts M 32

IP 66/67

- for the reduction of condensation by pressure compensation
- sealing range: Ø 13-21 mm
- ISO thread M 32 x 1.5
- bore-hole: Ø 32.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M32 must be used per 12 litres (12000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres.
  Number of necessary combi climate glands M32 ≥ 2 piece.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- Colour: grey, RAL 7035

tightening torque	4.0 Nm

KBM 40

Combi climate gland for knockouts M 40

IP 66/67

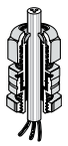
- for the reduction of condensation by pressure compensation
- sealing range: Ø 16-28 mm
- ISO thread M 40 x 1.5
- bore-hole: Ø 40.5 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M40 must be used per 16 litres (16000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12.393 litres. Number of necessary KB. 40 (M40) ≥ 1 piece.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- Colour: grey, RAL 7035

tightening torque	6.0 Nm

KBS 20

IP 66/67

Combi climate gland for knockouts M 20



- to reduce condensation through pressure compensation
- sealing range: Ø 6-13 mm
- ISO thread M 20 x 1.5
- bore-hole: Ø 20.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M20 must be used per 6 litres (6000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres. Number of necessary combi climate glands KB. 20 (M20) ≥ 3 pieces.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- colour: black, RAL 9005

tightening torque	3,0 Nm

KBS 25

IP 66/67

Combi climate gland for knockouts M 25

- to reduce condensation through pressure compensation
- sealing range: Ø 9-17 mm
- ISO thread M 25 x 1.5
- bore-hole: Ø 25.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M25 must be used per 10 litres (10000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres. Number of necessary combi climate glands KB. 25 (M25) ≥ 2 pieces
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- colour: black, RAL 9005

tightening torque	4,0 Nm

Combi climate glands

KBS 32

Combi climate gland for knockouts M 32

IP 66/67

- to reduce condensation through pressure compensation
- sealing range: Ø 13-21 mm
- ISO thread M 32 x 1.5
- bore-hole: Ø 32.5 mm
- wall thickness up to 3,5 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M32 must be used per 12 litres (12000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12,393 litres. Number of necessary combi climate glands KB. 32 (M32) ≥ 2 piece.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- colour: black, RAL 9005

tightening torque	4,0 Nm

KBS 40

Combi climate gland for knockouts M 40

IP 66/67

- to reduce condensation through pressure compensation
- sealing range: Ø 16-28 mm
- ISO thread M 40 x 1.5
- bore-hole: Ø 40.5 mm
- wall thickness up to 3 mm
- with strain relief and locknut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- glow wire test IEC 60695-2: 960 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one combi climate gland M40 must be used per 16 litres (16000 cm^3) of enclosure volume.
- Example: enclosure size 27 cm x 27 cm x 17 cm = 12393 cm^3 = 12.393 litres. Number of necessary KB. 40 (M40) ≥ 1 piece.
- When using different gland sizes the values for the enclosure volumes of the used combi climate glands can be added on.
- If the quantity of the necessary climate glands for pressure compensation is larger, than the number of necessary cable glands for cable entry, the unused climate glands can be sealed with sealing plugs.
- colour: black, RAL 9005

tightening torque	6,0 Nm

VSB 13

Sealing plug diameter 13 mm

- for sealing combi climate glands M20 or M25, which are not used for cable entry
- ambient temperature - 25 °C to + 55 °C
- colour: red, RAL 3000

VSB 21

Sealing plug diameter 21 mm

- for sealing combi climate glands M32 and M40, which are not used for cable entry
- ambient temperature - 25 °C to + 55 °C
- colour: red, RAL 3000

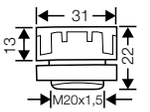
Applicaton:

Combi climate glands

BM 20G

Pressure compensation element for M 20 knockouts

IP 54

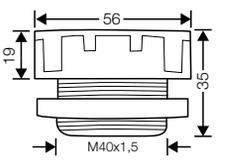


- for the reduction of condensation by pressure compensation in power distribution systems
- ISO thread M 20 x 1.5
- bore-hole: Ø 20.3 mm
- wall thickness up to 4 mm
- with counter nut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one pressure compensation element BM 20G must be used per 28 litres (28000 cm³) of enclosure volume.
- Example: enclosure size 30 cm x 60 cm x 17 cm = 30600 cm³ = 30,6 litres. Number of necessary BM 20G (M20) = 2 piece.
- technical changes reserved
- colour: grey, RAL 7035

BM 40G

Pressure compensation element for M 40 knockouts

IP 54



- for the reduction of condensation by pressure compensation in power distribution systems
- ISO thread M 40 x 1.5
- bore-hole: Ø 40.3 mm
- wall thickness of up to 8 mm
- with counter nut
- for indoor (normal environment and/or protected outdoor) and outdoor installation (harsh environment and/or outdoor)
- ambient temperature - 25 °C to + 55 °C
- In order not to exceed leakage limit of 0.07 bar with pressure compensation, one pressure compensation element BM 40G must be used per 122 litres (122000 cm³) of enclosure volume.
- Example: enclosure size 60 cm x 60 cm x 17 cm = 61200 cm³ = 61,2 litres. Number of necessary BM 40G (M40) = 1 piece.
- technical changes reserved
- colour: grey, RAL 7035

Pressure compensation element

KST 70

Stepped grommet

IP 65

- sealing range: Ø 30-72 mm
- bore-hole: Ø 83 mm
- wall thickness 1.5-3 mm
- for indoor - normal environment and (or) protected outdoor installation
- ambient temperature - 25 °C to + 35 °C
- glow wire test IEC 60695-2-11: 750 °C

KHR 01

Cable retention for cable diameter 6.5 - 14 mm

- set with 10 x 6 cable rentention rings
- 30 pieces for cable diameter 6,5 - 10 mm
- 30 pieces for cable diameter 10 - 14 mm

KHR 02

Cable retention for cable diameter 10 - 16 mm

- set with 10 x 6 cable rentention rings
- 30 pieces for cable diameter 10 - 14 mm
- 30 pieces for cable diameter 13 - 16 mm

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

Cable cross section	NYM	NYY	NYCY NYCWY
1x4 mm²	Ø 8 mm	Ø 9 mm	–
1x6 mm²	Ø 8.5 mm	Ø 10 mm	–
1x10 mm²	Ø 9.5 mm	Ø 10.5 mm	–
1x16 mm²	Ø 11 mm	Ø 12 mm	–
1x25 mm²	–	Ø 14 mm	–
1x35 mm²	–	Ø 15 mm	–
1x50 mm²	–	Ø 16.5 mm	–
1x70 mm²	–	Ø 18 mm	–
1x95 mm²	–	Ø 20 mm	–
1x120 mm²	–	Ø 21 mm	–
1x150 mm²	–	Ø 23 mm	–
1x185 mm²	–	Ø 25 mm	–
1x240 mm²	–	Ø 28 mm	–
1x300 mm²	–	Ø 30 mm	–
2x1.5 mm²	Ø 10 mm	Ø 12 mm	–
2x2.5 mm²	Ø 11 mm	Ø 13 mm	–
2x4 mm²	–	Ø 15 mm	–
2x6 mm²	–	Ø 16 mm	–
2x10 mm²	–	Ø 18 mm	–
2x16 mm²	–	Ø 20 mm	–
2x25 mm²	–	–	–
2x35 mm²	–	–	–
3x1.5 mm²	Ø 10.5 mm	Ø 12.5 mm	Ø 13 mm
3x2.5 mm²	Ø 11 mm	Ø 13 mm	Ø 14 mm
3x4 mm²	Ø 13 mm	Ø 16 mm	Ø 16 mm
3x6 mm²	Ø 15 mm	Ø 17 mm	Ø 17 mm
3x10 mm²	Ø 18 mm	Ø 19 mm	Ø 18 mm
3x16 mm²	Ø 20 mm	Ø 21 mm	Ø 21 mm
3x25 mm²	–	Ø 26 mm	–
3x35 mm²	–	–	–
3x50 mm²	–	–	–
3x70 mm²	–	–	–
3x95 mm²	–	–	–
3x120 mm²	–	–	–
3x150 mm²	–	–	–
3x185 mm²	–	–	–
3x240 mm²	–	–	–
3x25/16 mm²	–	Ø 27 mm	Ø 27 mm
3x35/16 mm²	–	Ø 28 mm	Ø 27 mm
3x50/25 mm²	–	Ø 32 mm	Ø 32 mm
3x70/35 mm²	–	Ø 32-36 mm	Ø 36 mm
3x95/50 mm²	–	Ø 37-41 mm	Ø 40 mm
3x120/70 mm²	–	Ø 42 mm	Ø 43 mm
3x150/70 mm²	–	Ø 46 mm	Ø 47 mm
3x185/95 mm²	–	Ø 52 mm	Ø 48-54 mm
3x240/120 mm²	–	Ø 57-63 mm	Ø 60 mm
3x300/150 mm²	–	Ø 63-69 mm	–

Cable cross section	NYM	NYY	NYCY NYCWY
4x1.5 mm²	Ø 11 mm	Ø 13.5 mm	Ø 14 mm
4x2.5 mm²	Ø 12.5 mm	Ø 14.5 mm	Ø 15 mm
4x4 mm²	Ø 14.5 mm	Ø 17.5 mm	Ø 17 mm
4x6 mm²	Ø 16.5 mm	Ø 18 mm	Ø 18 mm
4x10 mm²	Ø 18.5 mm	Ø 20 mm	Ø 20 mm
4x16 mm²	Ø 23.5 mm	Ø 23 mm	Ø 23 mm
4x25 mm²	Ø 28.5 mm	Ø 28 mm	Ø 28 mm
4x35 mm²	Ø 32 mm	Ø 26-30 mm	Ø 29 mm
4x50 mm²	–	Ø 30-35 mm	Ø 34 mm
4x70 mm²	–	Ø 34-40 mm	Ø 37 mm
4x95 mm²	–	Ø 38-45 mm	Ø 42 mm
4x120 mm²	–	Ø 42-50 mm	Ø 47 mm
4x150 mm²	–	Ø 46-53 mm	Ø 52 mm
4x185 mm²	–	Ø 53-60 mm	Ø 60 mm
4x240 mm²	–	Ø 59-71 mm	Ø 70 mm
4x25/16 mm²	–	–	Ø 30 mm
4x35/16 mm²	–	–	Ø 30 mm
4x50/25 mm²	–	–	Ø 36.5 mm
4x70/35 mm²	–	–	Ø 40 mm
4x95/50 mm²	–	–	Ø 44.5 mm
4x120/70 mm²	–	–	Ø 48.5 mm
4x150/70 mm²	–	–	Ø 53 mm
4x185/95 mm²	–	–	–
4x240/120 mm²	–	–	–
5x1.5 mm²	Ø 12 mm	Ø 15 mm	Ø 15 mm
5x2.5 mm²	Ø 13.5 mm	Ø 16 mm	Ø 17 mm
5x4 mm²	Ø 15.5 mm	Ø 16.5 mm	Ø 18 mm
5x6 mm²	Ø 18 mm	Ø 19 mm	Ø 20 mm
5x10 mm²	Ø 20 mm	Ø 21 mm	–
5x16 mm²	Ø 26 mm	Ø 24 mm	–
5x25 mm²	Ø 31.5 mm	–	–
7x1.5 mm²	Ø 13 mm	Ø 16 mm	–
7x2.5 mm²	Ø 14.5 mm	Ø 16.5 mm	–
19x1.5 mm²	–	Ø 22 mm	–
24x1.5 mm²	–	Ø 25 mm	–

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

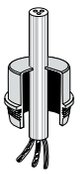
Outside diameters of cables		Cable entry metric
Ø min.	Ø max.	
4 mm	6 mm	AKM/ASS 12
5 mm	10 mm	AKM/ASS 16
6.5 mm	13.5 mm	AKM/ASS 20
11 mm	17 mm	AKM/ASS 25
15 mm	21 mm	AKM/ASS 32
19 mm	28 mm	AKM/ASS 40
27 mm	35 mm	AKM/ASS 50
35 mm	42 mm	AKM/ASS 63
4.8 mm	11 mm	ESM 16
6 mm	13 mm	ESM 20
9 mm	17 mm	ESM 25
9 mm	23 mm	ESM 32
17 mm	30 mm	ESM 40
3.5 mm	12 mm	STM 16
5 mm	16 mm	STM 20
5 mm	21 mm	STM 25
13 mm	26.5 mm	STM 32
13 mm	34 mm	STM 40

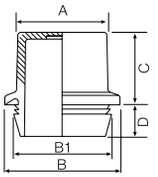
Outside diameters of cables		Cable entry metric
Ø min.	Ø max.	
5 mm	10 mm	EDK 16
6 mm	13 mm	EDK 20
9 mm	17 mm	EDK 25
8 mm	23 mm	EDK 32
11 mm	30 mm	EDK 40
conduit connection		
M 16		EDR 16
M 20		EDR 20
M 25		EDR 25
M 32		EDR 32
M 40		EDR 40

Cable entry systems

Technical details

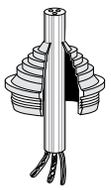
Dimensions	518
Operating and ambient conditions	519

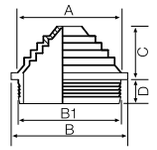




Grommets in mm	A	B	B1	C	D
ESM 16	16.5	22	18.5	14.5	8.5
ESM 20	20.5	26	22.5	14.5	8.5
ESM 25	26.0	31	27.5	14.5	8.5
ESM 32	33.0	38	34.5	17.5	8.5
ESM 40	41.0	46	42.5	17.5	8.5

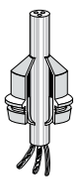
Grommets ESM
Degree of protection IP 55
Grommets ESM are inserted into knockouts. There is no counternut required!

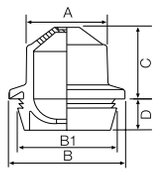




Stepped grommets in mm	A	B	B1	C	D
STM 16	13.2	21.2	19	7.4	8.0
STM 20	18.0	25	23	9.2	8.0
STM 25	21.6	30	28	11.5	7.4
STM 32	27.6	37	35	11.5	8.6
STM 40	33.6	45	43	15.1	8.6

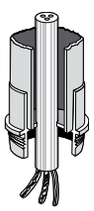
Stepped grommets STM
Degree of protection IP 55
Stepped glands STM are inserted into knockouts. There is no counternut required!

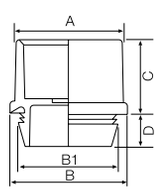




Grommets in mm	A	B	B1	C	D
EDK 16	14.5	22	18.5	13.5	8.5
EDK 20	18.5	26	22.5	14.5	8.5
EDK 25	23.5	31	27.5	14.5	8.5
EDK 32	30.5	38	34.5	19.5	8.5
EDK 40	38.5	46	42.5	19.5	8.5

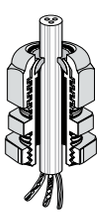
Grommets EDK
Degree of protection IP 65
Grommets EDK are inserted into knockouts. There is no counternut required!

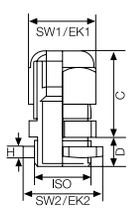




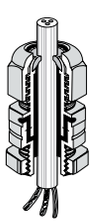
Grommets for conduits in mm	A	B	B1	C	D
EDR 16	20	22	18.5	14.5	8.5
EDR 20	24	26	22.5	14.5	8.5
EDR 25	29	31	27.5	14.5	8.5
EDR 32	36	38	34.5	17.5	8.5
EDR 40	44	46	42.5	17.5	8.5

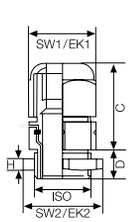
Grommets for conduits EDR
Degree of protection IP 65
Grommets for conduits EDR are inserted into knockouts. There is no counternut required!



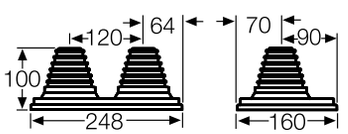


Cable glands ADG/ADG/AKM/ASS with strain relief counternut. degree of protection IP 66 / IP 67 in mm	ISO	SW1 across flats	EK1 across corners Ø	C max.	D	SW2 across flats	EKS across corners Ø	H
ADG/AKM/ASS 12	M 12	15	16.4	22	8	17	19.0	5
ADG/AKM/ASS 16	M 16	20	22.0	26	8	22	24.7	5
ADG/AKM/ASS 20	M 20	24	26.5	29	8	27	30.2	6
ADG/AKM/ASS 25	M 25	29	32.0	34	8	32	36.0	6
ADG/AKM/ASS 32	M 32	36	39.7	39	10	41	46.0	7
ADG/AKM/ASS 40	M 40	46	50.5	46	10	50	54.1	7
ADG/AKM/ASS 50	M 50	55	60.0	51	10	60	66.3	8
ADG/AKM/ASS 63	M 63	68	74.7	55	10	75	83.0	8

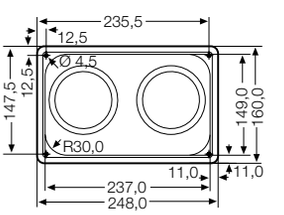




Combi climate glands KBM / KBS with strain relief counternut. degree of protection IP 66 / IP 67 in mm	ISO	SW1 across flats	EK1 across corners Ø	C max.	D	SW2 across flats	EK2 across corners Ø	H
KBM/KBS 20	M 20	24	27.0	42	8	27	29.0	5
KBM/KBS 25	M 25	29	32.0	45	8	32	35.5	5
KBM/KBS 32	M 32	36	40.0	47	10	40	44.5	6
KBM/KBS 40	M 40	46	50.5	59	10	50	54.1	7



Flange MV FP 66
Degree of protection IP 55
for retrofitting onto boxes made of sheet steel
material thickness ≥ 1.5 mm



Cable entry systems

Technical Details

Operating and Ambient Conditions

	ESM ... STM ... EDK ... EDR ... KST... MV FP 66	AKM ... ASS ...	AKS ... KBM ... KBS ...
Application area	Suitable for indoor installation (normal environment and/or protected outdoor)	Suitable for **outdoor installation** - harsh environment and / or outdoor	
Ambient temperature - Average value over 24 hours - Maximum value - Minimum value	 + 35 °C + 40 °C – 25 °C	 + 55 °C + 70 °C – 25 °C	 + 55 °C + 70 °C – 25 °C
Fire protection in the event of internal faults	Demands placed on electrical devices from standards and laws: Minimum requirements - Glow wire test in accordance with IEC 60695-2-11: - 650 °C for boxes and Cable glands		
Burning behaviour - Glow wire test IEC 60695-2-11 - UL Subject 94	 750 °C – flame-retardant self-extinguishing	 960 °C V-0 flame-retardant self-extinguishing	 960 °C V-2 flame-retardant self-extinguishing
Toxic behaviour	halogen-free silicone-free	halogen-free silicone-free	halogen-free silicone-free
	“Halogen-free” in accordance with IEC 60754-2 “Common test methods for cables - Determination of the amount of halogen acid gas”. For material properties see technical data.		