

Mating connectors and cable sets for valves and sensors in hydraulics

RE 08006

Edition: 2016-04

Replaces: 10.12










Features

- ▶ Mating connectors and cable sets for electrical connection of:
 - Valve solenoids
 - Valves with integrated electronics
 - Position and pressure sensors
- ▶ Various designs and standards
- ▶ Plastic and metal versions

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|---|---|---|-----------|
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Notice:

Plug-in connectors must not be disconnected and connected under load

Mating connectors

For valves with "K4" connector, 2-pole + PE, design A (large cubic connector)

Ordering code

| Short designation | Voltage (V) DC / AC <i>U</i> | Current (A) <i>I</i> _{max} | Color | Line fitting | Material number | Circuit diagram |
|--|-------------------------------------|--|-------|--------------|-----------------|-----------------|
| Without circuitry, standard | | | | | | |
| Z4 | 12 ... 240 V | 16 A ⁴⁾ | gray | M16 x 1.5 | R901017010 | |
| | 12 ... 240 V | 16 A ⁴⁾ | black | M16 x 1.5 | R901017011 | |
| Z45 | 12 ... 240 V | 16 A ⁴⁾ | brown | NPT 1/2" | R900004823 | |
| | 12 ... 240 V | 16 A ⁴⁾ | black | NPT 1/2" | R900011039 | |
| With indicator light | | | | | | |
| Z5L | 12 ... 240 V | 4 A ⁴⁾ | black | M16 x 1.5 | R901017022 | |
| Z55L | 12 ... 240 V | 4 A ⁴⁾ | black | NPT 1/2" | R900057453 | |
| With indicator light and Zener diode suppression circuit | | | | | | |
| Z5L1 | 24 V ± 10% ¹⁾ | 4 A ⁴⁾ | black | M16 x 1.5 | R901017026 | |
| With indicator light and protective diode | | | | | | |
| Z5L2 | 24 V ± 10% ²⁾ DC only | 3 A ⁴⁾ | black | M16 x 1.5 | R901017027 | |
| With rectifier | | | | | | |
| RZ5 | 80...240 V ³⁾ | 1.5 A ⁴⁾ | black | M16 x 1.5 | R901017025 | |
| RZ55 | 80...240 V ³⁾ | 1.5 A ⁴⁾ | black | NPT 1/2" | R900842566 | |
| With indicator light and rectifier | | | | | | |
| RZ5L | 80...240 V ³⁾ | 1.5 A ⁴⁾ | black | M16 x 1.5 | R901017029 | |
| RZ55L | 80...240 V ³⁾ | 1.5 A ⁴⁾ | black | NPT 1/2" | R900057455 | |

¹⁾ Switch-off voltage peak limitation to 55 V

²⁾ Switch-off voltage peak limitation to 1 V

³⁾ Switch-off voltage peak limitation to 2 V

⁴⁾ Please observe temperature range and/or derating (see technical data)

Technical data

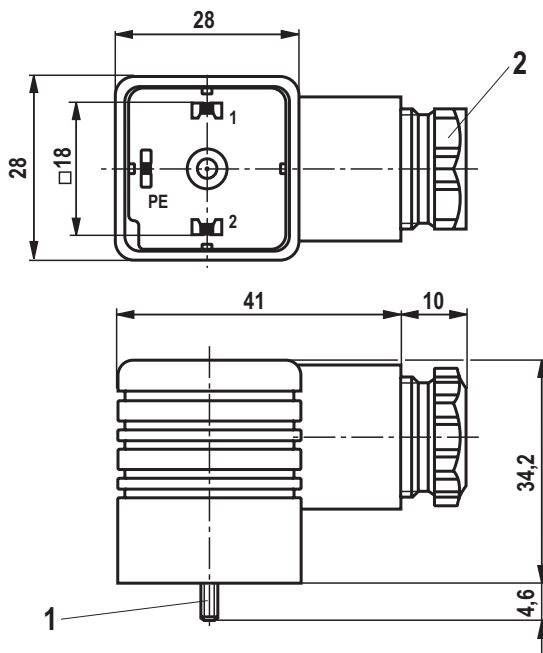
| Mating connector | | | | |
|---|---|-------------------------|-------------|------------|
| Design | | | A | |
| Ambient temperature | Standard (Z4, Z45) | °C | -30 ... +90 | |
| | with indicator light/rectifier (Z5L, Z55L, Z5L1, Z5L2, RZ5, RZ55, RZ5L, Z55L) | °C | -20 ... +60 | |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | | |
| Indicator light (Z5L, Z55L, Z5L1, Z5L2, RZ5L, Z55L) | LED yellow | | | |
| Number of poles | 2 + PE | | | |
| Terminal area for lines with external diameter | mm | 5 ... 10 | | |
| Maximum wire cross-section | mm ² | 1.5 ¹⁾ | | |
| Type of connection | Screw connection | | | |
| Standard | EN 175301-803 | | | |
| Certification/conformity | Z4 | VDE, SEV, RoHS | | |
| | Z45 | VDE, SEV, UL, CSA, RoHS | | |
| Derating | Z4, Z45 | 16 A | °C | max. 40 °C |
| | | 9.5 A | °C | max. 60 °C |
| | Z5L, Z55L, Z5L1, Z5L2 | - | | |
| | RZ5, RZ55, | 1.5 A | °C | max. 25 °C |
| | RZ5L, Z55L | 1 A | °C | max. 60 °C |
| | | | | |

¹⁾ 2.5 mm² with special wire end ferrule clamp (e.g. Knipex 975314 or Weidmüller PZ 6/5)

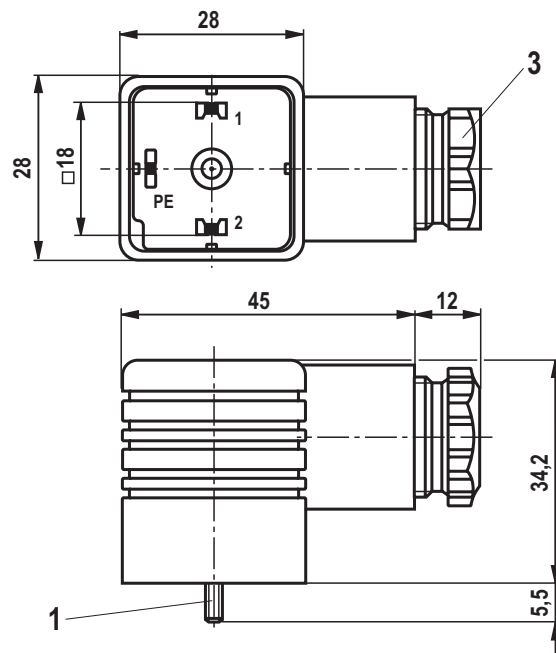
Unit dimensions

(dimensions in mm)

Z4



Z45

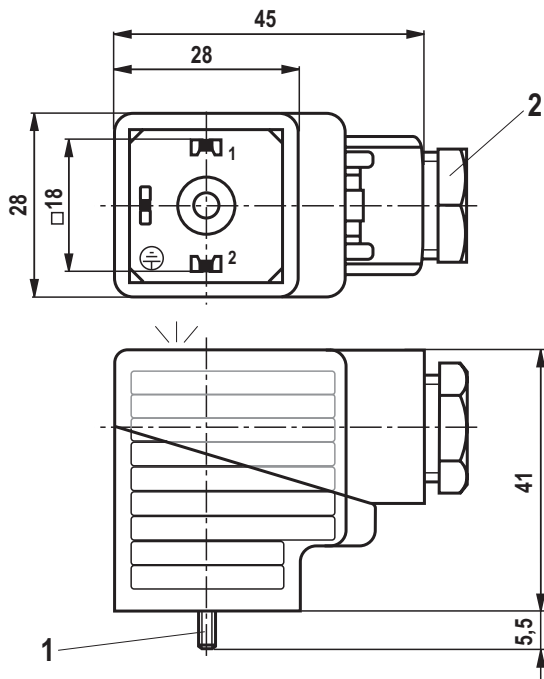


- 1 M3 mounting screw, tightening torque $M_A = 0.5 \text{ Nm}$
- 2 M16 x 1.5 line fitting, tightening torque $M_A = 1.5 \dots 2.5 \text{ Nm}$ (4.5 ... 10 mm)
- 3 NPT 1/2" line fitting, tightening torque $M_A = 2.5 \dots 3.75 \text{ Nm}$ (4 ... 11 mm)

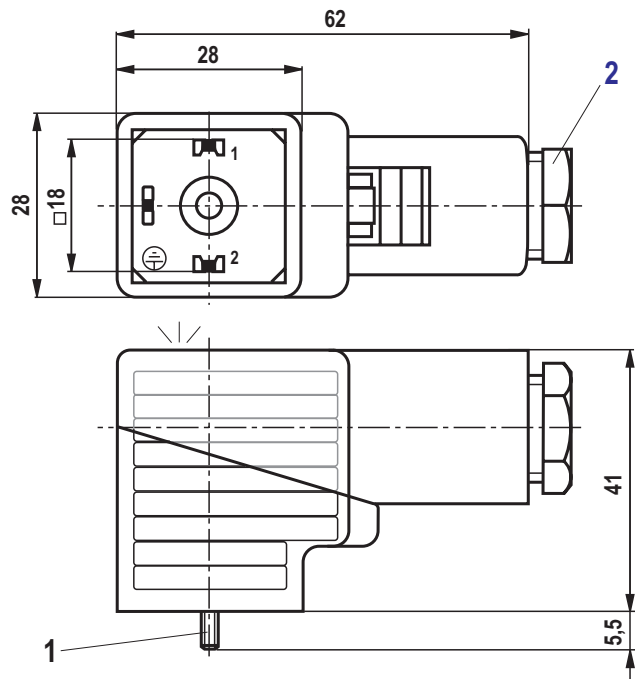
Unit dimensions

(dimensions in mm)

Z5L, Z5L1, Z5L2, RZ5, RZ5L



Z55L, RZ55L, RZ55



- 1 M3 mounting screw, tightening torque $M_A = 0.5 \text{ Nm}$
- 2 M16 x 1.5 line fitting, tightening torque $M_A = 1.5 \dots 2.5 \text{ Nm}$ (5 ... 10 mm)
NPT 1/2" line fitting, tightening torque $M_A = 2.5 \dots 3.75 \text{ Nm}$ (4.5 ... 10 mm)
(see table on page 6)

Cable sets

For valves with "K4" connector, 2-pole + PE, design A (large cubic connector)

Ordering code

| Short designation | Voltage (V) DC / AC U | Current (A) I_{max} | Color | Material number for cable length | | | Circuit diagram |
|--|-------------------------------|--------------------------|-------|----------------------------------|------------|------------|-----------------|
| | | | | 3 m | 5 m | 10 m | |
| Without circuitry, standard | | | | | | | |
| Z4 | 12 ... 240 V | 10 A | black | R900032020 | R900032014 | R900217134 | |
| With indicator light | | | | | | | |
| Z4L | 24 V | 4 A | black | R900032050 | R900032018 | R900217135 | |
| | 90 ... 130 V | 1 A | black | R900032023 | R900032012 | R900217136 | |
| | 230 V | 0.5 A | black | R900032024 | R900032010 | R900217137 | |
| With indicator light and Zener diode suppression circuit | | | | | | | |
| Z4L1 | 24 V ¹⁾ | 4 A | black | R900032021 | R900032015 | R900217138 | |

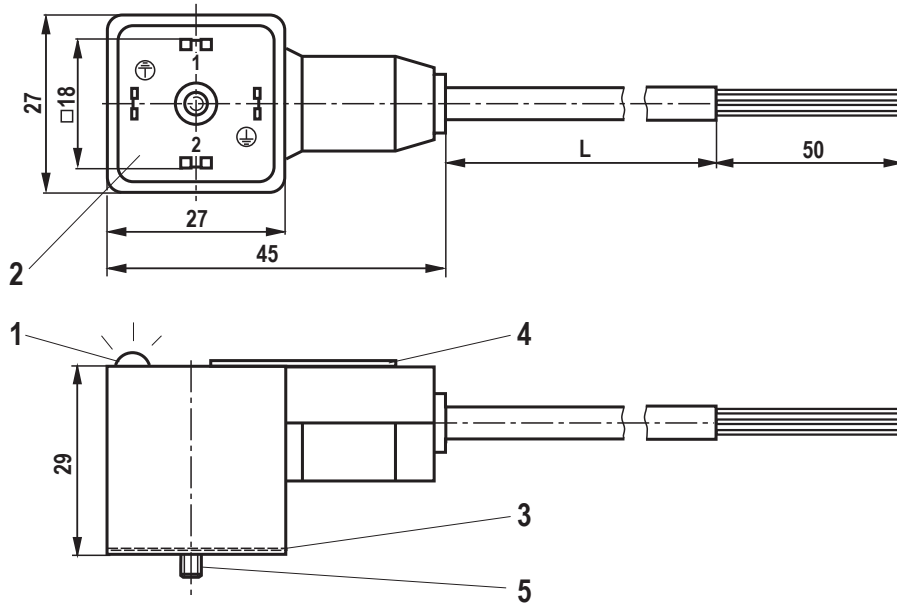
¹⁾ Switch-off voltage peak limitation to 55 V

Technical data

| Mating connector | | |
|--|--|---------------------------|
| Design | A | |
| Ambient temperature | Fixed line installation | °C -20 ... +80 |
| | Flexible line | °C -5 ... +70 |
| Protection class according to EN 60529 | IP 67 with mating connector mounted and fitted | |
| Indicator light | Z4L... | LED yellow |
| Number of poles | 2 + PE | |
| Standard | EN 175301-803 | |
| Certification/conformity | RoHS | |
| Derating | - | |
| Connection line | | |
| Type | Oilflex 150 PVC, gray | |
| Wire cross-section | mm ² | 3 x 1.0 |
| Core marking | PE | Green/yellow |
| | other wires | Black with numbers |
| Line diameter | mm | Approx. 7 |
| Bending radius | Fixed line installation | Min. 4 x line diameter |
| | Flexible line | Min. 12.5 x line diameter |

Unit dimensions

(dimensions in mm)



- 1 LED
- 2 Contacting 0 + 180° rotatable
- 3 Flat seal (not detachable)
- 4 Name plate
- 5 M3 mounting screw (not detachable), tightening torque $M_A = 0.5 \text{ Nm}$
- L Cable length 3, 5 or 10 m (see "Ordering code")

Cable sets

For **ATEX** valves with "K4" connector, 2-pole + PE, design A (large cubic connector)

Ordering code

| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Material number for cable length | | | Circuit diagram pole pattern |
|-----------------------------|--------------------------------|------------------------------------|-------|----------------------------------|------------|------------|---------------------------------|
| | | | | 3 m | 5 m | 12 m | |
| Without circuitry, standard | | | | | | | |
| DS2513...ATEX | 0 ... 230 V | 4 A | black | R901200418 | R901200460 | R901200582 | |

Technical data

| Mating connector | | | |
|--|--|-------------------------|--------------|
| Design | A | | |
| Ambient temperature | °C -30 ... +90 | | |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | |
| Number of poles | 2 + PE | | |
| Standard | DIN EN 175301-803 | | |
| Certification/conformity | ATEX cat. 3 GD, EN 60079-0, EN 60079-15, EN 60079-31 | | |
| Derating | - | | |
| Connection line | | | |
| Type | LiF9YH-11YH, PUR | | |
| Wire cross-section | mm ² 3 x 0.75 | | |
| Shielding braid overlap | % Approx. 85 | | |
| Core marking | PE | Color | Green-yellow |
| | others | Color | Brown, blue |
| Line diameter | mm 5.5 ... 6.5 | | |
| Bending radius | Flexible | Min. 10 x line diameter | |

Notice:

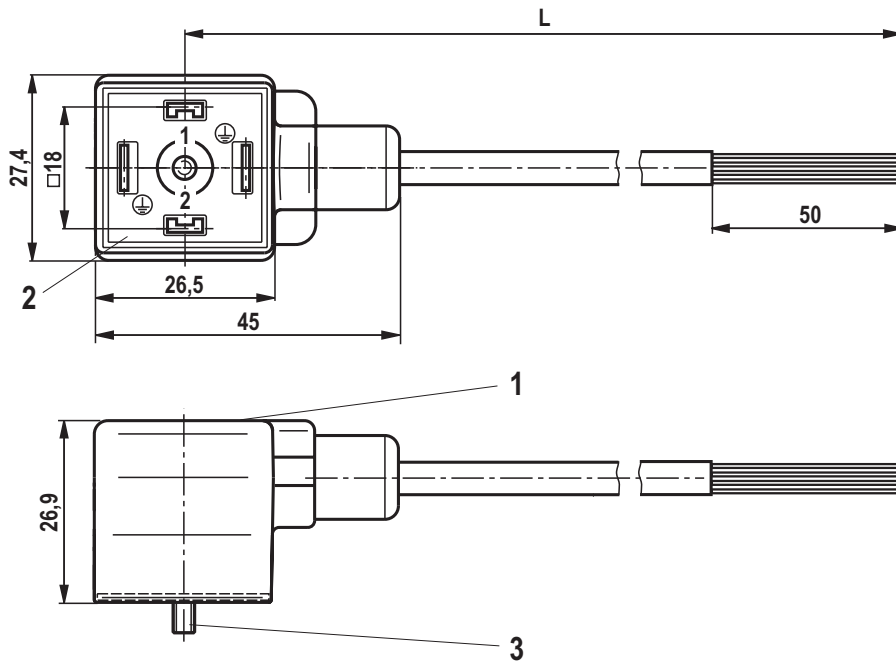
The enclosed NBR seal must be used in connection with Rexroth valves.

Enclosed:

- ▶ Labeling plate
- ▶ Additional NBR seal for use with Rexroth valves

Unit dimensions

(dimensions in mm)



- 1 Name plate
- 2 Contacting 0 + 180° rotatable
- 3 M3 mounting screw (not detachable), tightening torque $M_A = 1 \text{ Nm}$
- L Cable length 3, 5 or 12 m (see "Ordering code")

Cable sets

For valves with two solenoids (double mating connectors) and "K4" connector, 2-pole + PE, design A (large cubic connector)

Ordering code: for directional valves type WE **Size 6**, SEC and pilot-operated on/off valves

| Short designation | Voltage DC / AC U | Current I_{max} | Cable length | Material number | Circuit diagram |
|--|--------------------------|-------------------|--------------|-----------------|-----------------|
| Cable sets with M12 x 1 connector | | | | | |
| Z60 | 24 V ± 10% | 4 A | – | R901207820 | |
| With indicator light | | | | | |
| Z60L | 24 V ± 10% | 4 A | – | R901207819 | |
| With indicator light and Zener diode suppression circuit | | | | | |
| Z60L8 | 24 V ± 10% ¹⁾ | 4 A | – | R901205511 | |
| Cable sets with free line end | | | | | |
| Z61 | 12 ... 240 V | 4 A | 3 m | R901207821 | |
| | 12 ... 240 V | 4 A | 5 m | R901207822 | |
| With indicator light, shielded | | | | | |
| Z61L | 24 V | 4 A | 3 m | R901286065 | |

¹⁾ Switch-off voltage peak limitation to ≤ 50 V

Ordering code: for directional valves type WE NG10

| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Cable length | Material number | Circuit diagram |
|---|-----------------------------|------------------------------------|--------------|-----------------|-----------------|
| Cable sets with M12 x 1 connector | | | | | |
| Z60 | 24 V ± 10% | 4 A | – | R901207825 | |
| With indicator light | | | | | |
| Z60L | 24 V DC only | 4 A ²⁾ | – | R901207824 | |
| Cable sets with free line end | | | | | |
| With M12 x 1 connector, indicator light and Zener diode suppression circuit | | | | | |
| Z60L8 | 24 V ¹⁾ DC only | 4 A ²⁾ | – | R901207823 | |
| With free line end | | | | | |
| Z61 | 230 V ± 10% | 4 A | 3 m | R901207826 | |
| | 230 V ± 10% | 4 A | 5 m | R901207892 | |

¹⁾ Switch-off voltage peak limitation to ≤ 50 V

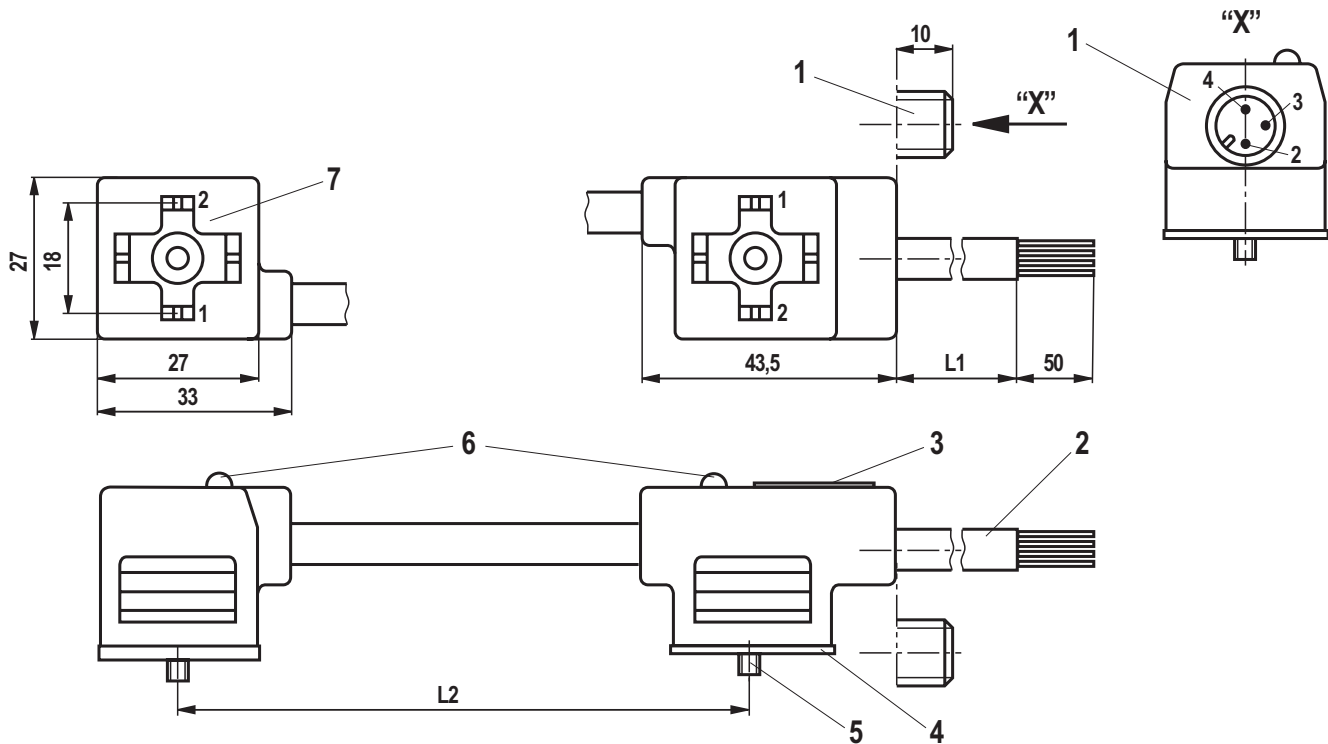
²⁾ Please observe temperature range and/or derating (see technical data)

Technical data

| Mating connector | | | | |
|--|--|-------------------------|-------------|----------|
| Design | A | | | |
| Connector | M12 metal thread, A coding, version according to 61076-2-101 | | | |
| Ambient temperature | Fixed line installation | °C | -25 ... +80 | |
| | Flexible line | °C | -20 ... +80 | |
| Protection class according to EN 60529 | IP 67 with mating connector mounted and fitted | | | |
| Indicator light | Z60L..., Z61L... | LED yellow | | |
| Number of poles | 2 + PE | | | |
| Standard | EN 175301-803A/ISO4400 | | | |
| Certification/conformity | RoHS, CSA | | | |
| Derating | Z60L, Z60L8 | 4 A | °C | Max. +40 |
| | | 2 A | °C | Max. +95 |
| Connection line | | | | |
| Type | PUR-JZ black | | | |
| Connection line wire cross-section | | mm ² | 3 x 0.75 | |
| Breakout cable wire cross-section | Z61 | mm ² | 4 x 0.75 | |
| | Z61L | mm ² | 3 x 0.75 | |
| Shielding braid overlap at "Z61L" | Min. 85% | | | |
| Core marking at "Z61" | PE | Green/yellow | | |
| | other wires | Black with numbers | | |
| Line diameter | Z61 | mm | 5.9 ± 0.2 | |
| | Z61L | mm | 6.5 ± 0.2 | |
| Bending radius | Fixed line installation | Min. 4 x line diameter | | |
| | Flexible line | Min. 10 x line diameter | | |

Unit dimensions

(dimensions in mm)



- 1 Version "Z60..."
- 2 Version "Z61..."
- 3 Name plate
- 4 Flat seal (not detachable)
- 5 M3 mounting screw (not detachable), tightening torque $M_A = 0.4 \text{ Nm}$
- 6 LED (versions "Z60L" and Z61L only)
- 7 0° contacting (PE bridged)
- L1 Cable length 3 or 5 m (see "Ordering code")
- L2 113 mm (for NG6 valves), 135 mm (for NG10 valves)

Mating connectors

For valves with connector, 4-pole (small cubic connector)

Ordering code

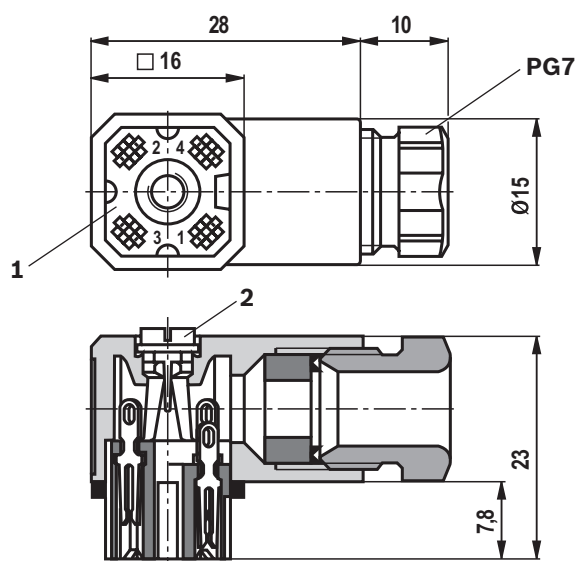
| Short designation | Voltage DC / AC U_{max} | Current I_{max} | Color | Line fitting | Material number | Circuit diagram |
|-------------------|---------------------------------|----------------------|-------|--------------|-----------------|-----------------|
| G4W1F | 50 V | 6 A | black | PG 7 | R900023126 | |

Technical data

| Mating connector | |
|--|--|
| Design | Without designation (see unit dimensions) |
| Ambient temperature | °C -40 ... +90 |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted |
| Number of poles | 4 |
| Terminal area for line diameter | mm 4 ... 7.5 |
| Maximum wire cross-section | mm ² 0.14 ... 0.5 |
| Type of connection | Soldered joint |
| Standard | DIN VDE0627/IEC61984 |
| Certification/conformity | VDE |
| Derating | - |

Unit dimensions

(dimensions in mm)



- 1 Contacting (rotatable)
- 2 M3 x 20 mounting screw, tightening torque $M_A = 0.5 \text{ Nm}$

Mating connectors

For valves with round connector, 6-pole + PE and 6-pole

Ordering code

| Short designation | Voltage DC / AC U | Current I_{max} | Line fitting | Material number | Circuit diagram pole pattern |
|---|------------------------|----------------------|-------------------|-----------------|------------------------------|
| 6-pole + PE, plastic version | | | | | |
| 7PZ31...K | 24 V | 3 A ¹⁾ | PG 11 | R900021267 | |
| 6-pole + PE, metal version | | | | | |
| 7PZ31...M | 24 V | 3 A | PG 11 | R900223890 | |
| 6-pole, metal version, connection compatible with VG 95328 (for servo valves) | | | | | |
| 6P KPTC6 | 24 V | 3 A | SW16 clamping nut | R901043330 | |

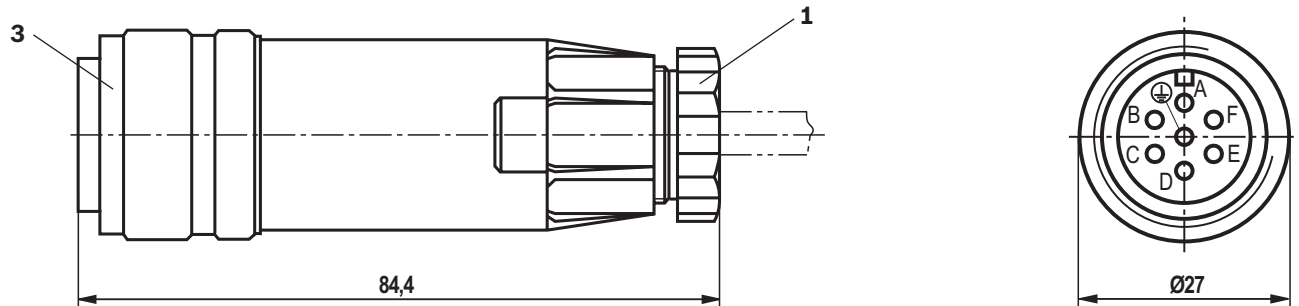
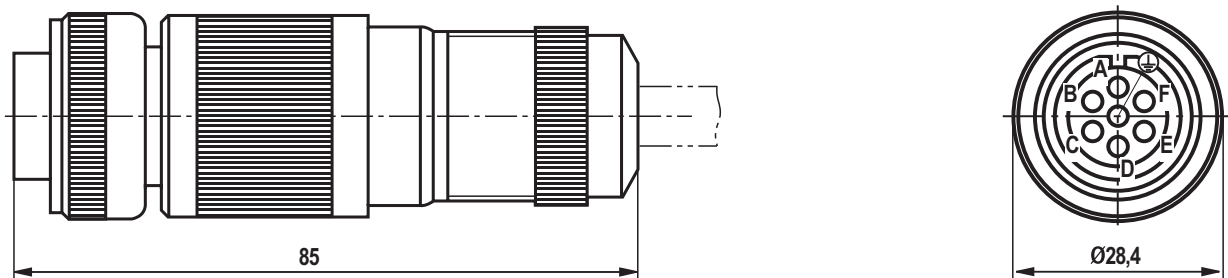
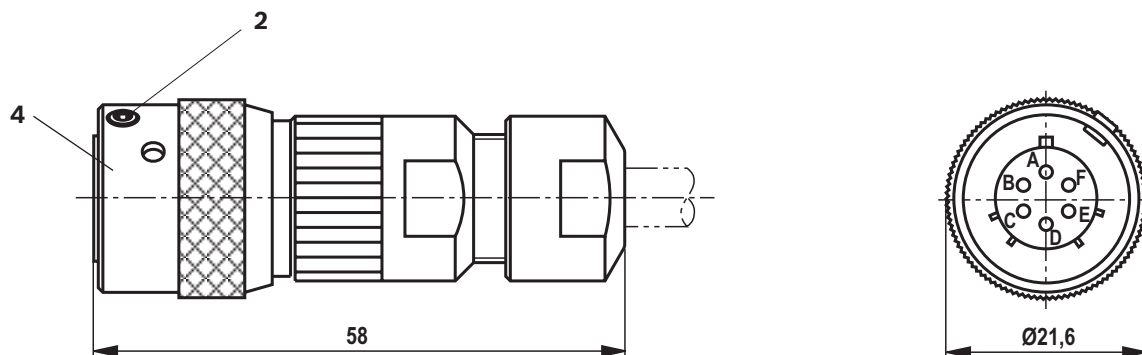
¹⁾ Please observe temperature range and/or derating (see technical data)

Technical data

| Mating connector | | | |
|--|---|--|------------------------------|
| Design | without designation (see "Unit dimensions") | | |
| Ambient temperature | 7PZ31... | °C | -40 ... +100 |
| | 6P KPTC6 | °C | -55 ... +125 |
| Protection class according to EN 60529 | 7PZ31...K | IP 67 with mating connector mounted and fitted | |
| | 7PZ31...M, 6P KPTC6 | IP 65 with mating connector mounted and fitted | |
| Number of poles | 6 + PE | | |
| Terminal area for line diameter | 7PZ31...K | mm | 6.5 ... 11 mm |
| | 7PZ31...M | mm | 9.0 ... 12.5 mm |
| | 6P KPTC6 | mm | 4.5 ... 7 mm |
| Maximum wire cross-section | 7PZ31... | mm ² | 0.5 ... 1.5 mm ² |
| | 6P KPTC6 | mm ² | 0.4 ... 0.75 mm ² |
| Type of connection | 7PZ31... | Soldered joint | |
| | 6P KPTC6 | Crimping connection (crimping contact included in the scope of delivery) | |
| Standard | 7PZ31..., 6P KPTC6 | EN175201-804 | |
| | 7PZ31... | DIN43563 | |
| Certification/conformity | 7PZ31... | DIN 43563 | |
| | 6P KPTC6 | RoHS | |
| Derating | 7PZ31...K | 6 A at 0.5 mm ² | °C Max. +70 |
| | | 9 A at 1.5 mm ² | °C Max. +70 |

Unit dimensions

(dimensions in mm)

7PZ31...K**7PZ31...M****6P KPTC6**

- 1 PG11 line fitting
- 2 Fuse: M3 grub screw, tightening torque $M_A = 0.3 \text{ Nm}$
- 3 7/8" - 20 UNEF 2B
- 4 9/16" - 24 UNEF 2B

Accessories for "6P KPTC6" (not included in scope of delivery)

| | Order number |
|---------------------|---------------------|
| ITT Cannon | |
| Crimping pliers | M22520/1-01 |
| Crimping insert | M22520/1-02 |
| Installation tool | CiTG-20A |
| Installation pliers | CIT-KPTC-20 |

Cable sets

For valves with round connector, 6-pole + PE

Ordering code

| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Material number for cable length | | | Circuit diagram pole pattern |
|--|--------------------------------|------------------------------------|-------|----------------------------------|------------|------------|---------------------------------|
| | | | | 3 m | 5 m | 10 m | |
| 6-pole + PE, plastic version, shielded | | | | | | | |
| 7P Z31 BF6 ... | < 50 V | 8.5 A | black | R901420483 | R901420491 | R901420496 | |

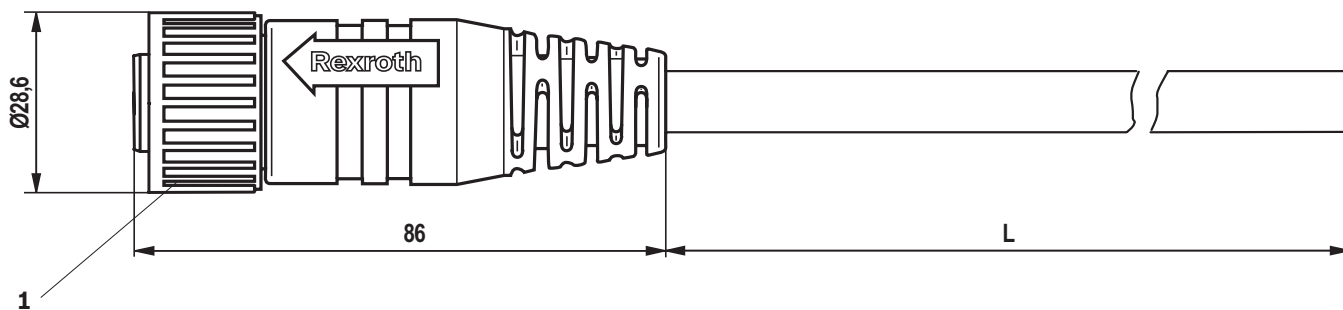
Technical data

| Mating connector | | | |
|--|--|-------------------------|---|
| Design | Without designation (see "Unit dimensions") | | |
| Ambient temperature | Fixed installation | °C | -40 ... +80 |
| | Flexible | °C | -25 ... +80 |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted IP 67 with mating connector mounted and fitted | | |
| Number of poles | 6 + PE | | |
| Standard | MIL-C 5015, VG 95 342 | | |
| Certification/conformity | RoHS, cULus (UL2238) | | |
| Derating ¹⁾ | 8.5 A | °C | Max. +40 |
| | 4 A | °C | Max. +65 |
| Connection line | | | |
| Type | Li9Y11CVY, black, halogen-free, flame-resistant, shielded, drag chain-compatible | | |
| Wire cross-section | mm ² | 7 x 0.75 | |
| Shielding braid overlap | % | 85 ± 5% | |
| Core marking | PE | Color | Green-yellow |
| | others | Color | A: brown, B: yellow, C: green, D: blue, E: gray, F: white |
| Line diameter | mm | 9 ± 0.2 | |
| Bending radius | Fixed installation | Min. 5 x line diameter | |
| | Flexible | Min. 10 x line diameter | |

¹⁾ Maximum admissible current dependent on ambient temperature; with rising ambient temperature, the admissible current declines linearly.

Unit dimensions

(dimensions in mm)

7P Z31 BF3 ...

1 Coupling nut, tightening torque $M_A = 1 \dots 1.5$ Nm

Mating connectors

For valves with round connector, 11-pole + PE

Ordering code

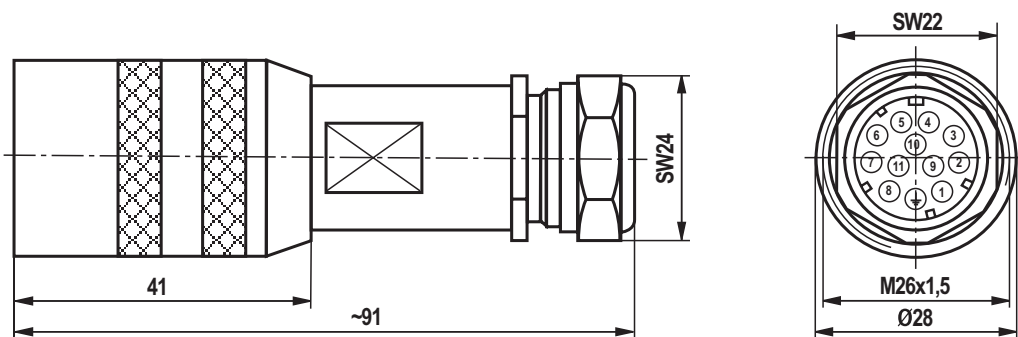
| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Line fitting | Material number | Circuit diagram pole pattern |
|--|--------------------------------|------------------------------------|--------------|-----------------|---------------------------------|
| 11-pole + PE, metal version, shielded | | | | | |
| 12PN11... EMC | 24 V | 3 A | PG 13.5 | R901268000 | |
| 11-pole + PE, plastic version | | | | | |
| 12PN11 | 24 V | 3 A | PG 16 | R900752278 | |
| 11-pole + PE, plastic version, two cable outlets | | | | | |
| 12PN11...2XD8 | 24 V | 3 A | PG 16 | R900884671 | |

Technical data

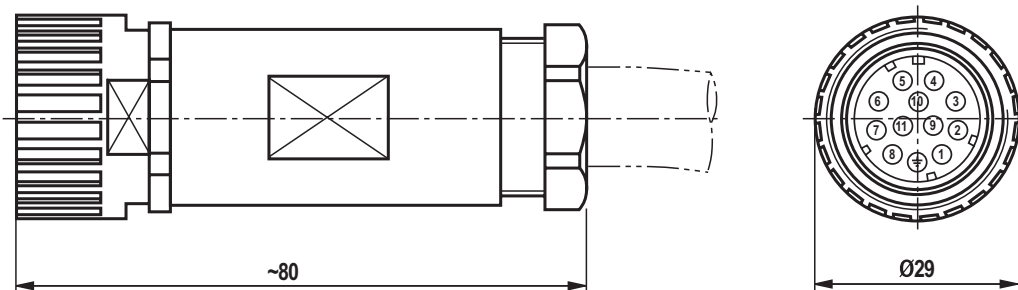
| Mating connector | | | | | | | | | | |
|--|--|--|-----------------------------|--|---------------------------------|---------------|---|--|----|--|
| Design | without designation (see "Unit dimensions") | | | | | | | | | |
| Ambient temperature | °C -40 ... +90 | | | | | | | | | |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | | | | | | | | |
| Number of poles | 11 + PE | | | | | | | | | |
| Terminal area for line diameter | <table border="0"> <tr> <td>12PN11... EMC</td> <td>12 ... 15 mm</td> </tr> <tr> <td>12PN11</td> <td>12 ... 14 mm</td> </tr> <tr> <td>12PN11...2XD8</td> <td>2 x 6 ... 8 mm</td> </tr> </table> | 12PN11... EMC | 12 ... 15 mm | 12PN11 | 12 ... 14 mm | 12PN11...2XD8 | 2 x 6 ... 8 mm | | | |
| 12PN11... EMC | 12 ... 15 mm | | | | | | | | | |
| 12PN11 | 12 ... 14 mm | | | | | | | | | |
| 12PN11...2XD8 | 2 x 6 ... 8 mm | | | | | | | | | |
| Maximum wire cross-section | <table border="0"> <tr> <td>12PN11, 12PN11... EMC</td> <td>0.5 ... 1.5 mm²</td> </tr> <tr> <td>12PN11...2XD8</td> <td>3 x 0.5 ... 1.5 mm²</td> </tr> <tr> <td></td> <td>9 x 0.14 ... 0.5 mm²</td> </tr> </table> | 12PN11, 12PN11... EMC | 0.5 ... 1.5 mm ² | 12PN11...2XD8 | 3 x 0.5 ... 1.5 mm ² | | 9 x 0.14 ... 0.5 mm ² | | | |
| 12PN11, 12PN11... EMC | 0.5 ... 1.5 mm ² | | | | | | | | | |
| 12PN11...2XD8 | 3 x 0.5 ... 1.5 mm ² | | | | | | | | | |
| | 9 x 0.14 ... 0.5 mm ² | | | | | | | | | |
| Type of connection | Crimping connection | | | | | | | | | |
| ► Crimping contact: | <table border="0"> <tr> <td>12PN11</td> <td>mm</td> <td>12 x 0.5...1.5 (included within the scope of delivery)</td> </tr> <tr> <td>12PN11...2XD8</td> <td>mm</td> <td>3 x 0.5...1.5 (included within the scope of delivery)</td> </tr> <tr> <td></td> <td>mm</td> <td>9 x 0.14...0.5 (included within the scope of delivery)</td> </tr> </table> | 12PN11 | mm | 12 x 0.5...1.5 (included within the scope of delivery) | 12PN11...2XD8 | mm | 3 x 0.5...1.5 (included within the scope of delivery) | | mm | 9 x 0.14...0.5 (included within the scope of delivery) |
| 12PN11 | mm | 12 x 0.5...1.5 (included within the scope of delivery) | | | | | | | | |
| 12PN11...2XD8 | mm | 3 x 0.5...1.5 (included within the scope of delivery) | | | | | | | | |
| | mm | 9 x 0.14...0.5 (included within the scope of delivery) | | | | | | | | |
| Standard | DIN 43651 | | | | | | | | | |
| Certification/conformity | - | | | | | | | | | |
| Derating | - | | | | | | | | | |

Unit dimensions
(dimensions in mm)

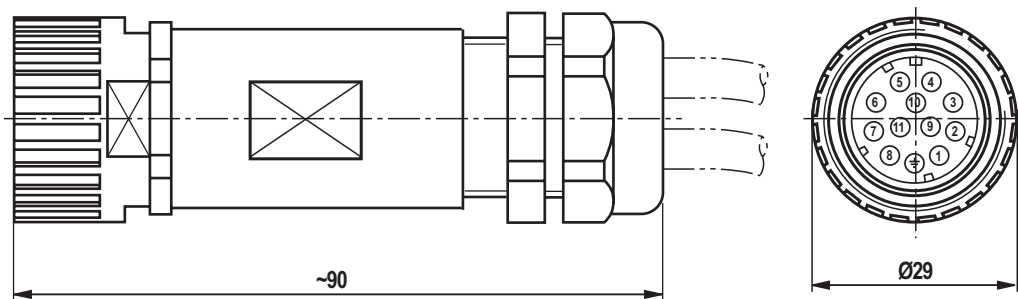
12PN11... EMC



12PN11



12PN11...2XD8



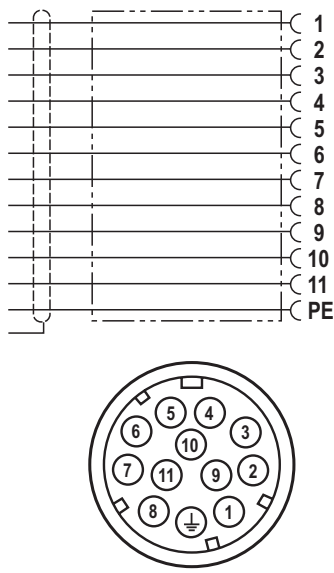
Accessories (not included in the scope of delivery)

| Hirschmann | Order number |
|-----------------|--------------|
| Crimping pliers | XCZ 0701 |
| Ejection tool | XWA 164 |

Cable sets

For valves with round connector, 11-pole + PE

Ordering code

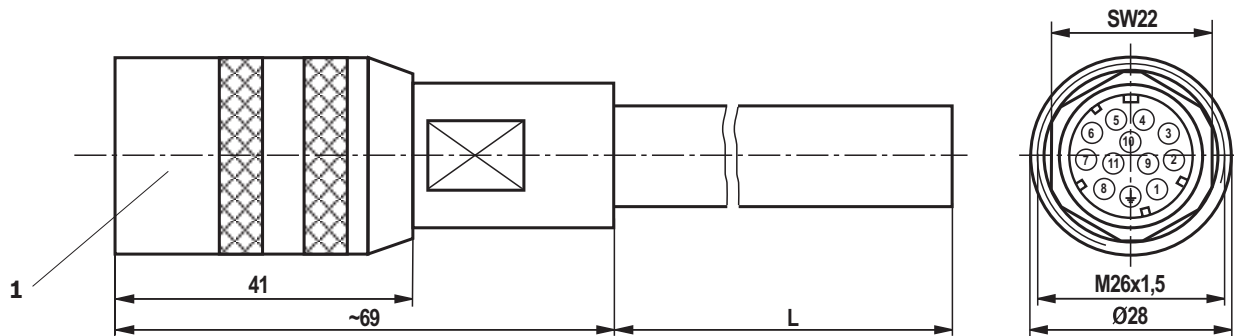
| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Material number for cable length | | Circuit diagram pole pattern |
|---------------------------------------|--------------------------------|------------------------------------|-------|----------------------------------|------------|--|
| | | | | 5 m | 20 m | |
| 11-pole + PE, metal version, shielded | | | | | | |
| 12PN11REFS EMV...BG | 25 VAC, 50 VDC | 5 A | gray | R901272854 | R901272852 |  |

Technical data

| Mating connector | | | |
|--|---|-------------------------|---------------------------------------|
| Design | Without designation (see "Unit dimensions") | | |
| Ambient temperature | Fixed installation | °C | -40 ... +80 |
| | Flexible | °C | -20 ... +80 |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | |
| Number of poles | 11 + PE | | |
| Standard | DIN 43651 | | |
| Certification/conformity | RoHS | | |
| Derating | - | | |
| Connection line | | | |
| Type | F-C-PURö-JZ, coolant-resistant, Cu-shielded, increased oil resistance | | |
| Wire cross-section | mm ² | 12 x 0.75 | |
| Shielding braid overlap | % | 85 | |
| Core marking | PE | Color | Green-yellow |
| | others | Color | Black wires with serial white numbers |
| Line diameter | mm | Approx. 10.5 | |
| Bending radius | Fixed installation | Min. 5 x line diameter | |
| | Flexible | Min. 10 x line diameter | |

Unit dimensions
(dimensions in mm)

12PN11REFS EMV...BG

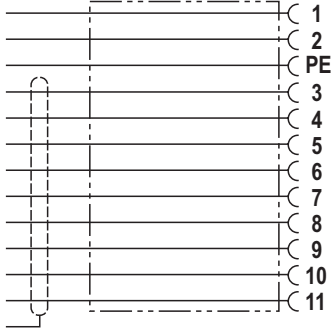



1 Coupling nut, tightening torque $M_A = 1 \dots 1.5 \text{ Nm}$

Cable sets

For valves with round connector, 11-pole + PE

Ordering code

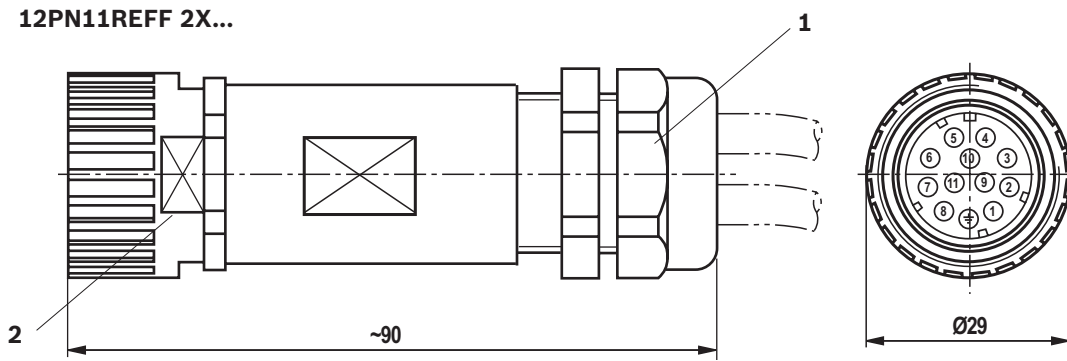
| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Material number for cable length | | Shield | Circuit diagram pole pattern |
|---|--------------------------------|------------------------------------|-------|----------------------------------|------------|---|---|
| | | | | 5 m | 20 m | | |
| 11-pole + PE, plastic version, shielded | | | | | | | |
| 12PN11REFF 2X... | < 50 V | 5 A | black | R900032356 | R900860399 | data line 10 x 0.14 mm ² shielded only |   |

Technical data

| Mating connector | | | |
|--|--|--|--|
| Design | Without designation (see "Unit dimensions") | | |
| Ambient temperature | Fixed installation | °C | -40 ... +80 |
| | Flexible | °C | -5 ... +70 |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | |
| Number of poles | 11 + PE | | |
| Standard | DIN 43651 | | |
| Certification/conformity | - | | |
| Derating | - | | |
| Connection line | | | |
| Type | Data line: | PVC, Unitronic LiYCY, shielded, flame-resistant according to IEC 60332-1-2 | |
| | Control line | PVC, classic 110, flame-resistant according to IEC 60332-1-2 | |
| Wire cross-section | Data line: | mm ² | 10 x 0.14 |
| | Control line | mm ² | 3 x 1.0 |
| Core marking | PE | Color | Green-yellow |
| | others | Color | Black wires with serial white numbers 1: 1; 2: 2; 3: white; 4: yellow; 5: green; 6: violet; 7: pink; 8: red; 9: brown; 10: black; 11: blue; n.c.: gray |
| Line diameter | Data line: | mm | Approx. 6.1 |
| | Control line | mm | Approx. 6 |
| Bending radius | Fixed installation | Min. 6 x line diameter | |
| | Flexible | Min. 15 x line diameter | |

Unit dimensions

(dimensions in mm)



- 1** Line fitting, tightening torque $M_A = 1 \text{ Nm}, 1.5 \text{ Nm}$
2 Coupling nut, tightening torque $M_A = 0.8 \dots 1.0 \text{ Nm}$

Mating connector

For mechanical pressure switches with "K14" connector, 3-pole + PE, design A (large cubic connector)

Ordering code

| Short designation | Voltage DC / AC U | Current I_{max} | Color | Line fitting | Material number | Circuit diagram |
|--|---------------------------|----------------------|-------|--------------|-----------------|-----------------|
| Without circuitry, standard | | | | | | |
| Z14 | 250 V | 16 A ¹⁾ | black | M16 x 1.5 | R901017012 | |
| With indicator lights at connections 2 and 3 | | | | | | |
| Z15L | 6 ... 14 V | 4 A | black | M16 x 1.5 | R901017030 | |
| | 16 ... 36 V | 4 A | black | M16 x 1.5 | R901017048 | |
| | 36 ... 60 V | 4 A | black | M16 x 1.5 | R901017032 | |
| | 90 ... 130 V | 4 A | black | M16 x 1.5 | R901017035 | |
| | 180 ... 240 V | 4 A | black | M16 x 1.5 | R901017037 | |
| With indicator lights at connections 1 and 3 | | | | | | |
| Z15L6 | 16...36 V | 4 A | black | M16 x 1.5 | R901017040 | |

¹⁾ Please observe temperature range and/or derating (see technical data).

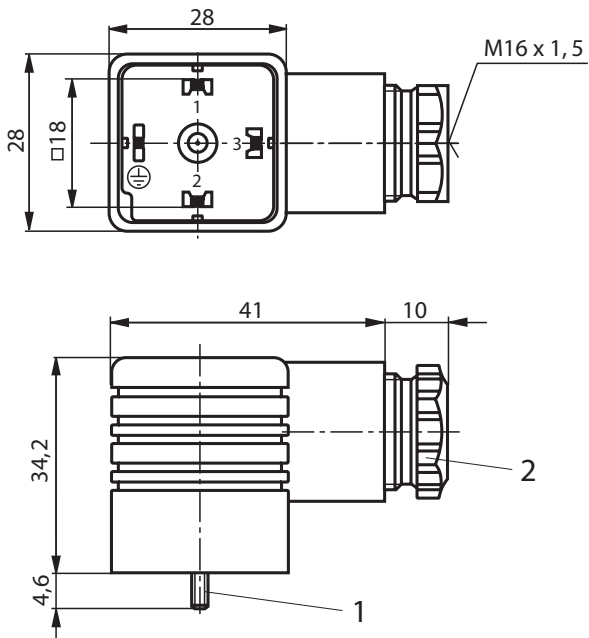
Technical data

| Mating connector | | | |
|--|--|---|-------------|
| Design | A | | |
| Ambient temperature | Standard | °C | -40 ... +90 |
| | with indicator light | °C | -20 ... +60 |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | |
| Indicator light | Z15L | Connection 2 LED green, connection 3 LED yellow | |
| | Z15L6 | Connection 1 LED green, connection 3 LED yellow | |
| Number of poles | 3 + PE | | |
| Terminal area for line diameter | mm | 5 ... 10 | |
| Maximum wire cross-section | mm ² | 1.5 with wire end ferrule | |
| Type of connection | Screw connection | | |
| Standard | DIN EN175301-803A | | |
| Certification/conformity | Z14 | RoHS, VDE, SEV | |
| | Z15.. | RoHS | |
| Derating | Z14 | 16 A | °C Max. +40 |
| | | 9.5 A | °C Max. +60 |

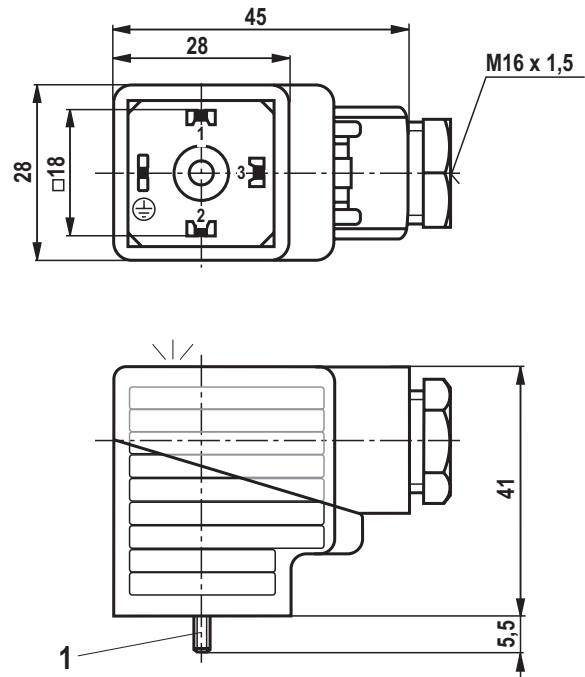
Unit dimensions

(dimensions in mm)

Z14



Z15L, Z15L6



- 1 M3 mounting screw, tightening torque $M_A = 0.5 \text{ Nm}$
- 2 M16 x 1.5 line fitting, tightening torque $M_A = 0.15 \dots 0.25 \text{ Nm}$

Cable sets

For mechanical pressure switches with "K14" connector, 3-pole + PE, design A (large cubic connector)

Ordering code

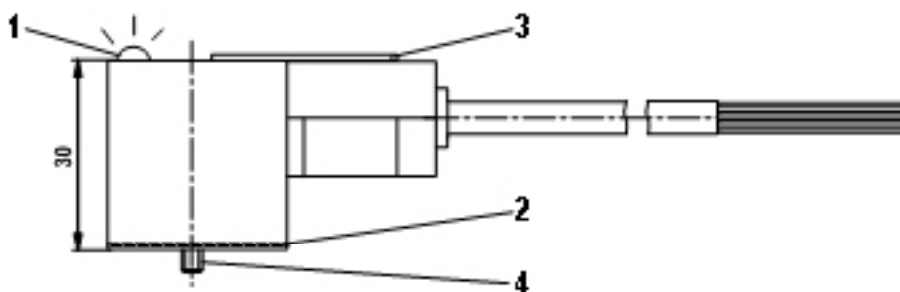
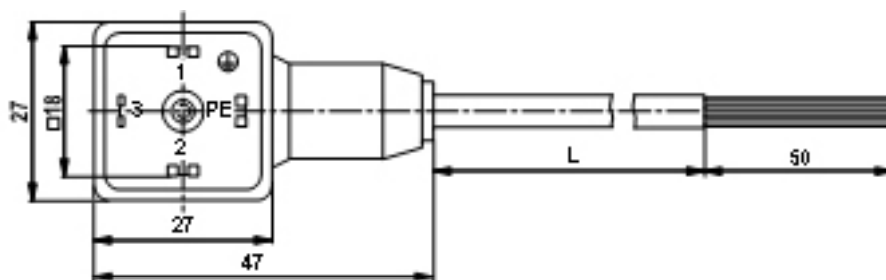
| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Material number for cable length | | Circuit diagram |
|-----------------------------|--------------------------------|------------------------------------|-------|----------------------------------|------------|-----------------|
| | | | | 5 m | 10 m | |
| Without circuitry, standard | | | | | | |
| Z14 | 12 – 240 V | 10 A | black | R900058528 | R900217139 | |
| With indicator light | | | | | | |
| Z14L | 24 VDC | 4 A | black | R900210635 | R900217140 | |

Technical data

| Mating connector | | | |
|--|--|---|---------------------------|
| Design | A | | |
| Ambient temperature | °C | -5 ... +70 | |
| Protection class according to EN 60529 | IP 67 with mating connector mounted and fitted | | |
| Indicator light | Z14L | Connection 2 LED green, connection 3 LED yellow | |
| Number of poles | 3 + PE | | |
| Standard | EN 175301-803/ISO4400 | | |
| Certification/conformity | - | | |
| Derating | - | | |
| Connection line | | | |
| Type | PUR-JZ, gray | | |
| Wire cross-section | Z14 | mm ² | 4 x 0.75 |
| | Z14L | mm ² | 5 x 0.5 |
| Core marking | PE | Green/yellow | |
| | other wires | Black with numbers | |
| Line diameter | mm | Approx. 7 | |
| Bending radius | Z14 | Fixed line installation | Min. 15 x line diameter |
| | | Flexible line | Min. 20 x line diameter |
| | Z14L | Fixed line installation | Min. 12.5 x line diameter |
| | | Flexible line | Min. 17.5 x line diameter |

Unit dimensions

(dimensions in mm)



- 1 LED
- 2 Flat seal (not detachable)
- 3 Name plate
- 4 M3 mounting screw (not detachable), tightening torque $M_A = 0.5 \text{ Nm}$
- L Cable length 5 or 10 m (see "Ordering code")

Mating connectors

For sensors and valves with "K24", "K35" and "K72" connectors, 4-pole

Ordering code

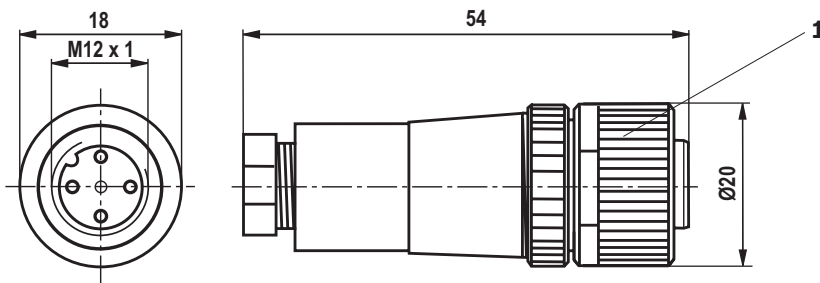
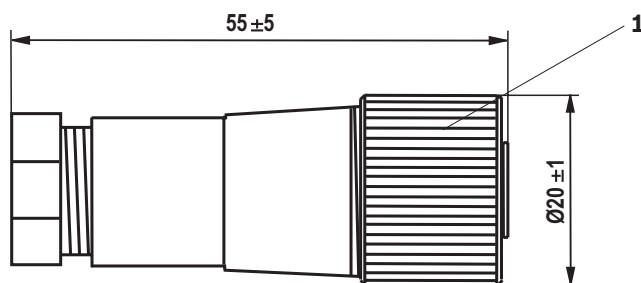
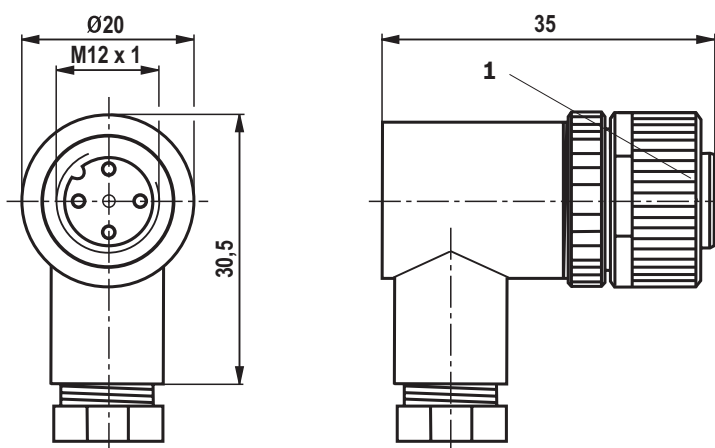
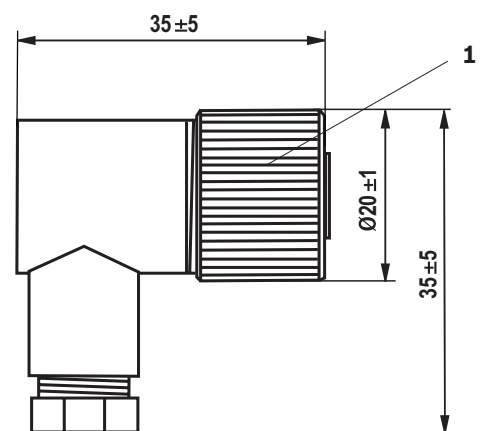
| Short designation | Voltage AC/DC U_{max} | Current I_{max} | Color | Line fitting | Material number | Circuit diagram pole pattern | |
|-------------------|-------------------------------|----------------------|-------|--------------|-----------------|---------------------------------|--|
| M12 x 1, straight | | | | | | | |
| 4PZ24 | 250 V | 4 A | black | PG 7 | R900773042 | | |
| | 250 V | 4 A | black | PG 9 | R900031155 | | |
| M12 x 1, angled | | | | | | | |
| 4PZ24 | 250 V | 4 A | black | PG 7 | R900779509 | | |
| | 250 V | 3 A | black | PG 9 | R900082899 | | |

Technical data

| Mating connector | |
|--|--|
| Design | M12, coding A |
| Ambient temperature | °C -25 ... +85 |
| Protection class according to EN 60529 | 4PZ24 IP 67 with mating connector mounted and fitted |
| Number of poles | 4 |
| Terminal area for line diameter | 4PZ24, PG 7 mm 4 ... 6 |
| | 4PZ24, PG 9 mm 6 ... 8 |
| Maximum wire cross-section | mm ² 4 x 0.75 |
| Type of connection | Screw connection |
| Standard | - |
| Certification/conformity | 4PZ24, straight UL, CSA |
| Derating | - |

Unit dimensions

(dimensions in mm)

M12 x 1, straight, 4PZ24, PG 7**M12 x 1, straight, 4PZ24, PG 9****M12 x 1, angled, 4PZ24, PG 7****M12 x 1, angled, 4PZ24, PG 9****1** Coupling nut, tightening torque $M_A = 0.6 \text{ Nm}$

Cable sets

For sensors and valves with "K24", "K35" and "K72" connectors, 4-pole

Ordering code

| Short designation | Voltage DC / AC U | Current I_{max} | Color | Material number for cable length | | | | Shield | Circuit diagram pole pattern | |
|---------------------|------------------------|----------------------|-------|----------------------------------|------------|------------|------------|----------------|------------------------------|--|
| | | | | 2m | 3 m | 5 m | 10 m | | | |
| M12 x 1, straight | | | | | | | | | | |
| 4PM12 | 250 | 4 | black | R900773031 | - | R900779498 | | Cable shielded | | |
| 4PZ24 ¹⁾ | 250 | 40 | black | - | R900064381 | - | R913005668 | Not shielded | | |
| M12 x 1, angled | | | | | | | | | | |
| 4PM12 | 250 | 4 | black | R900779504 | - | R900779503 | | Cable shielded | | |
| 4PZ24 ¹⁾ | 250 | 40 | black | - | - | - | R913011722 | Not shielded | | |

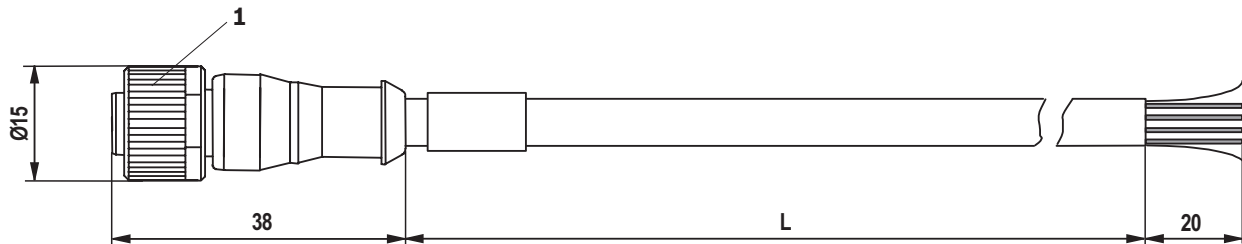
1) For version with UL certification up to 30 V.

Technical data

| Mating connector | | |
|--|--|-------------------------|
| Design | M12, coding A | |
| Ambient temperature | °C -25 ... +85 | |
| Protection class according to EN 60529 | IP 67 with mating connector mounted and fitted | |
| Number of poles | 4 | |
| Standard | - | |
| Certification/conformity | UL, CSA | |
| Derating | - | |
| Connection line | | |
| Type | PUR-OB, black with approval: UL, CSA | |
| Wire cross-section | mm ² 4 x 0.34 | |
| Core marking | 1: brown; 2: white; 3: blue; 4: black | |
| Line diameter | 4PM12 | mm 5.9 |
| | 4PZ24 | mm 5.2 |
| Bending radius | Fixed line installation | Min. 10 x line diameter |
| | Flexible line | Min. 15 x line diameter |

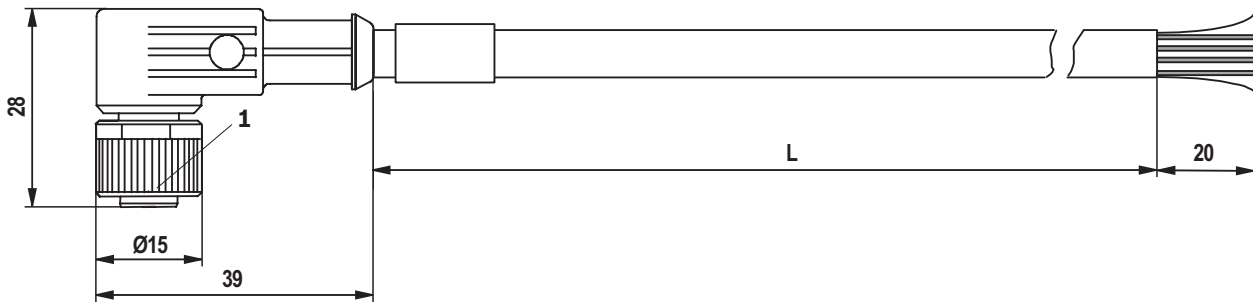
Unit dimensions:
(dimensions in mm)

M12 x 1, straight, 4PM12 and 4PZ24



| | |
|-------------------|----------|
| R900773031 | L = 2 m |
| R900064381 | L = 3 m |
| R900779498 | L = 5 m |
| R913005668 | L = 10 m |

M12 x 1, angled, 4PM12 and 4PZ24



| | |
|-------------------|----------|
| R900779504 | L = 2 m |
| R900779503 | L = 5 m |
| R913011722 | L = 10 m |

1 Coupling nut, tightening torque $M_A = 0.6 \text{ Nm}$

Cable sets

For sensors and valves with "K24", "K35" and "K72" connectors, 4-pole

Ordering code

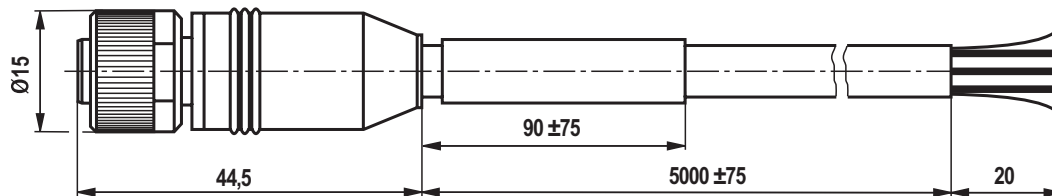
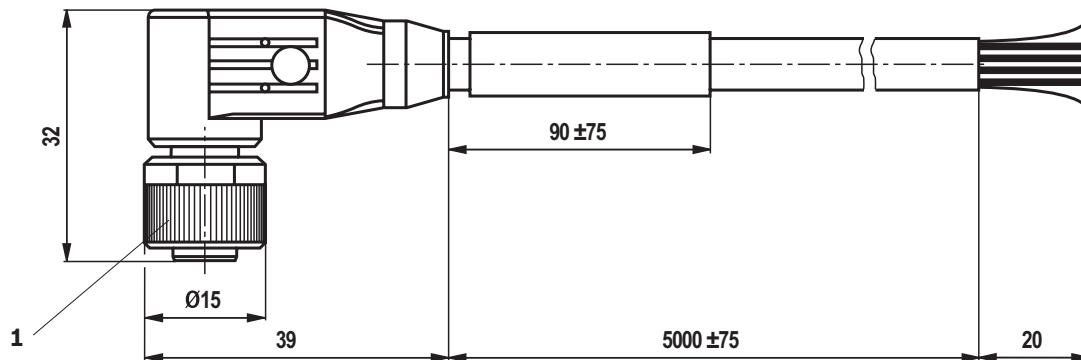
| Designation | Voltage DC / AC U | Current I_{max} | Color | Material number | Shield | Circuit diagram pole pattern |
|------------------------------------|---------------------------|----------------------|-------|-----------------|--|---------------------------------|
| M12 x 1, straight | | | | | | |
| KABELSATZ VT-SSPA1-1X/M12/1/V00 | 60 V | 4 A | black | R901241656 | Cable and mating connector shielded | |
| M12 x 1, angled | | | | | | |
| KABELSATZ VT-SSPA1-1X/M12/2/V00 | 60 V | 4 A | black | R901241651 | | |

Technical data (For applications outside these values, please consult us!)

| Mating connector | | |
|--|--|-------------------------|
| Design | M12 | |
| Ambient temperature | Fixed installation °C | -25 ... +80 |
| | Flexible °C | -5 ... +80 |
| Protection class according to EN 60529 | IP 67 with mating connector mounted and fitted | |
| Number of poles | 4 | |
| Standard | - | |
| Certification/conformity | CSA, RoHS | |
| Derating | - | |
| Connection line | | |
| Type | PVC, black | |
| Wire cross-section | mm ² 4 x 0.75 | |
| Line diameter | mm 5.9 ± 5% | |
| Bending radius | Fixed installation | Min. 5 x line diameter |
| | Flexible | Min. 10 x line diameter |

Unit dimensions

(dimensions in mm)

M12 x 1, straight, KABELSATZ VT-SSPA1-1X/M12/1/V00**M12 x 1, angled, KABELSATZ VT-SSPA1-1X/M12/2/V00****1** Coupling nut, tightening torque $M_A = 0.6 \text{ Nm}$

Mating connectors

For mechanical position switches, mechanical pressure switches and valves with central connection with "K6" and "DK6L" connectors

Ordering code

| Short designation | Voltage DC / AC <i>U</i> | Current <i>I</i> _{max} | Color | Line fitting | Material number | Circuit diagram pole pattern |
|-------------------|--------------------------------|------------------------------------|-------|--------------|-----------------|---------------------------------|
| 6-pole + PE | | | | | | |
| 7PZ6 | 250 V | 10 A | gray | PG 11 | R900002803 | |

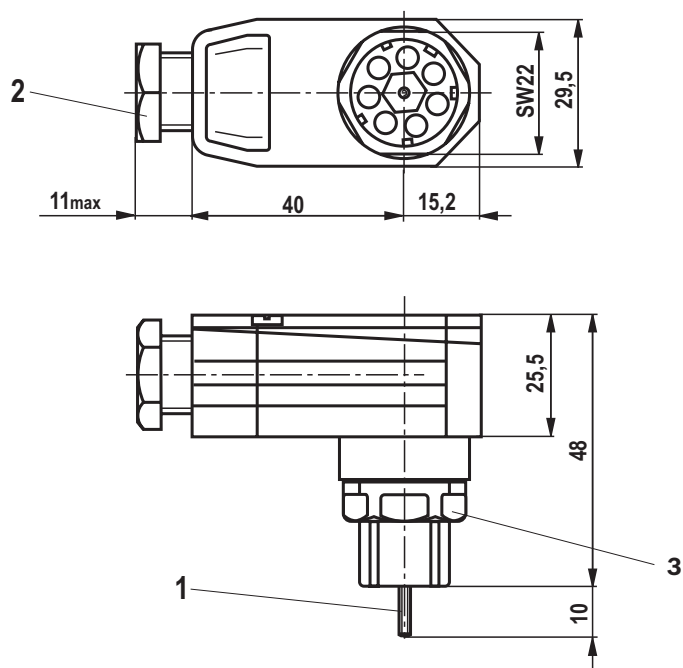
Technical data

| Mating connector | | | |
|--|--|-------------|----------|
| Design | Without designation (see "Unit dimensions") | | |
| Ambient temperature | °C | -40 ... +90 | |
| Protection class according to EN 60529 | IP 65 with mating connector mounted and fitted | | |
| Number of poles | 6 + PE | | |
| Terminal area for line diameter | mm | 7 ... 9 | |
| Maximum wire cross-section | mm ² | 1.5 | |
| Type of connection | Crimping connection (crimping contact included in the scope of delivery) | | |
| Standard | DIN EN175201-804 | | |
| Certification/conformity | - | | |
| Derating ¹⁾ | 10 A | °C | Max. +40 |
| | 4 A | °C | Max. +65 |

¹⁾ Maximum admissible current dependent on ambient temperature; with rising ambient temperature, the admissible current declines linearly.

Unit dimensions

(dimensions in mm)

7PZ6

- 1 M3 mounting screw, tightening torque $M_A = 0.5 \dots 0.6 \text{ Nm}$
- 2 PG11 line fitting, tightening torque $M_A = 2.5 \dots 3.8 \text{ Nm}$
- 3 SW22 coupling nut, tightening torque $M_A = 1.0 \dots 1.5 \text{ Nm}$

Accessories (not included in the scope of delivery)

| HIRSCHMANN | Order number |
|-----------------|--------------|
| Crimping pliers | XCZ 0701 |
| Ejection tool | XWA 164 |

Mating connectors

For directional valves with "C4" and "C4Z" connectors (AMP Junior-Timer)

Ordering code

| Short designation | Voltage DC / AC U | Current I_{max} | Color | Litz wire external diameter | Material number | Circuit diagram pole pattern |
|-------------------|---------------------------|----------------------|-------|-----------------------------------|-----------------|---------------------------------|
| 2P JUNIOR D2 2 | 10 ... 32 V | 5 A | black | 2.2 ... 3.0 mm | R901022127 | |
| 2P D1.2 JUNIOR | 10 ... 32 V | 5 A | black | 1.2 ... 2.1 mm | R900313533 | |

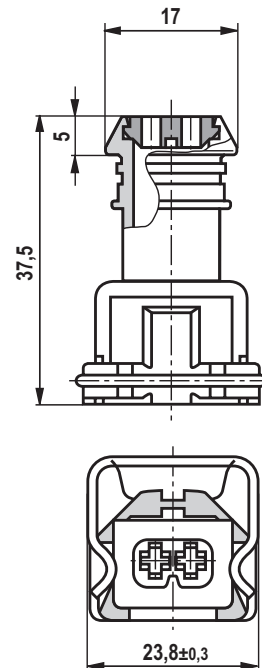
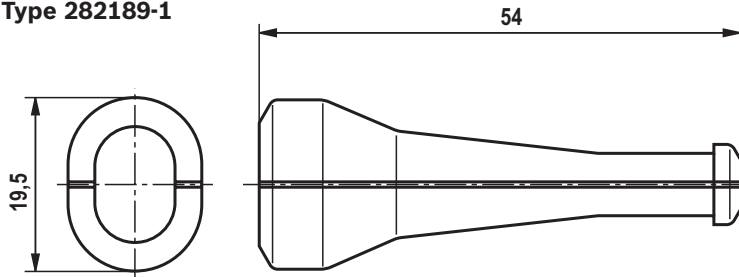
Technical data

| Mating connector | |
|--|--|
| Design | Without designation (see "Unit dimensions") |
| Ambient temperature range | °C -20 ... +125 |
| Protection class according to EN 60529 | IP 66A with mating connector mounted and fitted |
| Number of poles | 2 |
| Terminal area for line diameter | mm 5.2 ... 7 |
| Maximum wire cross-section | mm ² 0.5 ... 1 |
| Type of connection | Crimping connection |
| Standard | - |
| Certification/conformity | - |
| Derating | - |
| As-delivered state | 1 connector housing, 2 contacts, 2 individual conductor sealings, 1 rubber bushing in package, not mounted |

Unit dimensions

(dimensions in mm)

AMP housing Type 282189-1



Accessories (not included in the scope of delivery)

| Crimping tool | |
|---------------|---------------------|
| Basic pliers | Type 539635-1, TYCO |
| Die | Type 539737-2, TYCO |

Mating connectors

For directional valves with "K40" connector (Deutsch plug)

Ordering code

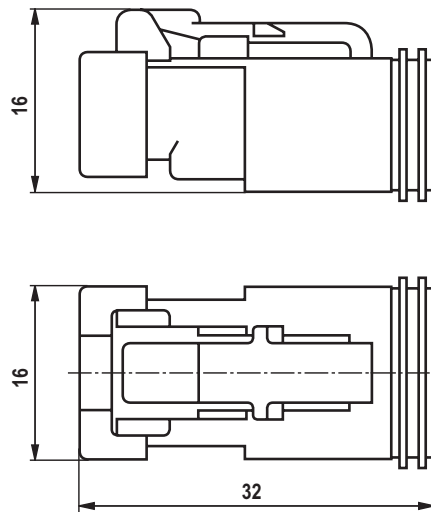
| Short designation | Voltage DC / AC U | Current I_{max} | Color | Wire cross-section | Material number | Circuit diagram pole pattern |
|-------------------|---------------------------|----------------------|-------|-----------------------|-----------------|---------------------------------|
| 2P DT06 K40AWG14 | 10 ... 32 V | 5 A | gray | AWG 14-16 | R900733451 | |
| 2P DT06 K40AWG16 | 10 ... 32 V | 5 A | gray | AWG 16-18 | R901017847 | |

Technical data

| Mating connector | |
|--|--|
| Design | Without designation (see "Unit dimensions") |
| Connector housing | DT06-2S-CE01 |
| Ambient temperature range | °C -20 ... +125 |
| Protection class according to EN 60529 | IP 69K with mating connector mounted and fitted |
| Number of poles | 2 |
| Terminal area for line diameter | mm 1.35 ... 3,05 |
| Maximum wire cross-section | AWG 14-16 mm ² 1.3 ... 2.08 |
| | AWG 16-18 mm ² 0.83 ... 1.3 |
| Type of connection | Crimping connection |
| Standard | - |
| Certification/conformity | - |
| Derating | - |
| As-delivered state | 1 connector housing, 2 contacts, 1 locking wedge in package, not mounted |

Unit dimensions


(dimensions in mm)



Accessories (not included in the scope of delivery)

| | |
|---------------|------------------------|
| Crimping tool | Type HDT-4800, Deutsch |
|---------------|------------------------|

Further information

 **Notice:**

For general information on safety, installation or commissioning, see operating instructions:

07602-B Electronics for industrial applications

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