

2/2-way Miniature Solenoid Valve



Type 6011 can be combined with...



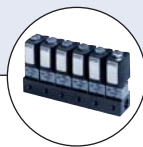
Type 2506

Cable plug to
DIN EN 175301-803*
form C



Type 2507

Cable plug industrial
standard form B



Type 6012

Multiple manifold
(e.g. 6-fold)

- Direct-acting
- 0 ... 21 bar ¹⁾
- DN 1.2 ... 2.4 mm
- M5, G1/8 and sub-base
- 21 mm coil spacing when mounted on manifold

This direct-acting 2/2-way miniature solenoid valve is available in two versions.

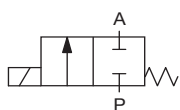
Standard version:

Type 6011 is a miniature solenoid valve used for shut-off, dosing, filling, ventilating and for technical vacuum. It is of modular design and may be mounted individually or as a block on a multiple manifold.

Analysis and vacuum technology:

Type 6011 A is a high-quality miniature solenoid valve for analysis and vacuum technology. It is manufactured under clean-room conditions. This includes thorough cleaning of all parts in contact with media from organic and inorganic substances. The limit for residual hydrocarbons is below 0.2 mg/dm³. 100 % of the valves are subjected to a special leakage test with regard to tight seating and tightness to the exterior. The permissible leakage rate is 10⁻⁴ mbar l/s. The valve is used for shut-off, dosing, filling, ventilating and particularly for analysis technology.

Circuit function A



2/2-way valve,
normally closed by
spring force

| Technical data | |
|---|---|
| Body material | Type 6011 Type 6011 A |
| | brass, polyamide (PA), stainless steel 1.4305 brass, stainless steel 1.4305 |
| Sealing material | FKM |
| Analytical version (Typ 6011 A) | version free from silicones, oil and grease leaktightness better than 10 ⁻⁴ mbar l/s |
| Limit value for remainder carbon (Type 6011 A) | <0,2 mg/dm ³ |
| Medium | Type 6011 Type 6011 A |
| | <ul style="list-style-type: none"> ▪ technical vacuum ▪ neutral gases and fluids (e.g. compressed air, water hydraulic oil ▪ neutral/aggressive media that do not attack the body and seal materials |
| Medium temperature | -10 ... +100 °C |
| Ambient temperature | max. +55 °C |
| Viscosity | max. 21 mm ² /s |
| Port connection | Type 6011 Type 6011 A |
| | M5, G1/8, sub-base G1/8, sub-base |
| Betriebsspannung | Type 6011 Type 6011 A |
| | 24 V DC, 24 V/50 Hz, 110 / 230 V / 50 Hz 24 V DC, 230 V / 50 Hz |
| Voltage tolerance | ± 10% |
| Duty cycle/single valve | when mounted as a block on a manifold |
| | 100 % continuous rating Intermittent operation 60 % (30 min) or with 2 W coil (on request) |
| Electrical connection | <ul style="list-style-type: none"> ▪ to DIN EN 175301-803* Form C for cable plug Type 2506 (see Ordering chart for Accessories) ▪ Form B (industrial standard) for Type 2507 (see Ordering chart for Accessories) |
| Installation | as required, preferably with actuator upright |
| Assembly | no oil, grease or silicones to be used as installation aids |
| Mass | ca. 125 g |
| Protection class | IP65 with cable plug |

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

* previously DIN 43650

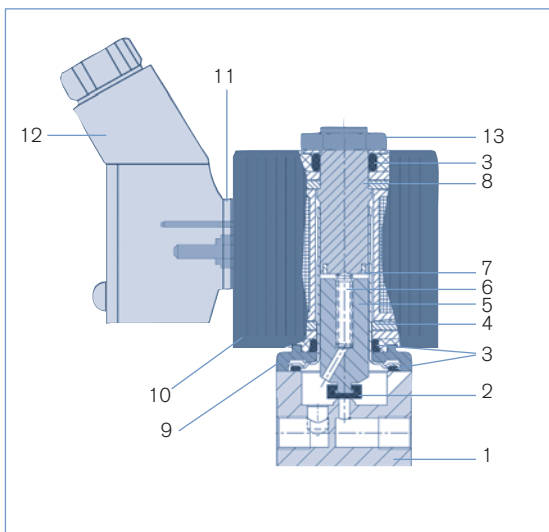
Response times

| Orifice [mm] | K _v value water [m ³ /h] | Pressure range | | Coil power [W] | Power consumption | | | Response times | | |
|-----------------|--|-----------------|-----------------|----------------------|-------------------|----------------------------|---------------------------|-----------------|-----------------|-------|
| | | for AC [bar] | for DC [bar] | | Inrush AC [VA] | Hold AC (hot coil) [VA] | DC (hot/cold coil) [W] | Opening [ms] | Closing [ms] | |
| 1.2 | 0.045 | 0-21 | 0-12 | 4 W | 9 | 6 | 4 | 4/5.5 | 7-10 | 10-15 |
| 1.6 | 0.06 | 0-12 | 0-6 | | | | | | | |
| 2.0 | 0.11 | 0-8 | 0-4.5 | 4 W | 9 | 6 | 4 | 4/5.5 | 7-12 | 7-12 |
| 2.4 | 0.13 | 0-6 | 0-3 | | | | | | | |

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

- k_v value [m³/h]: Flow rate value for water, measured at +20 °C and 1 bar¹⁾ pressure differential over a fully opened valve.
- Response times [ms]: measured at valve outlet at 6 bar¹⁾ and +20 °C
Opening: pressure build-up 0 ... 90 %, closing: pressure relief 100 ... 10 %

Material

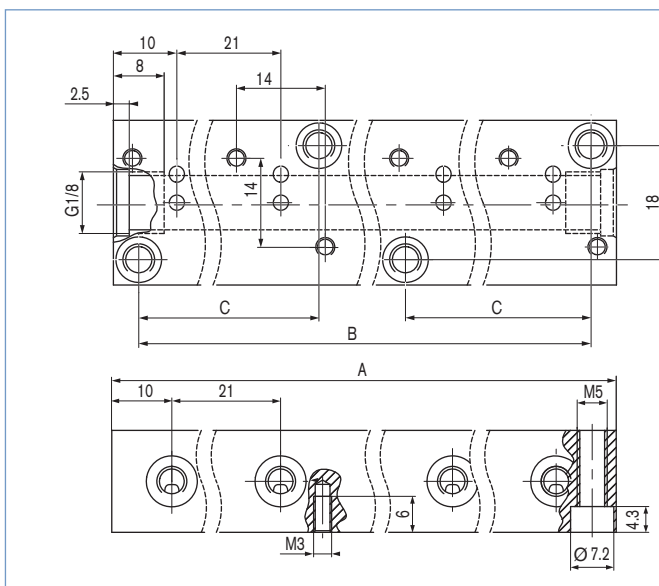


| | |
|-----------------|--|
| 1 Body | Brass, stainless steel 1.4305 PA (polyamide) |
| 2 Armature seal | FKM |
| 3 O-ring | FKM |
| 4 Guide tube | Stainless steel 1.4303 |
| 5 Core | Stainless steel 1.4105 |
| 6 Spring | Stainless steel 1.4310 |
| 7 Shading ring | Copper, Silver |
| 8 Stopper | Stainless steel 1.4105 |
| 9 Sub-base | Thick-film passivated (brass version) nickel-plated surface (stainless steel version) |
| 10 Coil | DIN EN 175301-803* form C Form B (industr. standard) |
| 11 Flat seal | PA |
| 12 Cable plug | PA |
| 13 Locknut | Thick-film passivated |

^{*)} bisher DIN 43650

Dimensions [mm]

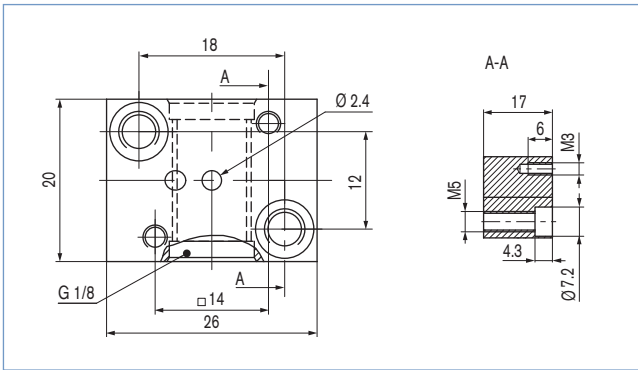
Multiple manifold



| No. of valves | A [mm] | B [mm] | C [mm] |
|---------------|--------|--------|--------|
| 1 | 20 | 12 | - |
| 2 | 41 | 33 | - |
| 3 | 62 | 54 | - |
| 4 | 83 | 75 | - |
| 5 | 104 | 96 | - |
| 6 | 125 | 117 | - |
| 7 | 146 | 138 | - |
| 8 | 167 | 159 | 54 |
| 9 | 188 | 180 | 54 |
| 10 | 209 | 201 | 75 |
| 11 | 230 | 222 | 75 |
| 12 | 251 | 243 | 96 |

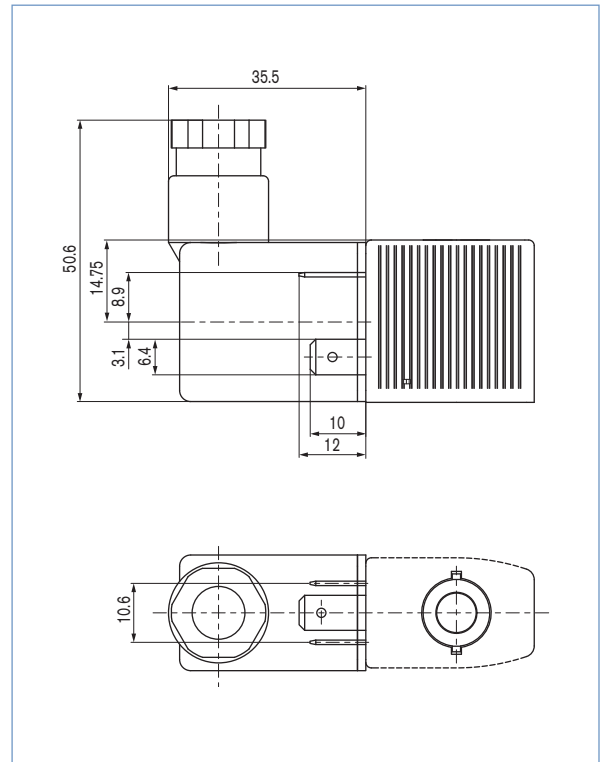
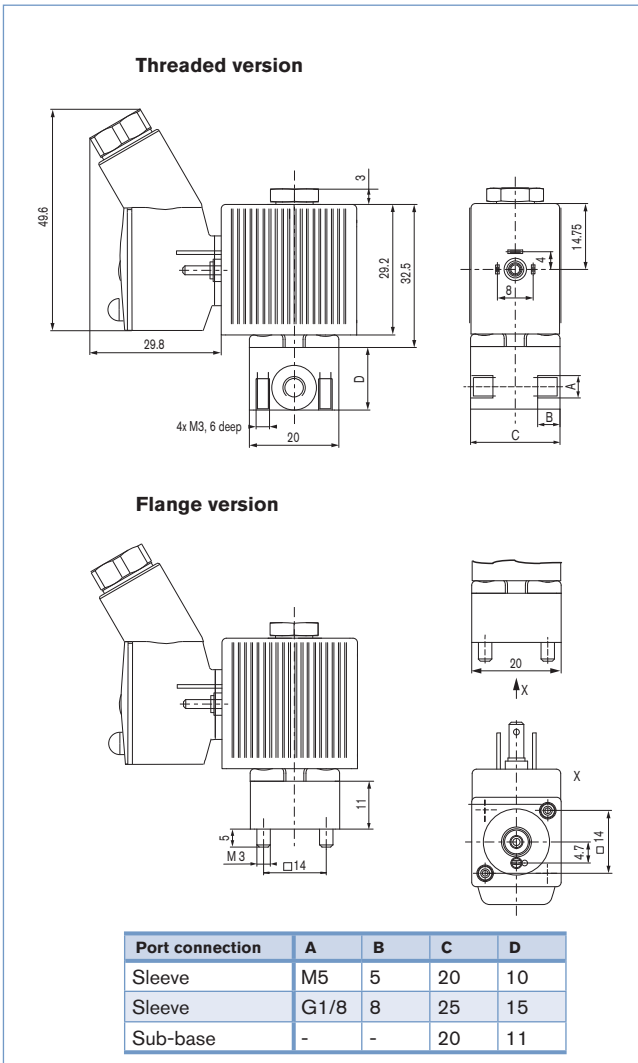
Dimensions [mm]

Single manifold



Type 6011 / 6011 A
Version with electrical coil connection
to DIN EN 175301-803* form C
(cable plug type 2506)

Type 6011 / 6011 A
Version with electrical coil connection
Form B industrial standard
(cable plug type 2507)

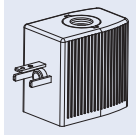


* previously DIN 43650

Ordering chart

Type 6011

Solenoid valve complete in ported or flanged version with electrical coil connection to DIN EN 175301-803* Form C for cable plug Type 2506



- All valves complete with coil and FKM seal material; without cable plug
- Other versions on request.

| Circuit function | Orifice [mm] | Port connection | Kv value water [m ³ /h] | Pressure range [bar] ¹⁾ | Voltage/Frequency [V/Hz] | Item no. Brass body | Item no. Stainless steel body |
|------------------|--------------|-----------------|------------------------------------|------------------------------------|--------------------------|---------------------|-------------------------------|
| A | 1.2 | M5 | 0.045 | 0-12 | 24/DC | 134 084 | - |
| | | | | 0-21 | 24/50 | 134 085 | - |
| | | | | 0-21 | 110/50 | 134 086 | - |
| | | | | 0-21 | 230/50 | 134 087 | - |
| | 1.6 | M5 | 0.06 | 0-6 | 24/DC | 134 088 | - |
| | | | | 0-12 | 24/50 | 134 089 | - |
| | | | | 0-12 | 110/50 | 134 090 | - |
| | | | | 0-12 | 230/50 | 134 091 | - |
| | | | | 0-6 | 24/DC | 134 071 | 134 103 |
| | | | | 0-12 | 24/50 | 134 092 | 134 104 |
| | | | | 0-12 | 110/50 | 134 093 | 134 105 |
| | 2.0 | G1/8 | 0.11 | 0-4.5 | 24/DC | 134 095 | 134 107 |
| | | | | 0-8 | 24/50 | 134 096 | 134 108 |
| | | | | 0-8 | 110/50 | 134 097 | 134 109 |
| | | | | 0-8 | 230/50 | 134 098 | 134 110 |
| | 2.4 | G1/8 | 0.13 | 0-3 | 24/DC | 134 099 | 134 111 |
| | | | | 0-6 | 24/50 | 134 100 | 134 112 |
| | | | | 0-6 | 110/50 | 134 101 | 134 113 |
| | | | | 0-6 | 230/50 | 134 102 | 134 114 |
| | 1.2 | sub-base | 0.045 | 0-12 | 24/DC | 134 115 | - |
| | | | | 0-21 | 24/50 | 134 116 | - |
| | | | | 0-21 | 110/50 | 134 117 | - |
| | | | | 0-21 | 230/50 | 134 118 | - |
| | 1.6 | sub-base | 0.06 | 0-6 | 24/DC | 134 119 | 134 131 |
| | | | | 0-12 | 24/50 | 134 120 | 134 132 |
| | | | | 0-12 | 110/50 | 134 121 | 134 133 |
| | | | | 0-12 | 230/50 | 134 122 | 134 134 |
| | 2.0 | sub-base | 0.11 | 0-4.5 | 24/DC | 134 123 | 134 135 |
| 0-8 | | | | 24/50 | 134 124 | 134 136 | |
| 0-8 | | | | 110/50 | 134 125 | 134 137 | |
| 0-8 | | | | 230/50 | 134 126 | 134 138 | |
| 2.4 | sub-base | 0.13 | 0-3 | 24/DC | 134 127 | - | |
| | | | 0-6 | 24/50 | 134 128 | - | |
| | | | 0-6 | 110/50 | 134 129 | - | |
| | | | 0-6 | 230/50 | 134 130 | - | |

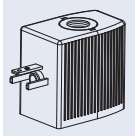
¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

^{*)} previously DIN 43650

Ordering chart

Type 6011 A

Solenoid valve complete in threaded or flanged version with electrical coil connection to DIN EN 175301-803* Form C for cable plug Type 2506



- All valves complete with coil (4 W) and FKM seal material; without cable plug
- Other versions on request.

| Circuit function | Orifice [mm] | Port connection | Kv value water [m ³ /h] | Pressure range [bar] ¹⁾ | Voltage/Frequency [V/Hz] | Item no. Brass body | Item no. Stainless steel body |
|------------------|--------------|-----------------|------------------------------------|------------------------------------|--------------------------|---------------------|-------------------------------|
| A | 1.6 | G1/8 | 0.06 | 0-6 | 24/DC | 137 794 | 137 800 |
| | | | | 0-12 | 230/50 | 137 795 | 137 801 |
| | 2.0 | G1/8 | 0.11 | 0-4.5 | 24/DC | 137 796 | 137 802 |
| | | | | 0-8 | 230/50 | 137 797 | 137 803 |
| | 2.4 | G1/8 | 0.13 | 0-3 | 24/DC | 137 798 | 137 804 |
| | | | | 0-6 | 230/50 | 137 799 | 137 805 |
| | 1.2 | sub-base | 0.045 | 0-12 | 24/DC | 137 806 | 137 812 |
| | | | | 0-21 | 230/50 | 137 807 | 137 813 |
| | 1.6 | sub-base | 0.06 | 0-6 | 24/DC | 137 808 | 137 814 |
| | | | | 0-12 | 230/50 | 137 809 | 137 815 |
| | 2.0 | sub-base | 0.11 | 0-4.5 | 24/DC | 137 810 | 137 816 |
| | | | | 0-8 | 230/50 | 137 811 | 137 817 |

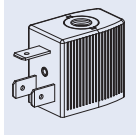
¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

^{*)} previously DIN 43650

Ordering chart

Type 6011

Solenoid valve complete in ported or flanged version with electrical coil connection Form B (industrial standard) for cable plug Type 2507



- All valves complete with coil and FKM seal material; without cable plug
- Other versions on request.

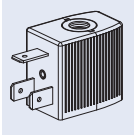
| Circuit function | Orifice [mm] | Port connection | Kv value water [m ³ /h] | Pressure range [bar] ¹⁾ | Voltage/Frequency [V/Hz] | Item no. Brass body | Item no. Stainless steel body |
|------------------|--------------|-----------------|------------------------------------|------------------------------------|--------------------------|---------------------|-------------------------------|
| A | 1.2 | M5 | 0.045 | 0-12 | 24/DC | 163 491 | - |
| | | | | 0-21 | 24/50 | 163 492 | - |
| | | | | 0-21 | 110/50 | 163 493 | - |
| | | | | 0-21 | 230/50 | 163 494 | - |
| | 1.6 | M5 | 0.06 | 0-6 | 24/DC | 163 495 | - |
| | | | | 0-12 | 24/50 | 163 496 | - |
| | | | | 0-12 | 110/50 | 163 497 | - |
| | | | | 0-12 | 230/50 | 163 498 | - |
| | | G1/8 | 0.06 | 0-6 | 24/DC | 163 499 | 163 509 |
| | | | | 0-12 | 24/50 | 163 500 | 163 510 |
| | | | | 0-12 | 110/50 | 163 501 | 163 511 |
| | | | | 0-12 | 230/50 | 163 502 | 163 512 |
| | 2.0 | G1/8 | 0.11 | 0-4.5 | 24/DC | 163 503 | 163 513 |
| | | | | 0-8 | 24/50 | 163 504 | 163 514 |
| | | | | 0-8 | 110/50 | 163 505 | 163 515 |
| | | | | 0-8 | 230/50 | 163 506 | 163 516 |
| | 2.4 | G1/8 | 0.13 | 0-3 | 24/DC | 161 193 | 163 517 |
| | | | | 0-6 | 24/50 | 163 507 | 163 518 |
| | | | | 0-6 | 110/50 | 163 508 | 163 519 |
| | | | | 0-6 | 230/50 | 161 194 | 163 520 |
| | 1.2 | sub-base | 0.045 | 0-12 | 24/DC | 163 521 | - |
| | | | | 0-21 | 24/50 | 163 522 | - |
| | | | | 0-21 | 110/50 | 163 523 | - |
| | | | | 0-21 | 230/50 | 163 524 | - |
| 1.6 | sub-base | 0.06 | 0-6 | 24/DC | 163 525 | 163 537 | |
| | | | 0-12 | 24/50 | 163 526 | 163 538 | |
| | | | 0-12 | 110/50 | 163 527 | 163 539 | |
| | | | 0-12 | 230/50 | 163 528 | 163 540 | |
| 2.0 | sub-base | 0.11 | 0-4.5 | 24/DC | 163 529 | 163 541 | |
| | | | 0-8 | 24/50 | 163 530 | 163 542 | |
| | | | 0-8 | 110/50 | 163 531 | 163 543 | |
| | | | 0-8 | 230/50 | 163 532 | 163 544 | |
| 2.4 | sub-base | 0.13 | 0-3 | 24/DC | 163 533 | - | |
| | | | 0-6 | 24/50 | 163 534 | - | |
| | | | 0-6 | 110/50 | 163 535 | - | |
| | | | 0-6 | 230/50 | 163 536 | - | |

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

Ordering chart

Type 6011 A

Solenoid valve complete in threaded or flanged version with electrical coil connection Form B (industrial standard) for cable plug Type 2507



- All valves complete with coil (4 W) and FKM seal material; without cable plug
- Other versions on request.

| Circuit function | Orifice [mm] | Port connection | Kv value water [m ³ /h] | Pressure range [bar] ¹⁾ | Voltage/Frequency [V/Hz] | Item no. Brass body | Item no. Stainless steel body |
|------------------|--------------|-----------------|------------------------------------|------------------------------------|--------------------------|---------------------|-------------------------------|
| A | 1.6 | G1/8 | 0.06 | 0-6 | 24/DC | 163 545 | 163 551 |
| | | | | 0-12 | 230/50 | 163 546 | 163 552 |
| | 2.0 | G1/8 | 0.11 | 0-4.5 | 24/DC | 163 547 | 163 553 |
| | | | | 0-8 | 230/50 | 163 548 | 163 554 |
| | 2.4 | G1/8 | 0.13 | 0-3 | 24/DC | 163 549 | 163 555 |
| | | | | 0-6 | 230/50 | 163 550 | 163 556 |
| | 1.2 | sub-base | 0.045 | 0-12 | 24/DC | 163 557 | 163 563 |
| | | | | 0-21 | 230/50 | 163 558 | 163 564 |
| | 1.6 | sub-base | 0.06 | 0-6 | 24/DC | 163 559 | 163 565 |
| | | | | 0-12 | 230/50 | 163 560 | 163 566 |
| | 2.0 | sub-base | 0.11 | 0-4.5 | 24/DC | 163 561 | 163 567 |
| | | | | 0-8 | 230/50 | 163 562 | 163 568 |

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

Ordering chart for accessories


Manifolds

| Material | No. of valves | Item no. |
|-----------------------|---------------|----------|
| Aluminium anodized | 1 | 005 312 |
| | 2 | 005 355 |
| | 3 | 005 313 |
| | 4 | 005 314 |
| | 5 | 005 315 |
| | 6 | 005 316 |
| | 7 | 005 893 |
| | 8 | 005 166 |
| | 9 | 005 241 |
| | 10 | 005 819 |
| | 11 | 005 242 |
| | 12 | 005 222 |

Accessories for manifolds

| Accessory | Features | Item no. |
|---------------|----------------------|----------|
| Blanking plug | with seal ring, G1/8 | 005 041 |
| Cover plate | for unused valves | 005 100 |


Cable plug type 2506 to DIN EN 175301-803* form C

|  | Circuitry | Voltage | Item no. |
|--|----------------------------------|-----------------|----------|
| | None (standard) | 0 - 250 V AC/DC | 008 353 |
| | with LED | 12 - 24 V AC/DC | 008 402 |
| | with LED and varistor | 12 - 24 V AC/DC | 008 408 |
| | with rectifier, LED and varistor | 12 - 24 V AC/DC | 008 354 |

- Supplied with cable plug: flat seal and fixing screw.
- Other versions of cable plug with circuitry to DIN EN 175301-803* Form C (see Datasheet Type 2506).

^{*)} previously DIN 43650

Cable plug type 2507 Form B (industrial standard)

|  | Circuitry | Voltage | Item no. |
|---|----------------------------------|-----------------|----------|
| | None (standard) | 2 - 250 V AC/DC | 423 845 |
| | with LED | 24 V AC/DC | 423 849 |
| | with LED and freewheeling diode | 12 - 24 V DC | 423 851 |
| | with rectifier, LED and varistor | 12 - 24 V AC/DC | 423 853 |

- Supplied with cable plug: flat seal and fixing screw.
- Other versions of cable plug with circuitry Form B (industrial standard) (see Datasheet Type 2507).

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