

## 46xx Solenoid

- For 2/2-, 3/2-, 5/2- and 5/3-way valves
- Power consumption from 0,7 up to 12 watt
- Suited for outdoor use under critical environment conditions
- For high and low ambient temperatures
- Housing material: Aluminium anodized
- Easy installation of the solenoid
- Compact design
- Userfriendly terminal compartment with screwless terminals for wire cross-section 0,5 to 2,5 mm<sup>2</sup>
- Type of protection electively Ex d mb or Ex e mb, depending on used cable gland



### Technical features

**EC-type examination certificate:**  
PTB 02 ATEX 2085 X

**Ex-Approval international:**  
IECEx PTB 11.0094X

**Duty cycle:**  
100% ED

**Fuse:**  
Integrated

**Relative humidity of the air:**  
max. 90%

**Coil insulation:**  
Thermic class H

**Standard voltages:**  
DC 24 V, AC 230 V (40 ... 60 Hz)  
Further voltages on request

**Degree of protection (EN 60529):**  
IP66

**Weight:**  
800g

**Temperature:**  
See table

**Material:**  
Aluminium anodized

Model overview solenoids

| Model                           |      | Rated power       | Electrical connection | Voltage  | Rated current | Device fuse rated current | Power consumption | Protection class IP     | Ex-protection (ATEX-category)                                    | Ambient temperature / media (°C)   | Circuit diagram no. |
|---------------------------------|------|-------------------|-----------------------|----------|---------------|---------------------------|-------------------|-------------------------|------------------------------------------------------------------|------------------------------------|---------------------|
| Core tube<br>Ø 13 mm    Ø 16 mm |      |                   |                       |          |               |                           |                   |                         |                                                                  |                                    |                     |
| 4600                            | 4650 | 0,7 W             | 1/2 NPT               | 24 V DC  | 33 mA         | 63 mA                     | 0,8 W             | IP66 (with cable gland) | II 2G Ex db mb<br>IIC T5/T6 Gb<br>II 2G Ex eb mb<br>IIC T5/T6 Gb | T5: -40 ... +80<br>T6: -40 ... +70 | 1                   |
| 4601                            | 4651 | 1,0 VA<br>(1,4 W) | 1/2 NPT               | 230 V AC | 6 mA          | 40 mA                     | 1,3 VA            |                         |                                                                  |                                    | 2                   |
| 4602                            | 4652 | 0,7 W             | M20 x 1,5             | 24 V DC  | 33 mA         | 63 mA                     | 0,8 W             |                         |                                                                  |                                    | 1                   |
| 4603                            | 4653 | 1,0 VA<br>(1,4 W) | M20 x 1,5             | 230 V AC | 6 mA          | 40 mA                     | 1,3 VA            |                         |                                                                  |                                    | 2                   |
| 4610                            | 4660 | 4 W               | 1/2 NPT               | 24 V DC  | 162 mA        | 400 mA                    | 3,9 W             | IP66 (with cable gland) | II 2G Ex db mb<br>IIC T4/T6 Gb<br>II 2G Ex eb mb<br>IIC T4/T6 Gb | T4: -40 ... +80<br>T6: -40 ... +55 | 1                   |
| 4611                            | 4661 | 5 VA<br>(4,5W)    | 1/2 NPT               | 230 V AC | 23 mA         | 40 mA                     | 5,3 VA            |                         |                                                                  |                                    | 2                   |
| 4612                            | 4662 | 4 W               | M20 x 1,5             | 24 V DC  | 162 mA        | 400 mA                    | 3,9 W             |                         |                                                                  |                                    | 1                   |
| 4613                            | 4663 | 5 VA<br>(4,5W)    | M20 x 1,5             | 230 V AC | 23 mA         | 40 mA                     | 5,3 VA            |                         |                                                                  |                                    | 2                   |
| 4620                            | 4670 | 8 W               | 1/2 NPT               | 24 V DC  | 369 mA        | 800 mA                    | 8,9 W             | IP66 (with cable gland) | II 2G Ex db mb<br>IIC T4/T6 Gb<br>II 2G Ex eb mb<br>IIC T4/T6 Gb | T4: -40 ... +70<br>T6: -40 ... +40 | 1                   |
| 4621                            | 4671 | 9 VA<br>(8 W)     | 1/2 NPT               | 230 V AC | 43 mA         | 80 mA                     | 10,0 VA           |                         |                                                                  |                                    | 2                   |
| 4622                            | 4672 | 8 W               | M20 x 1,5             | 24 V DC  | 369 mA        | 800 mA                    | 8,9 W             |                         |                                                                  |                                    | 1                   |
| 4623                            | 4673 | 9 VA<br>(8 W)     | M20 x 1,5             | 230 V AC | 43 mA         | 80 mA                     | 10 VA             |                         |                                                                  |                                    | 2                   |
| 4630                            | 4680 | 11 W              | 1/2 NPT               | 24 V DC  | 475 mA        | 1000 mA                   | 11,4 W            | IP66 (with cable gland) | II 2G Ex db mb<br>IIC T4/T5 Gb<br>II 2G Ex eb mb<br>IIC T4/T5 Gb | T4: -40 ... +50<br>T5: -40 ... +40 | 1                   |
| 4631                            | 4681 | 13 VA<br>(13,1 W) | 1/2 NPT               | 230 V AC | 66 mA         | 125 mA                    | 15,2 VA           |                         |                                                                  |                                    | 2                   |
| 4632                            | 4682 | 11 W              | M20 x 1,5             | 24 V DC  | 475 mA        | 1000 mA                   | 11,4 W            |                         |                                                                  |                                    | 1                   |
| 4633                            | 4683 | 13 VA<br>(13,1 W) | M20 x 1,5             | 230 V AC | 66 mA         | 125 mA                    | 15,2 VA           |                         |                                                                  |                                    | 2                   |

The mentioned solenoids are among others compatible with the following Valve series.

| Solenoid            | Valve series                                            |
|---------------------|---------------------------------------------------------|
| 4600/4601/4602/4603 | 97105, 98025                                            |
| 4610/4611/4612/4613 | 26360, 80207, 95000, 96000                              |
| 4620/4621/4622/4623 | 95000, 95100, 96000                                     |
| 4630/4631/4632/4633 | 91000, 95000, 95100, 96000                              |
| 4660/4661/4662/4663 | 24011, V81, V82, V87                                    |
| 4670/4671/4672/4673 | 24011, 25003, 95000, 95100, 96000, 98015, V81, V82, V87 |
| 4680/4681/4682/4683 | 21023, 21025, 25003, 95000, 95100, 96000                |

Item numbers for international approvals

| Country/Approvals                      | Code     |
|----------------------------------------|----------|
| Europe/ATEX                            | Standard |
| International/IECEX                    | Standard |
| China/NEPSI                            | -01      |
| Brasil/INMETRO                         | -02      |
| Korea/KOSHA                            | -03      |
| Russia, Kazakhstan & Belarus/TR-CU 012 | -04      |
| India/CCOE                             | Standard |
| Taiwan/ITRI                            | Standard |

Example: 0000000463002400-03  
(Solenoid: 4630; Voltage 24 V DC; Approval: KOSHA)

Accessories  
Electrical connection

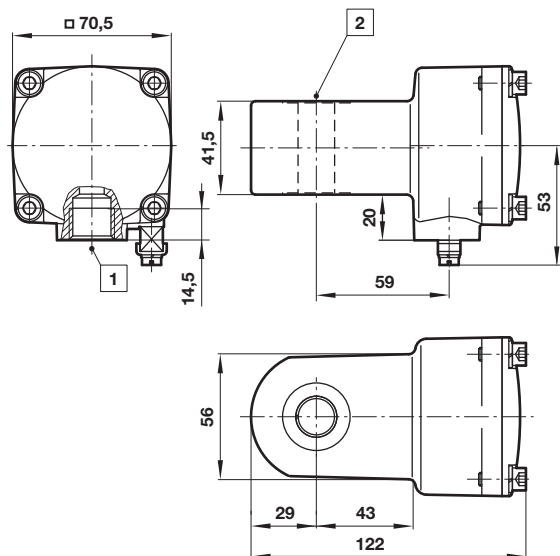
Cable gland  
Protection class (ATEX) Ex e, Ex d



| Page 3    |              |                                 |                         |         |
|-----------|--------------|---------------------------------|-------------------------|---------|
| Thread    | Cabel Ø (mm) | Materials                       | Protection class (ATEX) | Model   |
| M20 x 1,5 | 5,0 ... 14,0 | Nickel plated brass             | II 2 GD Ex e            | 0589654 |
| M20 x 1,5 | 10 ... 14    | Nickel plated brass             | II 2 GD Ex d            | 0588851 |
| 1/2 NPT   | 7,5 ... 11,9 | Nickel plated brass             | II 2 GD Ex d            | 0588925 |
| M20 x 1,5 | 9 ... 13     | Stainless steel 1.4571 (316 Ti) | II 2 GD Ex e            | 0589385 |
| M20 x 1,5 | 7 ... 12     | Stainless steel 1.4404 (316 L)  | II 2 GD Ex d            | 0589395 |
| M20 x 1,5 | 10 ... 14    | Stainless steel 1.4404 (316 L)  | II 2 GD Ex d            | 0589387 |

## Dimensions - Solenoid

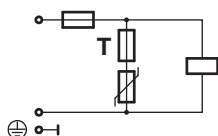
Dimensions in mm  
Projection/First angle



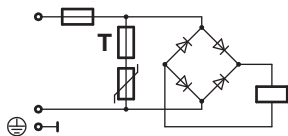
- 1 M20 x 1,5 or 1/2 NPT
- 2 Ø 16 or 13 (with spacer tube)

## Circuit diagrams

1

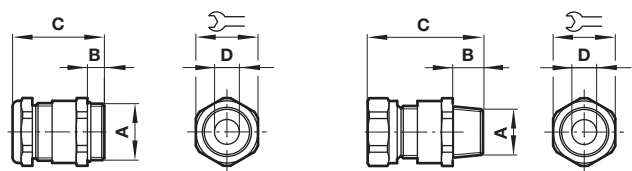


2



## Cable gland

Only for 0588925



| A         | B   | C    | ø D          |    | Model   |
|-----------|-----|------|--------------|----|---------|
| M20 x 1,5 | 6,5 | 35,5 | 5,0 ... 14,0 | 24 | 0589654 |
| M20 x 1,5 | 6,5 | 27,5 | 9 ... 13     | 22 | 0589385 |
| M20 x 1,5 | 14  | 39   | 10 ... 14    | 24 | 0588851 |
| 1/2 NPT   | 15  | 58   | 7,5 ... 11,9 | 24 | 0588925 |
| M20 x 1,5 | 14  | 39   | 7 ... 12     | 24 | 0589395 |
| M20 x 1,5 | 10  | 34   | 10 ... 14    | 24 | 0589387 |

## Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under »**Technical features/data**«.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications, consult Norgren.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.