

## Data sheet

# Electronic pressure switch / controller with actual value display

Type: DSR

Integrating a pressure switch, pressure sensor and display unit in one compact unit, the **Pressure Controller** offers everything for perfect pressure monitoring and control of hydraulic and pneumatic systems, particularly in continuous series production.

### View

- Optimum pressure management
- rotatable
- High protection rating
- Compact design
- Wide-ranging mounting possibilities
- Hard-wearing
- Wide range of variants available
- Ease of operation



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#### General technical data

##### Electrical connection

|                             |                                                  |
|-----------------------------|--------------------------------------------------|
| Supply voltage              | 15..30VDC nominal 24VDC protection class 3       |
| Electrical connection       | M12x1; 4-pole; 5-pole; with gold-plated contacts |
| Short circuit protection    | yes                                              |
| Reverse polarity protection | yes                                              |
| Overload protection         | yes                                              |
| Current consumption         | < 100mA                                          |

##### Housing

Directionally adjustable up to 290°

|                   |                                                                          |
|-------------------|--------------------------------------------------------------------------|
| Material          | Die-cast zinc Z 410; painted                                             |
| Foil material     | Polyester                                                                |
| Display           | 4-digit 7-segment; LEDred, character height 9mm                          |
| Protection rating | Ip67 EN60529; IP 65 with connector DIN EN 175301-803 (formerty DIN43650) |

##### Ambient conditions

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| Ambient temperature range | -20°C to +85°C                                                                              |
| Storage temperature range | -40°C to +100°C                                                                             |
| EM compatibility          | Interference emission acc. to EN 61000-6-3;<br>Interference resistance acc. to EN 61000-6-2 |
| Vibration resistance      | 20g 10...500Hz IEC60068-2-6*                                                                |
| Shock resistance          | 50g 11ms IEC60068-2-29*                                                                     |

\* not applicable to DIN43650 design

##### Outputs

|                         |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|
| Switching outputs       | 2 high-side outputs (PNP)                                                                   |
| Contact functions       | n.o. contact / n.c. contact, window, hysteresis, function freely adjustable characteristics |
| Switching voltage       | Supply voltage 1,5VDC                                                                       |
| Switching current max.* | 0,5 A per switch                                                                            |
| Short circuit current   | 2,4 A per switch                                                                            |
| Analogue output         | 0/4..20mA, programmable, freely scalable<br>RL ≤ (supply voltage 8 V ) / 20mA ( ≤ 500 Ω)    |

\* higher switching currents on demand

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#### Technical data

|                                                           |     | Low pressure |         |         | High pressure |          |          |          |          |
|-----------------------------------------------------------|-----|--------------|---------|---------|---------------|----------|----------|----------|----------|
| Measuring range                                           | bar | -1...4       | -1...10 | -1...16 | 0...60        | -1...100 | -1...250 | -1...400 | -1...600 |
| Overload pressure                                         | bar | 10           | 20      | 40      | 120           | 200      | 500      | 800      | 1200     |
| Burst pressure                                            | bar | 12           | 25      | 50      | 550           | 800      | 1200     | 1700     | 2200     |
| Display resolution                                        | bar | 0,01         | 0,01    | 0,01    | 0,1           | 0,1      | 1        | 1        | 1        |
| Smallest adjustable difference between SP and RSP (SPRSP) | bar | 0,03         | 0,06    | 0,09    | 0,3           | 0,6      | 2        | 3        | 3        |
| Measuring element                                         |     | Ceramic      |         |         | Thin film     |          |          |          |          |

#### Input quantities

|                                      |                                                                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------|
| Reversing cycles                     | ≥ 100 million.                                                                                           |
| Scanning rate                        | ≥ 5ms                                                                                                    |
| Connecting thread                    | G1/4 (BSPP); ED-soft seal NBR*<br>(DIN 3852 T2,Form X);ED(DIN3852 T11, Form E )                          |
| Tightening torque                    | 35Nm                                                                                                     |
| Parts coming into contact with media | Low pressure: stainless steel 1.4404; Ceramic AL2O3;NBR<br>High pressure: stainless steel 1.4404; 1.4542 |
| Medium temp. range                   | -20°C to +85°C                                                                                           |
| weight                               | approx. 300g                                                                                             |
| MTFFd                                | >100years                                                                                                |

\* other sealing materials (FPM, EPDM etc...) on demand

#### Output quantities

|                          |                                                       |
|--------------------------|-------------------------------------------------------|
| Accuracy                 | ± 0,5 % FS typ.± 1 % FS max.                          |
| Temperature drift        | ± 0,02 %FS/°K type (at -20...85°C) ± 0,03 %FS/°K max. |
| Long term stability      | ± 0,2 % FS/a                                          |
| Repeat accuracy          | ± 0,25% FS                                            |
| Switching point accuracy | ± 0,5 % FS typ.± 1 % FS max.                          |
| Display accuracy         | ± 0,5 % FS typ. ± 1 Digit ± 1 % FS max. ± 1 digit     |

#### Response speed

|                  |         |
|------------------|---------|
| Switching output | ≤ 10 ms |
| Analogue output  | ≤ 10 ms |

## Data sheet

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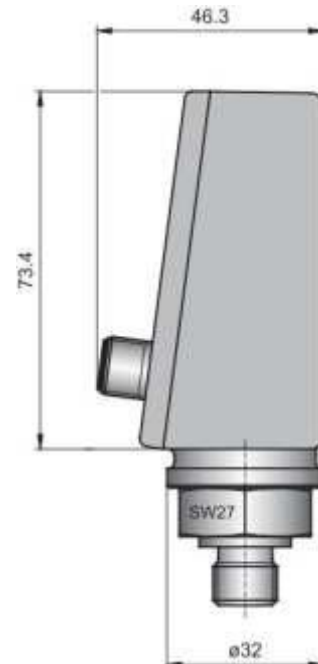
Type: DSR

### Mounting

External thread G1/4" BSPP  
High and low pressure  
Ordering example: DSR-XXX-X4-17



M12 plug-type connector  
Ordering example: DSR-XXX-X4-X7



Internal thread G1/4" BSPP  
High pressure from 60bar with measuring element DMS  
Ordering example: DSR-060-X4-27



Internal thread G1/4" BSPP  
Low pressure up to 16bar with ceramic measuring element  
Ordering example: DSR-016-X4-27



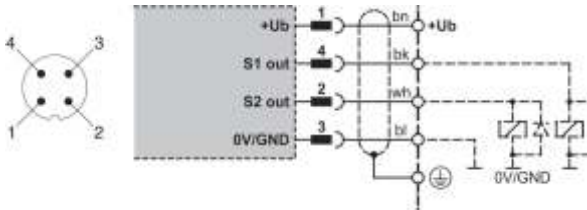
# Data sheet

## Electronic pressure switch / controller with actual value display

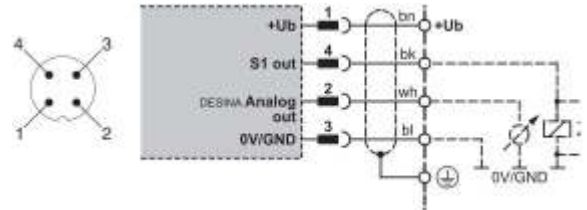
### Type: DSR

#### Terminal diagrams

2 switching outputs; without analogue output,  
M12x1 plug-type connector 4-pole  
ordering example: DSR-XXX-04-X7



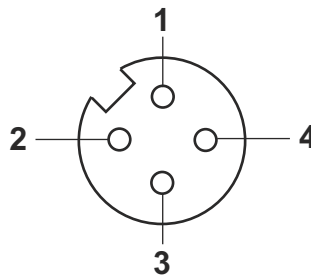
1x switching output, 1x analogue output,  
M12x1 plug-type connector 4-pole  
ordering example: DSR-XXX-14-X7



#### Pin assignment

##### SCPSD-xxx-14-x7

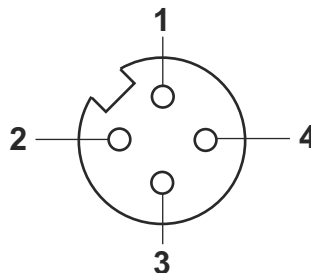
1 switching output, 1 analogue output  
M12x1; 4-pole



| PIN | occupancy      |
|-----|----------------|
| 1   | V <sub>+</sub> |
| 2   | Analogue out   |
| 3   | 0V/GND         |
| 4   | S1 out         |

##### SCPSD-xxx-04-x7

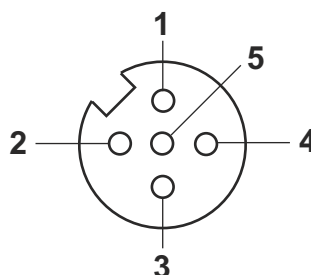
2 switching outputs  
M12x1; 4-pole



| PIN | occupancy      |
|-----|----------------|
| 1   | V <sub>+</sub> |
| 2   | S2 out         |
| 3   | 0V/GND         |
| 4   | S1 out         |

##### SCPSD-xxx-14-x5

2 switching outputs, 1 analogue output  
M12x1; 5-pole



| PIN | occupancy      |
|-----|----------------|
| 1   | V <sub>+</sub> |
| 2   | S2 out         |
| 3   | 0V/GND         |
| 4   | S1 out         |
| 5   | Analogue out   |

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### Order key

#### Pressure range

004 010 016 060 100 250 400 600

#### Switching outputs

**04** - 2 switching outputs, without analogue output

M12 plug-type connector 4pin

**14** - 1 switching output, with analogue output

M12 plug-type connector 4pin

other variants on request

#### Design

**1** - G1/4 BSPP external thread

**2** - G1/4 BSPP internal thread

DSR - XXX - 04 - X7

#### Cable length

**02** - 2m

**05** - 5m

**10** - 10m

#### Plug-type connector

**45** - M12 cable socket; straight

**55** - M12 cable socket; 90° angled

DSRK-400 - XX - XX

### Accessories

PC programming kit

DSR-PRG-KIT

Fixing clamp

DSR-S27