

Pressure transmitter with 2-channel output signal Model MHS

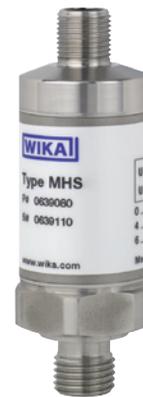
WIKA data sheet PE 81.48

Applications

- Mobile hydraulics
- Cranes
- Aerial platforms
- Industrial trucks

Special features

- Redundant pressure measurement and output signals
- Robust design
- Tested for operating conditions in mobile hydraulics



Pressure transmitter model MHS

Description

High safety through redundant measuring bridges

Through redundant pressure measurement, signal processing and two independent output signals, a control-side plausibility monitoring is ensured. This increases the process reliability, saves space and significantly reduces the installation costs over the use of two independent pressure transmitters.

Robust design for rough conditions

The model MHS has been designed for the extreme and harsh conditions in mobile hydraulic equipment. A hermetically welded WIKA thin-film measuring cell, the stainless steel case and the metal M12 connector make this pressure transmitter particularly tough. Through this robust design, the model MHS achieves an IP 69K ingress protection.

Measuring ranges and output signals

| Relative pressure | | | | | | |
|-----------------------------------|-----------|---------------------|-----------|---------------------|-----------|---------------------|
| Measuring range 1 [bar] | 0 ... 60 | 0 ... 60 | 0 ... 100 | 0 ... 100 | 0 ... 160 | 0 ... 160 |
| Measuring range 2 [bar] | 0 ... 60 | 0 ... 60 | 0 ... 100 | 0 ... 100 | 0 ... 160 | 0 ... 160 |
| Overpressure limit [bar] | 120 | 120 | 200 | 200 | 320 | 320 |
| Signal end value S1+ [mA, 3-wire] | 20,00 | 20,00 | 20,00 | 20,00 | 20,00 | 20,00 |
| Signal end value S2+ [mA, 3-wire] | 20,00 | 13,60 ¹⁾ | 20,00 | 14,00 ²⁾ | 20,00 | 14,24 ³⁾ |
| Measuring range 1 [bar] | 0 ... 250 | 0 ... 250 | 0 ... 400 | 0 ... 400 | 0 ... 600 | 0 ... 600 |
| Measuring range 2 [bar] | 0 ... 250 | 0 ... 250 | 0 ... 400 | 0 ... 400 | 0 ... 600 | 0 ... 600 |
| Overpressure limit [bar] | 500 | 500 | 800 | 800 | 1.200 | 1.200 |
| Signal end value S1+ [mA, 3-wire] | 20,00 | 20,00 | 20,00 | 20,00 | 20,00 | 20,00 |
| Signal end value S2+ [mA, 3-wire] | 20,00 | 14,00 ⁴⁾ | 20,00 | 14,67 ⁵⁾ | 20,00 | 13,60 ⁶⁾ |

1) corresponds to 20 mA at 100 bar
 2) corresponds to 20 mA at 160 bar
 3) corresponds to 20 mA at 250 bar
 4) corresponds to 20 mA at 400 bar
 5) corresponds to 20 mA at 600 bar
 6) corresponds to 20 mA at 1,000 bar

On request the given measuring ranges are also available in psi, kg/cm², kPa and MPa.

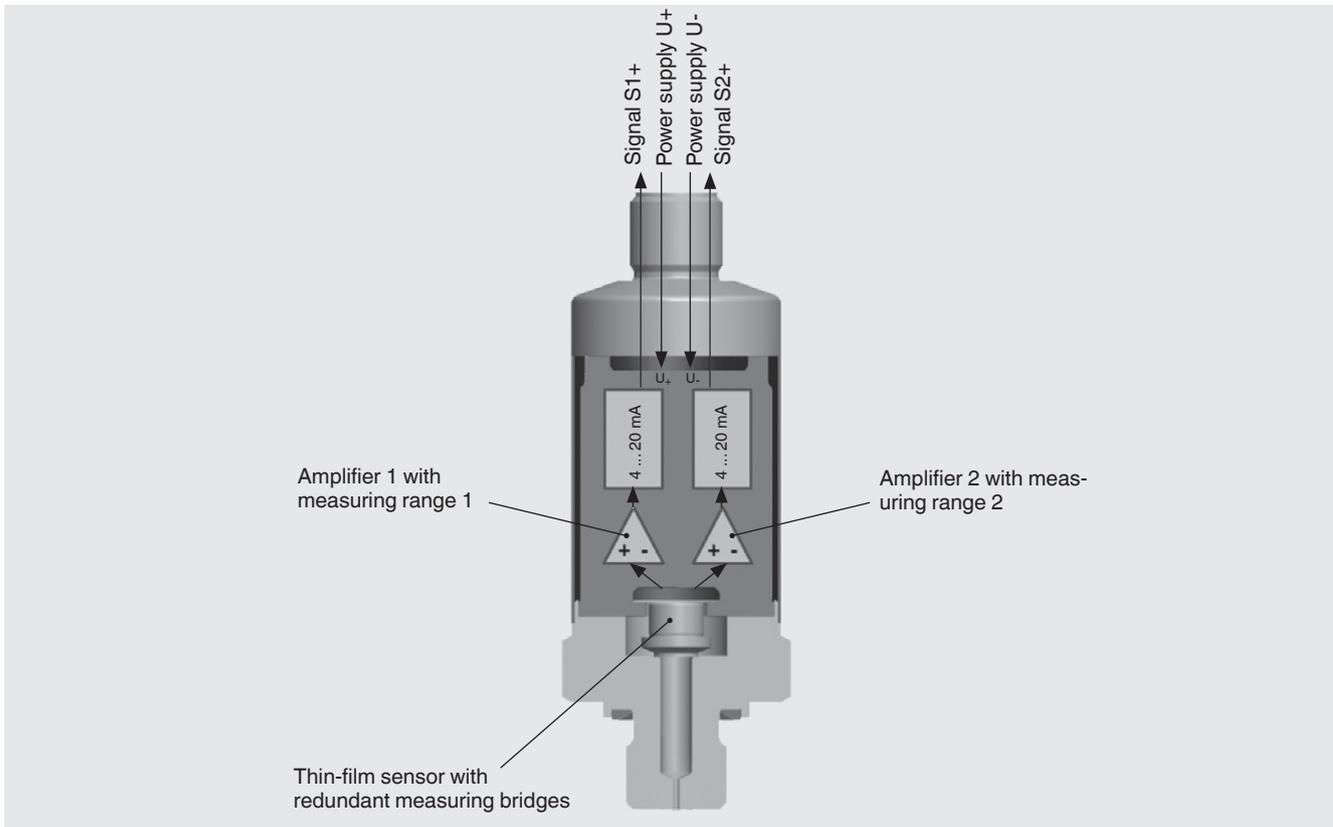
Analogue signal

4 ... 20 mA

Load in Ω

- Power supply DC 6.5 ... 20 V: max. 250 Ω
- Power supply DC 11.5 ... 20 V: max. 500 Ω
- Power supply DC 20 ... 32 V: min. 50 Ω/V x (power supply - 20 V)
 max. (power supply - 2 V) / 20 mA

Schematic diagram of the pressure transmitter



Voltage supply

Power supply U+
DC 6.5 ... 32 V

Total current consumption
Internal consumption without current sources
≤ 20 mA with maximum power supply

Reference conditions (per IEC 61298-1)

Temperature
15 ... 25 °C

Atmospheric pressure
860 ... 1,060 mbar

Humidity
45 ... 75 % r. h.

Power supply
DC 24 V

Mounting position
Calibrated in vertical mounting position with process connection facing downwards.

Accuracy data

Accuracy at reference conditions
≤ ±1 % of span

Including non-linearity, hysteresis, zero offset and end value deviation (corresponds to measured error per IEC 61298-2)

Temperature error (typical)
≤ ±2 % of span (over complete temperature range)

Response time (10 ... 90 %)
≤ 2 ms

Operating conditions

Ingress protection (per IEC 60529)
IP 69K

The stated ingress protection only applies when plugged in using a mating connector that has the appropriate ingress protection.

Vibration resistance (per IEC 60068-2-6)
10 g

Shock resistance (per IEC 60068-2-27)
50 g

Service life
> 10 million load cycles

Permissible temperature ranges

- Medium: -40 ... +85 °C
- Ambient: -40 ... +85 °C
- Storage: -40 ... +85 °C

Electrical connections

Available connection
Circular connector M12 x 1 (4-pin)

Reverse polarity protection
U₊ vs. U₋

Insulation voltage
DC 500 V

Connection diagram

Circular connector M12 x 1 (4-pin)



| | |
|-----------------|---|
| U ₊ | 1 |
| U ₋ | 3 |
| S1 ₊ | 4 |
| S2 ₊ | 2 |

Legend

| | |
|-----------------|--------------------------------|
| U ₊ | Positive power supply terminal |
| U ₋ | Reference potential |
| S1 ₊ | Signal 1 (measuring range 1) |
| S2 ₊ | Signal 2 (measuring range 2) |

Process connection

Available process connection

G ¼ A per DIN 3853-E, suitable up to max. 600 bar

Sealings

| Standard | Option |
|----------|-------------------|
| FKM | NBR ¹⁾ |

1) Only permitted for temperatures from -30 °C.

The sealings listed under "Standard" are included in the delivery. Other sealings available on request.

Materials

Wetted parts

- Stainless steel
- For sealing materials see "Process connections"

Non-wetted parts

Stainless steel

CE conformity

EMC directive

2004/108/EC, EN 61326 emission (group 1, class B) and interference immunity (industrial application)

Pressure equipment directive

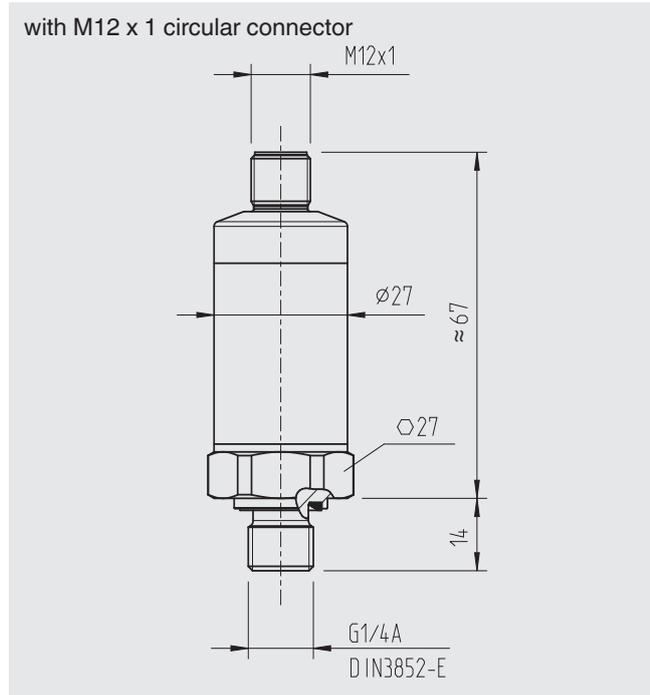
97/23/EC

RoHS conformity

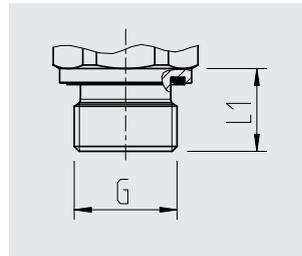
Yes

Dimensions in mm

Pressure transmitter



Process connections



| G | L1 |
|------------------|----|
| G ¼ A DIN 3852-E | 14 |

For information on tapped holes and welding sockets, see Technical information IN 00.14 at www.wika.com.

Ordering information

Model / Measuring range / Process connection

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