

Pressure Transmitter with thin film technology for mobile hydraulic applications Model MH-1

WIKA Data Sheet PE 81.21

Applications

- Mobile Hydraulics
- Mechanical Engineering
- General Industrial applications

Special Features

- Pressure ranges from 0 ... 60 bar to 0 ... 600 bar
- Signal output 4 ... 20 mA, 1 ... 5 V
- Resistant to shock and vibration
- Ingress protection from IP 65 to IP 69 K (steam jet protection)
- Resistant to pressure peaks

Description

Rugged design

The extremely high resistance to shock, vibration and pressure peaks (CDS-system), combined with degrees of protection better than IP 68, offered by model MH-1 make the instrument particularly suitable for the rough operating conditions of mobile hydraulic applications.

Pressure ranges from 0 ... 60 bar up to 0 ... 600 bar are available to meet all standard mobile hydraulic applications.

Proven thin film sensors

The hermetically welded thin film measuring cell eliminates the need for additional sealing materials and ensures long term leak tightness.

The thin film measuring cell is made of high quality stainless steel using sputtering technology to offer long term stability especially in applications subjected to frequent load changes.

The sensor is recessed into the pressure connection to offer additional protection against oil loss should the sensor



Fig. Pressure transmitter MH-1

become damaged by misuse on site (for example, when the sensors is destroyed by turning crane loads).

The instrument design adapted to mobile applications permits shock loads up to 500 g and vibrations up to 20 g.

Very good EMC characteristics complying with EN 61 326 as well as DIN 40 839 ensure reliable function even under difficult EMC conditions. Additional protection against load dump up to 200 V is integrated.

High ingress protection

Even extreme thermal shocks have no influence on the operational safety. This instrument offers a wide range of ingress protection classes particularly for mobile applications. In addition to a locking plug M 12x1 with ingress protection IP 67, the pressure transmitters can be shipped with a plug DIN EN 175301-803 shape C, with IP 65. Cable versions are also available with ingress protection classes up to IP 69K (steam jet protection) or premounted plugs to customer specifications.

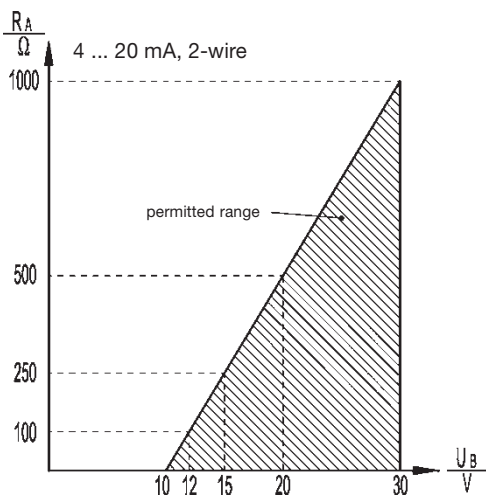
Specifications

Model MH-1

Pressure ranges	bar	60	100	160	250	400	600
Over pressure safety	bar	120	200	320	500	800	1200
Burst pressure	bar	550	800	1000	1200	1700	2400
		{Other on request}					
Materials							
■ Wetted parts		Stainless steel					
■ Case		Stainless steel					
Power supply U_B	DC V	$10 < U_B \leq 30$					
Signal output		4 ... 20 mA, 2-wire					
		{1 ... 5 V, 3-wire}					
		{Other signal outputs on request}					
Response time (10 ... 90 %)	ms	≤ 5					
Dielectric strength	DC V	500					
Accuracy	% of span	≤ 0.5 (BFSL)					
	% of span	≤ 1.0 *)					
		*) Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2).					
Non-linearity	% of span	≤ 0.4 (BFSL) according to IEC 61298-2					
1-year stability	% of span	≤ 0.2 (at reference conditions)					
Permissible temperature of							
■ Medium **)		-40 ... +125 °C			-40 ... +257 °F		
■ Ambience **)		-30 ... +85 °C {-40 ... +85 °C}			-22 ... +185 °F {-40 ... +185 °C}		
■ Storage **)		-40 ... +85 °C			-40 ... +185 °F		
		**) Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3					
Compensated Temperature range		0 ... +85 °C			+32 ... +185 °F		
Temperature coefficients within compensated temp range							
■ Mean TC of zero	% of span	$\leq 0.3 / 10$ K					
■ Mean TC of range	% of span	$\leq 0.2 / 10$ K					
CE- conformity		89/336/EEC interference emission and immunity see EN 61326					
		Interference emission limit class A and B					
		97/23/EG Pressure equipment directive					
Shock resistance	g	500 according to IEC 60068-2-27 (mechanical shock)					
Vibration resistance	g	20 according to IEC 60068-2-6 (vibration under resonance)					
Wiring protection		Protected against short circuiting Sig+ against $U_B / 0$ V and reverse polarity on the instrument side					
Mass	kg	Approx. 0.2					

{ } Items in curved brackets are optional extras for additional price.

Output signal and allowed load



Output current (2-wire)

4 ... 20 mA: $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$ with R_A in Ohm and U_B in Volt

Output voltage (3-wire)

1 ... 5 V: $R_A > 5 \text{ kOhm}$

Dimensions in mm

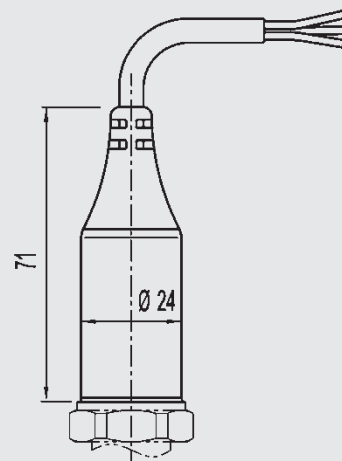
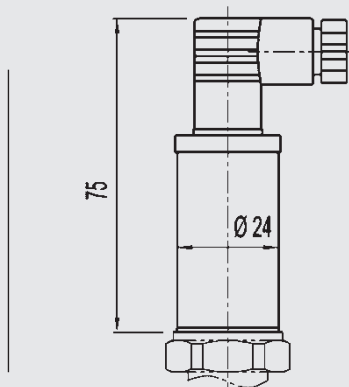
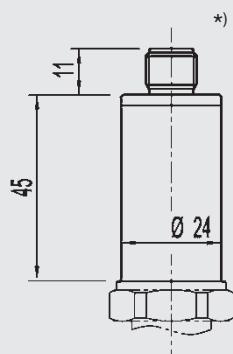
Electrical connections

Ingress Protection IP per IEC 60 529

Circular connector
M 12x1, 4-pin
IP 67
Order code: M4

Mini L-connector
DIN EN 175301-803, shape C,
for conductor cross section up to
max. 0.75 mm²,
conductor outer diameter 4.5 ... 6 mm
IP 65
Order code: I4

Flying leads with 1.5 m of cable
for conductor cross section up to
max. 0.75 mm²,
AWG 20 with end splices,
conductor outer diameter
5.9 mm (2-wire)
8.4 mm (3-wire)
IP 69K
Order code: FN



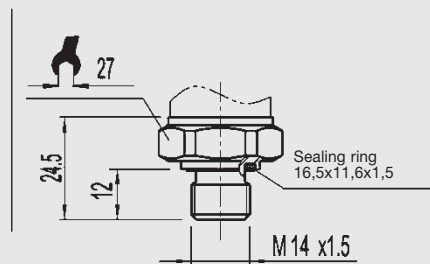
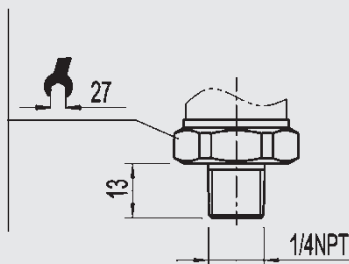
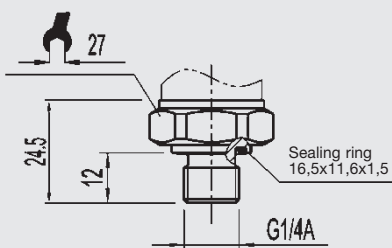
Others on request
{Cable assembly with customized plugs on request }

Pressure connections **)

G 1/4 A
DIN 3852-E
Order code: HD
(max. over pressure safety 600 bar)

1/4 NPT
per „Nominal size for US standard
tapered pipe thread NPT“
Order code: NB

M 14x1,5
DIN 3852-E
Order code: HN
(max. over pressure safety 600 bar)



Pressure channel Ø 3.5 mm

Others on request

For installation and safety instructions see the operating instructions for this product.

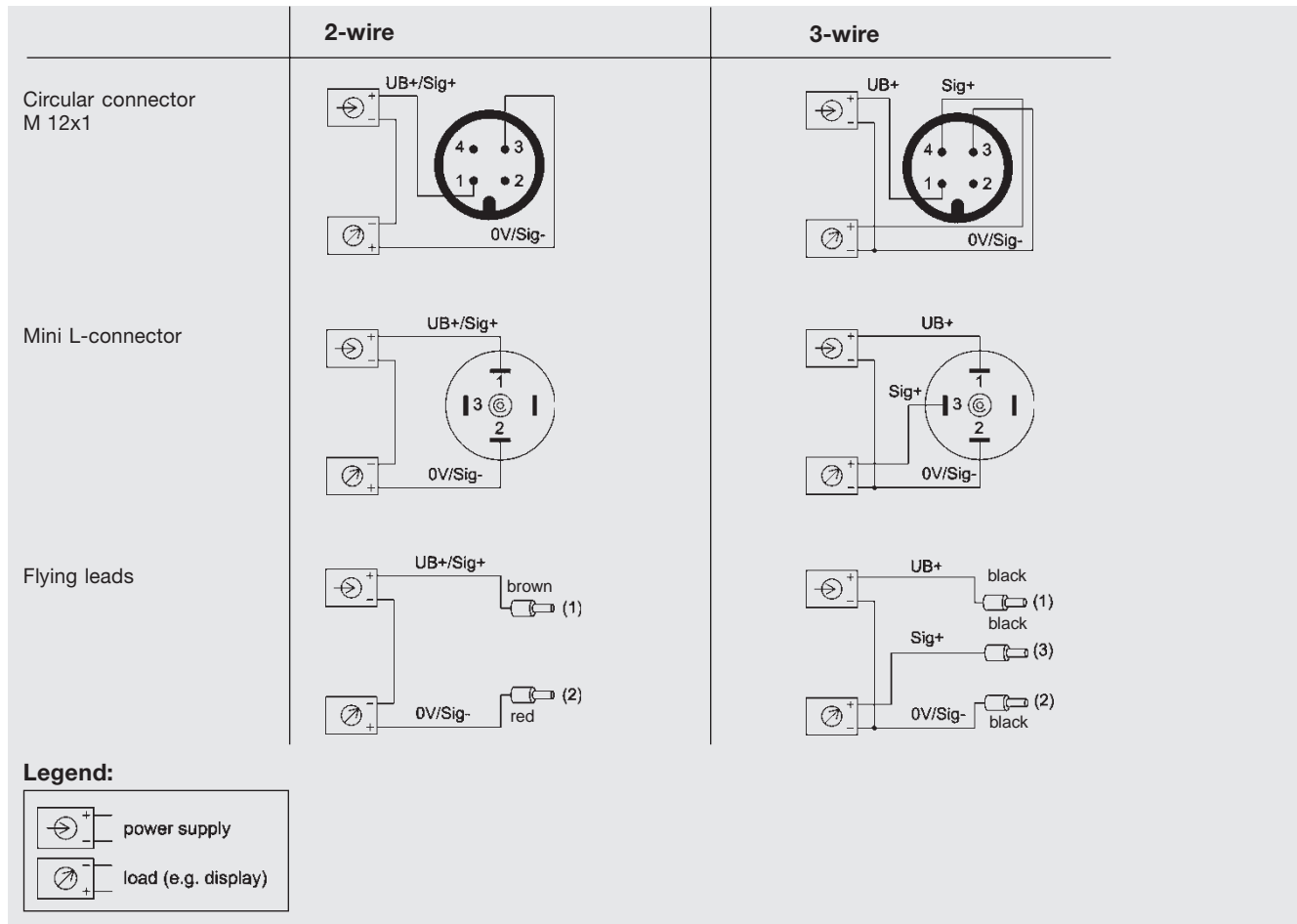
For tapped holes and welding sockets please see Technical Information IN 00.14 for download at www.wika.de -Service

*) Connectors are not included in delivery.

**) CDS-system: reduced pressure channel diameter for damping of pressure peaks and against cavitation.

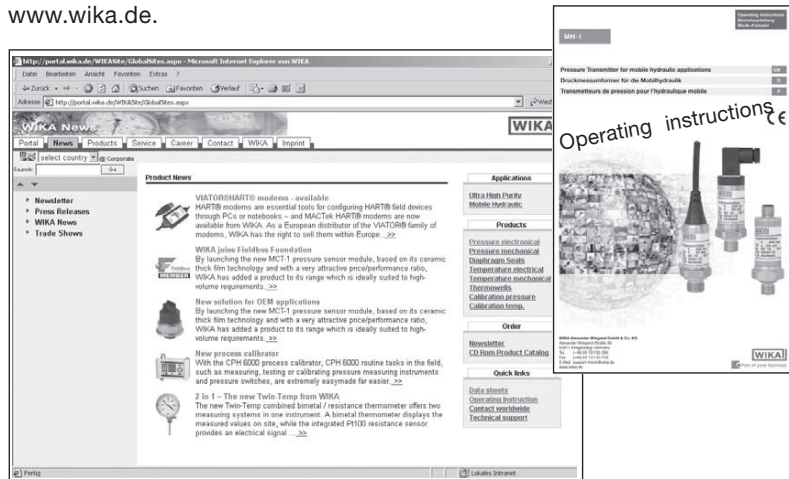
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Wiring details



Further informations

You can obtain further information (data sheets, instructions, etc.) via Internet address www.wika.de.



Specifications and dimensions given in this leaflet represent the state of engineering at the time of printing. Modifications may take place and materials specified may be replaced by others without prior notice.



WIKAL Alexander Wiegand GmbH & Co. KG
 Alexander-Wiegand-Straße 30
 63911 Klingenberg/Germany
 Phone (+49) 93 72/132-0
 Telefax (+49) 93 72/132-406
 E-Mail support-tronic@wika.de
www.wika.de