

OEM pressure transmitter with thin-film technology

For mobile hydraulics

Model MH-2

WIKA data sheet PE 81.37

Applications

- Load monitoring
- Load moment limitation
- Hydraulic drive control

Special features

- Excellent reliability of supply and quality to ISO/TS 16949 and ISO 14001
- For extreme operating conditions
- Compact and robust design



Pressure transmitter model MH-2

Description

Durable and robust

Shock and vibration resistance, resistance to pressure spikes (CDS system) and an ingress protection of up to IP 69K make the model MH-2 pressure transmitter especially qualified for the harsh operating conditions in mobile hydraulics. Even extreme temperature shocks do not affect its performance.

The case is made of a highly resistant glass-fibre reinforced plastic (PBT). This material is successfully used within the automotive industry.

A metallic shield inside the instrument provides excellent EMC characteristics in accordance with EN 61326, thus ensuring reliable operation, even under high exposures of up to 100 V/m.

The hermetically-welded thin-film measuring cell ensures long-term leak-tightness, without the need for additional sealing materials.

Especially in applications with high dynamic load cycles, the thin-film measuring cell features high long-term stability and load-cycling resistance.

State-of-the-art manufacturing

The model MH-2 pressure transmitter has been specifically developed for OEM applications in mobile hydraulics. It is manufactured on an ISO/TS 16949 certified production line.

Measuring ranges

Relative pressure in bar							
Measuring range	0 ... 40	0 ... 60	0 ... 100	0 ... 160	0 ... 250	0 ... 400	0 ... 600
Overpressure limit	80	120	200	320	500	800	1,200
Burst pressure	400	550	800	1,000	1,200	1,700	2,400

Measuring ranges < 40 bar on request

Vacuum tightness

Yes

Output signals

Signal type	Signal
Current (2-wire)	4 ... 20 mA
Voltage (3-wire)	DC 0 ... 10 V
	DC 1 ... 5 V
Ratiometric	DC 0.5 ... 4.5 V

Other output signals available on request

Load in Ω

- 4 ... 20 mA: $\leq (\text{power supply} - 10 \text{ V}) / 0.02 \text{ A}$
- DC 0 ... 10 V: $> 5\text{k}$
- DC 1 ... 5 V: $> 2.5\text{k}$
- DC 0.5 ... 4.5 V: $> 4.5\text{k}$

Voltage supply

Power supply

The power supply depends on the selected output signal

- 4 ... 20 mA: DC 10 ... 36 V
- DC 0 ... 10 V: DC 14 ... 36 V
- DC 1 ... 5 V: DC 8 ... 36 V
- DC 0.5 ... 4.5 V: DC 4.5 ... 5.5 V

Reference conditions (per IEC 61298-1)

Temperature

15 ... 25 °C

Atmospheric pressure

860 ... 1,060 mbar

Humidity

45 ... 75 % relative

Power supply

DC 24 V

Mounting position

Calibrated in vertical mounting position with pressure connection facing downwards.

Accuracy data

Accuracy at reference conditions

Maximum: $\leq \pm 1$ % of span

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

Non-linearity (per IEC 61298-2)

Maximum: $\leq \pm 0.4$ % of span BFSL

Typical: $\leq \pm 0.25$ % of span BFSL

Temperature error in rated temperature range

Rated temperature range: $-40 \dots +100$ °C

Maximum: ± 0.15 % der Spanne/10K

Typical: ± 0.08 % der Spanne/10K

Settling time

≤ 2 ms

Long-term stability

Typical: $\leq \pm 0.2$ % of span/year

Operating conditions

Ingress protection (per IEC 60529)

The ingress protection depends on the type of electrical connection.

- Circular connector M12 x 1 (4-pin): IP 67
- Metri-Pack series 150 (3-pin): IP 67
- Bayonet connector DIN 72585 (4-pin): IP 69K
- AMP Superseal 1.5 (3-pin): IP 67
- AMP Micro Quadlock (3-pin): IP 67
- Deutsch DT04-3P (3-pin): IP 67
- Cable outlet: IP 69K

The stated ingress protection only applies when plugged in using mating connectors that have the appropriate ingress protection.

Vibration resistance

20 g (per IEC 60068-2-6, under resonance)

Shock resistance

500 g (per IEC 60068-2-27, mechanical)

Temperatures

Permissible temperature ranges for:

- Ambient: $-40 \dots +100$ °C
- Medium: $-40 \dots +125$ °C
- Storage: $-40 \dots +100$ °C

Process connections

Process connection per	Thread size
DIN 3852-E	G ¼ A M14 x 1.5
ANSI/ASME B1.20.1	¼ NPT
SAE J514 Fig.34B	7/16-20 UNF-2A

Sealings

Thread size	Standard	Option
G ¼ A	NBR	FKM
7/16-20 UNF-2A	O-ring BOSS from FKM	-

The sealings listed under "Standard" are included in the delivery.

CDS system

All process connections are available with the CDS system. The diameter of the pressure channel is reduced in order to counteract pressure spikes and cavitation (see fig.1).

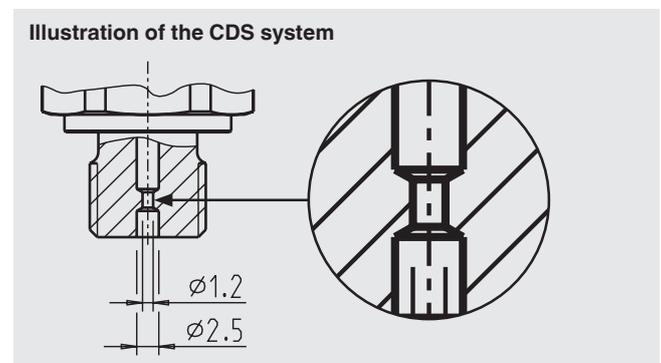


Fig. 1: Reduced diameter of the pressure channel

Approvals, directives and certificates

CE conformity

- EMC directive 2004/108/EC, EN 61326 emission (group 1, class B) and immunity (industrial application)
- Pressure equipment directive 97/23/EC

Materials

Wetted parts

Stainless steel

Non-wetted parts

Highly resistant glass-fibre reinforced plastic (PBT)

Electrical connections

Short-circuit resistance

S₊ vs. U₋

Reverse polarity protection

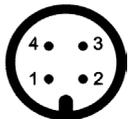
U_B vs. U₋

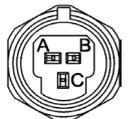
(no reverse polarity protection with ratiometric output signal)

Insulation voltage

DC 500 V

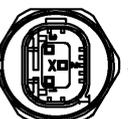
Connection diagrams

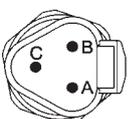
Circular connector M12 x 1 (4-pin)			
		2-wire	3-wire
	U _B	1	1
	U ₋	3	3
	S ₊	-	4

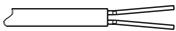
Metri-Pack series 150 (3-pin)			
		2-wire	3-wire
	U _B	B	B
	U ₋	A	A
	S ₊	-	C

Bayonet connector DIN 72585 (4-pin)			
		2-wire	3-wire
	U _B	1	1
	U ₋	2	2
	S ₊	-	3

AMP Superseal 1.5 (3-pin)			
		2-wire	3-wire
	U _B	3	3
	U ₋	1	1
	S ₊	-	2

AMP Micro Quadlock (3-pin)			
		2-wire	3-wire
	U _B	3	3
	U ₋	1	1
	S ₊	-	2

Deutsch DT04-3P (3-pin)			
		2-wire	3-wire
	U _B	A	A
	U ₋	B	B
	S ₊	-	C

Cable outlet			
		2-wire	3-wire
	U _B	brown	brown
	U ₋	green	green
	S ₊	-	white

U _B	Positive power supply terminal
U ₋	Reference potential
S ₊	Positive output terminal

Wire cross-section 0.75 mm² (with end splices)

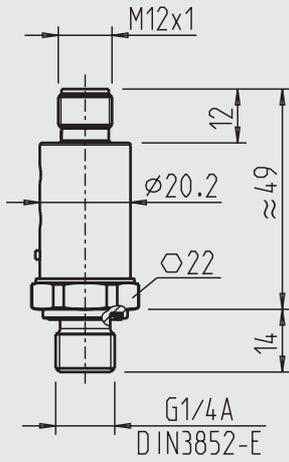
Cable diameter 6.6 mm

Cable length 0.5 m or 2 m

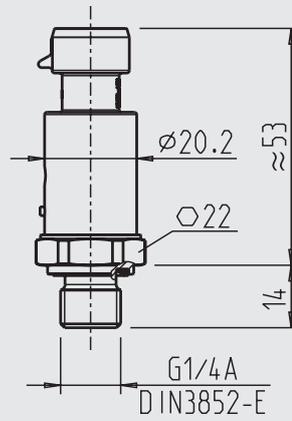
Dimensions in mm

Pressure transmitter model MH-2

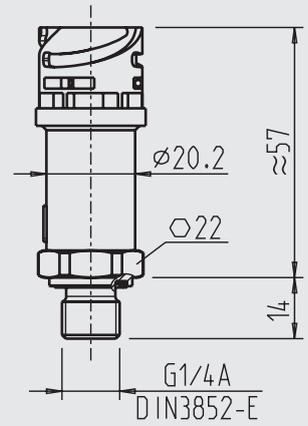
with circular connector M12 x 1



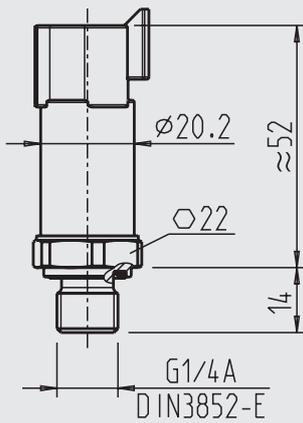
with Metri-Pack series 150



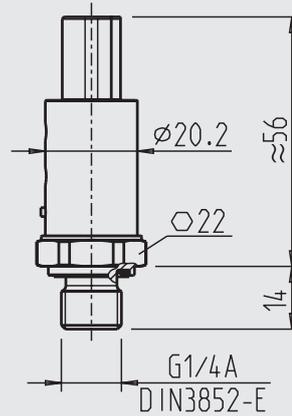
with bayonet connector DIN 72585



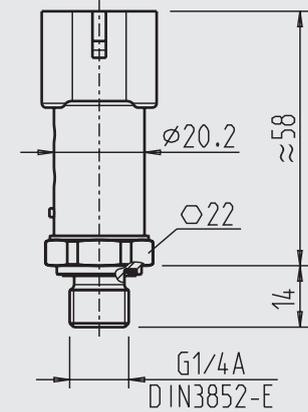
with Deutsch DT04-3P



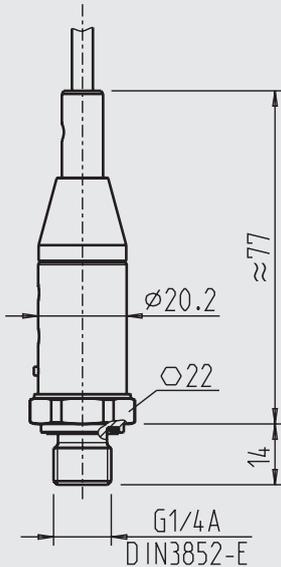
with AMP Micro Quadlock



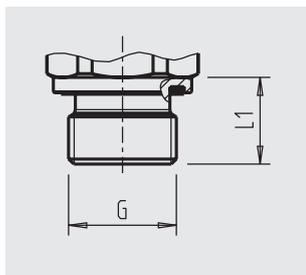
with AMP Superseal 1.5



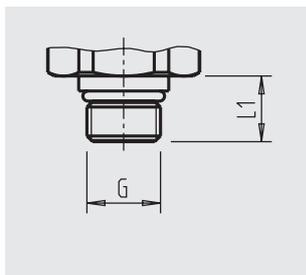
with cable outlet



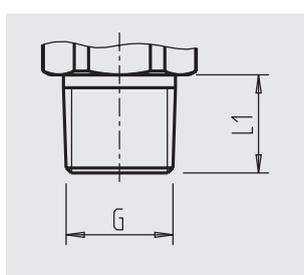
Process connections



G	L1
G ¼ A DIN 3852-E	14
M14 x 1.5 DIN 3852-E	14



G	L1
7/16-20 UNF	12



G	L1
¼ NPT	13

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

Ordering information

Model / Measuring range / Output signal / Process connection / Sealing / Electrical connection

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WIKAL Alexander Wiegand SE & Co. KG
Alexander-Wiegand-Straße 30
63911 Klingenberg/Germany
Tel. (+49) 9372/132-0
Fax (+49) 9372/132-406
E-mail info@wika.de
www.wika.de