

# MicroTronic® - Pressure transmitter in miniature design

## Model M-10, standard version

## Model M-11, flush diaphragm

WIKA Data Sheet PE 81.25

### Applications

- Mechanical engineering
- Hydraulics / Pneumatics
- General industrial applications

### Special Features

- Pressure ranges from 0 ... 16 bar to 0 ... 1000 bar
- Current and voltage signal outputs
- Ingress protection IP 65 or IP 67
- Case and wetted parts of stainless steel
- Vacuum tight

### Description

#### Small size

The MicroTronic is one of the smallest industrial pressure transmitters available. It is ideal for applications that require high accuracy, durability and small size.

#### Rugged design

Due to its rugged design, the MicroTronic is highly resistant to pressure spikes and vibrations and provides reliable operation even under extreme EMI conditions.

#### Excellent stability

The all welded construction of the sensor assembly eliminates additional sealing materials and gives long-term leak-free service. The thinfilm sensor guarantees an excellent long-term stability in applications subject to wide, rapid pressure fluctuations.



Fig. left MicroTronic M-10  
Fig. center MicroTronic M-11, flush diaphragm  
Fig. right MicroTronic M-10

#### High accuracy

The accuracy of the MicroTronic is another feature that makes it an outstanding instrument. The linearity of our „small one“ is 0.5 % (limit point calibration). Combined with an excellent repeatability and long-term stability, the MicroTronic offers a reliable measurement.

#### Versatile

The MicroTronic is available with three different analogue output signals as well as a wide range of electrical and pressure connections.

#### Flush diaphragm

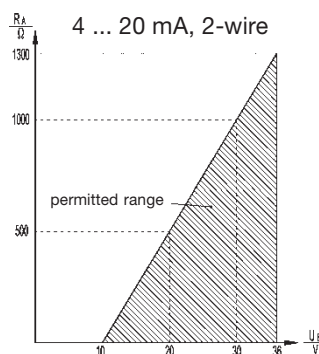
The model M-11 with flush diaphragm is particularly suitable for the measurement of viscous fluids or media containing particulates that may clog normal pressure connections. Pressure transmitters with flush diaphragm are available in pressure ranges from 0 ... 25 bar to 0 ... 600 bar.

## Specifications

## Model M-10 / M-11

Pressure ranges	bar	16 <sup>1)</sup>	25	40	60	100	160	250	400	600	1000 <sup>1)</sup>
Over pressure safety	bar	32	50	80	120	200	320	500	800	1200	1500
Burst pressure	bar	160	250	400	550	800	1000	1200	1700 <sup>2)</sup>	2400 <sup>2)</sup>	3000
		<sup>1)</sup> Only Model M-10.									
		<sup>2)</sup> For model M-11: max. 1500 bar.									
Materials											
■ Wetted parts		Stainless steel									
■ O-ring		NBR (only for version with flush diaphragm)									
■ Case		Stainless steel									
Internal transmission fluid		Synthetic oil (only for version with flush diaphragm)									
Power supply $U_B$	$U_B$ in DC V	$10 < U_B \leq 36$ (14...36 with signal output 0.1...10 V; 8...36 with signal output 1...5 V)									
Response time (10 ... 90 %)	ms	$\leq 2$									
Dielectric strength	DC V	500									
Accuracy	% of span	$\leq 0.25$ (BFSL) $\leq 0.5$ <sup>3)</sup>									
		<sup>3)</sup> Including non-linearity, hysteresis, non-repeatability, zero point and full scale error (corresponds to error of measurement per IEC 61298-2). Adjusted in vertical mounting position with lower pressure connection.									
Non-linearity	% of span	$\leq 0.2$ (BFSL) according to IEC 61298-2									
1-year stability	% of span	$\leq 0.2$ (at reference conditions)									
Permissible temperature of											
■ Medium <sup>4)</sup>		-40 ... +100 °C					-40 ... +212 °F				
■ Ambient <sup>4)</sup>		-40 ... +100 °C					-40 ... +212 °F				
■ Storage <sup>4)</sup>		-40 ... +100 °C					-40 ... +212 °F				
		<sup>4)</sup> Also complies with EN 50178, Tab. 7, Operation (C) 4K4H, Storage (D) 1K4, Transport (E) 2K3									
Compensated temperature range		-20 ... +85 °C					-4 ... +185 °F				
Temperature coefficients within compensated temp range											
■ Mean TC of zero	% of span	$\leq 0.2 / 10$ K (M-11: $\leq 0.3$ with pressure range 25 bar)									
■ Mean TC of range	% of span	$\leq 0.2 / 10$ K									
CE- conformity		89/336/EWG interference emission and immunity see EN 61 326 Interference emission limit class A and B 97/23/EG Pressure equipment directive									
Shock resistance	g	800 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 reverse polarity and short circuiting on the instrument side									
Mass	kg	Approx. 0.05									

## 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)

Not for M-11 with pressure range 25 bar

1 ... 5 V:  $R_A > 10 \text{ kOhm}$

0.1 ... 10 V:  $R_A > 20 \text{ kOhm}$

## Dimensions in mm

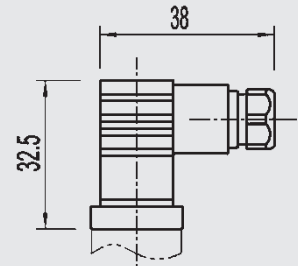
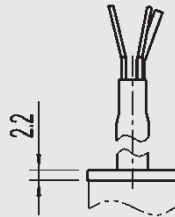
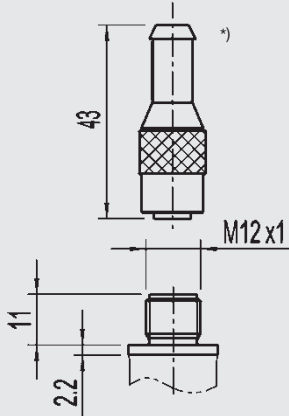
### Electrical connections

Circular connector  
4-pin, M 12x1,  
IP 65 for pressure range < 100 bar  
IP 67 for pressure range ≥ 100 bar  
{IP 67 for pressure range < 100 bar  
on request}  
Order code: M4

Ingress Protection IP per IEC 60 529

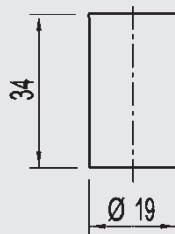
{Flying leads  
IP 65 for pressure range < 100 bar  
IP 67 for pressure range ≥ 100 bar  
{IP 67 for pressure range < 100 bar  
cable length 1.5 m on request}}  
Order code: DL

{Mini L-Connector  
DIN EN 175301-803, shape C},  
IP 65  
Order code: I4



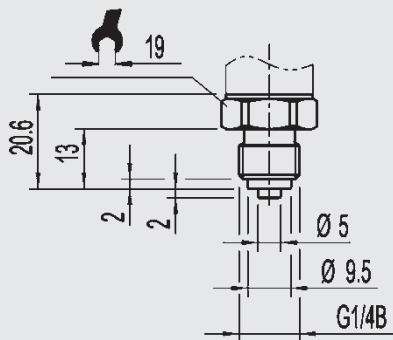
Others on request

### Case

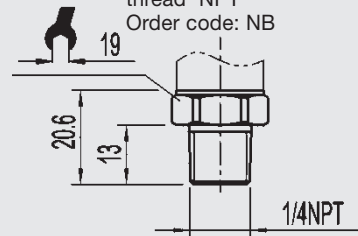


### Pressure connections M-10

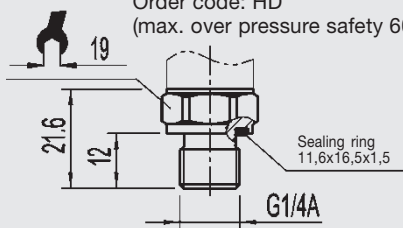
G 1/4  
Order code: GB



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

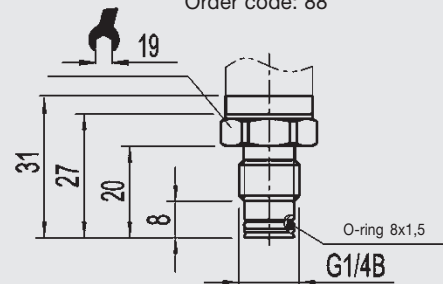


G 1/4  
DIN 3852-E  
with FPM/FKM sealing  
Order code: HD  
(max. over pressure safety 600 bar)



### Pressure connection M-11

G 1/4  
0 ... 25 to 0 ... 600 bar  
Order code: 88



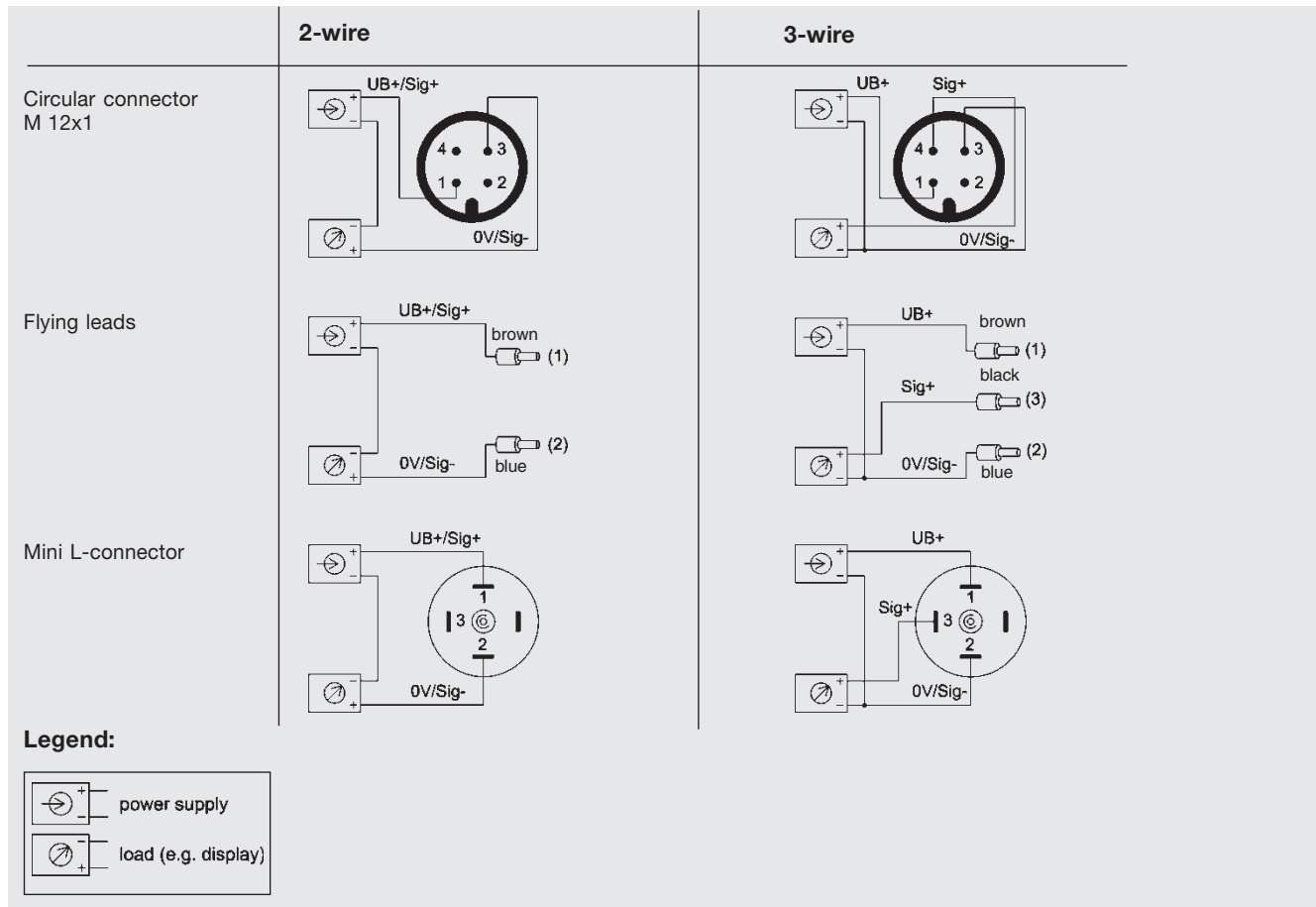
Others on request

**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](http://www.wika.de) -Service**

\*) Connectors are not included in delivery

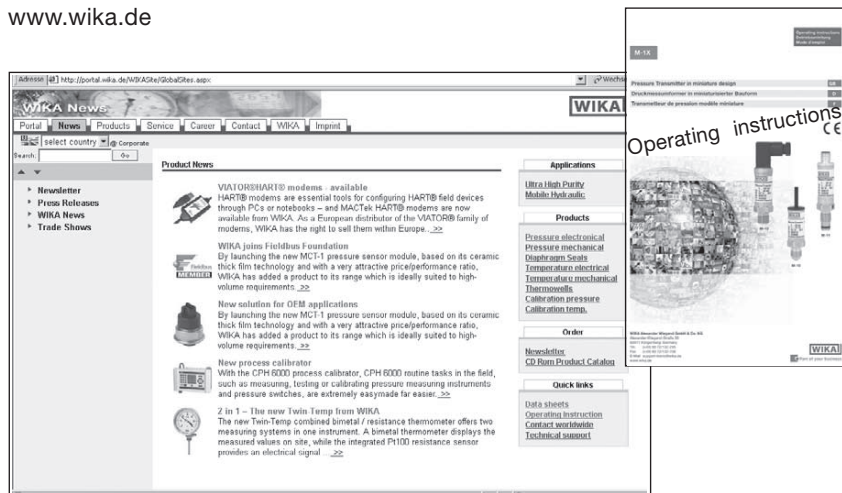
{ } Items in curved brackets are optional extras for additional price.

## Wiring details



## Further information

You can obtain further information (data sheets, instructions, etc.) via our internet address [www.wika.de](http://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.



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