

# Pressure Transmitter with field casing

## Model F-10 and F-11

## Model IF-10 and IF-11 for hazardous areas

WIKA Data Sheet PE 81.11



### Applications

- Process industry
- Chemical and petrochemical industry
- Rugged industrial environments

### Special Features

- Pressure ranges from 0 ... 100 mbar to 0 ... 4000 bar
- Various industrial standard signal outputs
- Wetted parts stainless steel
- Optionally: Intrinsically safe version according to ATEX



Fig. left Pressure transmitter F-10, standard version  
Fig. right Pressure transmitter F-11, flush diaphragm

## Description

### Rugged design

This series of pressure transmitters with field casing has been designed in order to utilize the advantages of modern industrial measurement technology under rough environmental conditions. The compact case provides IP 67 ingress protection. The electronics are fully encapsulated in resin for protection against moisture and vibration.

All wetted parts are made of stainless steel and are completely welded. Therefore there is no need for additional sealing material, which could possibly react with the pressure medium.

### Easily accessible clamping block

The length of the standard cable can be easily modified on site. Electrical connection is through a cable gland, the terminal screws are of large dimension and are located inside the case.

Zero point and span can be adjusted by the user also. However for normal operation no changes in the factory setting are necessary.

All transmitters with a 4 ... 20 mA 2-wire output signal have a test circuit connection to check signal output without interrupting the circuit.

### Intrinsic safety

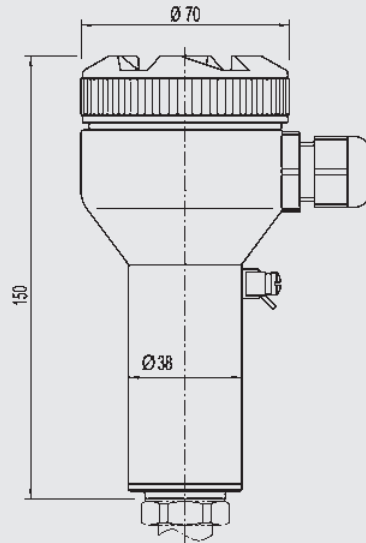
The models IF-10/IF-11 are designed for measurements in zone 1 areas. These intrinsically safe instruments meet the class EEx ia IIC T4-T6 according to ATEX.

### Flush diaphragm

The models F-11 and IF-11 with flush diaphragm are particularly suitable for the measurement of viscous fluids or media containing particles that may clog standard pressure connections. Thus, a trouble-free pressure measurement is ensured.

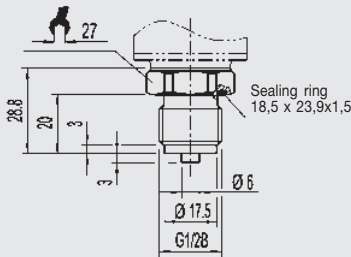
**Dimensions in mm**

**Model F-10 / IF-10**

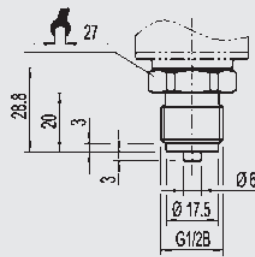


**Pressure connections F-10 / IF-10**

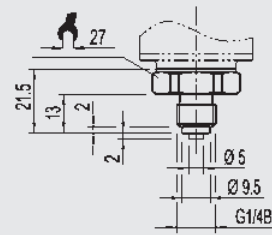
G 1/2  
0 ... 25 bar up to 0 ... 1600 bar  
Order code: GD



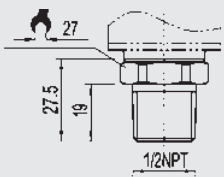
G 1/2  
up to 0 ... 16 bar  
Order code: GD



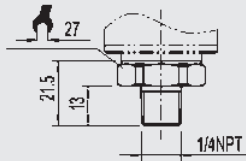
G 1/4  
up to 0 ... 1000 bar  
Order code: GB



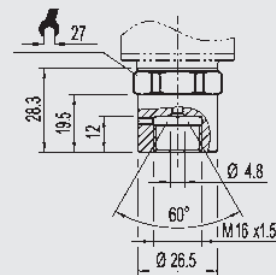
1/2 NPT  
per „Nominal size for US standard tapered pipe thread NPT“  
0 ... 25 bar up to 0 ... 1600 bar  
Order code: ND



1/4 NPT  
per „Nominal size for US standard tapered pipe thread NPT“  
0 ... 25 bar up to 0 ... 1000 bar  
Order code: NB

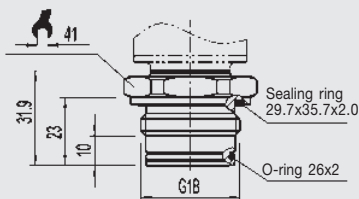


M 16x1.5 female  
> 0 ... 1600 bar  
Order code: ML

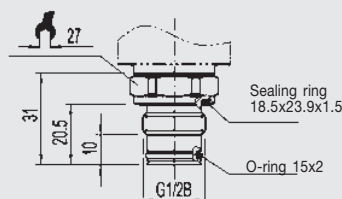


**Pressure connections F-11 / IF-11**

G 1  
0 ... 1.6 bar  
Order code: 85



G 1/2  
0 ... 2.5 bar up to 0 ... 600 bar  
Order code: 86



Others on request

For tapped holes and welding sockets please see data sheet IN 00.14 or [www.wika.de/download](http://www.wika.de/download).

Specifications		Model F-10 / F-11 / IF-10 / IF-11														
Pressure ranges	bar	0,1	0,16	0,25	0,4	0,6	1	1,6	2,5	4	6	10	16	25	40	
Over pressure safety	bar	1	1,5	2	2	4	5	10	10	17	35	35	80	50	80	
Burst pressure	bar	2	2	2,4	2,4	4,8	6	12	12	20,5	42	42	96	96	400	
Pressure ranges	bar	60	100	160	250	400	600	1000 <sup>1)</sup>	1600 <sup>1)</sup>	2500 <sup>1)</sup>	4000 <sup>1)</sup>					
Over pressure safety	bar	120	200	320	500	800	1200	1500	2000	3000	4400					
Burst pressure	bar	550	800	1000	1200	1700 <sup>2)</sup>	2400 <sup>2)</sup>	3000	4000	5000	7000					
		{Vacuum, gauge pressure, compound range, absolute pressure are available}														
Materials		(Other materials see WIKA diaphragm seal programm)														
■ Wetted parts		Stainless steel														
> Model F-10 / IF-10		Stainless steel; O-ring: NBR {FPM/FKM or EPDM}														
> Model F-11 / IF-11		Stainless steel with aluminium head {stainless steel}														
■ Case		Only for pressure ranges up to 0 ... 25 bar or for Model S-11 (flush diaphragm)														
Internal transmission fluid		Synthetic oil {Listed by FDA for food industry}														
		{Halocarbon oil for oxygen applications} <sup>3)</sup>														
Power supply U <sub>B</sub>		See below in section $\text{Ex}$ -protection !														
■ Model IF-10 / IF-11		10 < U <sub>B</sub> ≤ 30 (11 ... 30 with signal output 4 ... 20 mA,														
■ Model F-10 / F-11		DC V 14 ... 30 with signal output 0 ... 10 V)														
Signal output and maximum load R <sub>A</sub>		4 ... 20 mA, 2-wire R <sub>A</sub> ≤ (U <sub>B</sub> - 11 V) / 0,02 A with R <sub>A</sub> in Ohm and U <sub>B</sub> in Volt														
		0 ... 20 mA, 3-wire R <sub>A</sub> ≤ (U <sub>B</sub> - 3 V) / 0,02 A with R <sub>A</sub> in Ohm and U <sub>B</sub> in Volt														
		{0 ... 5 V, 3-wire} R <sub>A</sub> > 5 kOhm														
		{0 ... 10 V, 3-wire} R <sub>A</sub> > 10 kOhm														
Test circuit signal / max. load R <sub>A</sub>		4 ... 20 mA														
		Only for instruments with 4 ... 20 mA signal output. R <sub>A</sub> < 15 Ohm bei 20mA														
Adjustability zero/span		%														
		± 10 via potentiometers in the instrument														
Response time (10 ... 90 %)		ms														
		≤ 1 (≤ 10 ms at medium temperatures below -30 °C for pressure ranges up to 25 bar or with flush diaphragm)														
Accuracy <sup>4)</sup>		% of span														
		≤ 0.5 {0.25} <sup>5)</sup> (limit point calibration)														
		% of span														
		≤ 0.25 {0.125} <sup>5)</sup> (BFSL)														
Hysteresis		% of span														
		≤ 0.1														
Repeatability		% of span														
		≤ 0.05														
1-year stability		% of span														
		≤ 0.2 (at reference conditions)														
Permissible temperature of																
■ Medium		-30 ... +100 °C {-40 ... +125 °C}							-22 ... +212 °F {-40 ... +257 °F}							
■ Ambient		-20 ... +80 °C							-4 ... +176 °F							
■ Storage		-40 ... +100 °C							-40 ... +212 °F							
Compensated temperature range		0 ... +80 °C							0 ... +176 °F							
Temperature coefficients in compensated temp range																
■ Mean TC of zero		% of span														
		≤ 0.2 / 10 K (< 0.4 for pressure range 0 ... 0.1 and 0 ... 0.16 bar)														
■ Mean TC of range		% of span														
		≤ 0.2 / 10 K														
$\text{Ex}$ -protection		According to BVS 03 ATEX E 321														
Signal output		4 ... 20 mA, 2-wire														
Ignition protection type		EEx ia IIC T4				EEx ia IIC T5				EEx ia IIC T6						
		(BVS 03 ATEX E 321)				(BVS 03 ATEX 321)				(BVS 03 ATEX 321)						
Conformity specifications																
■ Power supply		DC V														
		11 ... 28														
■ Short circuit rating		mA														
		220														
■ Power limitation		W														
		1.75														
■ Medium temperature		-20...+100°C		-4...+212 °F		-20...+75°C		-4 ...+167 °F		-20...+60		-4...+140 °F				
■ Ambient temperature		-20...+80°C		-4...+176 °F		-20...+75°C		-4...+167 °F		-20...+60		-4...+140 °F				
■ Storage temperature		-20...+80°C		-4...+176 °F		-20...+80°C		-4...+176 °F		-20...+80		-4...+176 °F				
		See certification of conformity BVS 03 ATEX E 321 for additional data														
CE-conformity		89/336/EWG interference emission and immunity see EN 61 326														
		94/9/EG Guideline for explosion protection														
		EN 50 014 (general part), EN 50 020 (intrinsic safety),														
		EN 50 284 (Zone 0), {EN 50 303 (Mining industry)}														
		Model F-1X: 97/23/EG Pressure equipment directive														

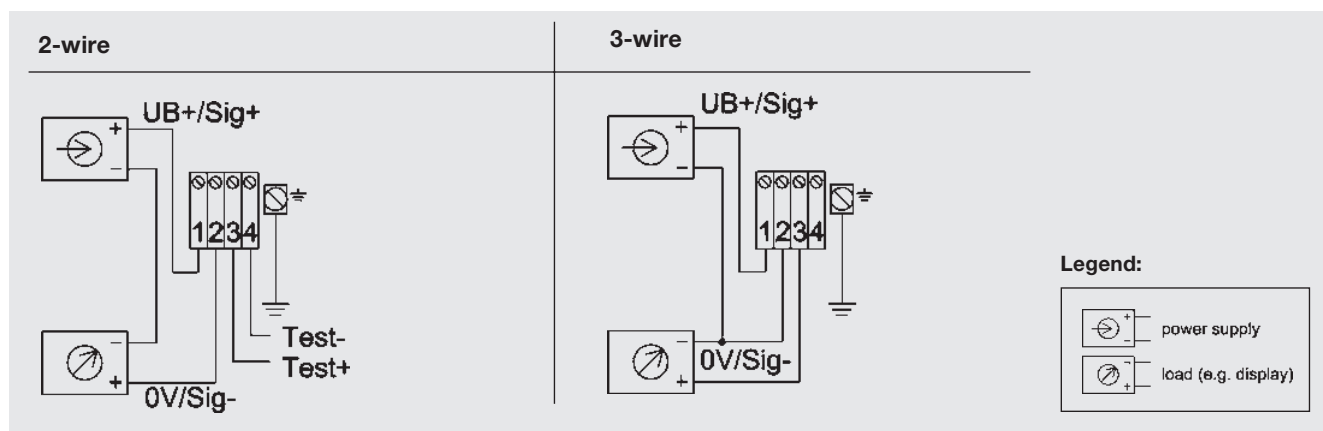
## Specifications

## Model F-10 / F-11 / IF-10 / IF-11

Shock resistance	g	400 according to IEC 60068-2-27 (mechanical shock)
Vibration resistance	g	3 according to IEC 60068-2-6 (vibration under resonance)
Wiring protection		Protected against reverse polarity, overvoltage and short circuiting Ex-transmitters only protected against reverse polarity
Electrical connection		Cable gland and internal terminal screws; Cross section max. 2.5 mm <sup>2</sup> Ground terminals internal and external
Ingress protection		IP 67 per IEC 60 529 / EN 60 529
Weight	kg	Approx. 0.5; Ex-transmitters approx. 0.6

- 1) Only Model F-10/IF-10.
  - 2) For Model F-11/IF-11: the value specified in the table applies only when sealing is realised with the sealing ring underneath the hex. Otherwise max. 1500 bar applies.
  - 3) Media temperature for oxygen version: -30 ... +60 °C / -22 ... 140 °F (F-11/IF-11 up to max. 160 bar). Cannot be manufactured for absolute pressure ranges < 1 bar abs.
  - 4) Including linearity, hysteresis and reproducibility. Limit point calibration in vertical mounting position with lower pressure connection.
  - 5) Only available for measuring ranges beyond 0 ... 0.25 bar.
- { } Items in curved brackets are optional extras for additional price.

## Wiring details



## Further informations

You can obtain further information (data sheets, instructions, etc.) via 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.



**WIKA 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](mailto:support-tronic@wika.de)  
[www.wika.de](http://www.wika.de)