

General Purpose Transmitter Type C-10

WIKA Datasheet C-10

Applications

- Hydraulics and pneumatics
- Mechanical engineering
- General industrial applications

Special Features

- Standard ranges from 0...100 InWC to 0...15,000 psi
- Excellent shock and vibration resistance
- Environmental protection to NEMA 4 / IP 67
- Stainless steel case and wetted parts

Description

The WIKA C-10 provides performance and economy for a wide range of OEM applications. They are especially suited to applications subject to severe mechanical shock, vibration and electromagnetic interference. Typical applications include hydraulics and pneumatics, compressor controls, pump protection, refrigeration and air conditioning systems.

Dependable performance

The C-10 features an all-welded stainless steel measuring cell for improved media compatibility. There are no internal soft sealing materials that may react with the media or deteriorate over time. The case is also made of stainless steel and is available with environmental protection ratings up to NEMA 4 / IP 67.

Pressure ranges up to 300 psi use a piezoresistive measuring cell. The higher pressure ranges use thin film sensor technology. Both are time proven highly reliable sensor technologies.



Left: C-10 with MiniDIN connector
Right: C-10 with optional cable

A standard signal output of 4-20 mA allows the C-10 to be integrated into many existing applications. Many custom signal outputs, process connections and electrical connections are available.

Each C-10 undergoes extensive quality control testing and calibration to achieve an accuracy of $\leq 0.50\%$ full scale. The printed circuit boards use state-of-the-art surface mount technology. Each is individually temperature compensated to assure accuracy and long-term stability even when exposed to severe ambient temperature variations.

Specifications

Model C-10

Pressure range	100 InWC	5 psi	10 psi	15 psi	25 psi	30 psi	50 psi	100 psi	200 psi
Maximum pressure*	29 psi	29 psi	58 psi	72 psi	145 psi	145 psi	240 psi	500 psi	1,160 psi
Burst pressure**	34 psi	34 psi	69 psi	87 psi	170 psi	170 psi	290 psi	600 psi	1,390 psi
Pressure range	300 psi	500 psi	1,000 psi	2,000 psi	3,000 psi	5,000 psi	7,500 psi	10,000 psi	15,000 psi
Maximum pressure*	1,160 psi	1,160 psi	1,740 psi	4,600 psi	7,200 psi	11,600 psi	17,400 psi	17,400 psi	21,750 psi
Burst pressure**	1,390 psi	5,800 psi	7,970 psi	14,500 psi	17,400 psi	24,650 psi	34,800 psi	34,800 psi	43,500 psi

*Pressure applied up to the maximum rating will cause no permanent change in specifications but may lead to zero and span shifts

**Exceeding the burst pressure may result in destruction of the transmitter and possible loss of media

Materials			
■ Wetted parts		Stainless steel	
■ Case		Stainless steel	
Internal transmission fluid		Synthetic oil, only for pressure ranges up to 0 ... 300 psi {Halocarbon® oil for oxygen applications} ¹⁾	
Supply Voltage U_B	DC V	$10 < U_B \leq 30$ (14 ... 30 with signal output 0 ... 10 V)	
Response time (10 ... 90 %)	ms	≤ 1 (≤ 10 ms at medium temperatures below -22°F (-30°C) for pressure ranges up to 300 psi)	
Accuracy ²⁾	% of span	≤ 1.0 (limit point calibration)	
	% of span	≤ 0.5 (BFSL)	
Hysteresis	% of span	≤ 0.1	
Non-repeatability	% of span	≤ 0.05	
1-year stability	% of span	≤ 0.2 (at reference conditions)	
Permissible temperature of			
■ Medium		$-22 \dots +212^\circ\text{F}$	$-30 \dots +100^\circ\text{C}$
■ Ambient		$-22 \dots +185^\circ\text{F}$	$-30 \dots +85^\circ\text{C}$
■ Storage		$-40 \dots +212^\circ\text{F}$	$-40 \dots +100^\circ\text{C}$
Compensated temperature range		$0 \dots +176^\circ\text{F}$	$0 \dots +80^\circ\text{C}$
Temperature coefficients in compensated temp range			
■ Mean TC of zero	% of span	$\leq 0.3 / 10 \text{ K}$	
■ Mean TC of range	% of span	$\leq 0.2 / 10 \text{ K}$	
CE-conformity		89/336/EEG interference emission and immunity see EN 61326 97/23/EG Pressure equipment directive	
Shock resistance	g	1,000 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, overvoltage and short circuiting	
Ingress protection		Per IEC 60529 / EN 60529, see page 3	
Weight	lb	Approx. .22	

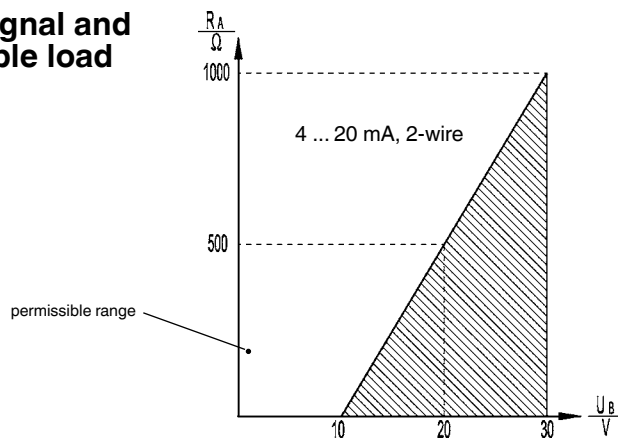
1) Media temperature for oxygen version: $-4 \dots +140^\circ\text{F}$ ($-20 \dots 60^\circ\text{C}$).
Cannot be manufactured for absolute pressure ranges < 1 bar abs.

2) Including linearity, hysteresis and repeatability.

Limit point calibration in vertical mounting position with down pressure connection.

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

Output signal and permissible load



Supply voltage

Output current (2-wire)
4 ... 20 mA: $R_A \leq (U_B - 10 \text{ V}) / 0.02 \text{ A}$

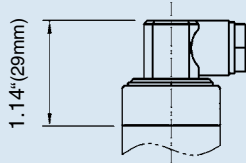
Output current (3-wire)
0 ... 20 mA: $R_A \leq (U_B - 3 \text{ V}) / 0.02 \text{ A}$

Output voltage (3-wire)
0 ... 5 V: $R_A > 5 \text{ k}\Omega$
0 ... 10 V: $R_A > 10 \text{ k}\Omega$

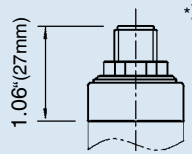
Dimensions in inches (mm)

Electrical connections

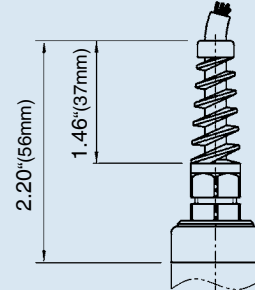
Mini L-connector
G-series
IP 65
Order code: II



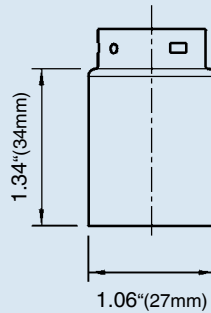
Circular connector,
5-pin, M 12x1,
IP 65
Order code: M5



Cable with Free Ends
IP 65
Order code: CR

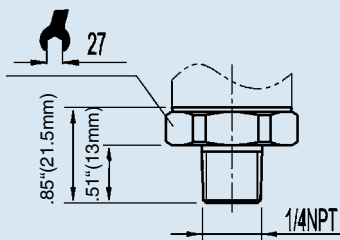


Case

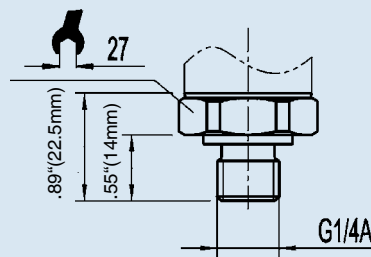


Pressure connections

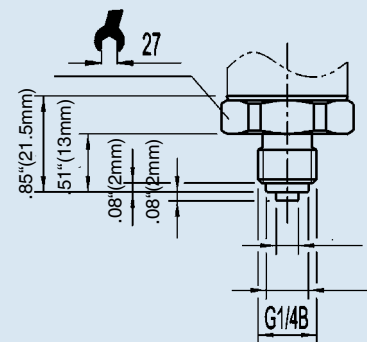
1/4" NPT male
Order code: NB



G 1/4 male
DIN 3852-E
Order code: HD



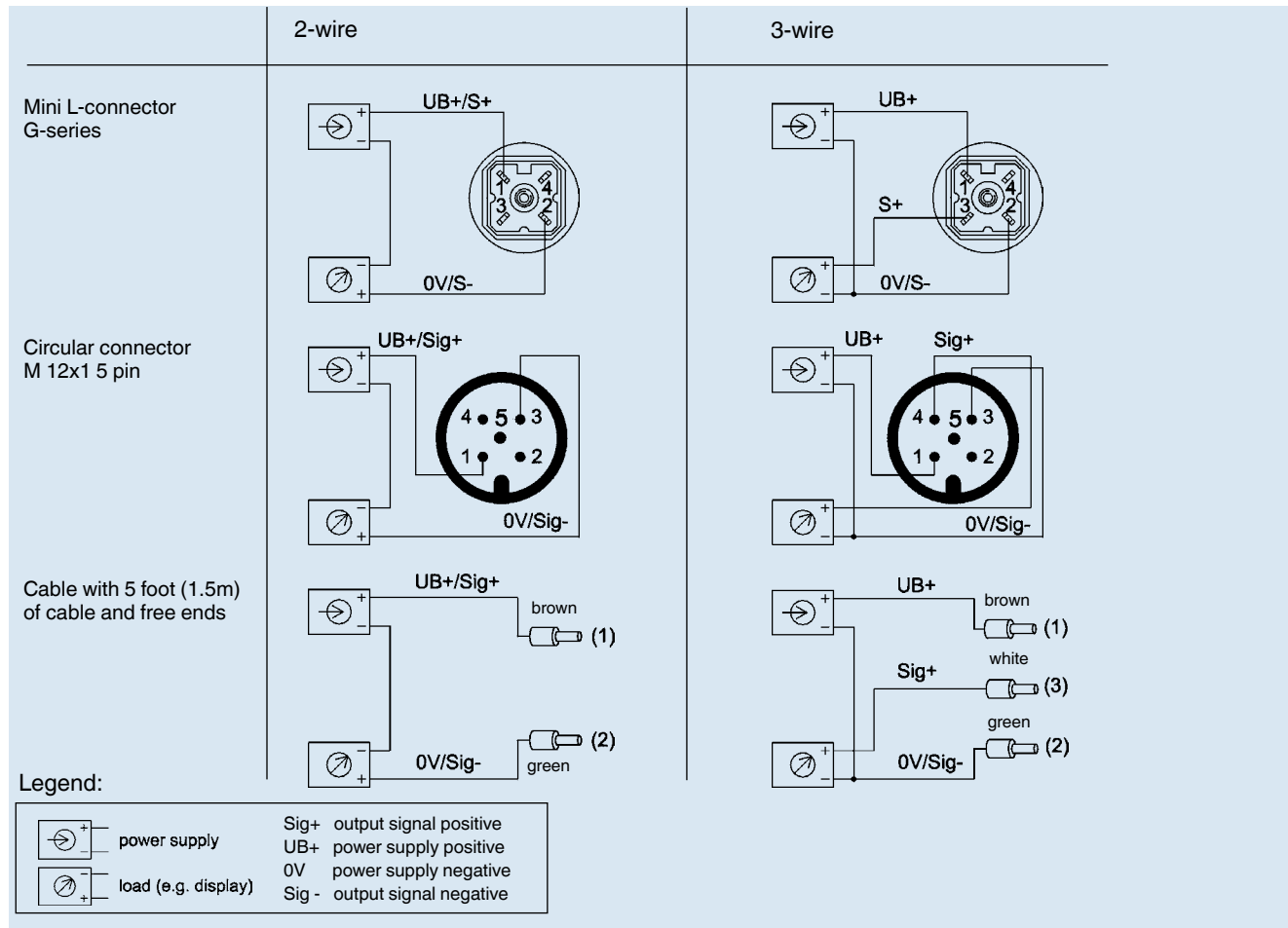
G 1/4 male
EN 837
Order code: GB



.) Mating connectors are not included

Other process connections available

Wiring details



Specifications and dimensions given in this data sheet 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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