

Pressure Transmitter for Hygienic applications

Model BEN-10, standard version

Model BEN-11, flush diaphragm

Benney Data Sheet AUS 81.45

Applications

- Chemical engineering
- Pharmaceutical Industry
- Food and Beverage
- General Industrial applications
- Rough environments

Special Features

- Pressure ranges from 0...0.1bar to 0...1000bar
- Microprocessor-based for accuracy and performance
- Linearity <0.1% of span
- Repeatability <0.03% of span
- No additional temperature error between 0°C and 50°C
- Signal output 4-20mA
- 316 Stainless steel housing with IP67



Fig. Left Pressure transmitter BEN-10
Fig. Right Pressure transmitter BEN-11 {with Flush Diaphragm}

Description

High Precision

Pressure transmitters with an accuracy of <0.1% are mainly used for testing, calibration, critical process control and service applications. The BEN 10/11 sanitary level and pressure transmitter is designed and manufactured to suit the harsh environments commonly encountered in the food and beverage processing industries.

Digital signal processing

The digital data processing of the precision transmitters BEN 10/11 ensure outstanding values regarding linearity and repeatability. System-related temperature errors are compensated by the temperature sensor integrated in the process connection in combination with the digital data processing via microcomputer. This guarantees a total temperature error of less than 0.1% in the range 0...50°C.

Flush diaphragm version

The BEN 11 has an integral flush diaphragm with a sealing O-ring on the perimeter of the seal allowing for a hygienic seal directly into a process without the need for additional fittings. The 316L stainless steel housing provides an ingress protection of IP67 and an optional digital display can be incorporated into the transmitter to provide a self indicating pressure transmitter.



Fig. Above Optional Integrated Digital Display

Specifications

Model BEN-10 / BEN-11

Pressure ranges	bar	0.25	0.4	0,6	1	1,6	2,5	4	6	10	16
Over pressure safety	bar	2	2	4	5	10	10	17	35	35	80
Burst pressure	bar	2.4	2.4	4.8	6	12	12	20.5	42	42	96
Pressure ranges	bar	25	40	60	100	160	250	400	600	1000 ¹⁾	
Over pressure safety	bar	50	80	120	200	320	500	800	1200	1500	
Burst pressure	bar	96	400	550	800	1000	1200	1700 ²⁾	2400 ²⁾	3000	
		{Vacuum, gauge pressure, compound range, absolute pressure are available}									
		{compound ranges: minimum span 400 mbar, e.g. -200 mbar ... +200 mbar}									
Materials											
■ Wetted parts											
> Model BEN-10		Stainless steel									
> Model BEN-11		Stainless steel, O-Ring: NBR (EPDM, Viton)									
■ Case		Stainless steel									
Internal transmission fluid		Synthetic oil									
		Only for pressure ranges up to 25 bar or Model BEN-11 (flush diaphragm units)									
		{Halocarbon oil for oxygen applications} ³⁾									
		{Listed by FDA for food industry}									
Power supply U _B	DC V	14 < U _B ≤ 30 (10 ... 30 with signal output 4 ... 20 mA, 2-wire)									
Signal output and maximum load R _A		4 ... 20 mA, 2-wire R _A ≤ (U _B - 10 V) / 0.02 A with R _A in Ohm and U _B in Volt									
Adjustability											
■ zero	%	-5 ... +20 (0 ... +20 with 0 ... 20 mA)									
		{adjustment via software Easy Com 2.0}									
■ span	%	-5 ... +5 {adjustment via software Easy Com 2.0}									
Internal measuring rate	Hz	100									
Warm-up time	min	< 10									
Accuracy ⁴⁾	% of span	≤ 0.10 in the range 0 ... 50 °C / 32 ... 122 °F {< 0,05 at 20 °C / 68 °F} ⁵⁾									
Reproducibility	% of span	≤ 0.03									
1-year stability	% of span	≤ 0.1 (at reference conditions)									
Permissible temperature of											
■ Medium		-20 ... +80 °C					-4 ... +176 °F				
■ Ambient		-20 ... +80 °C					-4 ... +176 °F				
■ Storage		-40 ... +85 °C (-20 ... +85 °C with keys)					-40 ... +185 °F (-4 ... +185 °F with keys)				
Compensated temp. range		-20 ... +80 °C					-4 ... +176 °F				
Temperature coefficients in compensated temp range		(the temperature related deviations in the range 0 ... 50 °C (32 ... 122 °F) are already covered by the accuracy above)									
■ Mean TC of zero	% of span	≤ 0.1 / 10 K									
■ Mean TC of range	% of span	≤ 0.1 / 10 K									
CE - conformity		89/336/EWG interference emission and immunity see EN 61 326									
		97/23/EG Pressure equipment directive (Module H)									
Shock resistance	g	< 100 according to IEC 60068-2-27 (mechanical shock)									
Vibration resistance	g	< 5 according to IEC 60068-2-6 (vibration under resonance)									
Wiring protection		Protected against reverse polarity (max. 10 min.), overvoltage and short circuiting									
Ingress protection per		IP67									
Weight	kg	Approx. 0.8kg {with optional digital display 1.0kg}									

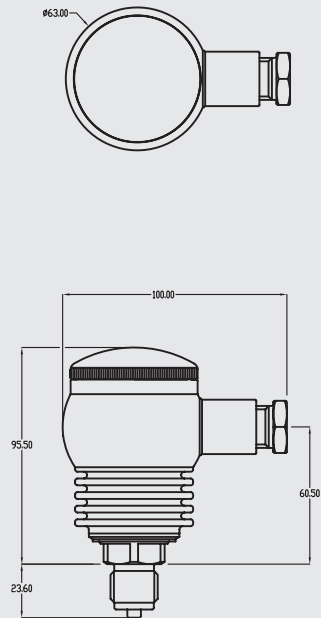
- 1) Only Model BEN-10.
 - 2) For Model BEN-11: the value specified in the table applies only when sealing is realised with the sealing ring underneath the hex. Otherwise max. 1500 bar applies.
 - 3) Media temperature for oxygen version: -30 ... +60 °C / -22 ... 140 °F (BEN-11 up to max. 160 bar)
Cannot 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) Cannot be manufactured for: compound ranges and pressure ranges ≤ 0,4 bar
- { } Items in curved brackets are optional extras at additional cost.

Dimensions in mm

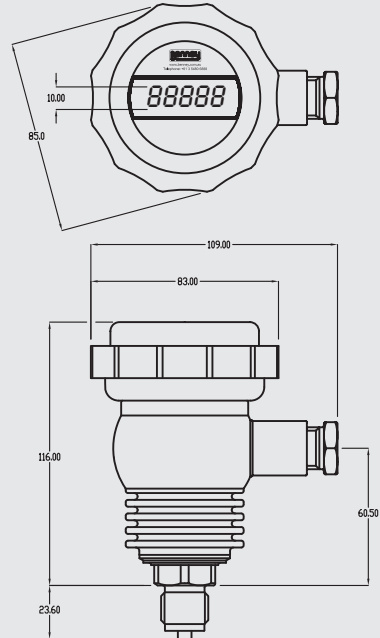
Electrical connections

Terminal Connection
IP 67

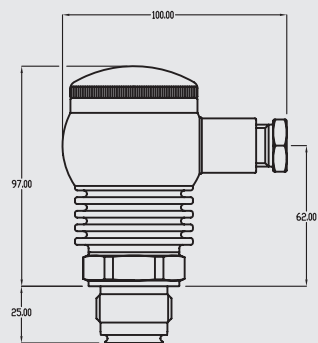
Case BEN-10



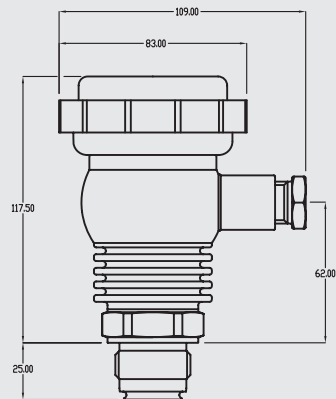
Case BEN-10 {with optional Digital Display}



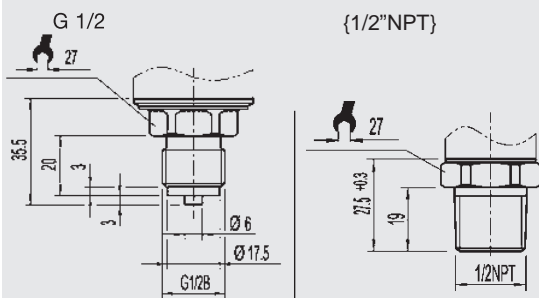
Case BEN-11



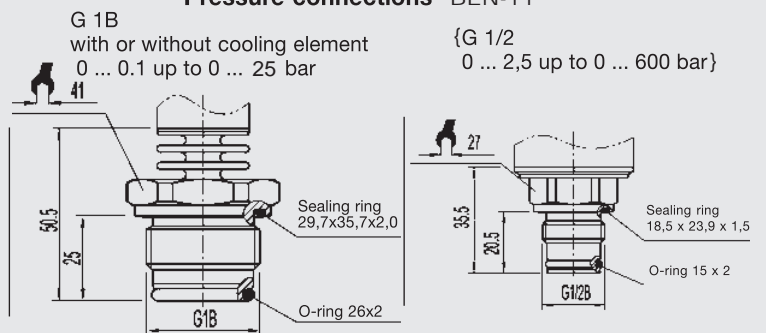
Case BEN-11 {with optional Digital Display}



Pressure connections BEN-10



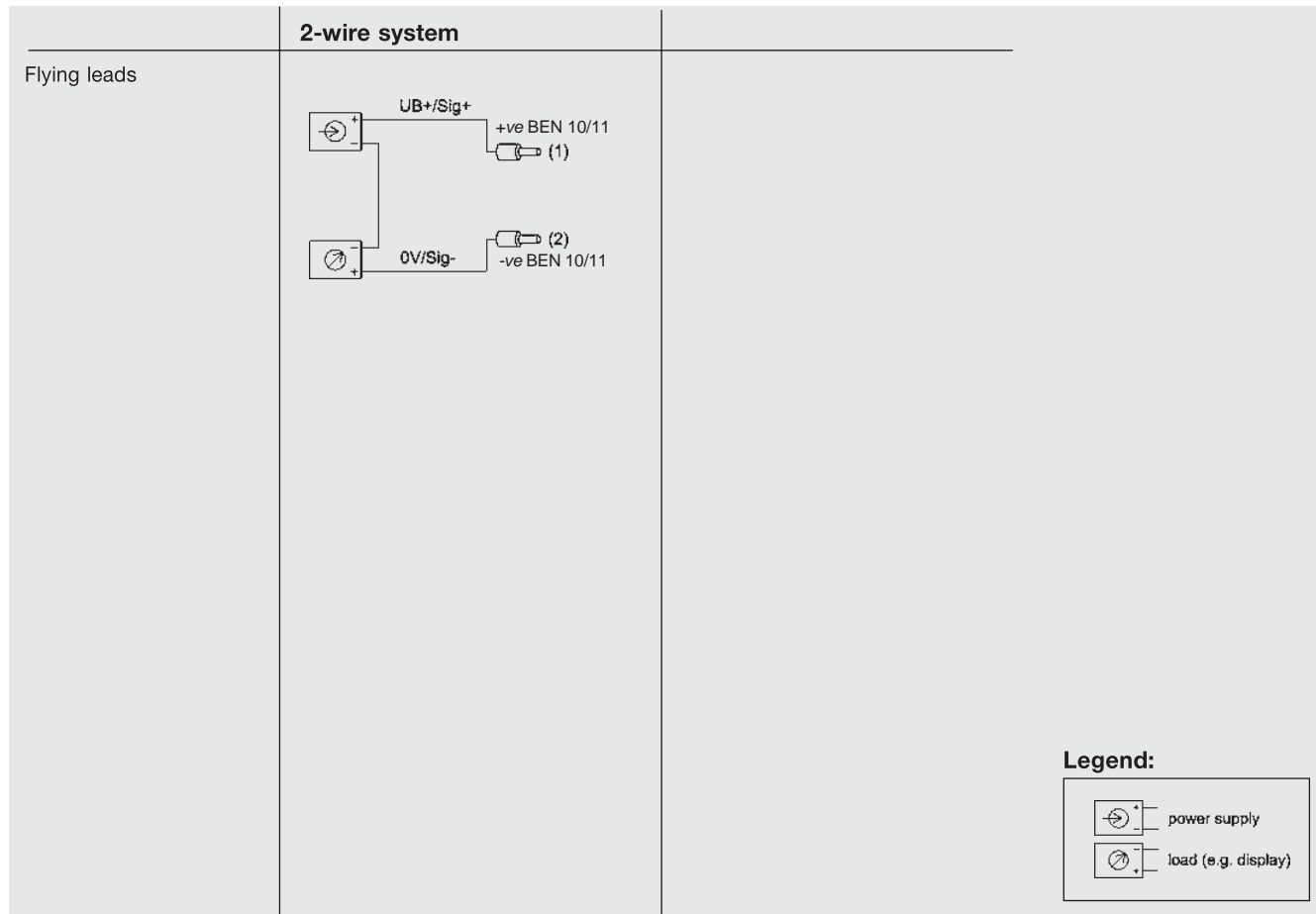
Pressure connections BEN-11



{1/2"NPT male thread and others also available on request}

{ } Items in curved brackets are optional extras at additional cost.

Wiring details



Accessories

	Order-No.
Software EasyCom, incl. cable set for internal service interface	7133507

Further informations

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.

