Melt Pressure Sensor

for plastic-, rubber- and food industries

Characteristics

- **Measure ranges from 0 ... 50 bar to 0 ... 2000 bar**
- **Output signal 3,3 mV/V**
- **Optionally analog output 0 (4) ... 20 mA and 0 ... 10 V**
- **Built - in calibration resistor supplies 80 % output signal**
- **For use with all resistance strain gauge amplifiers and displays**
- **Optionally mercury-free type**
- **Resistant membrane made of CrNi steel or hastelloy**

Description

These pressure sensors were designed especially for plastic-, rubber- and food industries. By different degrees of accuracy (0,5% and 1%) and by different mechanical designs, the program offers for almost every occuring problem definition a suitable solution.

During the developmet of these devices, there was attached special importance to the fact that they are electrically and mechanically compatible to the installations used in this industry.

As generally usual, the measured pressure at the medium-touched membrane is transferred by a liquid column to the measuring membrane. The excursion of the measuring membrane of a few μm is acquired by applicated resistance strain gauges which are wired to a full bridge.

The output signal is proportional to the measured pressure and supply voltage and can be processed by all commercially available display - and acquisition devices. Analog and digital displays are also offered with limit switches.

Of course, except of the standard-products which are introduced here, customized special solutions are available.

Technical Data

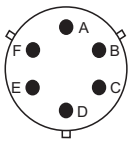
Input	Measure range:	50 / 100 / 200 / 350 / 500 / 700 / 1000 / 1400 / 2000 bar
	Overload:	200%, max. 2100 bar
	Measure Element:	full bridge
	Bridge Resistance:	350 ohms ± 10 %,
	Recommended Supply Voltage:	10 V, max. 12 V
	Zero Shift:	± 5 % of end-scale value
	Internal Calibration Resistor:	80 % of end-scale value ±0,25 %
Outputs	Output Signal:	3,3 mV/V ±2 %, optionally 2 mV/V 0 (4) ... 20 mA and 0 ... 10 V
Accuracy	Linearity:	±1 % of end-scale value, opt. ±0,5 %
	Hysteresis:	0,1 % of end-scale value
	Recovery Accuracy:	< ±0,1 % of end-scale value
	Recovery Accuracy Zero:	< 0,2 % / 10 °C of end-scale value
	Temp.-Coeff. Of Sensitivity:	< 0,1 % / 10 °C of end-scale value
	Temp.-Coeff. Zero	< 0,2 % / 10 °C of end-scale value
Power Supply	Insulation Resistance:	1000 MOhm at 50 V DC
	Supply Voltage:	6 ... 10 V DC optionally 12 ... 30 V DC for 0(4) .. 20 mA, 0 ... 10V
Ambient Conditions	Temperature Range At Medium-Contact Membrane:	≤ 400 °C
	Temperature Range At Measuring Membrane (Measuring Head):	≤ 70 °C
Dimensions	Case:	see dimensions
	Screw Thread:	½"-20 UNF M 18 x 1,5
	Case Material:	connection head of eloxiert aluminium shaft CrNi-steel resistable membrane of CrNi-steel or hastelloy
	Colour:	orange, other colours on request
	Weight:	approx. 1 kg
	Terminals:	male socket (PT02A-10-6P) female plug PT06A-10-6S(SR) please order separately optionally cable with open ends

Operating, Adjustment hints

Elektrical connection

All mass pressure sensors got an integrated calibration resistor. By short-circuit of terminals E and F, the sensor output gives 80 % of end-scale value. By doing this, following display - and acquisition devices can be adjusted without the need of an external calibration pressure.

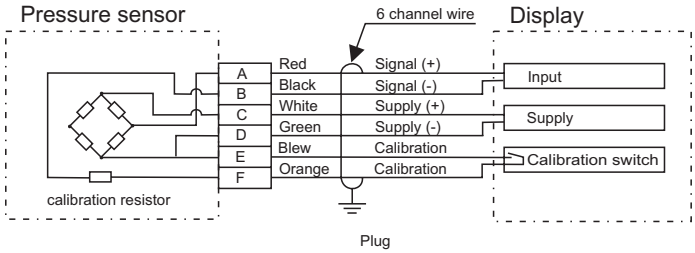
plug pin configuration



A Signal +
B Signal -
C Supply +
D Supply -
E Calibration resistor
F Calibration resistor

Socket PC 02E-10-6P 6 pol. or 8 pol.
Plug PC 06A-10-6S (SR) 6 pol. or 8 pol.

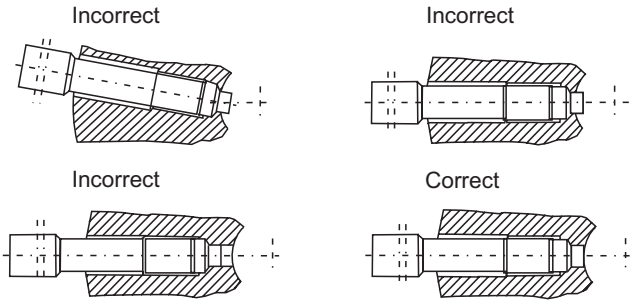
wire configuration



Terminal D not connected at output signal 0 ... 20 mA
Terminal C and D not connected at output signal 4 ... 20 mA

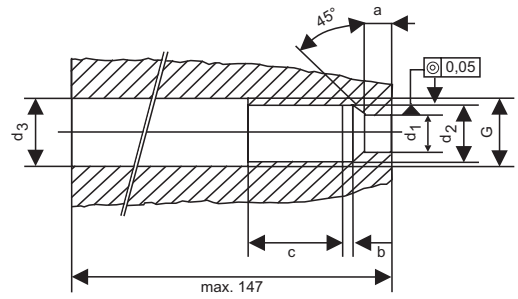
Mounting

Correct installation of the pressure sensors is the warrant for good measuring results and long life. If the mass pressure sensors are used with thermoplastics, a positioning like shown right should be aimed at because otherwise a damage of the membrane is possible. For use with gases or fluids, the installation is relative uncritical. But by all means, observe the mounting hints!



Mounting tools

For the easement of mounting, complete tool sets are offered. They consist of special spiral drills, a reamer and screw taps. They are available for all mass pressure sensors.

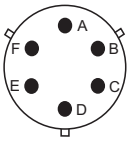


Dimensions of mounting boring

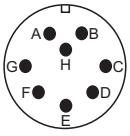
Dimensions (mm)						
G	Ø $d_1^{+0,05}$	Ø $d_2^{+0,10}$	Ø d3	a min.	b max.	c
½"-20 UNF	7,92	11,5	13	5,7	3,2	19
M 18 x 1,5	10,1	16,1	20	6,15	4,0	25

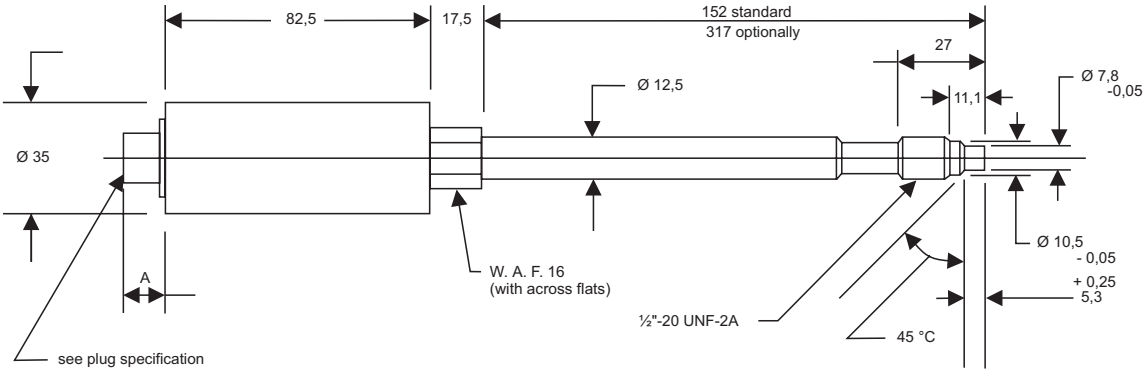
Dimensions

Type 0110
standard
6 channel plug



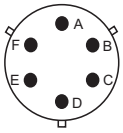
Type 0120
optionally
8 channel plug



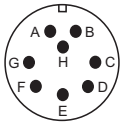


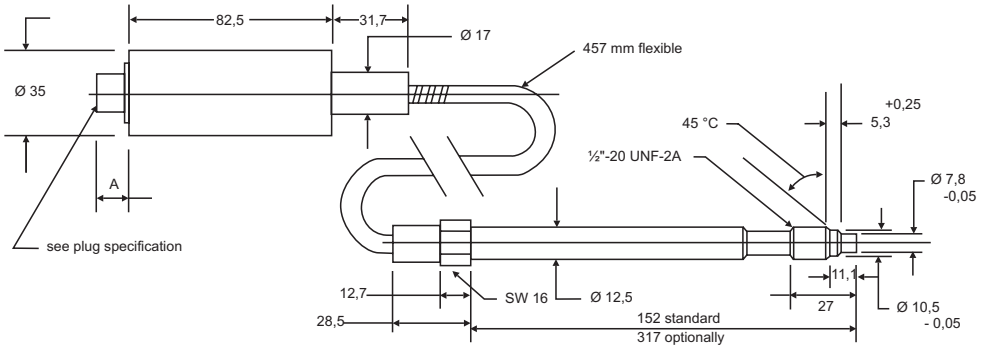
Dimensions

Type 0111
standard
6 channel plug

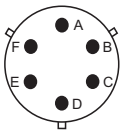


Type 0121
optionally
8 channel plug

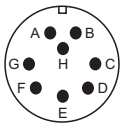


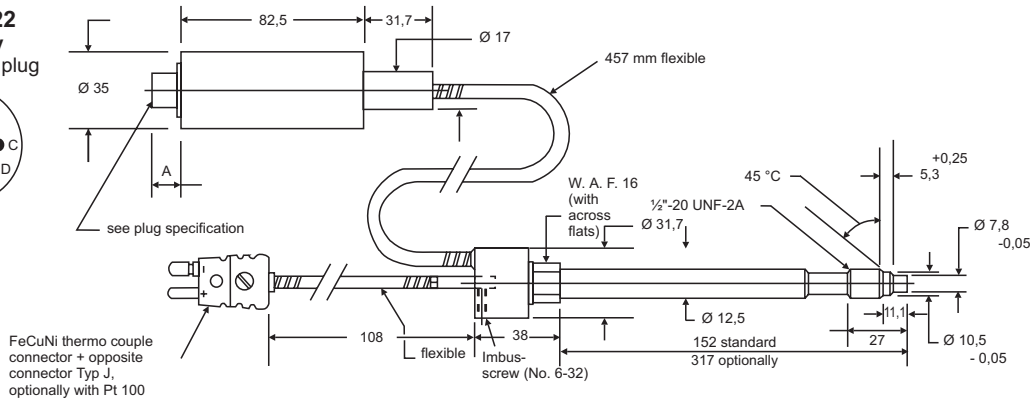


Type 0112
standard
6 channel plug

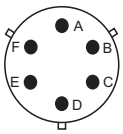


Type 0122
optionally
8 channel plug

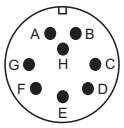


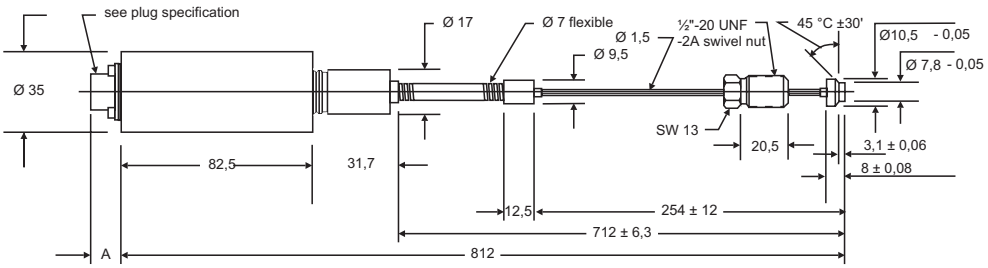


Type 0113
standard
6 channel plug



Type 0123
optionally
8 channel plug





Ordering key

Number	Analog output	Supply	Structural shape	Additional measuring of temperature	Threaded connection	Connector plug	Measuring range
0	3,3 mV/V	7 .. 10 V DC, max. 12 V DC	solid staff	without	½"-20 UNF	6-pol.	please order
1	0 - 20 mA	12 ... 30 V DC	flexible capillary	thermo couple FeCuNi (Type J)	M 18 x 1,5	8-pol.	e. g. 700 bar
2	4 - 20 mA	6 … 8 V DC	flex. capillary, thermo couple	Pt 100		2 m cable	0 … 100 bar
3	0 - 10 V		flex. capillary, swivel nut				
4	2 mV/V						