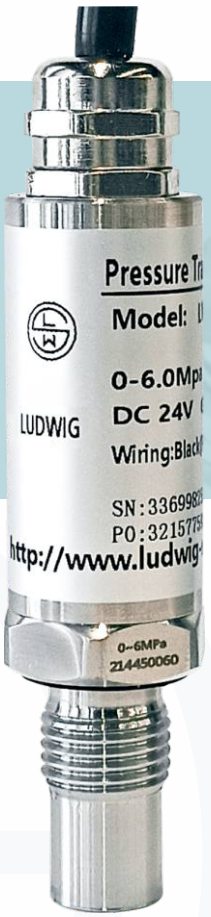
The selection is detailed on page 9



LW-PD

Custom Pressure Transmitter

Working principle

The waiting medium pressure is transmitted through the standard process connector and then affects the internal pressure sensor element. Internal electronics convert raw transmitter signals into filtered, amplified, temperature compensated and standardized signals such as 4... 20mA signal, etc. The output signal is transmitted to the next unit for signal processing via standardized connectors or cables.

Product description

Accurate measurement
The LW-PD pressure transmitter is designed for high precision measurement applications with a maximum measurement deviation of only 0.5% of the range. In addition, the pressure transmitter has an active temperature compensation function at 10... Application at temperatures of 60°C [10...140°F] does not result in any additional error.
Quick operation
With measurement and output rates up to 1 kHz, operators can quickly obtain measurement values.
Compact structure
The compact design makes the pressure transmitter ideal for mounting on test benches such as 19" racks.
multifunction
The LW-PD pressure transmitter is a flexible, customized product offering a wide range of electrical connections, process connections and measurement ranges to support not only standard analog signals, but also a variety of other signal outputs, such as USB and CANopen® signals. With the USB interface, the operator can quickly and easily adjust the LW-PD pressure transmitter in the application field.
The LUDWIG Data Logger is easy to use and allows operators to save measurements for products with a USB interface and create custom reports.

Product application

Measurement and experiment platform

Calibration technique laboratory

Equipment construction

Machine building

Functional characteristics

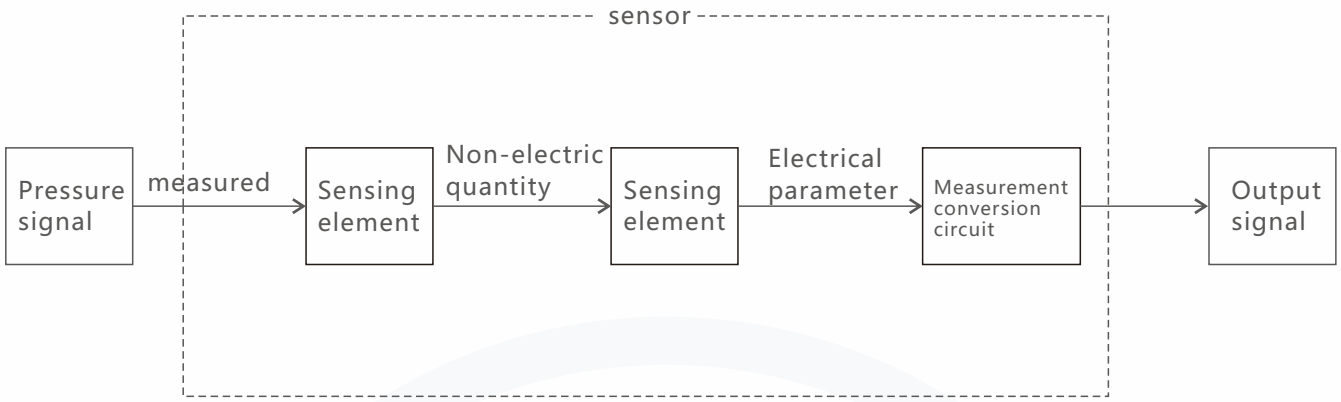
Accuracy is 0.1%, 0.5%, 0.25% and within 10... No other temperature errors occur within the range of 60 ° C [10...140 ° F]

Accuracy 0.1%FS (optional)

Fast measurement speed up to 1 kHz

Output signal: 4-20mA and other signals

Working principle diagram



Technical parameter

Output signal	
Signal type	signal
▪ Current (2-wire system)	4...20 mA
▪ Current (3-wire system)	4...20 mA
	0...20 mA
▪ Voltage (3-wire system)	DC 0...10 V
	DC 0...5 V
▪ USB	Complies with the LW-PD interface protocol
Supply voltage	
Power source	The power required depends on the output signal selectedDC 9 ...30 V
▪ 4...20 mA (2-wire system)	DC 9 ...30 V
▪ 4...20 mA (3-wire system)	DC 9 ...30 V
▪ 0...20 mA (3-wire system)	DC 9 ...30 V
▪ DC 0...5 V	DC 14 ... 30 V
▪ DC 0...10 V	DC 4.5 ... 5.5 V
▪ USB	DC 9 ...30 V
▪ CANopen®	The total current consumption depends on the respective signal type
Total current consumption	Max. 25 mA
▪ Current (2-wire system)	Max. 45 mA
▪ Current (3-wire system)	Max. 10 mA
▪ Voltage (3-wire system)	40 mA
▪ USB	60 mA
▪ CANopen®	
load	
▪ Current (2-wire system)	≤(power supply voltage -9V) / 0.02A
▪ Current (3-wire system)	≤(power supply voltage -9V) / 0.02A
▪ Voltage (3-wire system)	> Maximum output signal /1 mA

Technical parameter

Accuracy parameter[1]	
▪ Standard	≤ ± 0.5% of the range
▪ selectable	≤ ± 0.1% of the range
Total error range(10 ... 60℃)	≤± 0.5% of the range
Long-term stability	≤± 0.5% of the range/year
adjustability	The meter can be adjusted by software
▪ zero	Range -5... + 20%
▪ range	Range of -20... + 5%
Measurement rate	The measurement rate of the instrument depends on the respective signal type
▪ Two-wire system	2ms
▪ Three-wire system	1ms
▪ USB	3ms

1) Accuracy parameters include nonlinear error, hysteresis, repeatability error, zero offset, and final value deviation (equivalent to measurement error, according to IEC 61298-2). The meter is calibrated in a vertical mounting position with the pressure connector facing down.
2) Instruments with accuracy ± 0.05% of the range under reference conditions (optional) will have an additional temperature error ± 0.05% of the range.

Reference condition

Temperature	15 ... 25 °C [59 ... 77 °F]
Atmospheric pressure	86 ... 106 kPa [12.47 ... 15.37 psi]
Humidness	Forty-five... 75% relative humidity
Power source	DC 24 V
	DC 5 V with USB port
Start-up time	< 10 minutes
Installation position	Radial mounting of process connectors (LM)

Working condition

Protection level (according to IEC 60529)[1]	The level of protection depends on the type of electrical connection used
▪ Hersman connectors according to DIN 175301-803 A	IP65
▪ M12 x 1 Round joint (4 pins)	IP67
▪ M16 x 0.75 Prototype Connector (5 pins)	IP67
▪ Bayonet joint	IP67
▪ USB	IP67
▪ Cable outlet box	IP67
Stability against vibration	10 g, according to IEC 60068-2-6 standard
Impact stability	200 g (mechanical impact), according to IEC 60068-2-27

1) To achieve the level of protection described in this manual, it is necessary to plug with matching joints that meet the corresponding level of protection

Working condition

Service life	10 million load cycles
Free drop test	The meter will not be damaged if dropped from a height of 1m to the concrete floor.
Temperature	
▪ Ambient temperature	-20 ... +80 °C [-4 ... +176 °F]
▪ Medium temperature	-20 ... +105 °C [-4 ... +221 °F]
▪ Storage temperature	-40 ... +85 °C [-40 ... +185 °F]

Measuring range

Relative pressure							
MPa	0 ... 0.025	0 ... 0.04	0 ... 0.06	0 ... 0.1	0 ... 0.16	0 ... 0.25	0 ... 0.4
	0 ... 0.6	0 ... 1	0 ... 1.6	0 ... 2.5	0 ... 4	0 ... 6	0 ... 10
	0 ... 16	0 ... 25	0 ... 40	0 ... 60	0 ... 100[1)]	-	-
psi	0 ... 5	0 ... 10	0 ... 15	0 ... 25	0 ... 30	0 ... 50	0 ... 100
	0 ... 160	0 ... 200	0 ... 300	0 ... 500	0 ... 1,000	0 ... 1,500	0 ... 2,000
	0 ... 3,000	0 ... 5,000	0 ... 10,000	-	-	-	-
Absolute pressure							
MPa	0 ... 0.025[2)]	0 ... 0.04	0 ... 0.06	0 ... 0.1	0.08 ... 0.12[2)]	0 ... 0.16	0 ... 0.25
	0 ... 0.4	0 ... 0.6	0 ... 1	0 ... 1.6	0 ... 2.5	-	-
psi	0 ... 5	0 ... 10	0 ... 15	0 ... 25	0 ... 30	0 ... 50	0 ... 100
	0 ... 160	0 ... 200	0 ... 300	-	-	-	-

Vacuum and +/- measuring range					
MPa	0.1 ... 0	-0.06 ... 0	-0.04 ... 0	-0.025 ... 0	-0.1 ... +0.06
	-0.1 ... +0.1	-0.1 ... +0.15	-0.1 ... +0.3	-0.1 ... +0.5	-0.1 ... +0.9
	-0.1 ... +1.5	-	-	-	-
psi	-30 inHg ... 0	-30 inHg ... +15	-30 inHg ... +30	-30 inHg ... +50	-30 inHg ... +100
	-30 inHg ... +160	-30 inHg ... +200	-	-	-

1) Not suitable for flat type; 2) Limited to instruments with accuracy of 0.1% of the range

The measurement range can also be expressed in mbar, kg/cm2 and MPa units.
Other measuring ranges are available on request

Overvoltage safety

Overvoltage safety is achieved through the transmitter element. Process connections and seals determine their overvoltage safety limits. The higher the overvoltage safety, the greater the temperature error caused.

Measuring range ≤ 2.5MPa [≤400 psi]: 3 times
The range is 4... 60 MPa[500... 5,000 psi]: 2times 1)
Measuring range is 100 MPa: 1.5 times

1) 1.5times overpressure belts 1,000 psi, 1,500 psi and 10,000 psi

Vacuum protection
There are

Electrical connector

Short circuit protection	S+ vs. U-
	CAN- high /CAN- low vs. U+/U-
Polarity reverse protection	U+ vs. U-
Overvoltage protection	DC 36 V (model without USB port)
Insulation voltage	DC 500 V

Wiring diagram

M12 x 1 Round joint (4 pins)

	Two-wire system	Three-wire system
U+	1	1
U-	3	3
S+	-	4

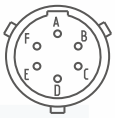
M16 x 0.75 Round Connector (5 pins)

	Two-wire system	Three-wire system
U+	3	3
U-	1	4
S+	-	1

Hersman connectors according to DIN 175301-803 A

	Two-wire system	Three-wire system
U+	1	1
U-	2	2
S+	-	3

Bayonet connector (6 pins)



	Two-wire system	Three-wire system
U+	A	A
U-	B	B
S+	-	C

M12 x 1 Round joint (5 pins) and CANopen®

	Three-wire system
U+	2
U-	3
Shielding layer	1
CAN-high	4
CAN-low	5

The unshielded cable exits

	Two-wire system	Three-wire system
U+	brown	brown
U-	blue	blue
S+	-	black

Various lengths of cable can be provided according to customer requirements

Process connector

Thread type	
Standard	Thread size
EN 837	G1/4B
	G1/4 Internal thread
	G1/2B
ISO 1179-2 (Original DIN 3852-E)	G1/4A
ANSI/ASME B1.20.1	1/4NPT
	1/2NPT
-	M18 x 1.5 external thread with G1/4 internal thread
	G1/2 external thread with G1/4 internal thread

Sealing element		
Thread size	Standard	Optional material
G1/4B	There is no	copper
		Stainless steel
G1/2A	There is no	copper
		Stainless steel
G1/4A	There is no	NBR
		FPM/FKM
platycline		
Standard	Thread size	
EN 837	G1/2B with flat diaphragms	
	G1B, with flat diaphragms	

Other connectors are available on request
For all other process connectors, we do not supply seals

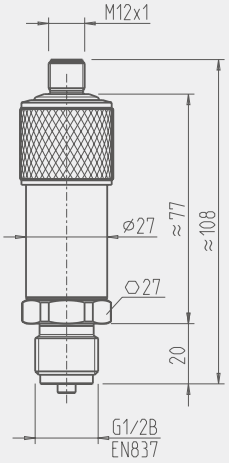
✆ 400-860-9760

material

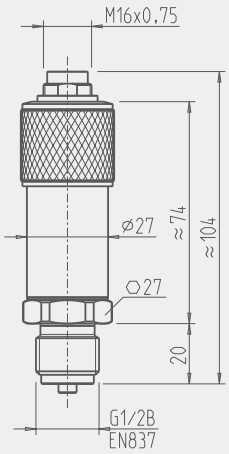
Material (liquid parts)	Stainless steel
	For gauges with a measuring range > 2.5 MPa, Elgiloy® alloys are available
	For sealing materials, see "Process Connectors" (page 5)
Material (non-liquid parts)	Stainless steel

Size mm

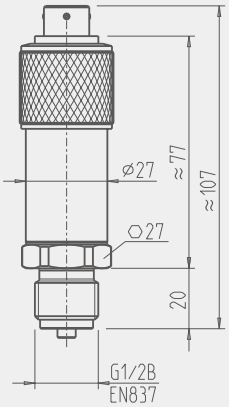
With M12 x 1 round connector



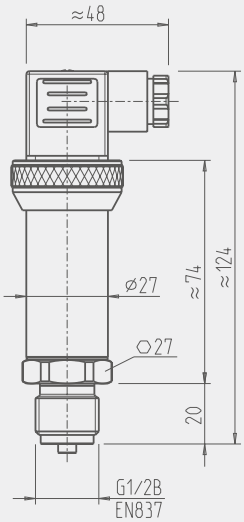
With M16 x 1.5 round connector



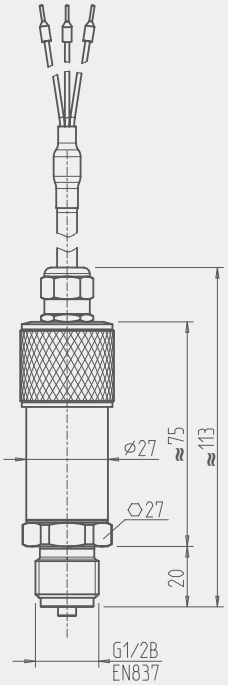
With bayonet connector



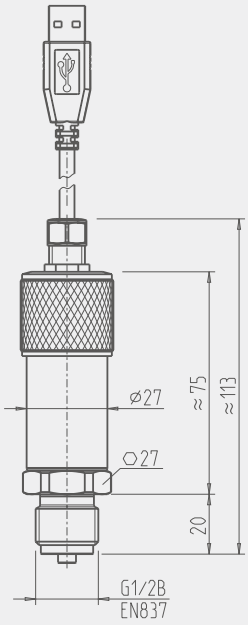
With compliance with DIN 175301-803 A, Type A Hersman joint



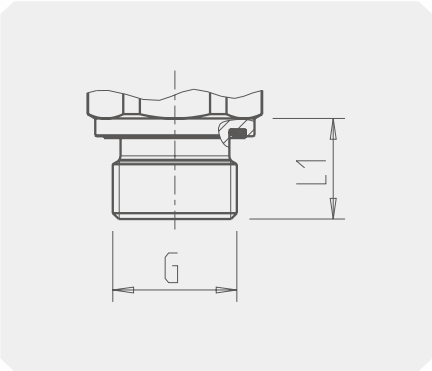
With cable outlet



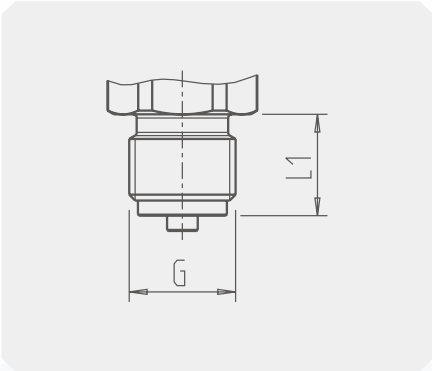
With USB port (Type A port)



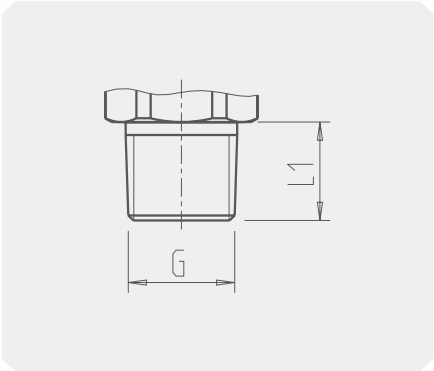
Threaded process connector



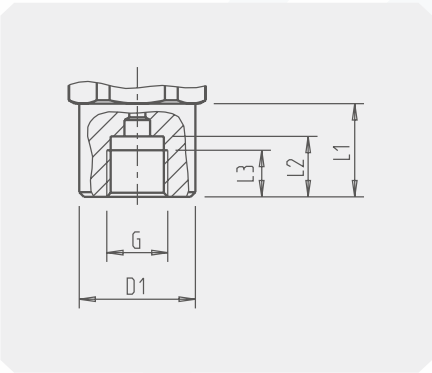
G	L1
G1/4A DIN 3852-E	12



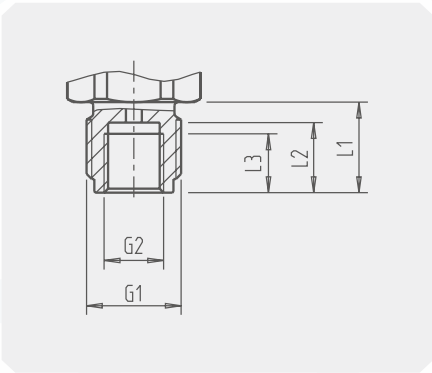
G	L1
G1/4B EN 837	13
G1/2B EN 837	20



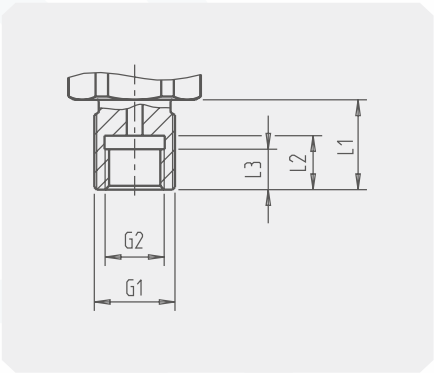
G	L1
1/4 NPT	13
1/2 NPT	19



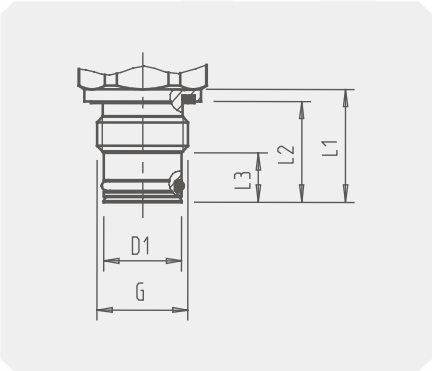
G	L1	L2	L3	D1
G1/4	20	13	10	Ø17.5



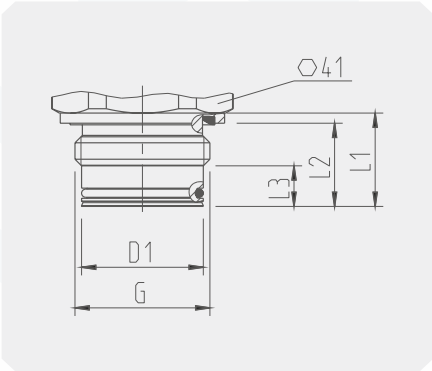
G1	G2	L1	L2	L3
G1/2B	G1/4	20	15.5	13



G1	G2	L1	L2	L3
M18*1.5	G1/4	20	12	9



G	L1	L2	L3	D1
G1/2B	23	20.5	10	Ø18



G	L1	L2	L3	D1
G1B	23	20.5	10	Ø30

Range table

Negative pressure	code	MPa	code	Bar	code	kPa	code	kg/cm²	code	Psi/-inHg
	MV001	-0.1/0	BV001	-1/0	KV001	-100/0	GV001	-1/0	RV030	-30"/0 Hg
Positive and negative pressure	code	MPa	code	Bar	code	kPa	code	kg/cm²	code	Psi/-inHg
	MC006	-0.1/0.06	BC006	-1/0.6	KC006	-100/60	GC006	-1/0.6	PC015	-30"/0/15
	MC015	-0.1/0.15	BC015	-1/1.5	KC015	-100/150	GC015	-1/1.5	PC030	-30"/0/30
	MC030	-0.1/0.3	BC030	-1/3	KC030	-100/300	GC030	-1/3	PC060	-30"/0/60
	MC050	-0.1/0.5	BC050	-1/5	KC050	-100/500	GC050	-1/5	PC100	-30"/0/100
	MC090	-0.1/0.9	BC090	-1/9	KC090	-100/900	GC090	-1/9	PC160	-30"/0/160
	MC150	-0.1/1.5	BC150	-1/15	KC150	-100/1500	GC150	-1/15	PC200	-30"/0/200
	MC240	-0.1/2.4	BC240	-1/24	KC240	-100/2400	GC240	-1/24	PC300	-30"/0/300
Positive pressure	code	MPa	code	Bar	code	kPa	code	kg/cm²	code	Psi
	MP001	0/0.1	BP001	0/1	KP001	0/100	GP001	0/1	PP1E5	0/15
	MP1E6	0/0.16	BP1E6	0/1.6	KP1E6	0/160	GP1E6	0/1.6	PP003	0/30
	MP2E5	0/0.25	BP2E5	0/2.5	KP2E5	0/250	GP2E5	0/2.5	PP006	0/60
	MP004	0/0.4	BP004	0/4	KP004	0/400	GP004	0/4	PP010	0/100
	MP006	0/0.6	BP006	0/6	KP006	0/600	GP006	0/6	PP016	0/160
	MP010	0/1	BP010	0/10	KP010	0/1000	GP010	0/10	PP020	0/200
	MP016	0/1.6	BP016	0/16	KP016	0/1600	GP016	0/16	PP030	0/300
	MP025	0/2.5	BP025	0/25	KP025	0/2500	GP025	0/25	PP040	0/400
	MP040	0/4	BP040	0/40	KP040	0/4000	GP040	0/40	PP060	0/600
	MP060	0/6	BP060	0/60	KP060	0/6000	GP060	0/60	PP100	0/1000
	MP100	0/10	BP100	0/100	KP100	0/10000	GP100	0/100	PP150	0/1500
	MP160	0/16	BP160	0/160	KP160	0/16000	GP160	0/160	PP200	0/2000
	MP250	0/25	BP250	0/250	KP250	0/25000	GP250	0/250	PP300	0/3000
	MP400	0/40	BP400	0/400	KP400	0/40000	GP400	0/400	PP400	0/4000
	MP600	0/60	BP600	0/600	KP600	0/60000	GP600	0/600	PP600	0/6000
	MP1000	0/100	BP1000	0/1000	KP1000	0/100000	GP1000	0/1000	PP1000	0/10000

LW-PD-Selection composition

Selection example **LW-PD** MP001 / A / E / L / N / Z / J / P (1 2 3 4 5 6 7 8)

1.Measuring range	R( )	See range table (page 8)
2.Output signal	A	4-20mA
	B	Other output signals
3.Power supply	E	DC 9...30V
	F	DC 14...30V
	G	DC 4.5...5.5V
4.Temperature range	L	0...+80℃
	M	-30...+100℃
5.Precision class	N	0.1%
	O	0.25%
	P	0.5%
6.Process connection	U	G1/4B
	V	G1/4A
	W	1/4NPT
	X	1/2NPT
	Y	M20×1.5 (Flat diaphragmatic type)
	Z	G1/2B
	A	G1/2 (Flat diaphragmatic type)
	B	G1B (Flat diaphragmatic type)
	T( )	Other threaded connections
7.Seal material	G	copper
	H	Stainless steel
	I	NBR
	J	FPM/FKM
	T( )	Other materials
8.Electrical connection	N	M12*1 (Round joint)
	O	M16*1.5 (Round connector)
	P	Hersman joint
	Q	Bayonet joint
	R	Cable outlet
	S	USB interface

Instructions:

LW-PD customized pressure transmitter, measuring range is: 0~0.1MPa, output signal 4-20mA, power supply is 24C, temperature range is 0... 80℃, accuracy class 0.1%, process connection G1/2B, sealing material is fluorine rubber, electrical connection is Hersman joint.

Product Certification

Compliance and approval; Rodeweig pressure gauges meet key standards and certifications for process measurement technology; Thus guaranteeing the highest reliability in such Settings;

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