The selection is detailed on page 8

LW-PE

Flameproof 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

The LW-PE flameproof pressure transmitter has been specially designed to meet the durability and better working requirements of industrial applications.
The pressure transmitter offers 4... 20mA industry standard signal, two-wire signal output (optional low power output 1... 5V), NEMA4X (IP67) protection rating. Resist pressure peak, prevent vibration, moisture. Even when the transmitter is exposed to sulfur-containing gases, it can prevent pressure cracks caused by sulfides.
This pressure transmitter is designed for hazardous industrial environments in hazardous areas of Class I zone.
Each pressure transmitter is subjected to very rigorous quality testing to achieve an accuracy of less than 0.5%. In addition, each pressure transmitter has temperature compensation, which ensures the long-term stability of the precision barrier even when exposed to harsh and highly variable temperatures.

Product application

Borehole monitoring

refinery

Petrochemical industry

Drilling platforms/Pipelines

Gas compressor

Functional characteristics

CSA and FM explosion-proof certification, according to the "flameproof" standard of Hazardous Zone 1 Zone 1 Category 1

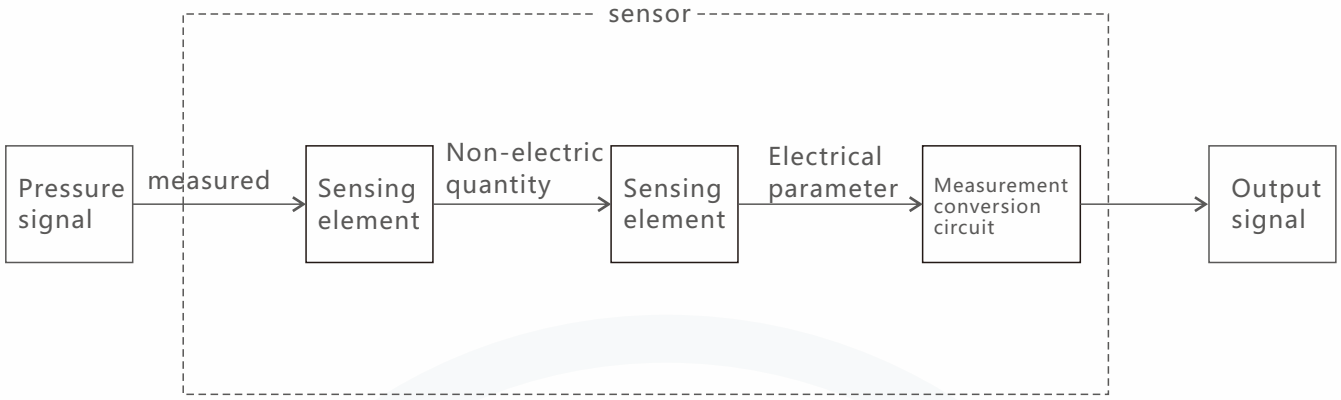
ATEX certified "flameproof housing" to II 2 G Ex d II C standard

Current or voltage output

Designed for harsh environmental conditions

A low power model is also available

Working principle diagram



Technical parameter

Materials	
▪ Part in contact with the medium	Stainless steel (≥2.5MPa stainless steel and Elgiloy)
	Stainless steel
	O-1: NBR[per minute/km]
▪ Shell	Stainless steel
▪ Internal transfer fluid	Synthetic oil (pressure range > 2.5MPa)
Auxiliary power supply UB	UB DC V 10<UB<30 For 4... 20mA, 2-wire
	6<UB <30 For 1... 5V, 3-wire low power system
Output signal	4...20mA,2-line [RA≤(UB- 10V)/0.02A]
Maximum load RA	RA Ω 1...5V,3-line RA > 10.000
Response time	≤1ms(≤10ms when measuring medium temperature is small and <-30C for measuring range to 2.5MPa or with flat insert diaphragm)
Insulation strength	500V DC [NEC 02Grade power supply (low voltage and low current up to 100VA also includes errors)])
precision	≤0.25% of range (BFSL)
	≤0.5% of the range [including nonlinearity, hysteresis, non-repeatability, zero point error and final value error] (corresponding measurement error according to IEC61298-2)
	Adjust when the pressure interface is downward in the vertical position
Nonlinearity	≤0.2% of the range (BFSL) according to IEC61298-2
Stability/year	≤0.2% of the range (under reference conditions)
Allowable temperature (℃/℉)	
▪ Medium temperature	-30...+100℃ [-40...+105℃] / -22...+212℉ [-40...+221℉]
▪ Ambient temperature	-30...+100℃ [-40...+105℃] / -22...+212℉ [-40...+221℉]
▪ Storage temperature	-40...+100℃ [-40...+105℃] / -40...+212℉ [-40...+221℉]
Compensates the temperature coefficient over the temperature range	0...+80℃
▪ The average temperature coefficient of zero	≤0.2% of range /10K (< 0.4 for pressure range < 25KPa)
▪ The average temperature coefficient of the range	≤0.2% of the range /10K
EMI electromagnetic interference	89/336/EWGRadiation and interference resistance (according to EN61326)
	Radiation limit grades A and B
High frequency protection	10 V/M
Burst	4 KV

Technical parameter

Impact resistance	1000 According to IEC60068-2-27 (Mechanical Impact)
antivibration	20 According to IEC60068-2-6 (resonance)
Connection protection	Reverse polarity and short circuit protection
weight	Approx. 0.2kg (0.4lb)

Process connector

Standard	Thread size	Maximum nominal pressure	Maximum nominal pressure
EN 837	G1/4B	100 MPa [14,500 psi]	140 MPa [20,300 psi]
	G1/2B	100 MPa [14,500 psi]	180 MPa [26,100 psi]
	G3/8B	100 MPa [14,500 psi]	140 MPa [20,300 psi]
DIN EN ISO 1179-2	G1/4A	60 MPa [8,700 psi]	60 MPa [8,700 psi]
	G1/2A	60 MPa [8,700 psi]	60 MPa [8,700 psi]
ANSI/ASME B1.20.1	1/4NPT	100 MPa [14,500 psi]	150 MPa [21,700 psi]
	1/2NPT	100 MPa [14,500 psi]	150 MPa [21,700 psi]
SAE J514 E	7/16-20 UNF BOSS	60 MPa [8,700 psi]	60 MPa [8,700 psi]
	9/16-18 UNF BOSS	60 MPa [8,700 psi]	60 MPa [8,700 psi]
DIN 16288	M20 x 1.5	100 MPa [14,500 psi]	180 MPa [26,100 psi]
ISO 7	R1/4	100 MPa [14,500 psi]	160 MPa [23,200 psi]
	R3/8	100 MPa [14,500 psi]	140 MPa [20,300 psi]
JIS B7505-76	G1/4B	100 MPa [14,500 psi]	100 MPa [14,500 psi]
-	G1/2B external thread/G1/4 internal thread	100 MPa [14,500 psi]	140 MPa [20,300 psi]
	M20 x 1.5 internal thread with sealing cone 1)	600 MPa	1,500 MPa
	M16 x 1.5 internal thread with sealing cone 1)	600 MPa	1,000 MPa
	9/16-18 UNF Internal thread F250-C1)	600 MPa	1,000 MPa
	G1/2B flat diaphragm	60 MPa [8,700 psi]	60 MPa [8,700 psi]
	G 1 B flat diaphragms	0.16 MPa [20 psi]	1 MPa [145 psi]
	G 1B flat embedded diaphragm, sanitary type	2.5 MPa [350 psi]	5 MPa [725 psi]
Process connections for use at optional media temperatures (see electrical connection diagram)			
Standard	Thread size	Maximum nominal pressure	Maximum nominal pressure
EN 837	G1/4B	40 MPa [5,800 psi]	80 MPa [11,600 psi]
	G1/2B	40 MPa [5,800 psi]	80 MPa [11,600 psi]
DIN EN ISO 1179-2 (原DIN 3852-E)	G1/4A	40 MPa [5,800 psi]	60 MPa [8,700 psi]
ANSI/ASME B1.20.1	1/2NPT	40 MPa [5,800 psi]	80 MPa [11,600 psi]
ISO 7	R1/4	40 MPa [5,800 psi]	80 MPa [11,600 psi]
-	G1/2B flat diaphragm	60 MPa [8,700 psi][2)]	60 MPa [8,700 psi][2)]
	G 1 B flat diaphragms	0.16 MPa [20 psi]	1 MPa [145 psi]
	G 1B flat embedded diaphragm, sanitary type	2.5 MPa [350 psi]	5 MPa [725 psi]

1) psi ranges are not applicable

2) For restrictions due to sealing material, see the table "Sealing Material Restrictions for Flat film process connection G ½ B"

Sealing element

Process connection	Materials	
	Standard	selectable
EN 837	OrichalcumNBR[1]	Stainless steel
DIN EN ISO 1179-2	NBR[1]	FKM/FPM[2]
SAE J514 E	NBR[1)4)]	FKM/FPM[2]
G ½ B flat diaphragms	NBR[1]	FKM/FPM[2)4)], FFKM[2)4)], EPDM[3)4)]
G 1 B flat diaphragms	EPDM[3]	FKM/FPM[2)], EPDM[3)]
G 1B flat embedded diaphragm, sanitary type		-

1) Allowable temperature range: -20... +100 °C[-4 ... +212 °F]
2) Permissible temperature range: -15... +200 °C[5 ... 392 °F]
3) Permissible temperature range: -40... +150 °C[-40 ... +302 °F]
4) Refer to the table "Material Limitations of Seals G1/2B for Flat diaphragm process connection" related to overload safety

Flat diaphragm process connection G1/2B seal material limitations		
Materials	Overvoltage safety	
	T = -20 ... +80 °C [-4 ... +176 °F]	T = -20 ... +80 °C [-4 ... +176 °F]
NBR	120 MPa [17,400 psi]	N/A
FKM/FPM	1200 MPa [17,400 psi]	60 MPa [8,700 psi]
FFKM	1200 MPa [17,400 psi]	120 MPa [17,400 psi]
EPDM	80 MPa [11,600 psi]	40 MPa [5,800 psi]

T = Ambient temperature
N/A = not applicable

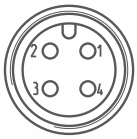
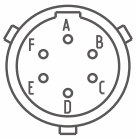
Acceptable operating temperature range in accordance with data specification (for flameproof Ex I)

Medium temperature range	
Standard	-20 ... +80 °C [-4 ... +176 °F]
Optional 1	-20 ... +150 °C [-4 ... +302 °F] (Suitable for flat diaphragm process connection only and measuring range ≤60 MPa [8,000 psi])
Optional 2	-40 ... +150 °C [-40 ... +302 °F] (Only applicable to flat diaphragm process connection and measuring range ≤40 MPa [5,000 psi])
Optional 3	-40 ... +200 °C [-40 ... +392 °F] (Only applicable to flat diaphragm process connection and measuring range ≤40 MPa [5,000 psi])
Breath	-20 ... +60 °C [-4 ... +140 °F]
Ambient temperature range	
Standard	-20 ...+80 °C[-4 ... +176 °F]
	IP68 grade cable straight out (continuous use in the medium), PUR cable: -15... +70 °C[5 ... 158 °F]
	IP68 Grade cable straight out (continuous use in media), FEP cable: -15... +80 °C[5 ... 176 °F]
Storage temperature range	
Standard	-20 ...+80 °C[-4 ... +176 °F]

Acceptable operating temperature range in accordance with data specification (for flameproof Ex nA and Ex tc)

Medium temperature range	-15 ...+70 °C[5 ... +158 °F] (Under oxygen conditions is -15 ...60 °C[5 ... +140 °F])
Ambient temperature range	-15 ...+70 °C[5 ... +158 °F]
Storage temperature range	-15 ...+70 °C[5 ... +158 °F] Degree range: -20 ...+80 °C[-4 ... +176 °F]

Electrical connection specification

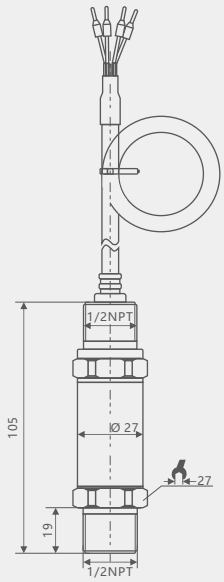
	In accordance with DIN EN 175301-803 A Standard Hersman connection		Comply with IEC 61076-2-101 A-COD Standard aviation plug M12 x 1 (4 pins)		Conforms to MIL-DTL-26482 Standard Bayonet Bayonet connector (6 pins)	
Connection diagram						
Specified (2-wire system)	U+ = 1	U- = 2	U+ = 1	U- = 3	U+ = A	U- = B
Cable shielding	-		-		-	
Traverse section	Max 1.5 mm²		-		-	
Cable diameter	6 ... 8 mm		-		-	

	Conforms to MIL-DTL-26482 Standard Bayonet Bayonet connector (4 pins)		Comply with IEC 61076-2-106 Standard aviation plug M16 x 0.75 (5 pins)		All cables are routed straight out	
Connection diagram						
Specified (2-wire system)	U+ = A	U- = B	U+ = 3	U- = 1	U+ = brown	U- = green
Cable shielding	-		-		gray	
Traverse section	-		-		0.5 mm²	
Cable diameter	-		-		6.8 mm	
					7.5 mm (For continuous use in media)	

Size mm

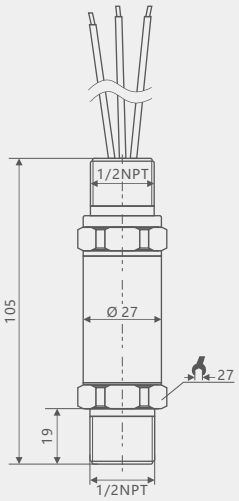
Electrical interface (protection level IP according to IEC60 529 standard)

1/2 external thread tubing with 1.8m (6 ft) guide line
IP67 (NEMA 4X)



Electrical interface (protection level IP according to IEC60 529 standard)

1/2 male thread guide with 1.8m (6 ft) open wire
IP 67 (NEMA 4X)



✆ 400-860-9760

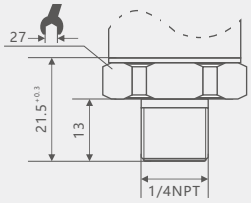
For more product information, please visit www.ludwig-schneider.com.cn

LUDWIG INSTRUMENT

Threaded process connector

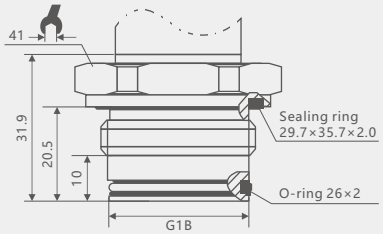
Pressure connection

According to the nominal size for US standard taper pipe thread NPT



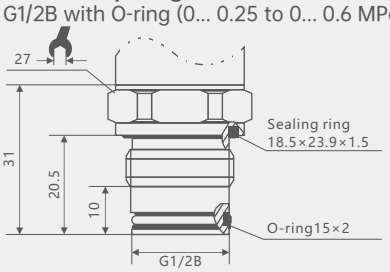
Pressure connection with flat insert diaphragm

G1B with O-ring (0... 0.01 to 0... 0.16 MPa)



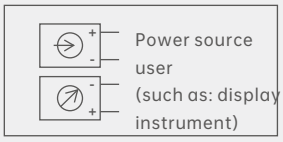
Pressure connection with flat insert diaphragm

G1/2B with O-ring (0... 0.25 to 0... 0.6 MPa)

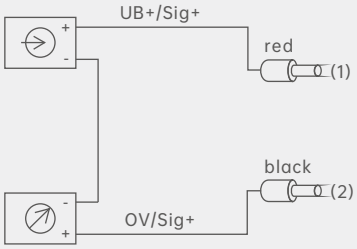


Wiring diagram

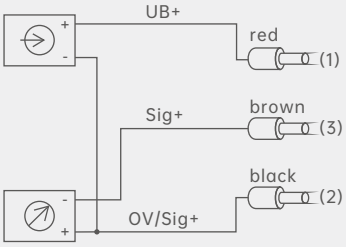
Legend:



2-wire system



3-wire system



More information

You can go to the website for more information (parameter sheet, instruction manual, etc.)

Other pressure transmitters for use in hazardous environments

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

LW-PE-Selection composition

Selection example **LW-PE**

MP001	A	B	E	H	S	U	Y	A	B
1	2	3	4	5	6	7	8	9	10

1.Measuring range	R( )	See range table (page 7)
2.Output signal	A	4-20mA
3.Power supply	B	DC 8...32V
4.Temperature range	E	0...+80℃
	F	-30...+100℃
5.Precision class	G	0.25%
	H	0.5%
6.Process connection	N	1/2NPT
	O	1/4NPT
	P	M14*1.5
	Q	M20*1.5
	R	M27*2
	S	G1/2B
	T	G1/4B
	T( )	Other connection specifications
7.Seal material	U	fluororubber
	V	Red copper
	T( )	Other materials
8.Electrical connection	X	M12*1 (Round joint)
	Y	Hersman joint
	Z	Head outlet
9.Explosion-proof option	A	flameproof
10.Liquid material	B	316L
	C	304SS

Instructions:

LW-PE flameproof pressure transmitter, measuring range: 0~0.1MPa, output signal 4-20mA, 24V power supply, temperature range is 0... 80℃, accuracy level 0.5%, process connection G1/2B, sealing material is fluorine rubber, electrical connection is Hersman joint, flareproof, liquid material 316L.

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;