

FD3051S Monocrystalline Silicon Pressure Transmitter

◆ Product Selection Guide

FD3051S LA/LG–Absolute / Gauge Remote Seal Pressure Transmitter

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Product Description

FD3051S LA / LG absolute / gauge pressure remote transmitter is structurally composed of FD3051STG / TA series pressure / absolute pressure transmitter and welded mounted remote flange with capillary tube. The pressure acting on the side of the remote flange first passes through the diaphragm and filling liquid on the remote flange, then through the capillary tube, and finally reaches the measuring end of the measuring sensor. FD3051S LG / LA gauge / absolute pressure remote transmitter is used to measure the level, density, pressure of liquid, gas or steam, and then convert it into 4 ~ 20mADC HART current signal output. FD3051SLG / A can also communicate with FDT375 handheld terminal or FDM100Modem, and use them for parameter setting, process monitoring, etc.



Technical Parameters Table

Span and Range	Table 1 Span code, measuring range and SWP			
	Span code	Min measuring range	Max measuring range	SWP (Max)
	C	6kPa	40kPa	The flange's working pressure
	D	25kPa	250kPa	
	F	30kPa	3MPa	
	G	1MPa	10MPa	
	H	2.1MPa	21MPa	
	I	4MPa	40MPa	
L	6kPa abs.	40kPa abs.		
M	25kPa abs.	250kPa abs.		
O	30kPa abs.	3MPa abs.		
Measuring range				
Lower limiting value : -100%URL (continuously adjustable)				
Upper limit value : +100%URL (continuously adjustable)				
Output signal				
Two wire 4~20mADC output with digital communications, linear or square root programmable. HART FSK protocol are superimposed on the 4~20 mADC signal.				
Function and Specification				
Output signal limit: Imin=3.9mA, Imax=20.5mA				
Failure Alarm (the mode can be selected)				
Low Mode (min): 3.7 mA				
High Mode (max): 21 mA				
No Mode (hold): Keep the effective value before the fault				
The standard setting of failure alarm is High Mode				
Response Time				
The amplifier damping constant is 0.1 sec; The sensor and flange's damping constant is 0.2~3 sec, it depends on the range and range compression ratio.				
Amplifier damping time constant is adjustable from 0.1 to 60 sec by software and added to response time.				

Technical Parameters Table

Installation conditions	
The transmitter can be directly flanged in any position. Preferably in such a position that the process flange axes are vertical. Deviations from this can cause a shift in the zero, which can be corrected. The electronic housing can be rotated through 360° and can be fixed in any position. The gauge pressure / absolute pressure remote flange is connected with the matching flange that meets ANSI / DIN standards. The matching flange should be equipped with soft gaskets and fixed bolts and nuts (users can choose mounting bolts and nuts)	
For gauge / absolute pressure remote transmitters with capillaries, if the remote seal is lower than the transmitter body, the maximum height drop between the remote seal and the transmitter body should be <5m. When the working pressure is lower than 100kPa absolute pressure, the transmitter body must be lower than the remote transmission sealing device.	
The minimum bend radius of the capillary of 75mm, is strictly prohibited winding!	
Ambient temperature	
Min: depends on the fill fluid	
Max: 85°C	
-20 ~ 65°C ,with LCD-indicator	
-40°C~70°C (OLED display)	
Storage temperature/transport temperature	
Min: depends on the fill fluid Max: 85°C	
Humidity	
0 ~ 100%	
Shock resistant	
Acceleration: 50g Duration: 11ms	
Vibration resistance	
500Hz on 2g	
Electromagnetic Compatibility (EMC)	
See the EMC Performance Table	

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Temperature limits	
-30 ~ 400°C	
Filling fluid working temperature and pressure	
See the table "Filling fluid, working temperature and minimum working static pressure relation table" on the next page	
Working condition	
Transmitter body pressure limit	
From the absolute pressure of 3.5kPa to the rated pressure, the protection pressure can be greater than 1.5 times the rated pressure, and it is added to both sides of the transmitter.	
Level flange rated pressure	
ANSI Standard : 150psi~600psi	
DIN Standard: PN 1.6MPa~PN 10MPa	
Explosion-proof performance	
NEPSI Explosion-proof license; Ex dIICT6	
NEPSI Intrinsically Safe License; Ex iaIICT4	
Allowable temperature: -40°C~65°C	
Power and load conditions	
The power supply voltage is 24V, the load is 520Ω, the calculation formula is as follows:	
Load $R \leq (U_s - 12V) / I_{max}$ kΩ, among them $I_{max} = 23mA$	
Power supply 15~36V DC	
Load Working condition : 0~1040Ω	
Digital communication : 230~600Ω	

Technical Parameters Table

Material	
Measuring capsule	316L stainless steel
Diaphragm	316L stainless steel, Hastelloy C, Tantalum
Process flange	304 stainless steel
Filling fluid	Silicon oil, High temperature silicon oil, Ultra high temperature silicone oil, Vegetable oil
Transmitter housing	Aluminum alloy material, epoxy resin on the surface
Housing Gasket	Perbunan (NBR)
Name plate and tag	304 stainless steel
Physical	
Electrical connection	
M20X1.5 cable sealing buckle, the terminal is suitable for 0.5 ~ 2.5mm ² wire	
Process connection	
The remote flange conforms to ANSI standard or DIN standard. Can be installed directly, participate in the dimension drawing	
Weight	
DN 50/2" about 7 ~ 10kg	
DN 80/3" about 8 ~ 11kg	
DN 4" about 9 ~ 12kg	
Housing protection class	
IP67	

EMC Performance Table

Items	Test items	Basic standards	Test conditions	Performance Level
1	Radiated interference (Housing)	GB/T 9254-2008 Table 5	30MHz ~ 1000MHz	qualified
2	Conducted interference (DC power port)	GB/T 9254-2008 Table 1	0.15MHz ~ 30MHz	qualified
3	Electrostatic Discharge (ESD) Immunity	GB/T 17626.2-2006	4kV(Line) 8kV(Air)	B
4	RF electromagnetic field immunity	GB/T 17626.3-2006	10V/m (80MHz ~ 1GHz)	A
5	Frequency magnetic field immunity	GB/T 17626.8-2006	30A/m	A
6	Electrical Fast Transient Burst Immunity	GB/T 17626.4-2008	2kV(5/50ns,5kHz)	B
7	Surge Immunity	GB/T 17626.5-2008	1kV (line to line) 2kV (line to ground) (1.2us/50us)	B
8	Conducted interference immunity induced by RF field	GB/T 17626.6-2008	3V (150KHz ~ 80MHz)	A

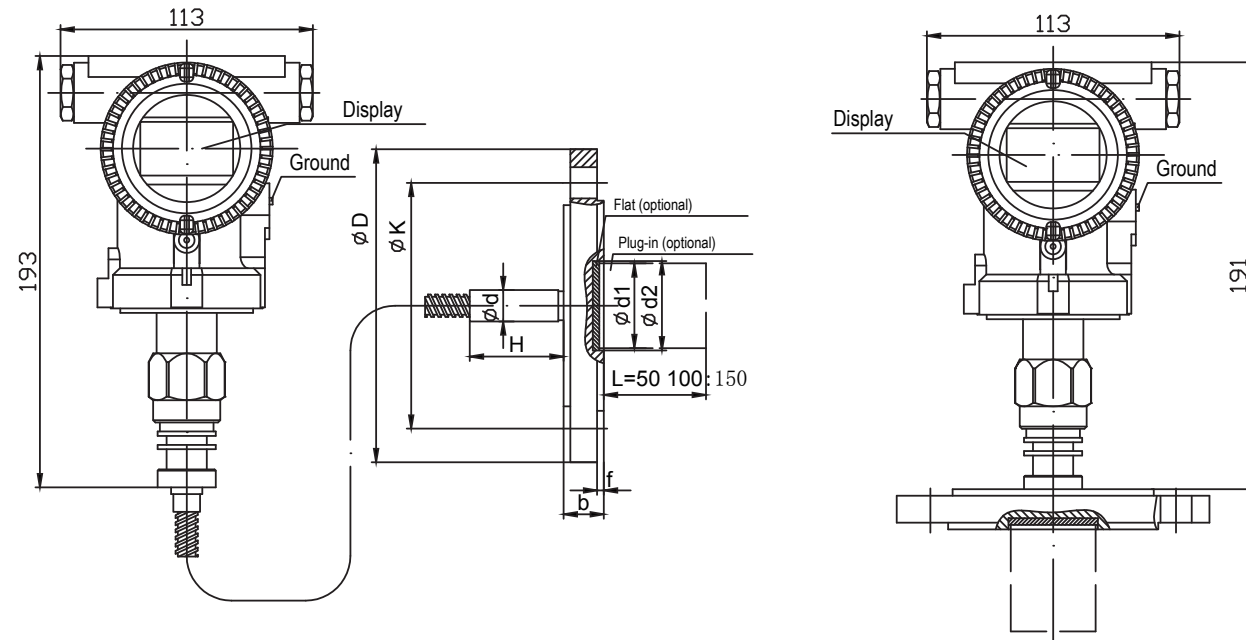
Note: (1) Performance level A description: The technical specifications within the limits of normal performance.
(2) Performance level B description: Temporary reduction or loss of functionality or performance, it can restore itself. The actual operating conditions, storage, and data will not be changed.

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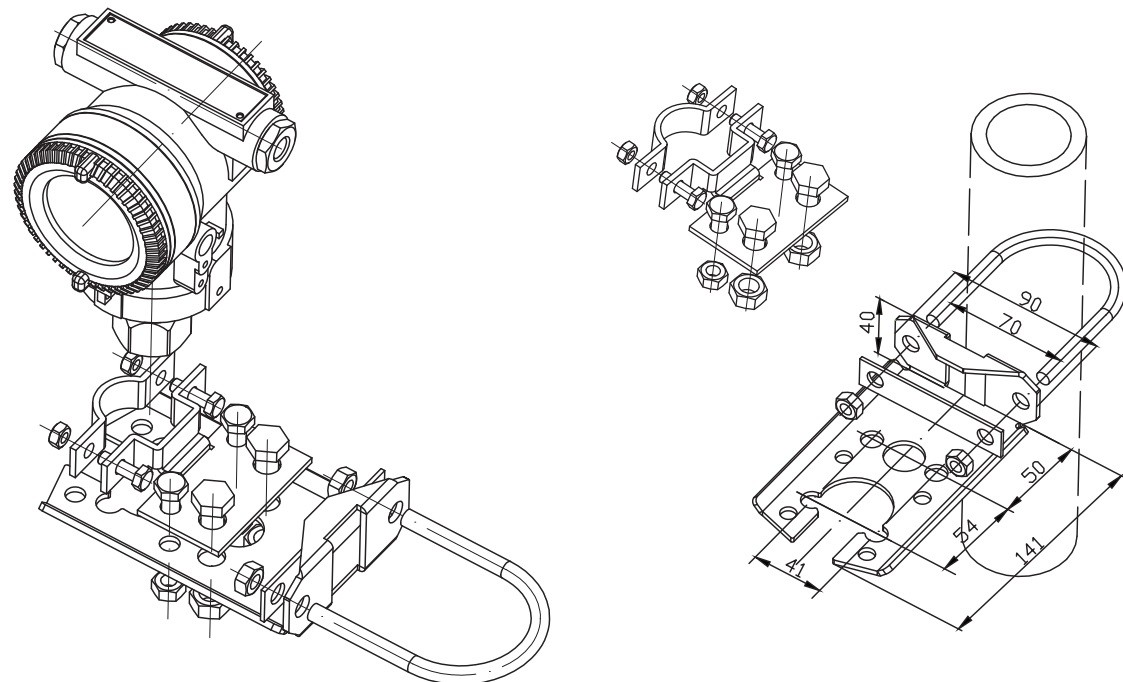
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FD3051S LA/LG—Absolute / Gauge Remote Seal Pressure Transmitter

Product outline size



Mounting method of bracket



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Electrical connection diagram

