

Differential Pressure Transmitter

MSP3100



LIQUID



GAS



OVERVIEW

Operation

MSP3100 Gauge, absolute and differential pressure measurement in gases, steam or liquids in all areas of process control field.

Features

- Compact design
- Protection type IP67 or EX-proof as optional
- High sensitivity
- MEMS technology
- Cost effective
- Short delivery
- High pressure
- High long-term stability

Application

- Level, volume or mass measurement in liquids.
- Working with detecting element

OPERATING DATA

Temperature Limit	-40...125°C
Storage Temp. Limit	-45...125°C
Stability	±0.25% of URL for 5
Accuracy	±0.075% URL (±0.055% optional)
Humidity limit	0-100% relative
Temperature Drift	±0.03% of URL/10°C Full
Overpressure	scale ranges x3
Weight	4 kg (without connection)
Turndown Ratio	10:1

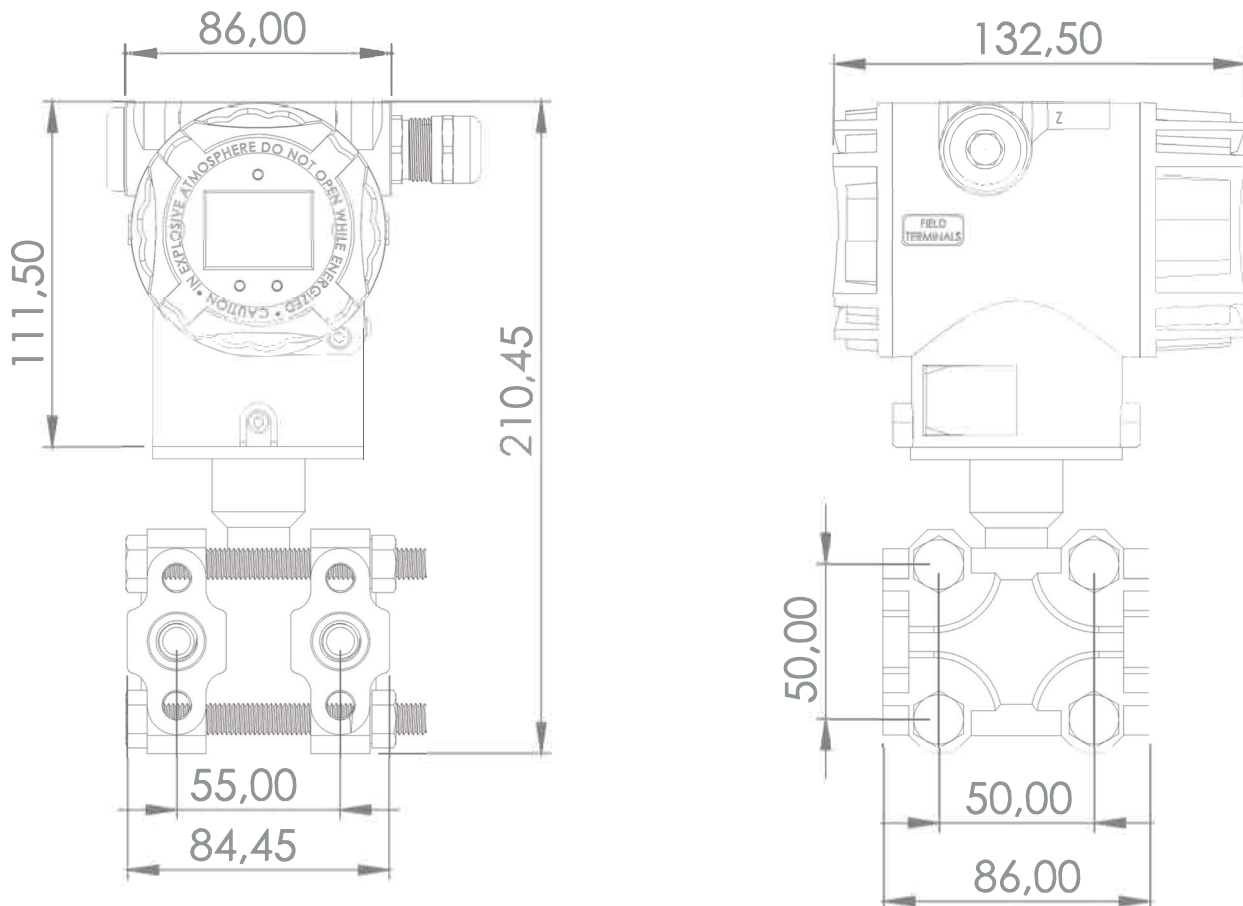
MEASURING RANGES

Measuring Range	0-10 mbar to 0-40 bar
Overpressure	160 bar (250 bar opt.)

MATERIALS

Wetted Part	AISI316
Others	On request

TECHNICAL DRAWINGS AND DIMENSIONS



CONNECTION

Standard

Please refer ordering table

MENU

Menu 1: Change LCD Display Variables:

Normal display state, press "↑" key, it will alternate display current, PV, and PV %, release the key when it display what you need. If LCD alternates display two variables with the interval of 3 seconds, repeat operate when it display the variable that you don't need.

Menu 2: PV Unit Setting

Normal display state, press "↵" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "↵" key. Then press "↑" key twice, the number become to "00002". Then press "↵" key once, the left bottom of LCD will display "2". You may press "↑" key to change the unit now. Press "↵" key to save until the required unit displays on LCD.

Menu 3/4: PV Range Value Setting

Normal display state, press "M" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "M" key. Then press "↑" key three times, the number become to "00003". Then press "↵" key once, the left bottom of LCD will display "3". Press "↑" key once, the left arrow on the LCD will flashes. Press "M" key to shift right, press "↑" key to change the setting number. When the last 0 on the LCD flashes, press "M" key, all decimal points will bright. Then you may press "↑" key to set the decimal point position. Press "↵" key to save data and automatically switch to set the upper limit. The left bottom display "4" now, you may repeat these steps to set new URV (upper range value).

Menu 5: Damping Setting

Normal display state, press "M" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "M" key. Then press "↑" key five times, the number become to "00005". Then press "↵" key once, the left bottom of LCD will display "5". Press "↑" key once, the left arrow on the LCD will flashes. Press "M" key to shift right, press "↑" key to change the setting number. When the last 0 on the LCD flashes, press "↵" key, all decimal points will bright. Then you may press "↑" key to set the decimal point position. Press "↵" key to save data and automatically switch to menu 6.

Menu 6: Zero Trim

Normal display state, press "↵" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "↵" key. Then press "↑" key six times, the number become to "00006". Then press "↵" key once, the left bottom of LCD will display "6". Press "↑" key to alternate "NO (Not Trim)" or "YES (Trim)" on the right bottom of LCD. Press "↵" key to trim zero when it display "YES". Shortcut key: Normal display state, Press ↵+M key, and keep it for 5 seconds at least, the left bottom of LCD will display "6", and you may trim zero now.

Menu 7: Output Type Setting

Normal display state, press "M" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "M" key. Then press "↑" key eight times, the number become to "00008". Then press "↵" key once, the left bottom of LCD will display "8". Press "↑" key to alternate current output mode "LIN (Linear output mode)" or "SQRT (Square root output mode)" on the right bottom of LCD. Press "↵" key to save output mode when it displayed on LCD.

Menu 8 and 9: Pressure Low Trim and High Trim

Normal display state, press "M" key, the LCD will display '00000', until the last 0 on the LCD flashes, release "M" key. Then press "↑" key until the number become to "00009". Then press "↵" key once, the left bottom of LCD will display "9". Press "↑" key once, the left arrow on the LCD will flashes. Using a pressure source with the accuracy three to ten times the desired calibrated accuracy, and apply a pressure equivalent to the Low Trim Value. Press "M" key to shift right, press "↑" key to change the setting number. When the last 0 on the LCD flashes, press "M" key, all decimal points will bright. Then you may press "↑" key to set the decimal point position. After input Low Trim Value, press "↵" key to save data and automatically switch to High Trim Menu. The left bottom display "10" now, you may repeat these steps to apply High Trim. Note: Low Trim and High Trim must be applied together! And Low Trim value must not equal High Trim value.

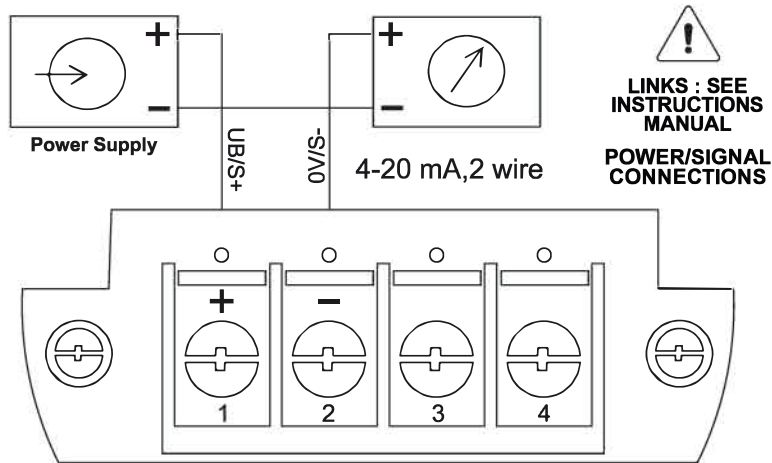
Menu 10: Pressure Bias

The left bottom of LCD will display "11" after High Trim. Please input the actual correct pressure value, and press "↵" key to adjust pressure value to input value.

ELECTRICAL DATA

Output	2 wires, 4-20 mA 2 wires, 4-20 mA+HART MODBUS (no analog output)
Power Supply	10.5-55 VDC power
Electrical Connection	M20x1.5 - Aluminium or AISI316SS as optional
Enclosure	IP67

WIRING



MEASURING RANGES

Code	Range (DIN Flange)	Min. Span	Code	Range (DIN Flange)	Min.Span
001	10 mBar (PN160)	1 mBar	007	40 Bar (PN160)	4 Bar
002	30 mBar (PN160)	3 mBar	008	500 mBar (PN420)	50 mBar
003	100 mBar (PN160)	10 mBar	009	3 Bar (PN420)	300 mBar
004	500 mBar (PN160)	50 mBar	010	16 Bar (PN420)	1600 mBar
005	3 Bar (PN160)	300 mBar	011	40 Bar (PN420)	4 Bar
006	16 Bar (PN160)	1600 mBar			

ORDERING

MSP3100									Differential Pressure Transmitter
Approval	N								None
	Xi								II 1/2G Ex ia IIC T4 Gb(Ga)
	Xd								Ex d IIC T6, T5, T4
Output	H								4-20 mA + HART
	M								MODBUS
Display		A							No display
		L							LCD
Measuring Range			XXX						Please see "Measuring range table"
Calibration				1					Sensor range, mBar/Bar
				2					Sensor range, kpa/Mpa
				3					Sensor range, mmH2O/mH2O
				4					Sensor range, psi
Diaphragm Material				1					AISI 316
				2					Alloy C-276
				X					On request
Process Connection					A				Female thread 1/4"NPT
					B				Female thread 1/2"NPT
					C				Male thread M20x1.5
Overpressure					A				160 bar
					B				250 bar
Process Connection Material						G			AISI 304
						N			AISI 316
						H			Hastelloy C
Mounting Bracket							A		None
							U		Mounting bracket for pipe