

Datasheet

Differential Pressure Transmitter DP100

Introduction

DP100 differential pressure transmitter is designed to measure pressure for liquid, gas or steam. Stable performance and high accuracy make it ideal for high requirement applications. Equipped HART make it easier to communicate with control system.



Characteristics

Differential pressure measurement

High accuracy, high stability

Temperature compensation

4...20mA / HART / RS485

Easy to use

Applications

Applicable to liquid or gas

Power plant

Steel mill

Paper mill

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Specifications

Measuring range	See measuring range table for details
Output	2-wire 4...20mA with HART
Accuracy	0.2% URL 0.075% URL
Temperature effect	$\leq \pm 0.45\%/55^{\circ}\text{C}$ (131°F)
Stability	$\pm 0.1\%$ of full span
Mounting position effect	An up to 0.24 kPa error can be expected (Can be calibrated out)
Vibration effect	$\pm 0.1\%$ of upper range limit.
Power supply	24VDC
Over-pressure	1.5 x full span
Initialization time	5s
Refresh time	0.25s
Zero and span adjust	Adjust by menu or HART communicator.
Alarm	If self-diagnostics detect a transmitter failure; Analog output is lower than 3.8 mA or higher than 20.8 mA;
Damping time	Settable between 0 and 32s.
Ambient temperature	-40...85°C / -40...185°F -20...70°C / -4...158°F (LCD display)
Medium temperature	-40...120°C / -40...248°F (Silicone oil)
Relative humidity	5%-98%
Protection class	IP65
Electrical connection	M20 x 1.5

Measuring range code (Differential pressure)

Code	Measuring range (kPa)	Static pressure limit (Mpa)	High pressure side overload limit (Mpa)	Low pressure side overload limit (Mpa)
DP6	-6...6	25	25	16
DP40	-40...40	40	25	16
DP100	-100...250	40	25	16
DP1000	-100...1000	40	25	16
DP3000	-100...3000	40	25	16
DP10000	-100...10000	40	25	16

Code	Measuring range (psi)	Static pressure limit (psi)	High pressure side overload limit (psi)	Low pressure side overload limit (psi)
DP6	-0.87...0.87	3600	3600	2300
DP40	-5.8...5.8	5800	3600	2300
DP100	-14.5...36	5800	3600	2300
DP1000	-14.5...145	5800	3600	2300
DP3000	-14.5...435	5800	3600	2300
DP10000	-14.5...1450	5800	3600	2300

Calibration

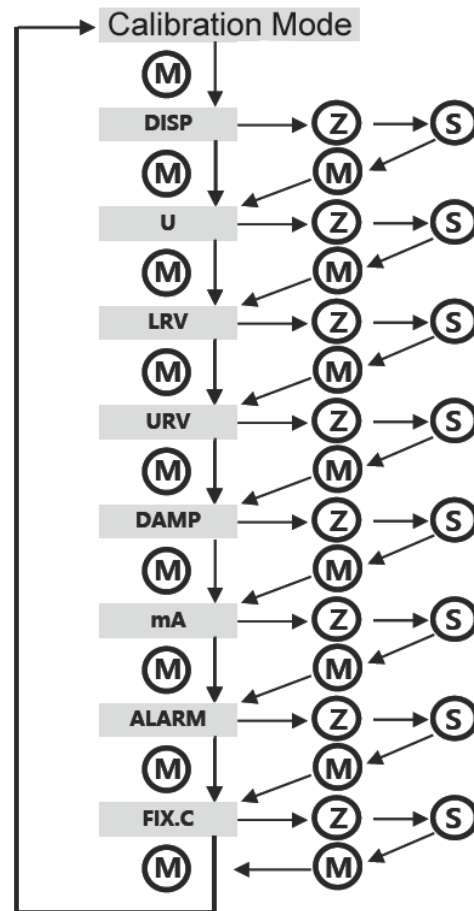
LCD Display		Description
PV=0		Reset PV: press Z and S at same time and hold for 5 seconds, release both keys when "PV=0" displays, reset is success,
Restore to factory setting	RECOVERY	Pressure S and hold for 5 seconds, enter setting 1
	OK	Pressure Z and hold for 2 seconds, OK will be displayed, release the key to enter setting 3
	LOADING	Wait untill initialization displays, recovery is done successfully.

Keys

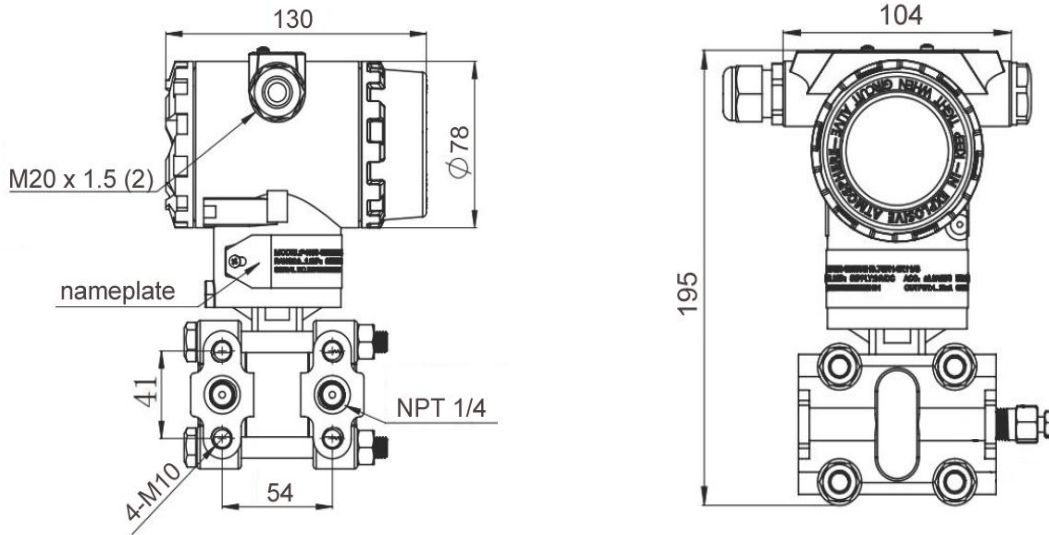
Key	Description
M	Confirm / Enter setting mode
Z	Select a menu / Change value
S	Change value / select unit of measure / select display mode / set output mode

Menu

Menu	Description	Options
URV	Set analog output lower limit	Use Z to change selection. Use S to change value.
LRV	Set analog output upper limit	Use Z to change selection. Use S to change value.
U	Set unit of measure	bar, mbar, mmHg, Pa, kPa, psi, mmH ₂ O, mH ₂ O, Kg/cm ² , g/cm ²
DAMP	Set damping time	Use Z to change selection. Use S to change value.
DISP	Set display mode	Use Z to enter setting. Use S to select pressure / current / percentage
mA	Set output signal	Use Z to enter setting. Use S to select output
ALARM	Alarm	Use Z to select alarm
FIX.C	Fixed current output	Use Z to enter setting, Use S to select 3.8 / 4 / 8 / 12 / 16 / 20 / 20.8 mA



Dimensions in mm



Order Code

Example: DP100-DP100LAAN14DN

1. Model

DP100- Differential pressure transmitter

2. Measuring range

DP6	-6...6 kPa / -0.87...0.87 psi
DP40	-40...40 kPa / -5.8...5.8 psi
DP100	-100...250 kPa / -14.5...36 psi
DP1000	-100...1000 kPa / -14.5...145 psi
DP3000	-100...3000 kPa / -14.5...435 psi
DP10000	-100...10000 kPa / -14.5...1450 psi

3. Wetted part material

L	316L
H	Hastelloy C

4. Output

A	4...20mA
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5. Accuracy

A	0.075%
B	0.2%

6. Process connection

N14	Female thread NPT1/4
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7. Display

N	No display
D	LCD display

8. Protocol

N	None
R	RS485
H	HART