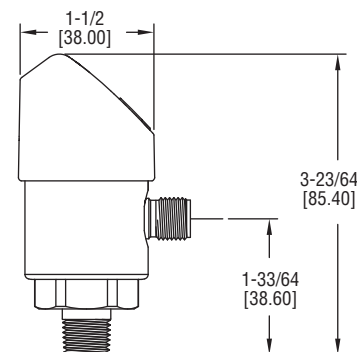
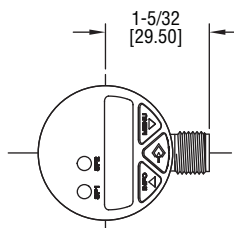




## Series DPT Digital Pressure Transmitter with Switches

### Specifications - Installation and Operating Instructions



The Series DPT Digital Pressure Transmitter with Switches combines a large, 14-segment LED display with two programmable solid state switches into one compact unit. A unique, 3-way rotating design allows the DPT to meet specific installation requirements without any retrofitting. The display and electrical connection can be rotated independently to maximize visibility while still orienting the electrical connection in the best position for the cable connector. Large, ergonomically designed push buttons allow for quick/easy programming and thin-film piezoresistive sensor technology guarantees long-term reliability and stability.

#### INSTALLATION

When installing gage always use a hex at the base of the housing to tighten the gage to a mating fitting. Do not apply wrench to housing.

#### POWER UP

4-digit LED display	- Display system pressure - Display Menu Item - Display Parameter
1. LED (red)	- Status Switch Output 1
2. LED (red)	- Status Switch Output 2 (Optional)
<b>Operating Modes</b>	
System start	- Display is fully activated for 2s -When the pressure switch is powered up within the range of the hysteresis, the output switch is set to "not active" by default
Display Mode	- Normal operation, displays system pressure
Programming Mode	- Setting Parameters

#### UNITS CHART

Model	Range (psig)	Maximum Pressure (psig)	Burst Pressure (psig)	Pressure Ranges			
				bar	MPa	kPa	kg/cm <sup>2</sup>
DPT-V00 DPT-A00	-14.5 to 0	30	75	1.034	.1034	103.4	1.055
DPT-V01 DPT-A01	0 to 15	30	75	1.034	.1034	103.4	1.055
DPT-V02 DPT-A02	0 to 25	60	150	1.724	.1724	172.4	1.758
DPT-V03 DPT-A03	0 to 30	60	150	2.068	.2068	206.8	2.109
DPT-V04 DPT-A04	0 to 50	100	250	3.447	.3447	344.7	3.515
DPT-V05 DPT-A05	0 to 100	200	500	6.895	.6895	689.5	7.031
DPT-V06 DPT-A06	0 to 160	290	500	11.03	1.103	1103	11.25
DPT-V07 DPT-A07	0 to 200	400	1500	13.79	1.378	1378	14.06
DPT-V08 DPT-A08	0 to 300	600	1500	20.68	2.068	2068	21.09
DPT-V09 DPT-A09	0 to 500	1000	2500	34.47	3.447	3447	35.15
DPT-V10 DPT-A10	0 to 1000	1740	7975	68.95	6.895	6895	70.31

\*feet of seawater @ 4°C

#### SPECIFICATIONS

**Service:** Compatible gases, liquids or vapors.

#### Wetted Materials:

Pressure connection: 316 L SS;

Pressure sensor: 316 L SS (13-8 PH for ranges above 150 psi).

**Housing:** 316 L SS lower body, heat and chemical resistant fiberglass reinforced plastic (PBT) plastic head, TPE-E keyboard, PC display window.

**Accuracy:** 1.0% F.S. (includes non-linearity, hysteresis, zero point).

**Pressure Limit:** See table.

**Temperature Limits:** 32 to 176°F (0 to 80°C).

**Process Connections:** 1/4" male NPT.

**Display:** Red LED 4-digit (0.35" H digits).

**Weight:** 7 oz (0.2 kg).

#### SWITCH SPECIFICATIONS

**Switch Type:** PNP.

**Electrical Rating:** 250 mA.

**Electrical Connections:** M 12x1, 5-pin.

**Mounting Orientation:** Mount in any position.

#### TRANSMITTER SPECIFICATIONS

**Temperature Limits:** 32 to 176°F (0 to 80°C).

**Thermal Effect:** 0.2% FS / 10k.

**Power Requirements:** 15 to 35 VDC.

**Output Signal:** DPT-A: 4 to 20 mA; DPT-V: 0 to 10 VDC.

**Loop Resistance:** DPT-A: ≤ 0.5k; DPT-V: > 10k.

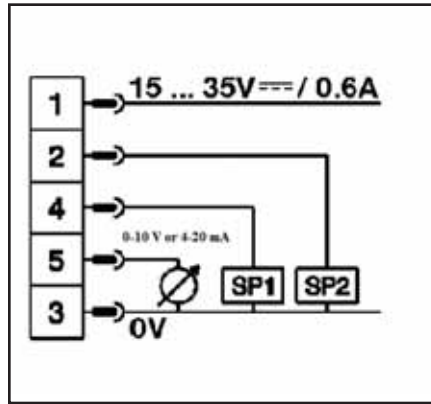
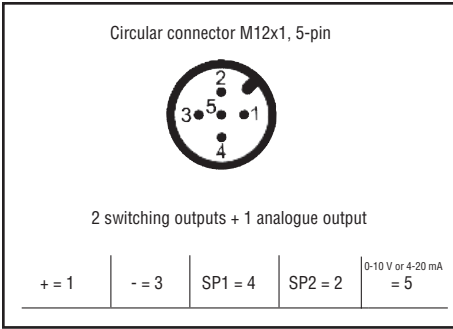
**Power Consumption:** ≤ 100 mA.

**Electrical Connections:** M 12x1, 5-pin.

**Enclosure Rating:** IP65 and IP67.

**Agency Approvals:** CE.

**WIRING**



**PROGRAMMING**

### Menu (Programming and Factory Setting)

Display-Mode  
 ▼ ▲ Long press on Menu Key  
 Programming-Mode

SP1 / FH1	value	(Min: LLR + 0.5%    Max: ULR)	Instrument Nominal Pressure
RP1 / FL1	value	(Min: LLR            Max: SP1 - 0.5%)	Instrument Nominal Pressure- 10%
SP2 / FH2	value	(Min: LLR + 0.5%    Max: ULR)	Instrument Nominal Pressure
RP2 / FL2	value	(Min: LLR            Max: SP2 - 0.5%)	Instrument Nominal Pressure- 10%
EF	RES	YES/NO	(Return to Factory Settings)
	DS1	value	(0 ... 50 s)            0 s
	DR1	value	(0 ... 50 s)            0 s
	DS2	value	(0 ... 50 s)            0 s
	DR2	value	(0 ... 50 s)            0 s
	OU1	PARA	(HNO, HNC, FNO, FNC)    HNO
	OU2	PARA	(HNO, HNC, FNO, FNC)    HNO
	UNIT	unit	(BAR, MPA, KPA, PSI, KG/cm²)    Order dependent
	0SET	YES/NO	(Zero Point Offset adjustment max. 3 %)
	DISM	PARA	(ACT, HIGH, LOW, OFF, SP1/FH1, RP1/FL1, SP2/FH2, RP2/FL2)    ACT
	DISU	value	(1/2/5/10 Updates/Second)    5 / s
	DISR	YES/NO	(Display rotate 180°)
	RHL	YES/NO	(Reset HIGH, LOW)
	PAS	value	(Password)                    without
	TAG	value	(Measuring Point number)    without
	END		

Display-Mode

Legend:  
 LLR = lower limit of range  
 ULR = upper limit of range

## BUTTON OPERATION

	Display-Mode	Programming-Mode
	short press: Display units  long press: Run-through Parameter Info 1. UNIT + unit 2. SP1 / FH1 + value 3. RP1 / FL1 + value 4. SP2 / FH2 + value (optional) 5. RP2 / FL2 + value (optional) 6. LOW + value 7. HIGH + value 8. TAG + value (Only display when value set)	short press: - Menu up - Increase parameter value  long press: - Menu up - Increase parameter value
	short press: Display units  long press: Switch to Programming Mode If the password is set to <> 0000, a password will be requested. If authentication is successful, then it enters the Program Mode, otherwise it reverts to Display Mode.	short press: - Menu down - Decrease parameter value  long press: - Menu down - Decrease parameter value (Increment rate is time dependent) long press (during Restart, keep pressed)
	short press: Display units	short press: - Select Menu Item - Confirmation of the entry (Parameter value)
 + 		short press (both keys at the same time): Return to Display Mode

## SWITCH FUNCTION

### Hysteresis function

If the system pressure fluctuates around the nominal value, the hysteresis keeps the switch status of the outputs stable. When the system pressure is rising, the output switches when it reaches the respective set point (SP); if the pressure falls again, the output switches back only if the reset point (RP) is reached.

Application example: loading an accumulator.

The shut-off valve loads up to 80 bar and then shuts off. When 70 bar is reached again, it switches on once more.

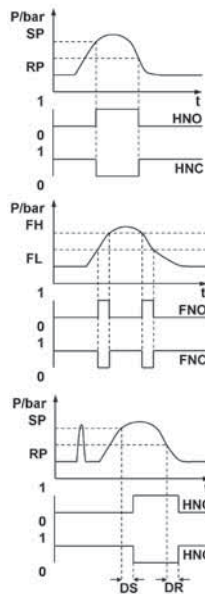
### Window function

The window function allows the monitoring of a defined range. If the system pressure is between the window high (FH) and the window low (FL), the output is activated (NO) respective deactivated (NC).

### Delay times (0.00 to 50 s):

By this means unwanted pressure peaks of short duration or high frequency can be filtered out.

The pressure must remain for at least this time to enable the switch to operate. The switching output does not immediately change its status when it reaches the switching event, but only after the delay time has elapsed. If the switching event no longer pertains when the delay time has elapsed, the switching output does not change.



## ERROR

Acknowledgement of an Error Display by pressing the "Enter" key.

Error Display	Description
ATT1	On changing the Switch Point the system automatically reduces the Reset Point
ATT2	Zero Point adjustment error, current pressure is outside the limits
ATT3	Password entered for Menu access is incorrect
ERR	Internal error
OL	Overpressure, measuring range exceeded > approx. 5% (Display blinks)
UL	Underpressure, under measuring range < approx. 5% (Display blinks)

## PARAMETERS

Parameter	Description
SP1 / SP2	Hysteresis function: Switch point switch output (1 or 2)
FH1 / FH2	Window function: Window high switch output (1 or 2)
RP1 / RP2	Hysteresis function: Reset point switch output (1 or 2)
FL1 / FL2	Window function: Window low switch output (1 or 2)
EF	Enhanced Programming Functions
RES	Return the set parameter to the Factory Settings
DS1 DS2	Switch Delay Time, which must occur without interruption before any electrical signal change occurs (SP1 or SP2)
DR1 DR2	Switch Delay Time, which must occur without interruption before any electrical signal change occurs (RP1 or RP2)
OU1	Switching Function Switching Output (1 or 2)
OU2	HNO = Hysteresis Function, normally open HNC = Hysteresis Function, normally closed FNO = Window Function, normally open FNC = Window Function, normally closed
UNIT	Changing Units (If the pressure range is higher than the display range, no change of the unit is possible and the parameter UNIT is not shown)
OSET	Zero Point adjustment (+ 3% of Nominal Pressure)
DISM	Display value in Display Mode ACT = Current System Pressure, LOW, HIGH = Minimum, Maximum System Pressure, OFF = Display off; SP1/FH1 = Function switch point 1, RP1/FL1 = Function reset point1, SP2/FH2 = Function switch point 2, RP2/FL2 = Function reset point 2
DISU	Display-Update 1, 2, 5, 10 Updates/Second
DISR	Display rotate 180°
RHL	Clear the Min- and Max-value memory
PAS	Password input, 0000 = no password Password input Digit by Digit
TAG	Input of a 16-digit alphanumeric Measuring Point number

## TROUBLESHOOTING

Failure	Possible cause	Procedure
No output signal	Cable break	Check connections and cable
No output signal	No/incorrect voltage supply	Adjust the voltage supply to correspond with the Operating Instructions
No/False output signal	Incorrectly wired	Follow pin assignment (see Instrument Label / Operating Instructions)
Output signal unchanged after change in pressure	Mechanical overload through over pressure	Replace instrument; if failure reoccurs, consult the manufacturer
Abnormal zero point signal	Overload limits exceeded	Ensure permissible overload limits are observed (see Operating Instructions)
Signal span too small	Mechanical overload through over pressure	Replace instrument; if failure reoccurs, consult the manufacturer
Signal span too small	Power supply too high/too low	Correct the power supply in line with the Operating Instructions

## WARRANTY

Upon final installation, no routine maintenance is required. A periodic check of the calibration is recommended. The series DPT is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a returns goods authorization number before shipping.

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