User's Guide

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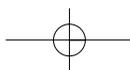*For latest product manuals:*
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PSW1000

Operating Instructions Dual Pressure Switch

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WARNING: These products are not designed for use in, and should not be used for, human applications.

2
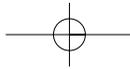
1. Product Description

Intended Applications

- The dual pressure switch is a device to monitor system pressure and has up to two switching outputs and one analog output.

- The instruments must only be installed in systems where the maximum pressure Pmax or the maximum temperature Tmax is not exceeded (according to the values on the type label).

- Attention: This device is not designed to be used as the only safety relevant element in pressurized systems according PED 97/23/EC.

Dimensions (in mm)
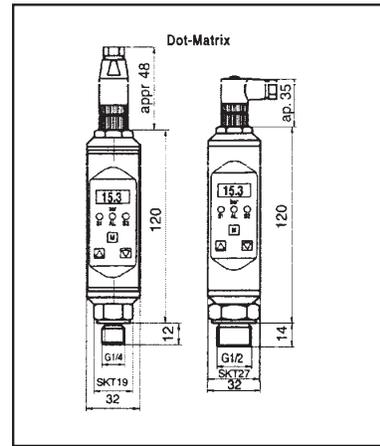
PSW1000

2. Starting operations

**Only assemble or disassemble the device when depressurized!**

Connecting the switch

- Mount the pressure switch from bottom to the fitting with a wrench hex 19 (1/4") resp. hex 22 with 45 Nm torque.

- Electrical connection depends on the type of pressure switch (see type label) according to the chart below (connection chart plug 2 for interface see page 4).

- When display is adjusted (rotable version only) the unit has to be fixed at the front side with an allen screw and and allen key 1,5 mm (torque = 3 Nm).

Electrical connections plug 1 (standard) and power supply

Plug M 12 x 1 4-pin / 5-pin	PG9 with cable LifYY11Y 4 / 5x0,25mm^2	Model with 1 switching output	Model with 2 switching outputs	Model with 1 switching output and 1 analog output	Model with 2 switching outputs and 1 analog output
Pin 1	Brown	18...32 V DC	18...32 V DC	18...32 V DC	18...32 V DC
Pin 2	White	-	SP2 0,5 A max.	analog 4...20 mA / 0...10 V DC	analog 4...20 mA / 0...10 V DC
Pin 3	Blue	0 V	0 V	0 V	0 V
Pin 4	Black	SP1 0,5 A max.	SP1 0,5 A max.	SP1 0,5 A max.	SP1 0,5 A max.
Pin 5	Grey	-	-	-	SP2 0,5 A max.

3
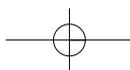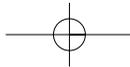
List of functions: (xxxx = 125% f. s.)

Dialog item	Value	Description
MENU	-1...9999	Primary display, e.g. the value selected in the DISP menu appears
DISP	.....	Display value which should be permanently in the display: act — actually measured value sp1 — switching point SP1 sp2 — switching point SP2 max — maximum peak value min — minimum peak value
ACT.	-1...9999	Display of actually measured value in bar
UNIT	bar psi psi HPa mbar	Fixing the unit bar = bar The unit is shown in the display appr. psi x = psi x 10 every 30 sec. for appr. 5 sec. psi = psi HPa = Hekto-Pascal mbar = millibar
SP.1	.....	none — switching output deactivated wind — window technology stnd — standard evaluation SP2 erro — error output
ON-1	-1 ... xxxx	Switch-on point for SP1; if the ON value is smaller than the OFF value the switching point evaluation is falling
OFF-1	-1 ... xxxx	Switch-off point for SP1
DLY1	0,0s...9,9s	Switch-on / switch-off delay for SP1 in seconds
INV-1	.....	Inversion of switching output SP1 hlfs — high-level-fail-save (normally open function) Ilfs — low-level-fail-save (normally closed function)
SP.2	.....	none — switching output deactivated wind — window technology stnd — standard evaluation SP2 erro — error output
ON-2	-1 ... xxxx	Switch-on point for SP2; if the ON value is smaller than the OFF value the switching point evaluation is falling
OFF-2	-1 ... xxxx	Switch-off point for SP2
DLY2	0,0s...9,9s	Switch-on / switch-off delay for SP2 in seconds
INV-2	-----	Inversion of switching output SP2 hlfs — high-level-fail-save (normally open function) Ilfs — low-level-fail-save (normally closed function)
MAX	-1 ... xxxx	Display of peak value „Max" (xxxx: = max. 125 % f. s.)
CLRH	-----	Delete the maximum value memory ----- — no deletion clr — delete value

CDLY	0,0s...9,9s	Time setting to delete the maximum value memory after switching point SP1 is reached (manual deletion is still possible)
MIN	-1 ... xxxx	Display of peak value "Min"
CLRL	-----	Delete the minimum value memory ----- no deletion clr delete value
OFFS	-9,9 ...+xx	Measured value offset in bar
CUT	0,0 ... +xx	Cut-off. e.g. signal suppression at measuring range start in bar
DLDS	0,0 ... 9,9s	Time delay for currently displayed value in seconds
ERRC	-----	Error messages: 0: -ok- no error 1: max exceeding pos. measuring range 2: min exceeding neg. measuring range 3: dig1 switching output 1 error 4: dig2 switching output 2 error 5: anao analog output error 6: sens sensor error 7: data data error (EEProm) 8: prog program error 9: cal calibration error
V7.X	Lev0...Lev2	Programming lock: Version display with actual input level: 0 : only display of operating parameters, no changes possible 1 : only switching points can be set ("max" and "min" memories) 2 : release user level (all operating parameters for customer)
LITH	20 ... 100	Change display brightness 20...100% (only for units with Dot-Matrix display)
AOZS (only V7.X)	0 ... 9999	Scale the analog output - start value (e. g. 0 bar = 4 mA)
AOFS	0 ... 9999	Scale the analog output - end value (e. g. 400 bar = 20 mA) (output signal start value always corresponds to the display initial value, e. g. 0 bar = 4mA) Maximum turn-down 4 : 1, i.e. at values below 25 % of the measuring range the analog output is switched off
STNO	-----	Enter the station number at Profibus DP
RECL	-----	SHRT short profile 8 byte LONG long profile 32 byte selection of the Profibus-protocol
CODE	000...999	Enter the code level: Changes: Lev1: 471 (up + down five seconds) Lev1-Lev0 Lev2: 740 (up + down + M five seconds) Lev2-Lev0 Lev0: 999
OPT (onlyV7.X)	-----	Display of the unit options
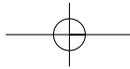
Operation:

The pressure switch should be installed and operated only by authorized persons.
After being switched on the PSW1000 runs through a self-test. The device is menu operated and configured with three keys on the front.

With the "M" key (= mode) you change between the dialog values and the adjusted / actual values. With the keys "▲" = up and "▼" = down you change between the dialog values in the menu or change the values / functions in the menues (see below: "List of functions").

If the dialog is not continued within two minutes the device automatically returns to the measuring mode. When the programming lock is entered, "LOCK" appears in the display when an attempt is made to change values.

Programming:

The setting menu is activated with the mode key. The dialog items are selected with the "▲" and "▼" keys. If the mode key is pressed again the corresponding value for the dialog item is shown and can be altered with the "▲" and "▼" keys. If the dialog with the unit is not continued within two minutes the device auto-matically returns to the measuring mode without accepting the new values.

To terminate programming more quickly, you can switch back to the measuring mode (primary menu) from any item in the menu by holding the M-key pressed for five seconds.

If the programming lock has been activated, the values can be shown, but no changes made, i.e. when Level 0 is active ("LOCK" appears in the display when an attempt is made to change values).
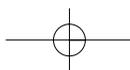
MADE IN USA ■■■■■■■■■ **WARRANTY/DISCLAIMER** ■■■■■■■

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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■■■■■■■■■ **RETURN REQUESTS/INQUIRIES** ■■■■■■■

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

| FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:	FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:
1. Purchase Order number under which the product was PURCHASED,	1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product under warranty, and	2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.	3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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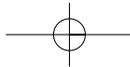
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