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User's Guide

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PSW3000

Operating Instructions Pressure Switch with 4 Relay Outputs

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Toll Free in Germany: 0800 639 7678
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United Kingdom:
ISO 9002 Certified
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The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.
WARNING: These products are not designed for use in, and should not be used for, human applications.

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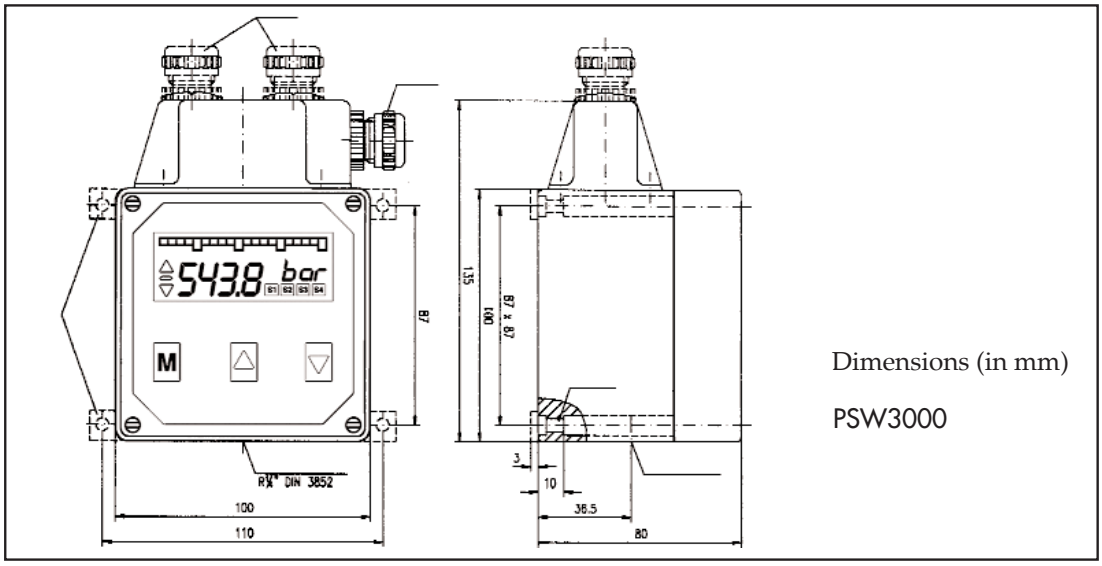
1. Product Description



Dimensions (in mm)

PSW3000

Intended Applications

- The pressure switch / trip amplifier is a device to monitor system pressure, temperature, flow, level, etc. and has four switching outputs and one analog output.
- The pressure switch is only to be installed in systems where the maximum pressure Pmax 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.

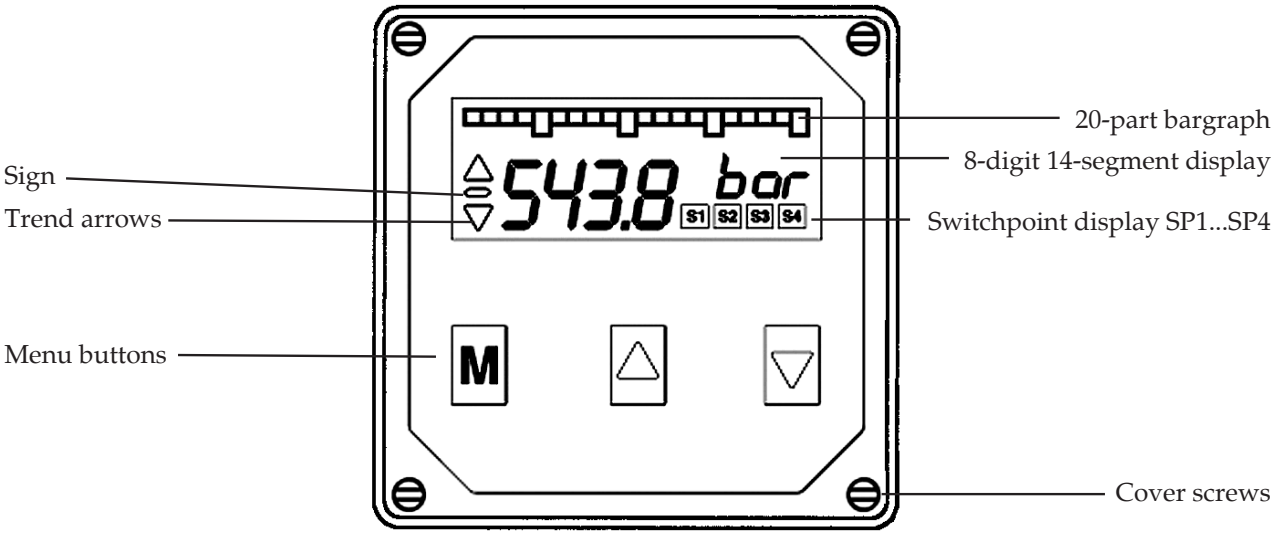
2. Starting operations

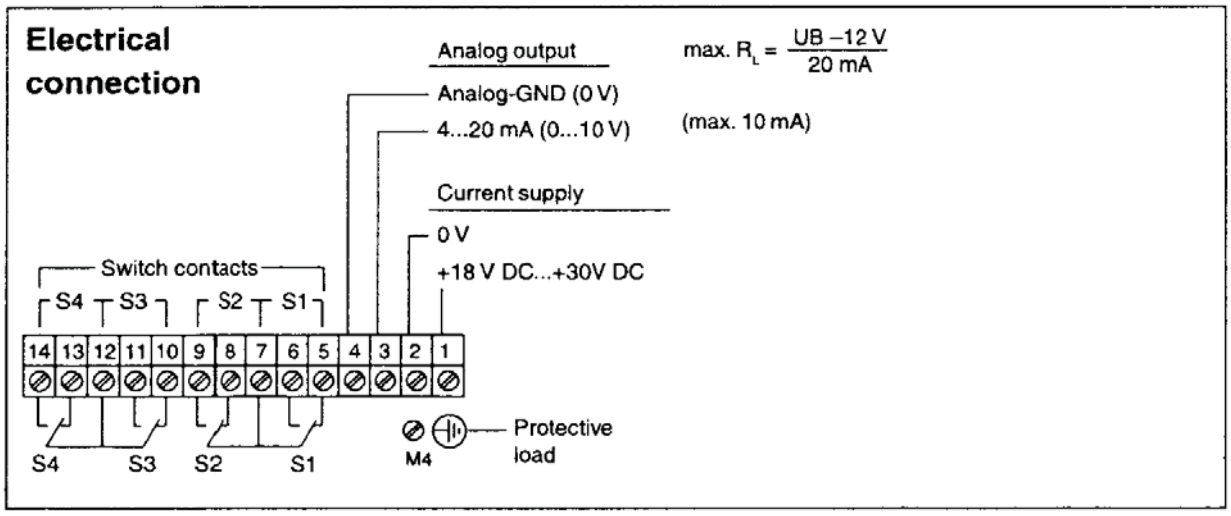
Only assemble or disassemble the device when depressurized!

- The pressure switch should be installed and operated only by authorized personel.
- Front cover and device bottom form a function unit. Exchanging the parts can result in measuring errors or malfunctioning. See serial number inside the front cover. For wall mounting, remove the four front cover screws and the front cover, then fasten the device with four screws to the wall, and finally remount the front cover. To damp strong vibrations shock, mounts must be used.
- Mount the pressure connection (G 1/4 female) of the PSW3000 to the pressure system with a flexible pipe and tighten with a 45 Nm torque. For pressure peaks damping, screws must be used.
- The electrical connection (supply, analog output switching contacts) must be carried out according to the connection tables depicted on the top of the device by removing the cover cap and insert the cable through the cable gland PG 13,5. If required, additional cable glands can be installed in the cover cap by breaking out the perforated cavities.
- The electrical connection must be carried out in accordance with the VDE 0100 regulations. In order to ensure trouble-free operation it is essential to connect the protective lead.

  When operating from 230 V AC loads at the switch contacts independent cables must be installed for supply and switches (cover cap with two cable screw connections).
- If inductive loads (magnets, contactors, etc.) are connected to the switch relays, suitable protective devices (varistors etc.) must be provided.

3. Operating elements





Contact rating	**: max. 120 V DC / 250 V AC**
Switching power	**: max. 120 W / 1250 V AC**
Switching capacitiy	**: 220 V AC / 3 A VDE 0660 T.2**
Constant current	**: max. 5 A**
Switching rate	**: max. 20/s**

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List of functions:

Main Menu	Sub Menu	Value	Description
Measuring mode	....		Display of the actually measured value and the measuring unit
MENU			Display keylock
		UNLK	No keylock, all parameters can be adjusted
		LOCK	Keylock active, all parameters visibal but can not be changed
SP.1 ... SP.4			Switchpoint menu SP1..SP4
	MODE	STND	Standard evaluation (rising/falling)
		WIND	Window technology
		ERRO	Error output
	ON	....	Switch-on value for SP1..SP4; if the ON-value is smaller than the OFF-value, the switch evaluatiuon is falling
	OFF	....	Switch-off value SP1..SP4
	LEV		Inversion of the switching output SP1...SP4
		HLFS	High-level-fail-safe (Normally Open function)
		LLFS	Low-level-fail-save (Normally Closed function)
	DEL	0,0s..9,9 s	Switch-on / switch-off delay for SP1...SP2 in seconds
ANOP			Analog output menu
	ANOP	ON	Analog output in operation
		OFF	Analog output switched off
	AOZS	....	Scale the analog output - start value (e.g. 0 bar=4mA)
	AOFS		Scale the analog output - end value (e.g. 400bar=20mA)
DISP			Display menu
	UNIT	bar	Adjustment of the measuring unit, the recalculation to the new unit value is done automatically
		PSI	
		MPa	
	DAMP	0,0s..9,9 s	Damping of the displayed measuring value in seconds
	OFFS	....	Measuring value -Offset, means shifting the display range
	CUT	....	Cut-Off, means signal-surpression within the cut-off range
	BGZS	....	Scale the bargraph - start value
	BGFS	....	Scale the bargraph - end value
PEAK			Peakholding menu
	MIN	....	Display the peak value **"**Min**"**
	CLRM	NO	no deletion
		YES	delete **"**Min**"** -value
	MAX	....	Display the peak value **"**Max**"**
	CLRX	NO	no deletion
		YES	delete **"**Max**"** -value

4. Operation

After the unit is switched on, the unit starts an automatic self-test.
The device is menu operated and configured by the three keys on the front.
With the **"**M**"** key (= mode) you change between the operation / indicating level to 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 menus.
A change of any configuration starts always with the M-Mode and indicated by the flashing cursor. After a change has been made the M-mode key must be pressed to confirm each configuration; to set numbers, each digit has to be confirmed with the M-Mode before adjusting the next one. By confirming the last digit the new configuration will be stored in the memory.
Pushing the down key at the end of the sub-menu the software will switch automatically to the main-menu.

For a quick termination of programming you can change into the measuring mode from any level in the menu by pressing the M-key for 5 seconds.

If the dialog is not continued within two minutes the device automatically returns to the measuring mode without accepting the new values (see also: **"**List of functions**"**).

5. Key lock

Activating the (**"**⇑**"** = up) and (**"**⇓**"** = down) keys together for more than 5 seconds will block any changings in all menues; shown by **"**LOCK**"** in the display.
In this mode, all configuration values can be checked only, but not changed.

Repeating this action will unlock the configuration menu and shown by **"**UNLK**"** in the display.

6. Error handling

The internal self-check software will monitor the proper functioning of the unit. When any of the following failures will occur, the flashing display will indicate the following text:

Display	**Error**	**Cause**
max	Positive excess of the measuring range	The measured value exceeds the max. of the range
min	Negative excess of the measuring range	The measured value is lower than the min. of the range
anao	Failure of the analog output	Output loop is not closed or short circuited
sens	Sensor failure (internal)	Sensor bridge not in balance, might be been overloade
data	Stored data failure (EEProm) (internal)	Memory failure
prog	Processor failure (internal)	Microcontroller failure
cal	Calibration failure (internal)	Calibration values are wrong

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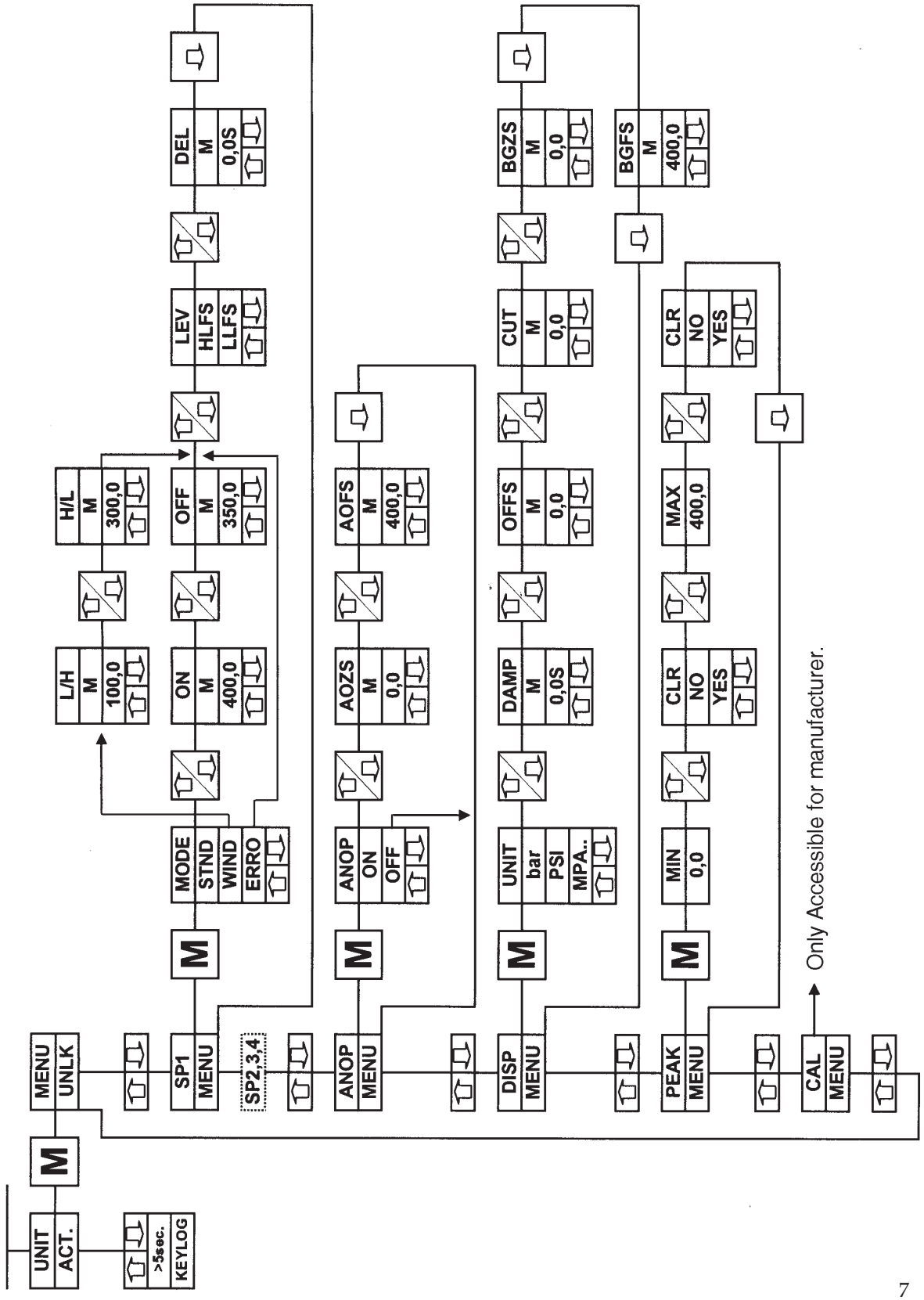

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WARRANTY/DISCLAIMER

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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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:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
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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