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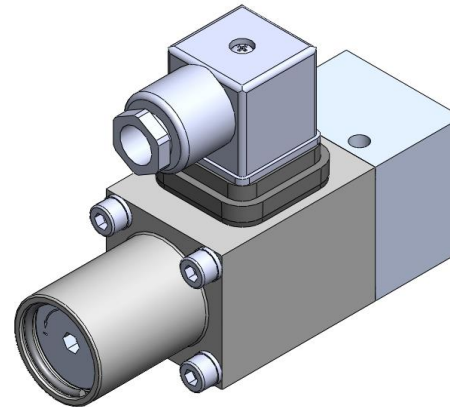
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**.1 YEAR
WARRANTY**



User's Guide

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**Compact Pressure Switches
PSW8 series**

M-5265/0213



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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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It is the policy of OMEGA Engineering, Inc. to comply with all worldwide safety and EMC/EMI regulations that apply. OMEGA is constantly pursuing certification of its products to the European New Approach Directives. OMEGA will add the CE mark to every appropriate device upon certification.

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.

NOTES

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Mechanical Operations

The pressure switches are specifically applied for monitoring and controlling of operations using maximum and minimum pressures. A limit switch triggers an electrical signal when minimum or maximum pressure is reached.


Safety Instructions

The safety instructions are intended to protect the user from dangerous situations and/or material damage.

In the operating instructions the seriousness of a potential risk is designated by the following signal words:

	SAFETY
<p>The pressure switch may be used in the specified fields of application, as long as the pressure, temperature, and electrical limitations shown on the individual catalogue pages are not exceeded</p> <p>Observe also the applicable national safety instructions for assembly, commissioning and operation of the switch.</p> <p>The switch is not designed to be used as the only safety relevant element in pressurized systems according to NEC, ASME, and local regulations .</p>	

	DANGER
<p>Refers to imminent danger to humans.</p> <p>Non-observance may result in fatal injuries.</p>	
	WARNING
<p>Refers to a recognizable danger.</p> <p>Non-observance may result in fatal injuries, and destroy the equipment or plant parts.</p>	

	CAUTION
<p>Refers to a danger.</p> <p>Non-observance may result in light injuries and material damage to the equipment and/or to the plant.</p>	

NOTES

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Ordering code with technical information

OMEGA NUMBER CODING SYSTEM													
PSW8	-	A	A	5	D	B							
						SEAL MATERIAL							
					B	BUNA-N (NBR)							
					V	VITON (FKM)							
					ELECTRICAL CONNECTION								
					D	DIN EN 175301-803 (DIN 43650) SIZE A, 6-8 mm CABLE.							
					M	M12X21 CONNECTOR							
					LIMIT SWITCH								
					1	GOLD CONTACTS							
				5	SILVER CONTACTS								
				PRESSURE RANGE									
				ADJUSTABLE RANGES									
				DECREASING				INCREASING			PROOF PRESSURE		
					PSI		(bar)		PSI		(bar)	PSI	(bar)
				A	5.8 - 82		(0.4-5.7)		8.7-87		(0.6-6.0)	1200	(80)
				B	29-246		(2.0-17)		45-290		(3.1-20)	1200	(80)
				C	43 - 600		(3.0-41)		60-650		(4.1-45)	1200	(80)
				D	43 - 2320		(3.0-160)		75-2610		(5-180)	8700	(600)
E	430 - 4300		(30-300)		750-5000		(50-350)	8700	(600)				
F	800 - 7550		(55-520)		1200-8700		(80-600)	13050	(900)				
							DIAPHRAGM						
							PISTON						
PRESSURE CONNECTION													
A	1/4" NPT FEMALE												
C	1/8" NPT FEMALE												
E	7/16 -20 UNF (SAE-4 O-RING BOSS)												
2	G 1/4" FEMALE												

Example: PSW8-AA5DV : Pressure Switch with ¼ NPT Female, Pressure Range (5.8 - 87 psi range) [0.4-6.0 Bar] with Viton Material and DIN 43650 - electrical connection



IMPORTANT

Refers to important information essential to the user.



Disposal

The equipment must be disposed correctly in accordance with the local regulations for electric/electronic equipment.

The equipment must not be disposed of with the household trash

Standards

The standards applied during development, manufacture and configuration are listed in the CE conformity and manufacturer's declaration.

Transport/Storage



CAUTION

Severe shock and vibrations should be avoided during transport. Storage should be dry and clean.

Installation/Commissioning



DANGER

Only install or uninstall the switch when de-energized (electrically and hydraulically/pneumatically).

Pressure connection and electrical connection must be carried out by trained or instructed personnel in accordance with applicable NEC, ASME and local regulations as applicable.

The switch must only be installed in systems where the maximum operation pressure P_{max} is not exceeded (see the name plate).



WARNING

Pressure peaks and pressure shocks exceeding the maximum operating pressure are inadmissible.

The maximum operating pressure is the upper final value of the operation range or, if specified, the pressure indicated as maximum operating pressure (see Fig. 9 or the nameplate). Exceeding the max. operating pressure may affect the performance and the life span of the product and may cause it to fail prematurely.



IMPORTANT

Check the switch regularly to ensure it functions properly

If the switch does not work properly, stop operation immediately! This switch is non-field repairable.



IMPORTANT

All pressure switches are 100% tested before they leave the factory. Factory proof pressure is stated on the nameplate (see Fig.9, page 8).

Contact Protection

The micro switches used are normally suitable for both direct and alternating current operation. Inductive, capacitive and lamp loads may, however, considerably reduce the life expectancy of a micro switch and, under extreme circumstances, even damage the contacts.

Depending on the application spark suppression and current limiting is recommended (see figures 1 to 4, page 4).

Pressure Ranges

	ADJUSTABLE RANGES		MAXIMUM OPERATING		PROOF		HYSTERESIS
	PSI	(bar)	PSI	(bar)	PSI	(bar)	
A	5.8 - 87	(0.4 - 6)	725	(50)	1200	(80)	15% OF FULL SCALE
B	29 - 290	(2.0 - 20)	725	(50)	1200	(80)	
C	43 - 650	(3.0 - 45)	725	(50)	1200	(80)	
D	43 - 2610	(3.0 - 180)	3600	(250)	8700	(600)	
E	430 - 5000	(30 - 350)	6500	(450)	8700	(600)	
F	800 - 8700	(55 - 600)	8700	(600)	13050	(900)	

Fig. 9: Compact pressure switch PSW8 Series – Pressure Ranges

Electrical Ratings Silver Contacts

SILVER CONTACTS	INDUCTIVE LOAD	RESISTIVE LOAD	GOLD CONTACTS	RESISTIVE LOAD
30 VDC	3.0 A	3.0 A	30 VDC	0.1 A
250 VDC	0.2 A	0.2 A	125 VAC	0.1 A
125 VAC	3.0A	5.0 A	U max = 28 V	I max = 50mA
MINIMAL CAPACITANCE: 160 mA @ 5 VDC			MINIMAL CAPACITANCE: 0.1 mA @ 5 VDC	

Fig. 10: Electrical ratings



IMPORTANT

Using a fuse of the maximum current rating from the table above according to the load switched is recommended.

Operating life time

Normal expected service life (expressed in the number of cycles over the full adjustment range) is approximately 1 million cycles for the pressure switch. This may be extended to 2.5 million cycles maximum if only a part of the adjustment range is used (about 20%).

Switch sensor life may also be effected negatively by:

- Media not compatible with the wetted materials.
- Rapid pressure changes in the system,
 1. In case of diaphragm switches >30 cycles/minute,
 2. In case of piston switches >60 cycles/minute.
- System cycling pressure exceeding the top of the adjustable range.

The proof pressure may not be exceeded; otherwise the switch may be damaged. Careful selection of the pressure range can have a positive effect on the service life of the switch.

Technical Data

See data sheet

Dimensions in inch[mm]

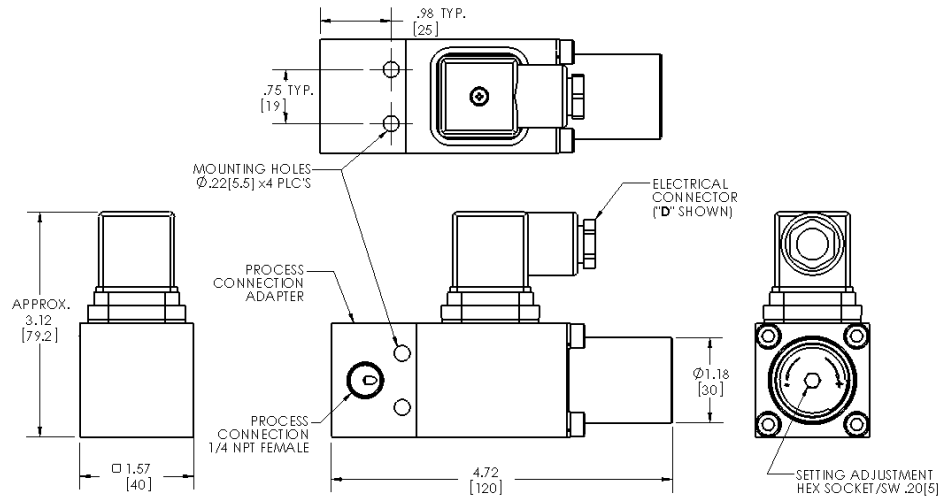


Fig. 7: Compact pressure switch PSW8 Series – D TYPE Electrical Option

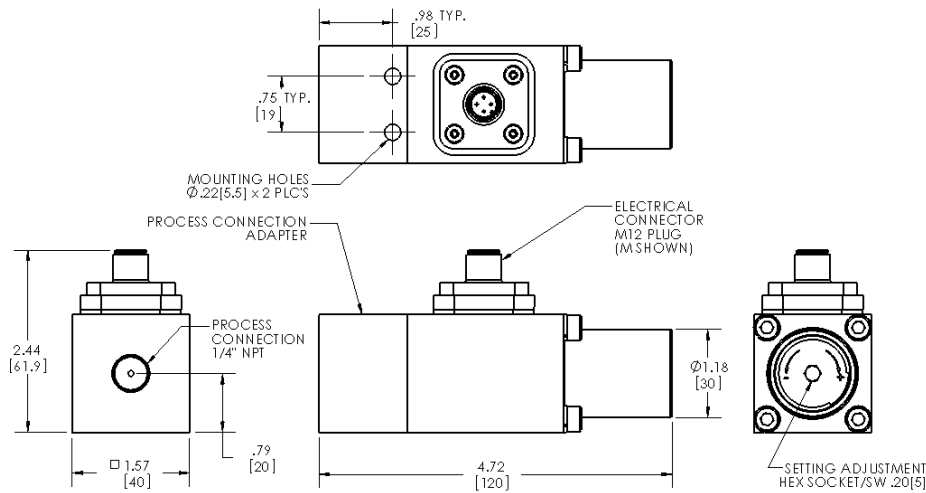


Fig. 8: Compact pressure switch PSW8 Series – M TYPE Electrical Option

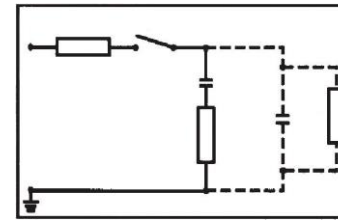


Fig. 1: Protection in case of capacitive loads R1: Protection against starting current rushes R2,R3: Protection against high discharge currents

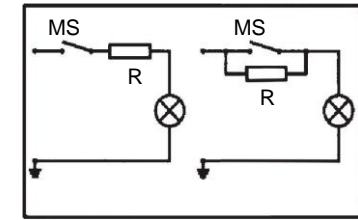


Fig. 2: Lamp load provided with resistance in parallel or series connection to switch of condensators

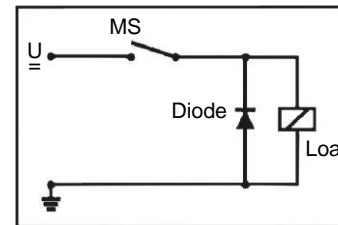


Fig. 3: Protection in case of continuous current and inductive load by recovery diode

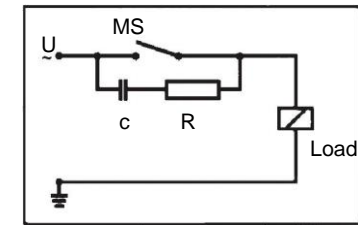


Fig. 4: Protection in case of alternating current and inductive load by RC-link

Set point adjustment

	IMPORTANT
	<p>Factory-Provided: pressure switch point setting For pressure switches that have been factory set the setting will be printed on the nameplate</p> <p>Warranty is not applicable for any changes that may occur due to transportation or installation. For critical applications we recommend the setting is checked and re-set if necessary after installation and wiring of the pressure switch.</p>


In pressure switches, a displacement of the pressure sensing element (piston) occurs with a change in pressure. Following the displacement of the pressure sensing element operates a microswitch.

Upon delivery of the product, the set points are likely to be found in the middle of the adjustable range. On request, factory-set points may be set at our factory. In this event, the set point will be indicated on the nameplate, i = increasing, d = decreasing.

The set point is adjusted by turning the captive adjustment screw (see Fig.7 & 8, page 7)

Allow pressure switch to reach the desired switch pressure.

Turn adjustment screw clockwise or counter-clockwise to activate the micro switch

	IMPORTANT
Please consult the wiring diagram for the contact status at atmospheric pressure.	

Precise adjustment of set point to actuate on increasing pressure

- 1. Cycle unit 5 times up to max. operating range
- 2. Lower system pressure to 0 psi.
- 3. Increase pressure slowly and check if micro switch is actuated at desired switch pressure.
- 4. If necessary, readjust by turning the adjustment screw
- 5. Repeat preceding steps (2. to 4.) until microswitch operates at desired switch pressure.

Precise adjustment of set point to actuate on decreasing pressure

- 6. Increase pressure up to a point clearly above the desired switch pressure (at least, switch pressure plus max. hysteresis; not above max. operating pressure).
- 7. Lower pressure slowly and check if micro switch is actuated at desired switch pressure.
- 8. If necessary, readjust by turning the adjustment screw
- Repeat preceding steps (6. to 8.) until microswitch operates at desired switch pressure.

Electrical connections, Dimensions in inch[mm]

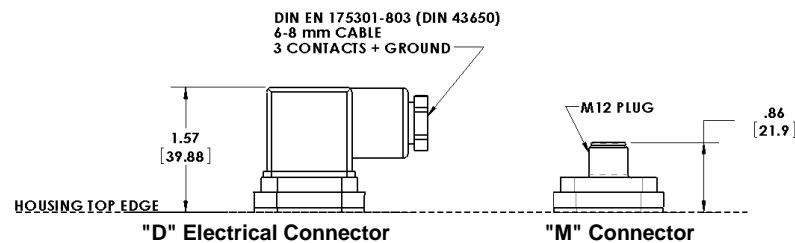
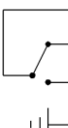


Fig. 5: Standard Mating Connector

Wiring code (contact status at atmospheric pressure)

WIRE COLOR CODE / PIN ASSIGNMENTS			
		"D" CONNECTION	"M" CONNECTION
	C	1	1
	NC	2	2
	NO	3	4
	GROUND	1	3

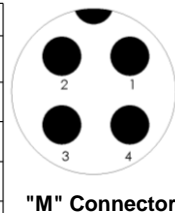


Fig. 6: Pin Call-Outs

Maintenance/Cleaning

The pressure switch is maintenance free. Checking the set points lies within the discretion of the user. The usual preventive maintenance work in accordance with the PED guidelines must always be carried out.

Please note that small set point drifts may occur during the initial use of the switch (run-in period). Larger or continuing set point drifts during the normal use of the switch may indicate that the measuring system is not used correctly within the specified limits, exceeding the design criteria or is worn-out. This might lead to metal fatigue of the measuring system and it therefore should be replaced before an ultimate rupture of the metal might take place. Please consult OMEGA for guidelines.