

GEMS SENSORS & CONTROLS

OPERATING & INSTALLATION INSTRUCTIONS

3600 SERIES

PLEASE READ CAREFULLY BEFORE INSTALLING

Part Number: 560550-0134

Issue: B

INTRODUCTION

Series 3600 Electronic Pressure Switches are available with either high side or low side switching capability. Switch function is achieved with a microcontroller which can be factory or field configured for set / reset pressures and switching delays.

Series 3600 with the CE Mark conform to the essential protection requirements of the EMC Directive 2004/108/EC certified by type testing to EN61326-1 and EN61326-2-3.

Series 3600 with the CE0086 mark also complies with the requirements of the Pressure Equipment Safety Regulations 2016 and can be used as part of a safety-related system on Category IV pressure equipment.

HAZARDOUS PRODUCTS

The Consumer Protection Act of 1987, Section 6 of the Health and Safety at Work Act 1974 and the Control of Substances Hazardous to Health Regulations 1988 require that we advise recipients and users of our products of any potential hazards associated with their storage, handling or use.

The products which our Company supplies may be classified as Electrical, Electro-Mechanical and Electronic equipment.

These products are tested and supplied in accordance with our published specifications or individual special requirements that are agreed in writing at time of order. They are constructed so as not to affect adversely the safety of persons and property when properly installed, maintained and used by qualified personnel, in the applications for which they were designed and manufactured.

Conformity with the requirements of the CE mark only applies when the installation conditions described in these instructions have been met. For units supplied without a cable assembly connection to the transducer must be accomplished using Gems Sensors approved cable. See APPROVED CABLE section.

GENERAL

- Pressure switch should not be subjected to greater than the maximum allowable pressure (P.S.) / Temperature (T.S.) as defined on the transducer label.
- Pressure Switch should not be subjected to mechanical impact.
- In the event of fire the end user must ensure that the system pressure is vented to a safe area.

- The effects of decomposition of unstable fluids should be considered by the user when placing this device in service.
- The pressure switch has no means of draining or venting, this must be performed by another component in the end users system.
- Pressure range must be compatible with the maximum pressure being measured.
- Pressure media must be compatible with the pressure switch wetted parts listed in these instructions.
- Liquid must not be allowed to freeze in the pressure port.
- The gasket must be fitted under the electrical connector.

MECHANICAL INSTALLATION

Mounting: Pressure Switch is designed to be attached by the coupling thread only. Omni-directional, self supported directly into the pipework. The Customer must ensure that the pressure seal is suitable for the application. If in doubt contact Gems Sensors & Controls. Observe the following maximum torques when tightening. Tightening / removal torque must be applied to pressure port hexagon only, with electrical supply disconnected.

PRESSURE PORT THREAD TYPE	MAX TORQUE NM OR TIGHTENING INSTRUCTION
G1/4”A	35
G1/8”A	25
G1/4” A Integral Face Seal	35
M12 HP Metal Washer Seal	35
NPT or NPTF	2 to 3 FFFT (Flats from Finger Tight) 120 to 150 degrees

ELECTRICAL INSTALLATION

All types with the CE Mark include suppression devices providing transient protection to EN 61000-6-2 and EN 55022. Refer to Tables 1 and 2 for electrical connections. Supply voltage is 6 - 40 Volts (<8 mA without load).

RECOMMENDED CABLE

Gems Sensors & Controls uses cables, enclosed by either a braided screen or aluminised polyester screen where the screen is in intimate contact with a separate drain wire. Cable materials must be compatible with the operating temperature.

OPERATION

Having installed the pressure switches as instructed, they are ready for use. The pressure switches should not be removed whilst the system is at pressure. Before applying power, check that the correct polarity and excitation levels are being applied. See Table 1 for electrical connections.

CALIBRATION

Pressure Switches are calibrated to the datum requested at time of order; this can be identified by the tenth letter of the identification code as follows:-

- G:** Gauge datum vented to atmosphere via the electrical connector or cable
- V:** Compound versions extend the pressure range on the low end to -15psiG or -1barG respectively. Compound versions measure Gauge pressure only.

LOAD SWITCHING CHARACTERISTICS

Switch Rating 700mA Low Side Switch, 1000mA High Side Switch.

CAUTION: Suitable protection should be fitted to the switch output for transient or high in-rush current applications. If required contact Gems Sensors & Controls for recommendations.

OPERATIONAL LIFE:

Limited to 100M cycles to maximum allowable pressure.

WARRANTY

We guarantee this instrument against faulty workmanship and material for a period of one year from date of delivery. The Company undertake to repair, free of charge, ex-works any instrument found to be defective within the specified period providing the instrument has been used within the specification in accordance with these instructions and has not been misused in any way.

Detailed notice of such defects and satisfactory proof thereof must be given to the Company immediately after the discovery and the goods are to be returned free of charge to the Company, carefully packed and accompanied by a detailed failure report. See "RETURN TO FACTORY".

WETTED PARTS

17-4 PH stainless steel, 304 stainless steel & Viton (FKM Elsatomer-Standard seal material)

SERVICING

The pressure switch cannot be repaired locally and if damaged should be returned to Gems Sensors & Controls at the address shown below or to accredited dealers when a replacement/repair is required:

Gems Sensors & Controls
Lennox Road
Basingstoke
Hants. RG22 4AW

Gems Sensors Inc
1 Cowles Road
Plainville, CT 06062
U.S.A.

RETURN TO FACTORY

PLEASE NOTE: To comply with Health and Safety requirements, the instrument must be clean and safe to handle and accompanied by a formal statement to that effect duly signed by an authorised officer of the Company.

Any instrument returned without certification will be quarantined and no action will occur until cleared. It may ultimately be returned to you and subject to a transportation charge.

MAINTENANCE

Routine Inspection: Not required except for periodic inspection of the cable and connector to ensure that these are neither damaged nor softened by incompatible liquid.

TABLE 1

	CONNECTOR		
	DIN 9.3mm	M12x1P	Deutsch DT04-4P
	Code B	Code E	Code 8
Vsupply	2	1	2
Ground	4	3	1
Switch Output	3	4	3
Digital Comms	1	2	4



EU DECLARATION OF CONFORMITY



Manufacturer Name: Gems Sensors and Controls
Manufacturer Address: Lennox Road, Basingstoke, Hampshire, RG22 4AW
Product Type: 3600 Series
Industrial Pressure Switches
Full Scale Pressure Range 1 Bar to 2200 Bar
Operating Temperature Range -40°C to +105°C

EMC Directive: 2014/30/EU
Harmonised Standards Used: BS EN 61326-1:2013 BS EN 61326-2-3:2013

RoHS2 Directive 2011/65/EU

This apparatus must not be put into service until the equipment into which it is to be incorporated has been declared in conformity with the provisions of the relevant New Approach Directive

On behalf of Gems Sensors and Controls, I declare that on the date the product(s) listed on this declaration is placed on the market, the product(s) conforms with all technical and regulatory requirements of the above listed directives.

Nick Blomfield (signature)

Nick Blomfield
Site Leader and Director of Finance EMEA

2/10/17 (date)

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