

GEMS SENSORS

OPERATING & INSTALLATION INSTRUCTIONS

SERIES 2400

PLEASE READ CAREFULLY BEFORE INSTALLING

Part Number: 560550-75

Issue: B

Please Note: The 2400 series is designed and manufactured in accordance with sound engineering practice as defined by the Pressure Equipment Directive 97/23/EC. This product must not be used as a “safety accessory” as defined by the Pressure Equipment Directive, Article 1, Paragraph 2.1.3. The CE Mark on the unit does not relate to the Pressure Equipment Directive.

INTRODUCTION

The Series 2400 pressure transducers use high output strain gauges to provide 100mV output for full range pressure, when used with a 10V d.c. power supply.

Series 2400 high output pressure transducers and transmitters are fitted with a hybrid amplifier providing various optional (at time of order) voltage outputs, and a 4-20mA current output capable of being used in control and indicating loops without further amplification.

Series 2400 with the CE Mark conform with the essential protection requirements of the EMC Directive 89/33/EEC amended by certified type testing to EN 50082-2 and EN 50081-1.

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

- * Transducer should not be subjected to greater than the maximum allowable pressure (as defined on the transducer label).
- * Transducer 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 transducer 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 transducer/transmitter wetted parts listed in these instructions.
- * Liquid must not be allowed to freeze in the pressure port.

MECHANICAL INSTALLATION

The pressure transducers and transmitters have been designed for measuring hydrostatic level by suspension from the cable.

For calibration purposes a G $\frac{1}{4}$ AT external pressure port has been provided and is accessible by removal of the nose cone.

ELECTRICAL INSTALLATION

All types include suppression devices providing transient protection to EN 61000-4-2 and EN 61000-4-4. Conformity with the requirements of the CE mark only applies when connection is made with Gems Sensors approved cable, see APPROVED CABLE section, and is connected as shown below:-

Millivolt Output Transducers: Four core screened cable should be used with the cable screen connected to the instrumentation earth. The cable screen should not be connected to the transducer body.

High Output Transducers/Transmitters: The screen of the cable must be earthed at the instrumentation end. If an 'Earth Loop' problem is encountered when the body of the unit is earthed by the pipework it is permissible to remove the cable screen from the instrumentation earth.

APPROVED CABLE

Gems Sensors uses cables comprising 7 colour-coded cores, with a central vent tube, enclosed by an aluminium/polyester screen where the screen is in intimate contact with a separate drain wire. The outer sheath is Polyurethane.

OPERATION

Having installed the transducers as instructed, they are ready for use. Before applying power, check that the correct polarity and excitation levels are being applied. See Table 1 for electrical connections.

CALIBRATION

Transducers are calibrated to the range requested at time of order.

LOAD CHARACTERISTICS (4-20mA Current Output)

The total resistive load in the loop (to include all the cable resistance) can be from 'zero to 50 x (supply volts -8) ohms' e.g. with a 24V d.c. supply the permissible load is from zero up to 800 ohms.

OPERATIONAL LIFE:

Limited to 100M cycles to maximum allowable pressure.

WARRANTY

We guarantee this instrument against faulty workmanship and material for a period of two year s 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

316L stainless steel, polyurethane and acetal.

SERVICING

The transducer cannot be repaired locally and if damaged should be returned to ourselves at the address shown below or to accredited dealers when a replacement/repair is required:

Gems Sensors
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 - ELECTRICAL CONNECTIONS

Type Number	Connector	mV					4-20mA			0-10V			
		In+	Out+	Out-	In-	Earth	In+	In-	Earth	In+	Com	Out+	Earth
2400A	Cable	R	Y	B	W	Drain							
2400B	Cable						R	BL	Drain				
2400S	Cable									R	W	Y	Drain

	Output	Supply Voltage
A	0 to 100mV	10V d.c.
B	4 to 20mA	8 – 28V d.c.
S	0 to 10V	13 to 28V d.c.