

GEMS SENSORS & CONTROLS

OPERATING & INSTALLATION INSTRUCTIONS

INTRINSICALLY SAFE SERIES 22IC / 26IC

PLEASE READ CAREFULLY BEFORE INSTALLING


Part Number: 560550-0099

Issue: C

INTRODUCTION

Series 22IC/26IC high output pressure transducers and transmitters are fitted with an Asic 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.

The types 22IC and 26IC are certified Intrinsically Safe for use in Group II Hazardous Areas, Zones 0, 1 and 2 when used in conjunction with a zener safety barrier or isolation barrier.

Certification is by ATEX Certificate Number BAS01ATEX1125X. This indicates a Safety Classification of  II 1G EEx ia IIC T4 (-20°C <T_a< +75°C).

Input Parameters: $U_i = 28V$ $I_i = 150mA$
 $P_i = 0.84W$ $C_i = 41nF$
 $L_i = 0.86mH$

The transducer is suitable for use in areas exposed to dust, subject to the stipulated conduit connections where applicable.

Conformity with the requirements of the Approval Certificate only applies when the installation conditions described in these instructions have been met.

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

GENERAL

The equipment is designed and manufactured to:

- a) avoid physical injury or other harm which may be caused by direct or indirect contact.
- b) ensure that excess surface temperature of accessible parts or radiation which would cause a danger are not produced.
- c) eliminate non-electrical dangers which are revealed by experience.
- d) ensure that foreseeable conditions of overload will not give rise to dangerous situations.

Provided that:

- * 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.
- * The gasket must be fitted under the electrical connector.

MECHANICAL INSTALLATION

Pressure Connection: Refer to attached Dimensional Outline Drawing.

Mounting: Omni-directional, self supported directly into the pipework. Use a 19mm AF (3/4") spanner on the hexagon provided to apply a maximum torque of 15.8Nm.

ELECTRICAL INSTALLATION

Installation of this type must be carried out in accordance with the Approved Installation conditions for Intrinsically Safe Pressure Transmitters.

SPECIAL CONDITIONS FOR SAFE USE

1. The screen of the integral cable may be connected internally to the frame of the apparatus and this must be taken into consideration when installing the apparatus.
2. Pin 4 of the optional plug/socket arrangement is connected internally to the frame of the apparatus and this must be taken into consideration when installing the apparatus.
3. When the absolute versions of the transmitters (types 22IXXAXXXXXXGXX and 26IXXAXXXXXXGXX) are used, the electrical circuit is not capable of withstanding 500V rms to earth or frame; and this must be taken into consideration when installing the apparatus.

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 datum requested at time of order; this can be identified by the sixth letter of the identification code as follows:-

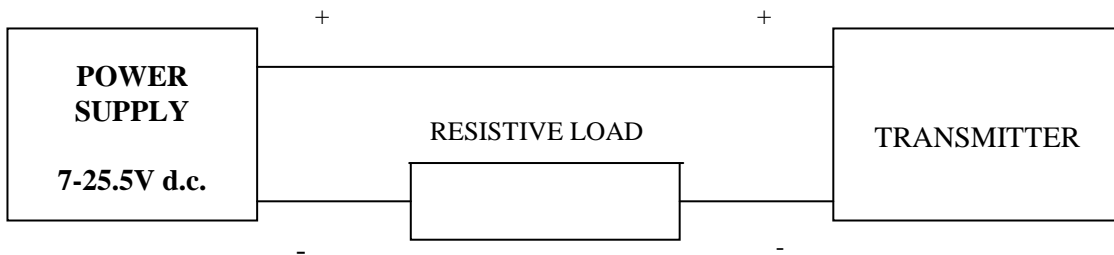
G - Gauge datum vented to atmosphere via the electrical connector or cable

A - Absolute datum sealed (not capable of withstanding 500V rms to earth or frame)

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 -7) ohms' e.g. with a 24V d.c. supply the permissible load is from zero up to 850 ohms.

FIGURE 1



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

316 and 17-4 PH stainless steels plus Nickel Braze to BS1845 : NK3/HTN2.

SERVICING

The transducer is not to be repaired by the user and must be replaced by an equivalent certified unit. Repairs should only be carried out by the manufacturer or an approved repairer.

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

CONNECTIONS 22IC / 26IC SERIES

TYPE NUMBER	CONNECTOR	4-20mA			Voltage			
		In+	In-	Earth	In+	Com	Out+	Earth
22ICX-AB	Mini Din Style with Mating Connector	1	2	4	1	2	3	4
22ICX-BB	Mini Din Style without Mating Connector	1	2	4	1	2	3	4
22ICX-DB	IP65 Cable	R	BL	Drain	R	W	Y	Drain
22ICX-FB	IP67 Cable	R	BL	Drain	R	W	Y	Drain
26ICX-1B	8-4P	A	B	D	A	C	B	D
26ICX-3B	Conduit 1 Metre Cable	R	BL	Drain	R	W	Y	Drain
26ICX-CB	10-6P	A	B	E	A	C	B	E
26ICX-FB	IP67 Cable	R	BL	Drain	R	W	Y	Drain
26ICX-GB	Large Din	1	2	E	1	2	3	E
26ICX-MB	Moulded Immersible	R	BL	Drain	R	W	Y	Drain

OUTPUT	SUPPLY VOLTAGE (V D.C.)
4 - 20mA	7 - 25.5
1 - 6V	7.5 - 25.5
1 - 11V	12.5 - 25.5
0.1 - 5.1V	6.6 - 25.5
0.2 - 10.2V	11.7 - 25.5
1 - 5V	6.5 - 25.5
0.5 - 5.5V	7.0 - 25.5
0 - 5V	6.5 - 25.5
0 - 10V	11.5 - 25.5

EC DECLARATION OF CONFORMITY

Manufacturers Name: Gems Sensors & Controls
Manufacturers Address: Lennox Road, Basingstoke, Hants, RG22 4AW
Product Type: 22IC
Description: Intrinsically Safe Industrial Pressure Transducers & Transmitters
Date of Issue: 7th April 2008

Gems Sensors & Controls hereby declares that the product above conforms with the essential protection requirements of the following EC Directives:

PED: *Equipment marked CE0086 complies with the requirements of the Pressure Equipment Directive 97/23/EC and is classed as a safety accessory and can be used as a safety-related device on Category IV pressure equipment. Conformity assessment procedure followed is to Modules B+D. Module B EC Type examination certificate number CE72108 issued by BSI 0086 Mayland Avenue, Hemel Hempstead, Herts, HP2 4SQ, England. The notified body monitoring the quality assurance system is BSI 0086 Mayland Avenue, Hemel Hempstead, Herts, HP2 4SQ, England. The Technical Specifications used are Gems Sensors Design Standards.*

EMC: *89/336/EEC amended by 93/68/EEC by compliance to EN 50082-2, EN 50081-1 and EN 50081-2*

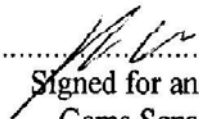
SAFETY: *"For the equipment within which this component is installed to comply with the Low Voltage Directive (73/23/EEC), this product must be powered from a Safety Extra Low Voltage (SELV) source of 42V peak maximum.*

When the power source is derived from a transformer this must conform to EN 60742 or equivalent, with intrinsic short circuit protection. The power source to this component must also incorporate suitable over-current protection related to the current rating of this component"

ATEX: *Equipment marked with the certificate number BAS01ATEX1125X and also marked EEx ia IIC T4 & (Ex) II 1G complies with the requirements of the EU Directive 94/9/EC Equipment intended for use in Potentially Explosive Atmospheres (ATEX)
The letter X after the certificate number denotes that the equipment is subject to special conditions for safe use as specified in the operating instructions.*

Notified Body No. 1180
Baseefa (2001) Ltd
Rockhead Business Park
Staden Lane
Buxton, Derbyshire, SK17 9RZ

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.

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Signed for and on behalf of
Gems Sensors & Controls
Bryan O'Flaherty Wills
Director of Product Development
England

563724 Issue A

EC DECLARATION OF CONFORMITY

Manufacturers Name: Gems Sensors & Controls
Manufacturers Address: Lennox Road, Basingstoke, Hants, RG22 4AW
Product Type: 26IC
Description: Intrinsically Safe Industrial Pressure Transducers & Transmitters
Date of Issue: 7th April 2008

Gems Sensors & Controls hereby declares that the product above conforms with the essential protection requirements of the following EC Directives:

PED: *Equipment marked CE0086 complies with the requirements of the Pressure Equipment Directive 97/23/EC and is classed as a safety accessory and can be used as a safety-related device on Category IV pressure equipment. Conformity assessment procedure followed is to Modules B+D. Module B EC Type examination certificate number CE72108 issued by BSI 0086 Mayland Avenue, Hemel Hempstead, Herts, HP2 4SQ, England. The notified body monitoring the quality assurance system is BSI 0086 Mayland Avenue, Hemel Hempstead, Herts, HP2 4SQ, England. The Technical Specifications used are Gems Sensors Design Standards.*

EMC: *89/336/EEC amended by 93/68/EEC by compliance to EN 50082-2, EN 50081-1 and EN 50081-2*

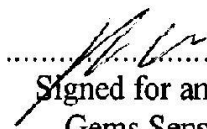
SAFETY: *"For the equipment within which this component is installed to comply with the Low Voltage Directive (73/23/EEC), this product must be powered from a Safety Extra Low Voltage (SELV) source of 42V peak maximum.*

When the power source is derived from a transformer this must conform to EN 60742 or equivalent, with intrinsic short circuit protection. The power source to this component must also incorporate suitable over-current protection related to the current rating of this component"

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Bryan O'Flaherty Wills
Director of Product Development
England

563725 Issue A