

Installation Guide

MODELS 512 / 516

High Output Pressure Transducers

setra



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Please Note: Series 512 / 516 are 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

Series 512 / 516 high output pressure transducers and transmitters are fitted with an ASIC 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 512 / 516 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 Setra Systems approved cable. See APPROVED CABLE section.

GENERAL

- * Transducer should not be subjected to greater than the maximum allowable pressure listed on label and the following operating temperature specifications:

Compensated Temperature Range: -5°F to +180°F (-20°C to +80°C)

Operating Temperature Range:

Electrical Connection Codes A, B, C, 1 -40°F to +260°F (-40°C to +125°C)

Electrical Connection Codes 2, D, G, 3 -5°F to +180°F (-20°C to +80°C)

Electrical Connection Code F -5°F to +125°F (-20°C to +50°C)

- * 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 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 Transducer is designed to be attached by the coupling thread only. Omni-directional, self supported directly into the pipework. Use a 19mm AF (3/4") wrench on the hexagon provided to apply a maximum torque of 11.5 lb.ft. The Customer must ensure that the pressure seal is suitable for the application. If in doubt contact Setra Systems.

ELECTRICAL INSTALLATION

All types with the CE Mark 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 Setra Systems approved cable, see APPROVED CABLE section, and is connected with the shield of the cable grounded at the instrumentation end. If an 'Ground Loop' problem is encountered when the body of the unit is grounded by the piping it is permissible to remove the cable shield from the instrumentation ground.

APPROVED CABLE

Setra Systems uses cables comprising 2, 3 or 4 color-coded wires, enclosed by an aluminised polyester shield which is in contact with a separate drain wire. The outer shield is chrome PVC and overall diameter is approximately 0.15 in (4 mm).

OPERATION

Having installed the transducer as instructed, it is ready for use. The transducer should not be removed while 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

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

C – Compound datum

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.

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 years 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 steel plus Nickel Braze to BS1845 : NK3/HTN2.

SERVICING

The transducer cannot be repaired locally and if damaged should be returned to Setra Systems with the following:

1. Name and phone number of person to contact
2. Shipping and billing information
3. Full description of malfunction
4. Remove any pressure fittings and plumbing that you may have installed and enclose any required mating electrical connectors and wiring diagrams.

Please ship prepaid the Setra Systems at the address shown below or to your local Setra Distributor when a replacement/repair is required:

United States
Setra Systems Inc
159 Swanson Road
Boxborough, MA 01719
Attn: Repair Department

Outside The United States
Contact your local Setra Distributor

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	CE	CONNECTOR	4-20mA			VOLTAGE			
			IN+	IN-	EARTH	IN+	COM	OUT+	EARTH
512X-E1	Yes	4 Pin Mini DIN	1	2	E	1	2	3	E
512X-NA	Yes	IP67 Weatherproof Cable Gland	R	BK	DRAIN	R	BK	W	DRAIN
512X-N1	Yes	IP65 Cable	R	BK	DRAIN	R	BK	W	DRAIN
516X-B1	Yes	8-4 Bayonet Connector	A	B	D	A	C	B	D
516X-B3	Yes	10-6 Bayonet Connector	A	B	E	A	C	B	E
516X-E2	Yes	Large DIN 436 Connector with Mating Connector	1	2	E	1	2	3	E
516X-E2	Yes	½" Connector with 1 meter lead	R	BK	DRAIN	R	BK	W	DRAIN

OUTPUT	SUPPLY VOLTAGE
11 4 to 20mA	7 to 35V d.c
28 1 to 6V	7.5 to 35V d.c
2R 1 to 11V	12.5 to 35V d.c
27 1 to 5V	6.5 to 35V d.c
24 0.5 to 5.5V	7 to 35V d.c.
2B 0 to 5V	6.5 to 35V d.c.
G 0 to 10V	11.5 to 35V d.c.