

1 EC TYPE EXAMINATION CERTIFICATE

2 Equipment or protective system intended for use in potentially explosive atmospheres –
Directive 94/9/EC – Annex III

3 EC Type Examination Certificate No.: **TRAC12ATEX0060X (incorporating variation V1)**

4 Equipment: **Pressure Transmitters, GS4200, HI2000, HI2010, HP1003, HP1103, PR3100, PR3110, PR3200, PR3202, PR3400, PR3420, PR3440, PR3441, PR3800, PR3820, PR3840, PR3850, PR3860, PR3880, PR3900, PR3930, PR3940, PR3913, PR3920, PR9000 and PR9000DP**

5 Manufacturer: **ESI Technology Limited**

6 Address: **Sensor House, Wrexham Technology Park, Wrexham, LL13 7YP, United Kingdom**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Element Materials Technology, Notified Body number 0891 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or protective system intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **TRA-007518-33-00A & TRA-029446-33-00A**.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in section 17 of the schedule to this certificate, has been assured by compliance with:

EN 60079-0:2012

EN 60079-11:2012

EN 60079-26:2007

EN 50303:2000

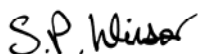
10 If the sign “X” is placed after the certificate number then this indicates that the equipment or protective system is subject to special conditions of safe use specified in the schedule to this certificate.

11 This EC-Type Examination certificate relates only to the design and construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of this equipment or protective system shall include the following:

 **II 1 G Ex ia IIC T4 Ga**
II 1 D Ex ia IIIC T135°C Da
I M 1 Ex ia I Ma

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the Element Materials Technology Ex Certification Scheme.



S P Winsor, Certification Manager

Issue date: 2016-01-04

13 **SCHEDULE TO EC TYPE EXAMINATION CERTIFICATE**

14 **TRAC12ATEX0060X (incorporating variation V1)**

15 **General description of equipment or protective system included within the scope of this certificate**

The Pressure Transmitters are used to monitor oil, gas, water and other liquids in the process, medical, oil and gas industries and aerospace industries. They are modular in construction and either utilise similar electronic circuitry, which is coupled to either a strain gauge that is bridge mounted on a ceramic or steel pressure diaphragm, or use silicon-on-sapphire sensor technology. Pressure measurement is electronically converted into a 4-20mA output signal. Electrical connection is achieved via a polarised three-pin connection, a cable entry device or by the use of potting to form a captive cable. Both the body and pressure port of the transducer are manufactured from mild steel, stainless steel or aluminium (in some cases the pressure port is manufactured from titanium).

A list of controlled Manufacturer's Documents is given in Appendix A to this schedule.

Table of entity parameters					
Parameters	HI2000 & HI2010	PR3110, PR3400, PR3420, PR3440, PR3441, PR3800, PR3820, PR3840, PR3850, PR3860 & PR3880	PR3202 & PR9000	PR9000DP	GS4200, HP1003, HP1103, PR3100, PR3200, PR3900, PR3913, PR3920, PR3930 & PR3940
Ui	28V	28V	28V	28V	28V
Ii	119mA	119mA	119mA	119mA	119mA
Pi	0.65W	0.65W	0.65W	0.65W	0.65W
Li	0.1µH	0.1µH	0.1µH	0.1µH	0.1µH
Ci	0	62nF	66nF	68nF	74nF
Max. cable length	50m	105m	85m	75m	45m

16 **Test report No. (associated with this certificate issue):** TRA-029446-33-00A

17 **Essential health and safety requirements (Directive Annex II)**

Covered by application of the standards listed in section 9 of this certificate and the assessment conducted in the test report listed in section 16 of this certificate.

18 **“Special Conditions of Safe Use” for Ex Equipment, if any:**

1. The power source feeding the apparatus shall be an ATEX/IECEx approved barrier only.
2. The PR3200 and PR3202 Pressure Transmitters that have powder coated aluminium enclosures shall only be situated in the hazardous areas where impact and friction sparks are avoided; in addition they shall be regularly inspected to ensure the coating is not damaged.
3. When plastic materials are used in the outer construction of the enclosure, these apparatus shall be cleaned only with a damp cloth.
4. For the maximum cable lengths stated the cable capacitance shall not exceed 200pF/m otherwise the overall capacitance of Ci plus the cable capacitance shall not exceed 83nF.
5. The pressure Transmitters have been ATEX and IECEx certified for an ambient temperature range, $T_{amb} = -20^{\circ}\text{C}$ to $+70^{\circ}\text{C}$.

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19 “Routine tests”, if any:

1. The manufacturer shall ensure compliance of each manufactured unit with cl. 6.3.13 in IEC60079-11:2011 by applying a voltage of 500Vrms between the intrinsically safe circuit and the enclosure. The test voltage shall be increased steadily to the specified value in a period of not more than 10 seconds and maintained at this level for at least 60 seconds. During this period no insulation breakdown or current in excess of 5mA shall be observed.

20 “Special conditions for manufacture”, if any:

None.

21 Other information, if any:

None.

22 Photographs

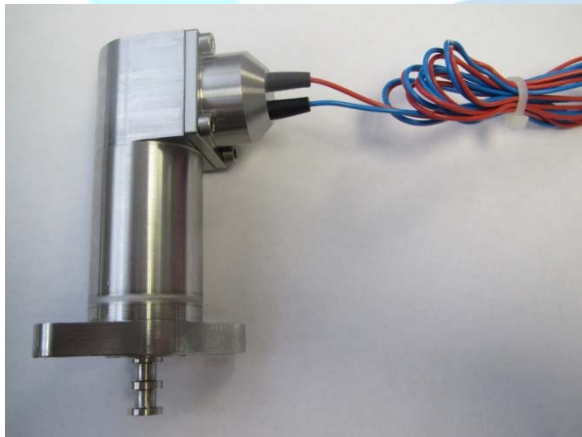


Fig 1. PR3913

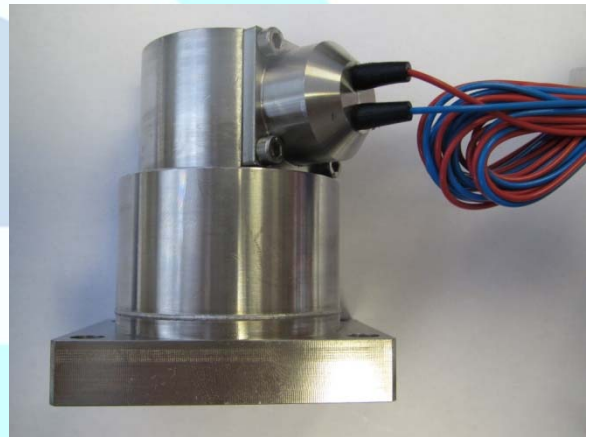


Fig 2. PR3920



Fig 3. GS4200



Fig 4. From left to right – HI2000, HI2010, PR3100

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Fig 5. PR3200

Fig 6. PR3202



Fig 7. PR3400, PR3440

Fig 8. PR3441, PR3800






Fig 9. PR3900

Fig 10. PR9000

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC12ATEX0060X V1

23 Details of markings

<p>ESI Technology Ltd Wrexham, LL13 7YP, UK</p> <p>Ex II 1 GD Ex ia IIC T4 Ga Ex ia IIIC T135°C Da IM 1 Ex ia I Ma</p> <p>TRaC Certificate No. TRAC12ATEX0060X V1 IECExTRC12.0025X Issue 01</p> <p>WARNING: POTENTIAL ELECTROSTATIC CHARGING HAZARD DUE TO PROPAGATING BRUSH DISCHARGE- SEE INSTRUCTIONS</p>   	<p>Model</p> <p>pressure range</p> <p>thread option</p> <p>Serial No. : Part No. : [][]EX [][][][][]-[][][][] Range : Output : Ui=28V Ii=119mA Ci=* Li=0.1uH Pi=0.65W</p> <p>connector/cable option, length</p>
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Notes:

- 1) * See table 1 opposite.
- 2) For the maximum cable lengths stated the cable capacitance shall not exceed 200pF/m otherwise the overall capacitance of Ci plus the cable capacitance shall not exceed 83nF.
- 3) Arrangement of details can be altered to suit different housing types provided the content of the marking remains unchanged.
- 4) Year of manufacture shall precede the serial number.
- 5) When the product cannot be engraved directly the product marking will be engraved on stainless steel plates which will be permanently fixed to the housing.
- 6) For CE mark xxxx refers to "relevant QAN notified body"

Table 1

"Ci"	Model	Maximum Cable Length
0	HI2000, HI2010	50m
62nF	PR3110, PR3400, PR3420, PR3440, PR3441, PR3800, PR3820, PR3840, PR3850, PR3860, PR3880	105m
66nF	PR3202, PR9000,	85m
68nF	PR9000DP	75m
74nF	GS4200, HP1003, HP1103, PR3100, PR3200, PR3900, PR3913, PR3920, PR3930, PR3940	45m

24 **Details of variations to this certificate**

This certificate is a consolidated certificate and reflects the latest status of the certification, including the following variations:

- Variation V1 – Addition of a diode, change to a resistor value, change to the range of pressure sensors which can be used in this equipment, addition of a new model HP1103 and a typographical correction to one drawing.

25 **Notes to CE marking**

In respect of CE Marking, Element Materials Technology accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

26 **Notes to this certificate**

Element Materials Technology certification reference: **TRA-029446-32-00**.

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.

Notified Body 0891 is the designation for Element Materials Technology Warwick Ltd (formerly known as TRaC Global Ltd).

This certificate is a consolidated certificate and reflects the latest status of the certification, including all variations.

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC12ATEX0060X V1

APPENDIX A - LIST OF CONTROLLED MANUFACTURER'S DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
ATEX PRODUCT MARKING	8727	05	2015-11-19
PR3100 CERAMIC DIAPHRAGM PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8840	02	2012-07-02
PRESSURE TRANSMITTER ELECTRICAL CONNECTOR	8842	03	2012-05-16
PRESSURE TRANSMITTER INTERNAL WIRING	8843	02	2012-07-02
CERAMIC PRESSURE SENSOR ASSEMBLY	8844	02	2012-06-29
PR420 CIRCUIT BOARD / ELECTRONICS (3 sheets)	8845	03	2012-06-05
PR3800 PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8852	03	2012-05-02
PR3800 PRESSURE TRANSMITTER – HOUSING DETAIL	8853	03	2012-07-02
PR9000 PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8854	02	2012-05-01
PR9000 PRESSURE TRANSMITTER HOUSING DETAIL	8855	02	2012-07-02
PR420/9000 CIRCUIT BOARD / ELECTRONICS (3 sheets)	8856	03	2012-07-02
PR9000 PRESSURE TRANSMITTER ELECTRICAL CONNECTION	8857	02	2012-05-16
GS4200 PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8859	02	2012-07-02
GS420 CIRCUIT BOARD & ELECTRONICS (3 sheets)	8861	04	2015-11-19
SOS PRESSURE SENSOR DETAIL	8862	02	2012-05-16
GS4200 & PR3100 PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8863	03	2015-11-19
PR3441 PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8866	02	2012-05-31
PR3441 HOUSING DETAIL	8867	02	2012-05-15
BH420 PRINTED CIRCUIT BOARD & ELECTRONICS (3 sheets)	8868	04	2015-11-19
ISOLATED STAINLESS STEEL SENSOR ASSY – 19MM	8869	02	2012-03-30
POLYURATHANE VENTED CABLE	8870	02	2012-07-05
PR3400 SUBMERSIBLE PRESSURE TRANSMITTER – INTRINSICALLY SAFE	8873	02	2012-05-31
PR3400 PRESSURE TRANSMITTER – HOUSING DETAIL	8874	02	2012-05-15
4 CORE SCREENED CABLE	8876	02	2012-05-17
PR 3440 PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8878	02	2012-05-31
PR3440 HOUSING DETAIL	8879	02	2012-05-15

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HP1003 & HP1103 HIGH PRESSURE TRANSMITTER – INTRINCALLY SAFE (ATEX)	8880	03	2015-11-19
HI2010 PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8882	02	2012-05-08
HI2010 PRESSURE TRANSMITTER – HOUSING DETAIL	8883	02	2012-05-15
6 PIN BAYONET CONNECTOR SHELL SIZE 10	8884	02	2012-05-16
HI2000 PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8885	02	2012-05-08
HI2000 HOUSING DETAIL	8886	03	2012-08-20
6 CORE PTFE SHEATHED CABLE	8887	02	2012-05-16
PR3200 DIFFERENTIAL PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8888	02	2012-07-02
PR3200 DIFFERENTIAL PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8889	02	2012-09-27
PR3202 DIFFERENTIAL PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8892	02	2012-05-31
PR3202 HOUSING DETAIL	8893	02	2012-09-29
PR3202 PRESSURE SENSOR	8894	02	2012-05-18
DPL420 CIRCUIT BOARD & ELECTRONICS (3 sheets)	8895	04	2015-11-19
PR3913 SERIES PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8898	03	2012-06-01
SINGLE CORE ETFE INSULATED WIRE	8899	02	2012-05-16
PR3913 HOUSING DETAIL	8900	02	2012-07-02
PR3920 DIFFERENTIAL PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8901	02	2012-06-01
PR3920 HOUSING DETAIL	8902	02	2012-07-02
M10 SOS SENSOR DETAIL	8904	02	2012-05-16
VL420 CIRCUIT BOARD & ELECTRONICS (3 sheets)	8931	03	2012-05-23
PR3900 SERIES, HIGH PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	8997	02	2012-05-17
PR3110 ISOLATED DIAPHRAGM PRESSURE TRANSMITTER – INTRINSICALLY SAFE [ATEX]	8998	02	2012-07-02
PR3900 PRESSURE TRANSMITTER HOUSING DETAIL	9001	02	2012-09-27
DP CONNECTION BOARD	9406	01	2012-07-04
PR9000-DP DIFFERENTIAL PRESSURE TRANSMITTER – INTRINSICALLY SAFE (ATEX)	9411	01	2012-07-02
PR9000-DP DIFFERENTIAL PRESSURE TRANSMITTER HOUSING	9412	01	2012-07-02
PRESSURE TRANSMITTER HOUSING, HP1003, GS4200, PR3100, PR3110	9415	01	2012-09-27
ATEX/IECEX PRODUCT INSTRUCTIONS	*	01	2012-11-27

* no information provided