



EC-TYPE EXAMINATION CERTIFICATE

**Equipment or Protective System Intended for use
in Potentially Explosive Atmospheres
Directive 94/9/EC**

EC-Type Examination Certificate Number : **BAS02ATEX1174X**

Equipment or Protective System: **DPI 61X IS SERIES PRESSURE CALIBRATOR**

Manufacturer: **DRUCK LIMITED**

Address: **Groby, Leicestershire, LE6 0FH**

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

The Electrical Equipment Certification Service, notified body number 600 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential Report N°

02(C)0340 dated 12 June 2002

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + Amds 1 & 2 EN 50020: 1994 EN 50284: 1999

except in respect of those requirements listed at item 18 of the Schedule.

If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

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

Ex II 1 G EEx ia IIC T4

This certificate may only be reproduced in its entirety and without any change, schedule included.

File No: EECS 0312/02/043

This certificate is granted subject to the general conditions of the Electrical Equipment Certification Service. It does not necessarily indicate that the apparatus may be used in particular industries or circumstances.



Electrical Equipment Certification Service
Health and Safety Executive
Harpur Hill, Buxton, Derbyshire, SK17 9JN, United Kingdom
Tel: +44(0)1298 28000 Fax: +44(0)1298 28244
internet: www.baseefa.com e-mail: baseefa.info.eecs@hsl.gov.uk



I M CLEARE
DIRECTOR
2 July 2002



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Description of Equipment or Protective System

The **DPI 61X IS Series Pressure Calibrator** is a battery powered transportable instrument designed to measure pressure, voltage, current, switch status (open/closed) and ambient temperature, and display the data.

The DPI 61X IS Series Pressure Calibrator may be supplied with an internal pressure transducer fitted or a provision is made for an external pressure transducer to be fitted supplied with a cable assembly of 10 metres maximum length.

Provision is also made for the data to be transferred in the non-hazardous area via RS232 interface.

The Pressure Calibrator consists of two printed circuit boards one of which is partially encapsulated, batteries, optional internal pressure transducer and pneumatic components all housed within a two part moulded plastic enclosure.

The enclosure provides a Degree of Protection IP20.

The DPI 61X Series Pressure Calibrator is powered by six alkaline C size batteries IEC Type LR14. Access to the batteries is via a removable battery cover plate which is secured by two tamperproof screws.

The battery types which may be used are as follows:

- Duracell Type MN1400-LR14
- Procell Industrial Type MN1400-LR14
- Energizer Type E93.LR14.C.AM2
- Energizer Industrial Type EN93
- Varta No 4014 Type LR14.C.AM2

The above batteries must only be changed in the non-hazardous area.

The pressure calibrator also contains two series connected lithium coin cells for memory back-up. These cells are directly soldered to the main printed circuit board and may be one of the following types:

- Duracell Type DL2430
- Varta Type CR2430
- FDK Type CR2430

Intrinsic safety is assured by limitation of voltage, current, power, limitation of capacitance, limitation and suppression of inductance and infallible segregation.



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The maximum output parameters at the external measurement connectors are:

IIN (SK1)

$U_o = 1.1V$ d.c.
 $I_o = 0.16$ mA d.c.
 $P_o = 0.15$ mW

$C_i = 0.05\mu F$
 $L_i = 0$

VIN (SK2)

$U_o = 1.1V$ d.c.
 $I_o = 0.11$ μA d.c.
 $P_o = 0.03\mu W$

$C_i = 0$
 $L_i = 0$

SWITCHIN (SK3)

$U_o = 1.1V$ d.c.
 $I_o = 12$ mA d.c.
 $P_o = 11$ mW

$C_i = 0.05\mu F$
 $L_i = 0$

IOUT (SK6)

$U_o = 7.9V$ d.c.

$C_i = 0$
 $L_i = 0.1$ mH

RS232

$U_o = 7.6V$ d.c.
 $I_o = 82$ mA d.c.
 $P_o = 162$ mW

$C_i = 0$
 $L_i = 0$

$U_m = 250V$



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External Transducer

$$U_o = 7.9V \text{ d.c.}$$

$$I_o = 155 \text{ mA d.c.}$$

$$P_o = 0.43W$$

$$C_i = 0.15\mu F$$

$$L_i = 0.9 \text{ mH}$$

$$C_o = 8.6\mu F$$

$$L_o = 0.3 \text{ mH}$$

The output parameters at sockets SK1, SK2 and SK3 do not exceed the values specified in Clause 5.4, Simple Apparatus, of EN 50020.

The maximum safe input parameters are:

Sockets SK1, SK2, SK3 and SK6:

$$U_i = 30V$$

$$I_i = 100 \text{ mA}$$

$$P_i = 1.0W$$

VARIATION 0.1

To permit an increase in the maximum ambient temperature from +40°C to +50°C by restricting the batteries to the Varta No 4014 Type LR14.C.AM2.

The revised code is EEx ia IIC T4 (-20°C ≤ T_a ≤ +50°C).

VARIATION 0.2

To permit the DPI 61X IS Series Pressure Calibrator to be alternatively known as a P330 Pressure Calibrator, a DPI 61X IS Series Pressure Validator or a P330 Pressure Validator.

16 Report No

02(C)0340

17 Special Conditions For Safe Use

1. The DPI 61X IS Series Pressure Calibrator is not capable of withstanding the 500V r.m.s. electric strength test between the external connectors and frame of the apparatus as required by Clause 6.4.12 of EN 50020 and this must be taken into account when using the apparatus for input measurements in a system.



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2. The outer enclosure may contain light metals in the form of aluminium, magnesium, titanium or zirconium. Therefore, the apparatus must be installed in such a manner as to prevent the possibility of it being subjected to impacts or friction.

18 **Essential Health and Safety Requirements**

ESSENTIAL HEALTH & SAFETY REQUIREMENTS not covered by standards listed in Section 9		
Clause	Subject	Compliance
1.1.3	Changes in characteristics of materials and combinations thereof	Report No 02(C)0340 Clause 5.1.1.3
1.2.2	Components for incorporation or replacement	Report No 02(C)0340 Clause 5.1.2.2
1.2.4	Dust deposits	Report No 02(C)0340 Clause 5.1.2.4
1.2.5	Additional means of protection	Report No 02(C)0340 Clause 5.1.2.5
1.4.2	Withstanding attack by aggressive substances	Report No 02(C)0340 Clause 5.1.4.2

19 **DRAWINGS**

Number	Issue	Date	Description
E-A3-2333, Sheets 1 & 2	2	12.1.99	General Assembly
E-A3-2345, Sheets 1 to 4	2	11.1.99	Transducer Details
E-A3-2329	4	11.6.02	Label Details
E-A2-2459, Sheets 1 to 5	2	11.1.99	Schematic - Main Board
E-A1-2455, Sheets 1 & 2	2	13.1.99	PCB Assembly - Main Board
E-A1-2457, Sheets 1 & 2	2	12.11.98	PCB Artwork - Main Board
E-A2-2458	3	27/05/99	Circuit Diagram, Switch Board
E-A2-2454	3	26.05.99	PCB Assembly, Switch Board
E-A2-2456 Sheet 1 of 3	3	26.05.99	PCB Drilling Details, Switch Board
E-A2-2456 Sheet 2 of 3	3	26.05.99	PCB Artwork Details, Switch Board
E-A2-2456 Sheet 3 of 3	3	26.05.99	PCB Legend Details, Switch Board

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BASEEFA List Keywords
2PRESMEA

ATEX CERTIFICATE NO: BAS02ATEX1174X

Product: Pressure Calibrator DPI61X IS
Section 2 Instruments
Issue Date: 10.07.02

Quality Assurance Method: Internal Production & Q.A Procedures. (EECS ATEX 0312)
Converted from Ex 99E2002X

Notes: TYPE EXAMINATION CERTIFICATE							
Amendment Description	Certificate No #	Date	Approval Report No	Schedule Drawing	Shts	Issue No.	Status
New Certificate	BAS02ATEX1174X	02.07.02	02(C)0340	E-A3-2333	1 & 2	2	
				E-A3-2345	1-4	2	
				E-A3-2329	1	4	
				E-A2-2459	1-5	2	
				E-A1-2455	1 & 2	2	
				E-A1-2457	1 & 2	2	
				E-A2-2458	1	3	
				E-A2-2454	1	3	
				E-A2-2456	1-3	3	

Checked.....*Mall*..... I.S. Eng Approved.....*H. Deof*.....
OBS = Obsolete Documents