

[1] EC-TYPE EXAMINATION CERTIFICATE

**[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC**

- [3] EC-Type Examination Certificate Number:** Nemko 03ATEX133X
- [4] Equipment or Protective System:** Pressure Transmitters
- [5] Manufacturer and applicant:** Smar Equipamentos Industriais Ltda
[6] Address: Av. Antonio Furlan Jr., 1028
Sertazinho SP-14160.000
Brazil
- [7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.**
- [8] Nemko AS, notified body number 0470 in accordance with Article 9 of 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 no. 200138188
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:**
CENELEC EN 50014: 1997 + A1: 1999 + A2: 1999
CENELEC EN 50020: 2002
CENELEC EN 50284: 1999
CENELEC EN 50281-1-1: 1998
- [10] 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.**
- [11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.**
- [12] The marking of the equipment or protective system shall include the following:**



II 1 GD T62°C

EEx ia IIC T4

Oslo, 2003-06-24

Certificate revised 2004-04-02 and replaces previous dated 2003-06-24



Rolf Hoel
Certification Department

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Enterprise number:
NO 974404532

[13] Schedule**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX133X****[15] Description of Equipment or Protective System**

Pressure transmitters for gauge or differential pressure using capacitive sensors for conversion of a pressure into an electrical signal and transmission to unspecified equipment via certified safety diode barriers. The transmitter comprises an aluminium or stainless steel enclosure with a terminal compartment and a compartment containing main electronic board, sensor board and display. Sensor with diaphragm and process adaptor/flange made of stainless steel. Process connections with various thread options and sizes.

Type Designation

LD290 or 4290 Gauge pressure transmitter, 4-20mA transmitter
LD291 or 4291 Gauge pressure transmitter, Hart protocol
LD301 or 4301 Smart pressure transmitter for differential, absolute, gauge, level and flow measurements

Data for the Intrinsic Safety

Maximum input voltage. U_i : 28V
Maximum input current. I_i : 100mA
Maximum input power. P_i : 0,7W
Maximum internal capacitance. C_i : 2nF
Maximum internal inductance. L_i : Negligible

[16] Report No. 200138188 and the listed Descriptive Documents.**Descriptive Documents**

Number	Revision	date	Title /Description
101-A-6209-00	00	2003-05-18	Marking Nemko ATEX
101-A-6210-00	00	2003-05-18	Marking Nemko ATEX
101-A-6346-00	00	2003-05-18	FM, Nemko ATEX E BVS
101-A-6340-00	00	2003-05-18	Marking Nemko ATEX Solartron
101-A-6341-00	00	2003-05-18	Marking Nemko ATEX Solartron
101-A-6321-00	00	2003-05-18	Marking Nemko ATEX Solartron
102A0971	00	2003-05-20	Control drawing
102B051309	9	2003-02-19	Field devices Single Board GLL 1071 5 sheets
102A069204	04	2003-02-19	GLL1071 (PCB Layout)Top Silk 6 sheets
LM-102-0501-12	5	2003-04-05	Parts List
102A041703	3	2001-03-08	LD 290/291 Boards Arrangement
102A043200	-	1997-10-26	GLL971 2 sheets
102B050601	01	1998-12-21	Field Devices Terminal block 2 sheets
102B007308	08	2000-12-07	Field Devices Capacitive sense Board GLL910 2 sheets
102A022601	1	2000-12-07	GLL910 (PCB Layout) 6 sheets
102B030700	-	1997-01-21	Transformer General Information
101E005902	2	2000-08-21	LD 290 Dimensional drawing With Indicator
101E005602	2	2000-08-21	LD 291 Dimensional drawing With Indicator
102A033702	2	2001-03-08	LD301 Boards Arrangement
101E002903	3	2000-08-18	LD 301 Dimensional Drawing With Indicator

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[17] Special conditions for safe use.

1. The transmitters are marked with three options for the indication of the protection code.
The certification is valid only when the protection code is indicated in **one** of the boxes following the code.
The following options apply:
 - 1.a. EEx d IIC T6 () with **X** ticked in the parenthesis:
The EEx d IIC T6 protection according to certificate Nemko 02ATEX035X / 02ATEX149X applies for the specific transmitter. Certified EEx d IIC cable entries shall be used.
 - 1.b. EEx ia IIC T4 () with **X** ticked in the parenthesis:
The EEx ia IIC T4 protection according to certificate Nemko 03ATE133 X applies for the specific transmitter. Certified diode safety barriers shall be used.
 - 1.c. EEx d IIC T6 / EEx ia IIC T4 () with **X** ticked in the parenthesis:
The transmitter has a double protection. Both EEx d IIC T6 and EEx ia IIC T4 protection apply for the specific transmitter according to certificates Nemko 02ATEX035X / 02ATEX149X and Nemko 03ATEX133X
In this case the transmitter shall be fitted with appropriate certified cable entries EEx d IIC and the electric circuit supplied by a certified diode safety barrier as specified for the protection EEx ia IIC T4
2. For enclosures of the transmitters made of aluminium impact and friction hazards shall be considered when the transmitter is used in category II 1 G according to EN 50284 clause 4.3.1
4. The safety barrier shall have a linear resistive output characteristic.
5. The pressure of the potentially explosive atmosphere surrounding the transmitter shall be within the range 0,8 mbar to 1,1mbar

[18] Essential Health and Safety Requirements

Covered by the standards listed under [9]

Certificate revised editorially 2004-04-02 and replaces previous dated 2003-06-24

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SUPPLEMENT 2 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX133X****[15] Description of Equipment or Protective System**

This supplement covers the following changes:

- Revised documents
- Technical changes that do not affect the intrinsic safety.

[16] Report No. 63395**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
FIELD DEVICES CAPACITIVE SENSE BOARD GLL910	102B007310	10	2005-01-25	1
FIELD DEVICES TERMINAL BLOCK	102B050603	03	2004-03-30	1
TRANSFORMER GENERAL INFORMATION	102B030802	02	2004-02-25	1
LD290/291 BOARDS ARRANGEMENT	102A041704	04	2005-06-08	1
LD290/291 PRINTED CIRCUIT BOARD INTERCONNECTION	102B044504	04	2005-06-08	1
MARKING NEMKO – ATEX (LD290)	101A620901	01	2005-12-29	1
MARKING NEMKO – ATEX (LD291)	101A621001	01	2005-12-29	1
MARKING NEMKO – ATEX (LD301)	101A634601	01	2005-12-29	1

[18] Essential Health and Safety Requirements

See item 9 in main certificate

Oslo, 2006-05-31**Rolf Hoel
Certification Department***This certificate may only be reproduced in its entirety and without any change, schedule included.*

SUPPLEMENT 3 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX133X****[15] Description of Equipment or Protective System**

This supplement covers the following changes:

- Revised document.

[16] Report No. 70149**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
Marking Nemko - Atex	101-A-6210-02	02	2006-05-04	1

[18] Essential Health and Safety Requirements

See item 9 in main certificate

Oslo, 2006-07-13

**p.p. Rolf Hoel
Certification Department***This certificate may only be reproduced in its entirety and without any change, schedule included.*

SUPPLEMENT 4 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX133X****[15] Description of Equipment or Protective System**

This supplement covers the following changes:

- Revised documents.
- Minor addition and corrections of critical components.

[16] Report No. 97422**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
FIELD DEVICES CAPACITIVE SENSE BOARD GLL910	102B0073	11	2007-06-06	1
FIELD DEVICES SINGLE BOARD GLL 1071	102B0513	11	2007-06-06	5
FIELD DEVICES TERMINAL BLOCK	102B0506	3	2004-30-03	1
TRANSFORMER GENERAL INFORMATION	102B0307	2	2006-25-06	1
DIMENSIONAL DRAWING WITH INDICATOR LD290, LD 291	101E0056	3	2007-24-09	1
LABEL PLATE LD 301	101A6346	3	2007-26-06	1
DIMENSIONAL DRAWING WITH INDICATOR LD301	101E0029	5	2007-24-09	1

[18] Essential Health and Safety Requirements

See item 9 in main certificate

Oslo, 2007-12-13

**Rolf Hoel**
Certification Manager, Ex-products*This certificate may only be reproduced in its entirety and without any change, schedule included.*