

[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 03ATEX1439X
- [4] Equipment or Protective System:** Temperature Transmitter
- [5] Applicant/ Manufacturer:** 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. 15751
- [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 G
II 1 D

EEx ia IIC T4
T 62°C

Oslo, 2003-12-16



Rolf Hoel
Certification Department

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[13] Schedule**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX1439X****[15] Description of Equipment or Protective System**

The type TT301 is a temperature transmitter for a field application. The enclosure is a EEx d design and the apparatus will have a double marking according to the information under item [17].

The device is intended for connection to separate RTDs, thermocouple or millivolt source (type not specified). This certificate does not cover these sensors.

The terminal connections for the external sensors pass the 500V Insulation test to earth.

Ingress Protection Code

IP 66/67 according to EN 60529

Data for the Intrinsic Safety**Supply terminals:**

Maximum input voltage.	U_i :	28V
Maximum input current.	I_i :	100mA
Maximum input power.	P_i :	0,7W
Maximum internal capacitance.	C_i :	5nF
Maximum internal inductance.	L_i :	6 μ H

External sensor connections:

Maximum output voltage.	U_o :	8V
Maximum output current.	I_o :	12mA
Maximum output power.	P_o :	0,1W
Maximum external capacitance.	C_o :	1 μ F
Maximum external inductance.	L_o :	1mH

[16] Report No. 15751 and the listed descriptive documents.**Descriptive Documents**

Name/Number	Rev.	Date	Title/Description	Sheets
102B043600	-	1997-09-04	TT301 Printed Circuit Board Interconnection	1
102A034000	-	1997-09-06	TT301 Boards arrangement	1
102B030301	01	2000-02-21	Field Devices terminal Block GLL1015	2
102A023600	-	1997-03-12	GLL1015 Top Silk	4
102B005101	-	1997-04-25	Field Devices Filters GLL896	2
102A022100	-	1997-05-01	GLL896 Top Silk	3
102B27805	05	2000-11-28	Field Devices Analog Input Board GLL895	2
102A022003	03	2000-11-10	GLL895 PCB	4
102B013309	3	2003-03-23	Field Devices Main Board GLL959	3
80000439-0	-	2003-12-15	Parts list LM-102-0336-08	5
80000437-4	1	2003-05-27	Parts List Level 1	1
102A023502	4	2003-03-25	GLL959 (PCB Layout)	4

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102B004305	2	2000-01-20	Field Devices Display GLL802	2
102A022702	2	2000-02-17	GLL802 (PCB Layout)	4
102B019900	-	1996-06-05	Transformer General Description	1
101D020801	1	1994-05-23	Dimensional Drawing	1
101-A-6213-01	01	2003-12-12	Marking Nemko ATEX	1
102A0972	00	2003-05-20	TT301 Control drawing	1

[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 II 2 G EEx d IIC T6 protection according to certificate Nemko 02ATEX036 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 II 1 GD EEx ia IIC T4/ T:62°C protection according to certificate Nemko 03ATE1439X 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 02ATEX036 and Nemko 03ATEX1439X
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 diode 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

See item 9

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Postal address:
P.O.Box 73 Blindern
N-0314 OSLO, NORWAY

Office address:
Gaustadalléen 30
0373 OSLO

Telephone:
+47 22 96 03 30
Fax:
+47 22 96 05 50

Enterprise number:
NO 974404532

SUPPLEMENT 1 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX1439X****[15] Description of Equipment or Protective System**

This certificate covers the following changes:

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

[16] Report No. 63430**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
GLL802 (PCB Layout)	102A022703	02	2004-08-24	4
GLL895 PCB	102A022005	05	2003-05-04	4
GLL959 (PCB Layout)	102A023503	03	2004-03-30	4
Field Devices Main Board GLL959	102B013310	10	2004-03-30	3
Field Devices Main Terminal Block GLL1015	102B030303	03	2004-03-1503	1

[18] Essential Health and Safety Requirements

See item 9

Oslo, 2006-06-01

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

SUPPLEMENT 2 TO EC-TYPE EXAMINATION CERTIFICATE**[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX1439X****[15] Description of Equipment or Protective System**

This certificate covers the following changes:

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

[16] Report No. 70158**Descriptive Documents**

Name/Title	Drawing No.	Rev.	Date	Sheets
FIELD DEVICES ANALOG INPUT BOARD GLL895	102B027806	06	2001-10-31	2
TRANSFORMER GENERAL INFORMATION	102B019902	02	2002-09-02	1

[18] Essential Health and Safety Requirements

See item 9

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.*