

[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 01ATEX445X** Issue 6

[4] Equipment or Protective System: **Position transmitters; TP290, TP301,
TP302, TP303**

[5] Applicant/ Manufacturer: **Smar Equipamentos Industriais Ltda.**

[6] Address: **Av. Dr. Antonio Furlan Jr., 1028
Sertãozinho -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. **D0002026**

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

EN 60079-0: 2012, EN 60079-1: 2007

[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 2G

Ex d IIC T6 Gb Ta : -20°C to +60°C

Oslo, 2016-04-19

Asle Kaastad
Certification Manager, Ex-products

[13] Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE No** **Nemko 01ATEX445X** **Issue 6**

[15] **Description of Equipment or Protective System**

The SMAR TP Series is a flameproof enclosure, intended to position transmitter and consist in housing and electronic circuit.

The equipment is manufactured in AISI316/CF-8M or SAE305 or SAE336/ANSI356, closed by removable screwed covers with M76 x 1,27 threads, with or without visor, and the cable entry for electronic circuits is mounted in the wall of the housing with options 1/2"-14 NPT or M20x1,5. Under the one cover, being equipped with an inspection glass, an alphanumeric LCD-display is arranged optionally; under the other cover, terminals for the signal-circuit are arranged.

The TP300 is available in HART® 4 to 20 mA, FOUNDATION™ fieldbus and PROFIBUS PA. This product line presents the TP290 version, also with digital technology and a 4 - 20 mA output signal. The TP300 is a smart transmitter for position measurement, suitable for linear or rotary displacement or movement.

The four models that this certificate covers are all position transmitters, capable of measuring displacement or movement of linear or rotary type by non-contact sensing. The models differ in their method of communication.

Type Designations

TP290: Analog signal

TP301: HART protocol

TP302: FIELDBUS

TP303: PROFIBUS PA protocol

Technical Data

TP290 and TP301: $U_{max} = 45V$ DC, $I_{max} = 25mA$

TP302 and TP303: $U_{max} = 32V$ DC, $I_{max} = 12mA$

Linear Motion : 10-100mm

Rotary Motion: 30-120°, rotation angle

Ingress Protection Code

IP66 and IP68 (10m depth for 24h)

IP66W and IP68W (10m depth for 24h)

[16] Report No. D0002026

Descriptive Documents

Title:	Drawing No.:	Rev. Level:	Sheet	Date:
Boards Arrangements TP290/301	102A-0554	03	1	14-01-07
PCB Interconnection TP290/301	102B-0562	03	1	14-01-07
LM TP290/TP301	LM-102-0447	21	1	14-03-18
LM General Components Hart	LM-102-0161	04	1	06-05-10
Label Plate TP290 NEMKO-EXAM/BVS IP66/68	102A-1449	04	1	16-04-18
Label Plate TP290 NEMKO-EXAM/BVS IP66W/68W	102A-1505	04	1	16-04-18
Label Plate TP301 NEMKO-EXAM/BVS IP66/68	102A-1450	04	1	16-04-18
Label Plate TP301 NEMKO-EXAM/BVS IP66W/68W	102A-1506	04	1	16-04-18
Mechanical Drawing TP NEMKO	101-E-0120	03	1	10-07-26
Boards Arrangements TP302/303	102A-0578	02	1	15-02-20
PCB Interconnection TP302/303	102B-0592	02	1	15-02-20
LM TP302/303	LM-102-1130	00	1	15-02-20
LM General Components Fieldbus/Profibus PA	LM-102-0232	03	1	06-11-13
Label Plate TP302 NEMKO-EXAM/BVS IP66/68	102A-1451	04	1	16-04-18
Label Plate TP302 NEMKO-EXAM/BVS IP66W/68W	102A-1507	04	1	16-04-18
Label Plate TP303 NEMKO-EXAM/BVS IP66/68	102A-1452	04	1	16-04-18
Label Plate TP303 NEMKO-EXAM/BVS IP66W/68W	102A-1508	04	1	16-04-18

Certificate History and Associated Nemko Reports

Issue	Date	Report	Description
0	2001-12-18	200116178	Prime Certificate released
1	2006-05-22	63410	Revised documents and minor changes of electronic components.
2	2006-07-13	70131	Revised documents and minor changes of electronic components.
3	2007-12-12	97420	Revised documents and minor corrections of critical components.
4	2010-05-31	126751	Addition of IP66W and IP68W.
5	2012-08-07	194921	Update to EN60079-0:2009 and EN60079-1:2007. Changed ambient temperature range to Tamb = -20°C to 60°C.
6	2016-04-19	D0002026	Inclusion of new PCB, updated documents, and update to the latest standard of EN 60079-0: 2012.

[17] Special Conditions for Safe Use

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN/IEC 60079-1.

[18] Essential Health and Safety Requirements

See item 9