[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 13ATEX1570X Issue 1

[4] Equipment or Protective System: Ex d Enclosure (TT,FI & IF)

[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. 173052 / D0000307

[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 -20 °C ≤ Ta ≤ +60 °C

Oslo, 2016-04-19

Asle Kaasad
Certification Manager, Ex-products

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 13ATEX1570X Issue 1

[15] Description of Equipment or Protective System

The SMAR TT, FI & IF Series is a flameproof enclosure, intended to transmitter & electrical converters and consists of housing and electronic circuit. The electrical parameters are within the specified limits.

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 TT300 Series are temperature transmitters mainly intended for measurement of temperature using RTD's or thermocouples, but can also accept other sensors with resistance or mV output such as: pyrometers, load cells, resistance position indicators, etc. The model TT301 offer digital communication based in HART®, the model TT302 offer digital communication based in Foundation™ Fieldbus and the model TT303 offer digital communication based in PROFIBUS PA.

The FIs and IFs are electrical converters devices for connection to Foundation™ Fieldbus or Profibus PA. The FI302 converts a FIELDBUS signal into a 4 to 20 mA signal. If the frequency converter does not have FIELDBUS capability, the bus signal can be converted into a conventional 4 to 20 mA by the FI302 and has three independent channels, which means that three 4 to 20 mA outputs are available. The FI303 is a converter mainly intended for interface of a PROFIBUS PA system to control valves, or other actuators. The equipment produces a 4-20 mA output proportional to input received over the PROFIBUS network and has three outputs available.

The IF302 is a converter mainly intended for interface of analog transmitters to a Fieldbus network. The equipment receives a current signal, typically 4-20 mA or 0-20mA, and makes it available to the Fieldbus system. The IF303 is a converter mainly intended for interface of analog transmitters to a PROFIBUS system. The equipment receives a current signal, typically 4-20 mA or 0-20 mA, and makes it available to the PROFIBUS PA network. The digital technology used in the IF303 enables a single converter to accept three inputs and also provide several types of transfer functions.

However the assessment has been restricted only to the Ex d requirements.

Type Designations
TT 301, TT 302, TT 303, FI 302, FI 303, IF 302 & IF 303

Technical Data
28 V DC
12mA, quiescent current consumption: 12 mA for Fieldbus/ Profibus protocol

Ingress Protection Code
IP66W and IP68W
10m for a period of 24 hours for IP68. Tested in a saturated solution of NaCl 5% w / w, at 35°C for a period of 200 h.

[16] Report No. 173052 / D0000307

Descriptive Documents

Title:	Drawing No.:	Rev. Level:	Sheet	Date:
Boards Arrangements TT301	102A-1116	03	1	13-10-01
PCB Interconnection TT301	102B-0881	02	1	13-10-01
LM TT301	LM-102-1074	02	1	14-12-03
LM General Components Temperature Transmitters	LM-102-0238	04	1	12-08-24
Label Plate TT301 NEMKO-EXAM/BVS IP66/68	102A-1470	04	1	16-04-18
Label Plate TT301 NEMKO-EXAM/BVS IP66/68W	102A-1526	04	1	16-04-18
Mechanical Drawing TT301 Nemko	101-D-0208	04	1	13-09-25
Boards Arrangements TT302/303	102A-0341	04	1	14-09-24
PCB Interconnection TT302/303	102B-0440	03	1	14-09-24
LM TT302/303	LM-102-1128	01	1	14-12-03
LM General Components Temperature Transmitters	LM-102-0238	04	1	12-08-24
Label Plate TT302 NEMKO - EXAM/BVS - IP66/68	102A-1473	04	1	15-02-04
Label Plate TT302 NEMKO - EXAM/BVS - IP66/68W	102A-1529	04	1	15-02-04
Label Plate TT303 NEMKO - EXAM/BVS - IP66/68	102A-1476	04	1	15-02-04
Label Plate TT303 NEMKO - EXAM/BVS - IP66/68W	102A-1532	04	1	15-02-04
Mechanical Drawing TT302/303 Nemko	101-D-0103	04	1	13-09-25
Boards Arrangements FI302/303	102A-0343	04	1	15-08-31
PCB Interconnection FI302/303	102B-0441	04	1	15-08-31
LM FI302/303	LM-102-1162	00	1	15-09-02
LM General Components Converters	LM-102-0244	04	1	12-08-24
Label Plate FI302 NEMKO-EXAM/BVS IP66/68	102A-1266	04	1	16-04-18
Label Plate FI302 NEMKO-EXAM/BVS IP66/68W	102A-1479	04	1	16-04-18
Label Plate FI303 NEMKO-EXAM/BVS IP66/68	102A-1271	04	1	16-04-18
Label Plate FI303 NEMKO-EXAM/BVS IP66/68W	102A-1486	04	1	16-04-18
Mechanical Drawing FI302/303 IF302/303 NEMKO	101-D-0104	04	1	13-09-24
Boards Arrangements IF302/303	102A-0342	04	1	15-02-24
PCB Interconnection IF302/303	102B-0442	03	1	15-02-24
LM IF302/303	LM-102-1131	00	1	15-02-25
LM Terminal General Components Converters	LM-102-0244	04	1	12-08-24
Label Plate IF302 NEMKO-EXAM/BVS IP66/68	102A-1415	04	1	16-04-18
Label Plate IF302 NEMKO-EXAM/BVS IP66/68W	102A-1497	04	1	16-04-18
Label Plate IF303 NEMKO-EXAM/BVS IP66/68	102A-1417	04	1	16-04-18
Label Plate IF303 NEMKO-EXAM/BVS IP66/68W	102A-1499	04	1	16-04-18
Mechanical Drawing FI302/303 IF302/303EXAM	101-D-0295	01	1	13-09-24

Certificate History and Associated Nemko Reports

Issue	Date	Report	Description
0	2013-12-09	173052/ D0000307	Prime Certificate released
1	2016-04-19	D0000307	Inclusion of new PCB and descriptive documents updated.

[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