



**ISSEP**  
Institut scientifique  
de service public

Métrieologie environnementale  
Recherche - Analyses  
Essais - Expertises


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- (1) **EC TYPE EXAMINATION CERTIFICATE**
- (2) **Equipment or protective system intended for use  
in potentially explosive atmospheres  
Directive 94/9/EC**
- (3) EC type examination certificate number: **ISSeP11ATEX008X**
- (4) Equipment or protective system: **Ultrasonic detector SDT270 model FUR270A**
- (5) Applicant – Manufacturer – ~~Authorized representative in the Community:~~  
**SDT International s.a- n.v.**
- (6) Address: **Bd de l'Humanité 415  
B-1190 Bruxelles**
- (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) ISSeP, notified body n° 492 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° 05139.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
- EN 60079-0 : 2009 (IEC 60079-0 : 2007)
  - EN 60079-11 : 2007 (IEC 60079-11 : 2006)
  - EN 60079-26 : 2007 (IEC 60079-26 : 2006)
- (10) If the symbol "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 this Directive may 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 indications:

 II 1 G / Ex ia II C T3/T2 Ga

Colfontaine, the 18.02.2011

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**M. LAMBERT,**  
Manager.

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(13)

## SCHEDULE

(14)

### EC TYPE EXAMINATION CERTIFICATE N° ISSeP11ATEX008X

(15) Description of the equipment or protective system:

Ultrasonic detector SDT 270 model FUR270A with shock proof holster FAHOLS270.

The following accessories are certified with the material :

- Head phone model FUHDPH-7 (Peltor HTM79B-43) ;
- Needle contact probes RS1 models FUSOND270A-XX;
- Threaded contact probes RS1 models FUSCRS3A;
- Flexible sensors FAFLEXSENS10R and FAFLEXSENS16R equipped with the flexible device FAFLEXH820.

#### Electrical parameters

- Accelerometer connections

$U_0 = 20.4V$

$I_0 = 68.7mA$

$C_0 = 96 nF$

$L_0 = 1mH$

#### Routine tests :

The manufacturer shall make the routine verifications and tests necessary to ensure that the electrical apparatus produced complies with the specification submitted to the testing station together with the prototype or sample (clause 27 of EN60079-0).

#### Eventual prescriptions

$T_a = -15^{\circ}C \text{ à } + 50^{\circ}C (T3)$

$T_a = -15^{\circ}C \text{ à } + 60^{\circ}C (T2)$

(16) Report n° 05139 of 17.02.2011

Composed in total of 36 pages, completed by the following descriptive documents :

- "Manuel d'instruction"
- FUR270 – SDT270 Assembly
- FUBATTR270-02 Battery pack SDT270 ATEX
- FAR270FP – SDT 270 Front assembly
- FAR270SPS-01--01--SDT270 Lateral plate sensorside assembly
- FAR270SPS – assembly Lateral plate connector
- Fiche produit FAR270MBA "Mother board SDT 270 ATEX" version 01 of 08.02.2011
- "Datasheet – Needle RS1" n° : DC.CP2.DAT.01 rev. C of 07.12.2010
- "Datesheet Threaded RS1" n° : DC.CP2.DAT.02 rev. c of 07.12.2010
- "Bottom PCB Assembly CP2" n° : SA.CP2.PCB.02 rev. b of 09.02.2011
- "Curved Magnetic Foot D30x23 M6" n° : FUSEACMAG-02 rev. a of 17.12.2010
- "Flat Magnetic Foot D25x14 M6" n° : FUSEACMAG-01 rev. a of 17.12.2010
- The drawings :
  - "SDT270 Mainboard" issue 6 (32 pages)
  - Mainboard.PCBDOC rév 858 of 01.12.2010 (10 pages)
  - BatteryPack.SCHDOC issue 5, rev. 859 of 01.12.2010
  - BatteryPack.PCBDOC issue 7, rev. 884 of 09.02.2011 (3 pages)
  - BatteryPack.PCBDOC rev. 706 of 08.10.2010
  - BatteryPack.PCBDOC rev. 759 of 01.12.2010 (2 pages)
  - "Isolation PCB" n° : P04AA56A of 06.10.2009
  - "Bac batterie 270 Plastic – 3" n° : P04AA22C of 22.09.2008
  - "Label Battery pack ATEX" n° : P04AA67A – SILABELR270BPA of 05.01.2011Ce

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## SCHEDULE

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X

- "Rubber Cover" n° : SI.CP2.MMF.051 rev. F of 25.10.2010
- "Contact Probe V2" n° : P03AE23A of 11.03.2009
- "Pin Cover" n° SI.CP2.MMF.052 rev. b of 27.01.2010
- "Pin Cover 300" n° : SI.CP2.MMF.059 rev. a of 27.04.2010
- "Pin Cover 500" n° : SI.CP2.MMF.061 rev. a of 27.04.2010
- "Needle133mm" n° : SI.CP2.MMF.057 rev. a of 27.04.2010
- "Needle325mm" n° : SI.CP2.MMF.058 rev. a of 27.04.2010
- "Needle522mm" n° : SI.CP2.MMF.060 rev. a
- "Needle 133mm ass" n° : SA.CP2.MMF.002 rev. b of 08.12.2010
- "Needle 325mm ass" n° : SA.CP2.MMF.003 rev. b of 08.12.2010
- "Needle 522mm ass" n° : SA.CP2.MMF.004 rev. b of 08.12.2010
- "Threaded foot ass" n° : SA.CP2.MMF.001 rev. b of 08.12.2010
- "Threaded foot" n° : SI.CP2.MMF.056 rev. a of 26.03.2010
- "Atex hat cover needle" n° : SI.CP2.MMF.066 rev. a of 15.11.2010
- ContactProbeTOP.SchDoc issue 5, rev. 679 of 09.09.2009
- ContactProbeTOP.PcbDoc issue 5, rev. 678 of 22.12.2010 (2pages)
- ContactProbeBOTTOM.SchDoc issue 6, rev. 644 of 04.08.2009
- ContactProbeBOTTOM.PcbDoc issue 6, rev. 861 of 15.12.2010 (2pages)
- "Piezo Holder – CP2" n° : SI.CP2.MMF.020 rev. c of 11.03.2009
- "Main Cover – CP2" n° : SI.CP2.MMF.021 rev. d of 11.03.2009
- "Needle Nut – CP2" n° : SI.CP2.MMF.023 rev. a of 11.03.2009
- "Mounting pad" n° : P03AE32A-SI.CP2.MMF.052 of 02.12.2009
- "Lube adapter v2" n° : SI.CP2.MMF.050 rev. a of 30.09.2009
- "Cover mag pad curve" n° : SI.CP2.MMF.064 rev. b of 21.10.2010
- "Pole mag round fit" n° : SI.CP2.MMF.063 rev. b of 21.10.2010
- "Mag pad for ring magnet d20xd10x6" n° : SI.CP2.MMF.065 rev. a of 12.10.2010
- "Flexible ATEX Assembly" n° : I94AD07A of 17.01.2011
- "Sensor holder 3" n° : P94AD26C of 09.02.2004
- "Sensor holder 4" n° : P94AD28B of 11.10.2007
- "Flexible Alu handle (820 mm)" n° : P94AD05B of 26.03.2001
- "Tube 100 mm for Flex handel" n° : P94AD39A-SAMFLEXTU100-01 of 20.01.2001
- "Flexible Tube 400" n° : P94AD07A of 09.10.2000
- "Tip Assembly 16mm" n° P94AD25C of 17.01.2011
- "Sensor 16mm ATEX Marking" n° : P94AD38B-SAMFLEXSENSHOL3A of 11.01.2011
- "Tip 10mm Assembly" n° : P94AD24C-02 of 17.01.2011
- "Sensor holder 10mm ATEX" n° : P94AD37C-SAMFLEXSENSHOL4AA of 06.01.2011
- Flex16mm.SchDoc issue 2, rev. 796 of 09.03.2010
- Flex16mm.PcbDoc issue 2, rev. 796 of 09.03.2010
- Flex16mm.PcbDoc issue 2, rev. 796 of 02.12.2010
- Flex10mm.SchDoc issue 2, rev. 862 of 15.12.2010
- Flex10mm.PcbDoc issue 2, rev. 863 of 15.12.2010 (2 pages)
- "SDT Headphone Wiring" n° : I04AC01C of 14.02.2011
- "ATEX Headphone Marking" n° : P04AC01A-FUHDPH-7 of 14.02.2011
- "SDT 270 ATEX Marking" n° : P04AA66A-FAR270PRA-05 of 04.01.2011
- "SDT270 Casing 5" n° : P04AA46D-SAMR270PR-05 of 30.09.2009
- "SDT270 Sensor holder 3" n° : P04AA41A of 30.04.2009
- "SDT270 Lateral plate Sensor" n° : P04AA33A-SAMR270SPSAD-02 of 26.11.2008
- "SDT 170-270 Cable assembly Lemo 7P Female" n° : I96AA05C-1 of 26.04.2010
- "SDT 270 Cable assembly PCB sensor" n° : P04AA59B-1 of 25.04.2010
- USIdentification.SchDoc issue 3, rev. 658 of 01.09.2009
- USIdentification.PcbDoc issue 3, rev. 664 of 03.09.09
- "SDT 270 Lateral plate connector 4" n° : P04AA49A-SAMR270SPC-03 of 24.08.2009
- "SDT170-SDT270 Cable Assembly Friwo 3P" n° : P96AA05E-3 of 27.04.2010

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## SCHEDULE

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSEP11ATEX008X

- "SDT270 Lateral plate Connector shielding" n° : P04AA29D-SAMR270SPCAD of 08.10.2009
- "SDT 270 Cable assembly Lemo17" n° : P04AA61B-1 of 03.12.2009
- "SDT 270 Cable assembly PCB Jack-USB" n° : P04AA60D-1 of 10.12.2010
- Jack\_USB.SchDoc issue 2, rev. 831 of 22.07.2010
- Jack\_USB.PcbDoc issue 2, rev. 831 of 22.07.2010
- "SDT270 Front cut out" n° : P04AA13B-1 of 08.05.2006
- "SDT270 Front spacer 3" n° : P04AA39A-SIMR270FRSP-02 of 08.04.2009
- "SDT270 Keypad dimensions" n° : P04AA04H-1 of 28.09.2010
- "SDT270 Keypad" n° : P04AA04H-2 of 28.09.2010
- SDT270 Keyboard.PCBDOC rev. 568 of 18.03.2009
- Keyboard.SCHDOC issue 2, rev. 568 of 18.03.2009
- "SDT270 Holster 270 V5" n° : P04AA53A of 29.09.2009
- "SDT270 Screen frame" n° : P04AA26C-SIMR270SCR-01 of 03.09.2008
- "SDT270 Battery pack Cable assembly" n° : P04AA08F-7 of 26.04.2010
- The part lists :
  - "SDT270 Mainboard" issue 6, rev. 855 of 15.12.2010 (9 pages)
  - "SDT270 Battery Pack" issue 5, rev. 706 of 15.12.2010
  - "Contact Probe Top" issue 5, rev. 678 of 22.12.2010
  - "ContactProbePCB1" issue 6, rev. 861 of 15.12.2010
  - "Flex16mm Sensor" issue 2, rev. 796 of 15.12.2010
  - "Flex10mm" issue 2, rev.863 of 22.12.2010
  - "USSensorIdentification" issue 3, rev. 664 of 15.12.2010
  - "USB/ Audio Jack board" issue 2, rev. 831 of 15.12.2010
  - "SDT270 Keyboard" issue 2, rev. 568 of 23.12.2010

(17) Special conditions for safe use:

Symbol X

- Don't connect anything on the USB input when the apparatus is in hazardous area.
- Temperature classes in relation to ambient temperature range.

Temperature ranges	Temperature classes
-15°C + 50°C	T3
-15°C + 60°C	T2

- The materials marked as Category 1 equipment and used in area needing this Category shall be installed in such a way that, even in the event of rare incident, the aluminium enclosure is not an ignition source due to impact or friction.
- All precautions shall be taken in order to avoid all electrostatic hazard at the level of the display.

(18) Essential Health and Safety Requirements: covered by the Standards listed in (9)

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## VARIATION

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/1

- (14) Equipment or protective system:  
Ultrasonic detector SDT270 model FUR270A with shock proof holster FAHOLS270
- (15) Object of the variation:
- Minor modifications on the mother board SDT270
  - Additional variations to the apparatus:
    - Ultrasonic detector Blok SteamDetect IV model FURBLOK
    - Ultrasonic detector SDT200 model FUR200
- Electrical parameters:      Unchanged
- Eventual prescriptions:      Unchanged
- (16) Report n<sup>o</sup> : 11086 of 02.08.2011  
Composed in total of 6 pages, completed with the following documents:
- « Certification ATEX du SDT270 Demande d'avenant » of 19.07.2011 (2 pages)
  - Fiche produit FAR200MBA "Mother board SDT 200 ATEX" version 01 of 20.07.2011
  - Fiche produit FAR270MBA "Mother board SDT 270 ATEX" version 02 of 20.07.2011
  - The drawings :
    - « SDT270.PrjPcb » issue 6 (32 pages)
    - « SDT270ATEX.PrjPcb » Issue 6 (32 pages)
    - « FUR200--01---SDT200 Eclaté » Version 01 of 20.07.2011
    - « FURBLOK--01---Blok SteamDetect IV » Version 01 of 20.07.2011
    - « FAR200FP--01--SDT200 Front éclaté » Version 01 of 23.12.2010
    - « FARBLOKFP--01--BLOK front panel assembly – éclaté » Version 01 of 20.07.2011
    - « SA.R179.MMF.009--01--sdt200.top.plate.et.sensor – éclaté » Version 01 of 20.07.2011
    - « SA.R179.MMF.011--1--bottom.plate.et.connector » Version 01 of 20.07.2011
    - « SA.R179.MMF.010--01--blok.top.plate.et.connector – éclaté » Version 01 of 20.07.2011
    - « SA.R179.MMF.008--b- » of 26.05.2011
    - « SA.R179.MMF.012--1--Casing Profile SDT200 ATEX » of 04.01.2011
    - « SA.R179.MMF004.- » Ind. a of 26.05.2011
    - « SA.R179.MMF.003--b--blok.top.plate.r179 » Ind. b of 24.05.2011
    - « SA.R179.MMF.002 - » Ind. a of 26.05.2011
    - « SA.R179.MMF.001--b--bott.plate.r179 » Ind. b of 24.05.2011
    - « SA.R179.MMF.006 - » Ind. a of 26.05.2011
    - « SA.R179.MMF.005--b--sdt.top.plate.r179 » Ind. b du 24.05.2011
  - The parts lists :
    - "SDT270 Mainboard" issue 6, rév. 927 of 19.07.2011 (8 pages)
    - "SDT270 Mainboard" issue 6, rév. 928 of 19.07.2011 (11 pages)

This document may not be used without the original certificate



**VARIATION (Schedule)**

**EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/1**

(17) Special conditions for safe use: Unchanged

(18) Essential Health and Safety Requirements: Covered by the Standards listed in (9)

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Colfontaine, 08.08.2011.

  
Marcel Lambert  
Directeur

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## VARIATION

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/2

- (14) Equipment or protective system:  
Ultrasonic detector SDT270 model FUR270A
- (15) Object of the variation:  
- Additional accessory : parabola model ParaDish2

Electrical parameters:      Unchanged

- (16) Report n<sup>F</sup> : 13012 of 23.04.2013  
Composed in total of 18 pages, completed with the following documents:

Datasheet : ParaDish2 n<sup>o</sup> : DC.PAR.DAT.01, rev. : 02 of 24.09.2012 (3 pages)

Fiche Produit ParaDish2-Final Assembly n<sup>o</sup> : FU.PAR2.001 rev. : 02 of 07.11.2012 (page 1 of 4)

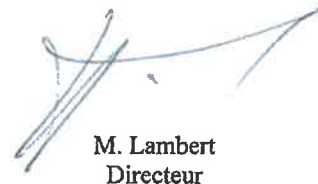
The drawings:

- « Parabola ATEX V2 », n<sup>o</sup> : PARV2.ATEX.SchDoc, Issue : 6, Rev. : 1042 of 04.02.2013
- « Parabola ATEX V2 », n<sup>o</sup> : PARV2.ATEX.SchDoc, Issue : 6, Rev. : 1046 of 23.04.2013
- PARV2 ATEX, Issue : I6, Rev. : 1045 of 04.04.2013
- PARV2 ATEX, Issue : I6, Rev. : 1047 of 23.04.2013
- SI.PAR2.MMF.024, Rev. a of 08.04.2013
- SI.PAR2.MMF.011, Rev. : C of 06.11.2012
- SI.PAR2.MMF.010, Rev. : B of 23.02.2011

- (17) Special conditions for safe use:      Unchanged
- (18) Essential Health and Safety Requirements:      Covered by the Standards listed in (9)

Colfontaine, 08.05.2013

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M. Lambert  
Directeur

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**VARIATION**

**EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/3**

- (14) Equipment or protective system:  
Détecteur Ultrasonore SDT 270 modèle FUR270A
- (15) Object of the variation:
- To permit the certificate updating following the last editions of the Standards in force  
EN 60079-0 : 2012 (IEC 60079-0 : 2011)  
EN 60079-11 : 2012 (IEC 60079-11 : 2011)  
EN 60079-26 : 2007 (IEC 60079-26 : 2006)
  - Models reference FUR200 and FURBLOK are respectively FUR200A and FURBLOKA
  - Additional accessories:
    - Handle for PARADISH2
    - Sensor TTS2B with signal amplifier type TTSensorAmplifier and integral cable of 6 meters

Electrical parameters: Unchanged

Eventual prescriptions: Unchanged

- (16) Report n<sup>r</sup> : 13073 of 06.08.2013  
Composed in total of 38 pages, completed with the following documents:
- Fiche produit « Handle assembly – ParaDish2 » FA.PAR2.004, ver. 4 of 14.05.2013 (3 pages)
  - « TankTest – Capteur TTS2B (noir) » FU.TTSY.TTS2.001, version 01 of 1.08.2013
  - « TankTest – Capteur TTS2B (rouge) » FU.TTSY.TTS2.002 version 01 of 1.08.2013
  - « Procédure de montage et de Test des capteurs TankTest TTS2 » IT.TTSY.TTS2.PM.001 version 01 of 31.07.2013 (4 pages)
  - The drawings:

Number	Rev.	Date	Pg	Description
P94AC00H	01	21.05.2013	-	Sensor Housing
SA.TTSY.TTS2.MMF.001	01	01.08.2013	-	Marking
TankTestSensorAmplifier.SchDoc	1076	31.07.2013	3	TankTest SensorAmplifier

- The parts lists
    - o TankTest Sensors TTS2 PCB, SA.TTSY.PCB.001, rev. 02 of 01.08.2013
- (17) Special conditions for safe use: Unchanged
- (18) Essential Health and Safety Requirements: Covered by the Standards listed in (9)

Colfontaine, 09.08.2013

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## VARIATION

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/4

- (14) Equipment or protective system:  
Ultrasonic detector SDT270 model FUR270A
- (15) Object of the variation:
- Correction of the product sheet of the TTS2R sensor (Red)
  - Maximum admissible length for TTS2 sensors is 16 meters
  - Additional accessories :  
Tight ultrasonic sensor type TankTest170 models FU.TTSY.TTS1.00X, these sensors can be equipped with a cable of 16 meters maximum
- Electrical parameters:    Unchanged
- Eventual prescriptions:   Unchanged
- (16) Report n<sup>o</sup> 13120 of 13.12.2013
- Composed in total of 15 pages, completed with the following documents:
- « Procédure de montage des capteurs TTS1 et TankTest170 » n<sup>o</sup> : IT.TTSY.PM.001 rev. 02 of 10.12.2013 (3 pages)
  - « Usinage et gravure des boîtiers TTS1 » n<sup>o</sup> : IT.TTSY.TTS1.001, rev. : 01 of 10.12.2013
  - TankTestSensor.PrjPCB, Issue 4, Rev 1059 of 29.04.2013
  - TankTestSensor.PcbDoc, Issue 4, Rev 1059 of 24.05.2013
  - SAPCBTANKSENS Rev. 04 of 27.05.2013
  - « TankTest – Capteur TTS2B (rouge) » FU.TTSY.TTS2.002 version 02 of 12.12.2013
- (17) Special conditions for safe use:    Unchanged
- (18) Essential Health and Safety Requirements: Covered by the Standards listed in (9)

Colfontaine,

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**Institut scientifique  
de service public**

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## VARIATION

### EC TYPE EXAMINATION CERTIFICATE N<sup>R</sup> ISSeP11ATEX008X/5

- (14) Equipment or protective system:  
Ultrasonic detector SDT270 model FUR270A
- (15) Object of the variation:
- Alternative batteries: Duracell DX1500 (2500 mAh), FDK HR-3U-2500 (2300 mAh) or FDK (SANYO) HR-3U-2700 (2700 mAh);
  - Changing in the temperature ranges in relation to the temperature classes (see point (17));
  - Modification on two resistors.

**Electrical parameters:**

**USB connection**

$U_o = 6.4 \text{ V}$	$U_i = 6.2 \text{ V}$
$I_o = 3.93 \text{ A}$	$I_i = 900 \text{ mA}$
$P_o = 6.29 \text{ W}$	$P_i = 1.395 \text{ W}$
$C_o = 6.4 \mu\text{F}$	
$L_o = 1.5 \mu\text{H}$	
$L_o/R_o = 5.65 \mu\text{H}/\text{Ohm}$	

Eventual prescriptions: Unchanged

- (16) Report n<sup>o</sup> : 15048 of 01.10.2015

Composed in total of 14 pages, completed with the following documents:

- The drawing "SDT270ATEX.PrjPcb, Issue 6 of 1.09.2015 (32 pages)

- (17) Special conditions for safe use:

Some conditions imposed by the original certification are modified as follow:

**Symbol X**

- The clause "Don't connect anything on the USB input when the apparatus is in hazardous area" is obsolete.
- Temperature class in relation to the ambient temperature range

Ambient temperature ranges	Temperature classes
- 15 °C to + 48 °C	T3
- 15 °C to + 60 °C	T2

- (18) Essential Health and Safety Requirements: Covered by the Standards listed in the variation 3

Colfontaine, 08.10.2015

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Directeur

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Wallonie