



- (2) **Equipment and protective systems intended for use in potentially explosive atmospheres
Directive 94/9/EC**

(1) **EC-TYPE EXAMINATION CERTIFICATE**

- (3) Number of the EC type examination certificate: **INERIS 06ATEX0018**

- (4) Equipment or protective system:

RADIATOR TYPE RC375....

- (5) Manufacturer: **AMARC**
(6) Address: **Via Lovati, 29
I - 20045 Besana Brianza (MI)**

- (7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

- (8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in confidential report No P64850/06.

- (9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 50 014 of June 1997 + Amendments 1 and 2
EN 50 018 of November 2000 + Amendment 1
EN 50 281-1-1 of September 1998 + Amendment 1


- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

- (10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of 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 the protective system will have to contain:

 II 2 G

EEx d IIC T1 to T5

or

 II 2 GD

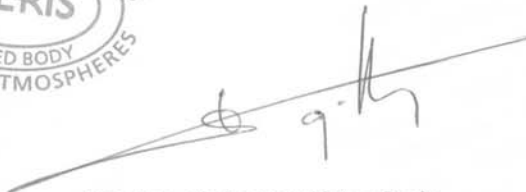
EEx d IIC T3 to T5 IP66 T200°C to T100°C

Verneuil-en-Halatte, 2006 03 20



C. PETITFRERE

Project Manager at the ATEX
Equipment Certification Laboratory



Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy Manager of Certification

(13)

ANNEX

(14)

EC TYPE EXAMINATION CERTIFICATE N° INERIS 06ATEX0018

(15)

DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

The radiator consists of a terminal box, with various sizes, fitted with resistance heating device intended to be submerged.

The terminal box can be fixed either directly on the material or through an extension fitted with a plate, this part is a cold zone.

Two thermal probes control the temperature resistance.

The enclosure gets the protection degrees IP65 according to the European standard EN 60 529.

PARAMETERS RELATING TO THE SAFETY

Supply voltage	:	from 24 to 700 V
Frequency	:	50/60 Hz
Current density	:	0.8 A/mm ²
Maximum power	:	1755 kW
Condensation-resistor power	:	from 60 to 120 W

The various powers are a function of the size of the terminal box, the temperature of the fluid and length of the extension. The various sizes and powers are defined in the descriptive documents.

Characteristic of thermal probes

Threshold of release	:	90°C ± 5°C for class T5 or T100°C
Threshold of release	:	130°C ± 5°C for class T4 or T135°C
Threshold of release	:	195°C ± 5°C for class T3 or T200°C
Threshold of release	:	285°C ± 5°C for class T2
Threshold of release	:	435°C ± 5°C for class T1

MARKING

Marking has to be readable and indelible; it has to include the following indications:

AMARC

I - 20045 Besana Brianza (MI)

RC375....

INERIS 06ATEX0018

(Serial number)

(Year of construction)

 II 2 G

EEx d IIC T (*)

T.cable : (*)

DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(*) The temperature class T1 to T5 and the cable gland temperature are stipulated on the descriptive documents in accordance with the manufacturing variation.

Or

AMARC


I - 20045 Besana Brianza (MI)

RC375....

INERIS 06ATEX0018

(Serial number)

(Year of construction)

 II 2 GD

EEx d IIC T(*)

T(*) IP 66

T.cable : (*)

DO NOT OPEN WHEN ENERGIZED

DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(*) The temperature class T3 to T5 or T200°C to T100°C and the cable gland temperature are stipulated on the descriptive documents in accordance with the manufacturing variation.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

Each equipment defined above have to successfully passed the following individual tests before delivery :

In accordance with clause 16.1 of the EN 50 018 standard, an overpressure test of a period comprised between 10 and 60 seconds under :

- 20 bar for model 03 to 14
- 13.7 bar for model 16, 18 and 20

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation of the equipment, subject of this certificate.

- Certification file n° RC 946/29 rev. 2 of 2006.03.24

This file signed on 2006.03.31 included 21 items.

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions are stipulated on the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the European standards EN 50 014, EN 50 018 and EN 50 281-1-1.
- All provisions adopted by the manufacturer and defined in the descriptive documents.

ADDITION

(3) INERIS 06ATEX0018/01

(4) RADIATOR TYPE RC375...

(5) Made by AMARC

(15) PURPOSE OF THE ADDITION

- Application of new standards EN 60079-0 : 2006, EN 60079-1 : 2004, EN 61241-0 : 2006, and EN 61241-1 : 2004.
- Use in group I.
- Possibility to use this radiator in an ambient temperature of 60°C.
- This radiator can also be used to heat a gas.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are completed as follows for group I :

Supply voltage	:	from 24 to 700 V
Frequency	:	50/60 Hz
Current density	:	0.8 A/mm ²
Maximum power	:	1755 kW
Condensation-resistor power	:	from 60 to 120 W

The various powers are function of the terminal box size, the fluid temperature and extension length. The various sizes and powers are defined in the descriptive documents.

Threshold of release of thermal probe : 125°C ± 5°C

MARKING

The marking is modified as follows:

A - Radiator for use in group IIC :

AMARC

I - 20045 Besana Brianza (MI)

RC375....

INERIS 06ATEX0018

(Serial number)

(Year of construction)

 II 2 G

Ex d IIC T (*)

T.cable : (*)

T.amb : (**)

WARNINGS :

DO NOT OPEN WHEN ENERGIZED
DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(*) The temperature class T1 to T5 and the cable gland temperature are stipulated on the descriptive documents in accordance with the manufacturing variation and the ambient temperature.

(**) Ambient temperature range if differs from -20°C to 40°C.

Or

AMARC

I - 20045 Besana Brianza (MI)

RC375....

INERIS 06ATEX0018

(Serial number)

(Year of construction)

 II 2 GD

Ex d IIC T (*)

Ex tD A21 IP66 T (*)

T.cable : (*)

T.amb : (**)

WARNINGS :

DO NOT OPEN WHEN ENERGIZED
DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(*) The temperature class T3 to T5 (gas) or T200°C to T100°C (dust) and the cable gland temperature are stipulated on the descriptive documents in accordance with the manufacturing variation and the ambient temperature.

(**) Ambient temperature range if differs from -20°C to 40°C.

B - Radiator for use in group I :

AMARC


I - 20045 Besana Brianza (MI)

RC375....

INERIS 06ATEX0018

(Serial number)

(Year of construction)

 I M2

Ex d I

T.cable : (*)

T.amb : (**)

WARNINGS :

DO NOT OPEN WHEN ENERGIZED
DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

(*) The surface temperature is 150°C and the cable gland temperature are stipulated on the descriptive documents in accordance with the manufacturing variation and the ambient temperature.

(**) Ambient temperature range if differs from -20°C to 40°C.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are modified as follows:

Each equipment defined above have to successfully passed the following individual tests before delivery, in accordance with clause 16.1 of the EN60079-1 standard, an overpressure test of a period comprised between 10 and 60 seconds under :

- 20 bar for model 03 to 14
- 13.7 bar for model 16, 18 and 20

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitute the technical documentation describing the modifications of the equipment, subject of this present addition.

- Certification file RC 946/29 rev.3 of 2007.11.19 (24 rubrics) signed on 2007.11.19.

(17) SPECIAL CONDITIONS FOR SAFE USE

The conditions are stipulated in the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is completed as follows:

- Conformity to the European standards EN 60 079-0, EN 60 079-1, EN 61241-0 and EN 61241-1.
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2007 12 19


S. MAUGER
Project Manager at the ATEX
Equipment Evaluation Laboratory




Director of the Certifying Body,
By delegation
T. HOUEIX
Certification Officer
Certification Division