

# CESI

CESI  
Centro Elettrotecnico  
Sperimentale Italiano  
Glacinto Motta SpA

Via R. Rubattino 54  
20134 Milano - Italia  
Telefono +39 022125.1  
Fax +39 0221255440  
www.cesi.it

Capitale sociale 8 550 000 €  
interamente versato  
Codice fiscale e numero  
iscrizione CCIAA 00793580150

Registro Imprese di Milano  
Sezione Ordinaria  
N. R.E.A. 429222  
P.I. IT00793580150

Schema di certificazione

# CESI-ATEX

Il CESI è stato autorizzato dal governo italiano ad operare quale organismo di certificazione di apparecchi e sistemi destinati a essere utilizzati in atmosfera potenzialmente esplosiva con D.M. 1/3/1983, D.M. 19/6/1990, D.M. 20/7/1998 e D.M. 27/9/2000

ATEX E C-02

# CERTIFICATE



## EC-TYPE EXAMINATION CERTIFICATE

[1]

**Equipment or Protective System intended for use  
in potentially explosive atmospheres  
Directive 94/9/EC**

[2]

[3]

EC-Type Examination Certificate number:

**CESI 03 ATEX 082X**

[4]

Equipment: Electrical armoured heaters for immersion type 1, 2, 3

[5]

Manufacturer: **F.A.T.I. S.r.l.**

[6]

Address: Via A. Volta, 52 – Cusago (MI) - Italy

[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]

CESI, notified body n. 0722 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. EX-A3/013951.

[9]

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

**EN 50014: 1997 + A1..A2**

**EN 50018: 2000 + A1**

[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 2 G**

**EEx d HC T4, T3, T2, T1**

This certificate may only be reproduced in its entirety and without any change, schedule included.

Date 16 April 2003 - Translation issued the 16<sup>th</sup> April 2003

Prepared  
Daniele Parazzoli

Verified  
Mirko Balaz

Approved  
Ulisse Colombo

**CESI**

CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO  
Business Unit Certificazione

*Il Responsabile*

[13]

## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 082X**

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[15] **Description of equipment**

The electrical armoured heaters for immersion type 1, 2, 3 consist of a heating unit and a flameproof terminal box.

The heating unit is made by one, two or three armoured heating elements and is fixed to the heated vessel through a coupling flange. The terminal box enclosure can be fixed directly to the coupling flange or can be spaced from it by a neutral extension.

The heaters are supplied with one or two flameproof thermometer pocket for the insertion of a temperature control sensing probe whose terminals are located in the terminal box.

The accessories used for cable entries in the terminal box, shall be certified according to EN 50014 and EN 50018 Standards.

### Electrical characteristics

Maximum rated voltage:	750	V
Maximum current:	75	A
Maximum rated power:	40	kW
Rated frequency:	50/60	Hz
Ambient temperature:	-40 + +60	°C

### Warning label

“Do not open when energized”

“Supply with cable suitable for temperature of ... <sup>1</sup> °C”

<sup>1</sup> the temperature of the supplying cable shall be assigned by the manufacturer as a function of the temperature indicated in column “B” of the tables at page 3.

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[13]

## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 082X

[15] Description of equipment (follows)

**Table 1** Ambient temperature:  $-40 \div +40$  ° C

Neutral extension length (mm)	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	300	T4	80	T3	83	T3	90	T3	96	T2	103	T2	111	T2
250	T4	81	T3	84	T3	91	T3	97	T2	105	T2	113	T2	120
200	T4	82	T3	86	T3	93	T3	102	T2	109	T2	117	T2	123
150	T4	83	T3	91	T3	96	T3	106	T2	113	T2	122	T2	129
100	T4	87	T3	98	T3	104	T3	117	T2	124	T2	134	/	
0	T4	114	/		/		/		/		/		/	
	100		150		200		250		300		350		400	

Operating temperature of the process plant \* °C

**Table 2** Ambient temperature:  $-40 \div +60$  ° C

Neutral extension length (mm)	A	B	A	B	A	B	A	B	A	B	A	B	A	B
	300	T3	100	T3	103	T3	110	T2	116	T2	123	T2	131	T1
250	T3	101	T3	104	T3	111	T2	117	T2	125	T2	133	T1	140
200	T3	102	T3	106	T3	113	T2	122	T2	129	T2	137	T1	143
150	T3	103	T3	111	T3	116	T2	126	T2	133	T2	142	T1	149
100	T3	107	T3	118	T3	124	T2	137	T2	144	/		/	
0	T3	134	/		/		/		/		/		/	
	100		150		200		250		300		350		400	

Operating temperature of the process plant \* °C

A= Temperature class of the equipment (terminal box, neutral extension, if any, up to the coupling flange)  
 B= Surface temperature of the terminal box

\* as operating temperature of the process plant is meant the temperature in steady state of the internal part (process side) of the coupling flange.

/ Not allowed

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[13]

## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 082X**

[16] **Report n. EX-A3/013951**

### Routine tests

The manufacturer shall carry out the routine tests prescribed at paragraph 24 of the EN 50014 standard and at paragraph 16 of the EN 50018 standard.

The routine overpressure test shall be carried out at

- 11,5 bar on the enclosure marked for a minimum ambient temperature of -20 °C
- 17 bar on the enclosure marked for a minimum ambient temperature of -40 °C
- with the static method (paragraph 15.1.3.1 of EN 50018 standard).

The manufacturer shall carry out the overpressure test at 1.5 times the maximum operating pressure of the plant on the parts submitted to the process fluid.

### Verification of the degree of protection

The electrical armoured heater for immersion and the terminal box, with the sealing gaskets as indicated on the documents annexed to this certificate, have been tested in accordance EN 60529 (1991) standard for the degree of protection IP 65.

The test results proved that the heater mentioned above comply with the EN 60529 specification for the degree of protection IP 65.

### Descriptive documents (prot. EX-A3/013957)

- Technical note n. 21126/NT Rev. 5 (7 pg.)	dated	24.03.2003
- Drawing n. 21126 Rev. 3 (2 pg.)	dated	24.03.2003
- Instructions for the installation n. 21126/IS Rev. 3 (4 pg.)	dated	24.03.2003
- Declaration of conformity Rev. 2	dated	21.03.2003

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use (X)**

- The temperature class of the equipment (column A of the tables at page 3) shall be established and affixed on the nameplate by the manufacturer on the basis of the maximum operating temperature of the process plant.
- The supply cable shall be suitable for an operating temperature equal or greater than the temperature indicated in column B of the tables at page 3.
- In order to avoid excessive temperatures of the heated fluid, in addition to the service thermosthwitch, each heating unit shall be provided with a safety device for temperature control, with non-automatic resetting.
- Particular precautions (for instance by means of a level switch) shall be taken in order to guarantee that the heater is in operation only when the level of fluid is at least 50 mm above the highest heated part of the heater.
- The conformity of the heater and of the assemblies as functional units with the certificate and the requirements of the current electrical installations rules, shall be verified by the heater manufacturer or by other skilled person.

[18] **Essential Health and Safety Requirements**

Covered by standards.

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