



[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:
CESI 04 ATEX 082

[4] Equipment: **Incremental Encoder series EX80 and
Absolute Encoder series EAX80**

[5] Manufacturer: **ELTRA S.r.l**

[6] Address: **Monticello di Fara 32/bis street, 36040 SAREGO (VI) - 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-A4/506126.

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

EN 50014: 1997 + A1, A2 EN 50018: 2000 + A1 : 2002

[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 EEx d IIC T6

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

Date 21.07.2004- Translation issued the 21.07.2004

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CESI

CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Business Unit Certificazione

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[13]

Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 04 ATEX 082**

[15] **Description of equipment**

Encoder series EX80

It is a rotational transducer to convert an angular movement into a series of electrical digital impulses. These generated impulses can be used to control angular or linear movements, if they are associated with a rack or endless screws. The electrical signals during rotation can be elaborated by numerical controls (*CNC*), programmable logic controls (*PLC*), control systems, etc. It gives usually two types of squared waves that are out of phase for 90 electrical degrees, which are usually called channel A and channel B. The reading of only a channel gives the information in relation to the speed rotation, while through the acquisition of second channel the sense of the rotation is given on the basis of the states sequence produced by the two signals. The output is of NPN, NPN Open Collector, Push-Pull type or Line Driver.

Encoder series EAX80

The working principle of an absolute encoder is very similar to that of an incremental one but it does not lose the real position when the power supply is turned off (even if shifted) and on a following power up (thanks to the direct coding on the disc) the position is up to date and available and it is not necessary to seek the zero index. It changes an angular movement and provides a digital electric signal in binary or Gray code according to a predetermined bit number. The output is of NPN, NPN Open Collector, PNP, PNP Open Collector, Push-Pull type or SSI (Serial Synchronous Interface).

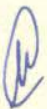
The composition of the identificative code of the two Encoders is reported as detailed in the documentation annexed to the present certificate.

Electrical characteristics

Encoder serie EX80

Power Supply: from 5 to 28 Vdc
Current consumption without load: 80 mA
Max commutable current: 50 mA per channel
Max output frequency: 300 kHz
R.P.M Max: 3000 Rpm
Ambient Temperature: $-20\text{ }^{\circ}\text{C} \leq T_a \leq +50\text{ }^{\circ}\text{C}$

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Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 04 ATEX 082**

[15] **Description of equipment (follows)**

Electrical characteristics (follows)

Encoder serie EAX80

Power Supply: from 5 to 28 Vdc

Current consumption without load: 100 mA

Max commutable current: 50 mA per channel

Max output frequency: 100 kHz

R.P.M Max: 3000 Rpm

Ambient Temperature: $-20\text{ }^{\circ}\text{C} \leq T_a \leq +50\text{ }^{\circ}\text{C}$

Cables entry

The accessories used for the entry of the cables must be certified according to the Standards EN 50014 and EN 50018. The accessory coupling between cables connection and encoder enclosure must be realized as foreseen in the enclosed documents to the present Certificate.

Warning label

None.

[16] **Report n. EX-A4/506126**

Routine tests

The manufacturer shall carry out the foreseen individual tests to the Par. 23 of the Standard EN 50014 and to the Par. 16 of the Standard EN 50018. The overpressure routine test shall be carried out at 11 bar with the static method (clause 15.1.3.1 of EN 50018 Standard).

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Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 04 ATEX 082**

[16] **Report n. EX-A4/506126 (follows)**

Descriptive documents (prot. EX-A4/506146)

- n. DEX0006A.doc	(pages 9)	date	30/06/04
- n. Dich. Conform.		date	21/05/04
- n. 3031A00		date	02/07/01
- n. 1248A00		date	27/08/99
- n. ESP0002D		date	07/03/97
- n. ING0002D		date	07/03/97
- n. 41700000	Rev. C1	date	11/03/97
- n. 41700001	Rev. A1	date	07/03/97
- n. 41700002	Rev. A1	date	07/03/97
- n. 41700003	Rev. B1	date	07/03/97
- n. 41700004	Rev. A1	date	07/03/97
- n. 41700005		date	06/02/97
- n. 41700006	Rev. D1	date	01/07/04
- n. 41700007		date	17/03/97
- n. 41700008		date	24/03/97
- n. DEX0002A	(pages 4)	date	30/06/04
- n. AS006IT0803A	(pages 2)	date	30/06/04
- n. IN010IT0803A	(pages 2)	date	30/06/04

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use**

None.

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

Covered by Standards.