Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 03 ATEX 3033

(4) Equipment: Electronic motor control units MCU_-4

(firmware version: 3._)

(5) Manufacturer: ABB Oy; Low Voltage Products

(6) Address: Strömberg Park; Muottitie 2A; 65320 Vaasa, Finland

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment 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 the confidential report PTB Ex 03-32236.

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

EN 60947-1	**EN 60947-8**
EN 60947-4-1	**EN 60079-14**
EN 60947-5-1	**DIN VDE 0660 Teil 303 (IEC 34-11-2)**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment 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 in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

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Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. F. Lienesch
Oberregierungsrat

Braunschweig, September 09, 2003

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 03 ATEX 3033

(15) Description of equipment

The motor control units MCU_-4 protect, monitor and control a three-phase motor or a single-phase AC motor. The MCU motor control units are available in two basic designs, i.e. MCU1 and MCU2. They are composed of the following units: baseplate, main unit, current measuring unit and voltage and frequency measuring unit (option for MCU2 only). The MCU1 and MCU2 types are monitored and controlled by a microcontroller. Among the most important functions are: motor data adjustments, TOL protection (standard in compliance with DIN EN 60947 and EExe), blocking protection (Stall protection), unbalance protection, phase loss protection and thermistor protection.

Only types MCU2 are equipped with an integrated thermal motor protection control (TMP).

A risk analysis on the basis of DIN V 19250 showed that the devices belong to the requirement class 3, according to EN 954-1, they fulfil the requirements of category 2.

(16) Test report PTB Ex 03-32236

(17) Special conditions for safe use

none

(18) Essential health and safety requirements

The tests carried out and their positive results as well as the proof furnished have confirmed compliance with the standards and thus with Directive 94/9/EC, Annex II and in particular point 1.5. Suitably selected and adjusted safety devices of this type are necessary for the safe operation of motors of the type of protection "increased safety". The devices themselves are installed outside potentially explosive atmospheres (article 1, section 2 of the Directive).

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. F. Lienesch
Oberregierungsrat

Braunschweig, September 09, 2003

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT II