



(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 05 ATEX 2079 X



- (4) Equipment: LCD-display HMI-Ex , type A..
- (5) Manufacturer: ABB Automation Products GmbH
- (6) Address: Borsigstraße 2, 63754 Alzenau, Germany
- (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 06-25311.

- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 50014:1997 + A1 + A2 EN 50020:2002 EN 50284:1999 EN 1127-1:1997
- (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:

 **II 1 G EEx ia IIC T6**

Zertifizierungsstelle Explosionsschutz
By order:

Braunschweig, February 14, 2006

Dr.-Ing. U. Johannsmeyer
Direktor und Professor



(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2079 X

(15) Description of equipment

The LCD-display HMI-Ex , type A is used for the visualisation of current process values. Local parameterisation is possible by means of 4 buttons. The LCD-display HMI-Ex , type A is connected to measuring transducers for various measuring purposes like e.g. temperature or pressure by a 6-pole ribbon cable with plug connector.

For relationship between permissible ambient temperature range, temperature class and the respective equipment category, reference is made to the following tables:

Application for equipment category 1:

temperature class	T6	T5	T4, T3, T2, T1
permissible ambient temperature range	-40 °C*...+44 °C	-40 °C*...+56 °C	-40 °C*...+60 °C

* optionally also -50 °C

Application for equipment category 2:

temperature class	T6	T5	T4, T3, T2, T1
permissible ambient temperature range	-40 °C*...+56 °C	-40 °C*...+71 °C	-40 °C*...+85 °C

* optionally also -50 °C

Electrical data

Display- / service interface.....
(plug connector)

Application for equipment category 1

type of protection Intrinsic Safety EEx ia IIB / IIC
only for connection to certified intrinsically safe circuits
maximum input values:

$$\begin{aligned}
 U_i &= 9 \text{ V} \\
 I_i &= 65.2 \text{ mA} \\
 P_i &= 101 \text{ mW} \\
 C_i &\approx 0 \\
 L_i &\approx 0
 \end{aligned}$$

Application for equipment category 2

Display- / service interface.....type of protection Intrinsic Safety EEx ia IIB / IIC
(plug connector) or EEx ib IIB / IIC
only for connection to certified intrinsically safe circuits
maximum input values

$U_i = 9 \text{ V}$
 $I_i = 65.2 \text{ mA}$
 $P_i = 101 \text{ mW}$
 $C_i \approx 0$
 $L_i \approx 0$

(16) Test report PTB Ex 06-25311

(17) Special conditions for safe use

1. The connection facilities of the LCD-display HMI-Ex, type A shall be installed as such, that the minimum degree of protection IP 20 according to IEC publication 60529:1989 is met.
2. Inadmissible electrostatic charge of the plastic housing of the LCD-display HMI-Ex, type A shall be prevented and a warning label on the equipment shall refer to this.
3. An additional mechanical protection is required for the ambient temperature range of -50 °C up to -20 °C.

(18) Essential health and safety requirements

met by compliance with the standards mentioned above

Zertifizierungsstelle Explosionschutz
By order.

Dr.-Ing. U. Johannsmeyer
Direktor und Professor



Braunschweig, February 14, 2006

1. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2079 X (Translation)

Equipment: LCD-display HMI-Ex, type A..

Marking:  II 1 G EEx ia IIC T6

Manufacturer: ABB Automation Products GmbH

Address: Schillerstraße 72, 32425 Minden, Germany
formerly
Borsigstraße 2, 63755 Alzenau, Germany

Description of supplements and modifications

The modification concerns the adaption to the current state of the standards and, therefore, also the marking of the LCD-display HMI-Ex, type A as well as the address of the manufacturer.
In the future the marking will read:

 II 1 G Ex ia IIC T6 Ga

The "electrical data", the "special conditions" as well as all other specifications apply without changes also to this 1st supplement to EC-type examination certificate PTB 05 ATEX 2079 X.

Applied standards

EN 60079-0:2009 EN 60079-11:2007 EN 1127-1:2007

Test report: PTB Ex 12-20273

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, March 27, 2012

On behalf of PTB:

(signature)

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

1 page, correct and complete as regards content.

On behalf of PTB:

Dr.-Ing. Johannsmeyer Braunschweig, February 25, 2015
Direktor und Professor

Sheet 1/1

2. SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2079 X (Translation)

Equipment: LCD-display HMI-Ex, type A..

Marking:  II 1 G EEx ia IIC T6

Manufacturer: ABB Automation Products GmbH

Address: Schillerstraße 72, 32425 Minden, Germany

Description of supplements and modifications

The EC-type examination certificate PTB 05 ATEX 2079 X for the LCD-display HMI-Ex, type A has been extended for further types of the LCD-display HMI-Ex, specified as types AS, B and BS.

Furthermore, the internal construction of the LCD-display HMI-Ex has been modified.

The temperature specifications as well as the "electrical data" apply to all types of the LCD-display HMI-Ex which are now approved and they are represented in the following.

The relationship between ambient temperature range and temperature class for the respective equipment categories is specified in the following tables:

Application as category-1 equipment:

Temperature class	T6	T5	T4, T3, T2, T1
permissible ambient temperature range	-40 °C*...+44 °C	-40 °C*...+56 °C	-40 °C*...+60 °C

* optional also -50 °C

Application as category-2 equipment:

Temperature class	T6	T5	T4, T3, T2, T1
permissible ambient temperature range	-40 °C*...+56 °C	-40 °C*...+71 °C	-40 °C*...+85 °C

* optional also -50 °C

2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2079 X

Electrical data

Display- / service interface.....type of protection Intrinsic Safety Ex ia IIB / IIC
(plug connector) only for connection to certified intrinsically safe circuits

Application as category-1 equipment:

Maximum input values:

$$\begin{aligned}U_i &= 9 \text{ V} \\I_i &= 65.2 \text{ mA} \\P_i &= 101 \text{ mW} \\C_i &\approx 0 \\L_i &\approx 0\end{aligned}$$

Display- / service interface.....type of protection Intrinsic Safety Ex ia IIB / IIC
(plug connector) or Ex ib IIB / IIC
only for connection to certified intrinsically safe circuits

Application as category-2 equipment:

Maximum input values:

$$\begin{aligned}U_i &= 9 \text{ V} \\I_i &= 65.2 \text{ mA} \\P_i &= 101 \text{ mW} \\C_i &\approx 0 \\L_i &\approx 0\end{aligned}$$

The "special conditions" apply also to the newly approved types of the LCD-display HMI-Ex.

Special conditions for safe use

1. The connection facilities of the LCD-display HMI-Ex of types A, AS, B as well as BS shall be installed as such, that the minimum degree of protection IP 20 according to IEC 60529 is met.
2. Inadmissible electrostatic charge of the plastic housing of the LCD-display HMI-Ex, of types A, AS, B as well as BS shall be prevented and a warning label on the equipment shall refer to this.
3. An additional mechanical protection is required for the ambient temperature range of -50 °C up to -20 °C.

Applied standards

EN 60079-0:2009

EN 60079-11:2007

EN 1127-1:2007

2. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE PTB 05 ATEX 2079 X

Test report: PTB Ex 12-28283

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Braunschweig, March 27, 2012

(signature)

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

3 pages, correct and complete as regards content.

On behalf of PTB:

Dr.-Ing. Johannsmeyer, Braunschweig, February 25, 2015
Direktor und Professor

