



(1) **CERTIFICATE OF CONFORMITY**

(2) KEMA No. Ex-01.E.1055

(3) This certificate is issued for the electrical apparatus:

Barrier Model ISB with barrier factory numbers ISB05000 and ISB15000

(4) Manufacturer:

**Mettler-Toledo, Inc.
1900 Polaris Parkway
Columbus, OH 43240
U.S.A.**

(5) This electrical apparatus and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

(6) KEMA, being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EEC), confirms that the apparatus has been found to comply with the harmonised European standards:

Electrical apparatus for potentially explosive atmospheres

**EN 50014: 1997, General requirements
EN 50020: 1994, Intrinsic safety "i"**

and has successfully met the examination and test requirements which are recorded in confidential report No. 93260.

(7) The apparatus marking shall include the code:

[Ex ia] IIC

(8) The manufacturer of the electrical apparatus referred to in this certificate, has the responsibility to ensure that the apparatus conforms to the specification laid down in the Annex to this certificate and has satisfied routine verifications and tests specified therein.

(9) This apparatus may be marked with the Distinctive Community Mark specified in Annex II to the Commission Directive of 16 January 1984 (84/47/EEC).

Arnhem, 4 May 2001
by order of the Board of Directors of N.V. KEMA

L.M.J. Vries
Certification Manager

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ANNEX

to Certificate of Conformity KEMA No. Ex-01.E.1055

Description

The barriers Model ISB with barrier factory numbers ISB05000 and ISB15000 are an interface for intrinsically safe signal transmission and supply of a weighing system.

The connection with the circuits on either side of each barrier is made by means of a 7 pin connector (the smallest is for the intrinsically safe circuits and has a bright blue colour).

Each barrier contains six circuits. The electrical data of the intrinsically safe circuits of each barrier are based upon the combination of all the circuits (i.e. assuming all circuits are shorted together). The barrier contains fuses which may be replaced.

The part of the barrier containing the intrinsically safe circuits, is protected by a construction providing a degree of ingress protection IP20. The other part of the barrier containing the replaceable fuses, has no ingress protection.

Ambient temperature range -40 °C ... +60 °C.

Electrical data

Barrier factory number ISB05000

Signal/supply circuit 5 V, 200 mA, 1 W
(green connector) Um = 250 Vac

Signal/supply circuit in type of explosion protection intrinsic safety EEx ia IIC,
(blue connector) with the following maximum values:

$$\begin{aligned}U_o &= 8,6 \text{ V} \\I_o &= 300 \text{ mA} \\P_o &= 340 \text{ mW}\end{aligned}$$

Maximum allowed external capacitance $C_o = 6,2 \mu\text{F}$,
maximum allowed external inductance $L_o = 0,3 \text{ mH}$.

Barrier factory number ISB15000

Signal/supply circuit 15 V, 200 mA, 3 W
(green connector) Um = 250 Vac

Signal/supply circuit in type of explosion protection intrinsic safety EEx ia IIC,
(blue connector) with the following maximum values:

$$\begin{aligned}U_o &= 17,3 \text{ V} \\I_o &= 302 \text{ mA} \\P_o &= 1 \text{ W}\end{aligned}$$

Maximum allowed external capacitance $C_o = 353 \text{ nF}$,
maximum allowed external inductance $L_o = 150 \mu\text{H}$.

ANNEX

to Certificate of Conformity KEMA No. Ex-01.E.1055

Installation instructions

1. The earth connection of the barrier must be connected to the potential equalising system in accordance with the applicable installation standard.
2. The barrier must be installed outside the hazardous area, unless it is protected by an other type of explosion protection and the combination is certified.
3. When a higher ingress protection than IP20 is required, this must be achieved by an additional enclosure which is suitable for the applicable environmental conditions.

Routine tests

A routine test shall be performed on each completed barrier per clause 11.1.1 of EN 50020.

Test documentation

	<u>dated</u>
1. Drawing No. 159669R)	
A15966800A)	
130934 (3 sheets))	
16063400A)	
16063200A)	
15116000A)	
16065300A)	
16065400A)	
160659R)	
)	06.04.2001
15967000A (3 sheets))	
16066100A)	
16065600A)	
A16066000A)	
)	
15967300A (3 sheets))	
16088200A)	
16065500A)	
A16065800A)	

2. Samples

Arnhem, 4 May 2001
by order of the Board of Directors of N.V. KEMA



L.M.J. Vries
Certification Manager

(1) **CERTIFICATE OF CONFORMITY**

(2) KEMA No. **Ex-01.E.2071 X**

(3) This certificate is issued for the electrical apparatus:

Barrier Model ISB with barrier factory numbers ISB05X000 and ISB15X000

(4) Manufacturer:

**Mettler-Toledo Inc.
1900 Polaris Parkway
Columbus, OH 43240
U.S.A.**

(5) This electrical apparatus and any acceptable variation thereto is specified in the Annex to this certificate and the documents therein referred to.

(6) KEMA, being an Approved Certification Body in accordance with Article 14 of the Council Directive of the European Communities of 18 December 1975 (76/117/EEC), confirms that the apparatus has been found to comply with the harmonised European standards:

Electrical apparatus for potentially explosive atmospheres

EN 50014: 1992, General requirements

EN 50018: 1994, Flameproof enclosure "d"

EN 50020: 1994, Intrinsic safety "i"

and has successfully met the examination and test requirements which are recorded in confidential report no. 93260.

(7) The apparatus marking shall include the code:

EEx d IIB + H₂ [ia] IIC T6

(8) The manufacturer of the electrical apparatus referred to in this certificate, has the responsibility to ensure that the apparatus conforms to the specification laid down in the Annex to this certificate and has satisfied routine verifications and tests specified therein.

(9) This apparatus may be marked with the Distinctive Community Mark specified in Annex II to the Commission Directive of 16 January 1984 (84/47/EEC).

Arnhem, 7 May 2001

by order of the Board of Directors of N.V. KEMA

L.M.J. Vries
Certification Manager

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ANNEX

to Certificate of Conformity KEMA No. Ex-01.E.2071 X

Description

The barriers Model ISB with factory numbers ISB05X000 and ISB15X000 consist of a safety barrier with factory number ISB05000 or ISB15000 respectively, mounted inside a flameproof enclosure. The barriers are used as an interface for intrinsically safe signal transmission and supply of a weighing system.

Ambient temperature range -10 °C ... +40 °C.

Electrical data

Barrier factory number ISB05000

Signal/supply circuit 5 V, 200 mA, 1 W
(green connector) Um = 250 Vac

Signal/supply circuit in type of explosion protection intrinsic safety EEx ia IIC,
(blue connector) only for connection to a certified intrinsically safe circuit,
with the following maximum values:

$$\begin{aligned}U_o &= 8,6 \text{ V} \\I_o &= 300 \text{ mA} \\P_o &= 340 \text{ mW}\end{aligned}$$

Maximum allowed external capacitance $C_o = 6,2 \mu\text{F}$,
maximum external inductance $L_o = 0,3 \text{ mH}$.

Barrier factory number ISB15000

Signal/supply circuit 15 V, 200 mA, 3 W
(green connector) Um = 250 Vac

Signal/supply circuit in type of explosion protection intrinsic safety EEx ia IIC,
(blue connector) only for connection to a certified intrinsically safe circuit,
with the following maximum values:

$$\begin{aligned}U_o &= 17,3 \text{ V} \\I_o &= 302 \text{ mA} \\P_o &= 1 \text{ W}\end{aligned}$$

Maximum allowed external capacitance $C_o = 353 \text{ nF}$,
maximum external inductance $L_o = 150 \mu\text{H}$.

Installation instructions

The cable entry devices shall be in type of explosion protection flameproof enclosure "d", suitable for the conditions of use and correctly installed.

The earth connection of the barriers must be connected to the potential equalising system in accordance with the applicable installation standard.

ANNEX

to Certificate of Conformity KEMA No. Ex-01.E.2071 X

Special conditions for safe use

See electrical data for the parameters of the intrinsically safe circuits.

Test documentation

1. Certificate of Conformity KEMA No. Ex-01.E.1055
Component Certificate DEMKO No. Ex-99E.124129 U

signed

2. Drawing No. 14115500A rev. 1)
160659R)
162057R)
A16103500A)
- 29.03.2001

3. Samples

Arnhem, 7 May 2001

by order of the Board of Directors of N.V. KEMA



L.M.J. Vries
Certification Manager