

RHEONIK

Part of GE's Sensing &
Inspection Technologies business

RHE EZB 14

Safety Instructions



imagination at work

M-E#EZB Rev. B
July 2009

1. Description of the Model EZB 14 Barrier Unit

The EZB 14 is a certified intrinsic safety barrier unit designed for installation between a Model RHM Mass Flow Sensor installed in a hazardous area and a Model RHE Mass Flow Transmitter installed in a safe area. The EZB 14 has built in voltage and current limiting components that provide protection for intrinsically safe mass flow sensor circuits. It is intended for an ambient temperature range of -20° to $+55^{\circ}$ °C.

The Model EZB 14 is mounted in a safe area.

All circuits are mounted inside a DIN-rail enclosure (TS35 DIN rails according to EN50022).

2. General Specifications

Terminals

18 terminals on both sides of the enclosure accommodate conductors up to 2.5 mm^2 (12 AWG) size.

Hazardous Area terminals are #1 to #18, Safe Area terminals are #19 to #36.

Operating Temperature Range

-20° to 55° °C (-4 to 131° °F)

Weight

200 g

Mounting and Earthing /Grounding

The EZB 14 clamps directly onto symmetrical 35 mm rail to DIN 46277, EN50022. Separate terminals for connection to earth ground are provided. A grounding post is provided at the side of the unit.

3. Electrical Characteristics

NON Intrinsically Safe Circuits

Maximum voltage (Um): 30 VDC

Intrinsically Safe Circuits

- DRIVE (2 parallel wired drive coils inside the RHM sensor for electromechanical drive)
- TEMP/SENSE (RTD temperature sensor voltage sense circuit)
- TEMP/CURRENT (RTD temperature sensor constant current circuit)
- COIL1 (flow sensing coil)
- COIL2 (flow sensing coil)

Circuit name	Barrier M703 No.	Uo [V]	Io [mA]	Lo [mH]	Co [uF]	Po [mW]
DRIVE	#1	5	39	20	100	50
TEMP/SENSE	#2	5	28	35	100	36
TEMP/CURRENT	#3					
COIL1	#4	5	9	300	100	12
COIL2	#5	5	9	300	100	12

4. Mounting

To mount the EZB 14 on 35 mm DIN rail:

1. Hook one side of the mounting foot over the lip of the rail
2. Pull out the latch at the bottom front side of the casing and
3. Press down firmly on the barrier casing to snap the other side of the mounting foot over the opposite rail lip.

Note: *This rail forms no electrical earth/ground connection. Earth connection must be established using the grounding post on the right side of the casing (minimum 4 mm² cable).*

5. Wiring and Connection

All connections must be made according to the RHM-EZB-RHE wiring diagram. The maximum size wire is 2.5 mm² (12 AWG). The wiring diagram can be found at the end of this booklet.

The terminal blocks for the hazardous area terminals #1 to #18 are located on the lower side of the casing, while the safe area terminals #19 to #36 are located at the upper side of the casing.

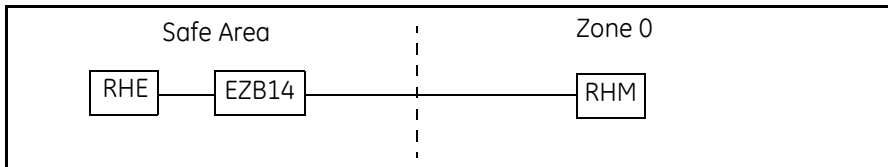
The connection of the EZB14 to the Intrinsic Safety ground system must be securely and properly implemented to meet the requirements of required local standards. An appropriate earth/ground clamp terminal must be used for this purpose (minimum wire size of 4 mm² /14 AWG).

Cable screens must only be connected to the cable shield terminals #16 (hazardous area side) and #34 (safe area side), but not to any earth/ground terminals.

6. Marking

Marking:

II (1)G [Ex ia] IIC/IIB:



EZB 14

CE₀₀₄₄  II (1) G [Ex ia] IIC/IIB, Ambient temperature: -20°C ÷ +55°C

Table 1: Marking Explanations for EZB 14

Number or Symbol	Explanation
0044	number of notified body for quality assurance (TUV NORD)
II	group II (surface)
(1)	apparatus for SAFE AREA, suitable to interface category 1 device
G	explosive atmospheres with gas or vapours
[Ex ia] IIB / IIC	type of protection [associated apparatus] & gas group
- 20° to +55 °C	ambient temperature

Table 2: Relations Among Zones, Substances and Categories

Hazardous area		Categories according to 94/9/CE Directive
Gas or vapours	Zone 0	1G
Gas or vapours	Zone 1	2G
Gas or vapours	Zone 2	3G

7. Safety Notes for Installation In Hazardous Area

Before the installation, read these instructions CAREFULLY.

The EZB 14 Safety Barrier must be installed and maintained according to all plant and maintenance standards for classified areas against explosion risk due to the presence of explosive gases (EN 60079-14, EN 60079-25, EN 60079-17 or other national/local standards).

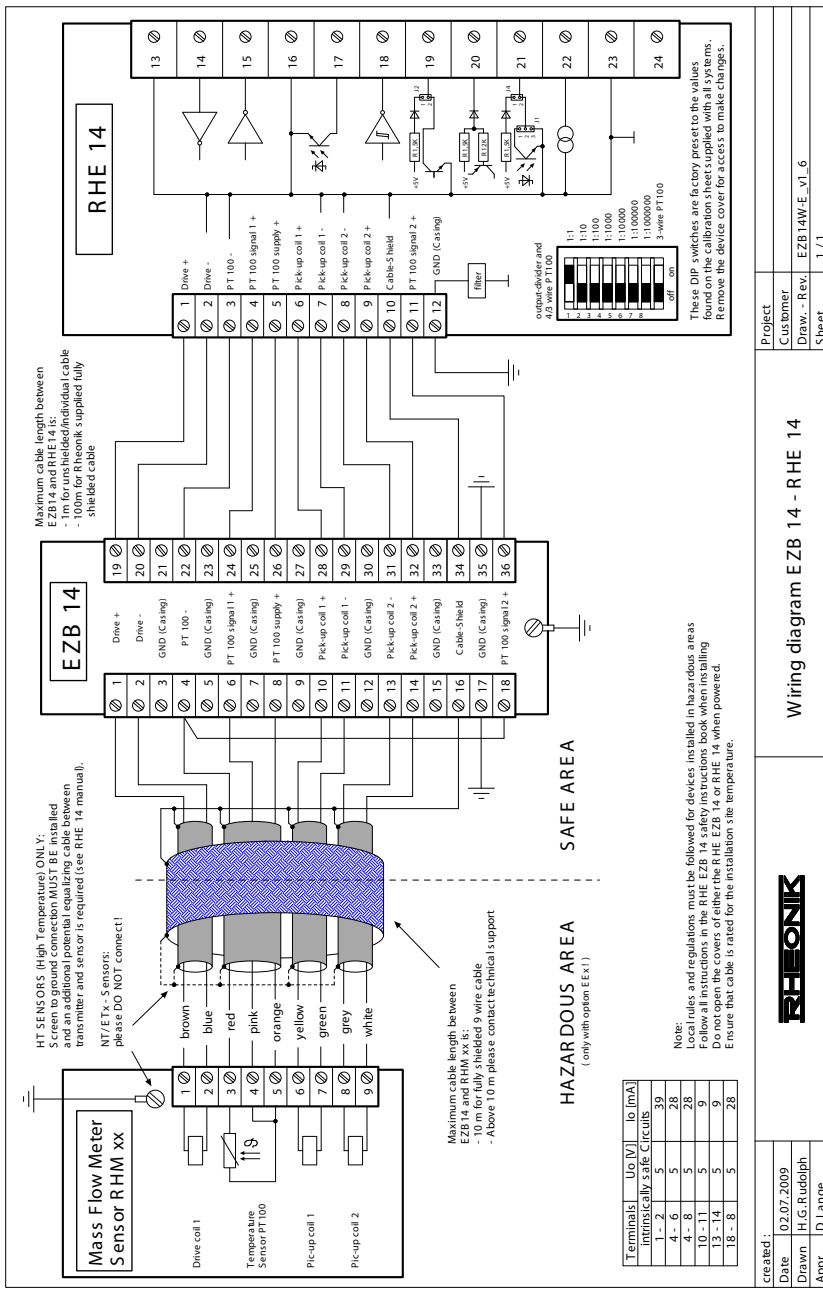
The EZB 14 Safety Barrier unit must only be connected to an IS certified (RHM) sensor that is suitable for use in the hazardous location (zone) of installation, and has input parameters (Ui, Ii, Pi, Ci, Li) corresponding to the input parameters of the EZB 14 (Uo, Io, Po, Co, Lo).

The Model EZB 14 barrier unit must be mounted in a “safe area”. EZB 14 units are not intended for installation in hazardous areas.

Equipment connected to the non hazardous location terminals of an EZB 14 unit must not be supplied with, nor contain, a potential with respect to ground, under normal or fault conditions, exceeding 30 V DC (Um).

There must be no other equipment (capacitive or inductive) connected to a EZB 14 barrier unit besides RHM sensor and Rheonik supplied cable.

For safety reasons the total cable length between a RHM sensor and a EZB 14 cannot exceed 100 meters. For functional reasons, the maximum cable length for the 9-wire cable that connects the RHM sensor and the EZB 14 is 10 meters. Above 10 meters please contact the technical support.





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DECLARATION OF CONFORMITY

We:

**RHEONIK Meßgeräte GmbH, Rudolf Diesel Str. 5, 85235
Odelzhausen, Germany**

acknowledge our sole responsibility, that the product:

Kind of equipment: Safety Barrier for Coriolis Mass Flow Meter

Type designation: EZB14

EZB14/N

in accordance with the ATEX Directive 94/9/EC,
is in compliance with the following standard (s) or document (s):

Technical regulations: EN 60079-0, EN 60079-11, EN 60079-15, EN 60079-26

Marking / Type of protection:

EZB 14: Ex II (1) G [Ex ia] IIC/IIB, ambient temp. : -20°C ÷ +55°C


EZB 14 N: Ex II 3 (1) G Ex nA [ia] IIC/IIB T4, ambient temp. : -20°C ÷ +55°C

EC type Certificate : **CESI 08 ATEX 054**

Notified Body for ATEX/Q: **0044 TÜV NORD**

30 of January 2009

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