

Users Manual

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1. INTRODUCTION

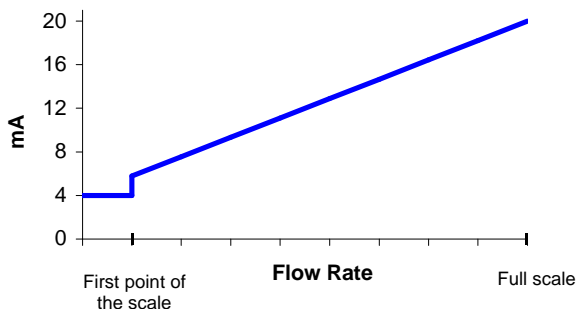
The Halltec III EEx is an intrinsically safe position transducer. The instrument uses the Hall effect to capture the field of a magnet. This signal, after the micro-controller processing, is converted to a 4-20 mA signal proportional to the flow rate.

NOTE: Do not unscrew or remove the magnet or the circuit board, because it could affect the calibration.

2. MODELS

2.1. TEH

It is a 4 to 20 mA transmitter proportional to flow rate. 4 mA corresponds to beginning of the scale. 20 mA corresponds to full scale. Between the beginning of the scale and the first point of the scale the analog output is constant at 4 mA, to avoid false readings of flow rate.



Example. Response of a TEH transmitter

2.2. TTEH

It is a TEH transmitter that includes a 9-digit totalizer.

3. GENERAL WIRING

Before starting the electrical installation, make sure that the cable gland of the connector is the right size for the cable to be used. This will guarantee that the instrument is perfectly sealed (it is recommended the use of cable with an exterior diameter between 5 and 8 mm. The section of the wires inside will be 0,25 or 0,5 mm²).

A twisted pair wiring should be used to avoid electrical interferences in the 4-20 mA loop. In some instances, shielded cable may be necessary.

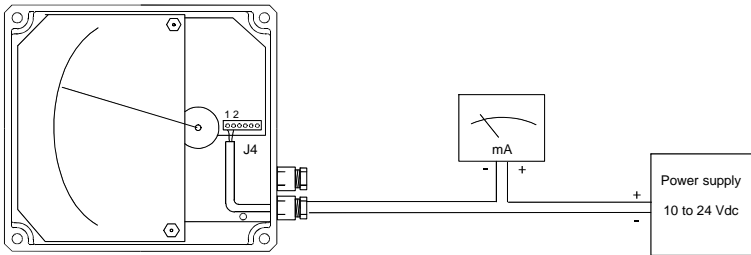
Before connecting the power supply, you must be sure that the supply voltage is the correct for the installation.

3.1. Power supply and analog output

The connection is made in the connector J4, with the negative terminal of the power supply in the position 1 and the negative terminal of the load in the position 2. The positive terminals of the power supply and the load are connected together. The instrument works in a 2-wire system, that is, the supply and signal line is the same.

3.2. Totalizer reset

If the instrument has totalizer, the reset input is connected in the 5th and 6th positions of J4. It can be connected a normally open potential free contact. It is important that the contact



works well with low level signals, to avoid noise effects.

Note: The reset terminals are not isolated from the rest of the circuit. They may not be connected to other equipment.

4. TECHNICAL CHARACTERISTICS

4.1. Power supply

Minimum voltage:	$0.02 Z + 10$ (Volts) (Z is the load in the loop in ohms)
Maximum voltage:	24 Vdc
Consumption:	4 to 20 mA (from 0 to full scale).

4.2. Outputs

Analog output:	4 - 20 mA, factory calibrated
Load in the 4-20 loop:	$(\text{Power supply (V)} - 10) / 20 \text{ mA (k}\Omega)$
Maximum load in the 4-20 loop:	700Ω (at 24 Vdc supply voltage)
Totalizer:	9 digits. Reset by means of potential free contact.

4.3. General Characteristics

Protection:	IP-65
Ambient temperature range:	-5 to +40 °C
Precision (analog output respect the magnet position):	< 0.6 %

5. SAFETY CHARACTERISTICS

This equipment conforms to the following directives and norms

89/336/CEE	Electromagnetic compatibility.
EN 50081-1	Electromagnetic compatibility. Generic emission standard.
EN 50082-2	Electromagnetic compatibility. Generic immunity standard.
94/9/CE	Equipment and protective systems intended for use in potentially explosive atmospheres.
EN 50014	Electrical apparatus for potentially explosive atmospheres. General requirements.
EN 50020	Electrical apparatus for potentially explosive atmospheres. Intrinsic safety 'i'.
EN 50284	Special requirements for construction, testing and marking of electrical apparatus of equipment group II, category 1G.

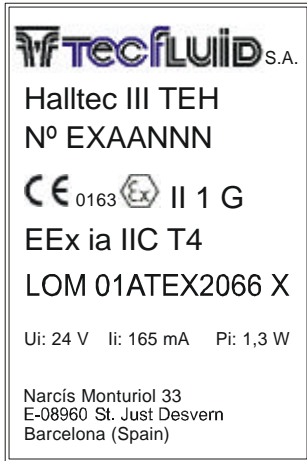
Given that this instrument is group II, it is intended for use in places likely to become endangered by explosive atmospheres, but not in mines.

The category is 1G, that is, it is intended for use in areas in which explosive atmospheres caused

by mixtures of air and gases, vapours or mists are present continuously, for long periods or frequently.



The front window must **always** be cleaned with a damp cloth, in order to avoid electrostatic discharges.



The marking of the equipment shows the following characteristics:

- Manufacturer
- Model
- Serial number (year of construction and number)
- CE marking
- Intrinsically safety marking
- Notified body
- Electrical parameters
- Address of the manufacturer

6. MAINTENANCE

No special maintenance is required.

WARRANTY

Tecfluid S.A. GUARANTEES ALL ITS PRODUCTS FOR A PERIOD OF 12 MONTHS, maximum 18 months after consignment, against all defects in materials and workmanship.

This warranty does not cover failures which can be imputed to misuse, use in application different from that specified in the order, the result of service or modification by un-authorised persons, bad handling or accident.

This warranty is limited to cover the repair or replacement of defective parts which have not been damaged by misuse.

This warranty is limited to the repair of the equipment and all further and eventually following damages are not covered by this warranty.

In the event of consignment of equipment to our factory, this should be done with the equipment well packed and prepaid transport. Tecfluid S.A. will not accept any responsibility for damage done during transport. Together with the equipment, a note should be enclosed indicating the failure observed, the name, address and telephone number of the sender.

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