

Users Manual

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1. INTRODUCTION

The Halltec III is a position transducer with a microprocessor. 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.

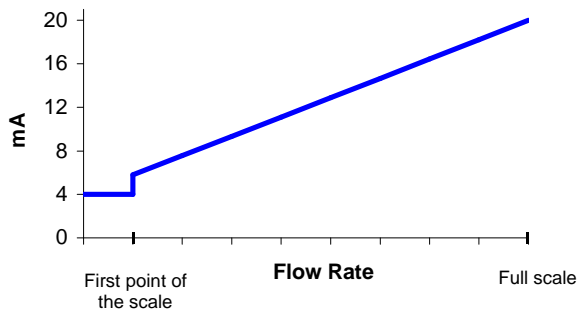
NOTE: Do not unscrew or remove the magnet or the circuit board, because it could affect the calibration.

2. MODELS

The following models work as a two-wire system. On demand, we can supply the same models to connect them as a four-wire system, for different power supply requirements.

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.



1. Example. Response of a TEH transmitter

2.2. TTEH

It is a TEH transmitter that includes a 9-digit totalizer and a pulse output synchronized with this 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 shielded pair wiring with an exterior diameter between 5 and 8 mm. The section of the cables inside will be 0,25 or 0,5 mm²).

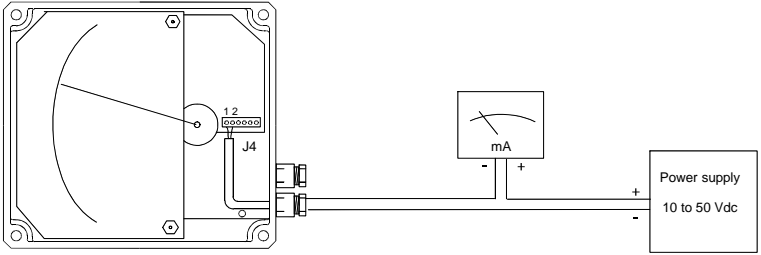
A twisted pair wiring should be used to avoid electrical interferences in the 4-20 mA loop. In some instances, shielded cable may be necessary.

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

4. 2-WIRE CONNECTION

4.1. 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.

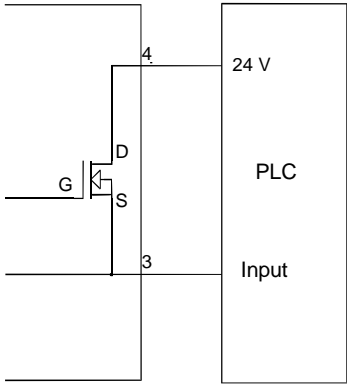


4.2. Pulse output and reset

If the instrument has a pulse output, this is connected in the 3rd and 4th positions of J4. The output is an N channel MOSFET isolated from the rest of the circuit and potential free. The 3rd terminal is the source and the 4th terminal is the drain.

5th and 6th positions from J4 are a reset input for the totalizer. 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.



Example: Pulse output connection

5. 4-WIRE CONNECTION

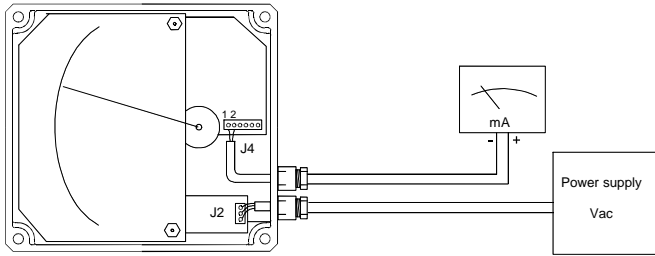
5.1. Power supply

The power supply of the instrument is connected to J2. The earth terminal is indicated with its symbol. With alternate current input, L terminal is the live and N terminal is the neutral.

With direct current input, the position of the positive and negative terminals doesn't matter.

5.2. Analog output

The current output from 4 to 20 mA is active. The connection is made in the connector J4, with the positive terminal of the load in position 1 and the negative terminal in position 2. It is recommended to use a twisted pair wiring to avoid interferences in the current loop.



NOTE: The TTEH model is supplied with a shortcircuit across pins 1 and 2. This should not be removed if the output is not used.

5.3. Pulse output and reset

See point 4.2

6. TECHNICAL CHARACTERISTICS

6.1. Power supply

2 wires:

Minimum voltage: 0.02 Z + 10 (Volts) (Z is the load in the loop in ohms)

Maximum voltage: 50 Vdc

Consumption: maximum 20 mA

4 wires:

Voltage: 24 to 240 Vac on demand.

Consumption: < 2 VA

6.2. Outputs

Analog output: 4 - 20 mA, factory calibrated

Maximum load in the 4-20 loop: 2 k Ω (at 50 Vdc supply voltage)

Pulse output: MOSFET N channel potential free. I_{max}: 200 mA

Maximum frequency: 2 Hz.

Pulse duration: Aprox. 250 ms.

Totalizer: 9 digits. Reset by means of potential free contact.

6.3. General Characteristics

Protection: IP-65

Ambient temperature range: -5 to +70 °C

Precision (analog output respect the magnet position): < 0.6 %

Compliance with Directive 73 / 23 / CEE

Norm EN 61010-1

Compliance with Directive EMC 89/336/CEE

Norm EN 50081-1

Norm EN 50082-2



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