Encoder EM6422
Pulses emitter for p.d. meters

Pulses emitter EM6422 is used to convert the rotary motion of a Positive Displacement Flowmeter into electric pulses, thus allowing the meter to interface with ISOIL electronic counters (VEGA II, VEGA T, VEGA 3).

Type A may be mounted directly on all recently built ISOIL p.d. meters while **type B** is for old versions of ISOIL meters since it is provided with an adapter.

A version for meters of other brands is also available upon request.

Operation

EM6422 is made of an aluminium casing divided into two compartments separated by an aluminium wall.

In one of the two compartments, a small shaft installed on a roller bearing is connected on one end to the output shaft of the pd meter and on the other end to a magnet. Inside the adjacent compartment, another magnet detects the rotation of the shaft and causes an electronic circuit to generate electric pulses.

Therefore there is no need for dynamic seals that can cause leaks due to wear over time.

The housing is closed by a cover with O-ring and has a threaded female inlet for cable entrance by conduit or by cable gland.

The electric wiring is made through a removable and easily accessible terminal block.

EM6422 versions

Pulses transmission

The shaft of the EM6422 is connected to the meter shaft.

Each rotation of the rotor equals 64 or 256 pulses which are generated on two channels (A and B) with a phase shift of 90° electrical degrees.

The coupling between the magnet and the sensor is continuously monitored by the electronic circuit. Any malfunctioning will result in a pulse transmission on a single channel only.

The electronic counter receives a number of pulses proportional to the delivered volume enabling the user to check:

- The correct transmission and operation of the EM6422 by simply comparing the count of both channels;
- The flow direction by analysing the pulse sequence.

CAN bus transmission

The encoder is provided with a micro-controller counting the pulses from a magnetic sensor (A, B and Index channels).

The number of generated pulses (64 or 256 pulses per round) and the frequency are transmitted to the flow computer through a CAN bus connection by means of an ISOIL proprietary protocol. This protocol includes a key controller to avoid tampering of legally relevant data.
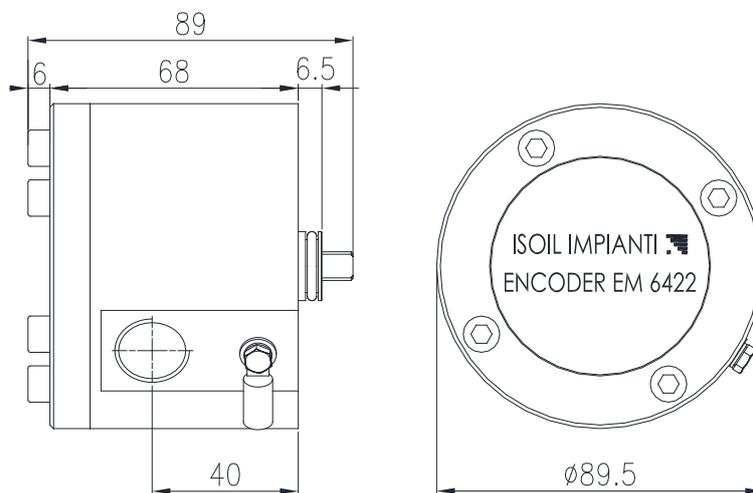
The integrity of the electronic circuit can be checked by monitoring the sequence on A, B and index channels, and the coupling between magnet and sensor.

Any malfunctioning can be immediately detected by monitoring the status of the CAN bus protocols.

Electronic counter VEGAII/VEGAT/VEGA3 linked with EM6422 CAN bus require a specific firmware.

Dimensions

Dimensions in mm

Pulses/liter

P.D. METER	*WITH EM6422 64 PULSES/REVOLUTION*	*WITH EM6422 256 PULSES/REVOLUTION*
SBM 32:	133,1	532,4
SBM 75:	102,4	409,6
SBM 150:	28,1	112,4
BM 200:	28,1	112,4
BM 400:	14,1	56,4
BM 600:	9,4	37,6
S 9000:	13,0	52
P 4000:	13,0	52
LBM 1000:	4,3	17,2
LBM 3000:	2,2	8,8

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Technical data

Environmental features

Working temperature:	*-40 ÷ +75°C*
Humidity:	*0÷100% non-condensing*

Construction

Housing:	*anodized aluminium alloy*
Shaft:	*stainless steel*
Gaskets (seal):	*FKM LT*
Gaskets (cover):	*NBR*
Operating speed:	*0 ÷ 1000 rpm*
Pulses:	*64 or 256 pulses/revolution, bidirectional*
Cable entrances:	*½"NPT (1 or 2 entrances)*
Terminal block:	*Pull-out, 5 positions, shielded wire Ø 0,2÷1,5 mm^2*
Weight:	*1 Kg*

Electrical characteristics

Power supply:	*5 ÷30 Vdc*
Consumption:	*0,5 W*
Electrical protection ATEX- IECEx:	*II 2 G Ex db IIB T6 Gb Tcable 80°C*
Mechanical protection:	*IP66*

Pulses transmission

Phase shift (A and B channel):	*90% ±5%*
Duty cycle:	*50/50± 5%*
Pulses output:	*Open drain FET, pull-up resistor 4,7kΩ set by dip switch*
Max output current (A and B channel):	*50 mA for each channel*

CAN bus trasmission

Serial communication:	*CAN bus interface*
	Speeds: 50/125 kHz by dip-switch selection
	Addresses: 21÷24 (Hex) by dip-switches selection

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