




Instructions Manual



Conforms with Directives 73 / 23 / CEE (Low voltage) and 89/336/CEE (EMC) 

1 INTRODUCTION

The Flomid-MCX/FI electronic control unit for batching adapts to the different Flomid series electromagnetic flow sensors.

The instrument has a microcontroller, which controls the analog signal from the sensor. The analog signal, which is proportional to flow rate, is converted to a pulse output signal for counting applications in fast batching processes.

The electronic circuit offers the following functions:

- Pulsed coil excitation to obtain a minimum zero drift.
- Mounting: compact or separate from the sensor.
- Easily removable from the sensor for maintenance.

2 INSTALLATION INSTRUCTIONS

For the electrical installation it is recommended to use multiple conductor cables with individual cable sections in the order of 0.5 mm^2 in order to make it easier to connect.

The Flomid-MCX/FI has two IP65 connectors at the rear of the electronics housing. The larger of the connectors is for the power supply (mains voltage) and the smaller of the two connectors is for the pulse output.

Before starting the installation, check that the cables to be used are the right size for the cable glands on the connectors, this will guarantee the instrument will stay water tight.

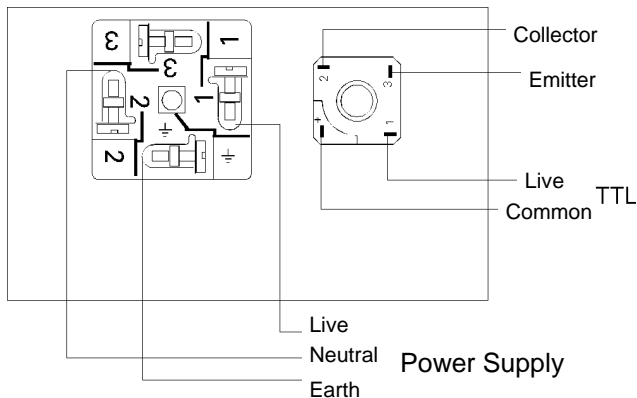
Peel the outside insulation to free the inner cables. It is recommended to tin the cables at the ends of the wires to avoid loose ends which can produce short circuits. Pass the cables through the cable glands and screw in or solder the cables in their positions. Once the wiring is finished make sure that the cables are well gripped by the cable glands.

IMPORTANT: In order to comply with the electrical safety requirements as per EN-61010-1, the installation of the equipment must take into account the following:

- A mains switch must be provided to disconnect the equipment. This switch must be marked as the disconnecting device for the equipment and be within easy reach of the operator.

- The mains supply must have an earth line.

Before starting to install the equipment, check that the supply voltage available is the same as marked on the label of the instrument.



2.1 Power supply connection

The mains supply is wired to terminals 1 & 2 of the largest of the two connectors. The Live is wired to terminal N° 1, the neutral to terminal N° 2 and the mains earth to the terminal marked as such. Terminal 3 no connection. The mains earth is important for the line filter inside the instrument and for electrical safety. These connections are by means of screw terminals.

2.2 Pulse output connection

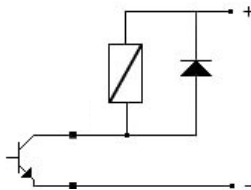
For the pulse output, two types of circuits are available to adapt to different requirements. These outputs are located in the small connector. The connections are by means of solder terminals.

Firstly there is a TTL output which gives active pulses from 0 to 5 Volts. The minimum load resistance for this output is 10 k Ω , given that the output resistance of the circuit is 1k Ω . For this output the live should be connected to terminal N° 1 and the common to terminal marked as earth.

The TTL output is not isolated from the earth and from electrodes.

In the terminals N° 2 and N° 3, there is an opto-isolated output. This output is an NPN transistor with the collector connected to terminal N° 2 and the emitter connected to terminal N° 3. This output can support 20 mA maximum current and 30 Volts maximum voltage. It is potential free and does not have any protection of any kind, which must be provided externally as needed.

In the event of employing inductive loads, such as relays, the use of a free wheeling diode is necessary and should be connected as shown below.



3. SET UP

The Flomid-MCX/FI needs no set up for operation. It is factory adjusted to give a pulse output as indicated in pulses per litre (i/l) on the electronics housing. The pulses per litre must be specified in the clients order.

The flow direction is from left to right for the standard setting (indicated on the label "Flow : +") This setting can be changed by means of a jumper inside the instrument, but this should be done only by authorised persons.

The pulse output has a cut-off level at about 0,2 m/s.

4. MAINTENANCE

It doesn't need any special maintenance.

5. TECHNICAL CHARACTERISTICS

5.1. Power supply

- Supply Voltage:
 - Standard : 220/230 Vac 50/60Hz
 - On Order : 240 Vac, 110 Vac, 24 Vac 50/60 Hz
- Power Consumption : Less than 10 VA
- Fuse : 250 mA Slow (T) 5 x 20 mm

NOTE: In the cases that the mains frequency is 60 Hz, this should be specified in the clients order since this implies a small change in the program of the microcomputers in order to minimize the effects of electrical noise from power lines.

5.2. Outputs

- TTL Output (0 a 5 V)
 - Minimum Impedance : 10 k Ω
- Open Collector Output
 - Maximum current : 20 mA
 - Maximum voltage : 30 V

5.3. General Characteristics

- Ingress Protection : IP65
- Maximum ambient temperature : 60°C

WARRANTY

Tecfluid S.A. GUARANTEES ALL ITS PRODUCTS FOR A PERIOD OF 24 MONTHS, after consignment, against all defects in materials and workmanship.

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

This warranty is limited to cover the repair or replacement 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.

Any consignment of equipment to our factory or distributor must be previously authorised. The consignment should be done with the equipment well packed, clean of any liquids, grease or hazardous materials. 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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