INSTRUCTION MANUAL

MAGNETIC

DISPLAY FOR FLOW RATE MEASURING

ENGLISH

PLEASE CAREFULLY READ
THIS INSTRUCTION MANUAL
BEFORE USING THE INSTRUMENT
AND KEEP FOR FUTURE REFERENCE.

POLMAC srl.

INSTRUMENT DESCRIPTION

The electromagnetic flowmeter is able to measure the quantity of liquid flowing in a pipe. Measuring is done through a magnetic induction electronic system which enables to have the section where the liquid passes completely free and with no moving parts. This feature enables to keep the performances of the instrument unchanged, even if liquids used are characterised by the presence of suspended solids. Pipe getting in contact with liquid is made of stainless steel and delrin, contained into a copper pipe; the mechanical part and the electronic card, properly isolated, are introduced into a plastic body preset in order to enable the use of flanges in different sizes and flanges interchangeable one another.

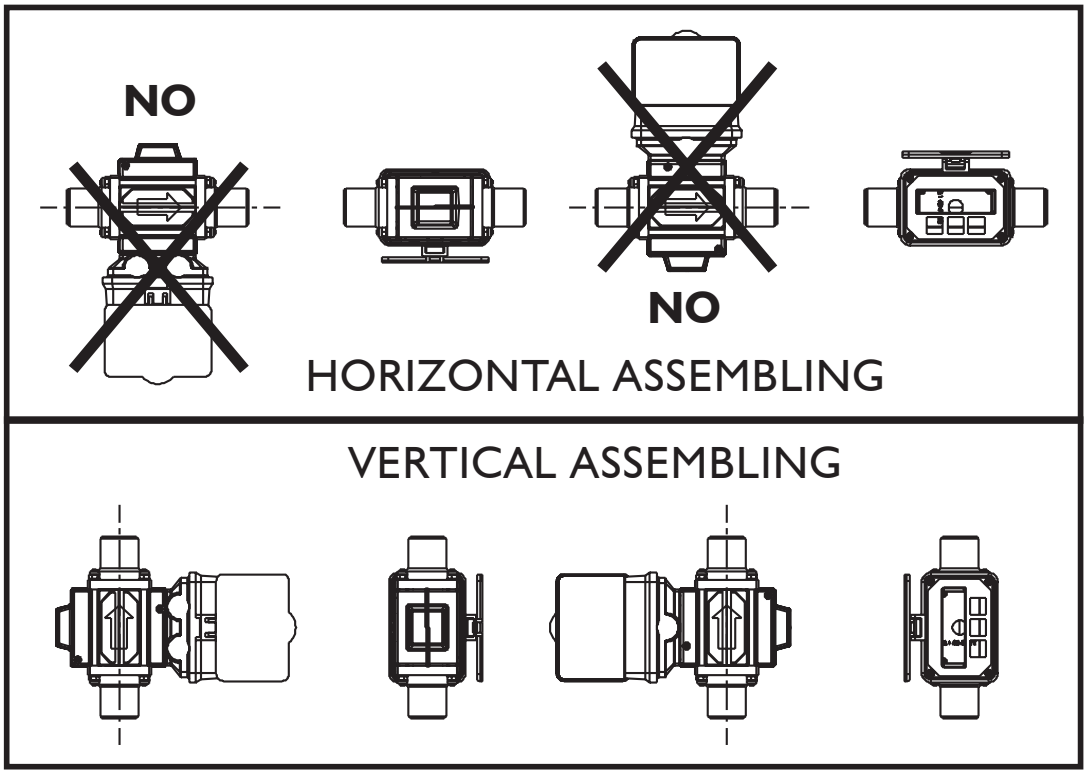
HOW TO USE THE INSTRUMENT

Polmac electromagnetic flowmeter can be used on Agricultural Machines to distribute chemical products as long as in the industrial field to measure liquid flows in general. It's absolutely forbidden to use it to measure inflammable liquids and as a point of reference within the sale of the product measured to third people. The aggressiveness of the liquid to be measured is determinant for a good functioning of the flowmeter, so we suggest to verify the compatibility with the parts of the device it will get in touch with.

INSTALLATION

Flowmeter good functioning, depends on a correct installation, on an appropriate use and on a regular maintenance. The choice of the device must be done keeping in consideration different variables, for example pipes diameter, system pression, working temperature, compatibility with the liquid used and the place of installation.

- Flowmeter location must be properly studied in order to prevent the exposure to wheather proof, to winter frost, to sun radiation, proximity to hot sources, contact with electric or electronic parts, places with saline atmosphere, gas or vapor.
- The flow must run inside the flowmeter without air, preventing water hammer.
- The presence on the line of an elbow, a valve and so on can result in a turbulence. For this reason it's recommendable to install the flowmeter far from the above mentioned accessories, caring to have a segment of the linear pipe with a length 10 times at least the internal diameter in the inlet and 5 times at least the internal diameter in the outlet.



VERSIONS AND CODES

3 versions for any model:

M	Electromagnetic Flowmeter
PM	Electromagnetic flowmeter with Display
PMS	Electromagnetic Flowmeter with Display and Outlet Signal 12V. - 5A.

	¼"	½"	1"	1"½	2"
M	00377050	00377052	00377053	00377055	00377060
PM	PM377050	PM377052	PM377053	PM377055	PM377060
PMS	PMS77050	PMS77052	PMS77053	PMS77055	PMS77060

SIGNAL AND ELECTRICAL CONNECTIONS

Polmac electromagnetic flowmeter (*version M*) has been designed to be connected to electronic instruments (computer, monitor, display) preset for the **NPN signal, Open Collector type with 20mA maximum current**. Frequency is proportioned to the liquid speed and by consequence to delivery.

Version M: Connection of the Deutsch pin DT06-3S		
A	Brown	+12 Vcc.
B	Green	SIGNAL
C	White	GND

Version PM: Connection of the Deutsch pin DT04-2P		
1	Brown	+12 Vcc.
2	Blue	GND

Version PMS: Connection of the Deutsch Pin DT04-2P		
Power supply Instrument Black sheath		
1	Brown	+12 Vcc.
2	Blue	GND
Version PMS: Connection of the Deutsch Pin DT06-2S		
Outlet signal 12Vcc. 5A. Grey sheath		
1	Red	+12 Vcc.
2	Black	0 V.

TECHNICAL DATAS

POWER SUPPLY	MAXIMUM ABSORPTION	LIQUID CONDUCTIVITY
12Vcc. ±1V.	0,5A. = M - PM 5A. = PMS (*under charge*)	≥ 300 μS/cm

WORKING TEMPERATURE	PROTECTION LEVEL	RESPONSE TIME
0 ÷ 40 °C	IP 65	500 ms

SIZE	DELIVERY	PRESSURE
¼"	1 ÷ 15 l/min. 0,26 ÷ 3,96 GPM	50 BAR 725 PSI
½"	3 ÷ 60 l/min. 0,79 ÷ 15,85 GPM	50 BAR 725 PSI
1"	10 ÷ 200 l/min. 2,64 ÷ 52,8 GPM	50 BAR 725 PSI
1"½	20 ÷ 400 l/min. 5,28 ÷ 105,68 GPM	40 BAR 580 PSI
2"	45 ÷ 900 l/min. 11,88 ÷ 237,78 GPM	30 BAR 435 PSI

FAST GUIDE TO THE FUNCTIONS OF THE MAGNETIC PONY (PM)

Legend: Red key " ENTER " **A**
Orange key " STOP/START / + " **B**
Green key " – " **C**

READING MENU (*before the activation the instrument is in the reading menu*): visualisation of the partial units, total units, unit measure and STOP START functions.

SETTING MENU = press at the same time the keys "B" and "C" for 3 seconds and you enter the setting menu to verify and eventually change:

1) UNIT: to set the unit measure (liters/minute, gallons/minute, cubic meters/hour).
2) POINT C: to set the decimal point in the calibration constant.
3) C: to set the calibration constant.
4) POINT TOT: to set the decimal point within the datas in the reading menu.

- Use the key "B" or the key "C" to change the parameters.
- Use the key "A" to confirm the parameters changed.
- Use the key "A" to look through the messages.
- Use the key "A" to get out the setting menu.

TOTAL ZERO SETTING = press at the same time the keys "A" and "C" for 3 seconds while the reading menu is in the STOP function.

STOP AND START FUNCTIONS = functions to stop the total units counting;
- press the key "B" to enter the START function (*message STOP flashing on the display*) and the total units counting increases;
- press the key "B" to enter the STOP function (*message STOP not flashing on the display*) and the total units counting does not increase.

FAST GUIDE TO THE FUNCTIONS OF THE MAGNETIC PONY SIGNAL (PMS)

Legend: Red key " ENTER " **A**
Orange key " STOP/START / + " **B**
Green key " – " **C**

READING MENU (*before the activation the instrument is in the Reading Menu*): visualisation of the partial units, total units, unit measure and Stop Start functions.

USER MENU = press the key "A" for 3 seconds to enter the User Menu to verify and eventually change the limit value "STOP TO" the instrument has to reach to enter the STOP phase automatically and activate/desactivate the outlet signal.
- Use the key "B" or the key "C" to change the lighting number.
- Use the key "A" to go to the next number.
- Use the key "A" to get out the user menu.

SETTING MENU = press the keys "B" and "C" at the same time for 3 seconds to enter the setting menu in order to verify and eventually change the following parameters:
1) UNIT: to set the unit measure (liters/minute, gallons/minute, cubic meters/hour).
2) POINT C: to set the decimal point in the calibration constant.
3) C: to set the calibration constant.
4) POINT TOT: to set the decimal point within the datas of the reading menu.
5) OUT SET: to set the 12Vcc outlet signal before reaching the total programmed (*choice 0*). To set the 12Vcc outlet signal after having exceeded the total programmed (*choice 1*).

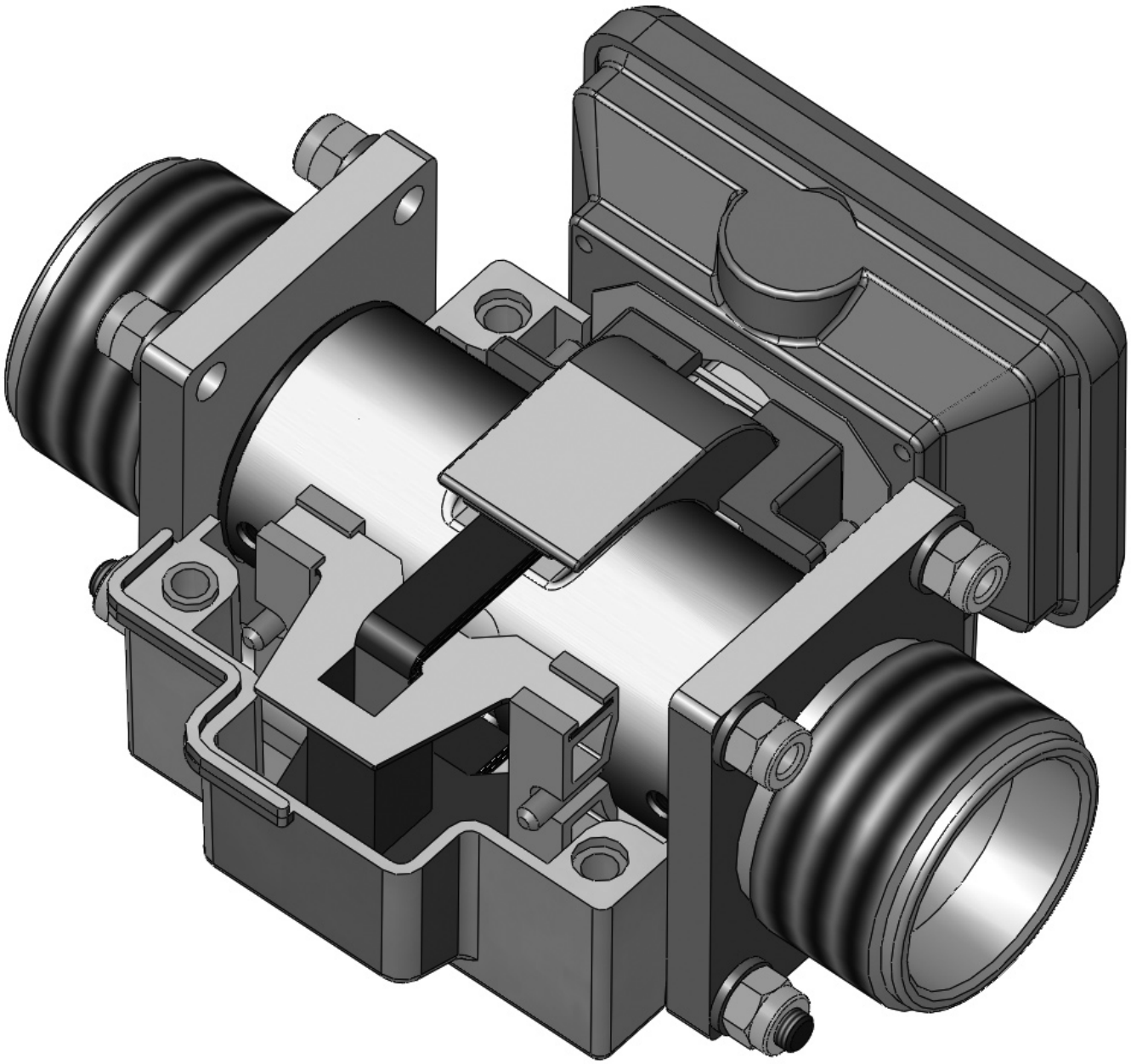
SETTING	BEFORE REACHING THE TOTAL SET	ONCE HAVING REACHED THE TOTAL SET
OUT SET = 0	12Vcc. *in the START phase* 0 Vcc. *in the STOP phase*	0 Vcc.
OUT SET = 1	0 Vcc. *in the START phase* 12Vcc. *in the STOP phase*	12 Vcc.

- Use the key "B" or the key "C" to change the parametrs.
- Use the key "A" to confirm the parameters changed.
- Use the key "A" to look through the messages.
- Use the key "A" to get out the setting menu.

TOTAL ZERO SETTING (RESET) = press the keys "A" and "C" at the same time for 3 seconds once you are in the reading menu - STOP phase.

STOP AND START FUNCTIONS = functions to stop the total units counting;
- press the key "B" to enter the START function (*message STOP flashing on the display*) and the total units counting increases;
- press the key "B" to enter the STOP function (*message STOP not flashing on the display*) and the total units counting does not increase.

SECTION VIEUW



MAINTENANCE

ROUTINE	Wash the internal pipeline with pure water every time the operation is finished; do not leave the instrument, in stand-by, in contact with aggressive products. **Do not use solvents to clean external parts.**
EXTRAORDINARY	Clean internal pipeline **and probes** with a small brush provided with nylon bristles, so that to remove any eventual deposit or product able to interfere with the reading signal. **Do not use metallic or highly abrasive objects.**

GUARANTEE

1. Our products are guaranteed for 12 months from delivery to the customer-user.
2. The Company is responsible for all those particulars presenting defects in the material or in the working procedure.
3. Guarantee is not granted in case of bad maintenance, anomalous use of the instrument, damages due to wrong installation and electric power supply and injuiries caused by the transport.
4. Repairs must be made at our factory or by personnel we have authorised. For any inspections, the products must be sent freight prepaid. Labor costs are not included in the guarantee.
5. Repairs will be made within the limits of time compatible with Polmac srl. exigences of organisation.
6. Repairs on components not washed or cleaned from product residuals will not be accepted.
7. Always inform about the instrument serial number positioned on the adhesive label whenever a repair or a replacement under warranty is requested.
8. Repairs made under warranty are guaranteed throughout a year.
9. Parts replaced under warranty stay under the property of Polmac srl.
10. In case of sale of the component from a dealer or an agent, it's necessary these ones transmit to the final user all the information concerned with a correct use.
11. Responsible for any dispute is the Foro of Modena.