

K 700 MODULAR PULSE METER

INTRODUCTION

The K700 series represents a family of meters developed to satisfy a wide range of requirements for the control, measurement, dispensing and transfer of lubricating oils and fuels. Its measurement principle is based on modular elliptical gears that provide high accuracy over a wide range of flow rates together with reduced loss of head.

The fluid passing through the instrument turns the gears whose rotation transfers constant "fluid units".

The exact measurement of the fluid dispensed is carried out by counting the rotations of the gears and, thus, the "fluid units" transferred.

The magnetic coupling, consisting of magnets installed in the gears and a magnetic switch located outside the measurement chamber, guarantees the seal of the measurement chamber and ensures the transmission of the impulses generated by the rotation of the gears to the microprocessor.

The meter housing is manufactured of extruded aluminum and is furnished with external guides for a practical and simple installation. The various models are differentiated by the length of the housing, which is related to their ability to function at higher flow rates.

The meter is furnished with threaded and aligned input and output connections to allow easy installation on the tubing. The diameter and thread are a function of the model.

A net filter is installed in the opening of the input connector, accessible from the outside by means of a cover provided for the purpose, that protects the gears of the meter from any dirt present in the system.

The PULSER version is a pulse emitter (reed bulb) that translates variations in the magnetic field generated by the rotation of the gears into electrical impulses to be sent to an external receiver that is connected as shown in the attached diagram. The pulser does not need its own electric power, in as much as it is powered directly by its connection with the receiver.

The type of pulse emitted is represented by a square wave generated by voltage variations, which can be diagrammed as follows:



Calibration of the instrument is performed by means of the external pulse receiver.

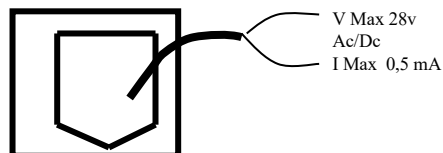
TECHNICAL DATA

Resolution	L/pulse	0.066	Viscosity Range	cSt	2 – 5.35
Range of Flow Rates	L/min	25 - 250	Accuracy (within capacity range)		± 0.5 %
Working Pressure	bar	20	Repetitiveness		0.2 %
Bursting Pressure	bar	60	Weight	Kg	1
Storage Temperature	°C	- 20 – + 70	Input and Output Connection Thread		2 " Gas
Storage Humidity	R.H.	95%	Impulse Type		Clean contact
Working Temperature	°C	- 10 – + 60	Max. Current	mA	0,5
Loss of Head (maximum flow rate with diesel fuel)	bar	0.4	Max. Voltage	Volt	28
Compatible Fluids	Diesel Fuel, according to UNI EN 590 Paraffinic HVO/XTL:EN15940		Impulses per liter (approx.)	n°	15

INSTALLATION

The model K700 is designed to be permanently installed on a fuel distribution line. Do not use conical connections that could damage the housing of the meter or the connection flange. The position of the filter determines the input direction of the flow. The pulser must be connected by two wires observing the electrical specifications shown in the diagram:

To increase the life expectancy of the litre-counter, it is recommended to keep the current value as low as possible (about 0.1 mA).



MAINTENANCE

The model K700 is designed to require a minimum of maintenance. The only required maintenance are:

Cleaning the Measurement Chamber	If necessary because of the particular nature of the fluid being dispensed
Cleaning the Filter	To be performed periodically, also as a function of the cleanliness of the fluids being dispensed

CLEANING THE MEASUREMENT CHAMBER

Cleaning the measurement chamber can be performed without removing the device from the line or the dispensing gun on which it is installed.

ATTENTION

Always make sure that the liquid has drained from the meter before cleaning.

To clean the chamber, proceed as follows (with reference to the positions on the spare parts list):

- Unscrew the 6 sealing screws on the upper cover (pos.15).
- Remove the cover (pos. 11) and the OR seal (pos. 22).
- Remove the 6 double height elliptical gears (pos. 14) and the 2 single height elliptical gears (pos.13) .
- Clean where necessary. For this procedure use a brush and a pointed object, such as a small screwdriver.
- Be careful not to damage the housing or the gears.
- Carry out the reverse procedure to reassemble the device. To make easier the installation, assemble first gear to the second gear with the major axis at 90° with respect to the first gear.
- Check that the gears rotate freely before closing the cover.

ATTENTION

Reassemble the gears following the mounting diagram shown on the exploded view.

ATTENTION

Only one of the two modularly coupled gears described is equipped with magnets. Be careful that the single elliptical gear on the top shall be assembled with the 2 magnets (pos.23) that shall not be disassembled from the gear.

CLEANING THE FILTER

Cleaning the K700 filter can be performed without removing the device from the line or the dispensing gun on which it is installed.

ATTENTION

Always make sure that the liquid has drained from the meter before cleaning

To clean the filter, proceed as follows (with reference to the positions on the spare parts list):

- Unscrew the 4 sealing screws on the lower cover (pos. 18).
- Remove the cover (pos. 16) and the OR seal (pos. 17).
- Slide out the filter (pos. 20).
- Clean the filter with compressed air.
- Carry out the reverse procedure to reassemble the filter.

TROUBLESHOOTING (cause / solution)

Problem	Possible Cause	Solution
Inaccuracy	Calibration not correct	Perform calibration with the appropriate procedure
	Working flow rate outside the capacity range	Calibrate the device with the impulse receiver
High loss of head	Dirty filter	Clean the filter
	Gears obstructed	Clean the measurement chamber
Not counting	Gears mounted incorrectly	Check the position of the gear with the magnets
	Reed bulb out of work	Change the cover with the reed bulb

POS.	COMPONENT DESCRIPTION	QTY.
01	WASHER ext. diam. 13 int. diam.6 thick.1	4
02	METER BODY K700 FOR FLANGE	1
03	BOARD COVER K700	1
04	COVER K700 112x90x20 K700	1
07	OR GASKET 3300 (D. 75.87 T. 2.62) NBR 70SH	2
09	ELLIPTICAL GEAR WITHOUT MAGNET K700	14
10	SCREW UNI 5931 8.8 GALV. M6X20	12
11	COVER 46X36 THICK.3 FILTER ZN WHITE	1
12	OR GASKET 4106 (d26.57 thick.3.53) NBR 70SH	1
13	SCREW UNI 5931 M5X10 ZN	8
14	CABLE CLAMP PG.7 LENGHT 5 METAL	1
15	FILTER 155.5x33 thick.1 d.holes 1.2	1
16	PULSER CABLE 2POLES 2mt MONOCHAN SECT 0.35	1
17	FILTER 155.5x36x6.8 thick0.4	1
18	MAGNET ø4 x h4 SAMARIUM COBALT YX28	2
19	ELLIPTICAL GEAR PIN h161.4 CHROME	2
20	ELECT. BOARD K600 PULSER MONOCHANNEL	1
24	OR GASKET 3250 (D.63,17 THICK.2,62) NBR 70SH	1
25	CABLE CLAMP RING NUT PG.7	1
26	SCREW + 2,2x4,5 GALV. WHITE	4
27	COV.72.2x66.8x2.5 BOARD PULS ZN WHITE	1
28	PARAL. PIN D.5x14 TOLL.g7	10
29	PIUSI SERIAL NUMBER - WEEK/YEAR	1
31	PIN d.3.875 x 10.9	12
32	DIE-CAST FLANGE 1" 1/2 ISO7 MACHINED	2
33	OR GASKET 3206 (D.52,07 THICK.2,62) NBR 70SH	2
34	SCREW UNI5931 8.8 M8x 25 - GALV	8
35	1 "1/2 THREAD CAP	2

