


## PRODUCT TECHNICAL CARD

<i>Product feature:</i> <b>Control and flow adjustment</b>	<i>Product Energeo:</i>  <h3 style="text-align: center;">Inline flowmeter</h3>	 <i>Sgn:EN.OZE.20-12.RL</i>
ASPOL-FV Lodz, Helska st. 39/45 www.aspol.com.pl		
ENERGEO – GEOTHERMAL TECHNOLOGY FOR GROUND SOURCE HEAT PUMPS – RENEWABLE ENERGY SOURCES		

BRAND A LEGALLY PROTECTED BY PATENT OFFICE DECISION OF THE REPUBLIC OF POLISH

EN.OZE.20-12.RL

Consolidated text dated on 22.02.2012

### 1. List of standards / legislation and other documents related to the product:

- ISO 228 – Whitworth Parallel Pipe Thread DIN ISO 228 BSPP (British Standard Pipe Parallel);
- PN-85/M-42371 - Flowmeters - General requirements and tests;
- DIN 962- Determination system of fastening elements.

### 2. Inline flowmeter – an element of the Energeo\* system

Flowmeter is used to monitor the flow of antifreeze liquid in Ground Source Heat Pump circulation system. Flowmeter consists of a brass body, stainless steel ball and plastic materials. The glass element is made of plastic resistant to high temperatures and mechanical damage. Straight flow regulator and flowmeter, male threaded on both ends 1", for solar, heating and hydronic applications. Direct reading of the flowrate through the graduated scale. Ball valve for flow adjustment. A careful sizing of the article provides very little headlosses.

### 3. Specifications of Inline flowmeter

*Tab.1. Technical parameters:*

Parameter	Value	Unit
Total flow range:	2-70	dm <sup>3</sup> /min
Flowmeter type A	2-12	dm <sup>3</sup> /min
Flowmeter type B	8-38	dm <sup>3</sup> /min
Flowmeter type C	20-70	dm <sup>3</sup> /min
Max. operating pressure	10	Bar
Measurement accuracy	+ - 10	%
Max. percentage of glycol	50	%
Temp. operating range	-30...120	°C

To have the real flow with the use of low temperature glycol solutions, it is necessary to multiply the value indicated by the flowmeter by a corrective factor, that is:

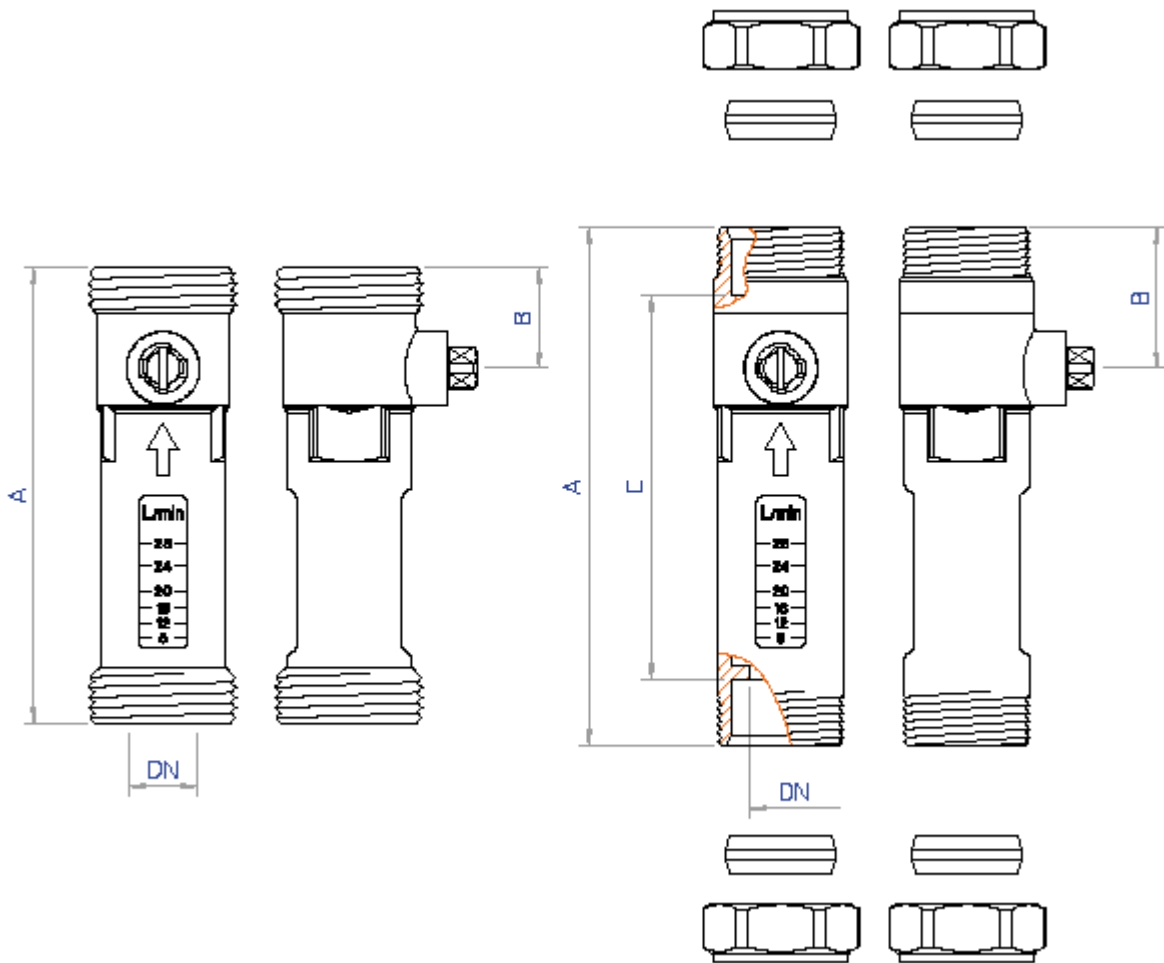
- 0,90 for concentrations of 20-30 %;
- 0,85 for concentrations of 30-40 %;
- 0,80 for concentrations of 40-50 %.

### 4. Inline flowmeter - Mounting

In Energeo ground collector system the Inline flowmeter is mounted on supply loops - glycol coming from the ground – warmer.

\* ENERGEO is a balanced hydraulic system developed to transfer geothermal energy from the ground, watercourses and water areas to the heat pump which provides energy for heating, cooling and hot water for dwellings, residential buildings and commercial facilities.

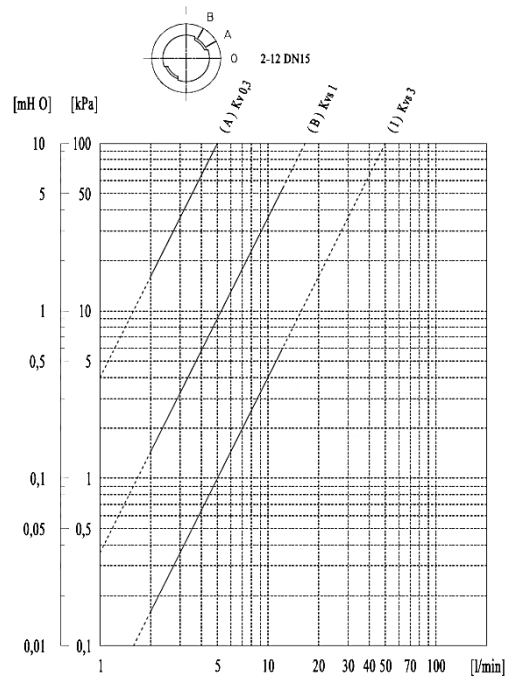
5. Dimensions:



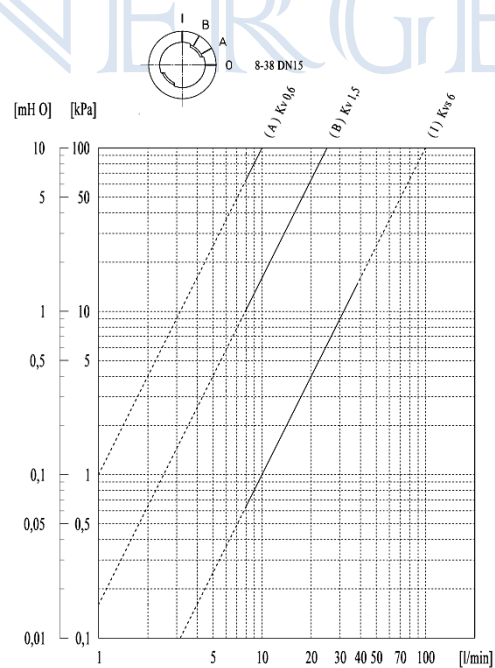
Draw 1. Flowmeters' dimension

Specification	Type A (2-12), Type B (8-38)	Type C (20-70)
Thread	1"	1"
A	102,0 mm	130,5 mm
B	22,4 mm	32,0 mm
DN	15	20
Weight	274 g	435 g

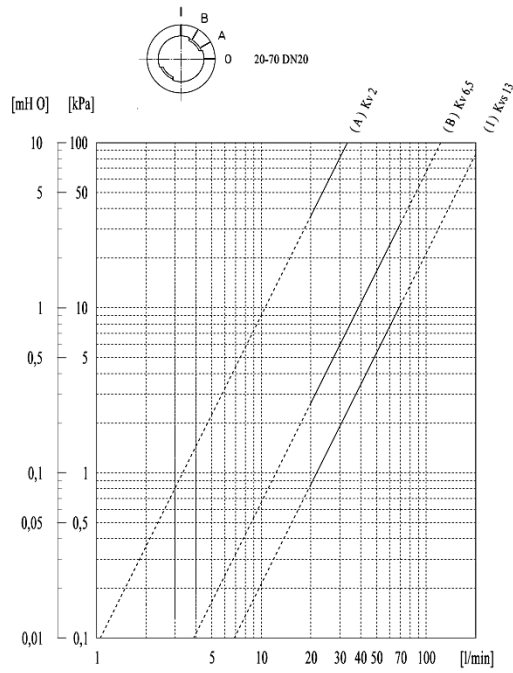
6. Inline flowmeter - Pressure losses



Draw.2. Inline flowmeter type A - Pressure losses



Draw.3. Inline flowmeter type B - Pressure losses



Draw.4. Inline flowmeter type C - Pressure losses

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