



Badger Meter Europa

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Turbine meters of the Vision series

For low viscous and non-aggressive liquids



Description

The liquid turbine meters of the series Vision are for the exact measuring of small quantities of liquids. The actual flow as well as the already passed flow can be measured.

The large number of pulses gives a good resolution. As the mass of the turbine are very small the response time is very short. It is not necessary to install a straight length of pipeline at the upstream side. The simple mechanical construction of the sensor Vision guarantees a long lifespan without any loss of accuracy. Pressure surges do not affect the measuring system.

Measuring principle

The rotor is turned by the fluid force in proportional to the flow. A hall generator supplies pulses, which can be utilized for digital or analogue signal processing. The generated pulses are specified as the k-factor.

Features

- Excellent price – performance ratio
- Small size
- Easy and fast installation
- Maintenance free
- High operating pressure
- Installation in any position

Applications

For flow measurement of water, demineralized water, alkaline solutions, oils/edible oils, fuel/fuel consumption, fuel oil, beverage, water based liquids, etc.

Special for washmachines, dish washers, coffee machines, laser cooling plants, solar solutions, bakery machines, steam cooking machines in large kitchen plants, dialysis equipment, CD cleaning, irrigation plants, etc.

Electrical connections





Technical data

Type	1005 2F66	2006 2F66	2006 4F44	2008 2F66
Material	Trogamid			
Connection*	G 1/4"	G 3/8"		
Order code (with coupler socket acc. EN 60529)	56547-163-2F66	56510-163-2F66	56510-163-4F44	56500-163-2F66
Order code for AMP Faston	-	56510-164-2F66	56510-164-4F44	56500-164-2F66
Order code for 1m-cable	56547-165-2F66-1	56510-165-2F66-1	56510-165-4F44-1	56500-165-2F66-1
Measuring rate l/min	0,1 – 2,5	0,5 - 5	1 – 10	0,5 – 7,5
K-factor PPL	22.000	6900	3300	4700
DN mm	5	6	6	8
Type	2008 4F44	2008 4F22	2008 4F17	3012 4F16
Material	Trogamid			
Connection*	G 3/8"			G 3/4"
Order code (with coupler socket acc. EN 60529)	56500-163-4F44	56500-163-4F22	56500-163-4F17	56422-163-4F16
Order code for AMP Faston	56500-164-4F44	56500-164-4F22	56500-164-4F17	-
Order code for 1m-cable	56500-165-4F44-1	56500-165-4F22-1	56500-165-4F17-1	56422-165-4F16-1
Measuring rate l/min	1 - 15	1 – 25	2 – 35	5 – 65
K-factor PPL	2200	1000	750	210
DN mm	8	8	8	12

Type	1005 2F66	2006 2F66	2006 4F44	2008 2F66
Material	Trogamid			
Connection*	NPT 1/4"	NPT 3/8"		
Order code (with coupler socket acc. EN 60529)	56548-163-2F66	56512-163-2F66	56512-163-4F44	56502-163-2F66
Article n° (AMP-Faston)	-	56512-164-2F66	56512-164-4F44	56502-164-2F66
Order code for 1m-cable	56548-165-2F66-1	56512-165-2F66-1	56512-165-4F44-1	56502-165-2F66-1
Measuring rate l/min	0,1 – 2,5	0,5 - 5	1 – 10	0,5 – 7,5
K-factor PPL	22.000	6900	3300	4700
DN mm	5	6	6	8
Type	2008 4F44	2008 4F22	2008 4F17	3012 4F16
Material	Trogamid			
Connection*	NPT 3/8"			NPT 3/4"
Order code (with coupler socket acc. EN 60529)	56502-163-4F44	56502-163-4F22	56502-163-4F17	56423-163-4F16
Order code (AMP-Faston)	56502-164-4F44	56502-164-4F22	56502-164-4F17	-
Order code (with 1m cable)	56502-165-4F44-1	56502-165-4F22-1	56502-165-4F17-1	56423-165-4F16
Measuring rate l/min	1 - 15	1 – 25	2 – 35	5 – 65
K-factor PPL	2200	1000	750	210
DN mm	8	8	8	12

*Other connections: O-ring; Hose nipple for Vision 2000

Type	1005 2F66	2006 2F66	2006 4F44	2008 2F66
Material	Brass			
Connection	-	-	-	G 3/8"
Order code (with coupler socket acc. EN 60529)	-	-	-	47000-163-2F66
Connection	-	-	-	NPT 3/8"
Order code (with coupler socket acc. EN 60529)	-	-	-	47001-163-2F66
Measuring rate l/min	-	-	-	2 - 8
K-factor PPL	-	-	-	4200
DN mm	-	-	-	8
Type	2008 4F44	2008 4F22	2008 4F17	3012 4F16
Material	Brass			
Connection	-	G 3/8"	-	-
Order code (with coupler socket acc. EN 60529)	-	47000-163-4F22	-	-
Connection	-	NPT 3/8"	-	-
Order code (with coupler socket acc. EN 60529)	-	47001-163-4F22	-	-
Measuring rate l/min	-	3 - 25	-	-
K-factor PPL	-	1000	-	-
DN mm	-	8	-	-



Type	1005 2F66	2006 2F66	2006 4F44	2008 2F66	2008 4F44	2008 4F22	2008 4F17	3012 4F16
Measuring rate l/min	0.1 – 2.5	0.5 – 5	1 – 10	0.50 – 7.5	1 – 15	1 – 25	2 – 35	5 – 65
K-factor PPL*	22.000	6900	3300	4700	2200	1000	750	210
Size mm	5	6	6	8	8	8	8	12
Viscosity range	0.8 - 16 mm ² /sec (mpas)							
Accuracy	+/- 3% of value							
Repeatability	Better than 0.5%							
Temperature range	-20 up to +100 °C							
Operating pressure	25 bar max							
Burst pressure	200 bar							~ 100 bar
Electrical connection **	- AMP Faston 2.8/6.3 x 0.8 mm - Connection MICRO-EN 60529 and 3 flat plugs 2.8 x 0.5 mm (point plate) - Cable connection: round cable 3xAWG 24 with free cable end							
Filter	20 to 40 micron recommended							
Power supply	5 - 24 VDC.							
Current consumption	Ca. 8 mA.							
Output signal	Pulses by open collector (NPN sinking).							
Output current	Max. 20 mA.							
Pull-up resistor	1 - 2.2 kOhm							
* PPL = Pulses per liter								
** DIN connector MICRO EN60529								

Pressure drop in bar for water (at 20°C)

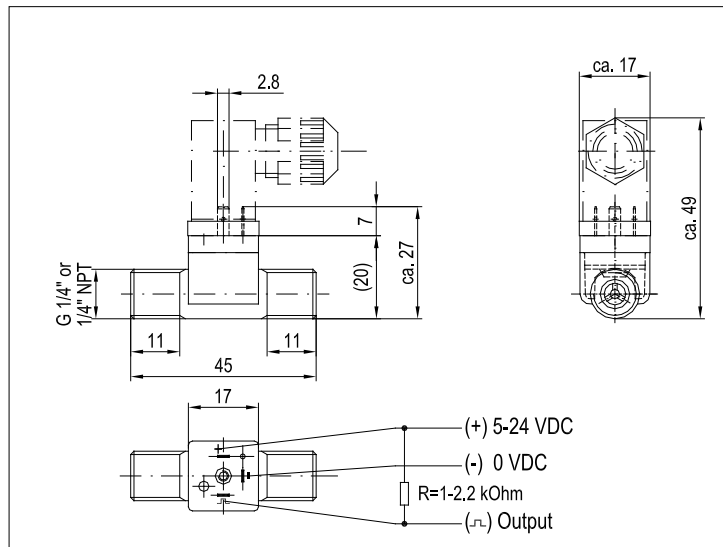
Type	1005 2F 66	2006 2F66	2006 4F44	2008 2F66	2008 4F44	2008 4F22	2008 4F17	3012 4F16
0,5 l / min	0.02	--	--	--	--	--	--	--
1 l / min	0.05	~ 0	~ 0	~ 0	~ 0	~ 0	~ 0	--
1,5 l / min	0.15	--	--	--	--	--	--	--
2 l / min	0.25 *	~ 0	0.06	~ 0	0.05	~ 0	~ 0	--
5 l / min	--	0.12	0.2	0.05	0.2	0.05	~ 0	0,00
10 l / min	--	0.4	0.7	0.2	0.4	0.17	~ 0.12	0,01
15 l / min	--	0.9	--	0.4	--	0.27	~ 0.25	0,02
20 l / min	--	1.3	--	0.7	--	0.48	~ 0.45	0,05
25 l / min	--	--	--	--	--	0.65	~ 0.60	0,07
30 l / min	--	--	--	--	--	--	~ 0.92	0,11
35 l / min	--	--	--	--	--	--	--	0,14
40 l / min	--	--	--	--	--	--	--	0,18
45 l / min	--	--	--	--	--	--	--	0,23
50 l / min	--	--	--	--	--	--	--	0,28
55 l / min	--	--	--	--	--	--	--	0,34
60 l / min	--	--	--	--	--	--	--	0,40
65 l / min	--	--	--	--	--	--	--	0,47

* Value applies to 2.5 l/min

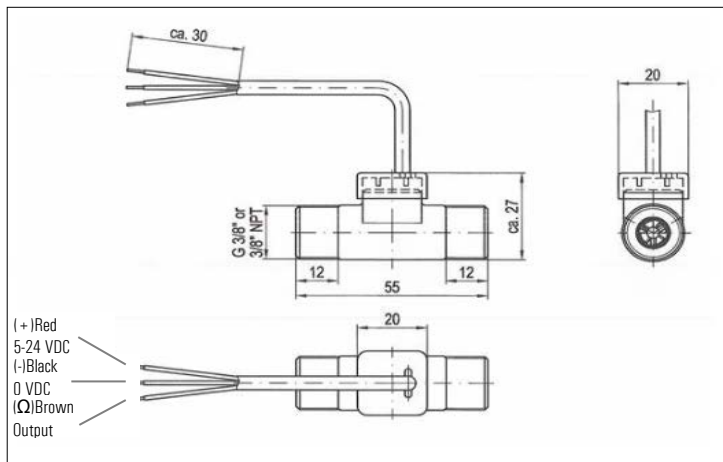
Display operation

Electr. connection	Coil for battery powered display required
Supply	2 – 5,5 VDC
Power consumption	Approx. 2,2 mA @ 2V
Output signal	Push - Pull
Output current	Max. 30 mA

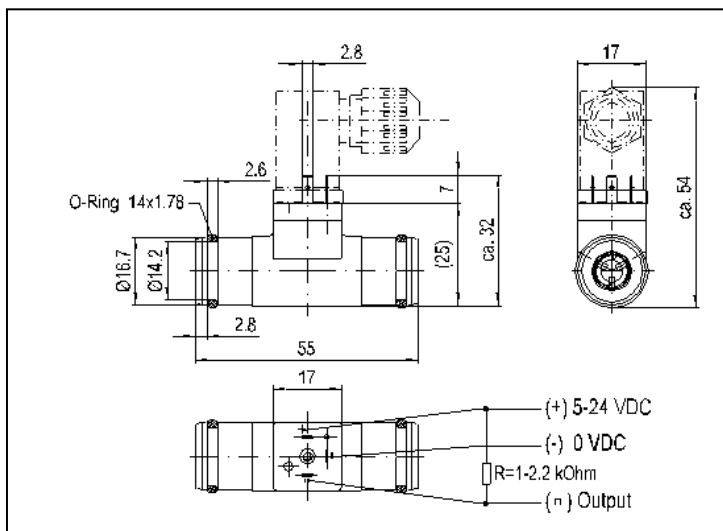
Dimensions (in mm)



Example: Vision 1000 with DIN plug



Example: Vision 2000 with round cable 3 x AWG 24



Example: Vision 2000 with O-Ring

Displays for the VISION series

The ILR 701T, 750T series electronic register



Features

- Large six digit LCD display
- Display in liters, pints, quarts or gallons, freely programmable
- 11 digits, non-resettable lifetime totalizer and 6 digits, resettable totalizer
- Temperature range: -20 °C to +80 °C (-4 °F to +140 °F)
- Calibration factor saved in non-volatile memory
- 9 point linearization (ILR 750T, ILR 701T)
- Scalable pulse output and 4-20 mA output (ILR 750)
- Protection class IP67

Description

The electronic register module contains a microprocessor board powered by a lithium battery. It can be programmed to batch in liters, pints, quarts, or gallons and will totalize in liters or gallons. A calibration factor and unit of measure are programmed during factory test. Unlike mechanical registers, these units can be electronically recalibrated in the field when necessary. A 6-digit LC display, accurate to three decimal places, shows the exact amount of fluid that has passed through the meter. The entire register module is protected from normal wear and tear by a rugged, shock resistant housing.

Operation

Turbine meters have hall sensors that cause the turbine to send pulses to the register as rotates.

The register is in a sleep mode until it detects these pulses caused by fluid going through the meter. The micro-processor in the register then measures the flow and will display either

the batch totalization or the flow rate of the fluid going through the meter on the 6-digit display.

The registers batch totalizer is a 6-digit display with three places of resolution after the decimal point. If the total dispensed exceeds 999.999 then the display will shift and only 2 digits will be displayed after the decimal point, 9999.99 and will continue to shift to the maximum value of 999999. After reaching 999999 the batch totalizer will rollover to 0.000. The batch totalizer is reset to zero when the reset button is depressed.

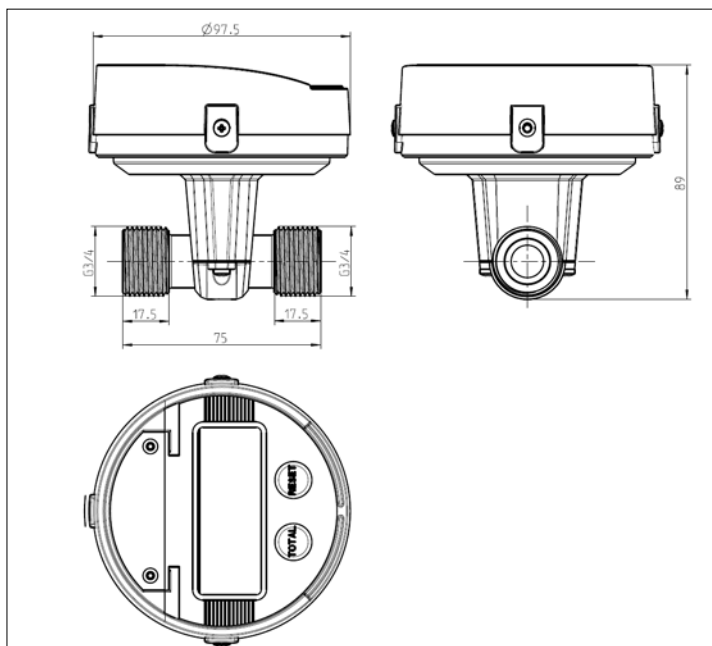
The register also has a resettable totalizer that requires that the total and reset button both be depressed to reset (hold the "Total" button, then press the "Reset" button to reset this totalizer while resettable totalize is displayed). This would be used for multiple batch totalization purposes.

The register's life time totalizer is 11 digits and will either be in gallons or liters based on the unit of measure selected. Pushing and holding the total button while the life time totalizer is displayed will display the full 11-digit life time totalizer value.

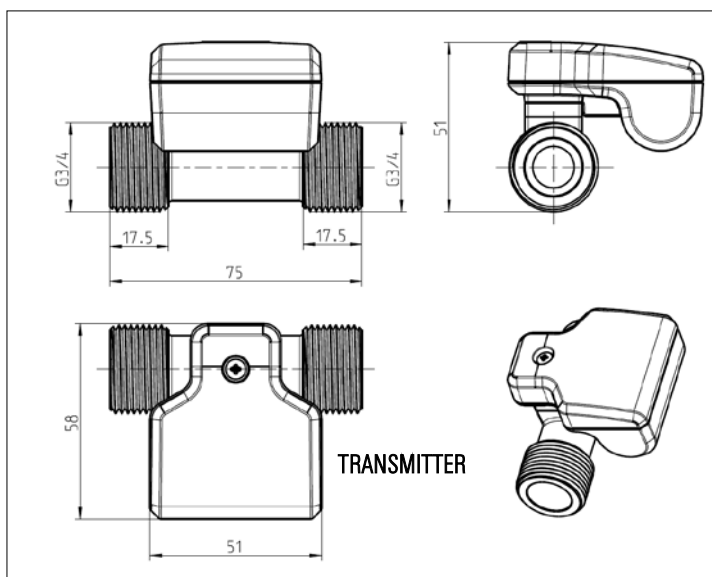
Register model	Register features
ILR 701T standard register	<ul style="list-style-type: none"> • Flow rate and totalizer display selectable in the programming menu • Selectable unit of measure • 9 point linearization
ILR 750T pulse output + 4-20mA output	<ul style="list-style-type: none"> • Scalable pulse output • Ability to set pulse output length • Analog 4-20mA output • Minimum and maximum values can be set for analog output • 9 point linearization

The electronic displays are available in two versions

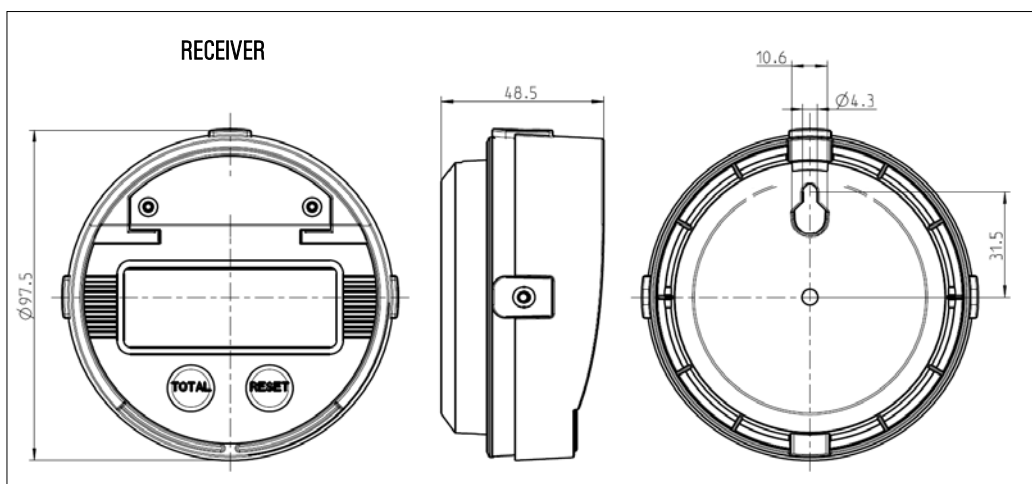
<p>Mounted version</p>	<p>For Vision 2000, Vision 3000 as battery-powered, on meter mounted display providing instant and total flow rate. ILR 701T: actual flow, total flow rate ILR 750T: actual flow, total flow rate 4-20 mA-output, scalable pulse output</p>	
<p>RF-Display (Remote reading via radio frequency)</p>	<p>For Vision 1000, Vision 2000, Vision 3000 as a wireless, battery-powered (1 x CR123A battery) display, with 2.4 GHz radio frequency, for remote reading of total flow rate over a 5 - 6 m range. Sender on top of turbine meter, receiver for wall mount. ILR 701T: total flow rate</p>	
<p>Remote</p>	<p>For Vision 1000, Vision 2000, Vision 3000 cable connection for remote reading ILR 701T: actual flow, total flow rate ILR 750T: actual flow, total flow rate 4-20 mA-output, scalable pulse output</p>	



Example Vision 3000 with built up display



Wireless system consisting of transmitter and receiver (shown here the transmitter on the Vision 3000)



Wireless system consisting of transmitter and receiver (shown here the receiver)