

GUADARRAMA FLOW TA Turbine Flowmeter



GUADARRAMA FLOW TA Turbine Flowmeter User Manual

[Home](#) » [GUADARRAMA FLOW](#) » GUADARRAMA FLOW TA Turbine Flowmeter User Manual 

Contents

- 1 [GUADARRAMA FLOW TA Turbine Flowmeter](#)
- 2 [Product Information](#)
- 3 [Product Usage Instructions](#)
- 4 [FAQ](#)
- 5 [VERY IMPORTANT](#)
- 6 [General information](#)
- 7 [Equipment Description](#)
 - 7.1 [Description and dimensions of the turbine flowmeters](#)
- 8 [Installation](#)
- 9 [Electrical connection](#)
- 10 [Contact](#)
- 11 [Documents / Resources](#)
 - 11.1 [References](#)

GUADARRAMA FLOW

GUADARRAMA FLOW TA Turbine Flowmeter



Product Information

Specifications

Model	Standard Pressure (bar)	Standard Flow Rate (L/h)	Standard Resolution Pulses/liter (approx.)	Materials – Impeller	Materials – Body	Connections	Dimensions (mm)	Weight (kg)
TA 15	90	40 – 3000	144	AISI 2205	AISI 316	DN15	144 x 135 x 110	1
TB 32	90	1000 – 12000	69	AISI 2205	AISI 316	DN32 PN-40	200 x 140	5
TB 40	90	2000 – 20000	31	AISI 2205	AISI 316	DN40 PN-40	200 x 145	7
TB 50	90	3000 – 40000	11	AISI 2205	AISI 316	DN50 PN-40	200 x 150	9
TC 25	90	800 – 8000	230	AISI 2205	AISI 316	DN25	–	–
TC 32	90	1000 – 12000	150	AISI 2205	AISI 316	DN32	–	–
TC 40	90	2000 – 20000	72	AISI 2205	AISI 316	DN40	–	–

Product Usage Instructions

General Information

The Turbine Flowmeter is designed to accurately measure flow rates. It uses a propeller that rotates when the flow circulates inside it. The rotation speed of the propeller is proportional to the flow rate, allowing the flow rate to be determined. A sensor generates a pulse every time a propeller blade passes in front of it, providing a train of pulses with a frequency that allows the flow rate to be determined.

Equipment Description

The Turbine Flowmeter comes in three models: TA, TB, and TC.

TA Model

The TA Model has the following specifications:

- Standard Pressure: 90 bar
- Standard Flow Rate: 40 – 3000 L/h
- Standard Resolution Pulses/liter (approx.): 144
- Materials – Impeller: AISI 2205
- Materials – Body: AISI 316
- Connections: DN15
- Dimensions (mm): 144 x 135 x 110
- Weight (kg): 1

TB Model

The TB Model has the following specifications:

- Standard Pressure: 90 bar
- Standard Flow Rate: 1000 – 40000 L/h
- Standard Resolution Pulses/liter (approx.): Varies
- Materials – Impeller: AISI 2205
- Materials – Body: AISI 316
- Connections: Varies based on model
- Dimensions (mm): Varies based on model
- Weight (kg): Varies based on model

TC Model

The TC Model has the following specifications:

- Standard Pressure: 90 bar
- Standard Flow Rate: 800 – 20000 L/h
- Standard Resolution Pulses/liter (approx.): Varies

- Materials – Impeller: AISI 2205
- Materials – Body: AISI 316
- Connections: Varies based on model

Installation

Follow these steps to install the Turbine Flowmeter:

1. Select a suitable location for installation.
2. Ensure the flowmeter is properly aligned with the flow direction.
3. Connect the flowmeter to the appropriate piping system.
4. Tighten all connections to prevent leaks.
5. Check for proper electrical connections if using a transmitter.
6. Perform any necessary calibration or configuration steps as per the user manual of the transmitter (if applicable).

Contact

If you have any questions or need further assistance, please contact our customer support team.

FAQ

Q: What is the measuring principle of the Turbine Flowmeter?

A: The Turbine Flowmeter measures flow rates by using a propeller that rotates when the flow circulates inside it. The rotation speed of the propeller is proportional to the flow rate, allowing the flow rate to be determined.

Q: How do I install the Turbine Flowmeter?

A: To install the Turbine Flowmeter, follow these steps:

1. Select a suitable location for installation.
2. Ensure the flowmeter is properly aligned with the flow direction.
3. Connect the flowmeter to the appropriate piping system.
4. Tighten all connections to prevent leaks.
5. Check for proper electrical connections if using a transmitter.
6. Perform any necessary calibration or configuration steps as per the user manual of the transmitter (if applicable).

Flowmeters and flow measurement technologies. Excellence in precision and repeatability. Made in Spain since 1972.

VERY IMPORTANT

MECHANICAL INSTALLATION

- A FILTER between 0.5mm and 1mm mesh must be installed in front of the flowmeter to protect it. Failure to install this filter can cause major damage to the equipment. This filter must be installed following the minimum flow meter inlet length indications to maintain laminar flow.
- The indications described in the user manual must be followed.

ELECTRICAL INSTALLATION. Only for models with power supply with pulse output.

- The power supply supplying voltage to the flowmeter:
 - It must not exceed 30 Vdc or be less than 12 Vdc.
 - It must not supply INDUCTIVE LOADS (Coils, solenoid valves, contactors, etc.).
- The polarity of the power supply cannot be reversed.
- The pulse output does not support loads greater than 100 mA.
- Power cables (Greater than 110 Vac) and Data (Pulse, analog, etc.) must go through separate conduits.

These turbine flowmeters have a magnetic pulse sensor to collect the rotation of each blade of the propeller inside the measuring tube. If the flowmeter has a strong electromagnetic field nearby that comes from an electric motor or other element such as a transformer, the pulse pickup may be influenced by this electromagnetic field. The pulse cable must go through signal channeling, never power and this must be shielded with one end of this mesh to ground. Nor can the excess cable be wound making a coil. The fluid cannot carry air, since the flow meter would measure this air and the liquid.

General information

Measuring principle

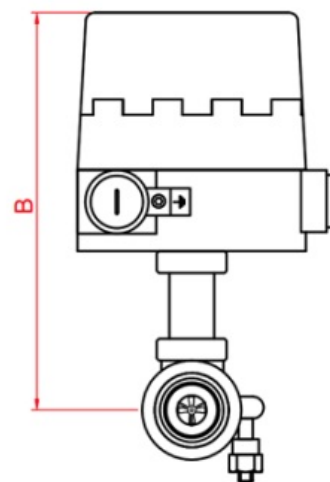
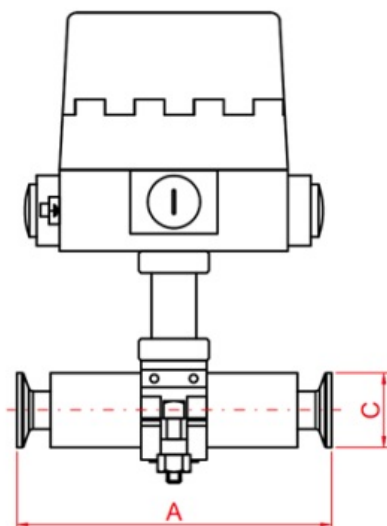
Turbine flowmeters are equipped with a propeller that rotates when the flow circulates inside it. The rotation speed is proportional to the flow rate, so once the speed is known, the flow rate can be determined. To know this, a sensor is used that generates a pulse every time a propeller blade passes in front of it. In this way, a train of pulses is obtained whose frequency allows the flow rate to be determined.



Equipment Description

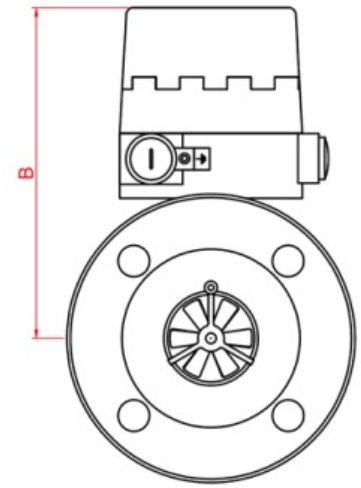
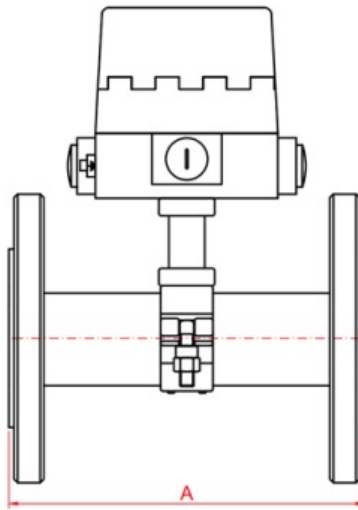
Description and dimensions of the turbine flowmeters

TA Model



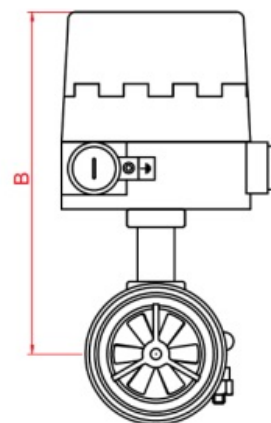
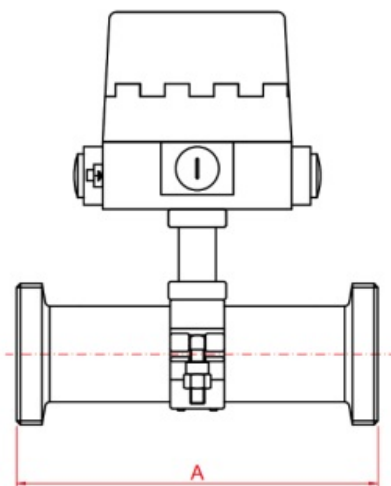
Model	Temperature (°C)	Pressure (bar)	Flow Rate (L/h)		Standard Resolution	Materials		Connections	Dimensions (mm)					Weight (kg)
	Standard	Standard	Min.	Max.	Pulses/liter (approx.)	Impeller	Body	Clamp connection	A	B			C	Standard
										CEB01C	CEB01MA	CEB09BV/SI/SIA		
TA15	90	40	300	3.000	890	AISI 2205	AISI 316	DN15	144	135	110	190	34	1

B Model



Model	Temperature (°C)	Pressure (bar)	Flow Rate (L/h)		Standard Resolution	Materials			Connections	Dimensions (mm)				Weight (kg)
	Standard	Standard	Min.	Max.	Pulses/liter (approx.)	Impeller 2205	Body 316	Flanges 304	DIN EN-1092-1 Flanges PN-40	A	B			Standard
											CEB01C	CEB01MA	CEB09BV/SI/SIA	
TB32	90	40	1.000	12.000	150	AISI 2205	AISI 316	AISI 304	DN32 PN-40	200	140	115	195	5
TB40	90	40	2.000	20.000	69	AISI 2205	AISI 316	AISI 304	DN40 PN-40	200	145	120	200	7
TB50	90	40	3.000	40.000	31	AISI 2205	AISI 316	AISI 316	DN50 PN-40	200	150	125	205	9
TB80	90	40	5.000	100.000	11	AISI 2205	AISI 316	AISI 304	DN80 PN-40	200	165	140	220	15

TC Model



Model	Temperature (°C)	Pressure (bar)	Flow Rate (L/h)		Standard Resolution	Materials		Connections	Dimensions (mm)				Weight (kg)
	Standard	Standard	Min.	Max.	Pulses/liter (approx.)	Impeller	Body	DIN11851 Sanitary Thread	A	B			Standard
TC25	90	25	800	8.000	230	AISI 2205	AISI 316	DN25	200	135	110	190	2
TC32	90	25	1.000	12.000	150	AISI 2205	AISI 316	DN32	200	140	115	195	3
TC40	90	25	2.000	20.000	72	AISI 2205	AISI 316	DN40	200	145	120	200	3
TC50	90	25	3.000	40.000	31	AISI 2205	AISI 316	DN50	200	150	125	205	4
TC80	90	25	5.000	100.000	11	AISI 2205	AISI 316	DN80	200	165	140	220	5

Transmitters

Transmitters are electronic devices that are used to calculate, using the pulses/liter factor, the volume of liquid that passes through the Turbine flowmeter. Depending on the model chosen, there is the option of having local indication (display), pulse output, analog output, or all combined.



CEB01C



CEB01MA



CEB09 (BV/BVSI/BVSIA)

- CEB01C: NPN – PNP transistor output, without local indication.
- CEB01MA: Analog (4 – 20 mA) output, without local indication.

- CEB09BV: Local Indication of:
 - Total Volume: Total liters that have passed through the equipment since the beginning of its operation, with a resolution of 8 digits.
 - Partial Volume: Total liters that have passed through the equipment since the last reset, with a resolution of 7 digits.
 - Volumetric Flow: Instantaneous flow rate that circulates through the flowmeter, with a resolution of 5 digits.
- CEB09BVSI: Local indication and NPN – PNP transistor output.
- CEB09BVSI: Local indication, NPN – PNP transistor and analog (4 – 20 mA) output.

Model	Power Supply	Output			Material	Description
		Indication	Pulses	4 – 20 mA		
CEB01C	24 Vdc		X		Aluminum	NPN - PNP transistor output, without local indication
CEB01MA	24 Vdc			X	Stainless Steel	4 – 20 mA output, without local indication
CEB09BV	Internal	X			Aluminum	Local Indication, without outputs
CEB09BVSI	Internal	X	X		Aluminum	NPN – PNP transistor output and local indication
CEB09BVSI	24 Vdc	X	X	X	Aluminum	NPN – PNP transistor and 4 – 20 mA output and local indication

Installation

Mechanical installation

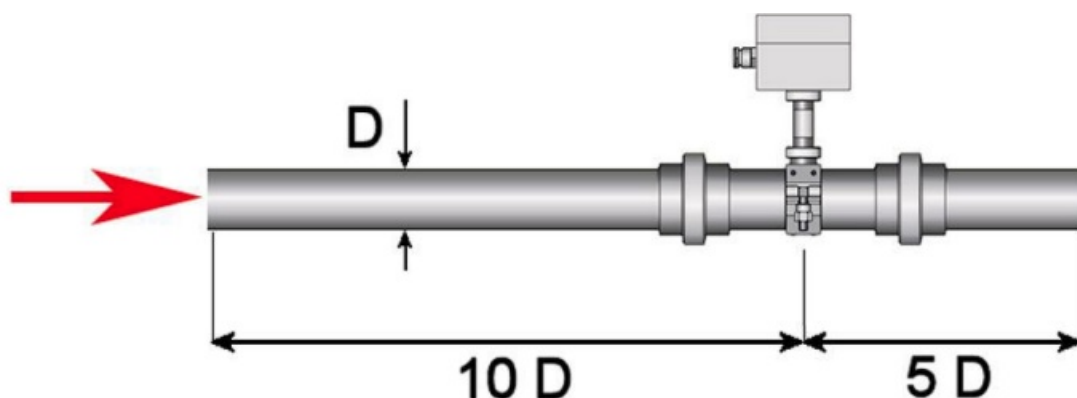
Stainless steel turbine flowmeters accurately measure when correct mechanical installation is performed. The recommendations that are exposed in this section, try to achieve the following objectives:

- Laminar flow: The liquid that passes through the equipment must do so in a laminar regime, that is, not turbulent.
- Always with liquid: The flowmeter must always be filled with liquid.
- Avoid the passage of air: The passage of air, or other gas through the flowmeter must be avoided.

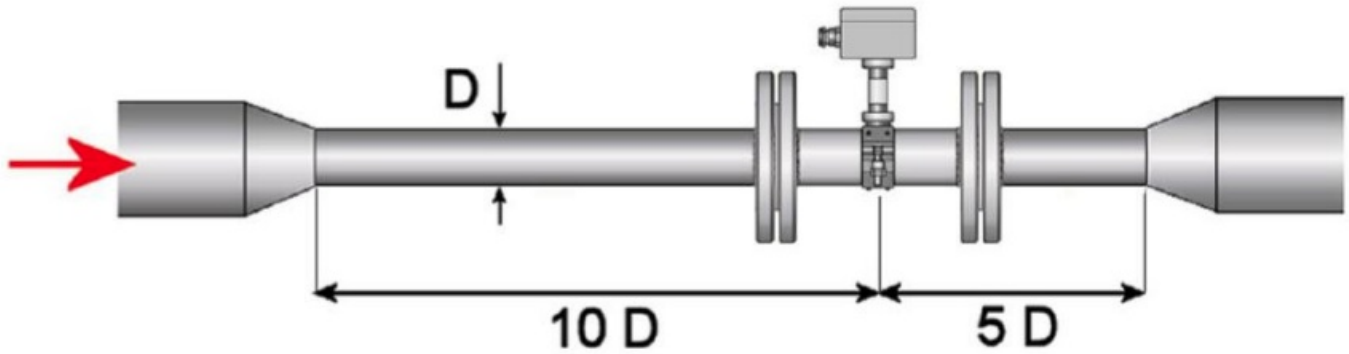
Caution: A 0.5-1mm mesh FILTER must be installed in front of the flowmeter to protect it. Failure to install this filter can cause major damage to the equipment. This filter must be installed following the minimum flow meter inlet length indications to maintain laminar flow.

Laminar Flow

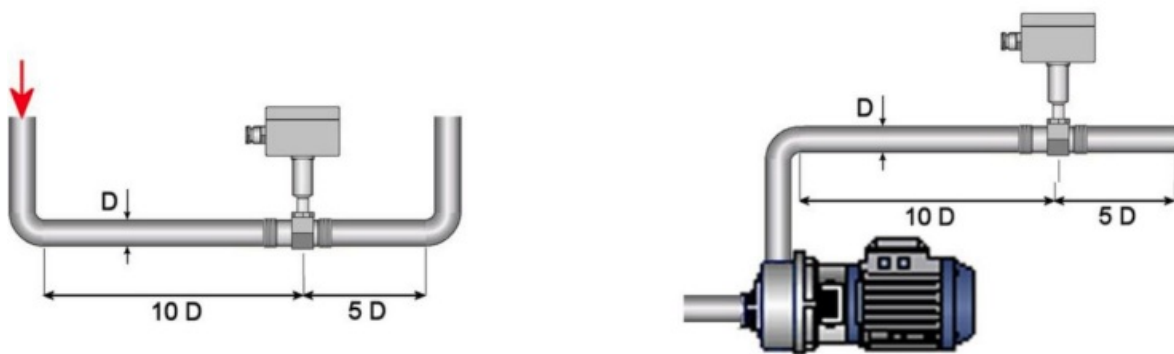
Straight sections. It is essential to place a section of straight pipe with the same internal diameter as that of the flow meter and, as a general rule, with a minimum length of 5 times the diameter at the outlet and 10 times the diameter at the inlet.



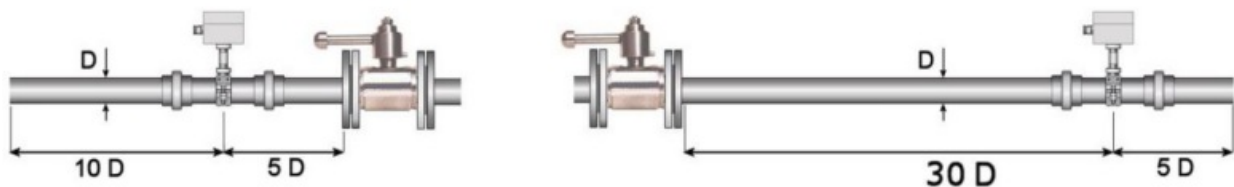
Reductions. If the diameter of the pipe is different from that of the flowmeter, concentric reductions must be placed before and after the indicated straight sections.



Curved sections. In front of or behind these straight tubes other elements or curved sections can be placed.

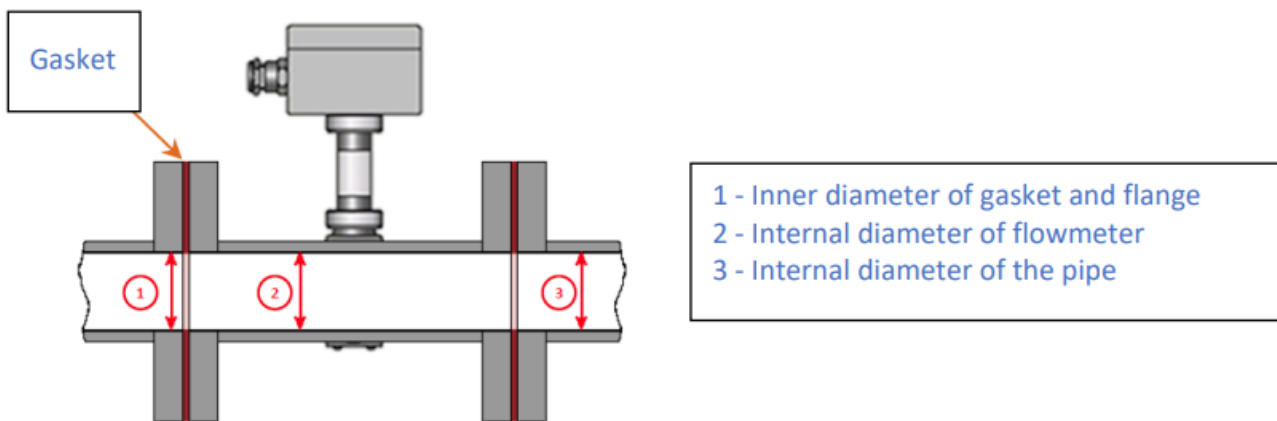


Valves. Manual valves must be placed behind the flow meter. If you want to put them in front of it, you have to increase the straight section to $30 D$. This is because, if a valve is left half open, the laminar flow of the liquid is greatly altered.



Unions with the pipe. The unions of the flowmeter with the pipes are critical points where turbulence can occur, affecting the precision of the equipment, if they are not carried out properly.

- As already indicated, the internal diameter of the pipe must be equal to that of the flow meter.
- Furthermore, the union fitting and gasket must not disturb the flow of the liquid. This point may be particularly important in the case of flanged junction TB turbine flowmeters.

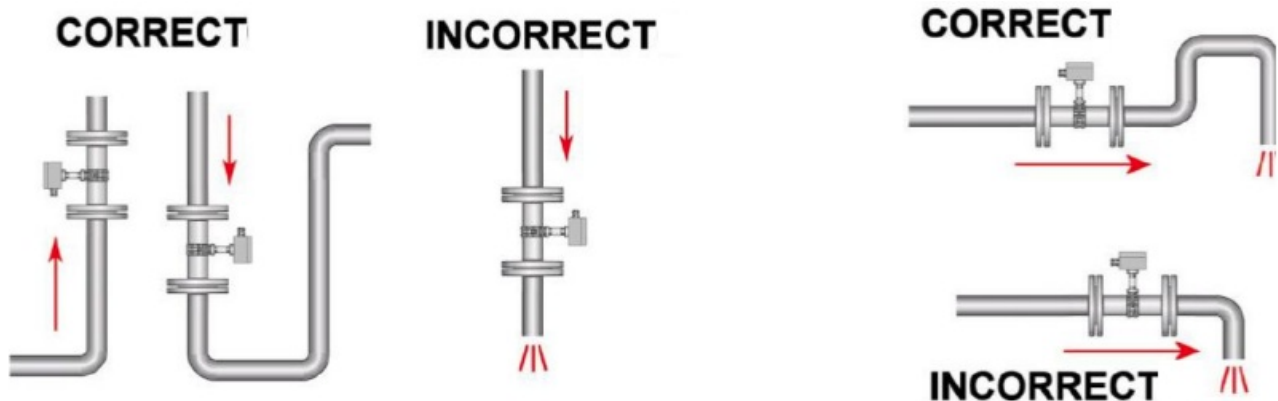


It is very important that the gasket is centered and that it has the same internal diameter to avoid turbulence at the inlet of the flowmeter. It is recommended to use self-centering gaskets such as:

- Gaskets whose outside diameter rests on the inside of the bolts.
- Gaskets with dimensions equal to the flanges, including their holes.

Always with liquid

The flow meter can be mounted in the pipeline in a VERTICAL or HORIZONTAL POSITION, but it must always be avoided that the flow meter can remain empty. A flowmeter should never be installed in an open discharge.



Avoid air passage

The passage of air or any gas through the flowmeter must be avoided, otherwise a measurement error would be made. If it cannot be avoided, a degasser or any other system must be installed that prevents air from passing through the equipment. In mobile installations, the air hose must be purged before reaching the flow meter.

Important. The passage of compressed air, steam or any other gas under pressure can seriously damage the turbine flow meter.

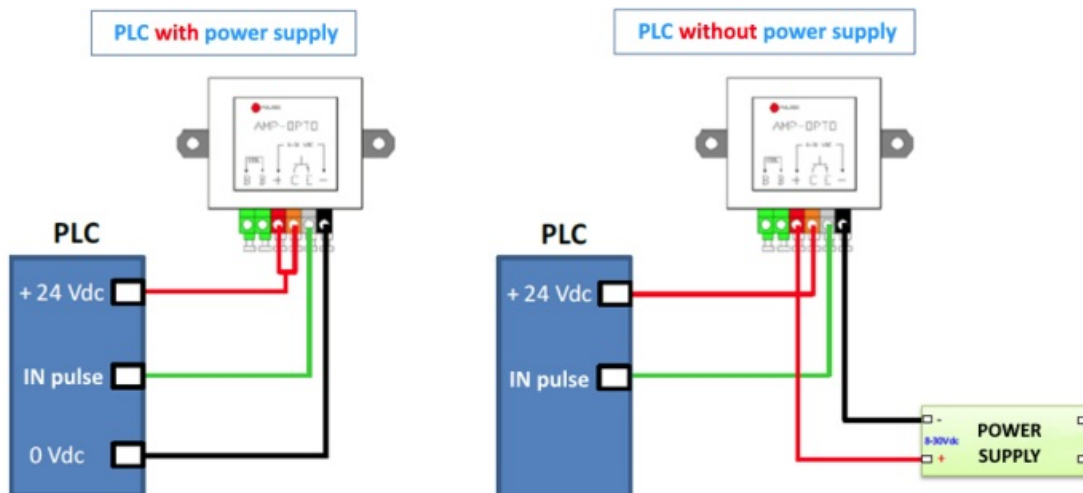
Other recommendations

- The flow meter must not be mounted next to the electric motor of a pump. It must be moved a minimum of 50 cm away.
- The fluid should not back up, otherwise it would count it positively. If there is a risk that this circumstance could occur, a non-return valve must be fitted.
- In lines with very hot liquids, if the flowmeter is installed in a horizontal line, rotate it 90 degrees so that the transmitter is not above the pipe, as the internal electronics could overheat.

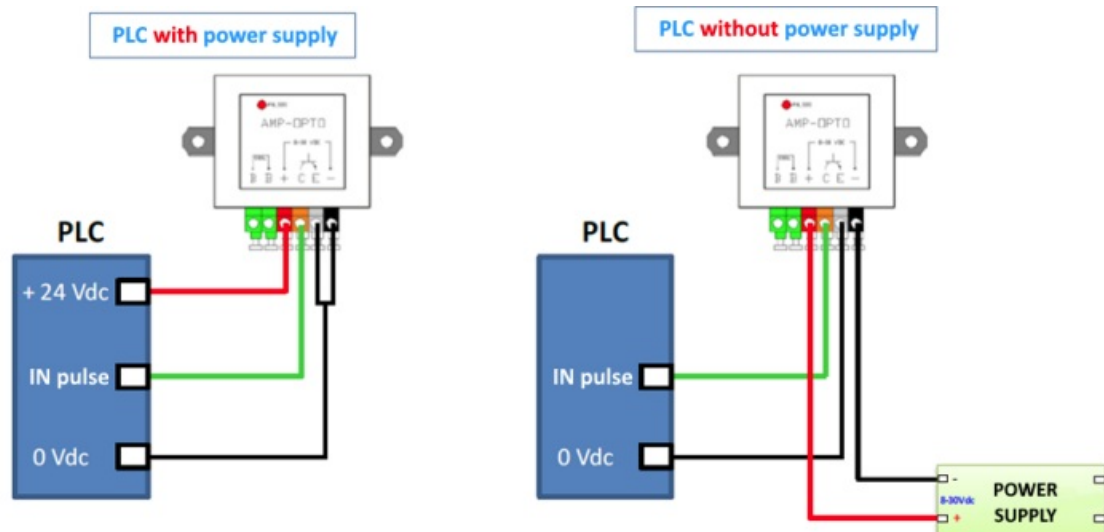
Electrical connection

CEB01C Transmitter

NPN – PNP open collector pulse output



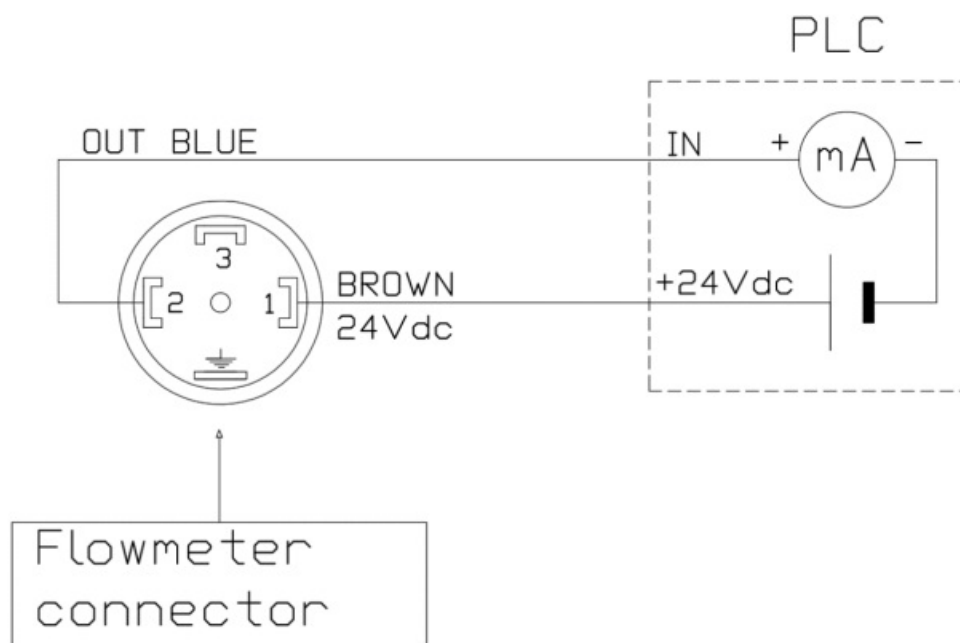
NPN Connection



CEB01MA transmitter

4 – 20 mA analog output

CEB01MA



- Passive 4 – 20 mA output
- Maximum load: 500 ohms


Contact

For any problem you may encounter or service you need, do not hesitate to contact the G – Flow offices.

Telephone:	+34 916378174 / +34 916378175	
E-mail:	serviciotecnico@g-flow.com	
Address:	Office	Calle Justina Velasco Martín 2,
	Laboratory	Pol. Ind. Los Llanos
	Factory	28260 – Galapagar – Madrid.

serviciotecnico@g-flow.com

Documents / Resources

 <p>TURBINE FLOWMETER USER MANUAL TA, TB AND TC GUADARRAMA FLOW</p>	<p>GUADARRAMA FLOW TA Turbine Flowmeter [pdf] User Manual TA, TB, TC, TA Turbine Flowmeter, Turbine Flowmeter, Flowmeter</p>
--	--

References

-  [Flow is building the future of culture and community in Web3.](#)
- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

This website is an independent publication and is neither affiliated with nor endorsed by any of the trademark owners. The "Bluetooth®" word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. The "Wi-Fi®" word mark and logos are registered trademarks owned by the Wi-Fi Alliance. Any use of these marks on this website does not imply any affiliation with or endorsement.