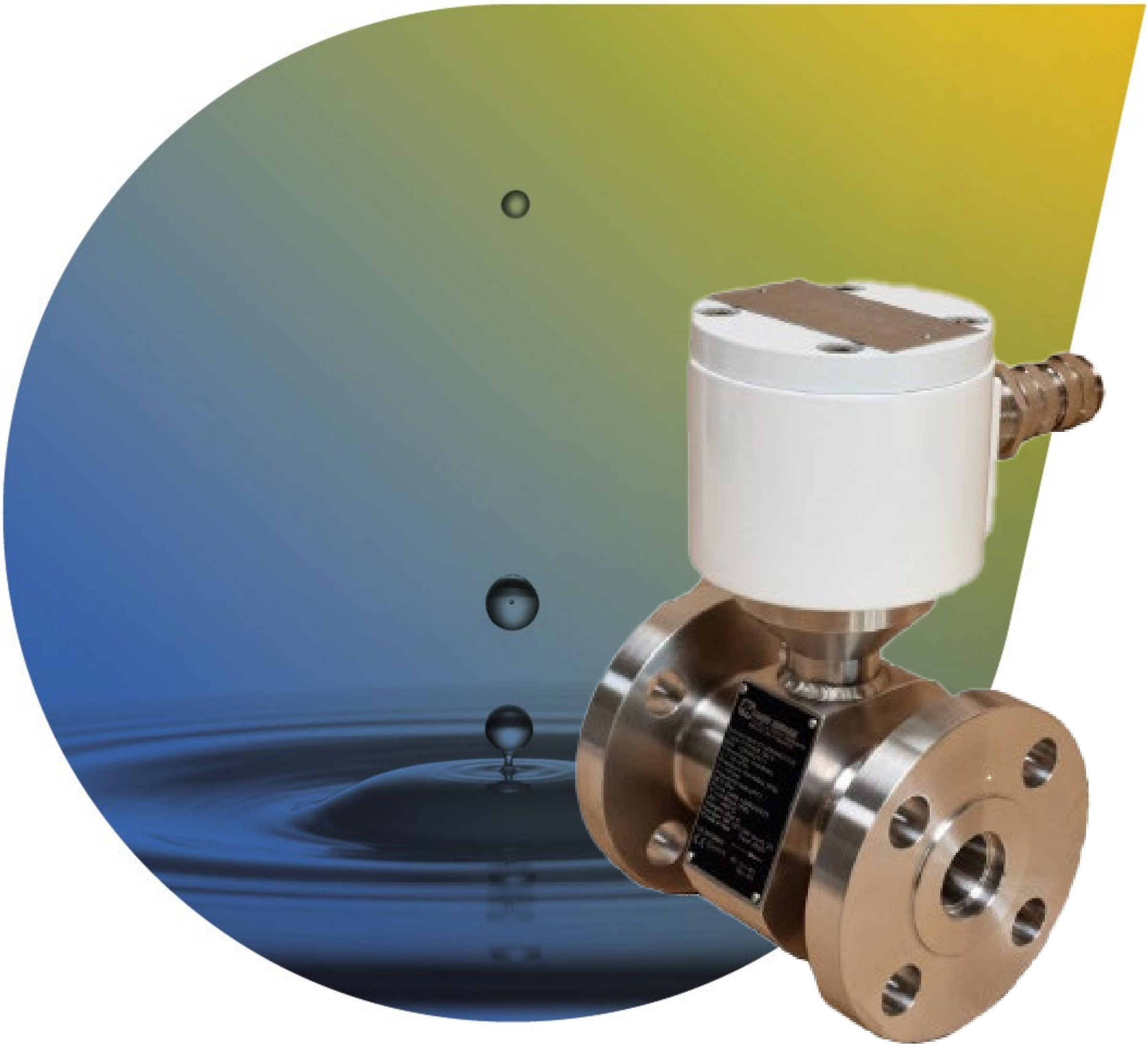
Faure Herman
Counting every drop



HELIFLU™ TGN

User's Manual

CONTENTS

Chapter 1: Generalities

HELIFLU TGN turbine flowmeters are designed for precise and reliable volume measurement of fluids in gaseous phase. Their simple and rugged construction guarantees excellent measurement accuracy and repeatability for a wide range of industrial and commercial applications. These meters incorporate a freely rotating rotor on ball bearings, positioned at the center of the measuring section. The rotor rotates at a speed proportional to the gas flow rate.

TGN Series

TGN	Model	NPS (")	Flowrate (ft^3/min)		Flowrate (US GPM)		Inlet Diameter (")
			Min	Max	Min	Max	
TGN 16	G 2.5	1/2	0.47	2.35	0.013	0.063	1/2
TGN 20	G 4	3/4	0.59	3.83	0.016	0.095	3/4
TGN 25	G 6.5	1	1.18	5.89	0.032	0.16	1
	G 10		1,47	9.42	0.040	0.25	
TGN 32	G 16	1 1/4	1.88	14.7	0.051	0.40	1 1/4
	G 25		2.35	23.5	0.063	0.63	
TGN 50	G 40	2	3.83	38.3	0.10	1.0	2 1/16
	G 65		5.89	58.9	0.16	1.6	
TGN 80	G 100	3	9.42	94.2	0.25	2.5	2 15/16
	G 160		14.7	147	0.40	4.0	
	G 250		23.5	235	0.63	6.3	
TGN 100	G 160	4	14.7	147	0.40	4.0	3 5/16
	G 250		23.5	235	0.63	6.3	
	G 400		20.6	206	1.0	10	
	G 650		58.9	589	1.6	16	
TGN 150	G 400	6	20.6	206	1.0	10	5 1/2
	G 650		58.9	589	1.6	16	
	G 1000		94.2	942	2.5	25	
	G 1600		147	1471	4.0	40	
TGN 200	G 1000	8	94.2	942	2.5	25	7 5/8
	G 1600		147	1470	4.0	40	
	G 2500		235	2354	6.3	63	
TGN 250	G4000	10	382.6	3826	10	103	9 5/16

Generating the signal

The operating principle of these meters is based on measuring the velocity of rotation (instantaneous flow) and the number of revolutions (quantity) of a helical-bladed rotor located at the center of the pipe, by means of a magnet (embedded in the thickness of the blades) / solenoid assembly (positioned in the body).

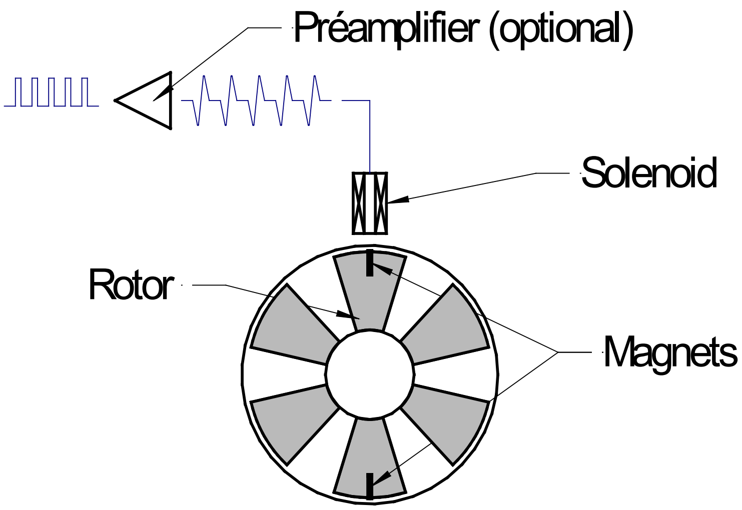


Figure 1. Signal Generation Principle

Signal generated is processed to determine value of instantaneous flow rate as follows: $Q = \frac{F}{Kf} x3600$ and transferred gas quantity such that: $V = \frac{N}{Kf}$

with Q Instantaneous flow in m^3/h [*dm^3/min, ft^3/min, …*]
F Output signal frequency in Hz
Kf Meter-specific factor determined during calibration (pulses/m^3) [*imp/dm^3, imp/ft^3, …*]
V Volume in m^3 [*dm^3, ft^3, …*]
N Number of accumulated pulses

Chapter 2: Components of the meter

HELIFLU TGN turbine meters include the following sub-assemblies:

- Body
- Measurement sub assembly (with rotor)
- Inlet ring
- Detection sub assembly
- Flow conditioner (depending on meter size)
- Totalizer (optional)

Body

Made from Carbon Steel, Stainless Steel (AISI 316 or equivalent) or Aluminum alloy, the meter body is designed to accommodate the functional sub-assemblies (measurement and signal generation) and to provide mechanical interfaces with the application piping (flanges, clamps, screw connections, special fittings, etc.).
Other materials are available on request (Duplex, Hastelloy, etc.).
A nameplate on the body identifies the meter, and an arrow indicates the direction of fluid flow.

Figure 2 – TGN Flanged body

Figure 3 – TGN "Clamp" body

Measurement sub assembly

This sub-assembly contains the elements contributing to the free rotation of the rotor.
For TGN 25 to 250, a nozzle is integrated into the measuring body to reduce the flow cross-section, accelerating fluid velocity and thus reducing boundary layer thickness.
The nozzle is made of stainless steel or aluminum alloy for small diameters (25 to 50) [Figure 4], and PETP for larger sizes (80 to 250) [Figure 5].

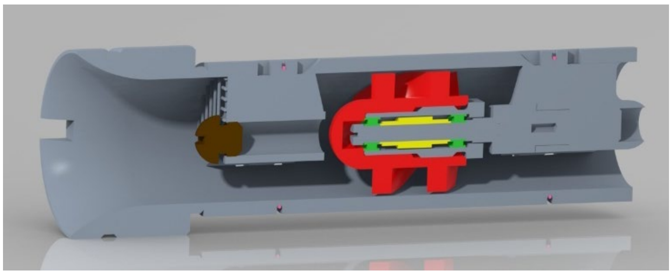


Figure 4 – SS Nozzle – TGN 25 à 50

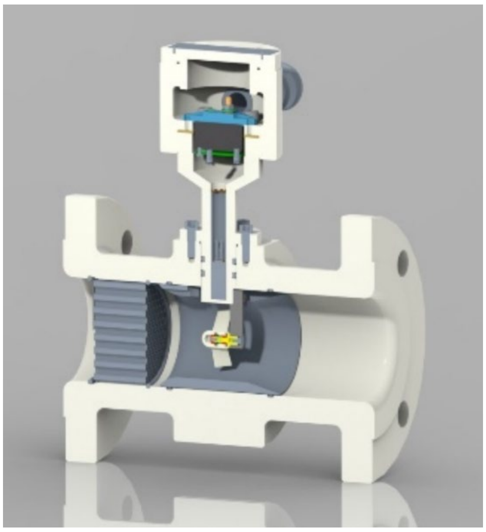


Figure 5 - PETP Nozzle – TGN 80 à 250

The propeller is made of PETP, aluminum alloy or titanium alloy (depending on the application) with a profile adapted to the measurement range (rotation speed) and pivots on two self-lubricating ball bearings. Two opposing blades are fitted with magnets to generate the electrical signal.
Rotor and its pivoting system are positioned on a support bracket or crosspiece in the center of the pipe.

- For TGN 16 and TGN 20, the upstream crosspiece supports the rotor and its pivoting system [Fig 6].
- For TGN 25 to 50, the upstream crosspiece reduces possible swirl of the fluid stream, while the downstream crosspiece supports the rotor and its pivoting system [Fig 7].
- For TGN 80 to 250, a bracket fixed inside the meter body supports the rotor and its pivoting system [Fig 8].

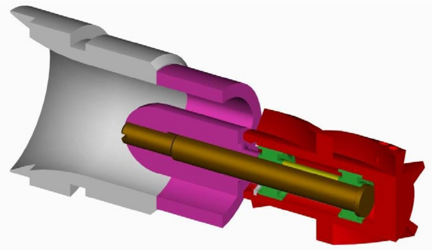


Figure 6 – TGN 16 and 20

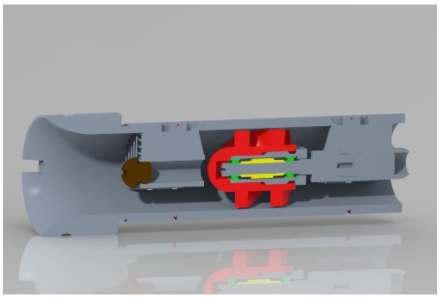


Figure 7 - TGN 25 to 50

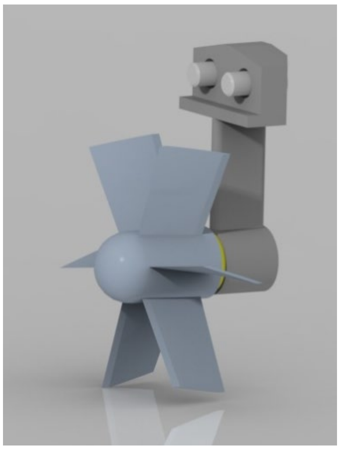


Figure 8 – TGN 80 to 250

Detection sub-assembly

The standard version of HELIFLU TGN turbine meters includes a detection sub-assembly for generating a pulse train representative of the volume measured (and flow rate). A preamplifier must be integrated into the sub-assembly, at least when the distance between the meter and the acquisition system exceeds 200 m. This preamplifier receives the low-voltage sinusoidal signal generated by the solenoid, shapes and amplifies it to enable reliable transmission over longer distances. The FH71 preamplifier is available in 2-wire (Intrinsically Safe - Standard FH or NAMUR) and 3-wire (Explosion Proof - Open Collector) versions.
The solenoid/preamplifier or solenoid/terminal connection is made at the factory.

Flow Conditioner

Performance of turbine meters can be affected by the rotation of the fluid stream (swirl) and asymmetry of upstream flow profile induced by the configuration of upstream pipes (elbows, cross-section reductions, etc.) and accessories (valves, filters, pumps, etc.).
For TGN 80 to 250 models, the flow conditioner consists of a bundle of cylindrical structures with adjacent hexagonal cross-sections in aluminum alloy, known as honeycomb. The honeycomb is held in place by two beads, and is used to condition the fluid stream upstream of the measuring element. If the gas being measured is incompatible with the aluminum alloy, the conditioner can be made up of a bundle of welded stainless steel tubes.
Immediately upstream of the honeycomb, a metal screen is held in place by the snap ring. It also has a flow-regulating function, particularly in the case of high-pressure operation.

Totalizer (option)

Depending on the model, conversion and/or display devices can be added to the meter.

Pressure tap (option from 3 to 10")

A pressure connection consisting of a hole in the body at rotor level allows the reference pressure in the measuring chamber to be measured. A ¼ NPT threaded connection is screwed into the body. For transport, or if the pressure connection is not needed, a plug is screwed into the connection.

Integrated temperature sensor (optional)

As an option, temperature measurement can be integrated into the meter (NPS ≥ 3"). It consists of a Pt 1000 RTD mounted in a thermowell, itself screwed to the boss with a BS ring for sealing. The probe wires join those of the coil in the coil-holder tube.

Chapter 3:
Reception, Storage and Handling

⚠ **On receipt of the meter, check the general condition of the packaging to identify any damage sustained in transit. Remove the equipment from its packaging and check its general condition, as well as the presence of this manual and the calibration certificate.**

⚠ **Before installing the equipment, we recommend keeping it in its original packaging, protected from severe weather conditions and possible shocks. Storage temperature should be between -20 and +70°C (-4 to 158°F)**
If the equipment is not introduced into service within one month of receipt, FAURE HERMAN recommends keeping it under inert gas (nitrogen).
Before installing the equipment on the measuring line, carry out a thorough visual inspection to identify flow direction, serial number, operating range, clamping class, etc.

⚠ **If the equipment is damaged and/or the documentation is incomplete, contact Customer Support immediately by telephone or e-mail:**

Customer support	
Hotline:	+33 (0)2 43 60 28 55 +1 713 623 0808 (USA)
Email:	services@faureherman.com
Website:	https://faureherman.com/

Handling: NPS ≥ 6" or Weight > 30 kg [66 lbs].

⚠ **Handling must be carried out using the lifting rings on the body (flanges) of the equipment, or using straps placed at each end.**

⚠ **Electrical boxe(s) must not be used for handling.**

Chapter 4: Installation

HELIFLU TGN turbine meters can be installed either horizontally or vertically (upflow), respecting the direction of flow indicated on the nameplate.
For applications subject to legal metrology control, and more generally to obtain reliable measurements, the equipment must be inserted between two straight sections of piping with the same nominal diameter as the equipment and a length greater than or equal to 15 x DN upstream and 5 x DN downstream.

Preparation for installation

Before integrating the meter into the measuring line, check the following points:

- No significant deposits or pollution in the upstream pipe section.
- Respect flow direction (indicator plate)
- Matching flange dimensions and joint faces between upstream/downstream pipes and equipment.
- Align meter with upstream/downstream piping and avoid flow obstructions (gaskets).
- Positioning of electrical outlets.

⚠ **Like all measuring instruments, TGN meters must be handled with care.**

Installation

Before installing the meter, we recommend that you keep it in its original packaging, protected from severe weather conditions and possible shocks.
The equipment will be inserted on the measuring line after checking and correcting the alignment of the flanges, if necessary, so as not to generate any stresses when applying the tightening torque.

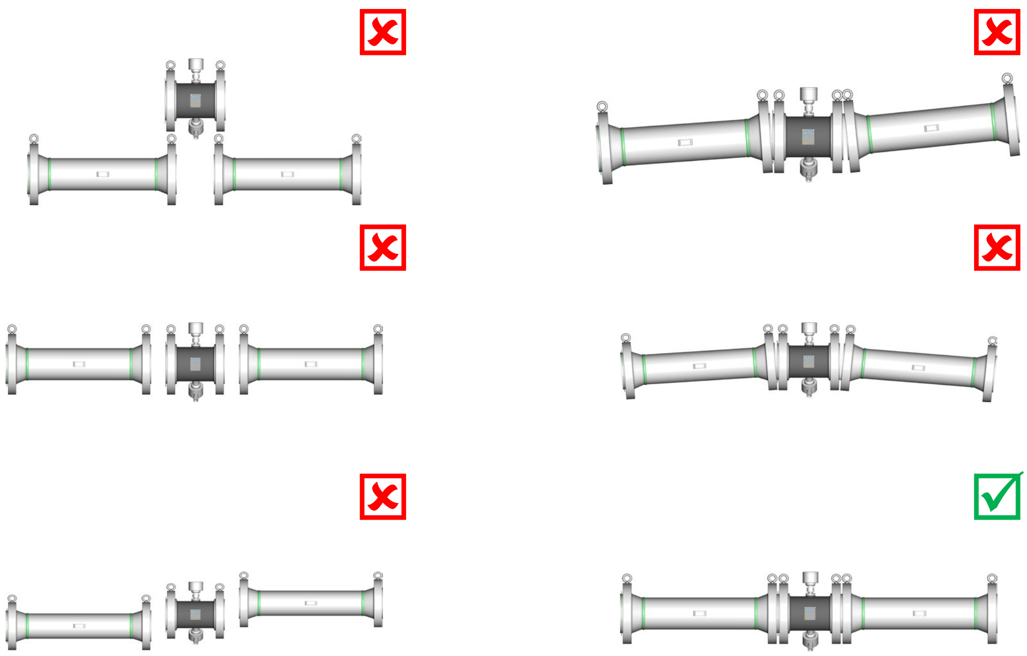


Figure 9. Upstream/downstream pipe alignment

The equipment must only be installed using suitable tools.

- Never use a hammer
- Check for tightening torque before tightening
- Spacers can be used to insert the equipment on a pre-installed line.

If a hoisting system is used to install the meter, we recommend leaving it in place until the upstream and downstream connections of the meter (or measuring line) are fully tightened.

Gaskets

Be sure to use gaskets that are suitable for the type of flange and comply with standards ASME B16.20 and ASME B16.21 or NF EN 1514 et NF EN 12560.
NOTE : Spiral wound gaskets are not permitted for flanges below class #300

Never re-use used gaskets.

Bolts and nuts

Mechanical connections of HELIFLU TGN meter to site piping are selected in accordance with the following standards ASTM A 193 B7 (threaded rods) and ASTM A 194 2H (nuts) in accordance with ASME B16.5 for applications at temperatures between -45°C and +480°C (-49 /+896 °F).

Tightening torque

Size and tightening torque Uncoated bolts				Size and tightening torque Coated bolts			
M	N.m	NPS	ft-lb	M	N.m	NPS	ft-lb
14	110	1/2	60	14	85	1/2	45
16	160	5/8	120	16	130	5/8	90
20	350	3/4	210	20	250	3/4	160
24	550	7/8	350	24	450	7/8	250
27	800	1	500	27	650	1	400
30	1150	1 ⅛	750	30	900	1 ⅛	550
33	1550	1 ¼	1050	33	1200	1 ¼	800
36	2040	1 ⅜	1400	36	1600	1 ⅜	1050
39	2650	1 ½	1800	39	2050	1 ½	1400
42	3350	1 ⅝	2350	42	2550	1 ⅝	1800

Measured fluid properties

Meter life and measurement reliability can be seriously affected by the presence of liquid and/or solid particles in the gas being measured.
Presence of liquid, in form of droplets or fog, results in a significant degradation of performance, while the passage of liquid "pockets" between two gas sections can result in the destruction of the rotor pivoting system, leading to serious measurement errors.
FAURE HERMAN recommends ensuring that there is no risk of liquid injection/generation upstream of the meter and, if necessary, installing a dehumidification system upstream of the meter. For an elevated installation, it is strongly recommended not to position the meter in a low area where a liquid pocket could form under the effect of gravity and/or significant cooling, causing a phase change.
The presence of small solid particles in flow can lead to gradual damage to fixed or moving parts of the meter (crosspiece, rotor), resulting in a gradual deterioration in performance, while the passage of larger solid particles is likely to cause permanent damage to these same parts.

Electrical connection

The meter must be connected to the electronic converter (site) by insulated armored pair cable. Only one end of the shield is earthed, and the other end is carefully insulated. The cable shield and foil must be connected without any intermediate connection, either on the meter side by grounding the shield and foil, or on the electronics side by grounding the shield and foil.
This earth connection is made on the device with the lower earth resistance. Resistance to earth on the meter side is provided by a screw inside the connection box. Connection on the converter side is made via the terminals provided.
The distance between the meter and flow computer can be up to 200 meters (650 ft) when using a coil alone, and up to 5000 meters (1 tard) when using a preamplifier.

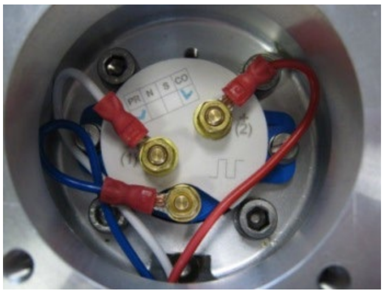
For on-site wiring, we recommend the use of 2 or 3-wire shielded instrumentation cables. Example: 01 IT 09 EG (NF M 87-202)

For installation in hazardous areas, these cables must comply with specific regulations.

1. Unscrew the four cover screws, remove the washers and remove the cover giving access to the terminal block.

2. Check cable sheath and cable gland seals for damage.
3. Feed the shielded pair cable through the cable gland.
4. Connect the cable wires to the screw terminals as shown in the diagram below.

2 wires Preamp
(Standard FH / NAMUR)



3 wires Preamp
(Open Collector)

1. If necessary, ground the shielding braid using the screw provided.
2. Refit cover, tighten to 6 Nm (4.4 ft-lb).

Wiring diagrams

On-site electrical connection depends on :

- Type of protection (intrinsically safe, explosion-proof)
- Characteristics of the acquisition system input stage (input impedance, current/voltage detection type, etc.)
- The characteristics of the cable used (resistance, inductance, capacitance, etc.).

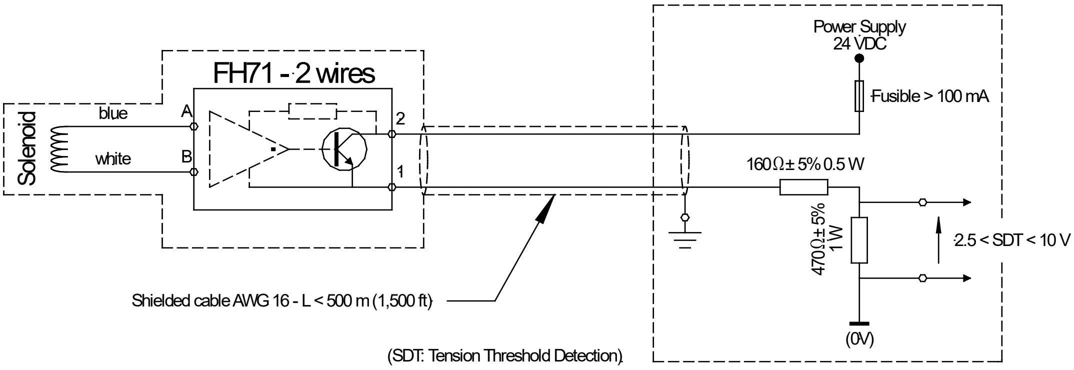


Figure 10. Example: Connection of a 2-wire preamplifier with input impedance > 10 kΩ

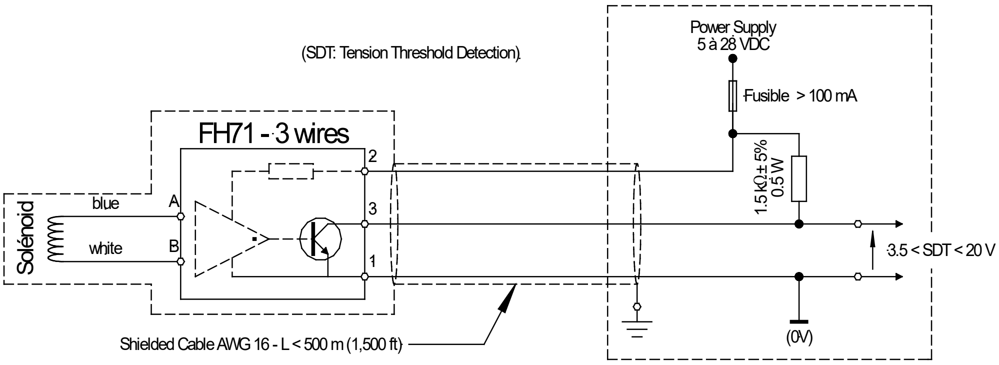


Figure 11. Example: Connecting a 3-wire preamplifier (Open Collector)

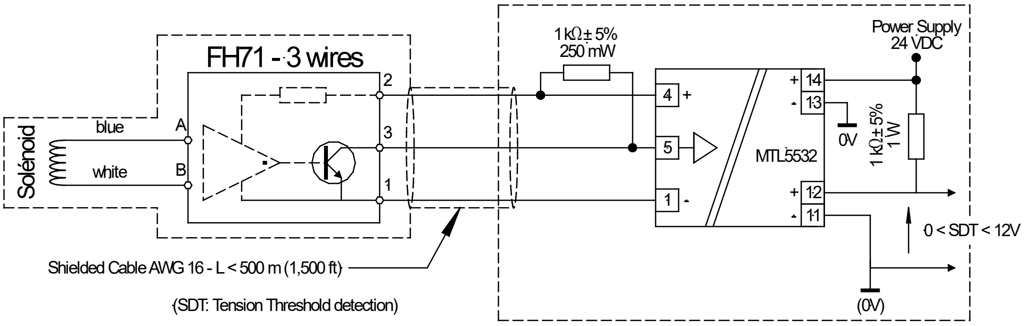


Figure 12. Example: Connection of a 3-wire preamplifier (Open Collector) with isolator

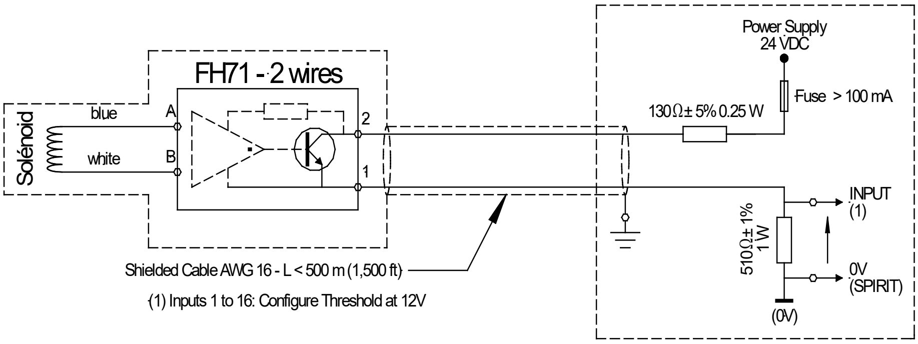


Figure 13. Example: Connecting a 2-wire preamplifier to a ABB/SPIRIT Flow-X computer

P148 Mezzanine Card:

SKT-C	CH1	CH2	CH3	CH4
Pulse +	4	3	2	1
Pulse -	23	22	21	20

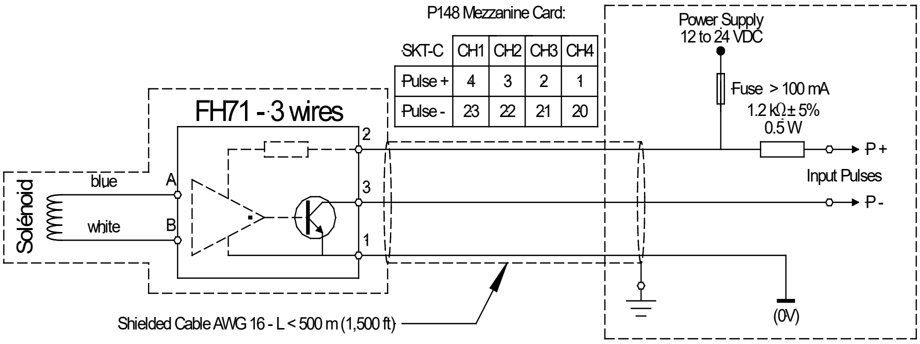


Figure 14. Example: Connecting a 3-wire preamplifier to an Emerson S600 FloBoss ECU

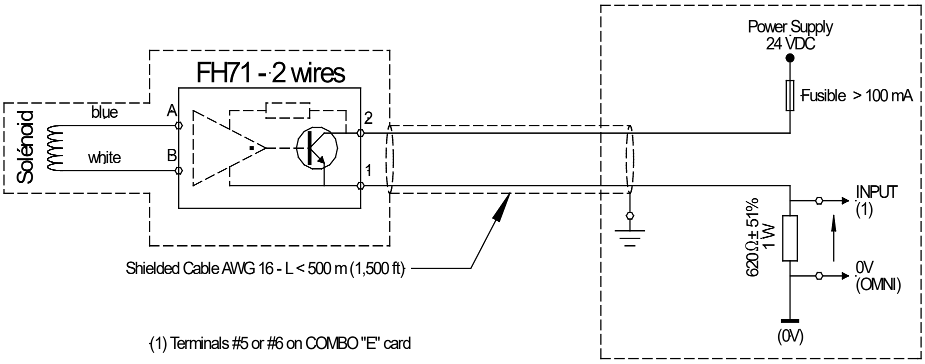


Figure 15. Example: Connecting a 2-wire preamplifier to an OMNI 3000/6000 computer

Chapter 5: Commissioning

Once the equipment has been mechanically installed on the measuring line and the pulse emitter(s) electrically connected, pressurized the system.

⚠ **During this filling/pressurizing operation, ensure that any liquid present in the pipes is eliminated by means of existing draining systems, circulating at a very low flow rate.**

⚠ **Avoid prolonged use of the meter beyond the maximum flow rate (see nameplate).**

Chapter 6: Maintenance

HELIFLU TGN turbine meters require no special maintenance as long as their use remains within the operating limits of the type.

A periodic inspection of the meter is recommended every 4000 hours of operation (or every 6 months).
The condition of ball bearings should be carefully checked, and the coil shafts checked for moisture. In case of doubt, we recommend changing the sub-assembly.

The frequency of maintenance visits should be increased if the meter operates in a fluid with a high or low solid content. In fact, some of the impurities in suspension can cause erosion and accelerate wear on moving parts.

Deposits on the measuring elements can falsify readings. It will therefore be necessary to carry out periodic cleaning in relation to the formation of these deposits.
After removing the meter, check for erosion or dirt.

If necessary, clean all parts in contact with the fluid with a solvent and allow to air dry.

Chapter 7: Malfunctions

ISSUE	PROBABLE CAUSE
The meter overestimates	1 – 2 – 5 - 7 – 8 – 9 – 10 – 11
The meter underestimates	1 – 2 – 3 - 4 – 5 – 6 – 8 – 9 – 10 – 11
Unstable indications	1 – 2 – 8 – 9 – 10 – 11
No signal	2 – 3 – 4 – 6

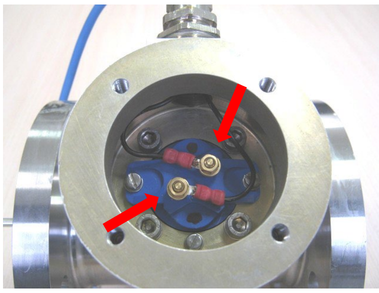
	PROBABLE CAUSE	CORRECTION TO BE MADE
1	Parasitic pulses	Check wiring (diagram, resistance values, shielding, etc.) Check (replace if necessary) solenoid and/or preamplifier
2	Solenoid and/or preamplifier fault	Check wiring (diagram, resistance values, shielding, etc.) Check preamplifier type (N, S, CO) Replace solenoid and/or preamplifier
3	Loss of magnetization	Replace measuring subassembly
4	Pivoting damaged	Replace measuring subassembly
5	Damaged rotor	Replace measuring subassembly
6	Blocked rotor	Clean measuring subassembly Replace measuring subassembly
7	Deposits on inner walls	Clean measuring subassembly Check installation conditions Check upstream components (filter, etc.) Replace measuring subassembly
8	Deformation of flow profile	Check installation conditions Check upstream components (filter, etc.)
9	Presence of liquid phase	Eliminate the source Check process parameters (pressure, temperature, gas composition) Integrate a gas dehumidification system
10	Cavitation	Check installation conditions Check upstream components (filter, etc.) Increase line pressure
11	Performances	Recalibrate Replace measuring subassembly

Chapter 8: Repairs

Replacing the preamplifier

This operation must be carried out outside the dangerous area and with disconnected power supply. Refer to the Magnetic Sensors Technical Manual (TEC 17-12-07) if necessary.

- Cut sealing wire (if applicable).
- Unscrew housing cover (4 screws).
- Disconnect preamplifier from site wiring (if applicable).

- Remove the two screws securing the preamplifier to the case.
- Remove the preamplifier from the case, taking care not to stress the solenoid connection cable.
- Disconnect the cable from the preamplifier.

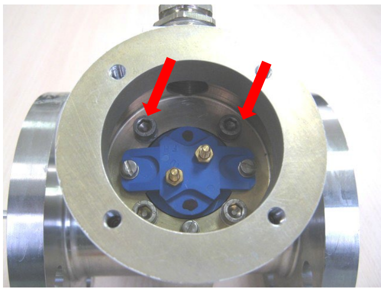
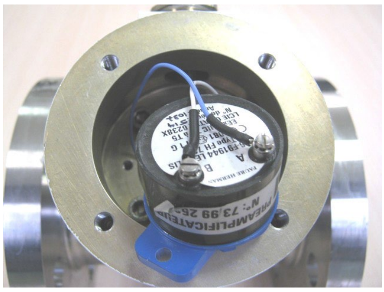




Figure 16. Replacing the preamplifier

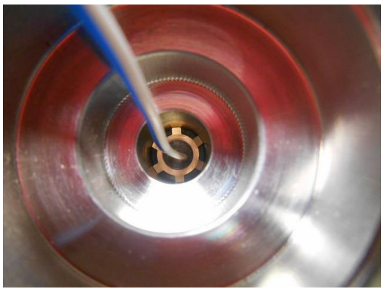
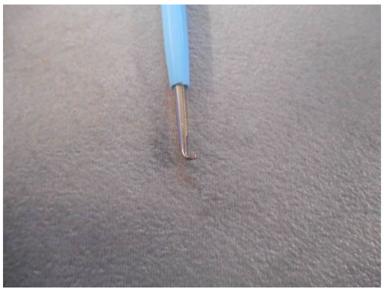
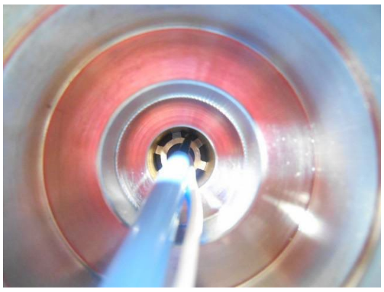
- Proceed in reverse order to install the new preamplifier.
- Reposition the cover and apply a torque of 6 Nm [4.4 ft.lb] when tightening the 4 screws.
- Install a new sealing wire (if applicable).

Replacing the Solenoid

With locking ring

This operation can only be performed once the preamplifier or terminal block has been removed.

- Disconnect the connection cable between solenoid and preamplifier (or terminal block).
- Remove the solenoid by loosening the ring using the tool provided (ref. 870046)

- Insert a new solenoid and ring, using the same tool (ref 870046) to ensure contact at the bottom of the well.

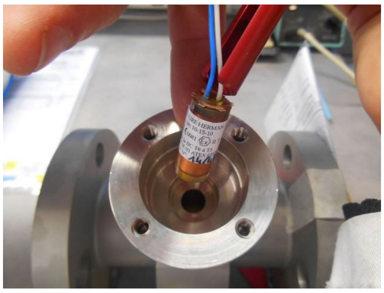
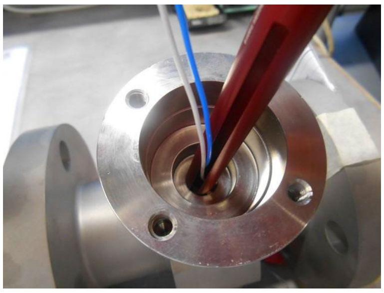
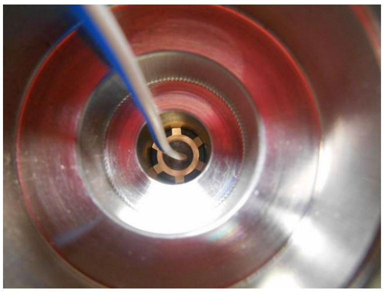
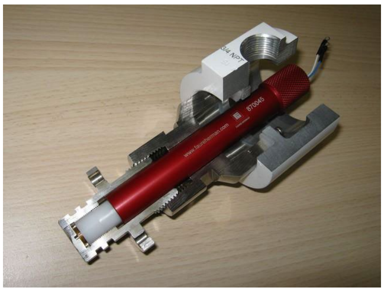
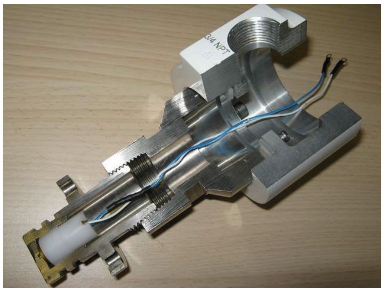




Figure 17 - Removing/assembling the solenoid held in place by a ring

With screwed ring

This operation can only be performed once the preamplifier or terminal block has been removed.

- Disconnect the connection cable between solenoid and preamplifier (or terminal block).
- Insert the tool (ref. 870045) into the boss, taking care not to damage the solenoid cables, and loosen the ring.

- Place the new solenoid in the ring and carefully insert the cables into the tooling.

Figure 18. Disassembly/assembly of the solenoid held in place by a screwed ring

Replacing the measuring subassembly

It is not possible to replace ball bearings on site, and FAURE HERMAN recommends returning the measuring subassembly or the complete meter (calibration) to the factory if necessary.

TGN 16 and 20

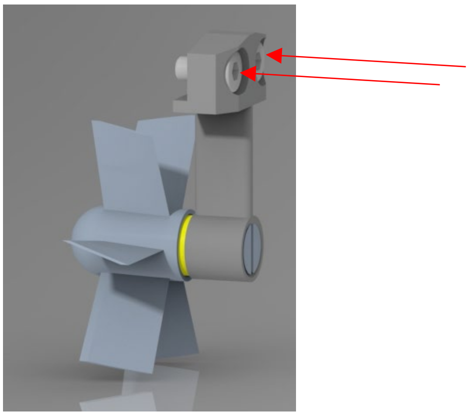
- Remove the meter from line
- Position meter vertically with upstream side up
- Unscrew the measuring sub-assembly, taking care not to shock the rotor.
- Reposition the new measuring subassembly and screw it into the measuring unit.

TGN 25 to 50

- Remove the meter from line
- Position meter vertically with upstream side up
- Unscrew the inlet ring and remove the fitted nozzle
- If necessary, make it easier to remove the subassembly by pushing it (downstream access).
- Reposition the new sub-assembly, making sure the flow direction is correct, and screw on the inlet ring.

TGN 80 to 250

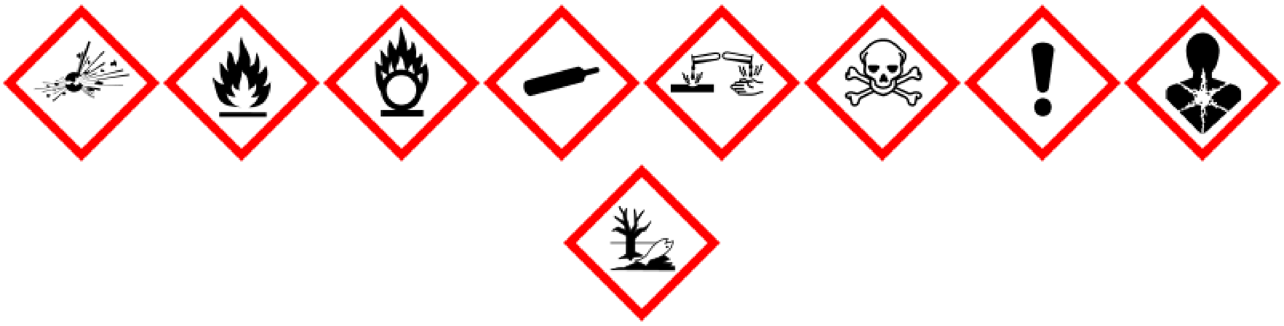
- Remove the meter from line
- Remove the fitted support (with the rotor) by removing the two fixing screws, while holding it in place with pliers, taking care not to shock the rotor.



- Reposition the new support and tighten the two fixing screws.

Chapter 9: Removing the meter

The equipment is designed to operate under pressure and must be depressurized before being removed from the measuring line (complete dismantling or work on an internal component).



IMPORTANT: Make sure the line is completely depressurized before loosening the connecting bolts.

Appendix 1 – Operating limitations

Special precautions

The operating range is defined on the nameplate and specifies:

- Flowrate Minimum / Maximum
- Pressure Maximum
- Temperature Minimum / Maximum

Flow rate limits define the range of optimum equipment performance (measurement accuracy and repeatability). The maximum value also defines the limit for continuous operation. This limit may be exceeded occasionally (without exceeding 120% of rated capacity for short periods).
Pressure and temperature limits relate exclusively to the mechanical design of the equipment and define the permitted operating range.

Appendix 2 - Safety information

Important information before installation
This manual contains important safety instructions. It is essential to read and understand the operations to be performed before installing, connecting and commissioning the equipment.
Failure to comply with these instructions and warnings may damage the equipment and/or endanger the personnel responsible for operating it.

Operators requirements

Ensure that operators and maintenance personnel have all safety equipment applicable to the area of operation (safety glasses, hearing protection, safety shoes, etc.) and are trained for the activities concerned.
Unauthorized personnel must not have access to installation and/or maintenance operations relating to the equipment.

Risks resulting from non-compliance with instructions and warnings

Failure to comply with these instructions and warnings may result in:

- Exposing personnel to mechanical, electrical and/or chemical hazards
- Damage to equipment (meter)
- Pollute the environment by releasing harmful or polluting gases

Safety instructions

To avoid electrical and pressure-related hazards, the power supply must be disconnected and the measuring line depressurized before any work is carried out.
The safety instructions contained in this manual, as well as all safety regulations and recommendations in force in the country of installation, must be observed.

Operating conditions

Operating range indicated on the meter nameplate must be strictly adhered to. The reliability and performance of the equipment can only be guaranteed if it is installed and operated as specified in this manual.

Installation, operation and maintenance of the equipment must be carried out using the appropriate tools. Never use hammers or tools likely to generate sparks or damage the equipment's electrical protection (housing, cable glands, conduits, etc.).

Installation, servicing and maintenance of the equipment must be carried out by qualified personnel.
All spare parts must be approved by FAURE HERMAN.

For further information on installation, use or maintenance of the equipment, please contact Customer Support by phone or e-mail:

Customer support	
Hotline:	+33 (0)2 43 60 28 55 +1 713 623 0808 (USA)
Email:	services@faureherman.com
Website:	https://faureherman.com/

Repair and maintenance

Repairs and modifications to the equipment are only possible with the express agreement of FAURE HERMAN. The use of spare parts not recognized by FAURE HERMAN releases FAURE HERMAN from all liability for any consequences related to this original modification.

Transport, handling and storage

The meter must be handled with care to avoid damage. Flange face protectors should remain installed for as long as possible.
If the meter is fitted with lifting eyes, they must be used for handling. Under no circumstances should the meter be handled, lifted or rested on the electrical boxes.

Unpacking

On reception of the meter, check the general condition of the packaging to identify any damage sustained in transit. Remove the equipment from its packaging and check its general condition, as well as the presence of this manual and the calibration certificate.

Storage

If the meter is not installed soon after receipt, it is advisable to keep it in its original packaging, protected from severe weather conditions and possible shocks. If the meter is to be stored for a long period (over 12 months), check the validity of the calibration against applicable regulations.

Return

Contact FAURE HERMAN before returning the equipment to the factory.
If the meter has been used to measure hazardous, toxic or corrosive products, the operator must ensure that it has been properly rinsed and decontaminated before returning it to the factory.

ATEX & IECEx

HELIFLU TGN meter is ATEX certified and compliant with regard to the essential health and safety requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres (Directive 2014/34/EU).

Ensure that the equipment is used in full compliance with the instructions given on the ATEX certificate and nameplate.

This equipment incorporates ATEX-certified electrical and non-electrical components relating to the design and construction of equipment intended for use in potentially explosive atmospheres (Directive 2014/34/EU).

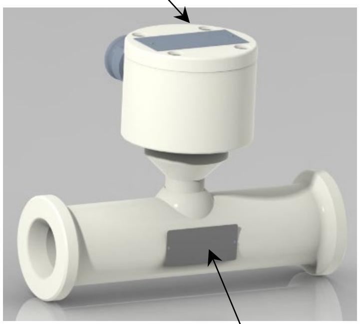
General safety information

The equipment must remain de-energized during installation and maintenance.

For safe operation, the equipment must be used in accordance with the criteria defined by the ATEX certificate and nameplate. Please observe all instructions concerning the equipment and components contained in this manual.
The equipment must be installed and used only in areas complying with its protection rating as specified on the rating plate.
If the equipment is connected to other electrical systems, check that the electrical protection systems are fully compatible.

As defined by the ATEX Directive, TGN turbine meters integrate mechanical and electrical parts. The combination of the two certifications defines the protection system and associated meter parameters.

"Electric" Label



"Général" and "Mécanic" Label

ATEX Non-Electrical Part - Example of marking

ATEX - Electrical Part - Example of marking

Risk analysis (Directive 2014/68/EU)

Appropriate resistance	Provisions
Excessive temperature and pressure.	Temperature and pressure limits must be taken into account at the design stage. Limitations are indicated on the equipment nameplate. It is the user's responsibility to install suitable devices to limit pressure and temperature.
Influence of wind/snow.	No influence given the small surface area.
c Earthquakes.	The equipment is not designed for use in seismic zones. If this is not the case, it is the responsibility of the user to provide the appropriate devices.
Reaction of supports, fixings and piping.	The equipment is designed to be connected to other piping systems and has no specific supports.
Thermal stress	Design to ASME B31.3. Choice of materials.
Mechanical stress.	Measuring instrument. It is the user's responsibility to provide a stress-free installation.
Vibrations.	Measuring instrument. It is the user's responsibility to provide an isolated installation away from sources of vibration.
Handling and Operation	**Provisions**
Closing and opening.	The equipment has no opening or closing mechanism.
Hazardous emissions from valves.	The equipment has no valve.
Access to the interior.	The equipment has no access (manhole cover, etc.).
Surface temperature.	It is the user's responsibility to point out hot surfaces.
Unstable fluid decomposition.	The equipment is used during fluid transfer, not for storage.
Manutention.	Equipment weighing over 30 kg is fitted with lifting eyes for safe handling.
Venting and Ventilation	**Provisions**
Water hammer	Measuring instrument. It is the user's responsibility to install devices to prevent water hammer.
Collapse due to vacuum.	Minimum operating pressure greater than 1 bar.g indicated on nameplate. The equipment is not designed for vacuum operation.
Corrosion and chemical attack	**Provisions**
Uniformly widespread.	Allowance for corrosion build-up. Select materials and apply paints suited to the environment. It is the user's responsibility to periodically check the condition of his installation.
Selective.	Choice of materials.
Galvanic.	Choice and compatibility of materials. It is the user's responsibility to install the appropriate devices (grounding braid, cathodic protection, etc.).
By differential aeration.	Choice of materials.
Cavernous by intergranular pitting.	Choice of materials.
Ammoniacal	Choice of materials..
Under stress.	Choice of materials.
Wear and tear	**Provisions**
Corrosion erosion.	Choice of materials. Application of a corrosion allowance. Application of paints adapted to the environment.
Corrosion cavitation.	Choice of materials. Measuring instruments. It is the user's responsibility to install devices to prevent cavitation.
Abrasion.	Choice of materials. Application of a corrosion allowance. It is the user's responsibility to periodically check the condition of the equipment.

Recommandations ATEX

Where applicable, this equipment is ATEX-certified and complies with the essential health and safety requirements for the design and construction of equipment intended for use in potentially explosive atmospheres (Directive 2014/34/EU).
To ensure safe operation, please ensure that the equipment is used in accordance with the indications given on the ATEX certificate and identification plate, and comply with the operating, installation and maintenance manuals for the equipment and its sub-assemblies.
Installation, operation and maintenance must be carried out by trained personnel who understand the language of this manual.

If you are missing a manual or need any other information, please contact Customer Support :

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Website:	https://faureherman.com/

Faure Herman
Counting every drop

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