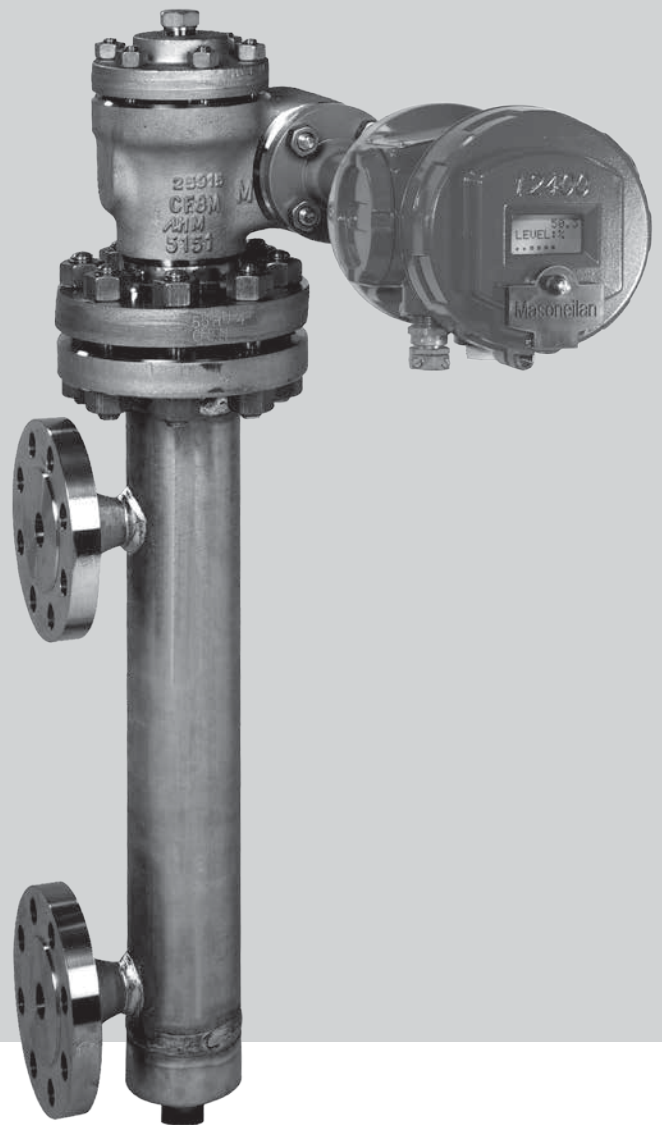


Masonellan* 12400 Series Level Transmitter & Controller ATEX Instruction Manual

Advanced Level Measurement

- SIL2-capable liquid level transmitter
- Low- and high- level switch integrated functions
- Easy installation and simple operation
- Three built-in pushbuttons
- Seamless system integration



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WARNING

BEFORE installing, using or carrying out any maintenance tasks associated with this instrument, READ THE INSTRUCTIONS CAREFULLY.

These instruments comply with the essential safety requirements of the European Directive ATEX 94/9/CE. It is certified to be used in Gas or Dust explosive atmospheres, groups IIA, IIB, IIC and IIIC:

- Category II 1GD – zones 0, 1, 2, 20, 21 and 22 for the protection mode "ia"
- Category II 2GD – zones 1, 2, 21 and 22 for the protection mode "d" and "tb"

They also comply with the essential safety requirements of the European Directive EMC 2004/108/CE as amended, for use within an industrial environment.

Products certified as explosion proof equipment **MUST BE**:

- a) Installed, put into service, used and maintained in compliance with European and/or national and local regulations and in accordance with the recommendations contained in the relevant standards concerning potentially explosive atmospheres.
- b) Used only in situations those comply with the certification conditions shown in this document and after verification of their compatibility with the zone of intended use and the permitted maximum ambient temperature.
- c) Installed, put into service and maintained by qualified and competent professionals who have undergone suitable training for instrumentation used in areas with potentially explosive atmosphere. Such trainings are not supported by GE.

It is the end user's responsibility to:

- **Verify material compatibility with the application**
- **Ensure proper use of fall protection when working at heights, per Safe Site Work Practices**
- **Ensure use of proper Personal Protective Equipment**
- **Take the appropriate actions to ensure that site personnel who are performing installation, commissioning and maintenance have been trained in proper site procedures for working with and around equipment, per Safe Site Work Practices**

GE reserves the right to discontinue manufacture of any product or change product materials, design, or specifications without notice.

Under certain operating conditions, the use of damaged instruments could cause a degradation of the performances of the system which may lead to personal injury or death.

Use only GE's Masoneilan replacement parts to ensure that the products comply with the essential safety requirements of the European Directives mentioned above.

1. LEVEL TRANSMITTER/CONTROLLER TYPE 12400 OPERATION

To be operational, the digital level and controller type 12400 must be mounted on a torque tube and on a displacer chamber equipped with the displacer.

Any change in the level of liquid or the interface between two liquids will change the apparent weight of the displacer and cause a change of the angle of rotation in the torque tube.

This angle is measured by a sensor and converted by an electronic module:

- Either to a standardized 4-20mA current, proportional with the change in level, when configured as a **level transmitter**,
- Or, to a 4-20mA current, generated by a PID algorithm derived from the error between the actual level of liquid and the local set point, when configured as a level controller.

2. TYPE 12400 NUMBER SYSTEM

12	4	a	b	c	d
	Model	Action	Mounting	Protection	Housing Material
	4 - HART communication protocol, LCD display and push buttons, SIL certified	1 - Controller with adjustable switches and second 4-20 mA analogue output signal: AO_1, AO_2, DO_1, DO_2 2 - Transmitter: AO_1 3 - Transmitter with adjustable switches and second 4-20 mA analogue output signal: AO_1, AO_2, DO_1, DO_2	0 - Top and bottom, Screwed, BW or SW 1 - Top and bottom, Flanged 2 - Side and side, Flanged 3 - Top vessel, Flanged 4 - Side vessel, Flanged 5 - Top and side, Screwed, BW or SW 6 - Side and bottom, Screwed, BW or SW 7 - Side and bottom, Flanged 8 - Top and side, Flanged 9 - Side and side, Screwed BW or SW	1 - FM & FMc SI, NI, DIP, XP and Nema 4X-6P 2 - JIS, Xproof 3 - Rosteknadzor, IS, Xproof and IP 66/67 4 - Inmetro, IS, Xproof 5 - ATEX & IECEx IS, Xproof, and IP 66/67 6 - Others approvals (based on ATEX/IEC approvals) 7 - Other approvals (not based on ATEX/IEC approvals)	1 - Aluminum with epoxy painting 2 - Stainless steel

Note: Controller option is pending. Please consult GE Oil & Gas.

3. TECHNICAL SPECIFICATIONS

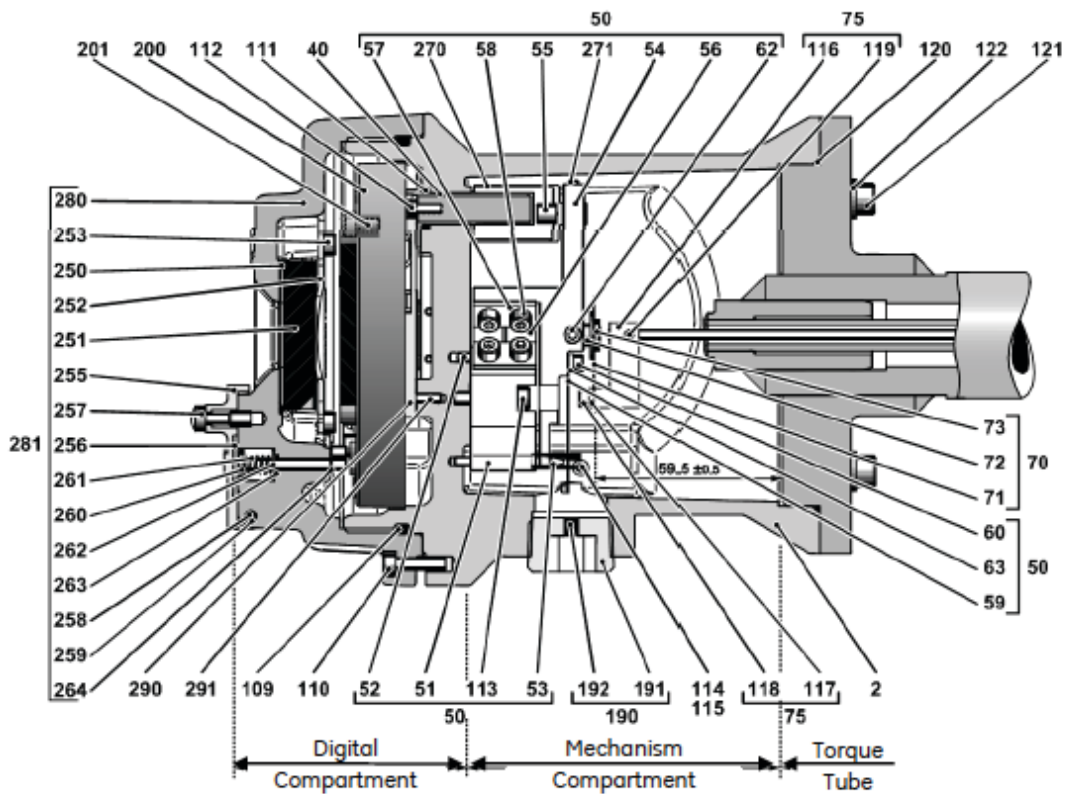
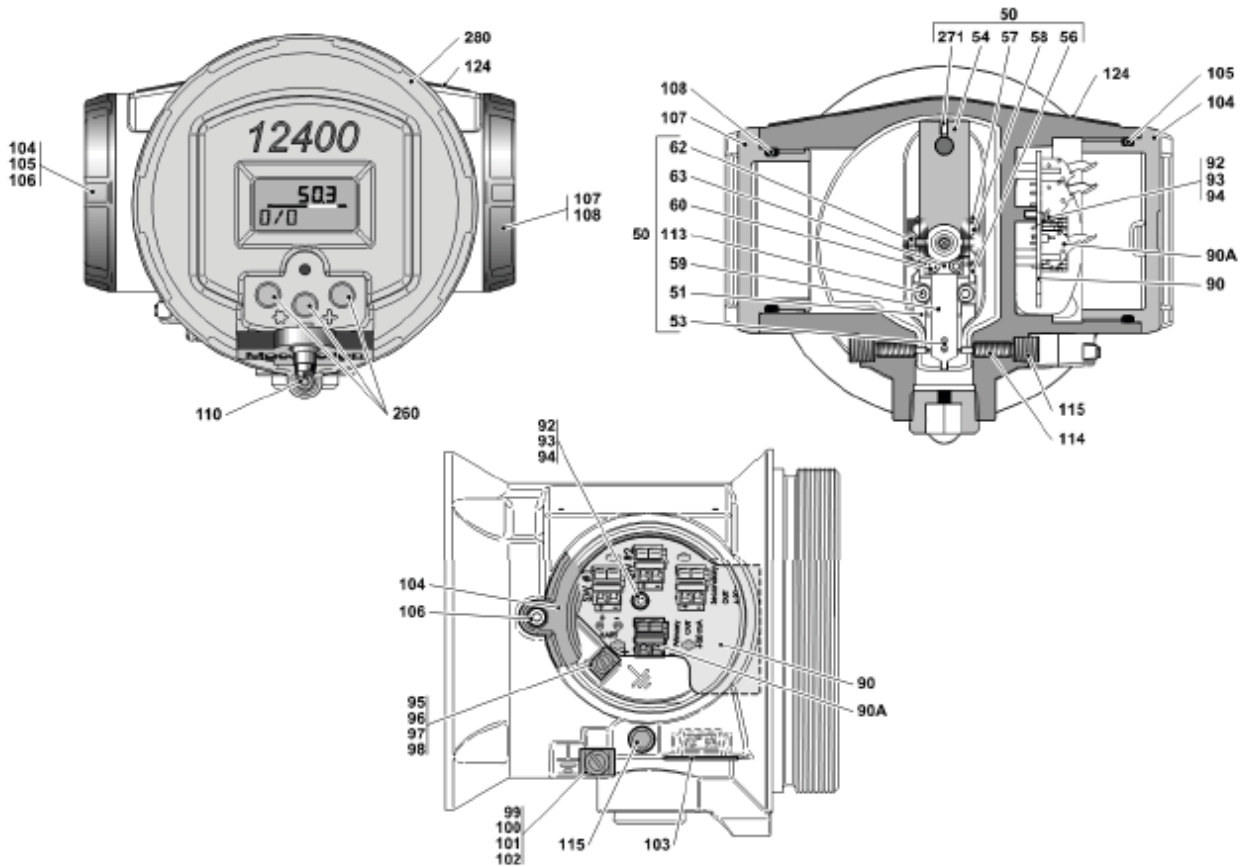
3.1 Performances

Refer to specific gravities between 0.15 and 1.4 with a standard displacer 907 cm³ @ 1362 g.

- Accuracy : ± 0.5 %
- Hysteresis : ± 0.3 %
- Repeatability : ± 0.2 %
- Dead zone: ± 0.1 %

- Ambient temperature ranges:
 - In operation : -50°C to + 80°C
 - Storage and transport: -50°C to +93°C
- Water ingress protection: IP66/67

3.2 Schematics and parts identification



4. ATEX INTRINSIC SAFETY MARKING FOR TYPE 12400

The marking is on the serial plate stamped on the 12400 housing (**rep 124**).


- Name and address the manufacturer:

Dresser Produits Industriels S.A.S.
12110 CONDE SUR NOIREAU - FRANCE

- Type designation: 12400

See numbering system for complete codification §2.

- Basic marking:

 II 1 G/D for protection mode "ia"

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