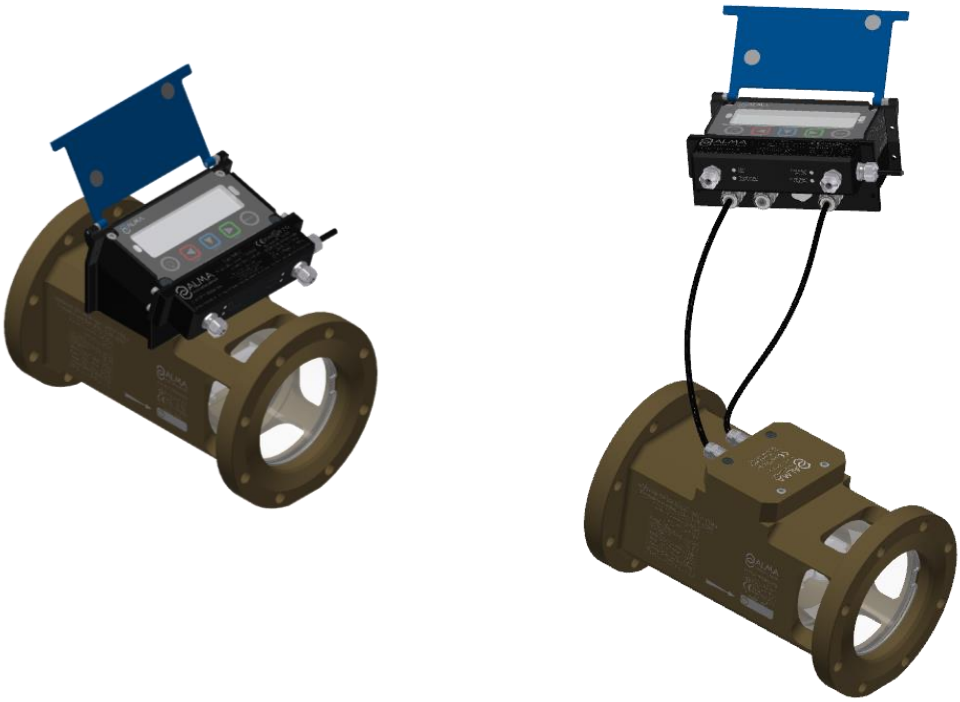
INSTALLATION GUIDE

DI 023 EN C

GRAVICOMPT UNI MPLS

Described in EU-type examination certificate N°: LNE-30858



C	2021/07/15	Calculator indicator UNI-2. Connection tables. Removal of CTD+	DSM	PJ
Issue	Date	Nature of modifications	Written by	Approved by

CONTENTS

1. GENERAL RECOMMENDATIONS

IN ORDER TO AVOID ALL THE PROBLEMS CONCERNING THE INSTALLATION, THE OPERATION AND THE MAINTENANCE OF THE EQUIPMENTS, BEING ABLE TO CREATE INOPPORTUNE FAILURE,
PLEASE RESPECT THE FOLLOWING RECOMMENDATIONS.

BEFORE ANY WORK, MAKE SURE THAT THE EQUIPMENTS SUPPLIED BY AN EXTERNAL POWER SOURCE ARE TURNED OFF.

1.1. MECANICAL RECOMMENDATIONS

⇨ Respect the recommendations of the instruction manual specifying the installation, operation and maintenance conditions of the ATEX equipment (instruction manual supplied with the equipment).

⇨ Take care to place the equipment in order to facilitate their installation, operation and maintenance by the technicians (working ergonomics).

⇨ Take care to position properly the equipment. The display must be readable without any difficulty.

⇨ Apply a tightening torque suitable with size and material of the fixation element except particular specifications mentioned on the presentation drawing or in the installation guides.

⇨ Mechanically protect the cables with the corrugated conduit if the cables are not ADR (corrugated conduit adapted to vehicles used for "carriage of dangerous goods of road" - hydrocarbons, LPG … - and meet the requirements of French standard NF R13-903. Refer to the regulations in force).

⇨ Ensure there are a good mechanical strength and a good sealing between cable glands and cables, and between cable glands and corrugated conduit.

⇨ Respect cables and corrugated conduit radii of curvature.

⇨ Leave enough flexibility to wires in order to avoid any risk of stripping.

⇨ Allow the drainage of the water in the lower loop (siphon) of the corrugated conduit (not water retention inside the corrugated conduit).

⇨ ⚠ See § INSTALLATION AND SEALING RECOMMENDATIONS ADRIANE TURBINE METER.

1.2. ELECTRICAL RECOMMENDATIONS

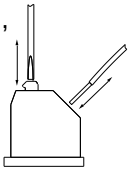
⇨ According to the ATEX directive or any other regulations in force in the country of destination, the safety protection level of the equipment must agree with the installation area (potentially explosive atmospheres).

⇨ Respect the recommendations of the instruction manual specifying the installation, operation and maintenance conditions of the ATEX equipment (instruction manual supplied with the equipment).

⇨ Use ADR specific cable, if it is not the case, use at minimum a cable resisting to hydrocarbons. Mechanically protect this cable with a corrugated conduit (corrugated conduit adapted to vehicles used for "carriage of dangerous goods by road" - hydrocarbons, LPG … - and meet the requirements of French standard NF R13-903. Refer to the regulations in force).

⇨ Take care not to damage the terminals of the different electronic boards while wiring.

- Screw terminals: do not damage the screw heads of the terminals.
  - Use insulated lugs and insulated wire ferrules adapted to the section of wires.
- Spring terminals: do not block the springs (if a spring is blocked, the electronic board must be replaced).
  - Use a flat screwdriver 0.4x2.5 (see figure)
  - Push in the spring with the screwdriver
  - Insert or remove the wire and remove the screwdriver.



⇨ Do not pinch or clamp the wires when closing the UNI-2 indicator and/or the MPLS.

⇨ Do not use wires of section higher than 1.5mm².

⇨ Do not insert more than two wires in a terminal, if necessary use an insulated twin wire ferrule (unless otherwise indicated).

⇨ Strictly respect the polarities of the input/output when wiring, in accordance with serigraphy on the cards and/or with the installation guide indications.

⇨ Whenever possible, perform a wired test, after wiring and before powering.

⇨ Whenever possible, respect the locations of the cables specified in the installation guide.

⇨ Equipment must be connected to the frame ground (external ground connection).

⇨ Whenever possible, use shielded cables with a 360° connection through the metal cable glands.

- Tighten the cable gland cap about one turn (fig.1)
- Push in the stripped wire up to the stop on the claw (fig.2)
- Fully tighten the gland cap (fig.3)

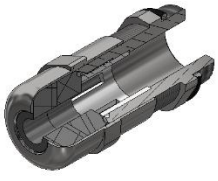


fig.1

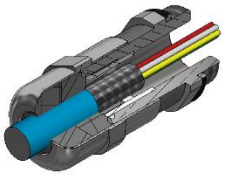


fig.2

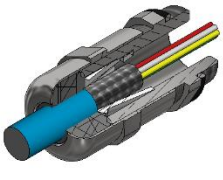


fig.3

⇨ Whenever possible, label the cables and cores according to the installation guide to facilitate the later maintenance operations.

⇨ Respect a homogeneous wire color code.

⇨ Current of the electrical devices:

Electrical devices	Supply voltage	Minimum current	Maximum current
UNI-2 through an intrinsic safety barrier	9.2VDC +/-10%	1 mA	200 mA
MPLS	24VDC +/-10%	1 A	1.5 A
PRINTER	24VDC +/-10%	0.1 A	5.5 A (switch-on)

⇨ Color code according to DIN 47100.

⇨ Code for designation of colours according to IEC 60757 (except FR codes):

FR				EN	IT	ES	DE
Couleurs	Codes		Standard codes CEI 60757	Colours	Colori	Colores	Farbe
White	**Bc**		**WH**	White	Bianco	Blanco	Weiß
Marron	**Mr**		**BN**	Brown	Marrone	Marrón	Braun
Vert	**Vt**		**GN**	Green	Verde	Verde	Grün
Jaune	**Jn**		**YE**	Yellow	Giallo	Amarillo	Gelb
Gris	**Gr**		**GY**	Grey	Grigio	Gris	Grau
Rose	**Rs**		**PK**	Pink	Rosa	Rosa	Lila
Bleu	**Bl**		**BU**	Blue	Blu	Azul	Blau
Rouge	**Rg**		**RD**	Red	Rosso	Rojo	Rot
Noir	**Nr**		**BK**	Black	Nero	Negro	Schwarz
Violet	**Vi**		**VL**	Violet	Viola	Violeta	Violett
Orange	**Or**		**OG**	Orange	Arancio	Naranja	Orange
Vert/Jaune	**V/J**		**GNYE**	Green/Yellow	Verde/Giallo	Verde/Amarillo	Grün/Gelb

1.3. PNEUMATIC RECOMMENDATIONS

⇨ Air must be filtered – from 40 to 20µm. Specific recommendations may be added in the installation guides or on the presentation drawings.

⇨ The air lubrication must be permanent and correct to avoid any damage on the pneumatic components.

⇨ The air supply pressure to the inlet of the equipment must be at least 6 bar and max 8 bar. Specific recommendations may be added in the installation guides or on the presentation drawings.

⇨ The pneumatic supply pipes (6/4) must be cut straight (no slanting cut) and should not be crushed after cutting to prevent leakage on fittings.

⇨ Respect the radii of curvature of the pneumatic pipes indicated by the manufacturer.

⇨ Use colored pneumatic pipes to ease maintenance operation.

⇨ In no case the exhaust holes of the pneumatic organs should be plugged, obstructed, unless if that is clearly specified in the installation guides or on presentation drawings.

⇨ The use of muffler is not allowed under any circumstances (fouling, frost…). Put a pneumatic pipe of sufficient length, pointed downwards, so that its end is placed in a protected area (L = 100 mm min.).

⇨ Pressure unit conversion:

PRESSURE UNIT CONVERSION				
Units	**Bar**	**PSI**	**Pascal**	**kg/cm²**
1 Bar =	1	14,5	100 000 ($1x10^5$)	1,0197
1 PSI =	0.069	1	6894,5	0,07031
1 Pascal =	$1x10^{-5}$	$14,5x10^{-5}$	1	$1,0197x10^{-5}$
1 kg/cm² =	0,98	14,22	98066,5	1

PSI = Pound per Square Inch (livre par pouce carré)
1 bar = 100 kPa = 0.1 MPa (1 MPa = 10 bar)

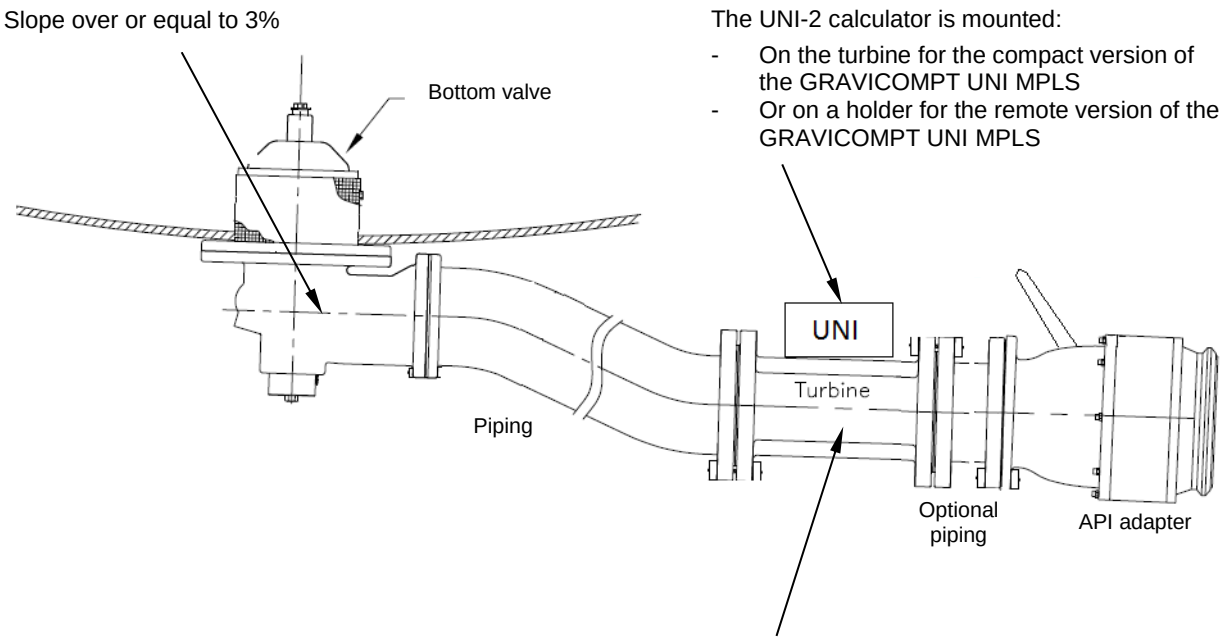
2. GENERAL PRESENTATION

2.1. USE ACCORDING TO MID CERTIFICATE

The GRAVICOMPT UNI measuring system is covered by the EU type examination certificate N° LNE-30858. Refer to this certificate for any precision about its installation.
The GRAVICOMPT UNI measuring system is based on a meter made up of the ADRIANE turbine meter and the UNI-2 calculator, associated to an unloading valve (that should be an API-type adapter)
The GRAVICOMPT UNI is a measuring system for gravity measurement of liquids other than water. It measures the product temperature. It can be mono or bi-directional. The MPLS device controls a valve and a printer, it receives an authorization signal.
For the sealing plan, see Annex to EU type examination certificate N° LNE-30858.

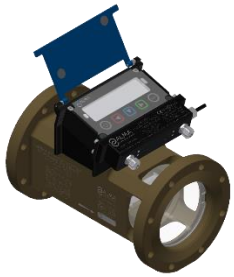
2.2. SPECIAL CONDITIONS FOR INSTALLATION

- ⇨ The GRAVICOMPT UNI measuring system must be installed so that air intakes upstream of the meter, and gas releases inside the liquid are avoided during routine operation. The tank must have a device which allows the reference position to be located
- ⇨ In the reference position, the tank must have a single drain pipe without bypass or reverse slope. Along the entire length, this pipework must have a slope over or equal to 3%
- ⇨ In case that a printing device with no assessment is connected to the electronic calculating-indicating device, a label mentioning that the printed information are not subject to legal control must be visibly affixed to the printing device
- ⇨ If necessary, a vacuum breaker not subject to legal control could be installed on the removable coupler coming to plug on the unloading valve.



3. PART LIST

3.1. GRAVICOMPT UNI MPLS COMPACT VERSION

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
1		**GRAVICOMPT UNI MPLS FOR COMPACT INSTALLATION** (Cable 10m)	**1**	
		**INTRINSIC SAFETY BARRIER** (For UNI-2 power supply)		
2		**3/2 NC ATEX SOLENOID VALVE to be installed in a box**	**1**	●
3		**3/2 NC NON-ATEX SOLENOID VALVE to be installed in a box**	**1**	●
4		**PRINTER KIT** - Holder - Supply cable 24 VDC 1.5 meter - Converter 24VDC/24VDC (for printer and MPLS) - Connector kit SUB-D25 for MPLS/printer connection, to be wired without any tools **Non-ATEX device, not usable in ATEX area**	**1**	●
5		**CONVERTER 24VDC/9.2VDC.** Set the converter to 9.2V, supply voltage of the intrinsic safety barrier (For UNI-2 power supply)	**1**	●

Non-contractual pictures

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
7		**GRAVITY COUPLER** (4" API / 3" 1/2 symmetrical coupling – with vacuum breaker)	**1**	●
8		**PNEUMATIC API ADAPTATER**	**1**	●
9		**KIT FOR MEASURING SYSTEM IDENTIFICATION PLATE** (Plate and sealing device)	**1**	●
Option*: equipment sold as an option by ALMA. It must be installed on the measuring system if required by the certificate.				

Non-contractual pictures

3.2. GRAVICOMPT UNI MPLS REMOTE VERSION

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
1		**GRAVICOMPT UNI MPLS FOR REMOTE INSTALLATION INCLUDING:** **REMOTE UNI-2 MPLS ELECTRONIC CALCULATOR INDICATING DEVICE** (Supplied with a bottom box and a 10 meters cable) **ADRIANE TURBINE METER DN100-80 TYPE 241 V-TTMA-DL** (Supplied with two 5 meters cables) **The system is not supplied pre-wired**	**1**	
		**INTRINSIC SAFETY BARRIER** (For UNI-2 power supply)		
2		**3/2 NC ATEX SOLENOID VALVE to be installed in a box**	**1**	●
3		**3/2 NC NON-ATEX SOLENOID VALVE to be installed in a box**	**1**	●
4		**PRINTER KIT** - Holder - Supply cable 24 VDC 1.5 meter - Converter 24VDC/24VDC (for printer and MPLS) - Connector kit SUB-D25 for MPLS/printer connection, to be wired without any tools **Non-ATEX device, not usable in ATEX area**	**1**	●
5		**CONVERTER 24VDC/9.2VDC.** Set the converter to 9.2V, supply voltage of the intrinsic safety barrier (For UNI-2 power supply)	**1**	●

Non-contractual pictures

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA

Item	Equipment	Designation	Qty	Option*
7		**GRAVITY COUPLER** (4" API / 3" 1/2 symmetrical coupling – with vacuum breaker)	1	●
8		**PNEUMATIC API ADAPTATER**	1	●
9		**KIT FOR MEASURING SYSTEM IDENTIFICATION PLATE** (Plate and sealing device)	1	●

Option*: equipment sold as an option by ALMA. It must be installed on the measuring system if required by the certificate.

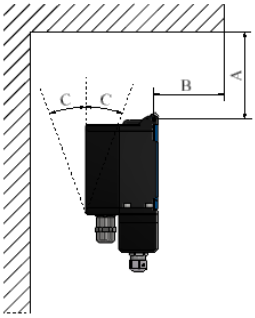
Non-contractual pictures

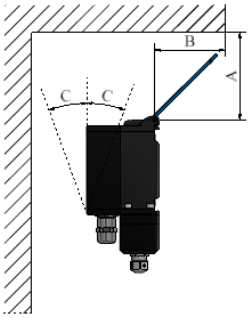
4. INSTALLATION RECOMMENDATIONS CALCULATOR-INDICATOR UNI-2

- Fasten the calculator UNI-2 with 4 M5 screws (M5 length 10 over 65 x 126)
- Leave an open space above the calculator in order:
  - To ease the cover opening
  - To ease connection to the GPS signal
- Dimensions: A ≥ 100mm, B ≤ 100mm, C = ± 20°.

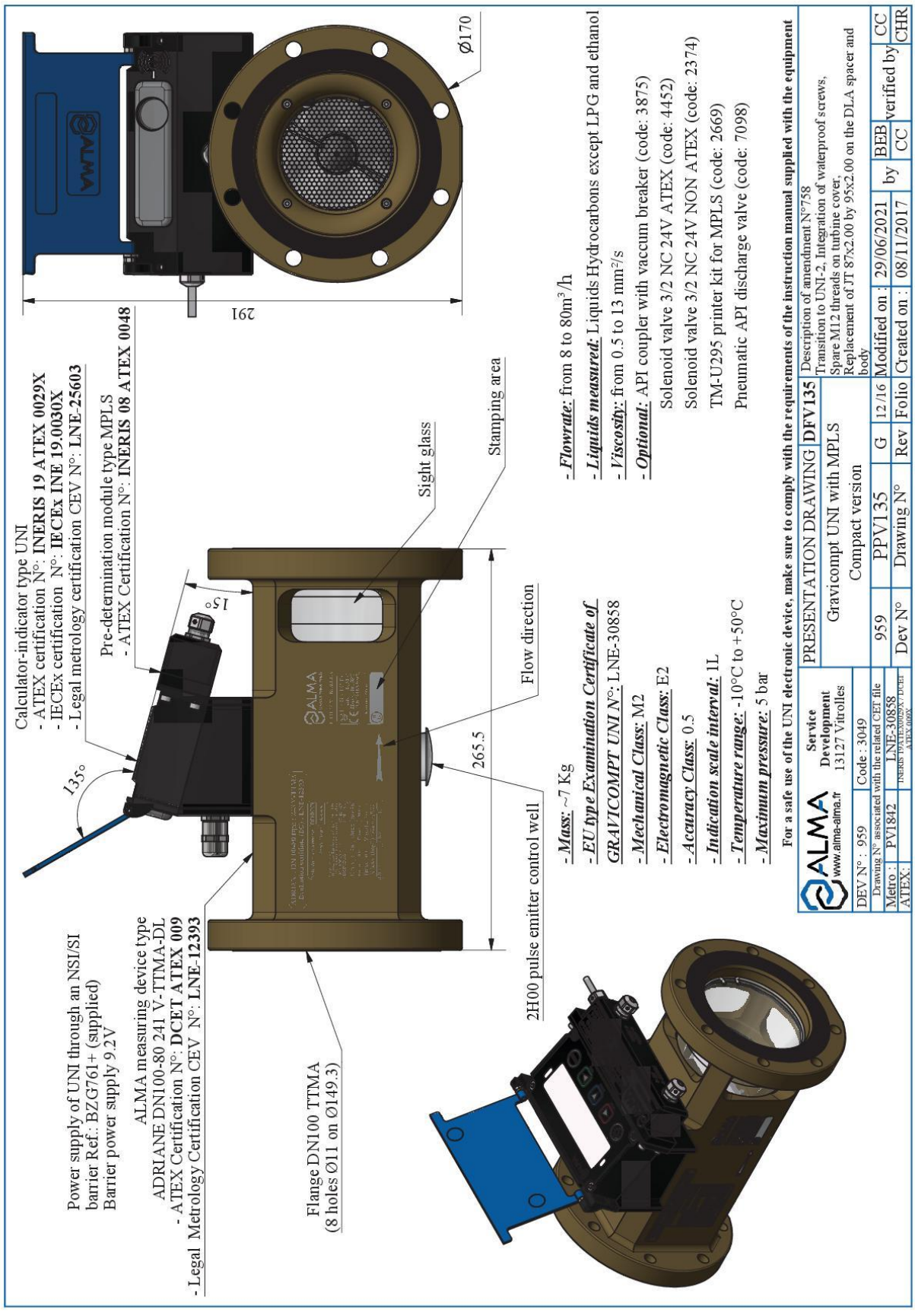
To have an optimal GPS signal, follow the requirements below:

- Do not close the trunk
- Make sure that the installation is in an open environment.



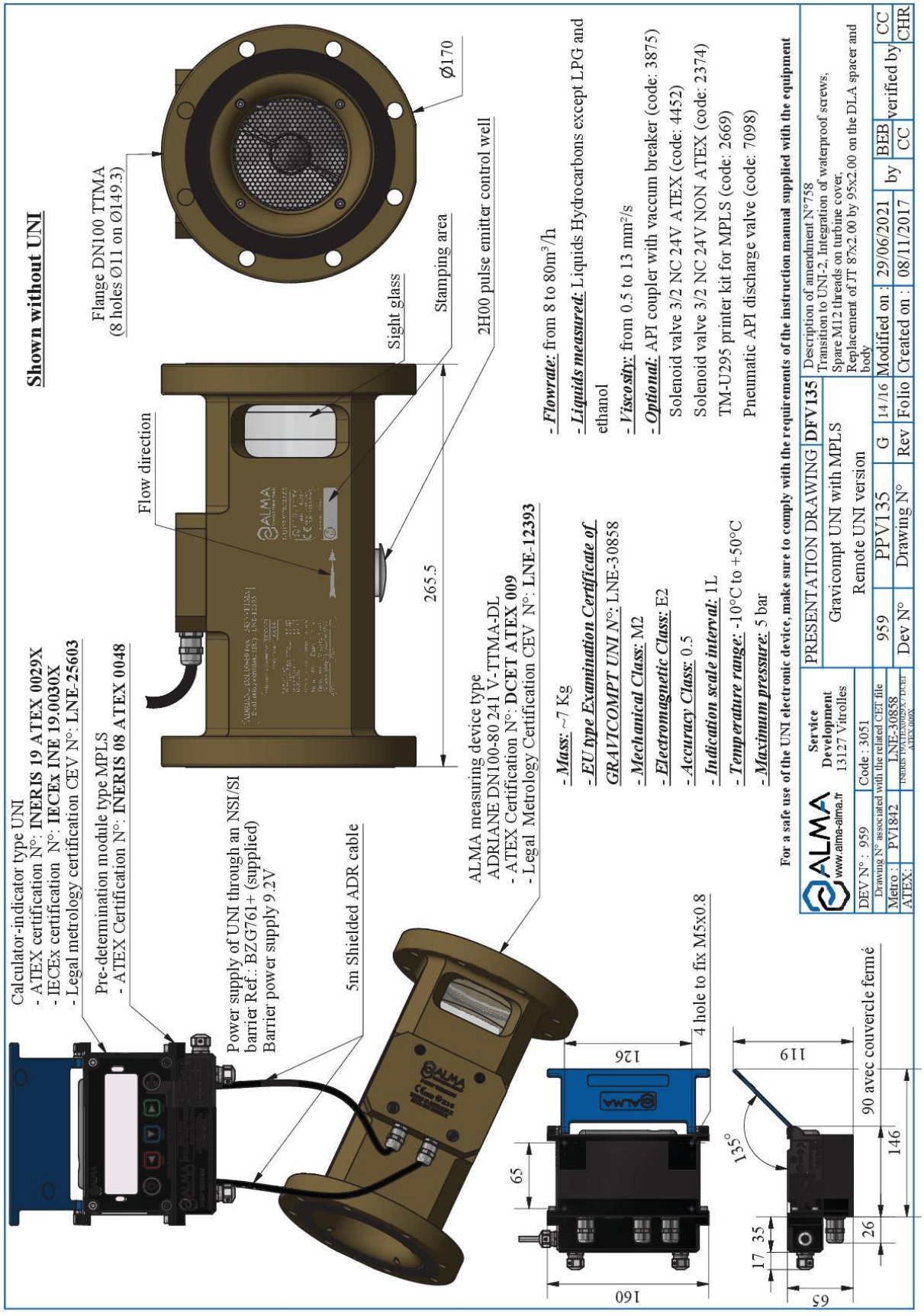


5. GRAVICOMPT UNI MPLS COMPACT VERSION



Document available on website alma-alma.fr

6. GRAVICOMPT UNI MPLS REMOTE VERSION

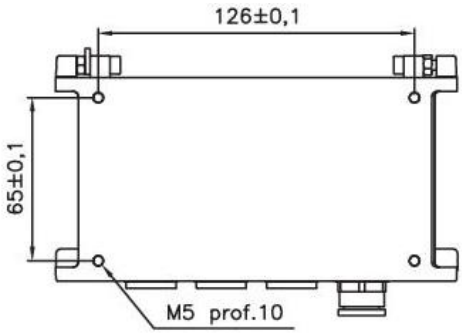


Document available on website alma-alma.fr

6.1. INSTALLATION RECOMMENDATIONS GRAVICOMPT UNI MPLS REMOTE VERSION

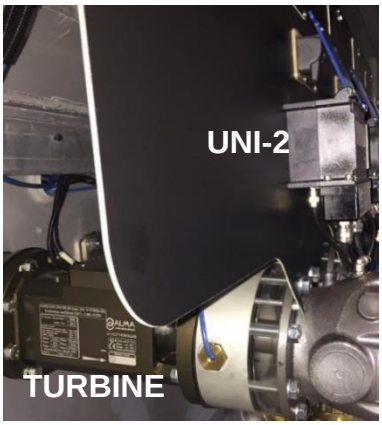
The remote UNI-2 MPLS is fastened on a holder which is the responsibility of the installer:

Dimensions of the UNI-2 bottom box:



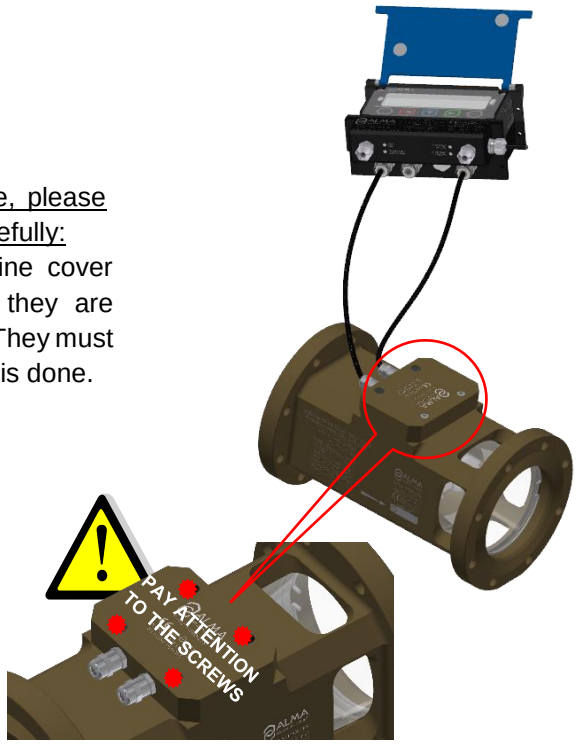
REAR VIEW

Assembly example turbine and UNI-2 MPLS:



The wiring of the turbine on the UNI-2 MPLS is the responsibility of the Customer. It must be done in accordance with the connection tables.

<u>If you need to unwire the turbine, please read the following instructions carefully:</u>
The security screws of the turbine cover supplied by Alma are specific, they are equipped with an integrated seal. They must be used to make sure the sealing is done.



Make sure the sealing is done, use the 4 screws supplied Alma

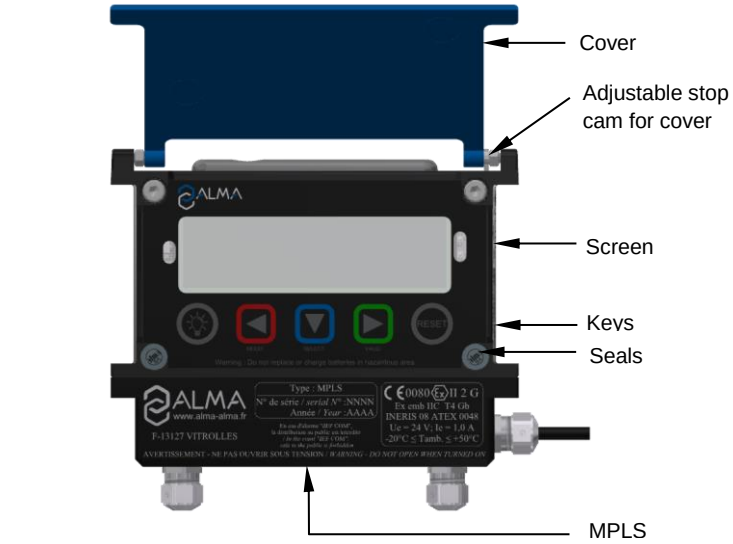
6.2. INSTALLATION RECOMMENDATIONS REMOTE CALCULATOR-INDICATOR UNI-2 MPLS

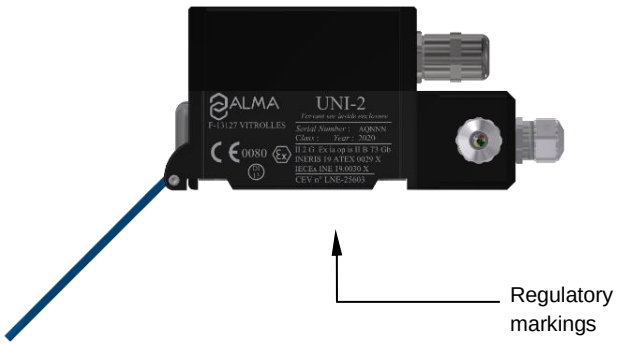
Mounted on a turbine or a holder, the UNI-2 indicator shall be positioned to allow:

- A good visualization of the screen.
- Easy access to the keys of the keyboard
- Free access to the box for connection and maintenance operation.
- Free access to regulatory markings of the UNI-2 and the turbine (stamping, seals).
- The using of the UNI-2 with its cover in open position

When the UNI-2 indicator is mounted on a holder, ensure the holder is secured and well-fastened

- Avoid excessive vibration.





REFER TO THE INSTRUCTION MANUAL
(DELIVERED WITH THE EQUIPMENT OR AVAILABLE ON ALMA WEBSITE)

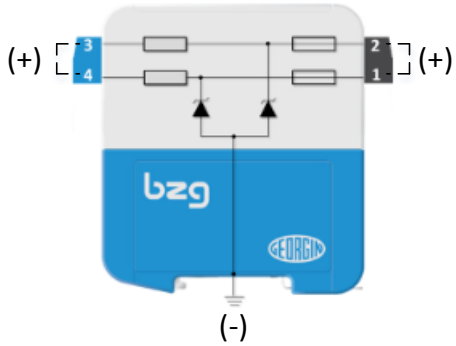
7. ELECTRICAL AND PNEUMATIC WIRING

7.1. PRECONDITIONS

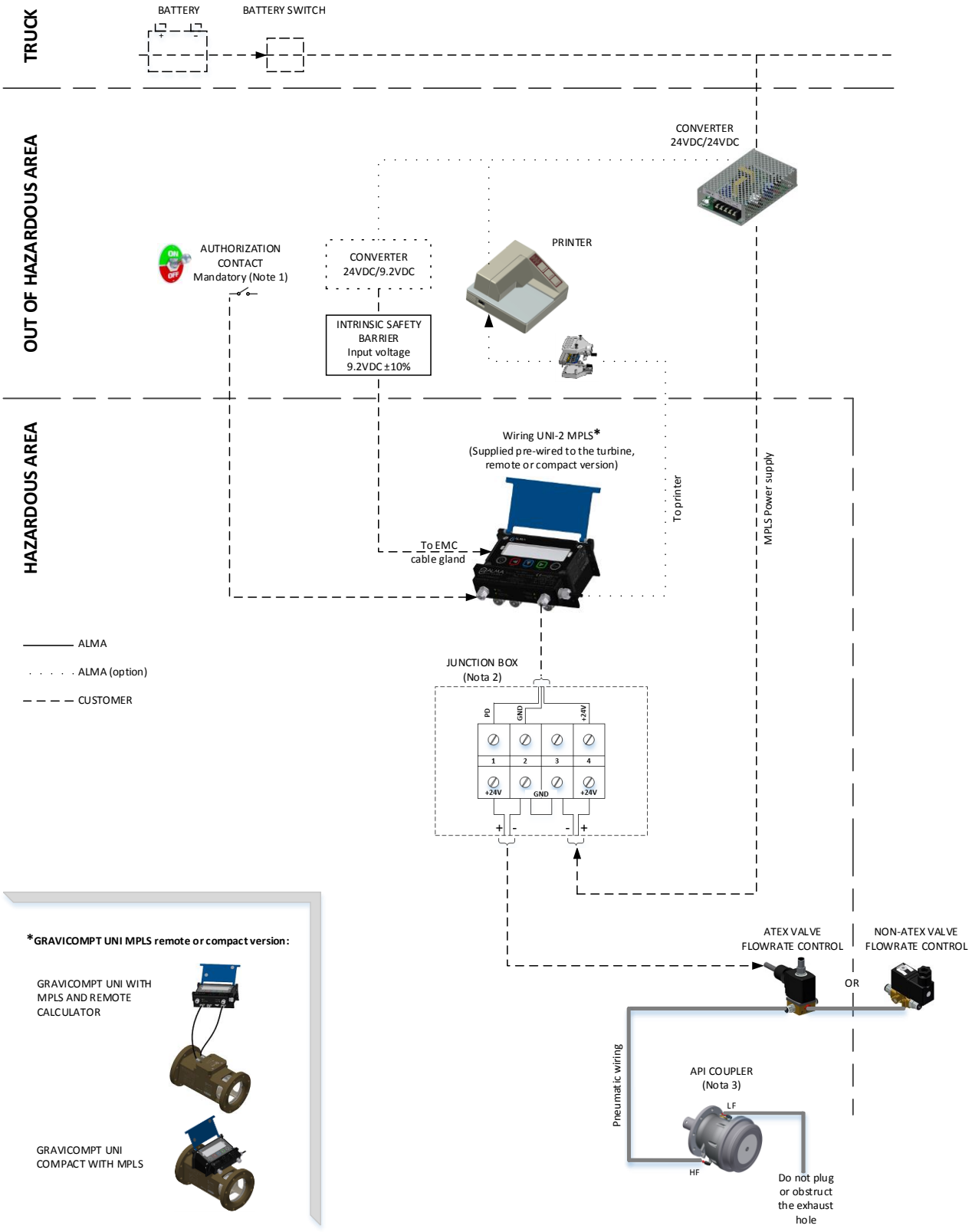
Before wiring the GRAVICOMPT UNI MPLS, it is necessary to prepare the intrinsic safety barrier to ensure power supply to the indicator.

- ⇨ Make a loop on terminals 1-2 and on terminals 3-4 of the barrier. Connect the (+) of the power supply to these terminals,
- ⇨ Connect the (-) of the power supply to the earth terminal on the lower part of the barrier.

INTRINSIC SAFETY BARRIER



7.2. INTERCONNECTION DIAGRAM



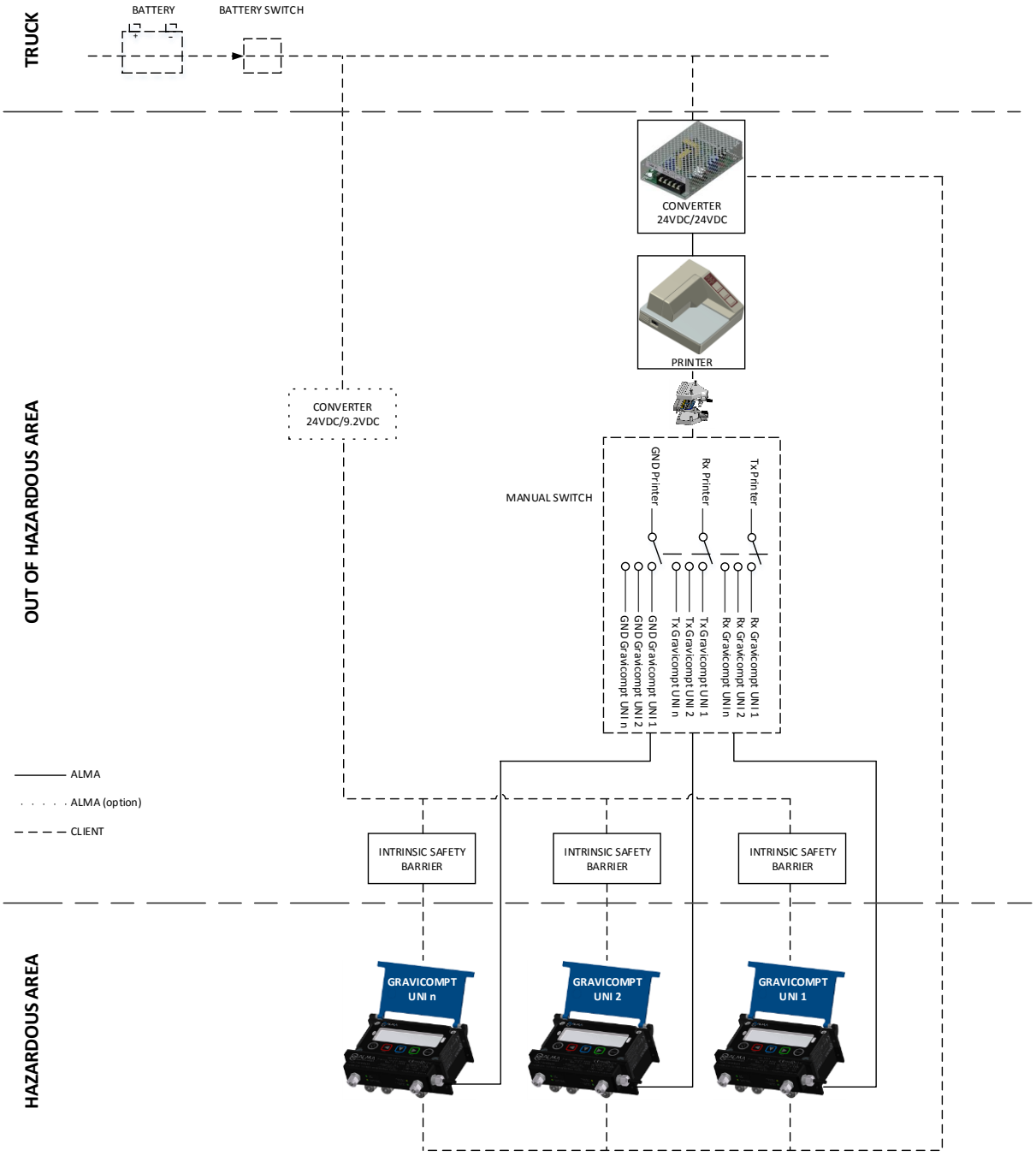
Note 1: To make sure that the GRAVICOMPT UNI MPLS will operate, an authorization contact is necessary (see Operating sequence).

Note 2: According to the ATEX directive or any other regulations in force in the country of destination, the safety protection level of the junction boxes must agree with the installation area.

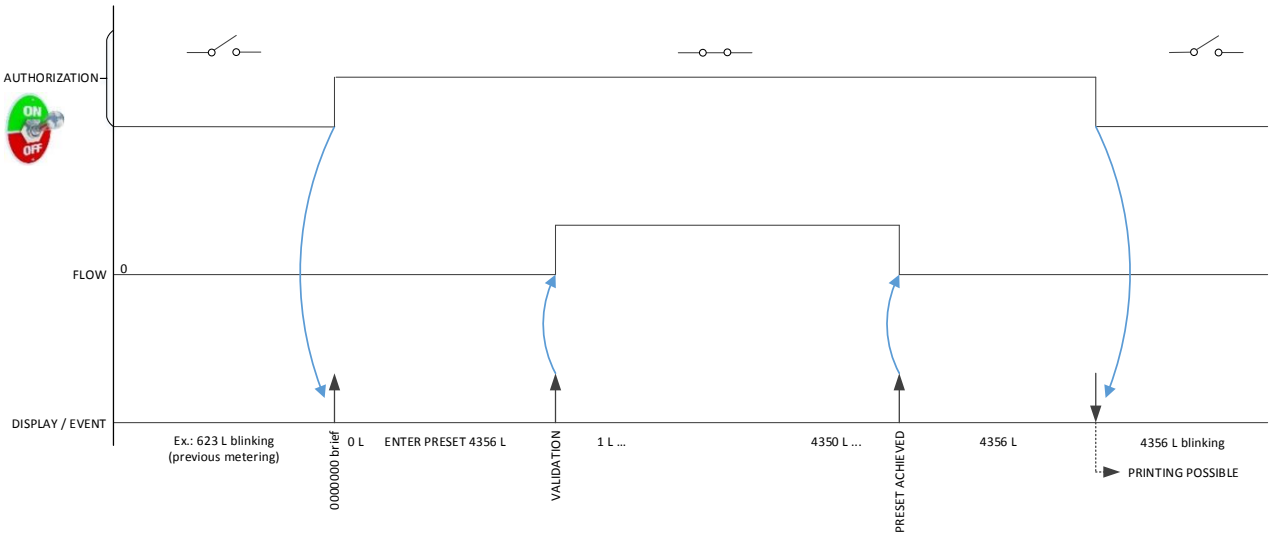
Note 3: The 'High flow (HF)' of the API coupler is controlled by the MPLS 'low flow' output using the solenoid valve. Therefore, the 'Low flow (LF)' fitting of the API coupler is not used. It must be equipped with a pneumatic tube which exhaust hole is facing downwards. The exhaust hole must not be plugged nor obstructed.

Special case: connection of a printer to several GRAVICOMPT UNI MPLS

n is the number of GRAVICOMPT UNI MPLS connected to the printer.



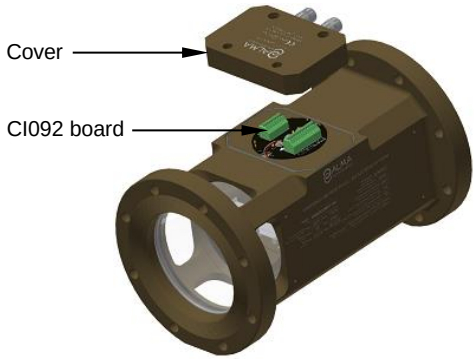
7.3. OPERATING SEQUENCE



7.4. CONNECTION TABLES

The connection of the sensors to the UNI-2 is done through the CI092 board located on the turbine. This board is protected by a sealed cover. To make the connection, follow the steps below:

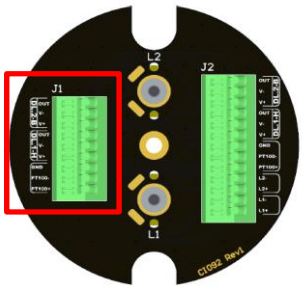
- Remove the seal protecting the access to the turbine cover
- Unscrew the 4 screws. Make sure to put these 4 screws aside
- Wire the different elements according to the connection tables that follow
- When the wiring is completed, reposition the cover and make sure to fix it using the original screws to ensure the sealing of the assembly.
- Seal the turbine in accordance with regulations in force.



7.4.1.Connecting the sensors to the CI092-interface board (coil, gas detection, temperature)

TERMINAL ASSIGNEMENT OF THE CI092-INTERFACE BOARD

Connection of sensors to J1

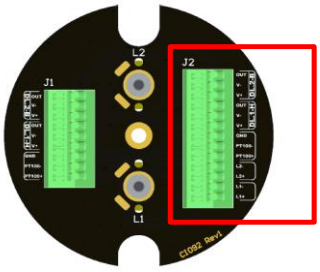


EQUIPMENT CONNECTED TO THE TURBINE								CI092-INTERFACE BOARD				
Option	Equipment	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Block	Terminal	Function		Observation
	Pt100 TEMPERATURE PROBE			•		+	Bc	J1	1	Pt100 +	Pt100	
						-	Rg		2	Pt100 -		
						-	Rg		3	Pt100 GND		
	GAS DETECTION 1 (HIGH)			•		+	Jn	J1	4	DL.1-H (V+)	GD1 (HIGH)	
						-	Nr		5	DL.1-H (V+)		
						OUT	Bc		6	DL.1-H (OUT)		
	GAS DETECTION 2 (LOW)					+	Rg		7	DL.2-B (V+)	GD2 (LOW)	
						-	Bl		8	DL.2-B (V+)		
						OUT	Vt		9	DL.2-B (OUT)		

**Refer to the cable glands installation instructions*

7.4.2.Connecting the CI092-interface board (coil, gas detection, temperature) to the UNI-2

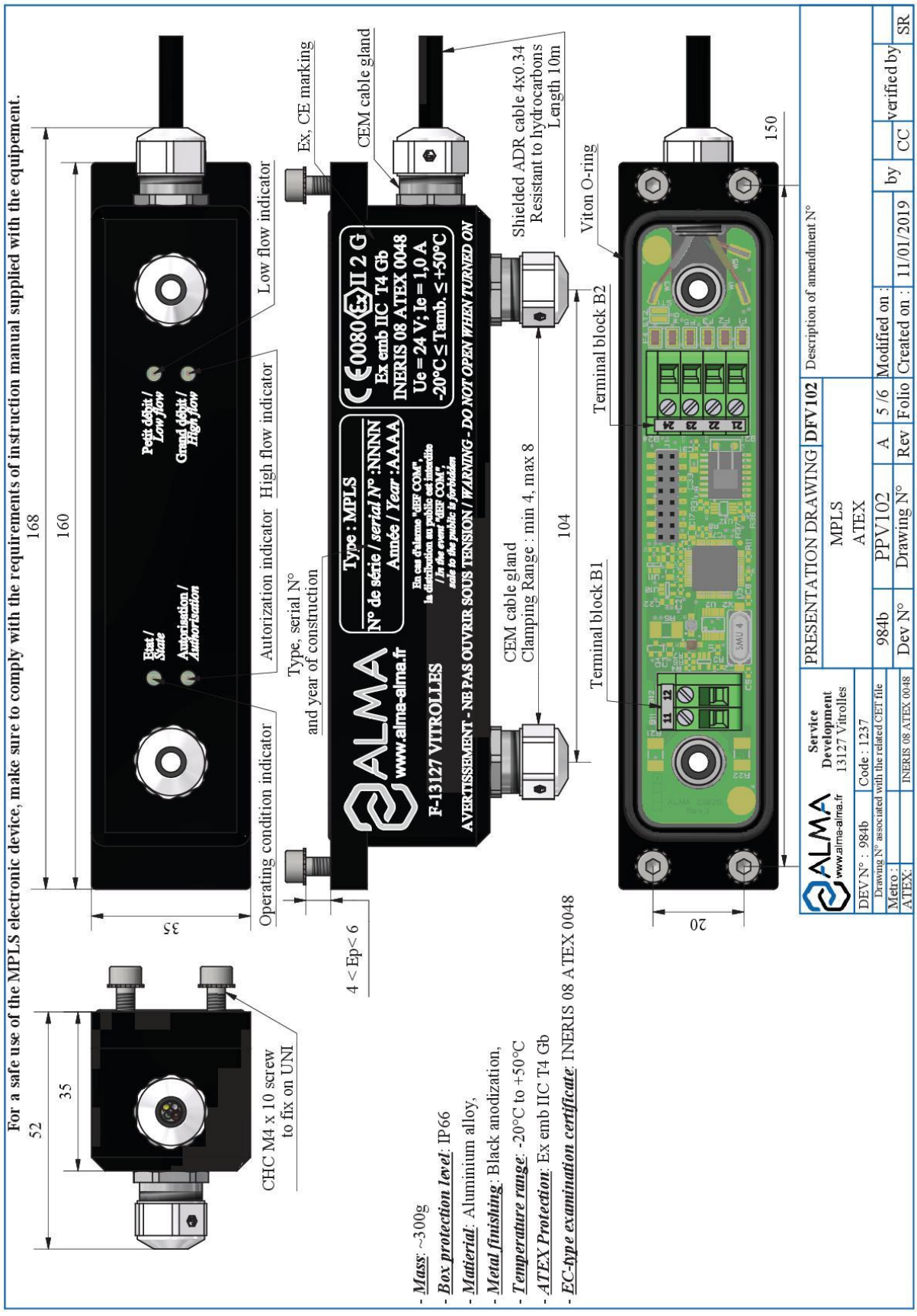
EQUIPMENT CONNECTED TO THE UNI-2									UNI-2 ELECTRONIC BOARD				
Option	Equipment	Cable (for information) No.	CG*	Alma	Type	Block	Function or Terminal	Colour or No.	Block	Terminal	Function		Observation
	POWER SUPPLY		PG9				V- Ext		B3	5	V- Ext	SUPPLY	The UNI-2 is powered through an intrincic satfety barrier
							V+ Ext			6	V+ Ext		

CI092-INTERFACE BOARD	*UNI-2 ELECTRONIC BOARD*
 Connection of the CI092-board to the UNI-2 from J2	

	TURBINE INDUCTIVE COIL	C1	Only for remote version: M12 on Turbine and PG9 on UNI-2	•	Only for remote version: ADR 7x0.34 sh. L=5m	J2	L1+	Jn	B1	1	L1+	METERING	The shielding braid of the cable must be connected to the ATEX cable gland
							L1-	Bc		2	L1-		
							L2+	Vt		3	L2+		
							L2-	Mr		4	L2-		
	Pt100 TEMPERATURE PROBE						Pt100 +	Gr	B2	1	Pt100+	Pt100	
							Pt100 -	Rs		2	Pt100-		
							GND	Bl		3	GND		
	GAS DETECTION 1 (HIGH)	C2	Only for remote version: M12 on Turbine and PG9 on UNI-2	•	Only for remote version: ADR 7x0.34 sh. L=5m	J2	DL.1-H (V+)	Jn	B2	4	1 V+	DG1 (HIGH)	The shielding braid of the cable must be connected to the ATEX cable gland
							DL.1-H (V-)	Bc		5	1 V-		
							DL.1-H (OUT)	Vt		6	1-OUT		
	GAS DETECTION 2 (LOW)						DL.2-B (V+)	Gr		7	2 V+	DG2 (LOW)	
							DL.2-B (V-)	Rs		8	2 V-		
							DL.2-B (OUT)	Mr		9	2-OUT		

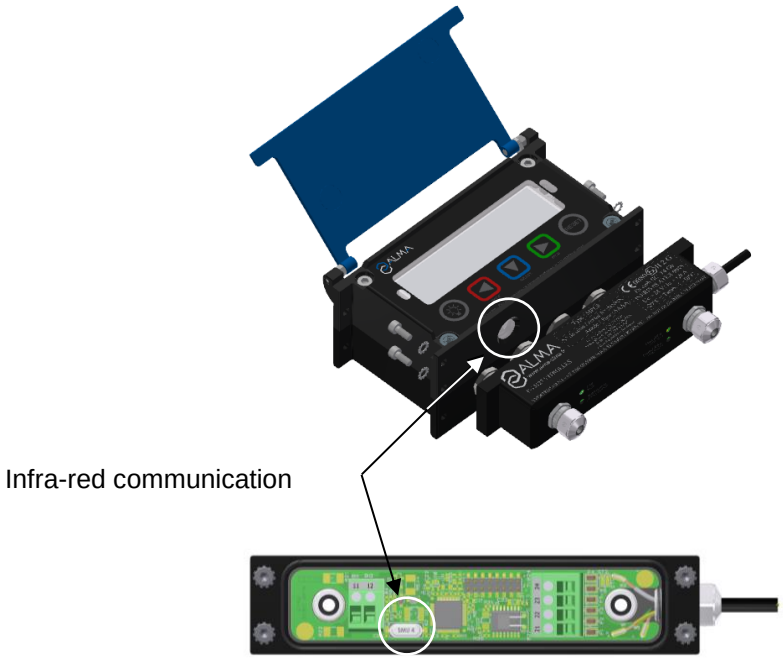
**Refer to the cable glands installation instructions*

8. MPLS ELECTRONIC DEVICE



Document available on website alma-alma.fr

8.1. INSTALLATION RECOMMENDATIONS MPLS ELECTRONIC DEVICE



Make sure that any wire obstruct the infra-red communication zone

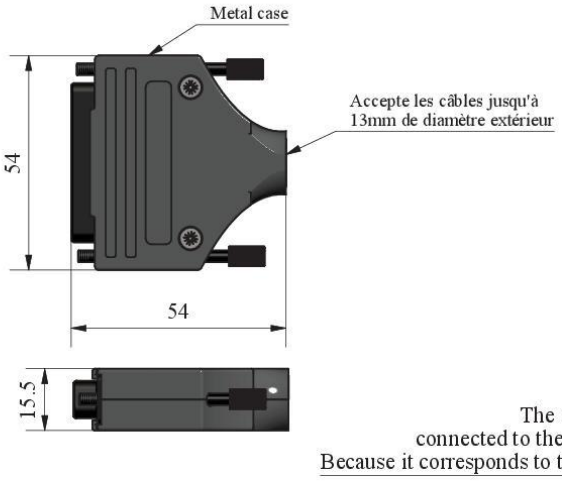
8.2. TERMINAL ASSIGNMENT OF THE MPLS ELECTRONIC BOARD

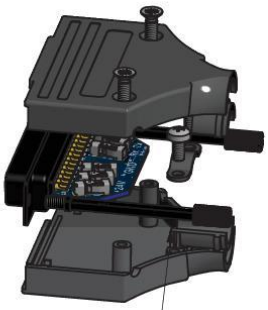
TERMINAL ASSIGNMENT OF THE MPLS

EQUIPMENTS CONNECTED TO THE MPLS									MPLS ELECTRONIC BOARD				
Option		Equipment	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Blocks	Terminal	Function		Observation
		AUTHORISATION DEVICE					AUTHOR.+		B1	11	+	AUTHOR.	Input for potential- free dry contact
							AUTHOR.-			12	-		
	JUNCTION BOX	TRUCK POWER SUPPLY					24VDC		B2	21	24 VDC	SUPPLY	
							0V			22	0V (GND)		
		FLOW CONTROL					LF			23	LF	FLOW CONTROL	Output 24VDC/450mA max.
•		PRINTER via connector SUB-D 25			•	ADR 4x0.34 sh.	Tx	See drawing PP2148 below Connector kit SUB-D 25		GN	Rx	RS232 PRINTER	If there is no printer, the wires must be individually insulated and connected in a junction box
							Rx			YE	Tx		
							Shielding			Shielding	0V (GND)		
										WH	*Not used*		
										BN	*Not used*		

**Refer to the Cable Glands installation instructions*

8.3. CONNECTOR KIT SUB-D25 FOR MPLS/PRINTER CONNECTION

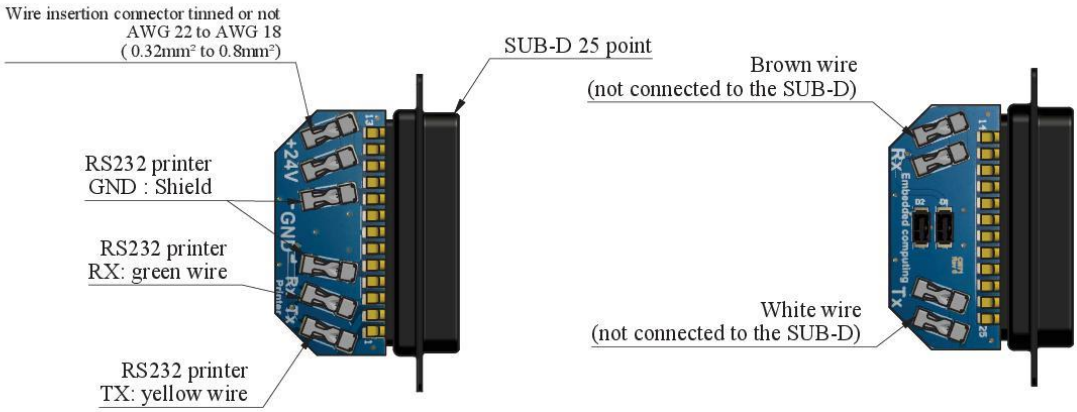




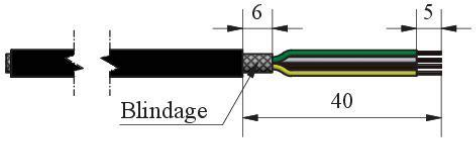
Important :
The shield must be well
connected to the connector housing.
Because it corresponds to the 0V of the printer

Top view

Bottom view



Cable preparation



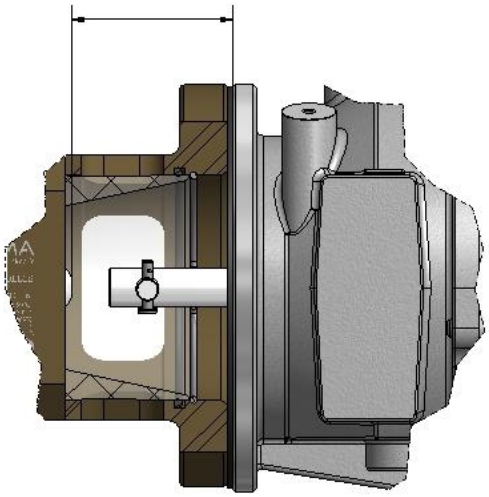
ALMA www.alma-alma.fr Service Development 13127 Vitrolles		PRESENTATION DRAWING	PV2148			Description of amendment N° Adding the indication of the connection of the shield to the GND					
DEV N° : 907	Code : 2665	Connector kit SUB-D 25 For connection MPLS / Printer									
Drawing N° associated with the related CET file		907	PPV2148	B	2 /2	Modified on :	08/06/2021	by	CC	verified by	CHR
Metro :		Dev N°	Drawing N°	Rev	Folio	Created on :	11/01/2019		ROC		SR
ATEX:											

9. ADRIANE TURBINE METER DN100-80 TYPE 241 V-TTMA-DL

9.1. INSTALLATION AND SEALING RECOMMENDATIONS ADRIANE TURBINE METER

For overall dimensions of the turbine meter, please refer to the drawings PPV135: GRAVICOMPT UNI REMOTE VERSION or GRAVICOMPT UNI COMPACT VERSION.

- The identification plate and the led of the pulse emitter(s) shall be visible and accessible.
- The turbine must be installed with respect to the flow direction.
- Put sealing rings each other sides between the turbine and the backflanges.
- Leave an open space all around the turbine in order to ease maintenance.
- The position or the movement of moving parts of the API adapter inside the turbine cannot exceed 60 mm of the downstream face of the flange of the turbine.



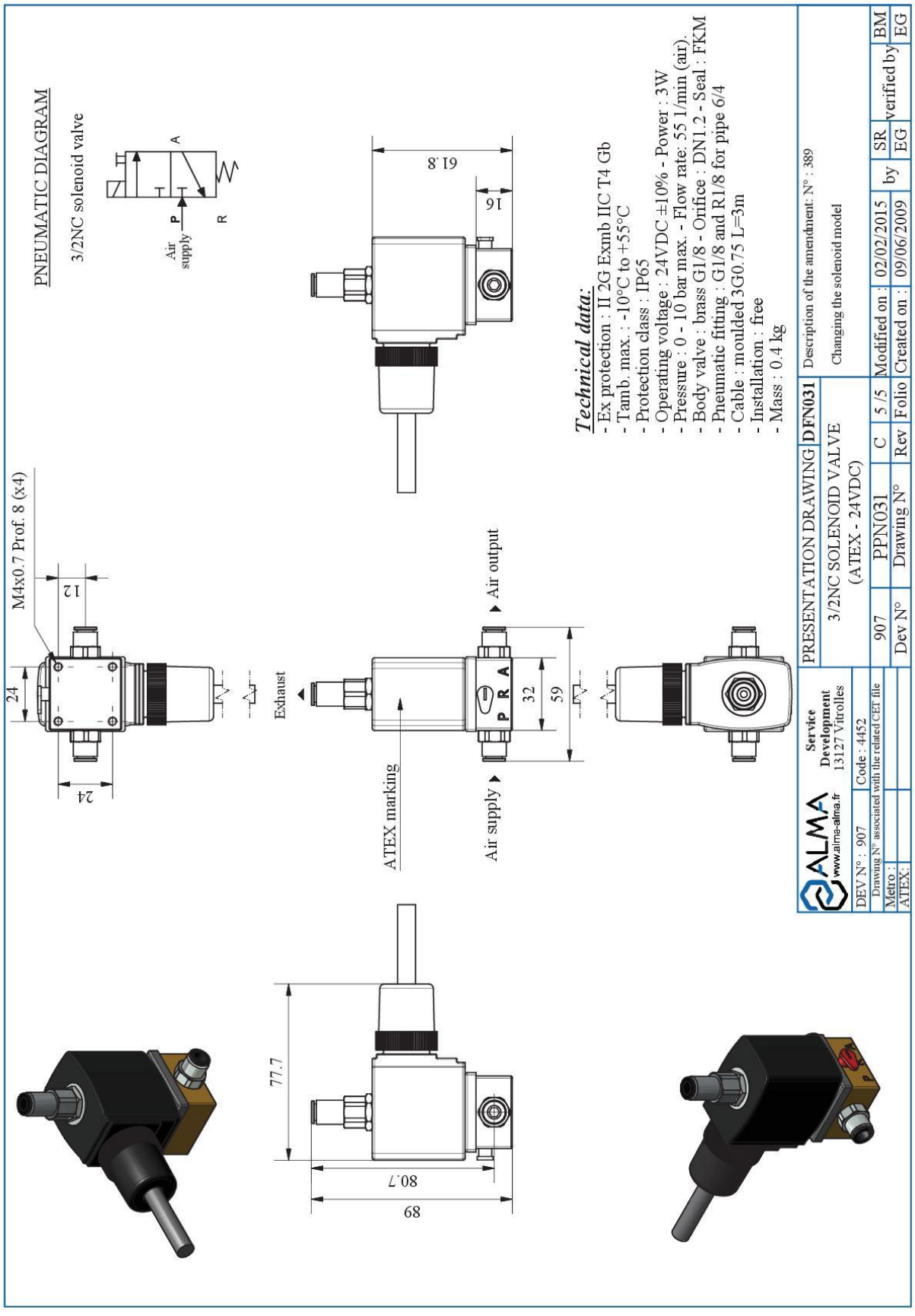
- Refer to the certificate written on the identification plate of the measuring system to suit the sealing requirements
- No loose lead wire on the sealing devices

For accuracy class 0.5 measuring systems, the pipes and equipment upstream or downstream the turbine meter must have the same nominal diameter as the meter on a length at least equal to 10 times this diameter upstream.

These lengths can be straight or bent.

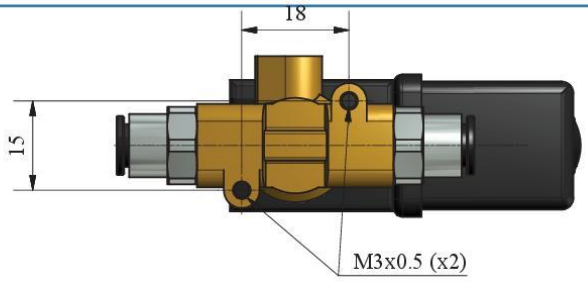
It is mandatory that no flowrate adjustment device (e.g. a variable-opening valve) is located upstream at a distance less than 10 times the nominal diameter of the meter. Do not create derivation circuits with sample or bypass, specially make sure that no nozzle is present on this pipe.

10. 3/2 NC ATEX SOLENOID VALVE



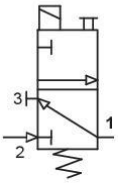
Document available on website alma-alma.fr

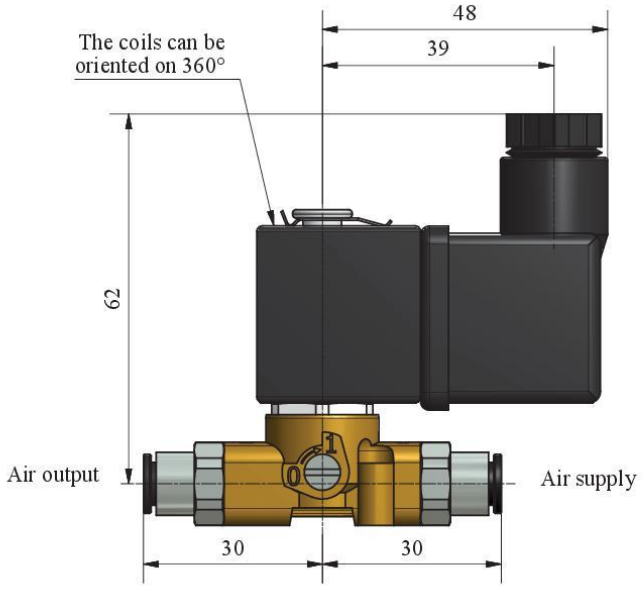
11. 3/2 NC NON-ATEX SOLENOID VALVE

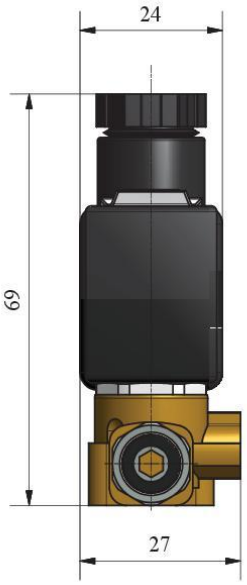


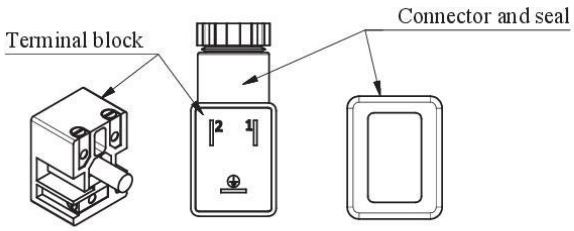
PNEUMATIC DIAGRAM

Solenoid 3/2NC

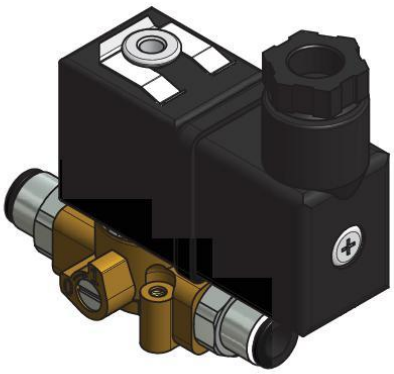








TERMINALS
Terminal 1 (+)
Terminal 2 (-)
Earth terminal



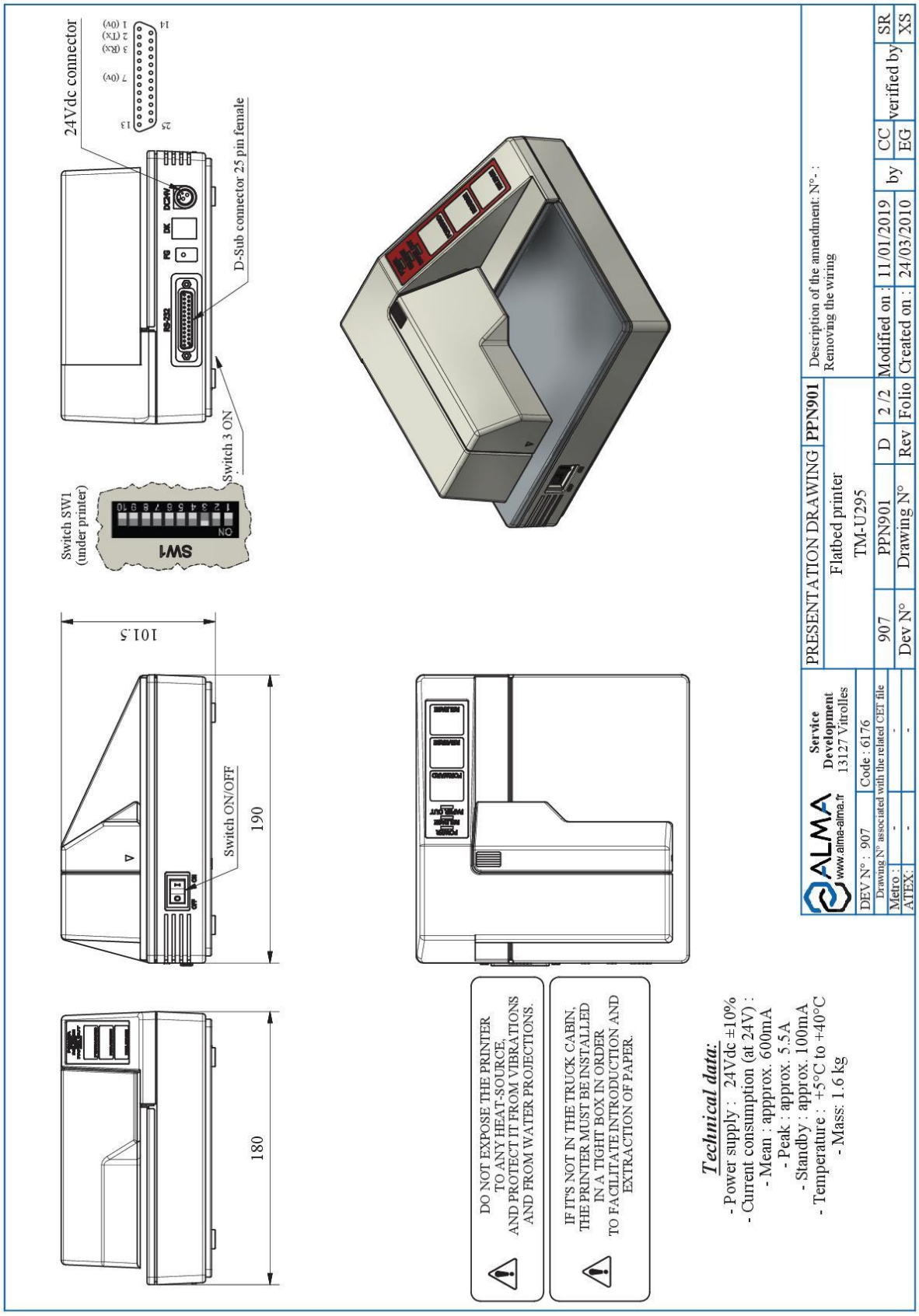
Technical data:

- Tamb. max. : -10°C to +60°C
- Protection class : IP65
- Operating voltage : 24Vdc - Power : 6.9W
- Pressure : 0 - 10 bar max.
- Body : Brass G1/8 - Orifice : DN1.2 - Seal : FKM
- Pneumatic fitting : G1/8 for pipe 6/4
- Plug-in connector : Cable : Ø 6-7mm
- Installation : the kit can be mounted in any position
- Mass : 0.3 kg

ALMA www.alma-alma.fr Service Development 13127 Vitrolles		PRESENTATION DRAWING	PV2078			Description of amendment N°					
DEV N° : 907	Code : 2374	Solenoid 3/2NC NON ATEX 24Vcc equiped									
Drawing N° associated with the related CET file		907	PPV2078	A	3 /3	Modified on :		by		verified by	
Metro :		Dev N°	Drawing N°	Rev	Folio	Created on :	22/11/2017		CC		SR
ATEX:											

12. PRINTER KIT FOR MPLS DEVICE

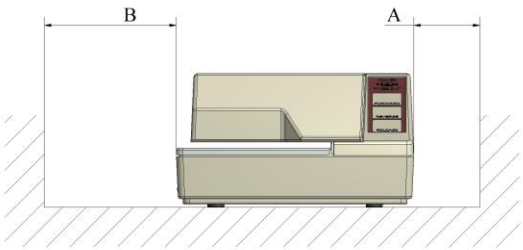
12.1. PRINTER

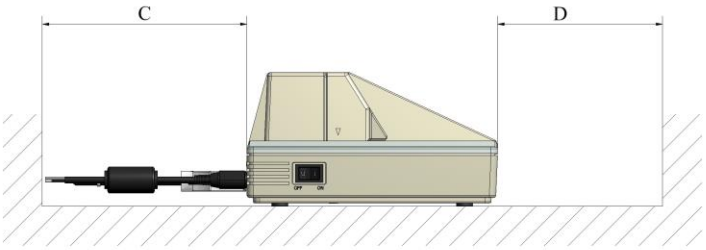


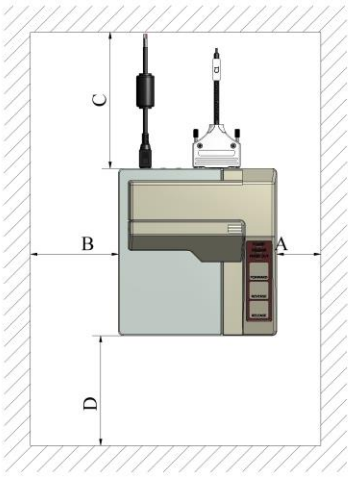
Document available on website alma-alma.fr

12.2. INSTALLATION RECOMMENDATIONS PRINTER

- The printer must be installed in a tight box and be laid out so as not to obstruct the introduction/extraction of sheet of paper (Dimension D).
- Do not store anything above the printer.
- Leave an open space all around the printer to ease maintenance.
- Dimensions: A ≥ 50mm, B ≥ 100mm, C ≥ 120mm.





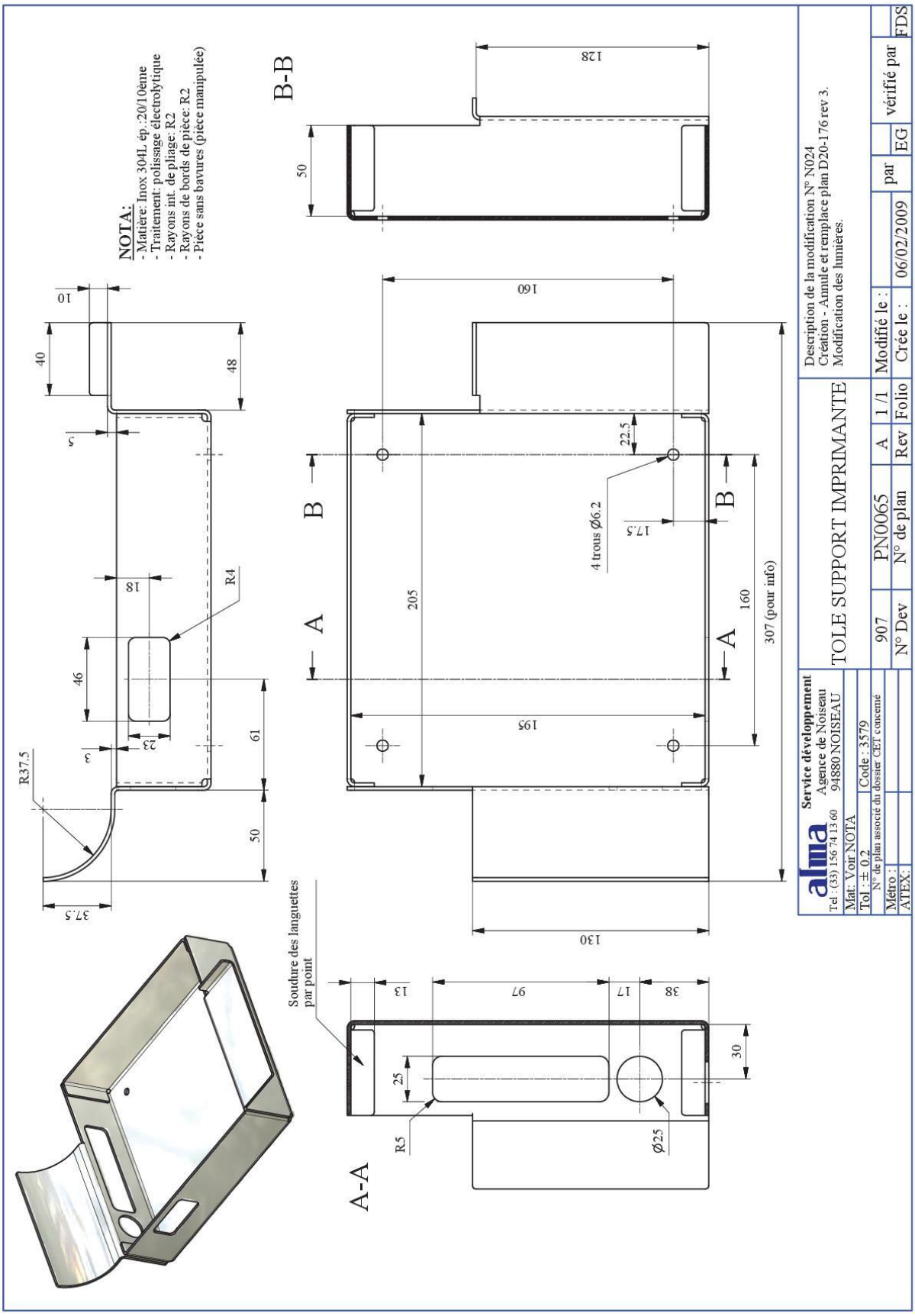


DO NOT EXPOSE THE PRINTER TO ANY HEAT-SOURCE.
PROTECT IT FROM VIBRATIONS AND WATER PROJECTIONS.

12.3. ELECTRICAL WIRING PRINTER

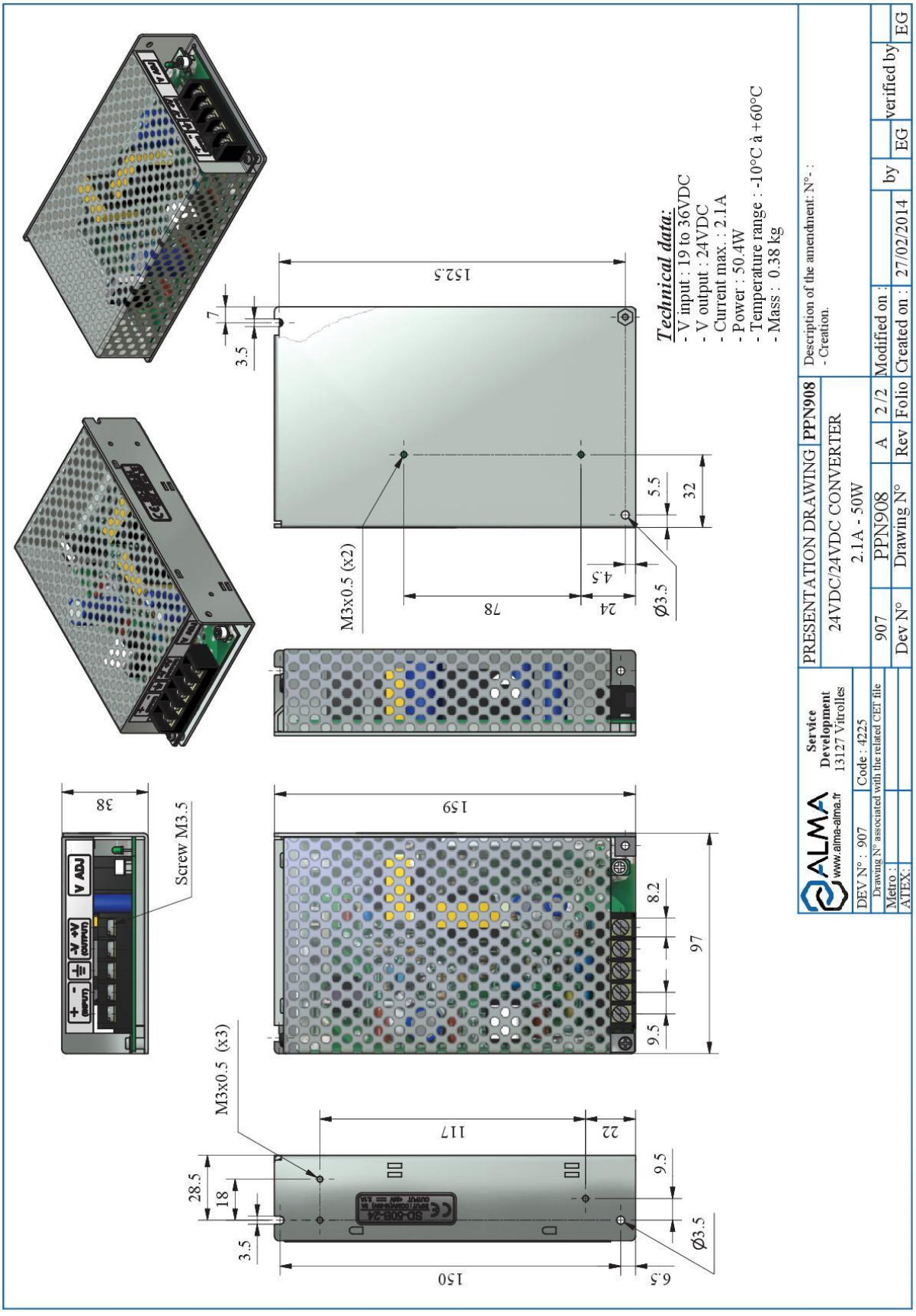
PRINTER SUPPLY CABLE						
						
CONVERTER 220VAC/24VCC					**PRINTER**	
Option	**Equipment**	**Function**	**Colour**		**Function**	**Observation**
●	CONVERTER 220VCC/24VDC	24VDC	Nr	White-coated (Bc)	PRINTER SUPPLY	Cable: 2x9mm2 External diameter: 5mm Length : 1,50m
		0V	Bc	Red-coated (Rg)		
		Shielding	Braid			

12.4. PRINTER HOLDER



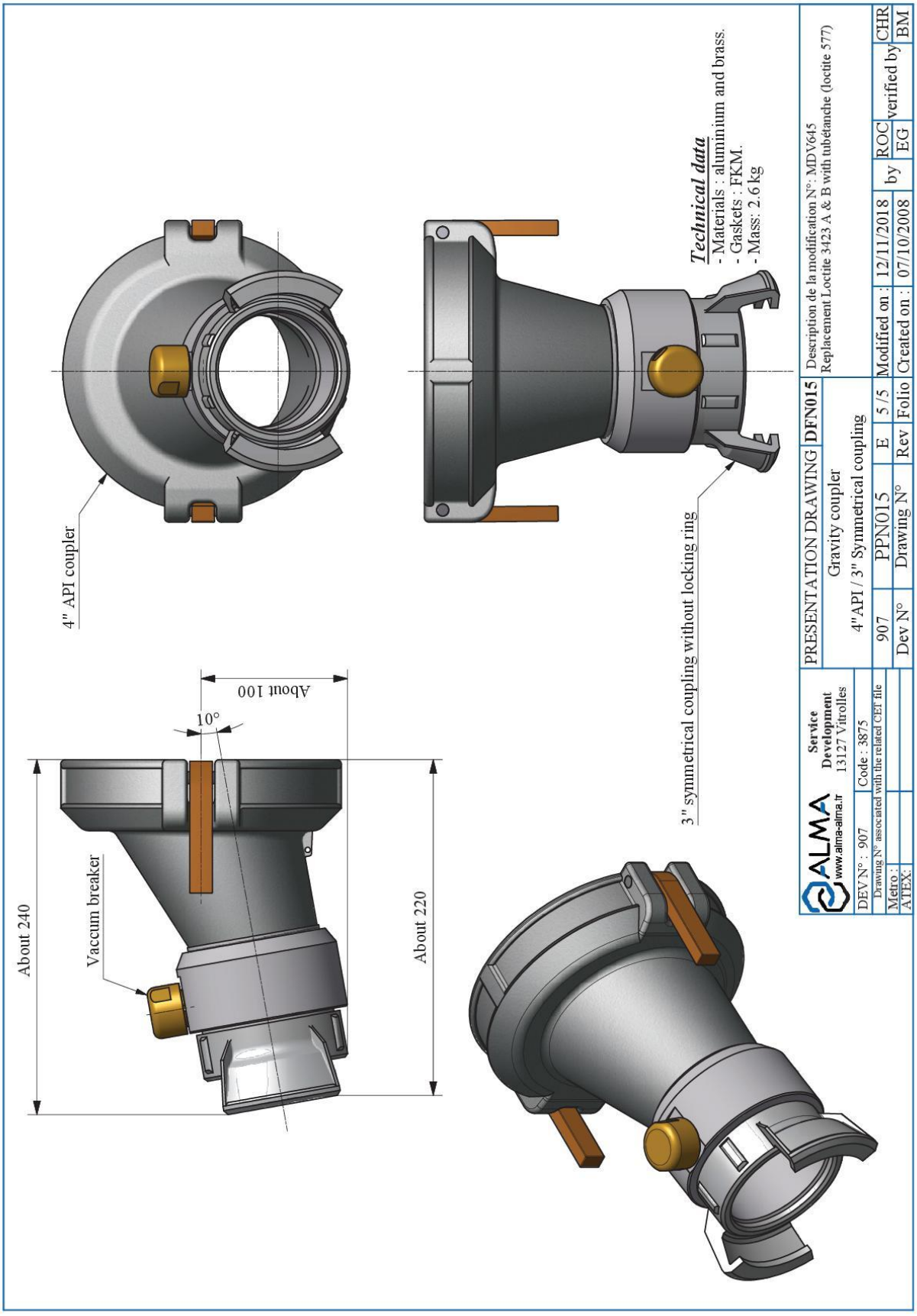
Document available on website alma-alma.fr

13. CONVERTER 24VDC/24VDC 2.1A 50W



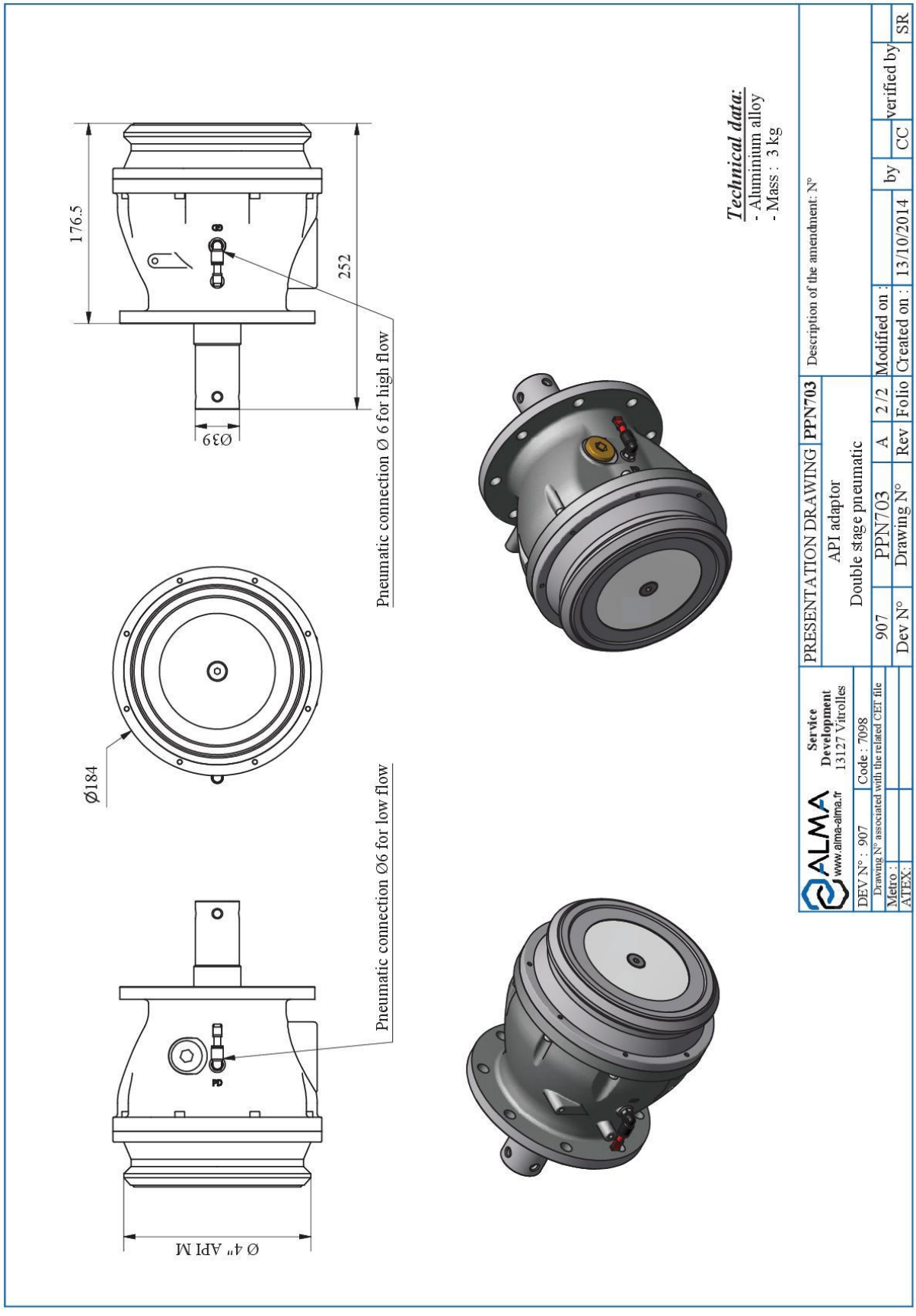
Document available on website alma-alma.fr

14. GRAVITY COUPLER



Document available on website alma-alma.fr

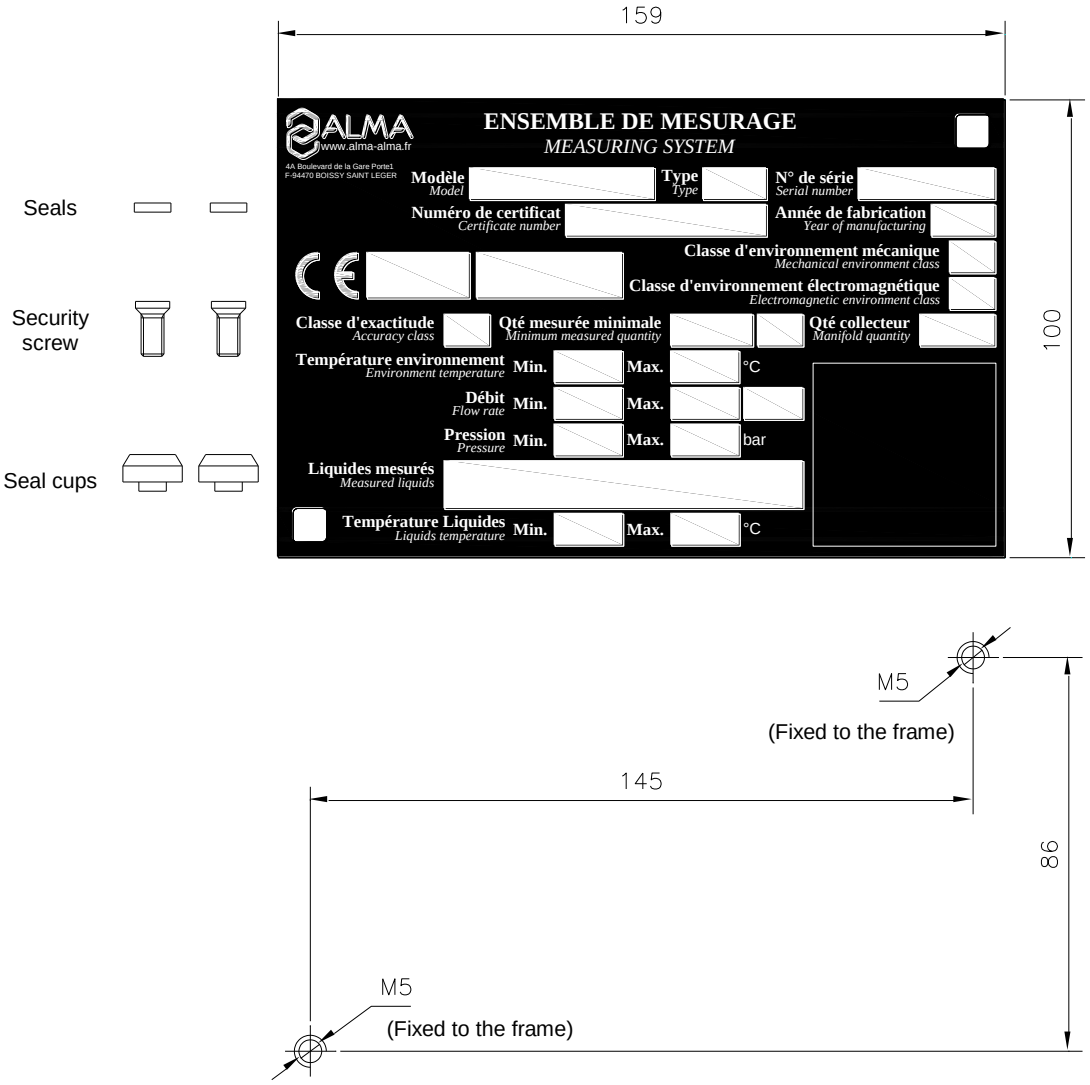
15. PNEUMATIC API ADAPTATER



Document available on website alma-alma.fr

16. KIT FOR MEASURING SYSTEM IDENTIFICATION PLATE

The identification plate shall be clearly installed, near the associated indicator device, and of easy access in order to be able to read features and to stamp the regulatory marks.



The security screws of the cups (provided by ALMA) must be screwed in the tap of the frame (do not use removable nuts).