INSTALLATION GUIDE

DI 002 EN F

CMA TRONIQUE

Described in EC-type examination certificate N°: LNE-14983

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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 ARE NOT POWERED.

MECANICAL RECOMMENDATIONS

- Respect the recommendations of the instruction manual specifying the installation, operation and maintenance conditions of the ATEX equipments (instruction manual supplied with the equipments).
- Take care to place the equipments 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).
- 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).

ELECTRICAL RECOMMENDATIONS

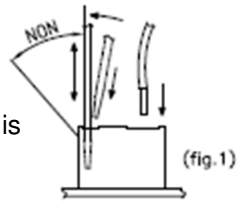
- Respect the recommendations of the instruction manual specifying the installation, operation and maintenance conditions of the ATEX equipments (instruction manual supplied with the equipments).

- Connect the supply of the equipments downstream cut-out, on the power supply reserved to the measured distribution.

- Put a delayed protection of 5A upstream the 24VDC supply to protect equipments in case of reverse polarity or overcurrent.

- 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).

- 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 flat screwdriver 0.4x2.5 (see fig.1).
    - Insert the screwdriver slightly tilted, then push it perpendicularly to the terminal.
    - Do not exceed the upright position when the screwdriver is down in order not to block the spring.
    - Insert or remove the wire and remove the screwdriver.



(fig.1)

- Pass the power supply cores (24Vdc truck) through the ferrites by carrying out a loop (ALMA supply).

- 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.

- Equipments must be connected to the frame ground (external ground connection).

- Whenever possible, use shielded cables with a 360° connection through the metal cable glands (see the documentation delivered with the equipments).
  Otherwise, connect the shields to devices inside the equipment (ground terminal, earth bar, earth boss…).

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

- Respect a homogeneous wire colour code.

- Printer TMU295: before positioning the printer on its support, check that configuration switches of the data link protocol, located under the printer, are well positioned: No 3 on "ON" and the 7 others on "OFF".

- Current of the MICROCOMPT+ and printer:

ALMA equipment	Supply voltage	Current mini.	Current maxi.
MICROCOMPT+	24VDC +/-10%	0.7 A	1.5 A
IMPRIMANTE	24VDC +/-10%	0.1 A	5.5 A (switch-on)

- Colour 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
Blanc	**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

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 equipments 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				
Unités	**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

Measuring system installed according to MID certificate

The CMA TRONIQUE measuring system is covered by the EC type examination certificate N° LNE-14983. Refer to this certificate for any precision about its installation.
For the sealing plan, see Annex to EC type examination certificate N° LNE-14983.

Special conditions for installation in any cases

ALMA CPR3000 pressure sensor is to be installed:

- ⇒ If possible by an equal distance between filter and pump entry, and in all cases with a minimal distance 200mm upstream from the pump entry
- ⇒ At the most vertical position regardless of the nipple on the pipe.

Any disruptive system (filter, valve, etc.) cannot be situated between the pressure entry and the pump entry.
Connection pipework between the compartments and the pump must have a minimum gradient of 3%. In case of a manifold configuration, this requirement is limited to the following conditions:

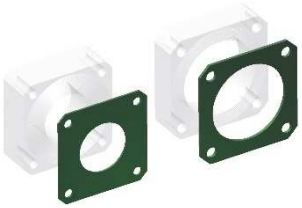
- ⇒ 3% minimum gradient of the pipe between bottom flap and manifold
- ⇒ No reverse slope between manifold and pump entry.

If the measuring system is fitted with two delivery points, it needs to be equipped with a device allowing a liquid delivery by only one point at once.

3. PART LIST

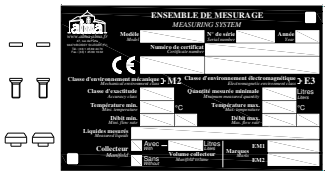
EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
1		**CALCULATOR INDICATOR MICROCOMPT+ CMA TRONIQUE** NON ATEX or ATEX (Provided with a magnetic supervisor key)	1	
2		**ADRIANE TURBINE METER DN50-50 or DN80-80** (Depending on configuration)	1	
3		**ADRIANE TURBINE METER DN80-80 373 PN16 AD-BLUE** (Only for CMA Ad-Blue)	1	

Non-contractual pictures

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
4		**RELATIVE PRESSURE SENSOR – CPR3000** NON ATEX or ATEX (Supplied with hydraulic shock absorber)	1	
5		**PRINTER TMU-295** (Printer – power supply cable – serial link cable 10m)	1	
6		**CONVERTER 24VDC/24VDC 2.1A 50W** (Printer power supply 24VDC)	1	
7		**NON-RETURN VALVE KIT DN50 or DN80** (Depending on configuration)	1	
8		**SIGHT KIT DN50 or DN80 FOR ADRIANE TURBINE METER** (Depending on configuration) (Supplied with pre-drilled screws for sealing)	1	
9		**NC/NO SOLENOID VALVES KIT** NON ATEX or ATEX	1	●
10		**PT100 TEMPERATURE SENSOR – CT1001** (Supplied with thermowell)	1	●

Non-contractual pictures

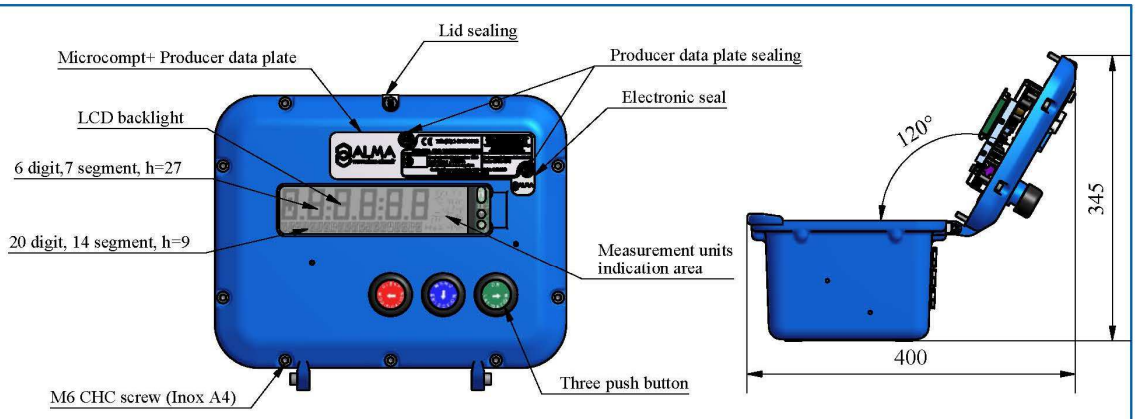
EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA

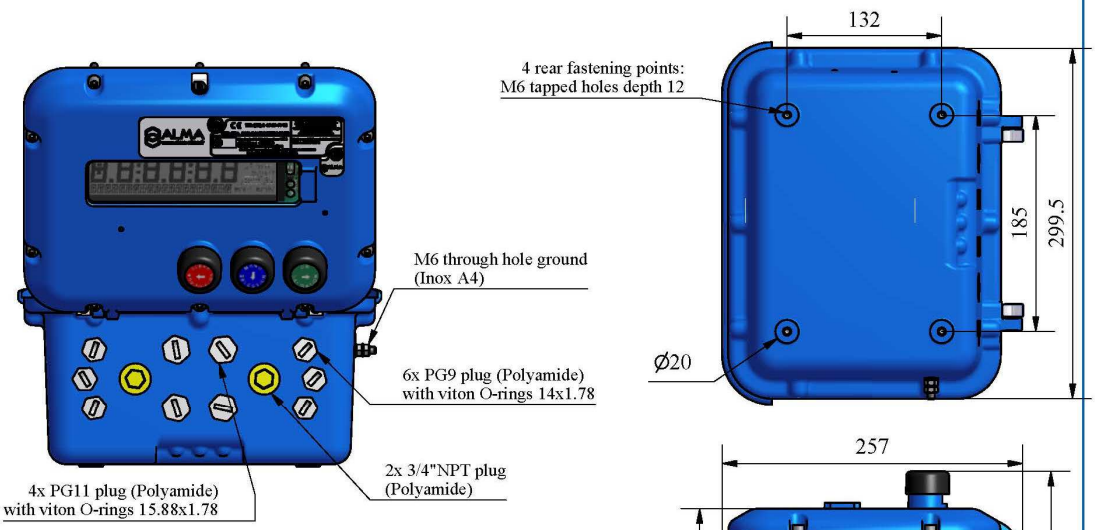
Item	Equipment	Designation	Qty	Option*
11		**CONNECTION KIT DN50 or DN80** (Depending on configuration) (Supplied with pre-drilled screws for sealing)	1	●
12		**KIT FOR MEASURING SYSTEM IDENTIFICATION PLATE** (Plate and sealing device)	1	●

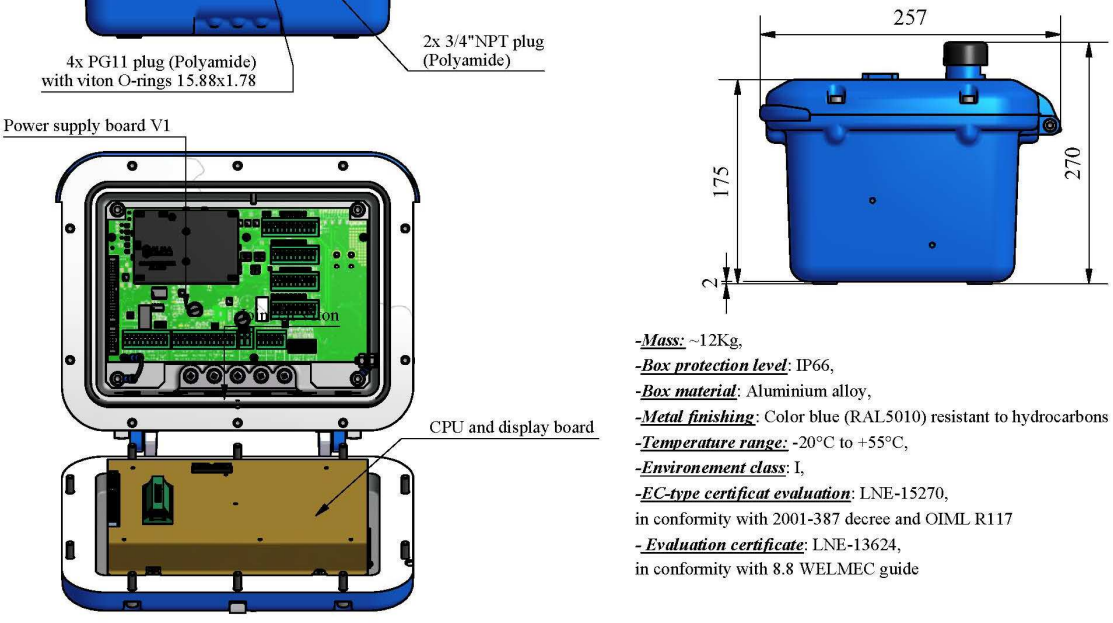
Option*: equipment sold as an option by ALMA must be installed on the measuring system if required by the certificate.

Non-contractual pictures

4. MICROCOMPT+ CMA TRONIQUE (NON ATEX)







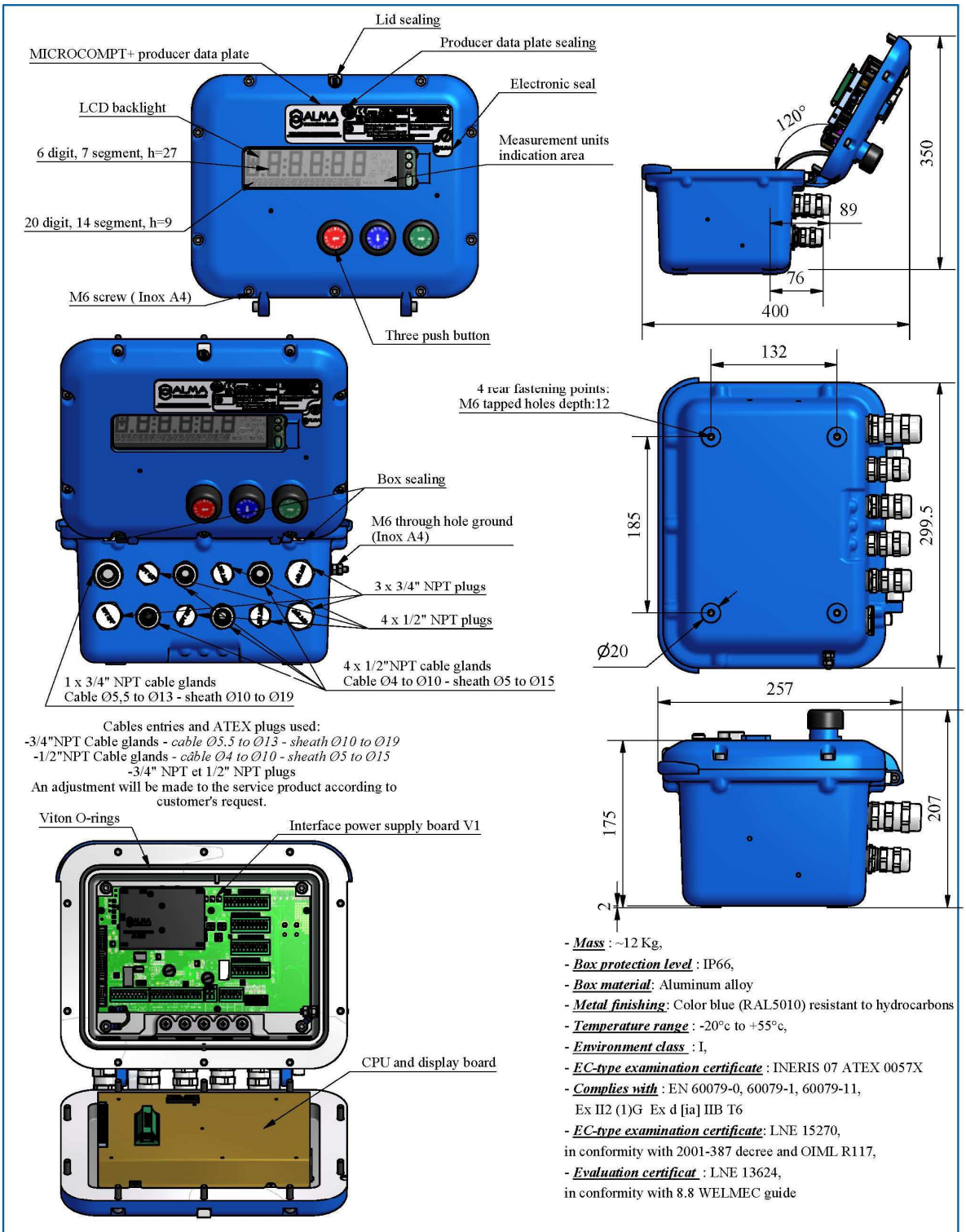
-***Mass:*** ~12Kg,
-***Box protection level***: IP66,
-***Box material***: Aluminium alloy,
-***Metal finishing***: Color blue (RAL5010) resistant to hydrocarbons
-***Temperature range:*** -20°C to +55°C,
-***Environement class***: I,
-***EC-type certificat evaluation***: LNE-15270,
in conformity with 2001-387 decree and OIML R117
- ***Evaluation certificate***: LNE-13624,
in conformity with 8.8 WELMEC guide

For a safe use of the MICROCOMPT+ electronic device, make sure to comply with the requirements of the instruction manual supplied with the equipment.

ALMA www.alma-alma.fr	Service Development 13127 Vitrolles	PRESENTATION DRAWING	DFV080	Description of the amendment N°392 Passage to inface power supply board V1 rev 11							
		Microcompt + X-tronique No ATEX									
DEV N° : 973	Code : 0071										
Drawing N° associated with the related CET file		973	PPV080	H	7 /9	Modified on :	23/02/2015	by	CC	verified by	SR
Metro :	LNE-15270 / LNE-13624	Dev N°	Drawing N°	Rev	Folio	Created on :	17/07/2009		CC		SR
ATEX:											

Document available on website alma-alma.fr

5. MICROCOMPT+ CMA TRONIQUE (ATEX)



- ***Mass*** : ~12 Kg,
- ***Box protection level*** : IP66,
- ***Box material***: Aluminum alloy
- ***Metal finishing***: Color blue (RAL5010) resistant to hydrocarbons
- ***Temperature range*** : -20°c to +55°c,
- ***Environment class*** : I,
- ***EC-type examination certificate*** : INERIS 07 ATEX 0057X
- ***Complies with*** : EN 60079-0, 60079-1, 60079-11, Ex II2 (1)G Ex d [ia] IIB T6
- ***EC-type examination certificate***: LNE 15270, in conformity with 2001-387 decree and OIML R117,
- ***Evaluation certificat*** : LNE 13624, in conformity with 8.8 WELMEC guide

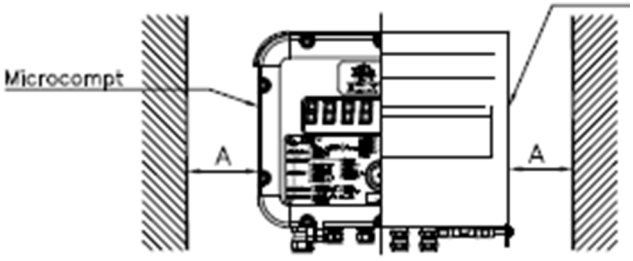
For a safe use of the MICROCOMPT+ electronic device, make sure to comply with the requirements of the instruction manual supplied with the equipment

ALMA www.alma-alma.fr	Service Development 13127 Vitrolles	PRESENTATION DRAWING	DFV087	Description of the amendment N°398 - Passage to power supply board V1 rev 11 - Change the logo							
DEV N° : 973	Code : 3802	Microcompt + X-tronique ATEX Interface power supply board V1									
Drawing N° associated with the related CET file		973	PPV087	J	7 /9	Modified on :	26/03/2015	by	CC	verified by	SR
Metro :	LNE-15270 / LNE13624	Dev N°	Drawing N°	Rev	Folio	Created on :	28/01/2010		CC		SR
ATEX:	INERIS 07 ATEX 0057X										

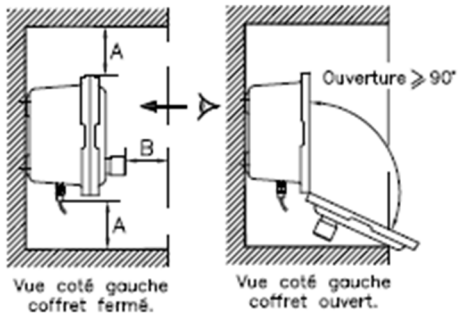
Document available on website alma-alma.fr

6. INSTALLATION RECOMMENDATIONS MICROCOMPT+

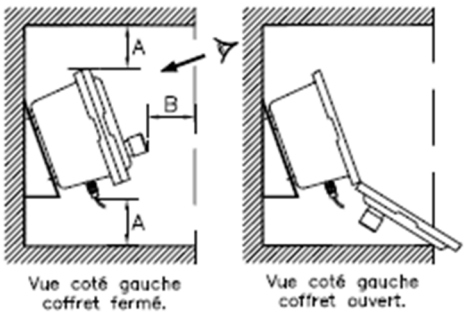
- Fasten the box with 4 M6 screws (holder suitable for vibrations and designed to support the MICROCOMPT). On the box: 4 M6 blind holes tapped length=12 over 185x132).
- Leave an open space around the box in order:
  - To facilitate maintenance operation.
  - To prevent any pressing on pushbuttons and on the glass.
- The space between the front face of the box and the cabinet door shall be sufficient.
- Dimensions: A > 100mm and B > 60mm



- SOLUTION 1: straight box if it's a breast height.

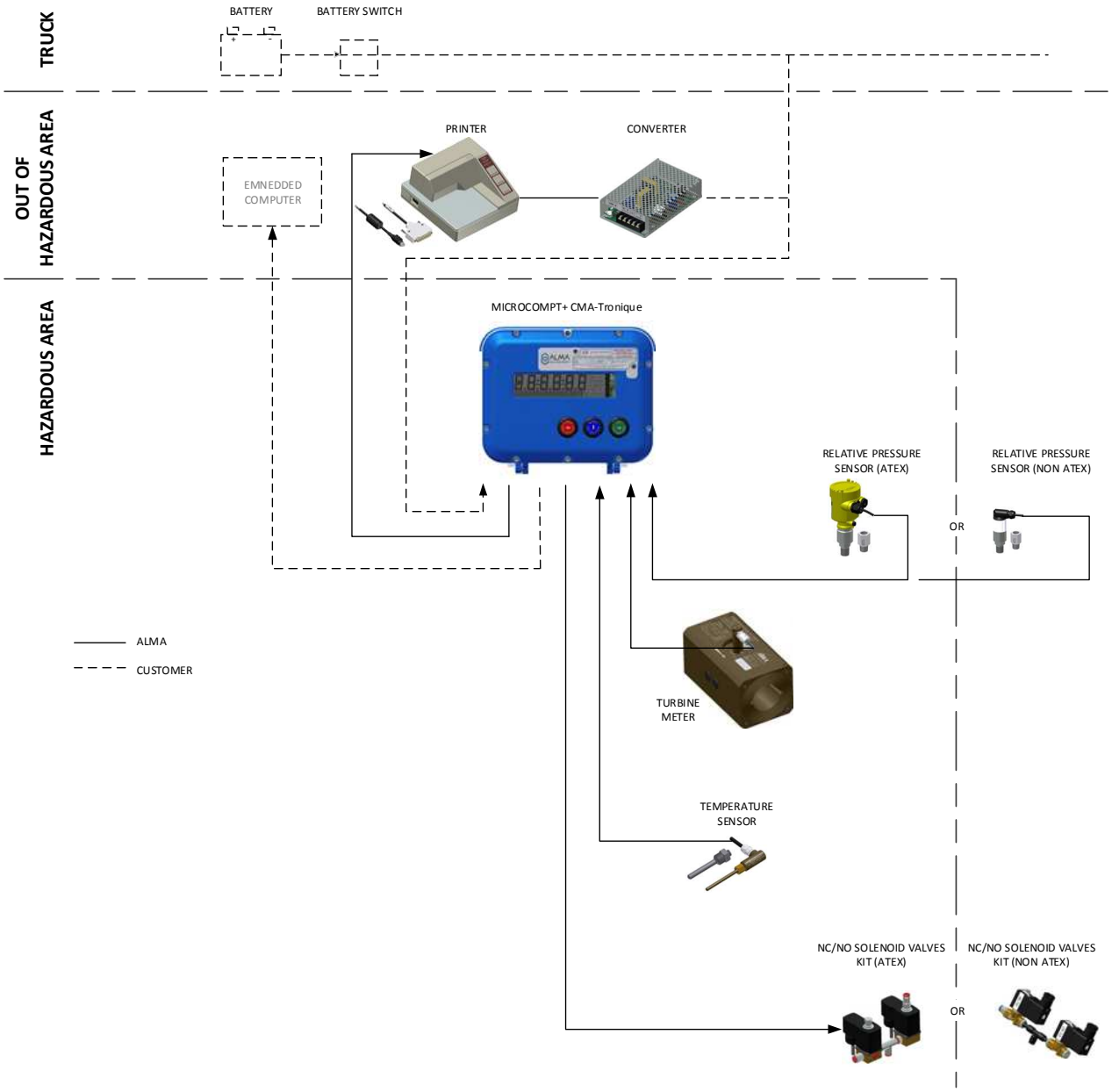


- SOLUTION 2: 20° angle if it's not a breast height.



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

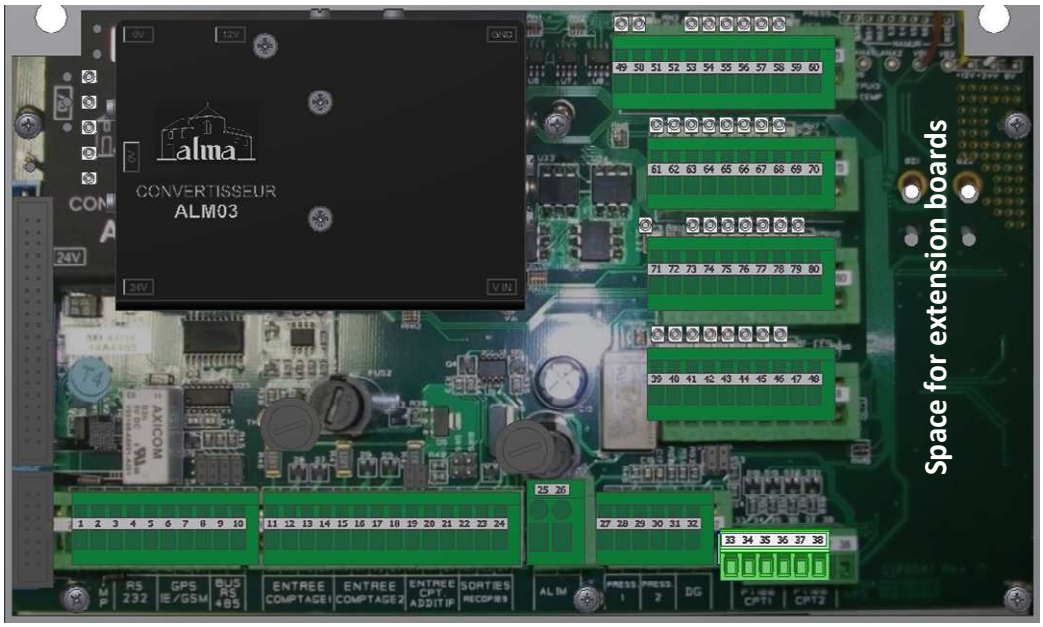
7. ELECTRICAL WIRING MICROCOMPT+



Any mass braids and shielding must be connected to the MICROCOMPT+ ground bar

TERMINAL ASSIGNEMENT OF MICROCOMPT+ BOARDS

INTERFACE POWER SUPPLY BOARD



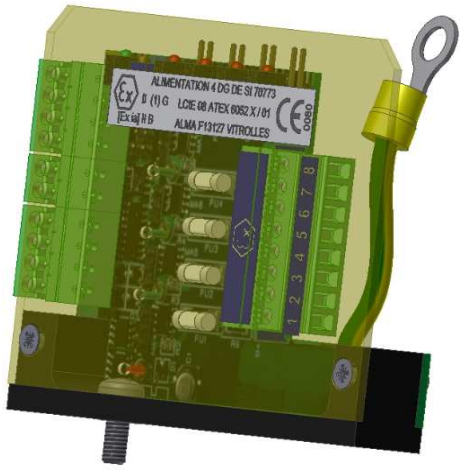
EQUIPMENTS CONNECTED TO THE MICROCOMPT+								INTERFACE POWER SUPPLY BOARD			
Option	Equipment	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Terminal	Function		Observation
	PRINTER	C1	1/2"NPT	●	ADR 4x0.34 sh.	Rx Printer	Bc	1	Tx	PRINTER	Connect the shielding
						Tx Printer	Mr	2	Rx		
						0V	Vt	3	0V		
•	EMBEDDED COMPUTING	C8	1/2"NPT		3x0.34 sh.	0V		3	0V	RS232	Connect the shielding
						Rx E.C.		4	Tx		
						Tx E.C.		5	Rx		
	TURBINE TRANSMITTER	C2	1/2"NPT	●	ADR 4x0.34 sh.	12V	Jn	15	12V	INPUT TURBINE EMA	Connect the shielding
						V1	Mr	16	V1		
						V2	Vt	17	V2		
						0V	Bc	18	0V		
•	PULSES OUTPUT		1/2"NPT			PO EMA		22	PO EMA	PULSES OUTPUT	
						PO EMB		23	PO EMB		
						0V		24	0V		
	SUPPLY 24VDC	A1	1/2"NPT		2x1	Bat. (+)	1	25	24VDC	POWER SUPPLY	24VDC truck battery (after battery switch and protected by a fuse)
						Bat. (-)	2	26	0V		
	PRESSURE SENSOR (NON ATEX)	C3	1/2"NPT	●	2x0.34 sh.	+	Mr	27	+	PRESSURE	Connect the shielding
						-	Bl	28	-		
	PT100 TEMPERATURE PROBE	C4	1/2"NPT	●	ADR 3x0.6 sh.	+	Jn	33	+	PT100	Connect the shielding
						-	Bc	34	-		
						-	Vt	35	-		

EQUIPMENTS CONNECTED TO THE MICROCOMPT+								INTERFACE POWER SUPPLY BOARD			
Option	Equipement	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Terminal	Function		Observation
	MANIFOLD FLAP CONTROL OR PRODUCT RETURN AUTHORISATION (Cpt 4 and 5)				4 to 7x1	Flap 1	1	39	24VDC = opened flap (outputs FET 24V 5W max.) FET=Field Effect Transistor	EV Flaps or Product return authorisation	
						Flap 2	2	40			
						Flap 3	3	41			
						Flap 4	4	42			
						Flap 5	5	43			
						Flap 6	6	44			Or Product return compartment 4
						Flap 7	7	45			Or Product return compartment 5
								46			
					1x1	24VDC		47	24VDC		24VDC supply for terminals 39 to 45
								48			
	RC-HEATING OIL RECEIVER				2x1	Start/Stop	1	49	Start/Stop	RC- Oil_1	
						LF/HF	2	50	LF/HF	RC- Oil_2	
	COUNTED / PUMPED DISTRIBUTION WAY (with additional commands)				3x1	Gravi/Pmp	1	57	0V	Gravity / Pumped	Closed circuit=product pumped (end position)
						Pct/Pnc	2	58	0V	Pumped counted/ no counted	Closed circuit=product counted
						0V	3	59	0V	0V (GND)	51, 52 and 59 are shunted if manual valves are not instrumented
	PTO CONTROL				1x1	PTO Ctrl		58		PTO control	Power- take- off engaged
	FOOTVALVE CONTROL				1x1	Footvalve			24VDC= cde	FOOTVALVE	24VDC=opening (Outputs FET 24V 5W max.) FET=Field Effect Transistor
	PRODUCT RETURN CONTROL				3 to 6X1	PR1	1	65	24VDC= author.	Return_1	Product return compartment 1 to 3
						PR2	2	66		Return_2	(Outputs FET 24V 5W max.)
						PR3	3	67		Return_3	FET=Field Effect Transistor
						Chasse		68		Cde chasse	
	HOSES 1 AND 2 AUTHORISATION CONTROL	C6			3x1	0V	1	70	0V	0V (GND)	Hoses 1 and 2 authorisation control
						Hose 1	2	75	24VDC= distrib.	Hose_1 ctrl	(Outputs FET 24V 5W max.)
						Hose 2	3	63		Hose_2 ctrl	FET=Field Effect Transistor
	ADDITIONAL COMMANDS				5X1	PTO	1	61	24VDC= pto	PTO	(Outputs FET 24V 5W max.) FET=Field Effect Transistor
						Stop Mot.	2	62	24VDC= stop	Stop motor	
						Acc. Mot.	3	73	24VDC= acc.	Motor acceleration	
						Clutching	4	76	24VDC= clutchin	Clutching	
						Start Mot.	5	77	24VDC= start	Start motor	
	ADDITIVATION CONTROL				2x1	Power	1	71	NO free contact	Additivation control	Closed contact=additivation
						Control	72	50			(Output: NO free potential relay)
•	KIT SOLENOID VALVES NC/NO (NON ATEX or ATEX)	C5		●	[3xG0.75]	NC valve Pump bypass	1 / [Mr]	74	24VDC	NC control	24VDC= opening NC solenoid valve
							2 / [Nl]	80	0V		
						NO valve Exhaust	1 / [Mr]	79	24VDC	NO control	24VDC= closing NO solenoid valve
							2 / [Nl]	80	0V		[cable supplied by ALMA for ATEX version]
	MANIFOLD VENT VALVE CONTROL				1x1	Vent valve		78	24VDC	Vent valve control	24VDC=opening (Outputs FET 24V 5W max.) FET=Field Effect Transistor

SOME EXTENSION BOARDS MAY BE SET ON TO THE INTERFACE POWER SUPPLY BOARD

**Refer to the Cable Glands Installation Instructions*

EXTENSION BOARD 4DG (SI)



EQUIPMENTS CONNECTED TO THE MICROCOMPT+								EXTENSION BOARD 4DG (SI)			
Option	Equipment	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Terminal	Function		Observation
	RELATIVE PRESSURE TRANSMITTER CPR3000 (ATEX)	C3			ADR 4x0.34 sh.	PRESSURE	Bc	5	+	PRESSURE	
							Mr	6	-		

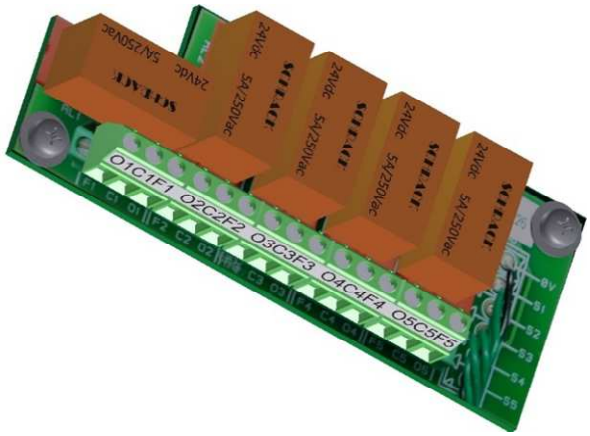
**Refer to the Cable Glands Installation Instructions*

EXTENSION BOARD SI SONDE AD

EQUIPMENTS CONNECTED TO THE MICROCOMPT+								EXTENSION BOARD SI SONDE AD			
Option	Equipement	Cable (for information) No.	CG*	Alma	Type	Function	Colour or No.	Terminal	Function		Observation
•	OVERFILL PREVENTION PROBE	C7			*[6x1]*	Common	*[Nr]*	1	-	OVERFILL PREVENTION PROBES	*[If cable are supplied by ALMA]*
						Power	*[Rg]*	2	+		
						From probe	*[Or]*	3	From probe		
						To probe	*[Jn]*	4	To probe		

**Refer to the Cable Glands Installation Instructions*

RELAY EXTENSION BOARD (used to control a minimum 5W spool valve)

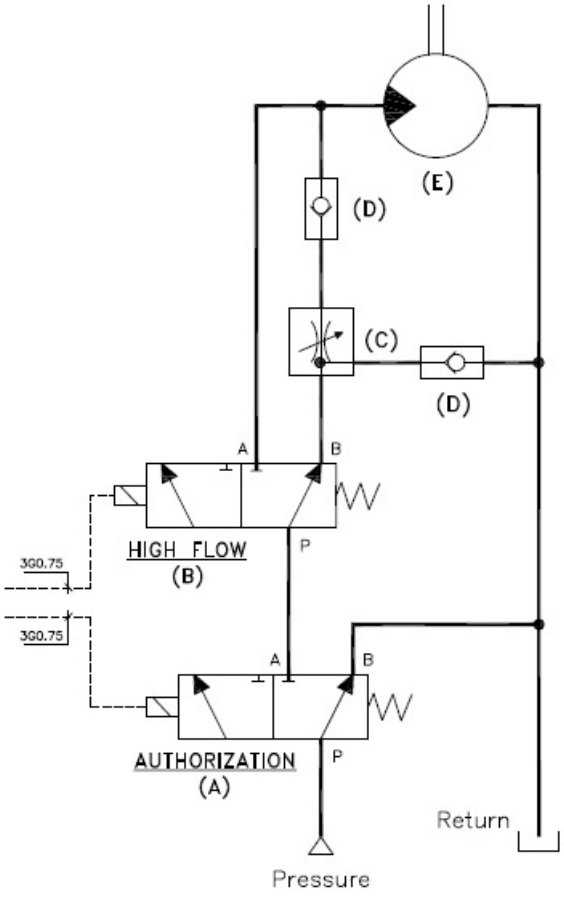


EQUIPEMENT CONNECTED TO THE MICROCOMPT+								RELAY EXTENSION BOARD			
Option	Equipement	Cable (for information)				Function	Colour or No.	Terminal	Function		Observation
		No.	CG*	Alma	Type						
	AUTORISATION SOLENOID VALVE					Author.		O1	NO free contact	RELAY 1	Hydraulic control of hydraulic pump
								C1	0V/24VDC		
								F1	NC free contact		
	HIGH FLOW SOLENOID VALVE					High flow		O2	NO free contact	RELAY 2	High flow control of hydraulic pump
								C2	0V/24VDC		
								F2	NC free contact		

**Refer to the Cable Glands Installation Instructions*

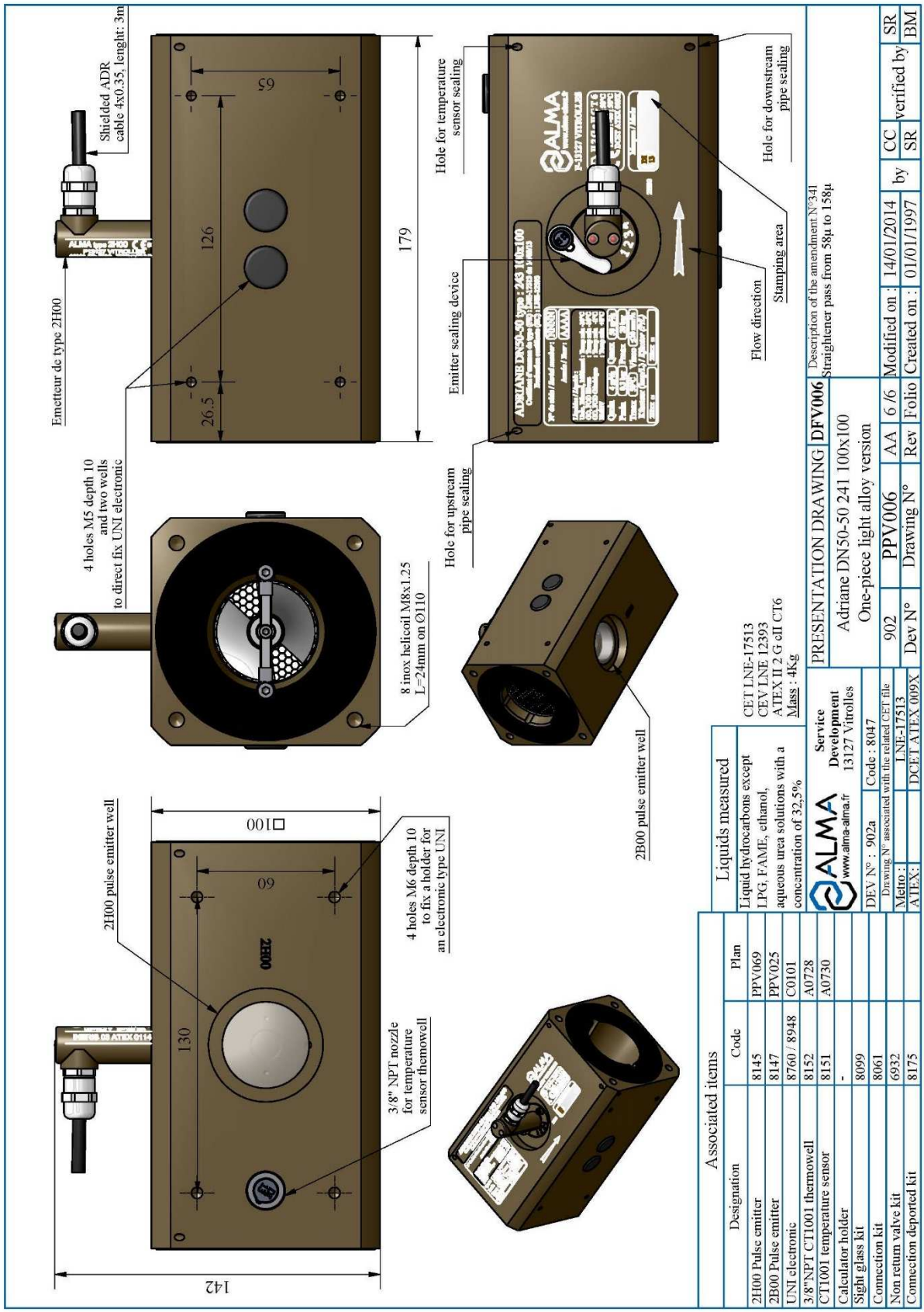
See hydraulic diagram on the next page.

8. SOLENOID VALVES HYDRAULIC DIAGRAM



(A) : AUTHORISATION solenoid valve (not supplied by ALMA)
(B) : HIGH FLOW solenoid valve (not supplied by ALMA)
(C) : Flow regulator (not supplied by ALMA)
(D) : Non return valve (not supplied by ALMA)
(E) : Hydraulic motor (not supplied by ALMA)

9. TURBINE METER ADRIANE DN50-50 243 100x100



Associated items

Designation	Code	Plan
2H00 Pulse emitter	8145	PPV069
2B00 Pulse emitter	8147	PPV025
UNI electronic	8760 / 8948	C0101
3/8"NPT CT1001 thermowell	8152	A0728
CT1001 temperature sensor	8151	A0730
Calculator holder	-	
Sight glass kit	8099	
Connection kit	8061	
Non return valve kit	6932	
Connection deported kit	8175	

Liquids measured

Liquid hydrocarbons except LPG, FAME, ethanol, aqueous urea solutions with a concentration of 32,5%

CET LNE-17513
CEV LNE 12393
ATEX II 2 G dII CT6
Mass : 4Kg

ALMA www.alma-alma.fr
Service Development
13127 Vitrolles

DEV N° : 902a | Code : 8047
Drawing N° associated with the related CET file
Metro : | LNE-17513
ATEX: | DCET ATEX 009X

PRESENTATION DRAWING | DFV006

Adriane DN50-50 241 100x100
One-piece light alloy version

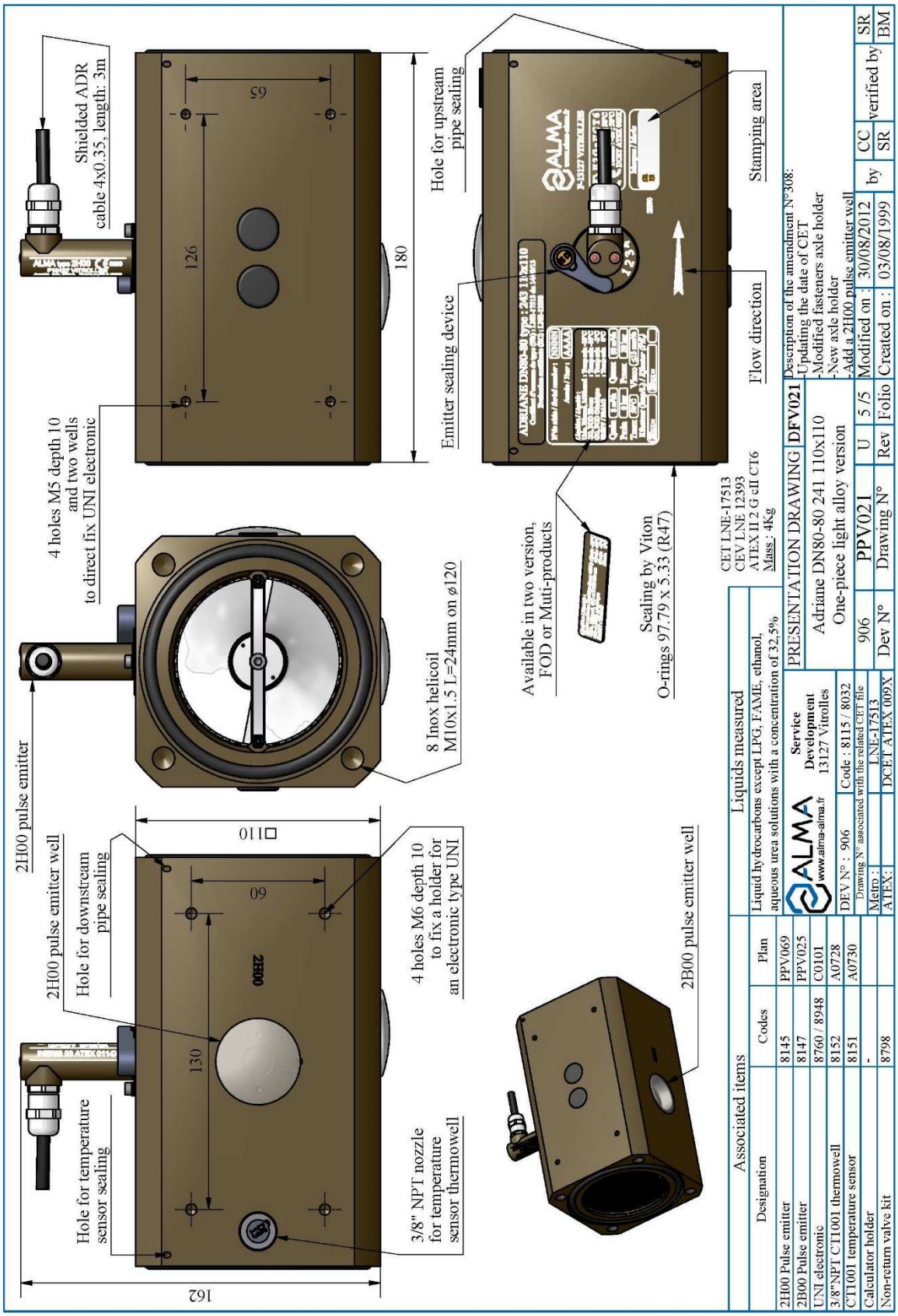
902 | PPV006 | AA | 6/6
Dev N° | Drawing N° | Rev | Folio

Description of the amendment N°341
Straightener pass from 58µ to 158µ

Modified on : 14/01/2014 by CC
Created on : 01/01/1997 by SR

verified by SR BM

10. TURBINE METER ADRIANE DN80-80 241 110x110



Associated items		
Designation	Codes	Plan
2H00 Pulse emitter	8145	PPV069
2B00 Pulse emitter	8147	PPV025
UNI electronic	8760 / 8948	C0101
3/8"NPT CT1001 thermowell	8152	A0728
CT1001 temperature sensor	8151	A0730
Calculator holder	-	
Non-return valve kit	8798	

Liquids measured: Liquid hydrocarbons except LPG, FAME, ethanol, aqueous urea solutions with a concentration of 32,5%

CET LNE-17513
CEV LNE 12393
ATEX II 2 G cII CT6
Mass : 4Kg

ALMA www.alma-alma.fr — Service Development 13127 Vitrolles

DEV N° : 906 | Code : 8115 / 8032

Drawing N° associated with the related CET file

Metro : LNE-17513

ATEX: DCET ATEX 009X

PRESENTATION DRAWING | DFV021

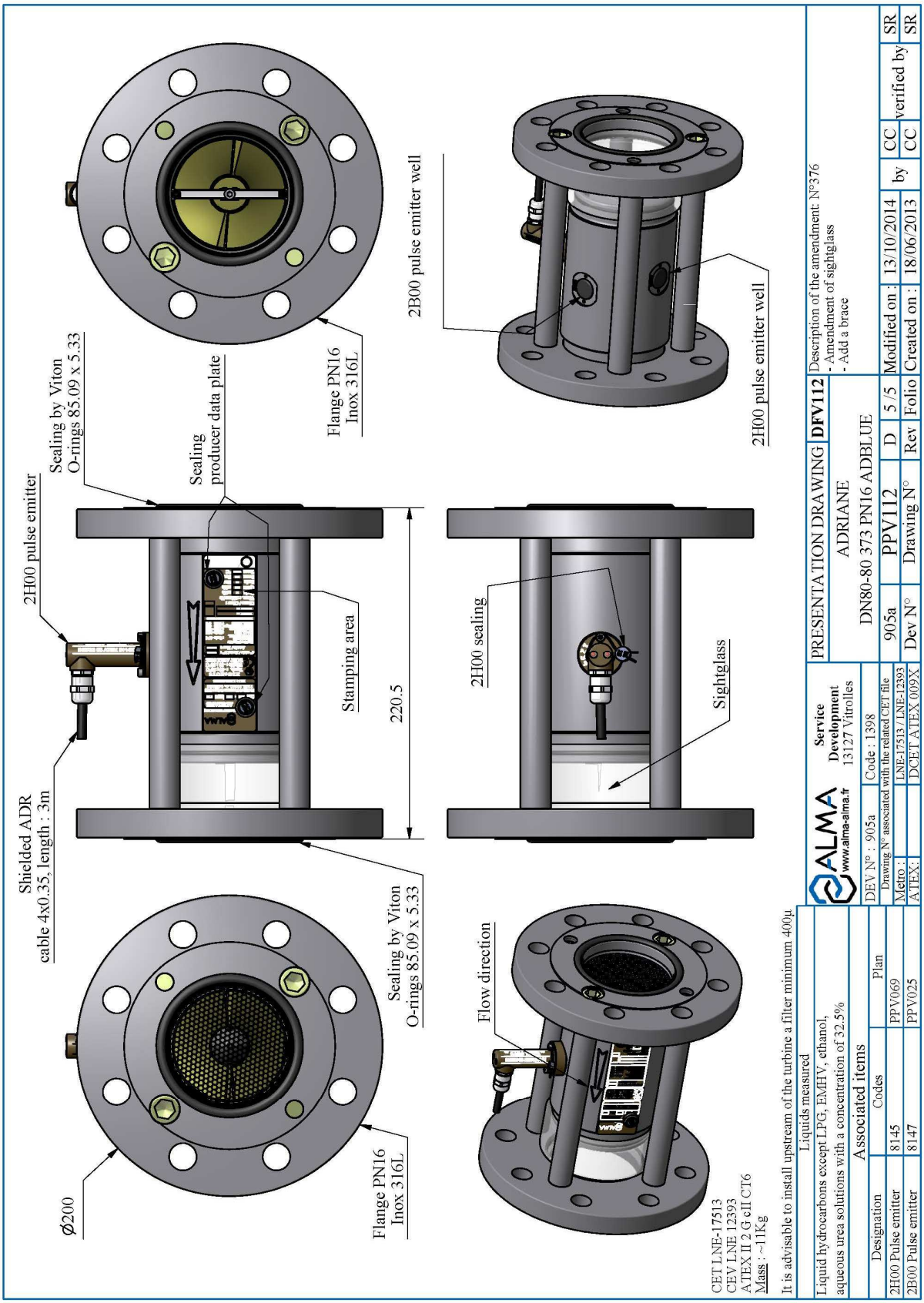
Adriane DN80-80 241 110x110
One-piece light alloy version

906 | PPV021 | U | 5 /5

Rev	Folio	Description of the amendment N°308:	by	CC	verified by	SR
Dev N°	Drawing N°	Updating the date of CET				
		-Modified fasteners axle holder				
		-New axle holder				
		-Add a 2H00 pulse emitter well				
		Modified on : 30/08/2012	SR			BM
		Created on : 03/08/1999				

Document available on website alma-alma.fr

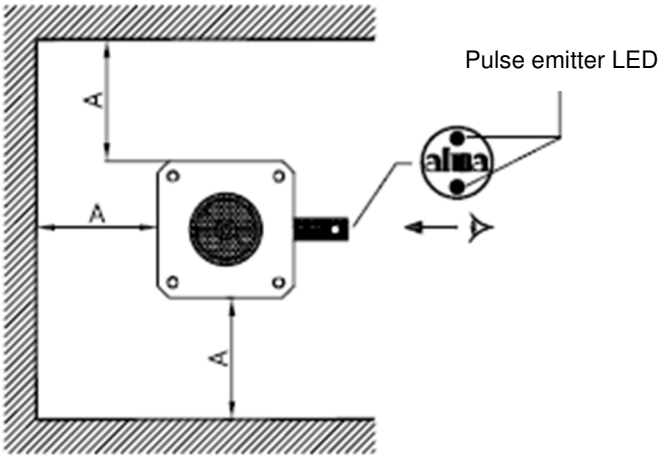
11. TURBINE METER ADRIANE DN80-80 373 PN16 ADBLUE



Document available on website alma-alma.fr

12. INSTALLATION RECOMMENDATIONS ADRIANE TURBINE METER

- The identification plate and the led of the pulse emitter(s) shall be visible and accessible.



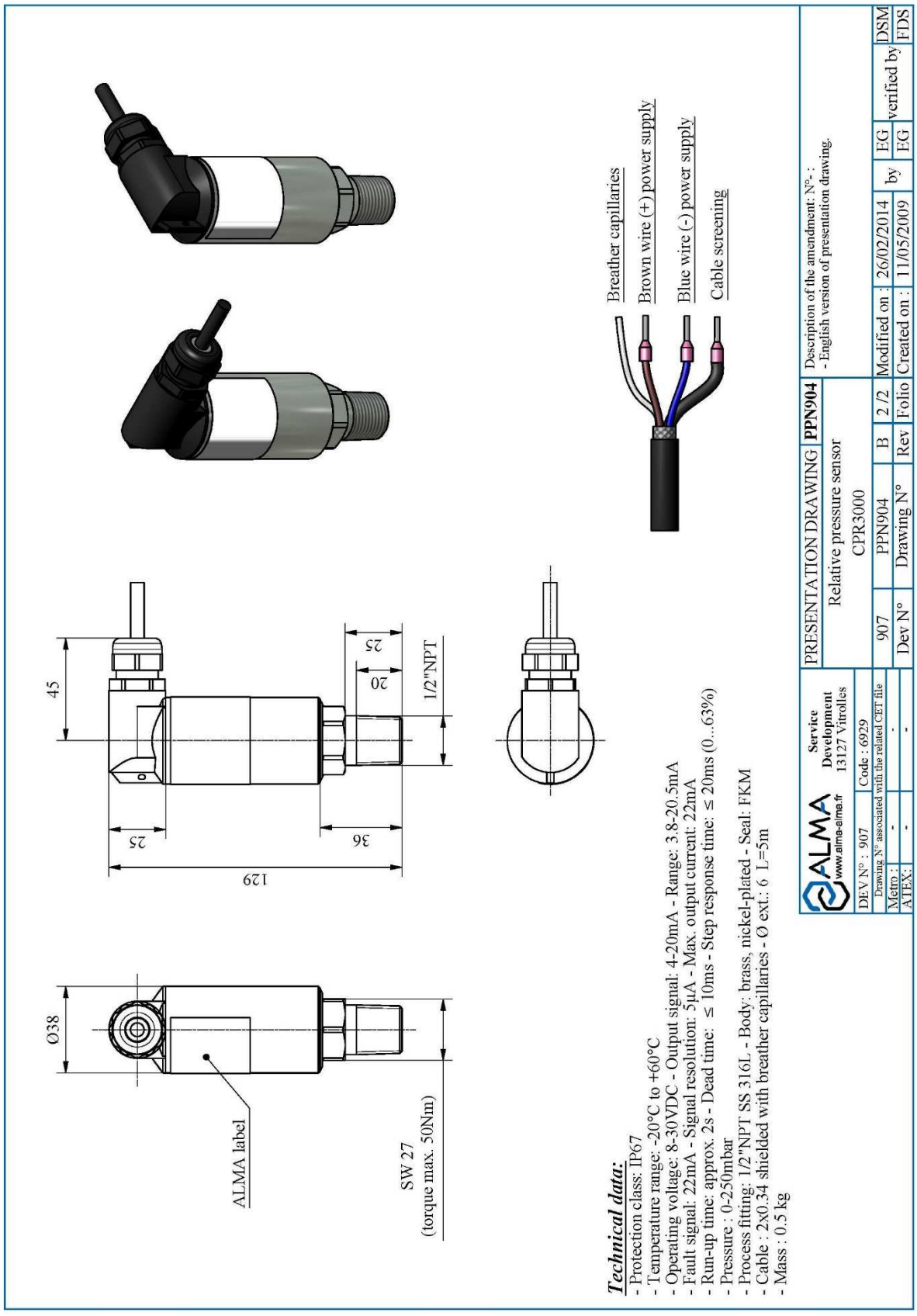
- The turbine must be installed with respect to the flow direction.
- Put sealing rings each other sides between the turbine and the backflanges.
- Leave an open space all around the turbine in order to ease maintenance.
- Install a 400µ filter (mini) on the pipe upstream from the turbine meter.
- After installation or during the commissioning period, if the new or modified pipes have not been perfectly cleaned or pickled and passivated, the turbine should be protected by a honeycomb sieve – max. 1mm mesh. It must be placed between two flanges upstream from the turbine.
- Dimensions: A > 100mm.

The meter may be installed:

- Between two straight pipe sections that have the same nominal diameter as the meter and which lengths is at least equal to 10 times this diameter upstream and 5 time downstream.
- Between two pipes that have the same nominal diameter as the meter, with shorter or no straight sections, provided that no flowrate adjustment device (eg. a variable-opening valve) is located upstream at a distance less than 10 times the nominal diameter.

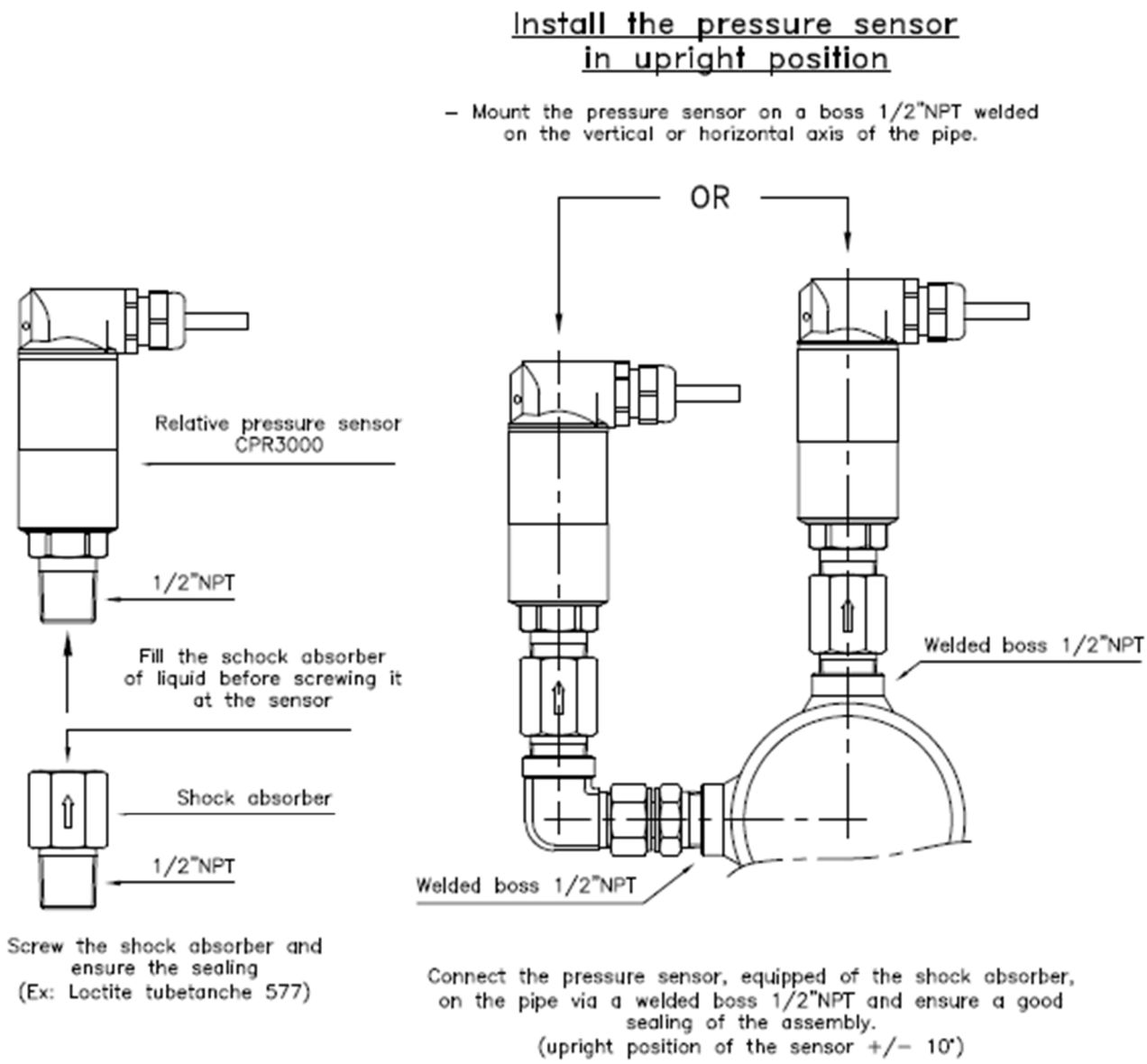
Provision contained in EC Type Examination or Evaluation Certificate.

13. RELATIVE PRESSURE TRANSMITTER CPR3000 (NON ATEX)



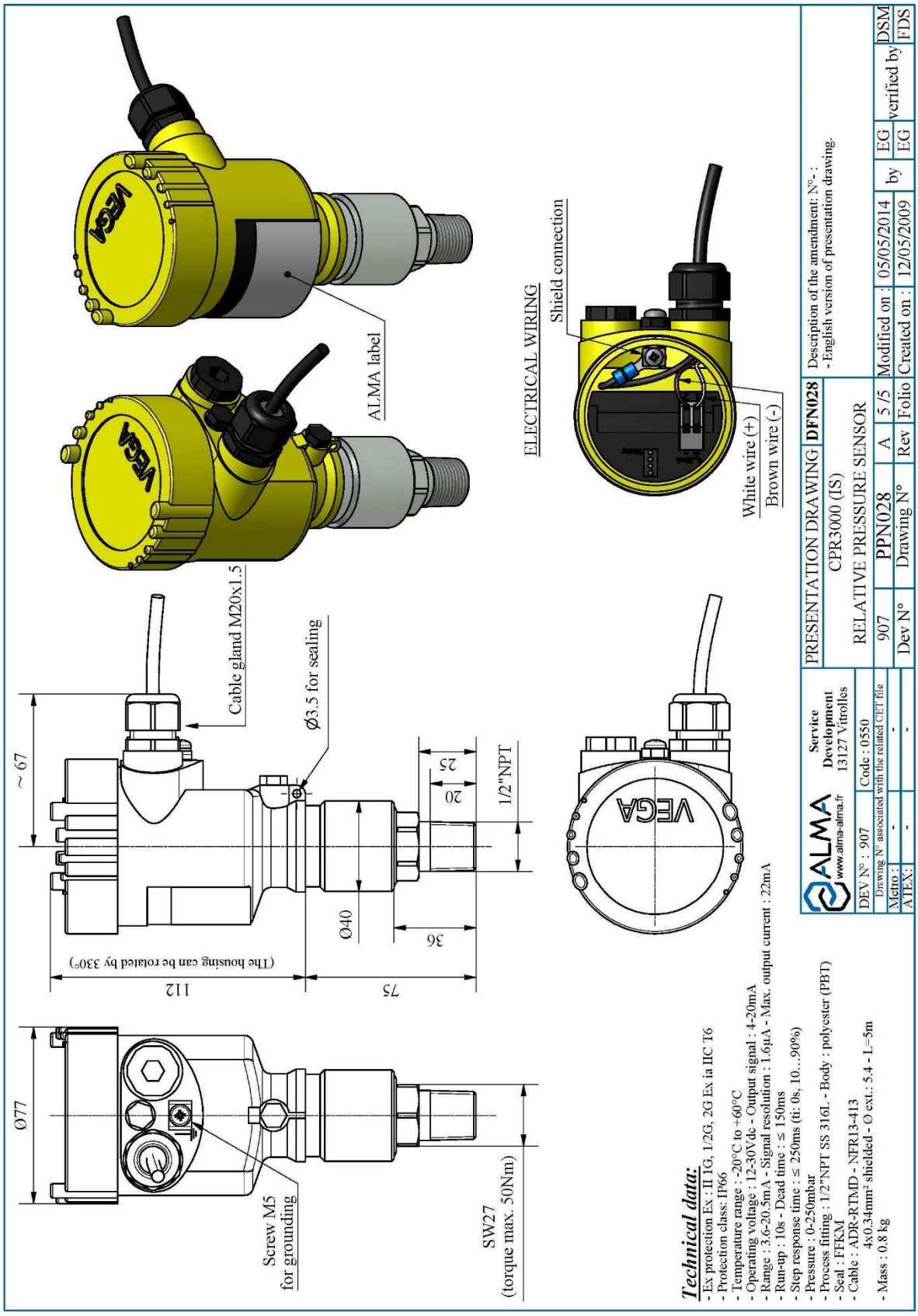
Document available on website alma-alma.fr

14. INSTALLATION RECOMMENDATIONS CPR3000 (NON ATEX)



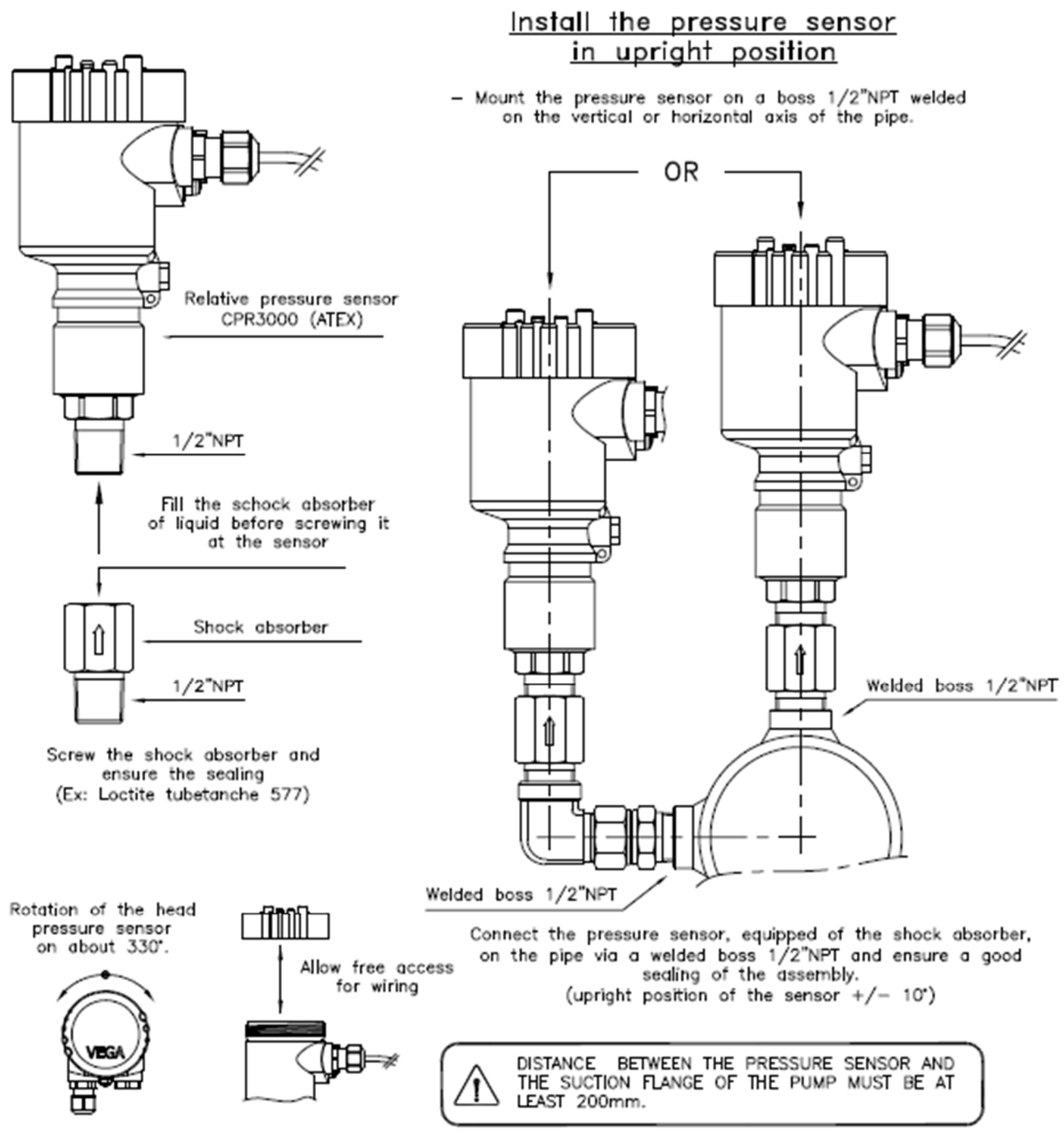
DISTANCE BETWEEN THE PRESSURE SENSOR AND THE SUCTION FLANGE OF THE PUMP MUST BE AT LEAST 200mm.

15. RELATIVE PRESSURE TRANSMITTER CPR3000 (ATEX)



Document available on website alma-alma.fr

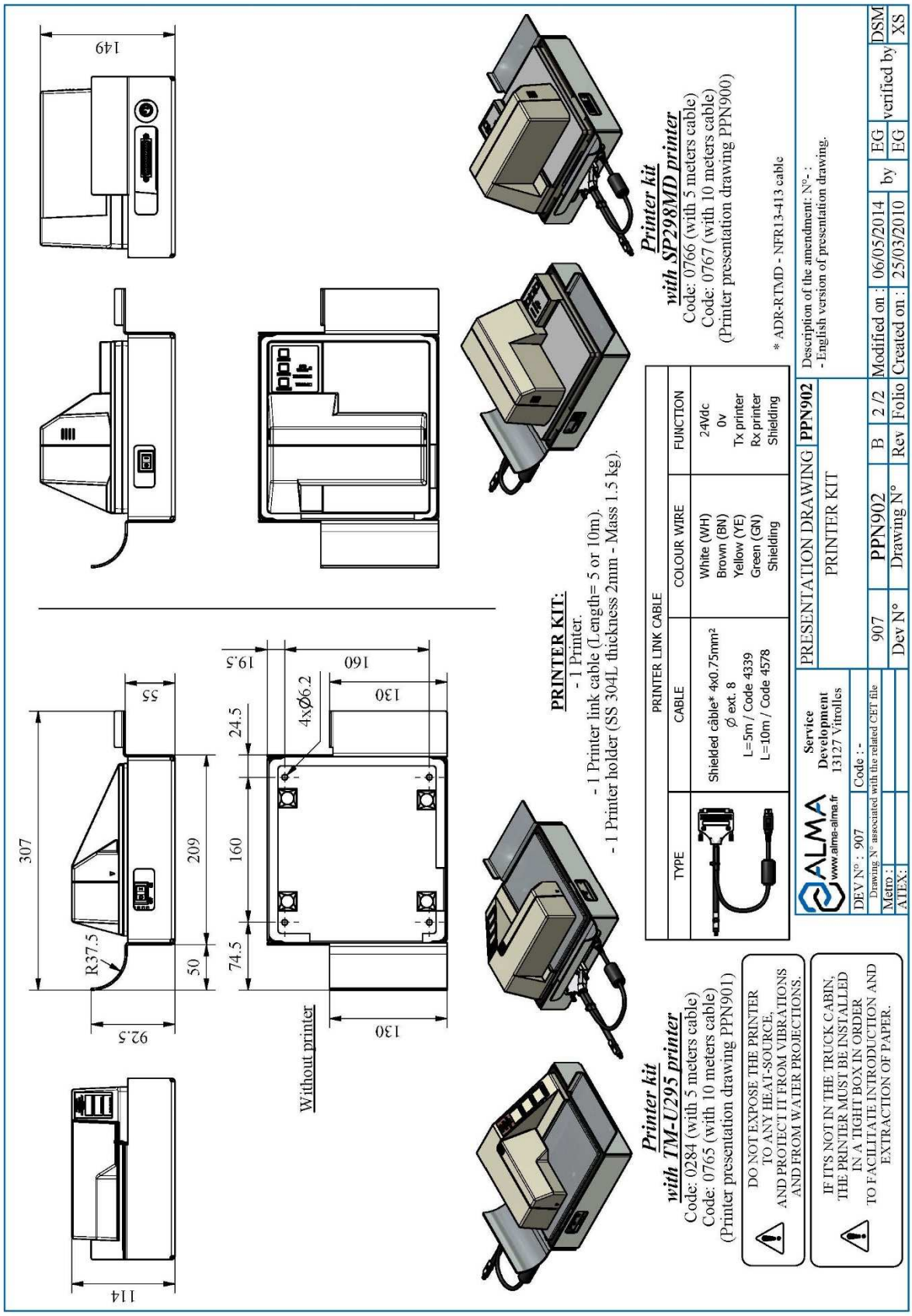
16. INSTALLATION RECOMMENDATIONS CPR3000 (ATEX)



REFER TO INSTRUCTION MANUAL

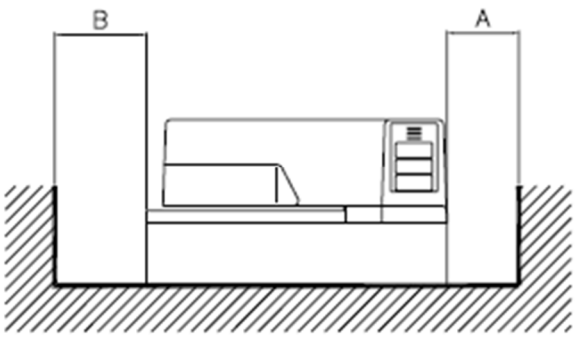
(DELIVERED WITH THE EQUIPMENT AND AVAILABLE ON ALMA WEBSITE)

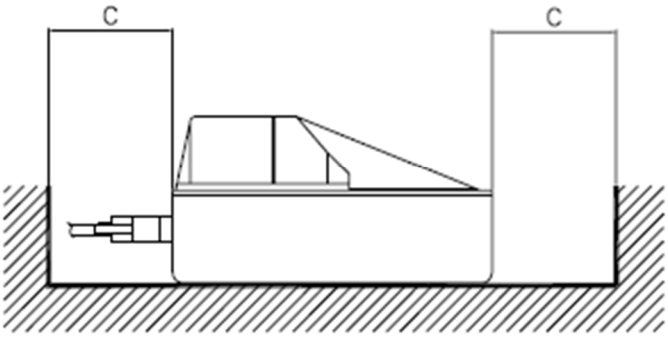
17. PRINTER

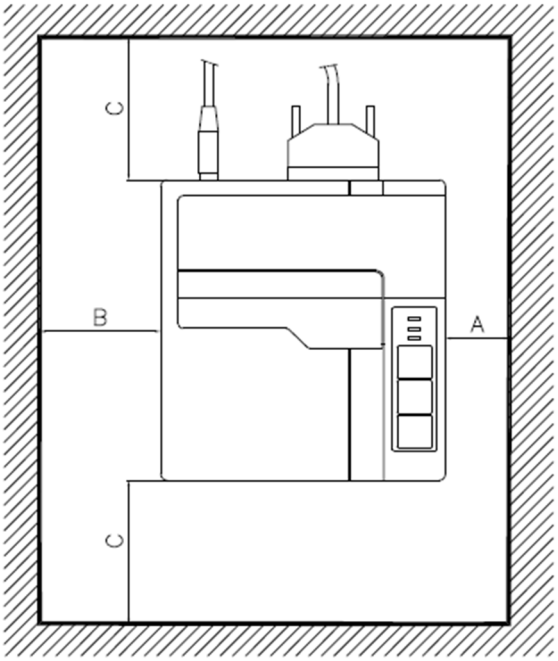


18. INSTALLATION RECOMMENDATIONS PRINTER

- Do not store anything above the printer.
- Leave an open space all around the printer to ease maintenance.
- Dimensions: A ≥ 50mm and B ≥ 100mm.





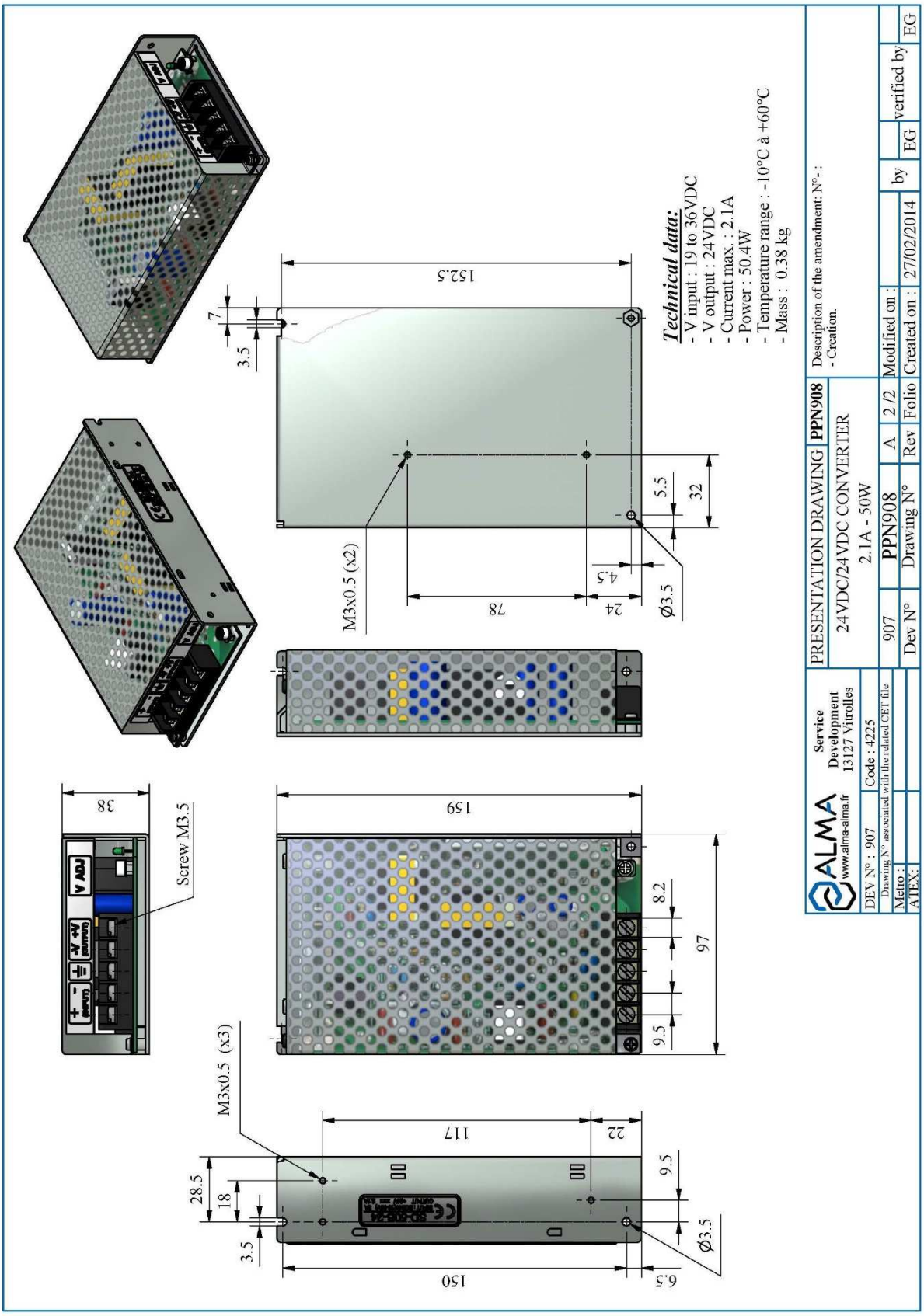


BOTTOM VIEW

The printer must be installed in a tight box and be laid out so as not to obstruct the introduction and the extraction of paper.

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

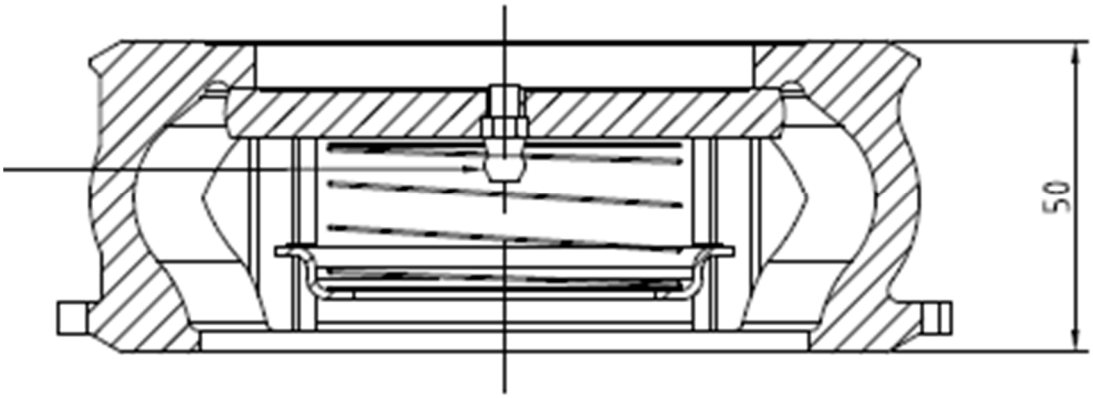
19. CONVERTER 24VDC/24VDC 2.1A 50W



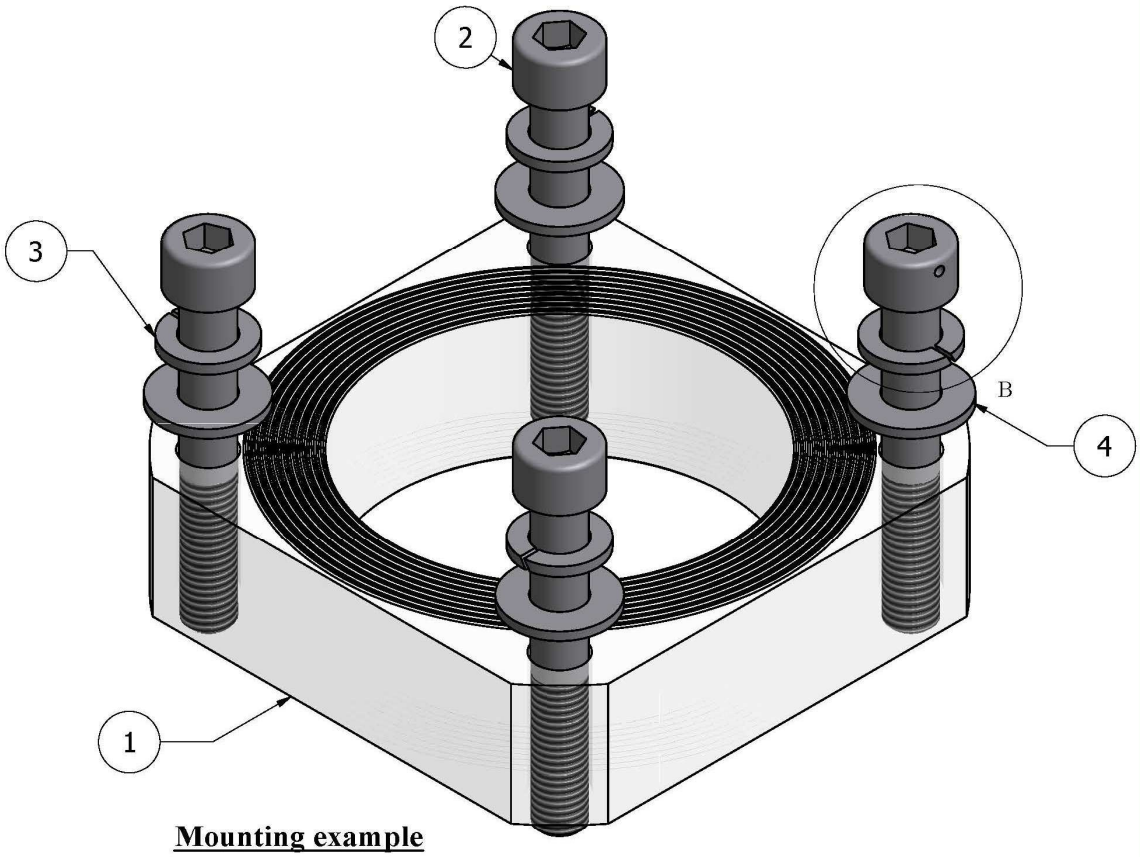
20. NON RETURN VALVE KIT DN80

OVERALL DIMENSIONS NON RETURN VALVE KIT DN80:

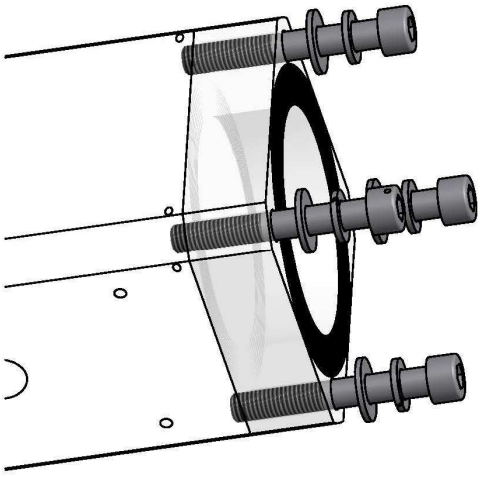
∅144



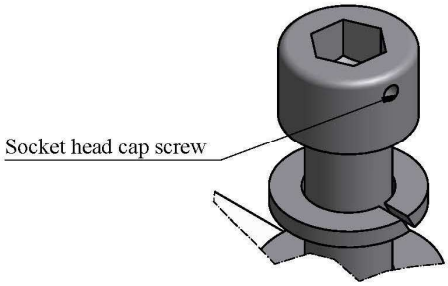
21. SIGHT GLASS DN80



Mounting example



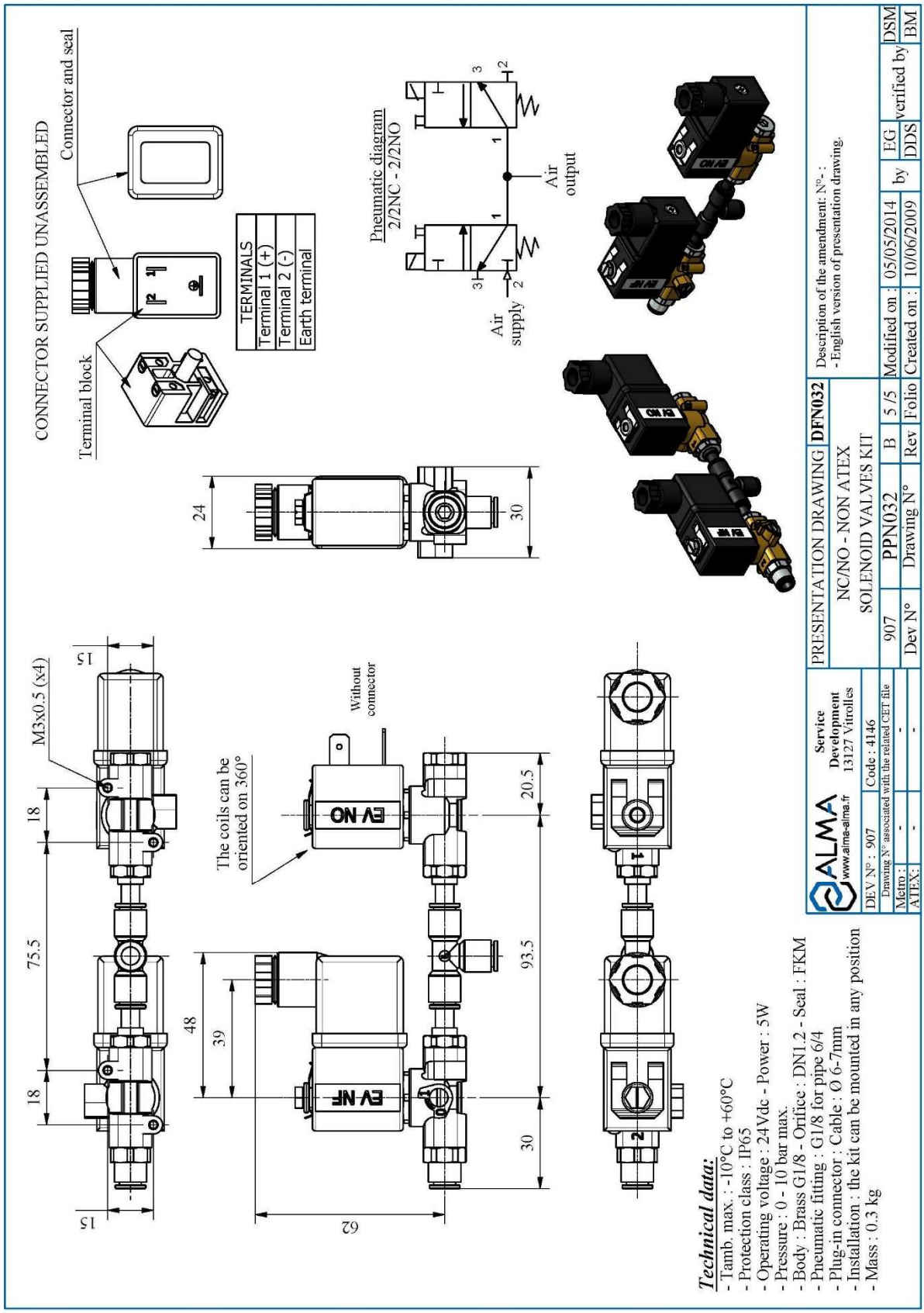
B (1.5 : 1)



Rep	Qty	Item description	Material	Reference	Rev.	Mdf	Code	Observation
1	1	Sightglass DN80 110X110	Moulded PMMA	A0533	B		0908	
2	1	CHC screw M10 x 70 (ISO 4762)	Stainless A4-70				8595	1 socket head cap screw
3	1	Washer W M10 (DIN 127)	Stainless A4-70				8474	
4	1	Washer M M10 (NFE 25-514)	Stainless A4-70				8430	

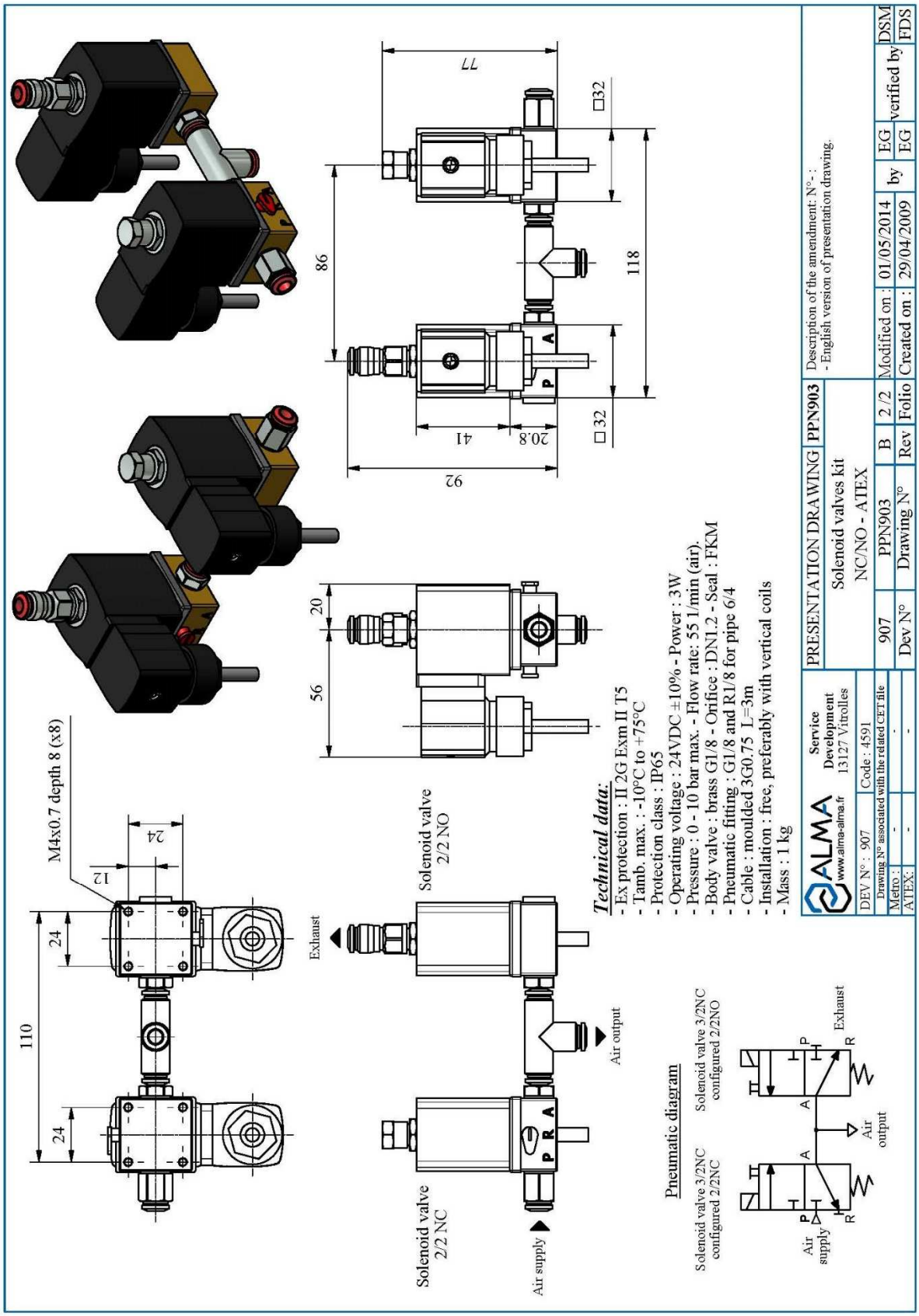
alma Service Developement 13127 Vitrolles Tel : 33 442 89 22 33		Sight kit 110 x 110 Adriane turbine meter DN80 24X				Description of amendment N°					
Mat:											
Tol : ± 0.2	Code : 1091										
Drawing N° associated with the related CET file		905	PV1674	A	2 /2	Modified on :		by		verified by	
Métro :		N° Dev	Drawing N°	Rev	Folio	Created on :	23/01/2014		CC		SR
ATEX:											

22. NC/NO SOLENOID VALVES KIT (NON ATEX)



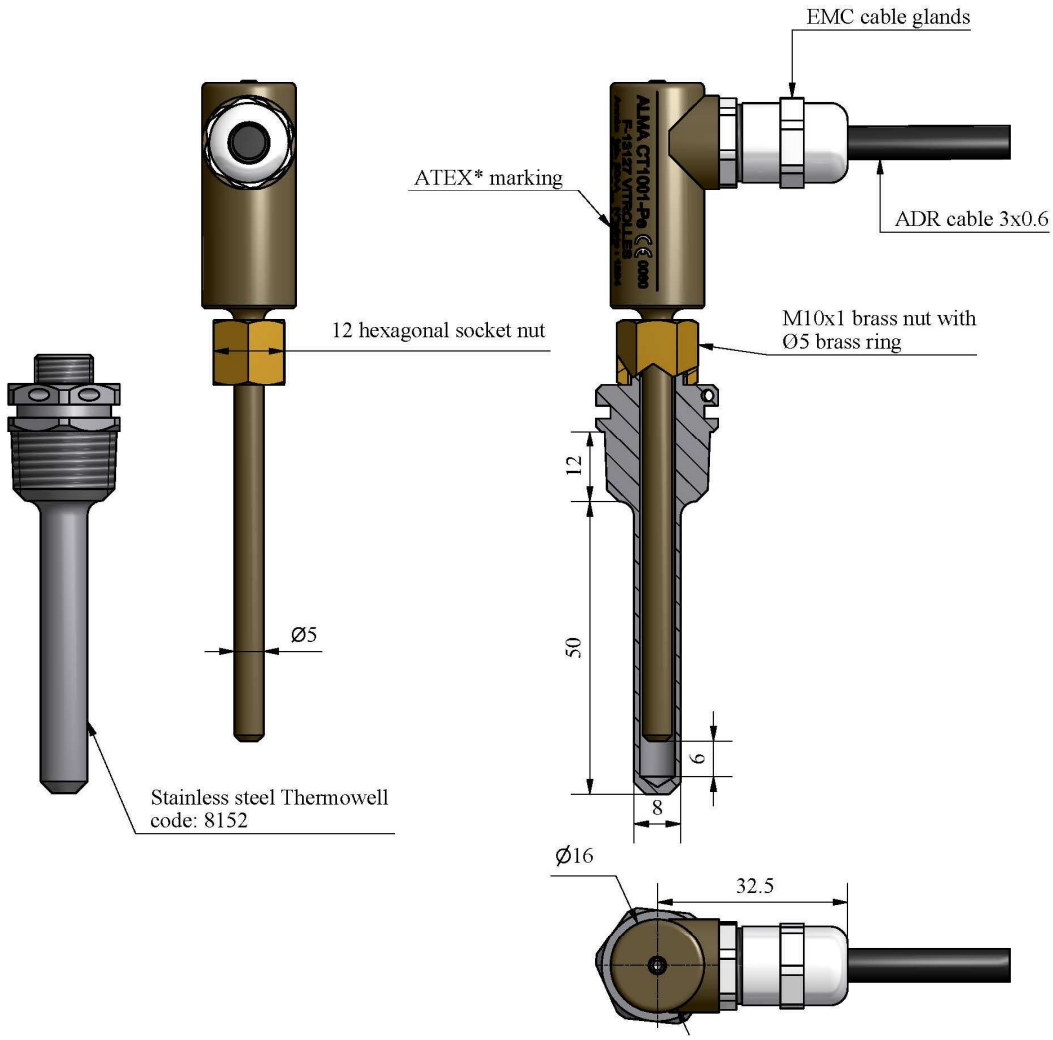
Document available on website alma-alma.fr

23. NC/NO SOLENOID VALVES KIT (ATEX)



Document available on website alma-alma.fr

24. PT100 TEMPERATURE SENSOR – CT1001



The sensor body is made of bronze color anodized aluminum alloy;
The ring and the nut are made of brass.
The probe can be be mounted either on a ALMA thermowell or on a thimble connection 1/4 "BSP (M10x1 n5).
Before installation, lubricate the parts in contact with the thermowell or the boss, to prevent corrosion

PT100 features:

- 3 wires
- 1/3 DIN

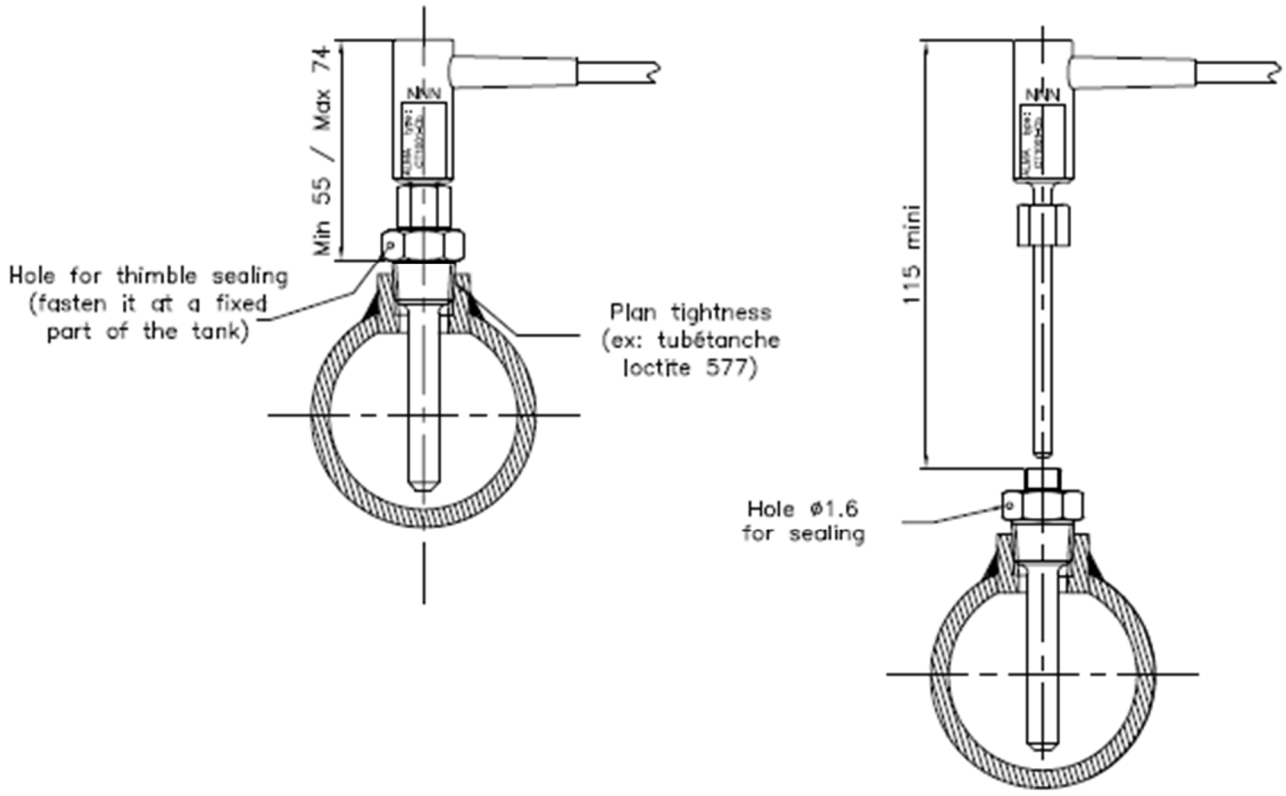
*ATEX "ia" and "ma" certification.
For installation and use in hazardous areas see Instruction manual

Also available with output connector according to IEC 60947-5-2

Connecting the cable		
Function	*Marking on the wire*	*Color wire*
PT100/1	1	Yellow
PT100/2	2	White
PT100/3	3	Green

ALMA www.alma-alma.fr Service Development 13127 Vitrolles	PRESENTATION DRAWING	DFV042			Description of the amendment N°312: Adding a strengthening part						
DEV N° : 949c Code : 8151	Temperature probe CT1001-Pe										
Drawing N° associated with the related CET file	949c	PPV042	I	5 /7	Modified on :	13/06/2013	by	CC	verified by	SR	
Metro :	Dev N°	Drawing N°	Rev	Folio	Created on :	13/09/2003		BM		BM	
ATEX: INERIS 04 ATEX 0026											

25. INSTALLATION RECOMMENDATIONS TEMPERATURE SENSOR

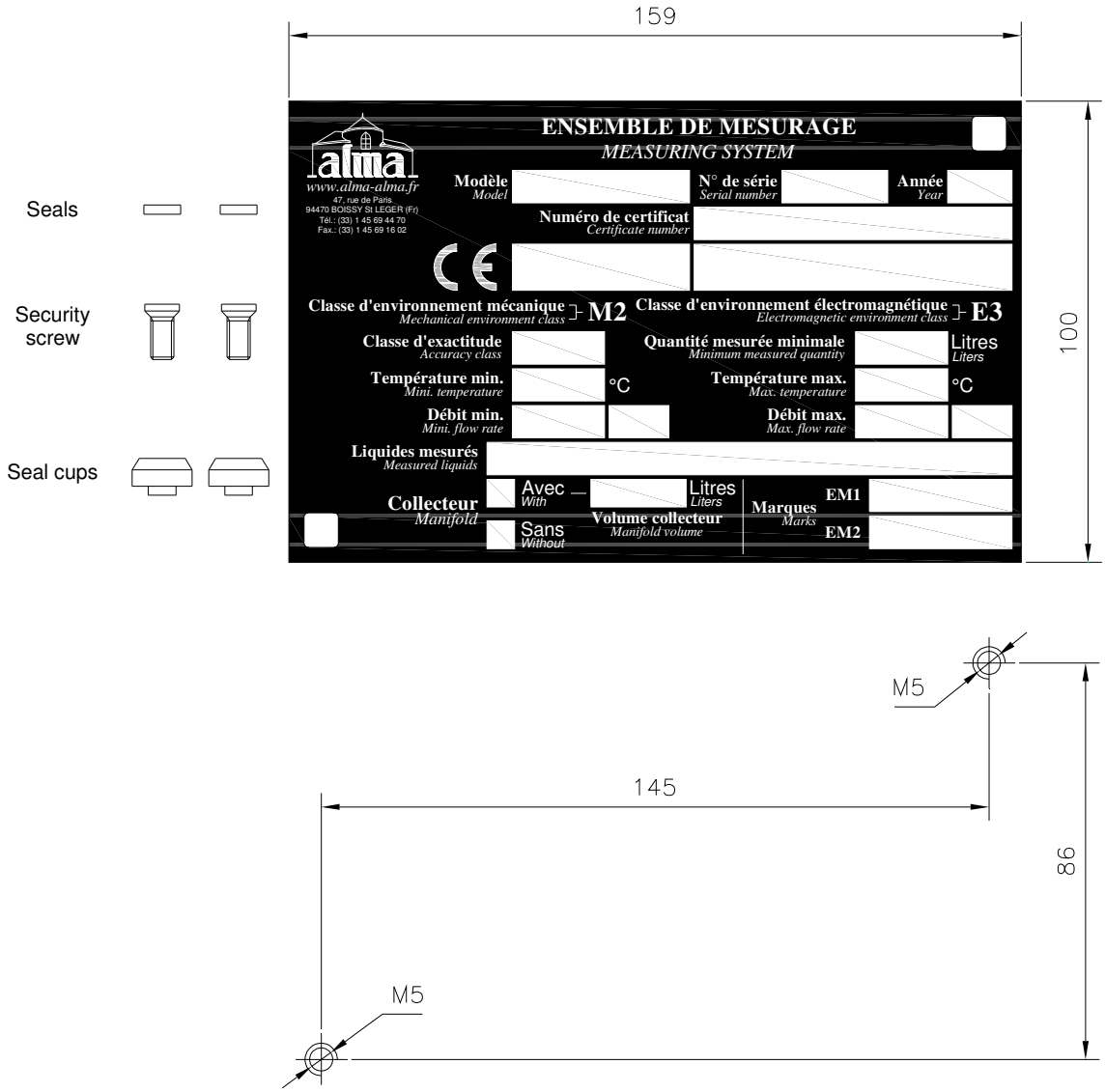


REFER TO INSTRUCTION MANUAL
(DELIVERED WITH THE EQUIPMENT AND AVAILABLE ON ALMA WEBSITE)

INSTALLATION OF THE TEMPERATURE SENSOR ON THE ALMA TURBINE METER:

26. 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).