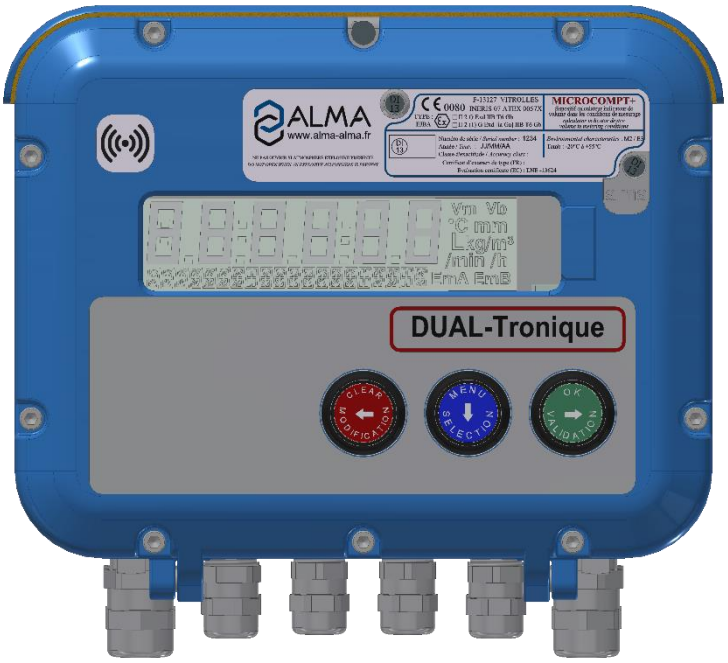
INSTALLATION GUIDE

DI 025 EN A

DUAL TRONIQUE

For applications other than Alma measuring systems



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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.

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).

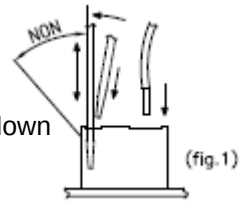
⇨ Connect the supply of the equipment downstream cut-out, on the power supply reserved to the measured distribution.

⇨ Put a delayed protection of 5A upstream the 24VDC supply to protect equipment 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. 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 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.

⇨ 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 (see the documentation delivered with the equipment).

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 color 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: No3 on 'ON' and the 7 others on 'OFF'.

⇨ Current of the electrical devices:

Electrical devices	Supply voltage	Minimum current	Maximum current
MICROCOMPT+	24VDC +/-10%	0.7 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
Blanc	**Bc**		**WH**	White	Bianco	Blanco	Weiβ
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				
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

The DUAL TRONIQUE is a system that can manage one or two measuring systems based on a single calculator-indicator MICROCOMPT+.

These measuring systems are fitted on a road tanker. The maximum number of compartments is 9 with a single measuring system and 6 with two measuring systems. They measures liquids other than water.

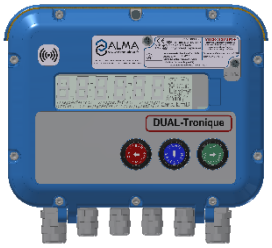
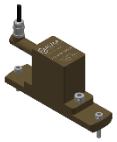
They are:

⇨ Certified type (see the relevant EC-type or EU-type examination certificate)

⇨ Of same model or of different models

They are called EMA and EMB within this document.

3. PART LIST

EQUIPMENT DELIVERED BY ALMA				
Item	**Matériel**	**Désignation**	**Qté**	**Option***
1		**CALCULATOR INDICATOR MICROCOMPT+ DUAL WITH Bluetooth CONNECTION**	1	
		Wi-Fi CONNECTION (As an alternative to Bluetooth)		•
		**RFID SUPERVISOR KEY**		
2		**2H00 KIT FOR SATAM PD-METER 24m³/h, 48m³/h**	1 or 2	
3		**Pt100 TEMPERATURE PROBE – CT1001-Pe ATEX** (Supplied with thermowell)	1 or 2	•

Non-contractual pictures

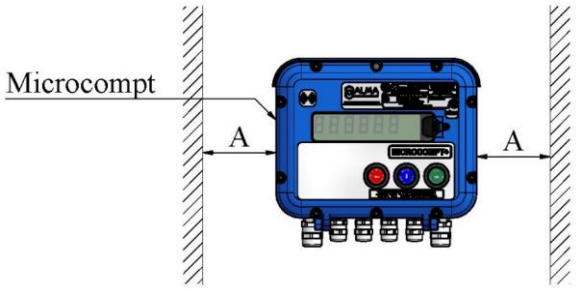
EQUIPMENT DELIVERED BY ALMA				
Item	**Equipment**	**Designation**	**Qty**	**Option***
4		**2-ANTENNA BOX GSM AND GPS**	**1**	●
5		**PRINTER TMU-295** (Printer – power supply cable – serial link cable 10m)	**1**	●
6		**CONVERTER 24VDC/24VDC 2.1A 50W** (Printer power supply 24VDC)	**1**	●
Option*: equipment sold as an option by ALMA, it must be installed on the measuring system if required by the certificate.				

4. MICROCOMPT+ DUAL

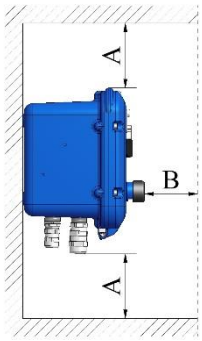
Document available on website alma-alma.fr

4.1. INSTALLATION RECOMMENDATIONS CALCULATOR-INDICATOR MICROCOMPT+

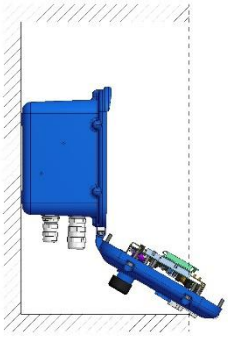
- Fasten the box with 4 M6 screws (holder suitable for vibrations and designed to support the MICROCOMPT). On the box: 4 M6 blind holes tapped length=12 over 185x132).
- Leave an open space around the box in order:
  - To facilitate maintenance operation.
  - To prevent any pressing on pushbuttons and 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.

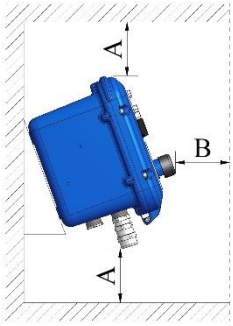


Left hand view
Closed box



Left hand view
open box

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

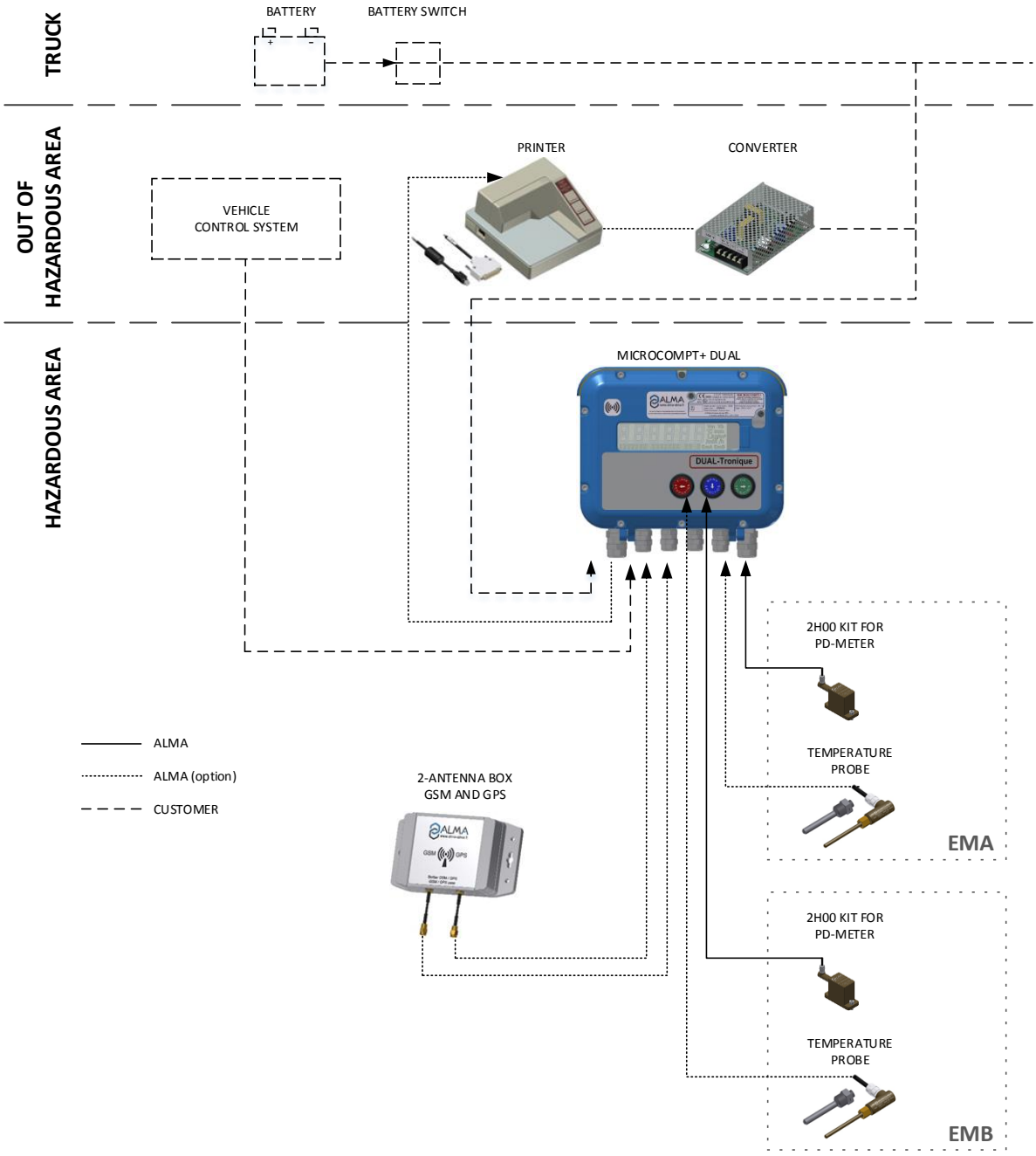


Left hand view
Closed box

Left hand view
open box

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

4.2. ELECTRICAL WIRING CALCULATOR-INDICATOR MICROCOMPT+

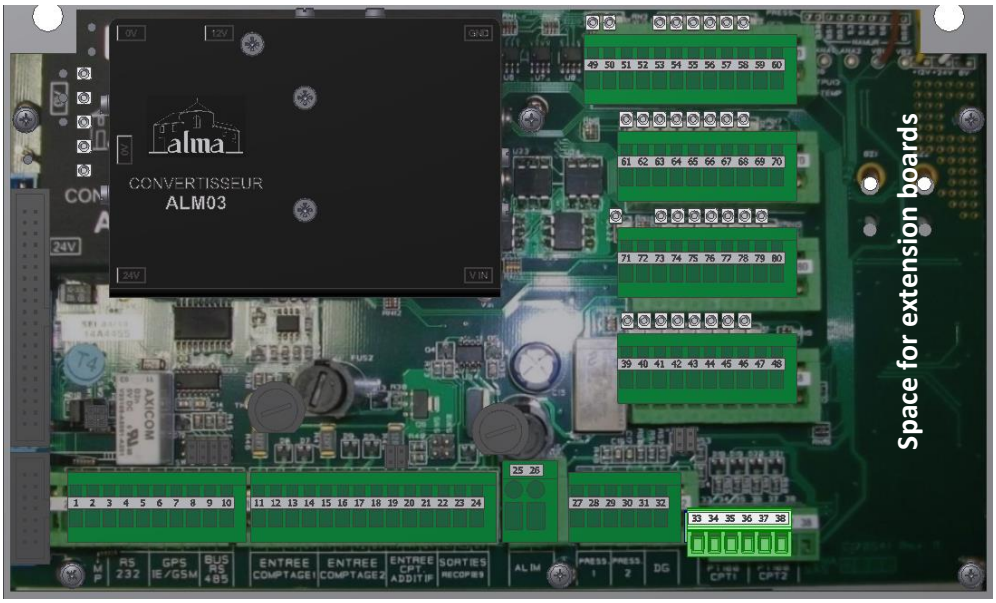


Terminal assignment of the power supply board

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

TERMINAL ASSIGNEMENT OF MICROCOMPT+ BOARDS

POWER SUPPLY BOARD



EQUIPMENT CONNECTED TO THE MICROCOMPT+								POWER SUPPLY BOARD			
Option	Equipment	Cable (for information)				Function	Colour or No.	Terminal	Function		Observation
		No.	CG*	Alma	Type						
•	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 ALMA or FTL Light Protocol
						Rx E.C.		4	Tx		
						Tx E.C.		5	Rx		
•	DSPGI DEVICE					Rx	Vt	6	Tx	DSPGI	Gauging system for product identification
						Tx	Bc	7	Rx		
						Ground	Nr	8	Ground		
	EMA METERING	C2	1/2"NPT	•	ADR 4x0.34 sh..	12V	Jn	11	12V	EMA Product metering input	Connect the shielding
						V1	Mr	12	V1		
						V2	Vt	13	V2		
						0V	Bc	14	0V		
	EMB METERING	C2	1/2"NPT	•	ADR 4x0.34 sh.	12V	Jn	15	12V	EMB Product metering input	Connect the shielding
						V1	Mr	16	V1		
						V2	Vt	17	V2		
						0V	Bc	18	0V		
•	ADDITIVE METERING or INJECTOR FEEDBACK CONTROL							19	12V	Additive metering input or Injector feedback ctrl	
								20	V1		
								21	0V		
•	PULSES OUTPUT		1/2"NPT			PO EMA		22	PO EMA	Pulses output	Control system / Display Put SW9 and SW10 to have a 0-24V signal
						PO EMB		23	PO EMB		
						0V		24	0V		

**Refer to the Cable Glands Installation Instructions*

EQUIPMENTS CONNECTED TO THE MICROCOMPT+								POWER SUPPLY BOARD			
Option	Equipement	Cable (for information)				Function	Colour or No.	Terminal	Function		Observation
		No.	CG*	Alma	Type						
	SUPPLY 24VCC	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		
•	EMA Pt100 TEMPERATURE PROBE	C4	1/2"NPT	•	ADR 3x0.6 sh	+	Jn	33	+	EMA Pt100	Connect the shielding
						-	Bc	34	-		
						-	Vt	35	-		
•	EMB Pt100 TEMPERATURE PROBE	C4	1/2"NPT	•	ADR 3x0.6 sh	+	Jn	36	+	EMB Pt100	Connect the shielding
						-	Bc	37	-		
						-	Vt	38	-		
	MANIFOLD FLAP CONTROL OR PRODUCT RETURN AND/OR INJECTOR 2				4 to 7x1	Flap 1	1	39	24VDC = opened flap	EV Flaps	Maximum number of compartments: 9 with a single measuring system 6 with two measuring systems Depending on configuration: direct connection or via plexmi electronic board. Refer to the assignment table and the connection table of the relevant plexmi board
						Flap 2	2	40			
						Flap 3	3	41			
							4	42			
							5	43			
							6	44			
							7	45			
	REMOTE CONTROL 1 or INTERMEDIATE STOP				1x1			49			
	REMOTE CONTROL 2 or FINAL STOP				1x1			50			
	DISTRIBUTION WAY: EMA/EMB and PUMPED COUNTED / NOT COUNTED				3x1	EMA/EMB	1	51	0V	Manual valve on EMA or EMB	Open circuit=selection EMB Closed circuit=selection EMA
						PC/PNC	2	52	0V	Pumped counted/ no counted	Closed circuit=product counted
						0V	3	59	0V	0V (GND)	
	ADDITIVE 1 LEVEL CONTROL				1x1	Ctrl ADD1		53		Additive 1 low level ctrl	
	ADDITIVE 2 LEVEL CONTROL				1x1	Ctrl ADD2		54		Additive 2 low level ctrl	
	OVERFILL PROBE CONTROL				1x1	Ctrl AD		55		Overfill probe crtl	
	INJECTOR 2 FEEDBACK CONTROL				1x1	Ctrl INJ2		56		Injector 2 feedback ctrl	
	CUSTOMER TANK OVERFILL PROBE CONTROL				1x1	Ctrl AD customer		57		Customer overfill probe crtl	
	PTO CONTROL				1x1	Ctrl PTO		58		PTO Control	Power-take-off engaged (EMA or EMB or EMA+EMB)
	FOOTVALVE CONTROL				1x1	Footvalve		64	24VDC= cde	Footvalve	EMA or EMA+EMB according to configuration 24VDC=opening (Outputs FET Field Effect Transistor 24V 5W max.)
	PRODUCT RETURN CONTROL				3 to 6x1	PR1	1	65	24VDC= author.	Return_1	Depending on configuration: direct connection (Outputs FET Field Effect Transistor 24V 5W max.) or via plexmi electronic board. Refer to the assignment table and connection table of the relevant plexmi board
						PR2	2	66		Return_2	
						PR3	3	67		Return_3	
						Drain		68		Drain ctrl	

**Refer to the Cable Glands Installation Instructions*

EQUIPMENT CONNECTED TO THE MICROCOMPT+								POWER SUPPLY BOARD			
Option	Equipement	Cable (for information)				Function	Colour or No.	Terminal	Function		Observation
		No.	CG*	Alma	Type						
	INJECTOR 1 CONTROL				2x1	Power	1	71	NO free contact	Injector 1	Closed contact=additivation
						Control	72	72			(Output: NO free potential relay)
						0V		70	0V	0V (GND)	
	LOW FLOW EMB / EXHAUST VALVE (NO) or EMA HOSE 2							63		EMB/LF control or EMA hose 2	(Outputs FET Field Effect Transistor 24V 5W max.)
	HIGH FLOW EMA / INPUT VALVE (NC)							74		EMA/HF control	(Outputs FET Field Effect Transistor 24V 5W max.)
	HIGH FLOW EMB / INPUT VALVE (NC) or EMA HOSE 1							75		EMB/HF control or EMA hose 1	(Outputs FET Field Effect Transistor 24V 5W max.)
	LOW FLOW EMA / EXHAUST VALVE (NO)							79		EMA/LF control	(Outputs FET Field Effect Transistor 24V 5W max.)
								80	0V	0V (GND)	
	COMMANDS FOR PUMP CONTROL SYSTEM				5x1	PTO	1	61	24VDC= pto	PTO EMA and/or EMB	(Outputs FET Field Effect Transistor 24V 5W max.)
						Stop Mot.	2	62	24VDC= stop	Stop motor	
						Acc. Mot.	3	73	24VDC= acc.	Motor acceleration	
						Clutching	4	76	24VDC= clutching	Clutching	
						Start Mot.	5	77	24VDC= start	Start motor	
	MANIFOLD VENT VALVE CONTROL				1x1	Vent valve		78	24VDC	Vent valve control	(Outputs FET Field Effect Transistor 24V 5W max.)

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

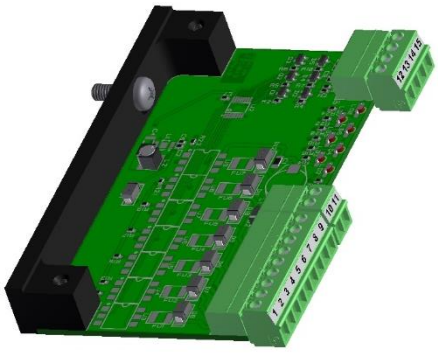
**Refer to the Cable Glands Installation Instructions*

Assignments table according to number of flaps, product returns and depending on the presence or not of a second additive injector:

				MICROCOMPT+ power supply board V1 REV11									
Nb of Flaps	Nb of Returns	Addit #1	Addit #2	45	44	43	42	41	40	39	67	66	65
5	0-4	yes	yes	addit#2	ret#4	flap#5	flap#4	flap#3	flap#2	flap#1	ret#3	ret#2	ret#1
5	5	yes	no	ret#5	ret#4	flap#5	flap#4	flap#3	flap#2	flap#1	ret#3	ret#2	ret#1
6	0-3	yes	yes	addit#2	flap#6	flap#5	flap#4	flap#3	flap#2	flap#1	ret#3	ret#2	ret#1
6	4	yes	no	ret#4	flap#6	flap#5	flap#4	flap#3	flap#2	flap#1	ret#3	ret#2	ret#1
6	5-7	yes	yes	addit#2	flap#6	flap#5	flap#4	flap#3	flap#2	flap#1	PLEXMI 1 (ret#1-ret#7)		
7	0-3	yes	no	flap#7	flap#6	flap#5	flap#4	flap#3	flap#2	flap#1	ret#3	ret#2	ret#1
7	4-7	yes	no	flap#7	flap#6	flap#5	flap#4	flap#3	flap#2	flap#1	PLEXMI 1 (ret#1-ret#7)		
8	0-6	yes	no	ret#6	ret#5	ret#4	flap#8	PLEXMI 1 (flap #1- flap#7)			ret#3	ret#2	ret#1
9	0-5	yes	no	ret#5	ret#4	flap#9	flap#8	PLEXMI 1 (flap#1- flap#7)			ret#3	ret#2	ret#1
9	6-9	yes	no	ret#9	ret#8	flap#9	flap#8	PLEXMI 1 (flap#1- flap#7)			PLEXMI 2 (ret#1-ret#7)		

If both PLEXMI electronic boards are useful, PLEXMI 1 is fixed to the MICROCOMPT+ frame and PLEXMI 2 (ret#1-ret#7) has to be installed in a 24VDC-supplied independent box.

Connection of plexmi electronic boards for manifold flaps and product returns



Multiplexing table:

MULTIPLEXING TABLE									
Input 1 (12)	Input 2 (13)	Input 3 (14)	Output 1 (1)	Output 2 (2)	Output 3 (3)	Output 4 (4)	Output 5 (5)	Output 6 (6)	Output 7 (7)
0	0	0	0	0	0	0	0	0	0
24V	0	0	**24V**	0	0	0	0	0	0
0	**24V**	0	0	**24V**	0	0	0	0	0
24V	**24V**	0	0	0	**24V**	0	0	0	0
0	0	**24V**	0	0	0	**24V**	0	0	0
24V	0	**24V**	0	0	0	0	**24V**	0	0
0	**24V**	**24V**	0	0	0	0	0	**24V**	0
24V	**24V**	**24V**	0	0	0	0	0	0	**24V**

PLEXMI board connection table for manifold flaps:

CONNECTED EQUIPMENT								PLEXMI ELECTRONIC BOARD							MICROCOMPT+			
								OUTPUTS				INPUTS			POWER SUPPLY BOARD			
Option	Equipment	Cable (for information)				Function	Colour or No	Termin.	Function		Observation	Observation	Function	Termin.	Termin.	Function		Observation
		No	CG*	Alma	Type													
●	MANIFOLD FLAP CONTROL				4 to 7x1	Flap#1	1	1	Outputs 24VDC (24VDC = opened flap)	Flap#1	500 mA max	Multiplexing** for flap#1 to flap#7	Input 1	12	39	Outputs 24VDC (24VDC = opened flap) outputs FET 24V 5W max	Flap#1 to Flap#7	
						Flap#2	2	2		Flap#2			Input 2	13	40			
						Flap#3	3	3		Flap#3			Input 3	14	41			
						Flap#4	4	4		Flap#4								
						Flap#5	5	5		Flap#5								
						Flap#6	6	6		Flap#6								
						Flap#7	7	7		Flap#7								
													SUPPLY	24VDC 10	S2	24VDC (white)	Supply via Microcompt+	
								8	0V	GND				0V 11	S4	0V (black)		
					1x1	0V		9	0V	GND			GND	0V 15	47	0V		

Refer to the Cable Glands installation instructions
*** Refer to the multiplexing table*

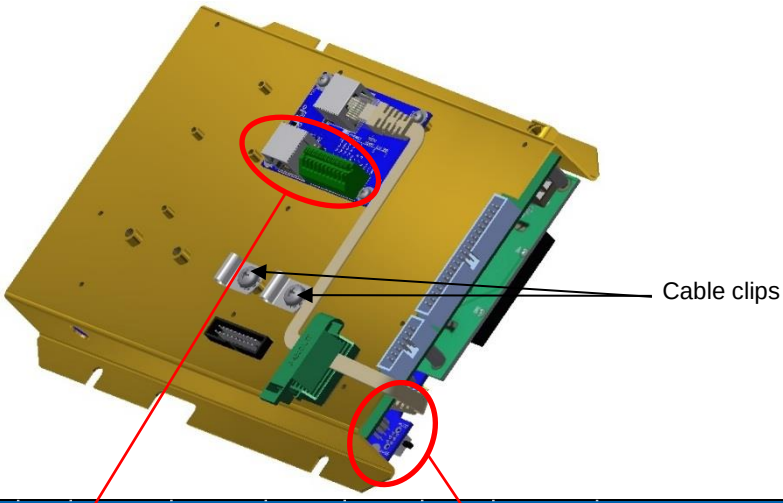
PLEXMI board connection table for product returns:

CONNECTED EQUIPMENT								PLEXMIELECTRONIC BOARD							MICROCOMPT+			
								OUTPUTS				INPUTS			POWER SUPPLY BOARD			
Option	Equipment	Cable (for information)				Function	Colour or No	Termin.	Function		Observation	Observation	Function	Termin.	Termin.	Function		Observation
		No	CG*	Alma	Type													
●	PRODUCT RETURN CONTROL				4 to 7x1	Return#1	1	1	Outputs 24VDC (24VDC = opened return)	Return#1	500 mA max	Multiplexing** from return#1 to return#7	Input 1	12	65	24VDC = authorisation	Product return compartment 1 to 7	Output FET 24V 5W max
						Return#2	2	2		Return#2			Input 2	13	66			
						Return#3	3	3		Return#3			Input 3	14	67			
						Return#4	4	4		Return#4								
						Return#5	5	5		Return#5								
						Return#6	6	6		Return#6								
						Return#7	7	7		Return#7								
													SUPPLY	24VDC 10	S2	24VDC (white)	Supply via Microcompt+	
								8	0V	GND				0V 11	S4	0V (black)		
					1x1	0V		9	0V	GND			GND	0V 15	47	0V		

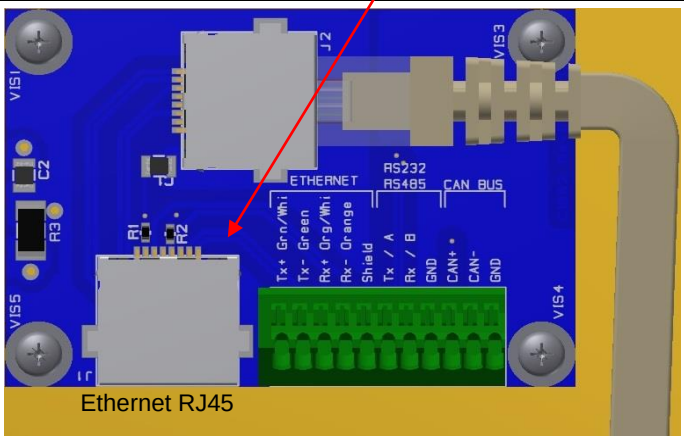
Refer to the Cable Glands installation instructions
*** Refer to the multiplexing table*

Connection of the network board – Ethernet, RS232/485, CANBus

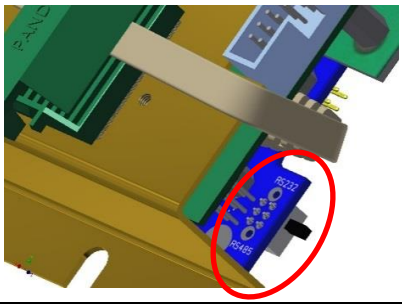
Connection to the Ethernet network:
- With the RJ45 connector according to the EIA/TIA-568 standard
- Or with the screw-terminal: see details in the table below.



NETWORK BOARD



RS232 or RS485 Switch

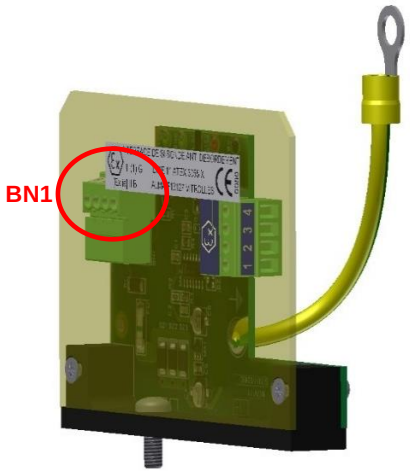


NETWORK CONNECTION TYPE								NETWORK BOARD			
Option	Connection	Cable (for information) No.	CG*	Alma	Type	Function	Coulor or No.	Coulor	Function		Observation
	ETHERNET NETWORK							**Vt/Bc**	Tx+	Ethernet	Or connection with RJ45 according to EIA/TIA-568
								Vt	Tx-		
								Or/Bc	Rx+		
								Or	Rx-		
									Sh		
	RS232 or RS485								Tx / A	RS232 or RS485	Depending on the switch configuration See above
									Rx / B		
									GND		
	CANBus NETWORK								CAN+	CANBus	
									CAN-		
									GND		

**Refer to the Cable Glands Installation Instructions*

Terminal assignment of the extension board “sonde AD” 5 wires (IS)

EXTENSION BOARD SONDE AD 5 wires (IS)

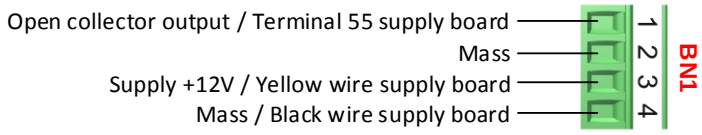


NT IN ATEX 510 C

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

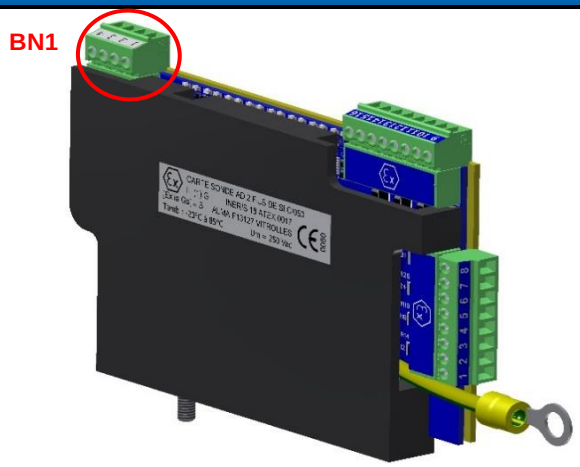
**Refer to the Cable Glands Installation Instructions*

Connection of the BN1-terminal to the MICROCOMPT+ power supply board (non-IS area):



Terminal assignment of the extension board “sonde AD” 2 wires (IS)

EXTENSION BOARD SONDE AD 2 wires (IS)



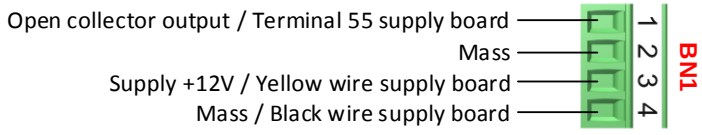
NT IN ATEX 15

EQUIPMENT CONNECTED TO THE MICROCOMPT+							EXTENSION BOARD SONDE AD (IS)				
Option	Equipment	Cable (for information) No.	CG*	Alma	Type	Function	Terminal	Function		Colour	Observation
•	OVERFILL PREVENTION PROBE 1					Supply	1	Supply +	SIGNAL PROBE 1	Mr	
						Common	2	Common		Bc	
•	OVERFILL PREVENTION PROBE 2					Supply	3	Supply +	SIGNAL PROBE 2	Rg	
						Common	4	Common		Bc	
•	OVERFILL PREVENTION PROBE 3					Supply	5	Supply +	SIGNAL PROBE 3	Or	
						Common	6	Common		Bc	
•	OVERFILL PREVENTION PROBE 4					Supply	7	Supply +	SIGNAL PROBE 4	Jn	
						Common	8	Common		Bc	
•	OVERFILL PREVENTION PROBE 5					Supply	9	Supply +	SIGNAL PROBE 5	Vt	
						Common	10	Common		Bc	
•	OVERFILL PREVENTION PROBE 6					Supply	11	Supply +	SIGNAL PROBE 6	Bl	
						Common	12	Common		Bc	
•	OVERFILL PREVENTION PROBE 7					Supply	13	Supply +	SIGNAL PROBE 7	Vi	
						Common	14	Common		Bc	
•	OVERFILL PREVENTION PROBE 8					Supply	15	Supply +	SIGNAL PROBE 8	Gr	
						Common	16	Common		Bc	

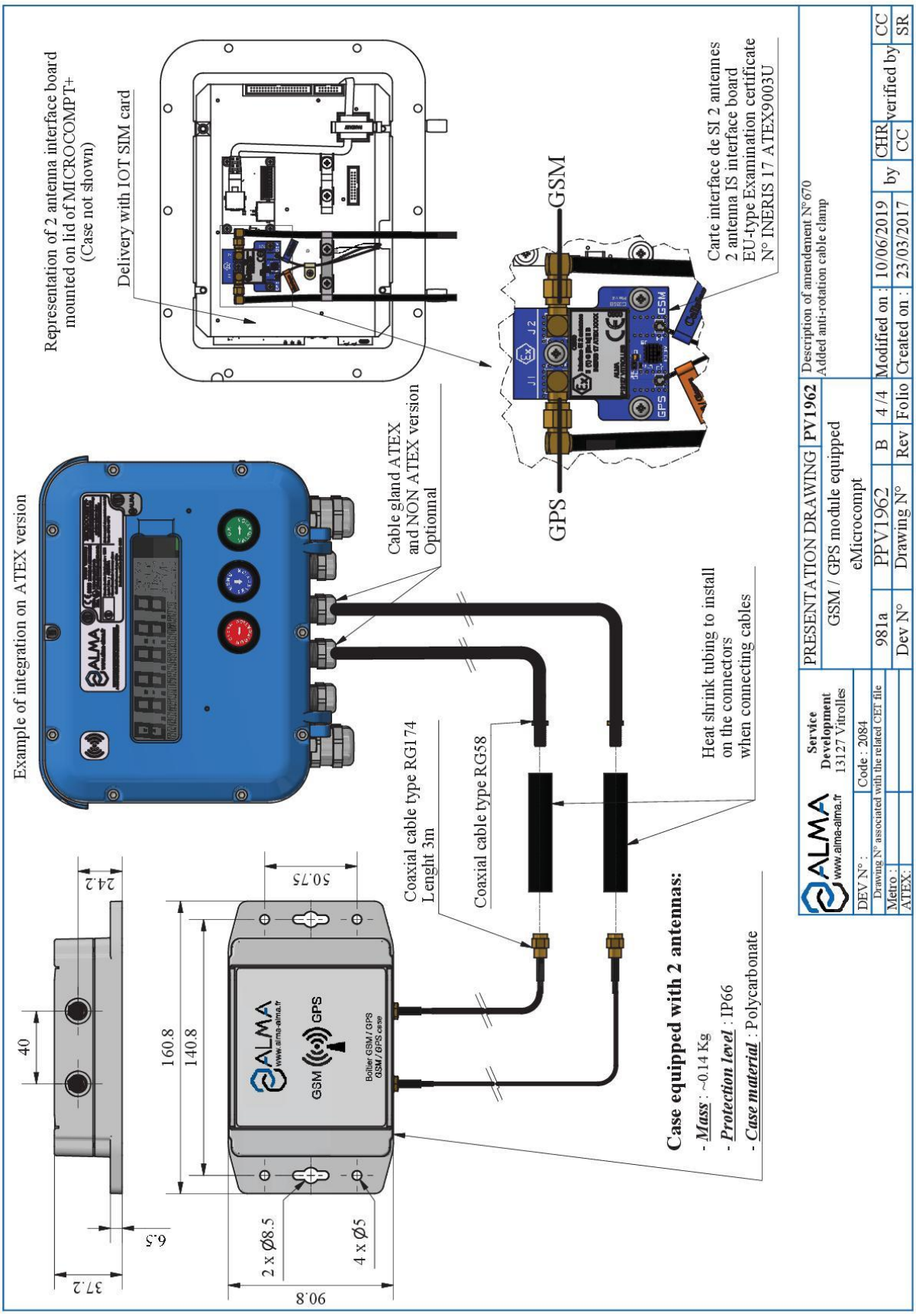
**Refer to the Cable Glands Installation Instructions*

- This extension board only works with two-wire optic overfill prevention probes.
- A Dummy device is a two-wire dry probe simulator. Channels that are not connected to overfill prevention probes must be connected to a Dummy device. None of the 8 channels must be open.
- Do not install the Dummy into the MICROCOMPT housing.
- If the MICROCOMPT is off, the probes and the Dummy device shall be electrically isolated.

Connection of the BN1-terminal to the MICROCOMPT+ power supply board (non-IS area):

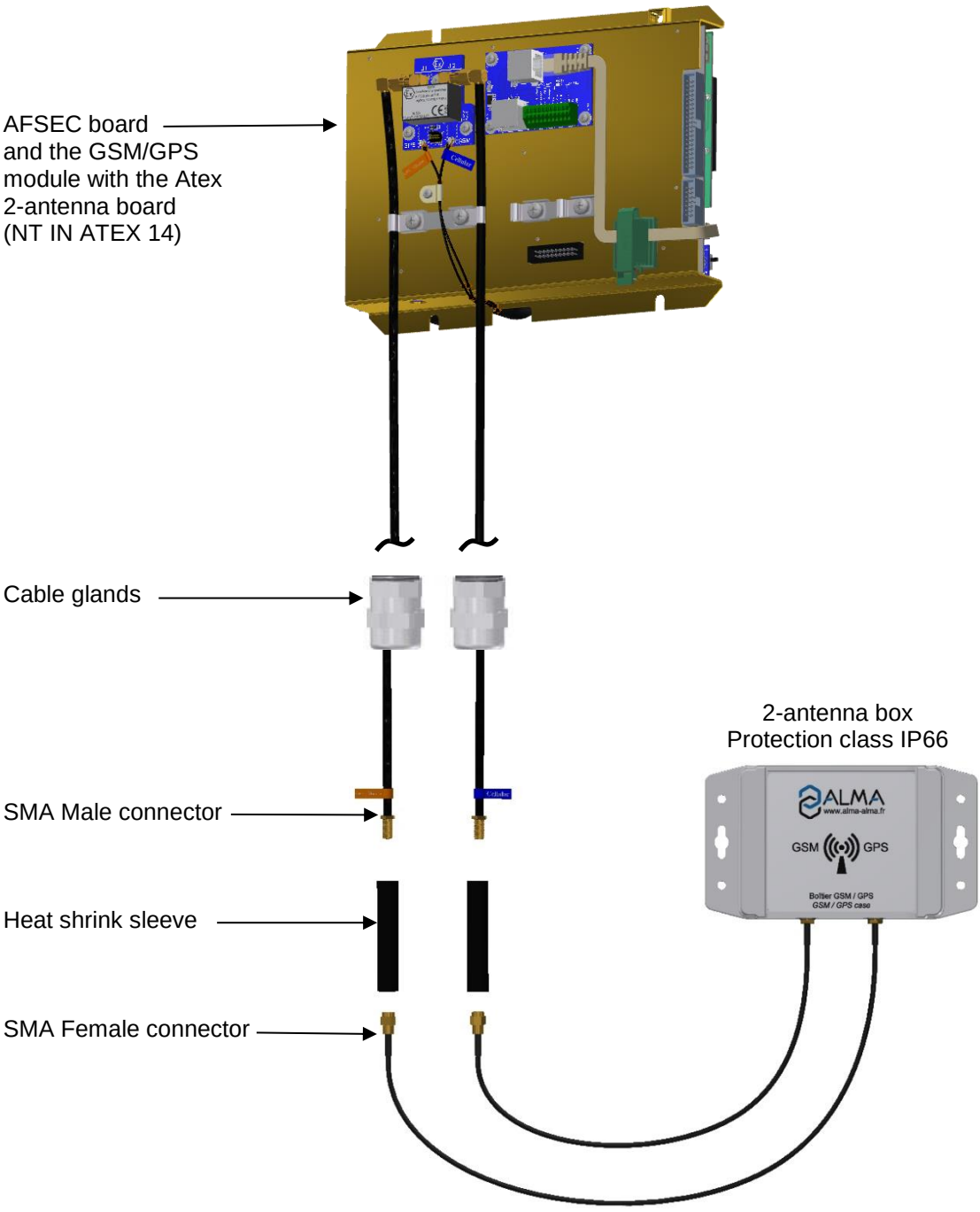


4.3. GSM/GPS MODULE EQUIPPED – 2-ANTENNA BOX



Document available on website alma-alma.fr

Mounting and wiring of the GSM and GPS antennas

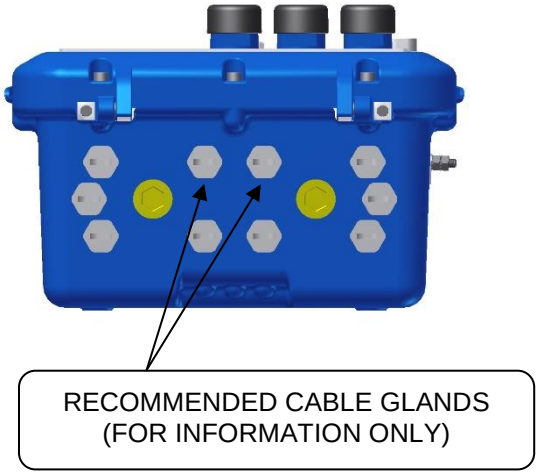


The 2-antenna board is supplied with a micro-SD card mounted as follows:

Mounting of the GSM/GPS cables into the cable glands

ALMA connects the GSM and GPS antenna to the MICROCOMPT+ (2-antenna board).

At the outlet of the MICROCOMPT+ box, you must pass both cables through cable glands. In case of an ATEX MICROCOMPT+, cable glands must be ATEX.



Into the MICROCOMPT+, adjust the cable length to easily open and close the cover. Make sure to prevent damage to the cable.

Tighten both cable glands.

Wiring of the 2-antenna box to the MICROCOMPT+

Fasten the box. You must install it in an area free of metallic cover to have a good reception and broadcasting of signal. You can install the box in a horizontal or vertical position.

Put each coaxial cable through the heat shrink sleeve.

Plug the RG58(1) cable from the MICROCOMPT+ with the RG174(2) cable from the antenna box and tighten them. Isolate the male/female SMA connectors with the supplied heat shrink sleeve (both antennas in the box are the same, cables don't have to be labelled).

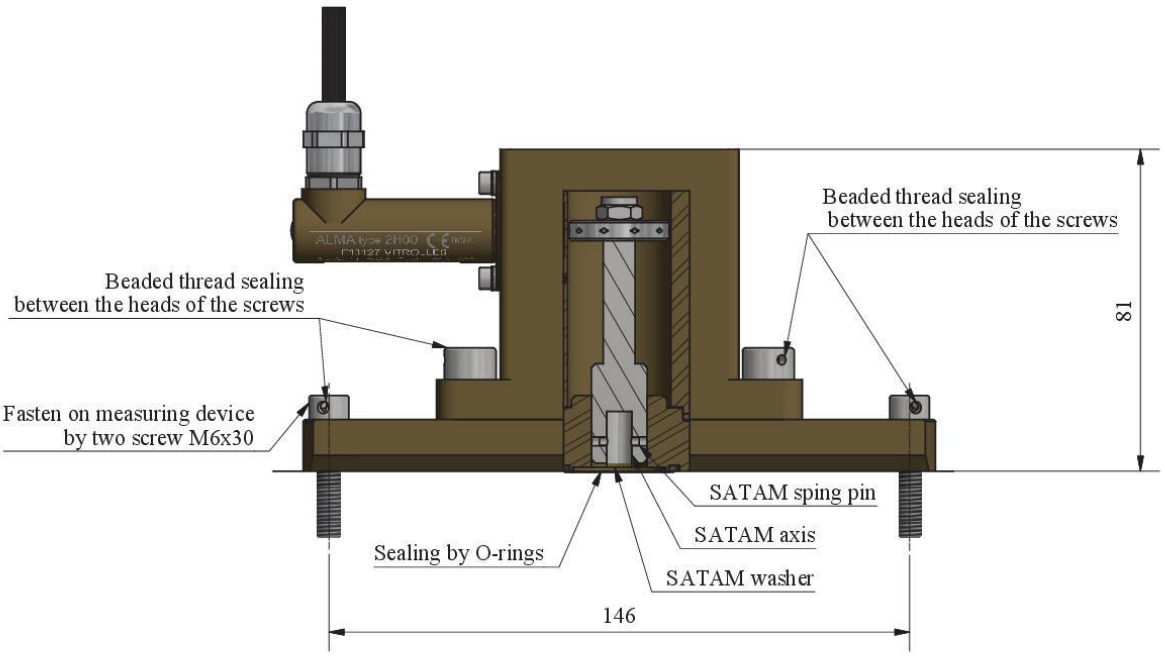
Position and heat up the sleeve on the connectors to prevent corrosion and humidity.

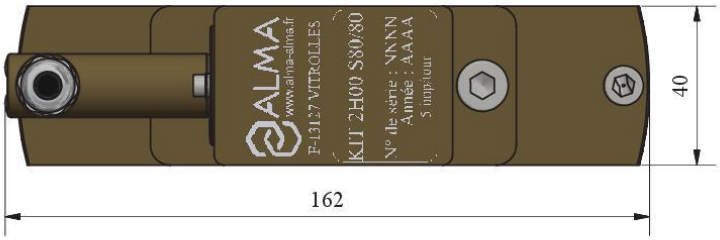
WARNING: The cables of this box can be **neither shortened nor extended**

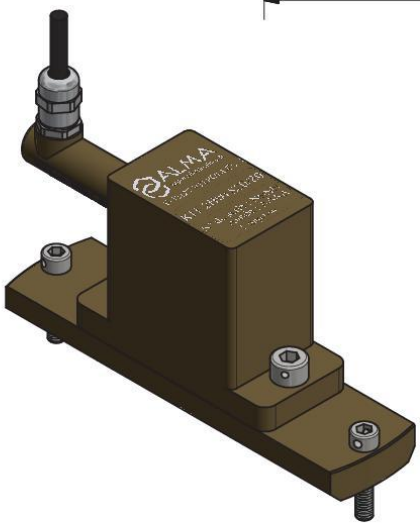
(1) RG58: Semi-rigid coaxial cable, 5mm diameter

(2) RG174: Flexible coaxial cable, 2.7mm diameter

5. 2H00 KIT FOR PD-METER 24m³/h, 48m³/h







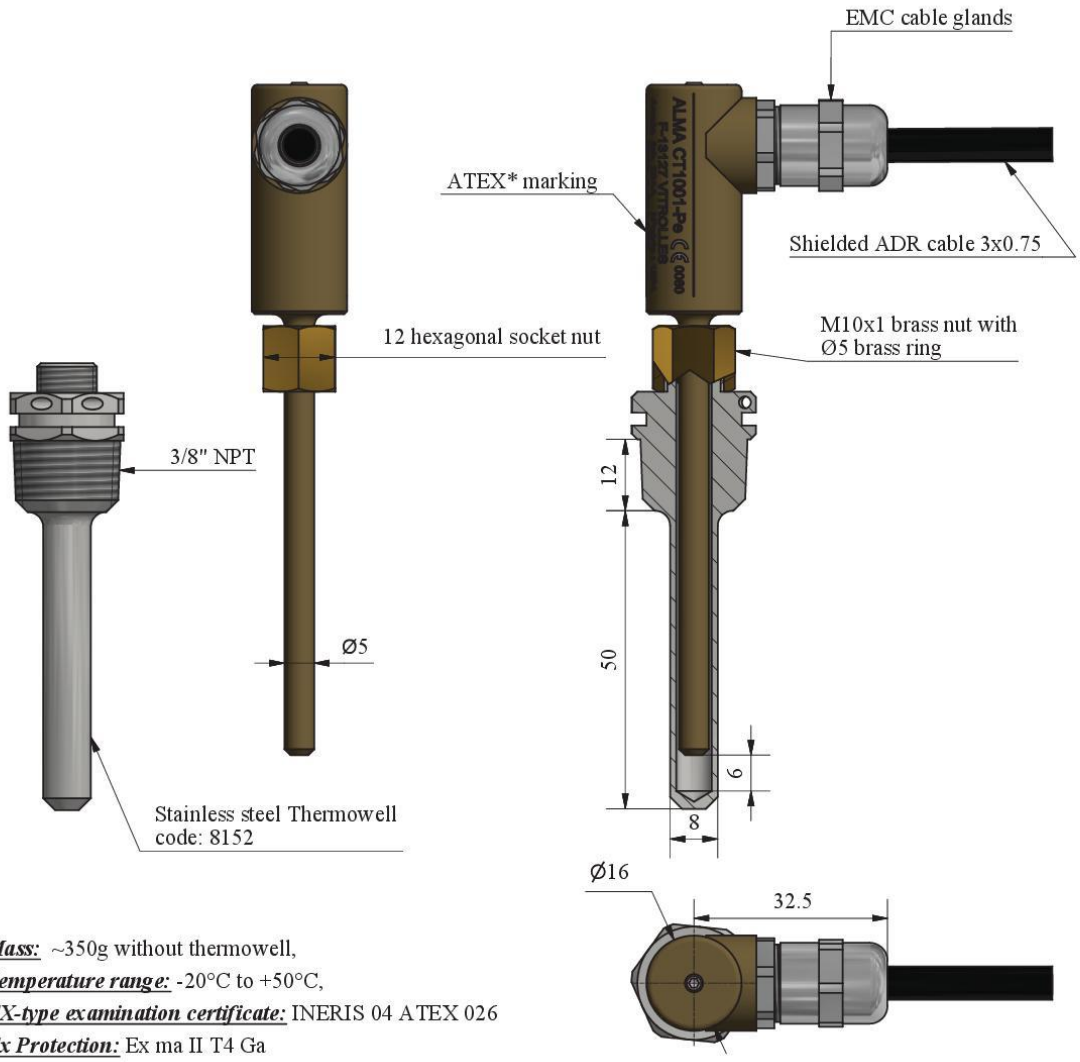
Mounting on SATAM ZC17-24 and 48 meters
The assembly uses the following SATAM parts:
- Axis : P358603 (D=6.35, L=36),
- Sping pin : M26241 (D=2, L=10),
- Washer : P359481 (D=23, d=7, Ep=1),

Anodized aluminum body
Stainless steel screws
Viton O-ring

5 pulses per rotation

ALMA www.alma-alma.fr Service Development 13127 Vitrolles		PRESENTATION DRAWING	DFV043			Description of amendment N°					
DEV N° : 904c	Code : 8064	2H00 For Volutronique									
Drawing N° associated with the related CET file		904c	PPV043	I	4 /4	Modified on :		by		verified by	
Metro :		Dev N°	Drawing N°	Rev	Folio	Created on :	07/01/2020		CC		SR
ATEX:											

6. TEMPERATURE PROBE Pt100 – CT1001 ATEX



- ***Mass:*** ~350g without thermowell,
- ***Temperature range:*** -20°C to +50°C,
- ***EX-type examination certificate:*** INERIS 04 ATEX 026
- ***Ex Protection:*** Ex ma II T4 Ga

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

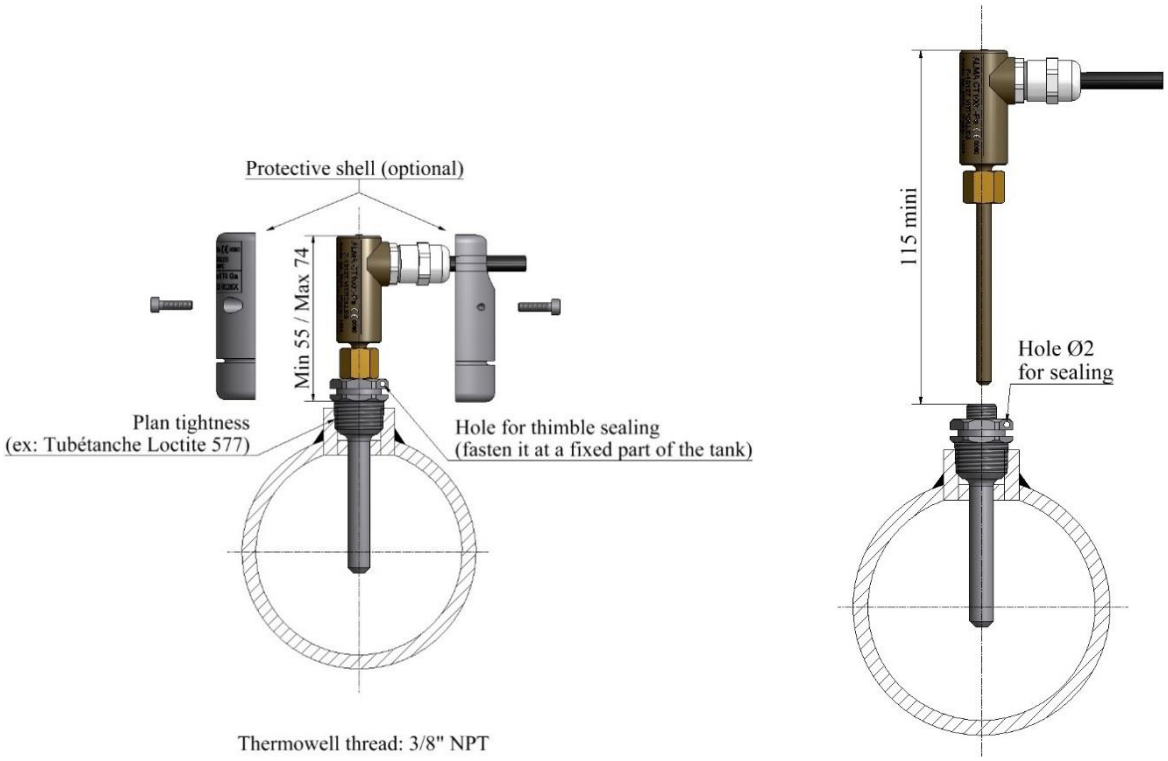
*ATEX "ma" certification.
For installation and use in hazardous areas see Instruction manual

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°662 Removal of the apparent 5mm requirement on the wiring					
DEV N° : 949d	Code : 8151	Temperature probe CT1001-Pe									
Drawing N° associated with the related CET file		949d	PPV042	L	5 /6	Modified on :	29/03/2019	by	CHR	verified by	CC
Metro :		Dev N°	Drawing N°	Rev	Folio	Created on :	13/09/2003		BM		BM
ATEX:	INERIS 04 ATEX 0026										

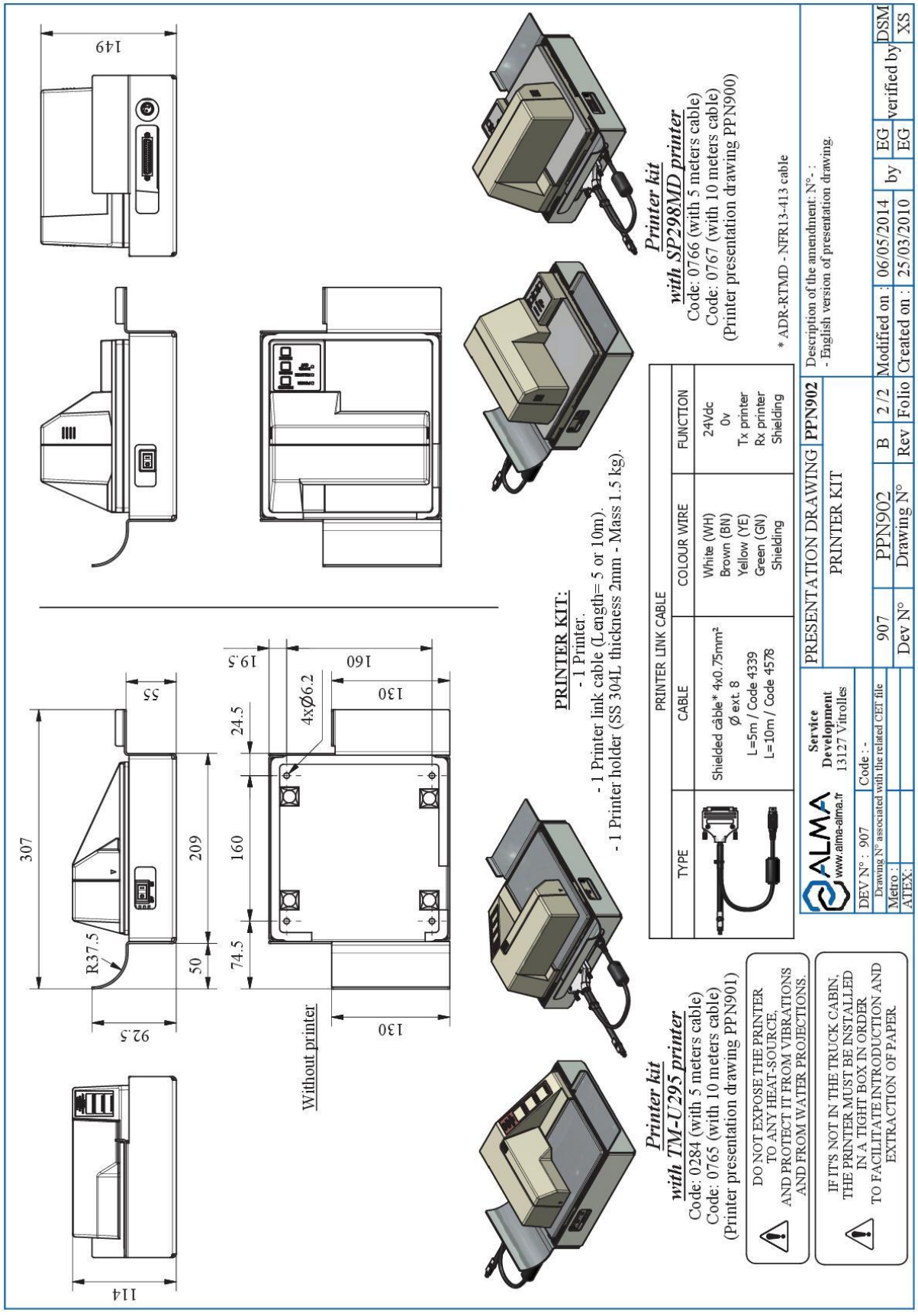
6.1. INSTALLATION RECOMMENDATIONS TEMPERATURE PROBE



REFER TO INSTRUCTION MANUAL

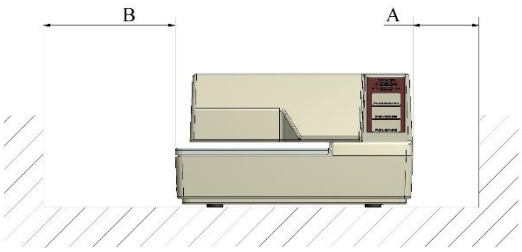
(DELIVERED WITH THE EQUIPMENT AND AVAILABLE ON ALMA WEBSITE)

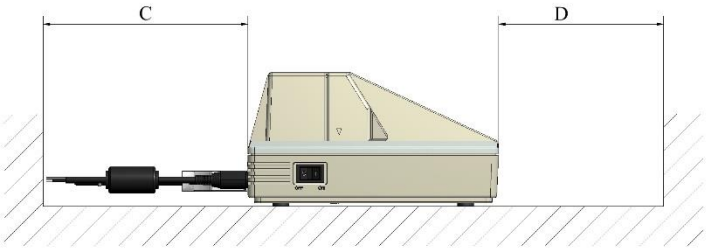
7. PRINTER

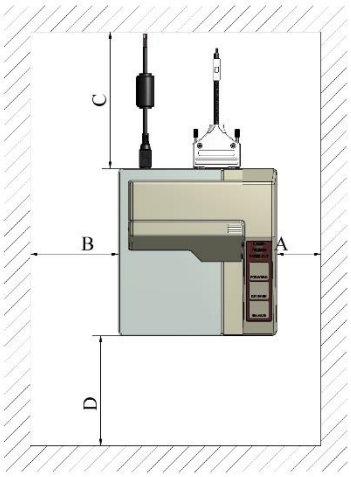


7.1. INSTALLATION RECOMMENDATIONS PRINTER

- 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.

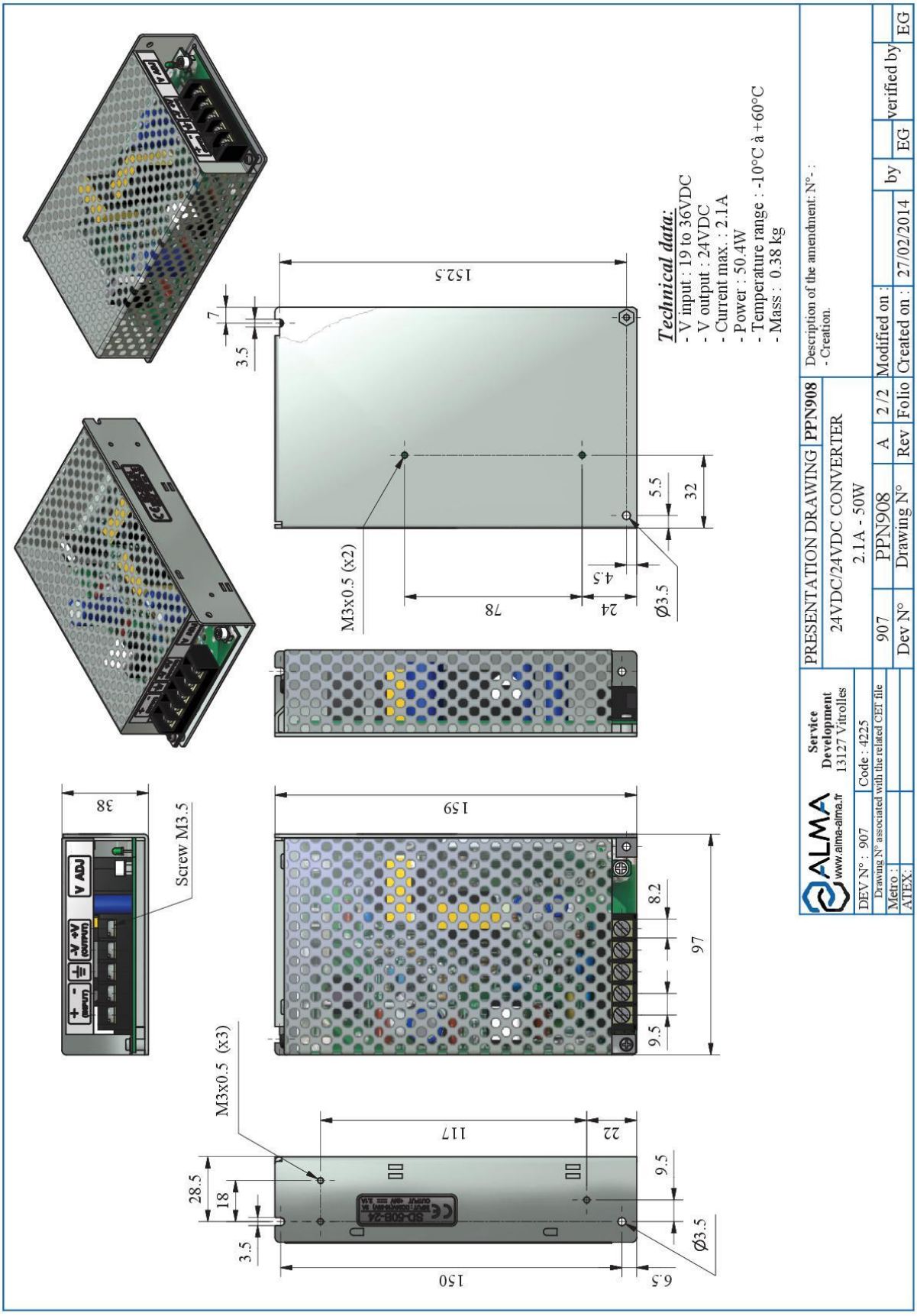






DO NOT EXPOSE THE PRINTER TO ANY HEAT-SOURCE.
PROTECT IT FROM VIBRATIONS AND WATER PROJECTIONS.

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



Document available on website alma-alma.fr