

INSTALLATION GUIDE

DI 005 EN J

LPG-TRONIC

Described in EC-type examination certificate N°: LNE-13621

J	2019/02/26	Configuration of the RCT4 switches, New FORM DOC, Drawings update	DSM/CHR	SR
I	2018/06/11	Functional changes for ASKW	CHR	FDS
H	2018/02/12	Integration of the ASKW remote control, new version of the control box [MDV545]	DSM/CHR	FDS/MV
Issue	Date	Nature of modifications	Written by	Approved by

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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.

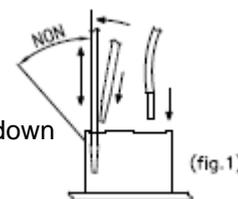
1.1. MECANICAL RECOMMENDATIONS

- ⇒ 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.

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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.



- ⇒ 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.

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- ⇒ 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	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

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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/cm ²
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/cm ² =	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)

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2. GENERAL PRESENTATION

2.1. USE ACCORDING TO MID CERTIFICATE

The LPG TRONIC measuring system is covered by the EU type examination certificate N° LNE-13621. Refer to this certificate for any precision about its installation.

For the sealing plan, see Annex to EU type examination certificate N° LNE-13621.

2.2. SPECIAL CONDITIONS FOR INSTALLATION IN ANY CASES

- ⇒ Safety valves may be incorporated in the ALMA LPG-TRONIC measuring system. If they are located downstream of the turbine meter, they must open to the atmosphere or be connected to the receiving tank. In no case may safety valves located upstream of the turbine meter be connected to the valves located downstream by pipes that bypass the turbine meter.
- ⇒ To prevent any hydraulic connection of bottle under pressure, the purge below the gas separator must finish on a smooth stiff pipe, without threading nor join, and which is not take down.

3. PART LIST

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	Equipment	Designation	Qty	Option*
1		CALCULATOR INDICATOR MICROCOMPT+ LPG TRONIC (Provided with a magnetic or RFID supervisor key)	1	
2		GPL TRONIC CONTROL BOX (Provided with RS232-serial link and power supply for printer)	1	●
3		METERING LINE GPL-BALC (Gas separator – ADRIANE turbine meter DN50-30 – differential valve)	1	
		ADRIANE TURBINE METER DN50-30 BALC		

Non-contractual pictures

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EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA				
Item	Equipment	Designation	Qty	Option*
4a		PRINTER TMU-295 (Printer – printer holder – cable 5 or 10m)	1	
4b		CONVERTER 24VDC/24VDC 2.1A 50W Provided if there is no control box (With RS232 serial link wire and 24VDC power supply for printer)	1	●
5		REMOTE CONTROL RCT4	1	●
6		Pt100 TEMPERATURE SENSOR – CT1001-Pe (Supplied with thermowell)	1	
7		KIT FOR MEASURING SYSTEM IDENTIFICATION PLATE (Plate and sealing device)	1	●
<p>Option*: equipment sold as an option by ALMA, it must be installed on the measuring system if required by the certificate.</p>				

Non-contractual pictures

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5. CALCULATOR-INDICATOR MICROCOMPT+

Mass : ~12 Kg,

Box protection level : IP66,

Box material : Aluminium 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 :

Ex II2 (1)G Ex d [ia] IIB T6

Complies with : EN 60079-0, 60079-1, 60079-11,

EC-type examination certificate : LNE 15270,

Evaluation certificate : LNE 13624,

OIML Certificate N° : R117/2007-FR2-17.02,

4 rear fastening points:
M6 tapped holes depth 12

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

132

Ø20

185

Cables entries and ATEX plugs used:

- 3/4" NPT Cable glands - cable Ø5,5 to Ø13 - sheath Ø10 to Ø19
- 3/4" NPT Cable glands - cable Ø8 to Ø18 - sheath Ø15 to Ø24
- 1/2" NPT Cable glands - cable Ø4 to Ø10 - sheath Ø5 to Ø15
- 1/2" NPT Cable glands - cable Ø5,5 to Ø13 - sheath Ø10 to Ø19
- 1/2" and 3/4" NPT Plugs

Lid sealing

Electronic seal

Measurement units indication area

6 digits, 7 segments, h=27

20 digits, 14 segments, h=9

Three push buttons (fourth button is optional)

257

205

175

MICROCOMPT+ producer data plate

310

Lid sealing

LCD backlight

Connectivity: Wifi or Bluetooth and Ethernet

Ground through

340

392

120°

Service Development
13127 Vitrolles
www.alma-alma.fr

Code : 3802

DEV N° : 973

Metro : LNE-15270 / LNE-13624

ATEX : INERIS 07 ATEX 0057X

PRESENTATION DRAWING DFV087
e-X Tronique ATEX
MICROCOMPT+

Description of amendment N°604
Switching to version connecting

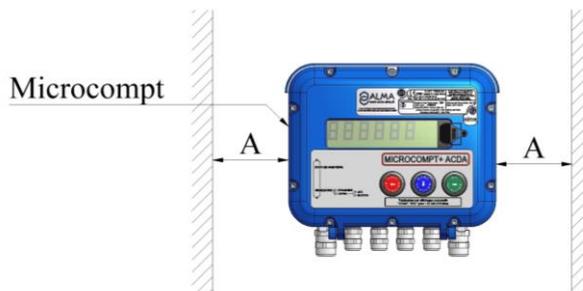
973	PPV087	K	6 / 8	Modified on :	06/02/2018	by	CC	verified by	SR
Dev N°	Drawing N°	Rev	Folio	Created on :	28/01/2010		CC		SR

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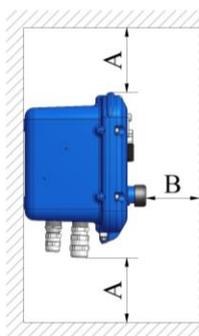
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5.1. INSTALLATION RECOMMENDATIONS CALCULATOR-INDICATOR MICROCOMPT+

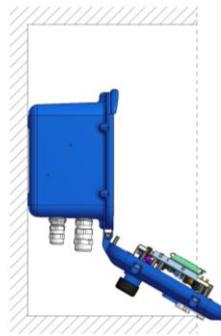
- Fasten the box with 4 M6 screws (holder suitable for vibrations and designed to support the MICROCOMPT). On the box: 4 M6 blind holes tapped length=12 over 185x132).
- Leave an open space around the box in order:
 - o To facilitate maintenance operation.
 - o To prevent any pressing on pushbuttons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

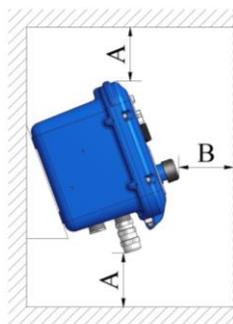


Left hand view
Closed box



Left hand view
open box

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



Left hand view
Closed box

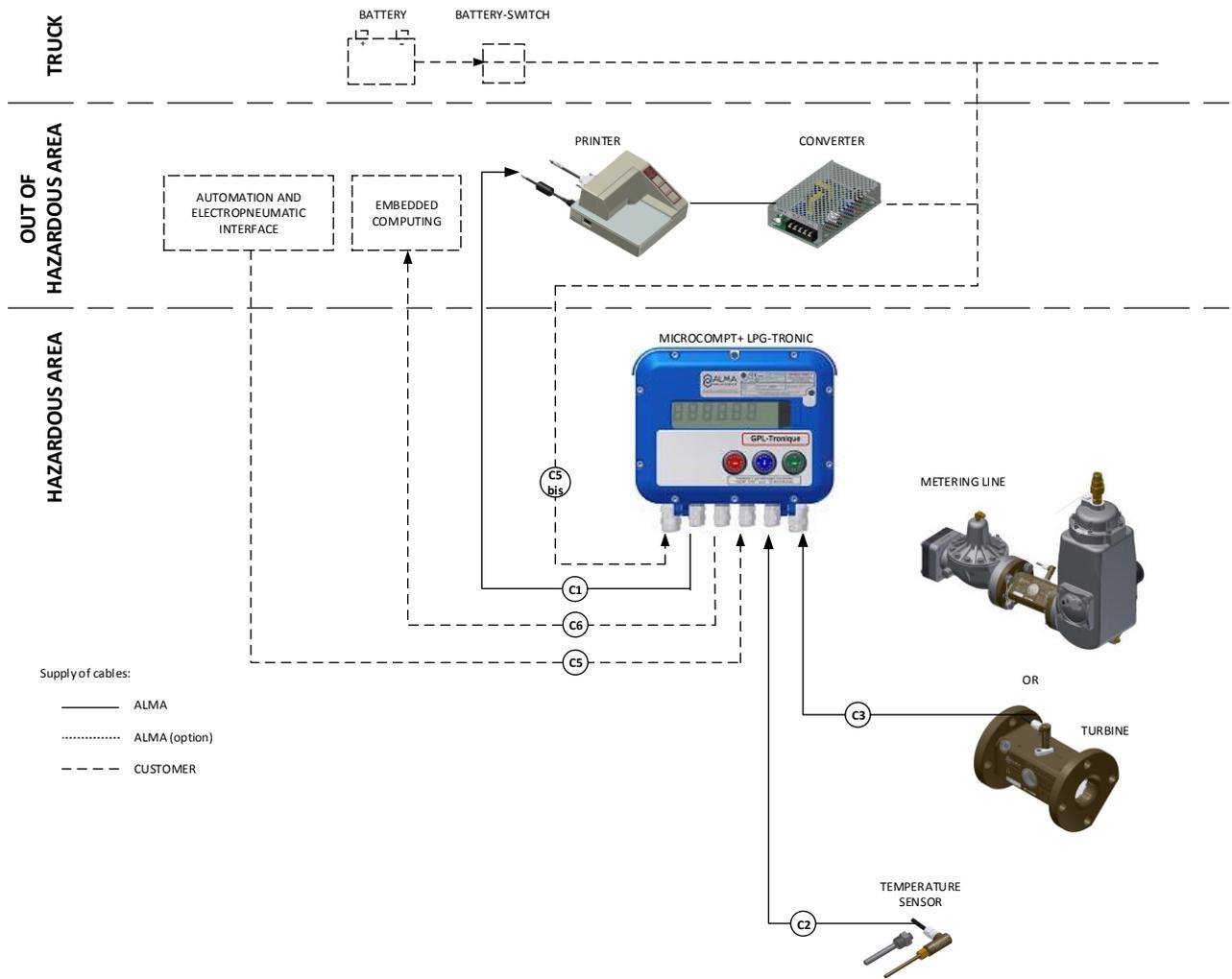


Left hand view
open box

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

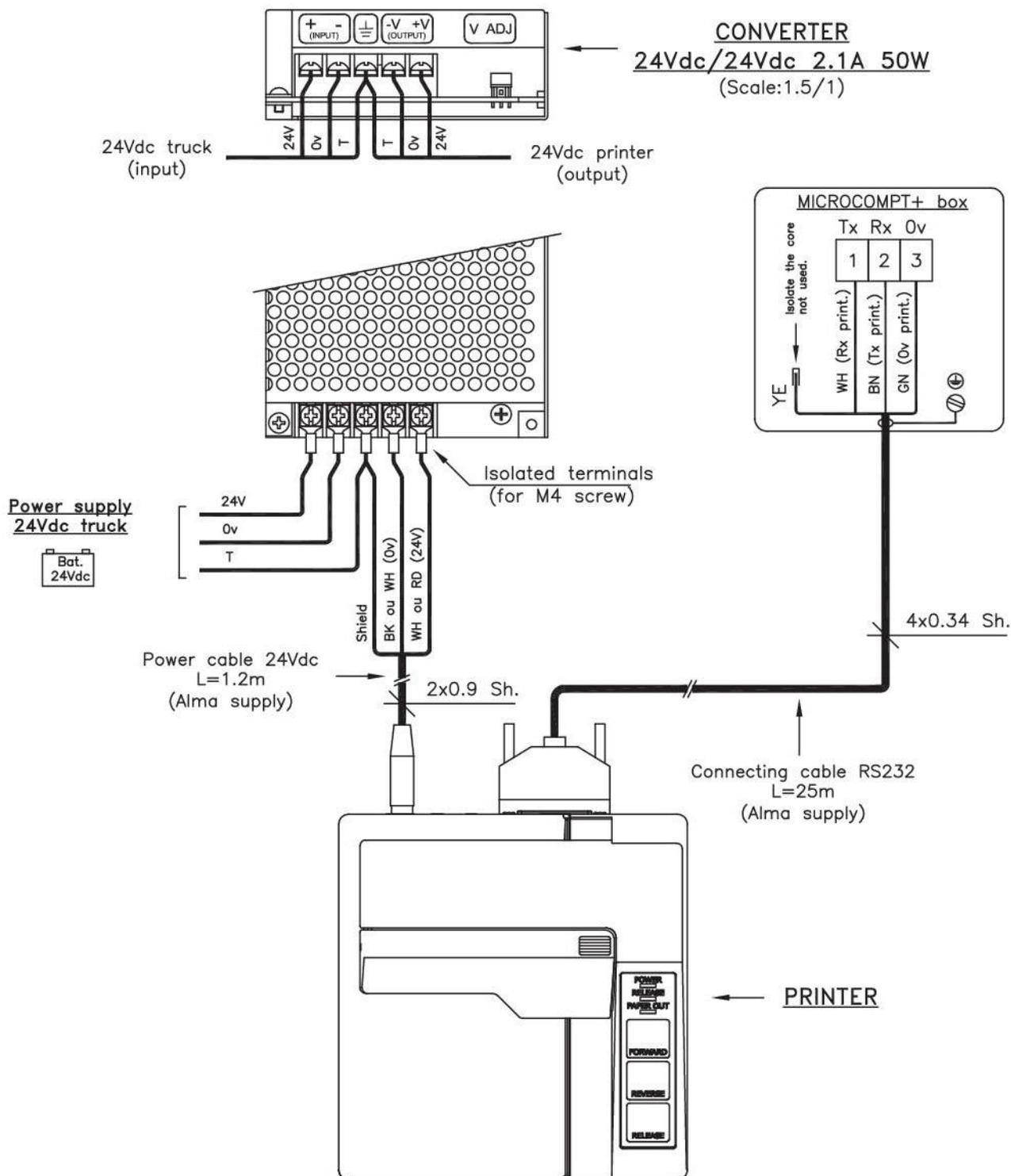
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5.2. ELECTRICAL WIRING CALCULATOR-INDICATOR MICROCOMPT+: BASIC VERSION



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Wiring diagram of the 24VDC/24VDC converter for printer:



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Terminal assignment of the MICROCOMPT+ power supply board RCT4 version

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

TERMINAL ASSIGNMENT OF MICROCOMPT+ BOARDS

POWER SUPPLY BOARD



EQUIPMENTS CONNECTED TO THE MICROCOMPT+							POWER SUPPLY BOARD					
Option	Equipment	Cable (for information)				Function	Colour or No.	Terminal	Function	Observation		
		No.	CG*	Alma	Type							
	CONTROL BOX serial links	C6		●	ADR 12x0.34 sh.	Rx	Vt	1	Tx	PRINTER	Serial link RS232 Embedded computing (EC) Remote control (RC)	
						Tx	Jn	2	Rx			
						0V	Nr	3	0V			
						Rx	Bl	4	Tx	RS232 EC + RC		Serial link RS485 Embedded computing (EC) Remote control (RC)
						Tx	Rg/Bl	5	Rx			
						RS485+	Bc	9	RS485+	RS485 EC + RC		
						RS485-	Rs	10	RS485-			
						Pulses output +	Rg	22	S	PULSES OUTPUT		
						Pulses output -	Gr	24	0V			
Mesur. End	Vi	53	24VDC	MEASURING END	Anti-fraud, Final stop							
PTO control	Mr	58	PTO	PTO CONTROL								
	TURBINE TRANSMITTER	C3	1/2"NPT		ADR 4x0.34 sh.	12V	Jn	11	12V	TURBINE INPUT	Connect the shielding	
						V1	Mr	12	V1			
						V2	Vt	13	V2			
						0V	Bc	14	0V			
	RECEIVER RCT4 Commands	C5		●	12G1	24VDC	1	25	24VDC	POWER SUPPLY 24VDC	High speed Authorisation Intermediate stop Measuring end	
						0V	2	26	0V			
						HS	3	74	24VDC	HIGH SPEED		
						Author.	4	75	24VDC	AUTHOR.		
						Interm. stop	5	49	24VDC	INTERM. STOP		
						Measuring end	6	50	24VDC	MEASURING END		
	Pt1000 TEMPERATURE PROBE	C2	1/2"NPT		ADR 3x0.6 sh.	+	Jn	33	+	Pt100	Connect the shielding	
						-	Bc	34	-			
						-	Vt	35	-			

*Refer to the Cable Glands Installation Instruction

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LPG-TRONIC**

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Angle: degree (° '' ''')
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Control box LPG-TRONIC

Technical features

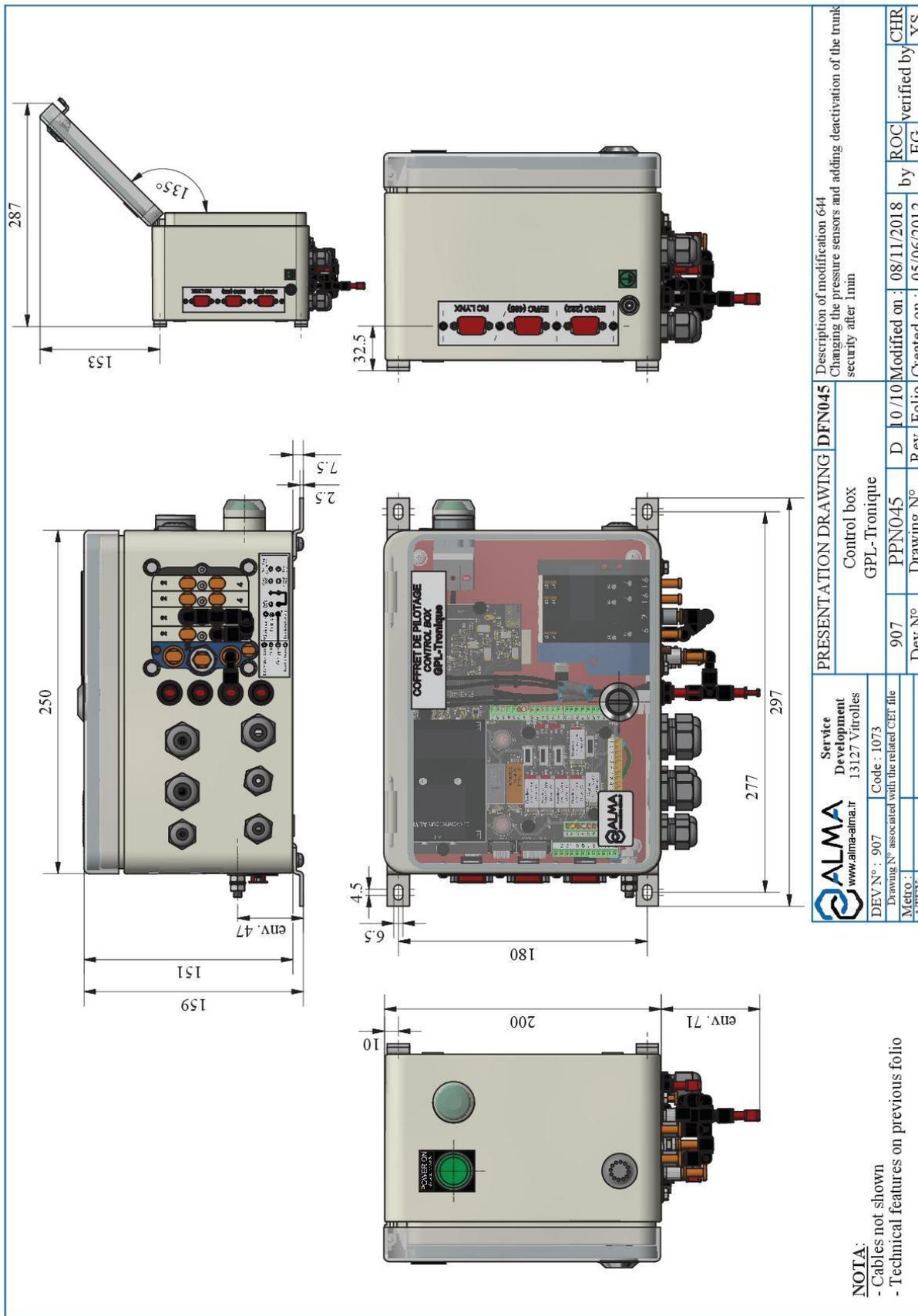
- Box (No ATEX): 250x200x159 material ABS with transparent lid.
- Protection level : IP50
- Temperature : -10° to +60°C
- Mass (except wiring): about 3.2 kg
- Electrical part:
 - Input power 24Vcc (truck)
 - Solenoid valves control: 24Vdc ±10% - 1.2W
- Pneumatic part:
 - Customer terminal block BN3: 1.5mm² max.
 - Pneumatic (4 output 3/2NC).
 - Fluid: 40µm filtered air lubricated or not
 - Operating Pressure: 10 bar max.
 - Flowrate at 6 bar: 500 Nl/min.
 - Pneumatic fittings: for tube Ø6.
 - Unused outputs must be plugged.

Technical specifications:
 ADR ISO 6722 - 12x0.34mm² shielded - L=1.3m
 Serial link beam
 power supply and RS232
 Print cable L=5m
 Driving beam
 ADR ISO 6722 - 12G1 - L=13m
 Regulator calibrated at 6 bar
 and fittings packed in bag
 3 Sub-D
 9pin male
 M (1:2)
 Emergency stop from customer
 From Trunk
 Air supply
 From parking brake
 Customer cable gland:
 - 2 PG13 cable Ø6-12
 - 1 PG09 cable Ø4-8
 Pneumatic block
 Pneumatic indicator
 (presence air brake park)
 Luminous power button
 Vent plug
 (do not block)

<p>PRESENTATION DRAWING DFN045 Description of modification 644 Changing the pressure sensors and adding deactivation of the trunk security after 1min</p>	
<p>Control box GPL-Tronique</p>	
<p>DEV N° : 907 Code : 1073 Drawing N° associated with the related Cdf file Metro : ATEX:</p>	<p>907 Dev N°</p>
<p>PPN045 Drawing N°</p>	<p>D 9 / 10 Modified on : 08/11/2018 by EG ROC verified by CHR XS</p>

NOTE: Overall dimensions on next folio

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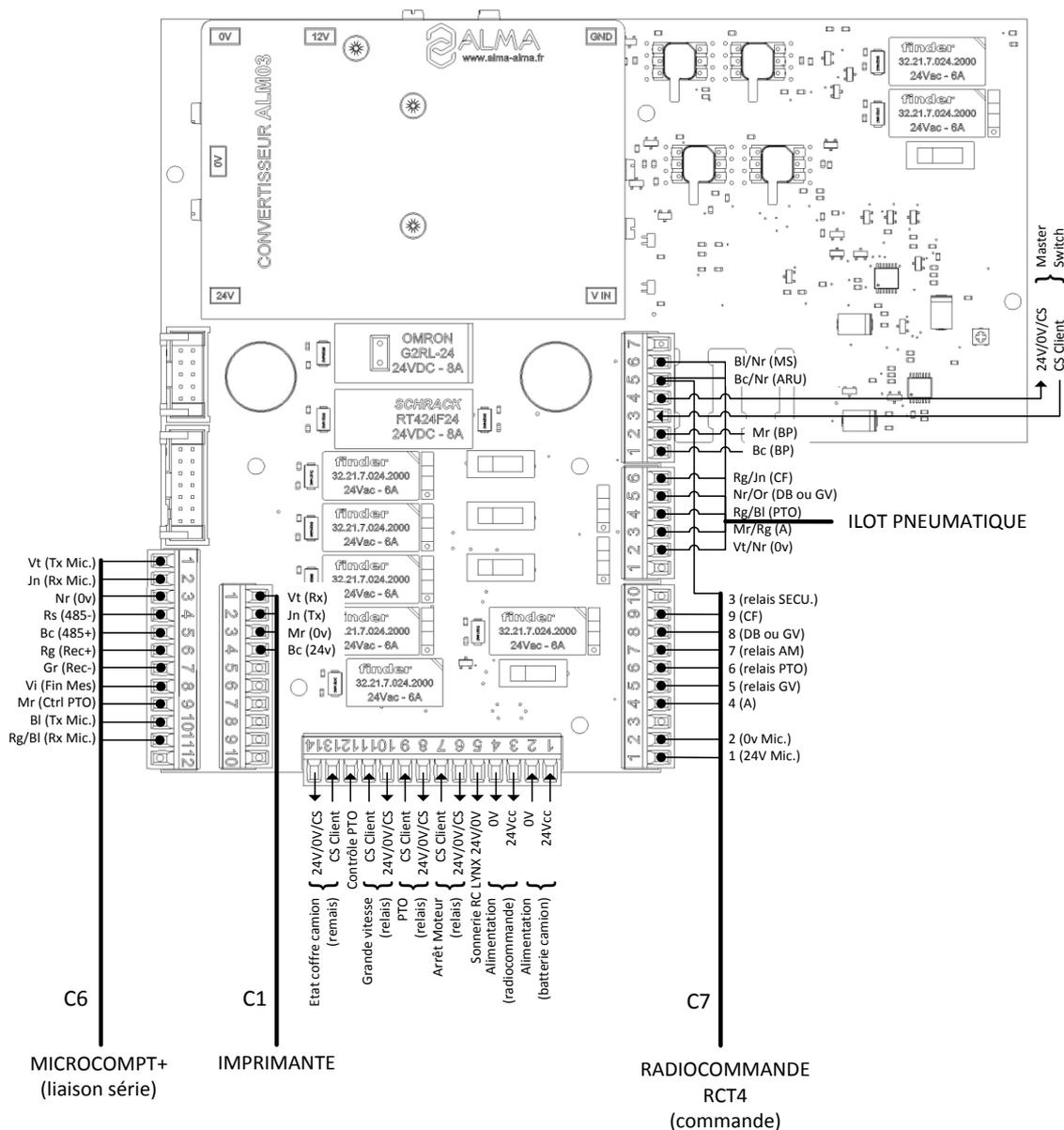


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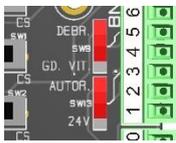
Electrical wiring control box RCT4 version

Wiring diagram of the control box RCT4 version:



Configuration of switches:

PTO (Power take off), Motor stop (AR MOT), High speed (GD. VIT.), RC LYNX, Truck trunk (COFFRE), Master Switch (M. SW), SW9 and SW13:

		
<p>Linear switching element for relays NC or NO contact</p>	<p>Three-position switch for common contact of the relay:</p> <p>1 → 24VDC 2 → GND (0V) 3 → CS (Free contact)</p>	<p>SW9 → DEBR. (Dec clutching) or GD. VIT. (H. speed) for semi trailer</p> <p>SW13 → 24V for PTO or AUTOR for semi trailer</p>

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TERMINAL ASSIGNMENT OF THE CONTROL BOX RCT4 VERSION

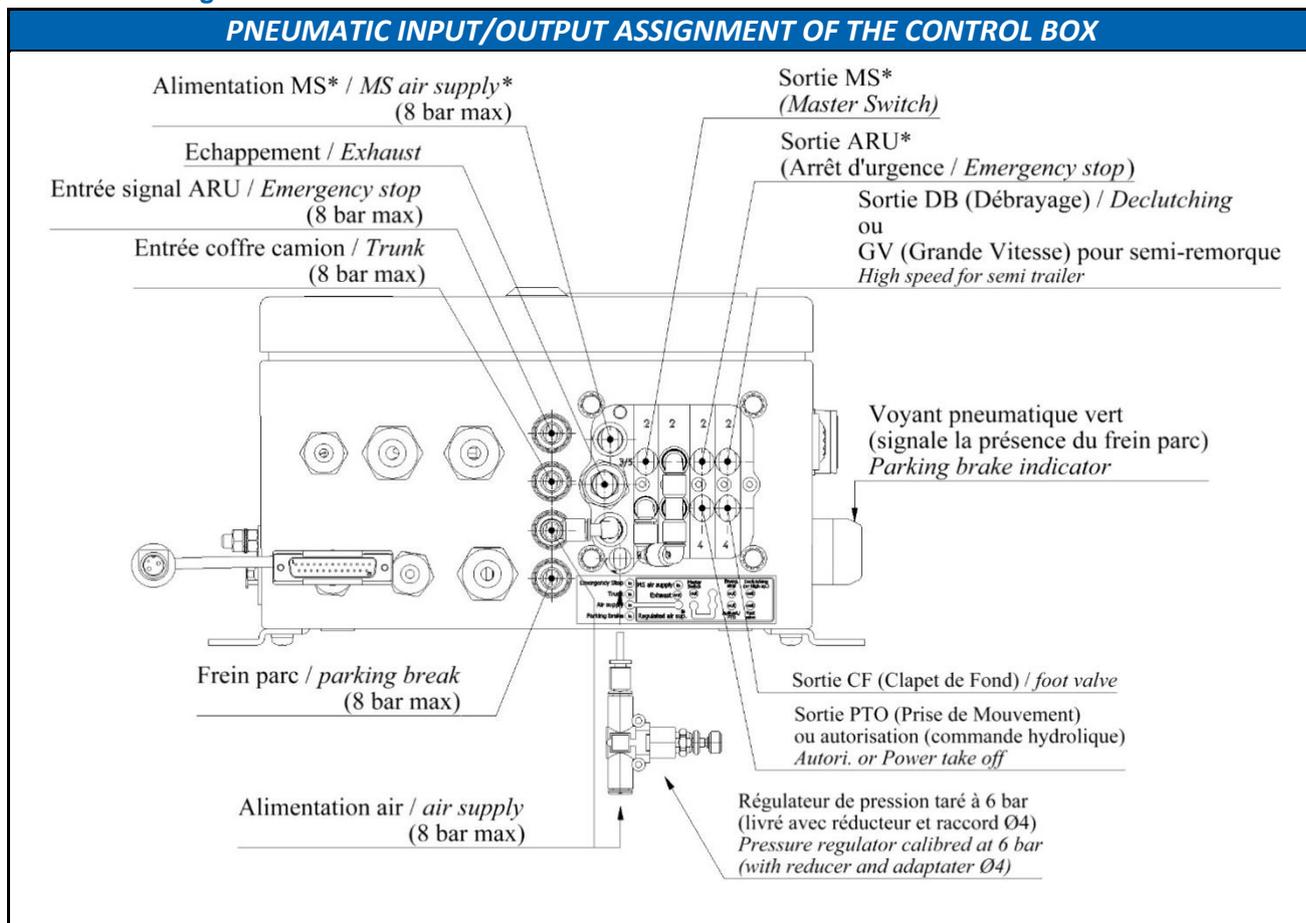


EQUIPMENT CONNECTED TO THE CONTROL BOX													
Option	Equipement	Cable for information)				Function	Colour or No.	Block	Terminal	Function		Observation	
		N°	CG*	Alma	Type								
	MICROCOMPT+ Serial links	C6			12x0.34 sh	Tx Rx OV RS485 - RS485 + Tx Rx	Vt Jn Nr Rs Bc Bl Rg/Bl	BN1	1 2 3 4 5 10 11	Rx Tx OV RS485 RS232	PRINTER EC + RC EC + RC	RS485 serial link Embedded computing (EC) Remote control (RC) RS232 serial link Embedded computing (EC) Remote control (RC)	
	PRINTER	C1		●	2x1	Rx Tx OV 24VDC	Vt Jn Mr Bc	BN2	1 2 3 4	Rx Tx OV 24VDC	PRINTER		
	POWER SUPPLY					24VDC OV		BN3 - Bornier client	1 2 5 6 7 8 9 10 11 12 13 14	24VDC OV - 24VDC/0V/CS CS 24VDC/0V/CS CS 24VDC/0V/CS CS CS 24VDC/0V/CS	POWER SUPPLY - MOTOR STOP PTO HIGH SPEED TRUCK TRUNK	24VDC truck battery (after battery switch and protected by a fuse) Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact TRUCK TRUNK TRUCK TRUNK Relay (Configuration 24V, 0V or Free contact)	
	RC LYNX BELL												
	MOTOR STOP												
	PTO												
	HIGH SPEED												
	TRUCK TRUNK												
	RECEIVER RCT4	C7		●	12G1	24VDC OV 24VDC OV Author. HS PTO Stop DC FV Security	10 11 1 2 4 5 6 7 8 9 3 V/J		BN3 BN4 BN6	3 4 1 2 4 5 6 7 8 9 5	24VDC OV 24VDC OV EV 3/2NC RELAY EV 3/2NC RELAY EV 3/2NC EV 3/2NC RELAY	SUPPLY CARD AND CRADLE MICROCOMPT + POWER SUPPLY AUTHOR. HS PTO MS DC FV SECURITY	Power supply for the remote control card and cradle Fuse Authorisation High speed Power take off Motor Stop Declutching (or High Speed) Footvalve Safety request

*Refer to the Cable Glands Installation Instructions

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Pneumatic wiring control box RCT4 version



Label	Input	Output	Function	Observation
Air supply	X		Main supply of the control box + detector for pressure drop	Pressure >1 bar: green warning light Pressure <1 bar: orange warning light. Disable the security management for trunk, pressure drop and customer ARU
	X		Secondary supply of the control box	The 6 bar-calibrated regulator, the 6/4 reducer and the Ø4 coupling are packed in a bag inside the control box
Air from parking brake	X		Air from parking brake	
Exhaust		X	Exhaust	Put a tube L=100mm min. (no muffler)
Emergency stop*		X	Pneumatic emergency stop	
Declutching		X	Declutching actuator (or High speed)	With pneumatic declutching
Footvalve		X	Footvalve opening	
Power take off PTO or Authorisation		X	Power take off or Authorisation	Power take off: leave the plug in place and don't connect any tube in case of electrical control Authorisation: hydraulic control
ARU Emergency stop input	X		Detection of emergency stop requests	ARU are connected in series in a positive safety loop
Trunk	X		Detection of back trunk openings	No air=trunk opened
MS*		X	Timed Master switch	When using the MS pneumatic output
Supply MS*	X		Master switch air supply	When using the MS pneumatic output

*Unused ports must be plugged.

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Remote control RCT4

Case transmitter (ATEX equipment)

Case receiver (no ATEX equipment)

Technical features:

- Uni directional VHF radio remote
- Power supply: 24 to 28Vcc.
- Consumption: 70 to 500mA max.
- Transmission frequency: 433 MHz FM.
- Power: < 10mW.
- Range: 150m in open ground
- Charging time: 12h battery empty, a few minutes after unloading.
- Autonomy: about 15 day without recharging before low battery alarm.
- Case receiver: polycarbonate (PC)
- Protection level : case receiver IP50 (installed in no EX area).
- case transmitter IP62
- Mas : 1.1 kg (complete set)

Dimensions:

- Case transmitter: 119 (width), 188 (depth), 122 (height)
- Case receiver: 150 (width), 200 (depth), 307 (height), 385 (total height with antenna)
- Antenna: 75 (height)
- Cardle: 60 (width), 30 (height)
- Box fastening: 116 (width)

Connections:

- Power of cardle (socket type "Jack")
- 12G1 cable (L=1.5m) connected by Alma to the electro-pneumatic control box.
- 7G1 cable (L=1.3m) connecting by customer to Microcomp+ indicator

Case transmitter:

- II 2G CE0081
- EEx ib IIA T4
- Temp. : -20°/+55°C
- Mass : 0.2 kg

Service Development:

- www.alma-alma.fr
- 13127 Vitrolles
- Code : 1128
- DEV N° : 907
- Drawing N° associated with the related CET file
- Metro. : -
- ATEX: -

PRESENTATION DRAWING DFN047

Remote control RCT4

907 Dev N°

PPN047 Drawing N°

C Rev

7/7 Folio

14/09/2015 Modified on

24/05/2012 Created on

EG by

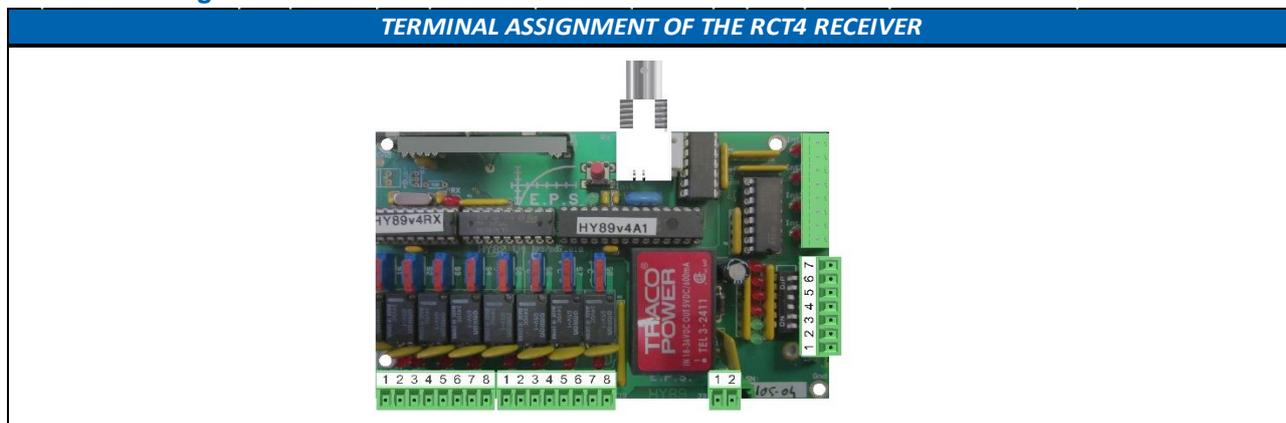
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SR XS

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Electrical wiring RCT4 remote control receiver



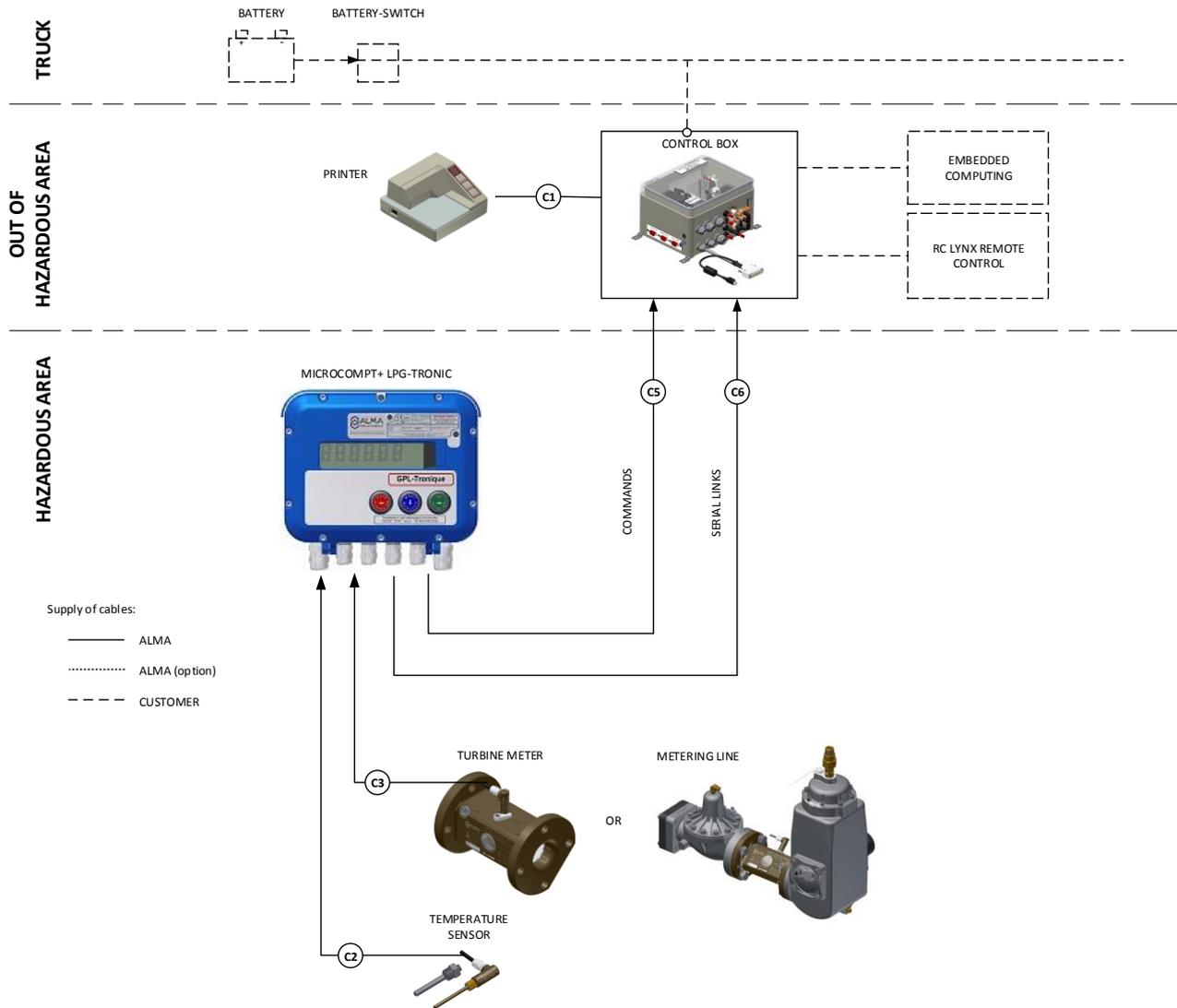
EQUIPMENT CONNECTED TO THE RCT4 RECEIVER								RCT4 RECEIVER TERMINAL BLOCK				
Option	Equipment	Cable for information)				Function	Colour or No.	Block	Terminal	Function		Observation
		No.	CG*	Alma	Type							
	MICROCOMPT+ Commands	C5			12G1	24VDC	1	BN1	1	24VDC	MICROCOMPT+ POWER SUPPLY	
						0V	2		2	0V		
						IN1 (A)	4	J4	5		AUTHORISATION	
						HS	3		5		HIGH SPEED	
						Author.	4	J4	4		AUTHORISATION	
						Interm. stop	5		3		INTERMEDIATE STOP	
						Measur. end	6	J4	2		MEASURING END	
						Fuse	1		1		MICROCOMPT+ POWER SUPPLY	
							2	BN1	2			
						EV AU	3	J2	5		SAFETY REQUEST	Emergency stop
						EV Author.	4	J4	4		AUTHORISATION	
						Relay HS	5	J1	7		HIGH SPEED	
						EV PTO	6	J1	5		POWER TAKE OFF	
						Relay MS	7	J2	3		MOTOR STOP	
						EV DC	8	J1	1		DECLUTCHING	or High speed
						EV FV	9	J1	3		FOOTVALVE	
						24VDC	10	J3	1	24VDC	SUPPLY RC CARD AND CRADLE	
						0V	11		2	0V		
									V/J			

*Refer to the Cable Glands Installation Instructions

Configuration of switches:

	<p>Switches position Default configuration</p> <p>6 → OFF 5 → OFF 4 → ON 3 → OFF 2 → OFF 1 → OFF</p>	<p>Terminal J4: Enable or disable the function with switches</p> <p>7 → IN4 PTO (ON=pulse 3 seconds) 6 → IN3 Parking brake 5 → IN2 High speed authorization Alma 4 → IN1 Anti-fraud Alma 3 → OUT2 Intermediate stop Alma 2 → OUT1 End of delivery Alma 1 → Ground</p>
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5.4. ELECTRICAL WIRING WITH CONTROL BOX AND RC LYNX REMOTE CONTROL



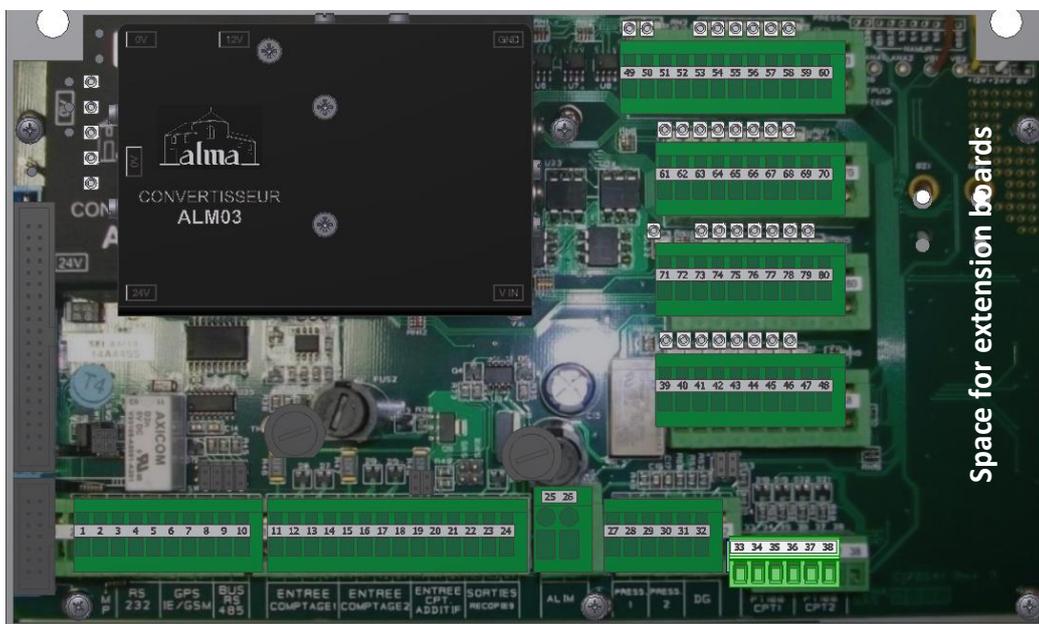
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Terminal assignment of the MICROCOMPT+ power supply board RC LYNX version

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

TERMINAL ASSIGNMENT OF MICROCOMPT+ BOARDS

POWER SUPPLY BOARD



EQUIPMENTS CONNECTED TO THE MICROCOMPT+							POWER SUPPLY BOARD							
Option	Equipment	Cable (for information)			Function	Colour or No.	Terminal	Function		Observation				
		No.	CG*	Alma				Type						
	CONTROL BOX serial links	C6		●	ADR 12x0.34 sh.	Rx	Vt	1	Tx	PRINTER	Serial link RS232 Embedded computing (EC) Remote control (RC) Serial link RS485 (RC Lynx) Embedded computing (EC) Remote control (RC)			
						Tx	Jn	2	Rx					
						0V	Nr	3	0V					
									Bl	4		Tx	RS232 EC + RC	
									Rg/Bl	5		Rx	RS485 EC + RC	
									RS485 +	Bc		9	+	PULSES OUTPUT
									RS485 -	Rs		10	-	
									Pulses output +	Rg		22	S	
									Pulses output -	Gr		24	0V	
			Mesur. End	Vi	53	24VDC	MEASURING END	Anti-fraud, Final stop						
			PTO control	Mr	58	PTO	PTO CONTROL							
	TURBINE TRANSMITTER	C3	1/2"NPT		ADR 4x0.34 sh.	12V	Jn	11	12V	TURBINE INPUT	Connect the shielding			
						V1	Mr	12	V1					
						V2	Vt	13	V2					
						0V	Bc	14	0V					

EQUIPMENTS CONNECTED TO THE MICROCOMPT+								POWER SUPPLY BOARD				
Option	Equipment	Cable (for information)				Function	Colour or No.	Terminal	Function		Observation	
		No.	CG*	Alma	Type							
	CONTROL BOX Commands	C5		●	12G1	24VDC	1	25	24VDC	POWER SUPPLY 24VDC	Ferrite on the supply wire (make a loop)	
0V						2	26	0V				
Security						3	72	24VDC	SECURITY			
Author.						4	75	24VDC	AUTHOR.			Authorisation
HS						5	73	24VDC	HS			High speed
PTO						6	61	24VDC	PTO			Power take off
Stop						7	62	24VDC	MS			Motor stop
DC						8	76	24VDC	DC			Declutching (or High speed)
FV						9	64	24VDC	FV			Footvalve
	Pt1000 TEMPERATURE PROBE	C2	1/2"NPT	●	ADR 3x0.6 sh.	+	Jn	33	+	Pt100	Connect the shielding	
-						Bc	34	-				
-						Vt	35	-				
						-		71	0V		Connect 71 to 80	
						-		80	0V		Connect 71 to 80	

*Refer to the Cable Glands Installation Instruction

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INSTALLATION GUIDE DI 005 EN J
LPG-TRONIC

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Control box LPG-TRONIC

Technical features

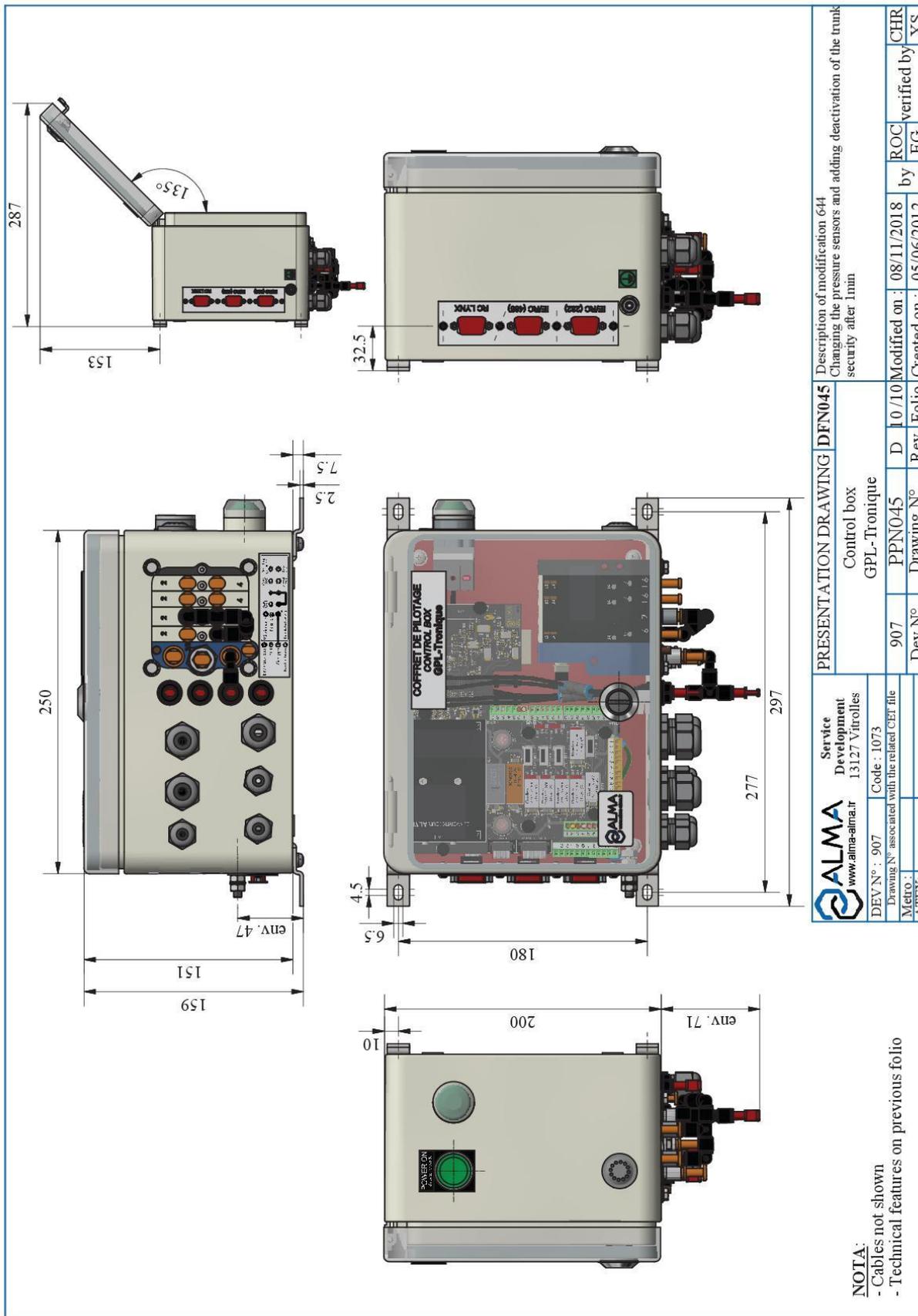
- Box (No ATEX): 250x200x159 material ABS with transparent lid.
- Protection level : IP50
- Temperature : -10° to +60°C
- Mass (except wiring): about 3.2 kg
- Electrical part:
 - Input power 24Vcc (truck)
 - Solenoid valves control: 24Vdc ±10% - 1.2W
- Pneumatic part:
 - Customer terminal block BN3: 1.5mm² max.
 - Pneumatic (4 output 3/2NC).
 - Fluid: 40µm filtered air lubricated or not
 - Operating Pressure: 10 bar max.
 - Flowrate at 6 bar: 500 Nl/min.
 - Pneumatic fittings: for tube Ø6.
 - Unused outputs must be plugged.

Technical specifications:
 ADR ISO 6722 - 12x0.34mm² shielded - L=1.3m
 Serial link beam
 power supply and RS232
 Print cable L=5m
 Driving beam
 ADR ISO 6722 - 12G1 - L=13m
 Regulator calibrated at 6 bar
 and fittings packed in bag
 3 Sub-D
 9pin male
 Emergency stop from customer
 From Trunk
 Air supply
 From parking brake
 Customer cable gland:
 - 2 PG13 cable Ø6-12
 - 1 PG09 cable Ø4-8
 Pneumatic block
 Pneumatic indicator
 (presence air brake park)
 Luminous power button
 Vent plug
 (do not block)

<p>DESCRIPTION OF MODIFICATION 644 Changing the pressure sensors and adding deactivation of the trunk security after 1min</p>	
<p>PRESENTATION DRAWING DFN045 Control box GPL-Tronique</p>	<p>907 Dev N°</p>
<p>9/10 Rev Folio</p>	<p>08/11/2018 Modified on</p>
<p>PPN045 Drawing N°</p>	<p>05/06/2012 Created on</p>
<p>Service Development www.alma-alma.fr 13127 Vitrolles</p>	<p>Code : 1073</p>
<p>DEV N° : 907</p>	<p>Drawing N° associated with the related Cdf file</p>
<p>Metro : ATEX:</p>	<p>CHR verified by EG XS</p>

NOTE: Overall dimensions on next folio

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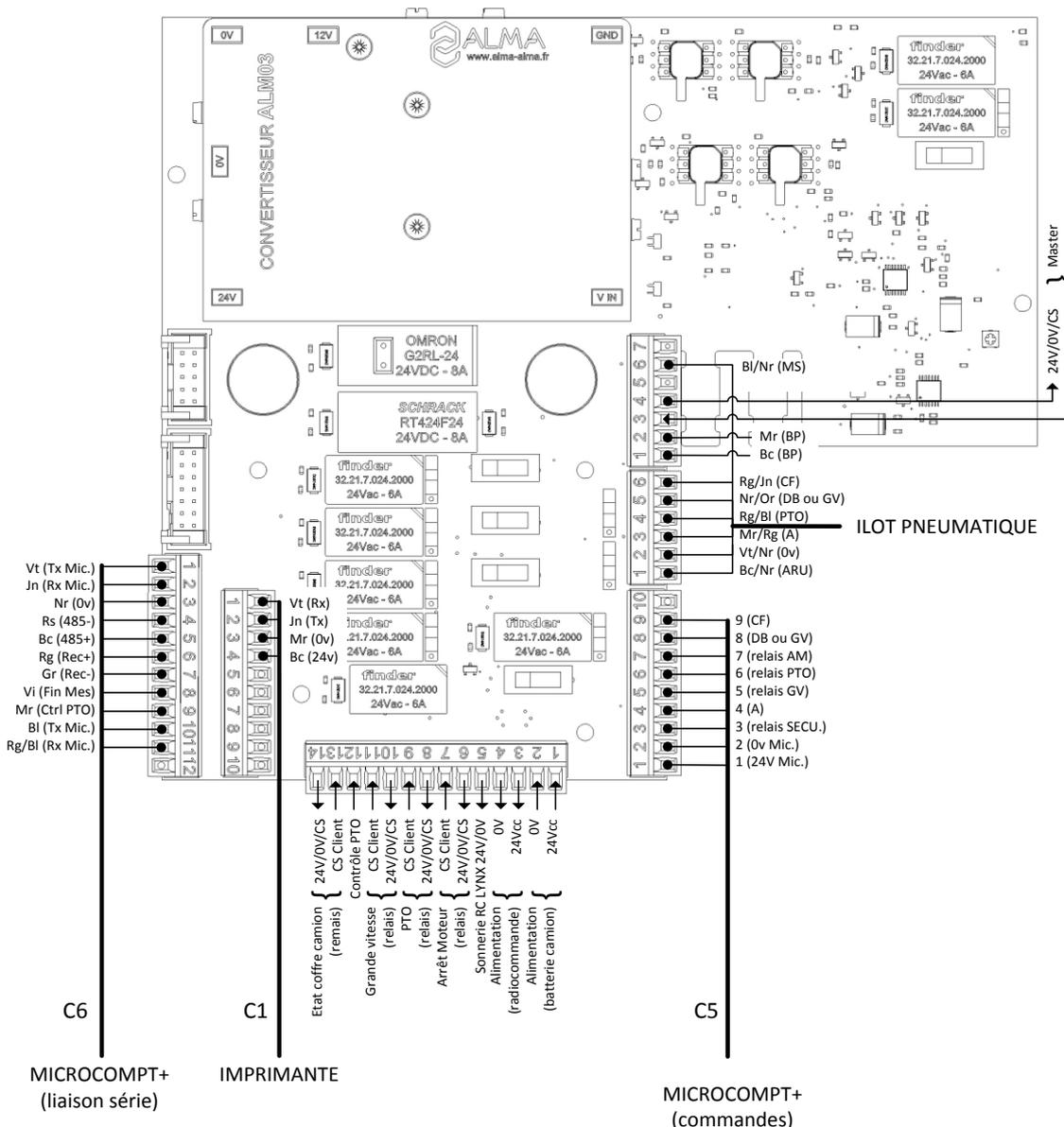
 Service Development 13127 Vitrolles www.alma-alma.fr		PRESENTATION DRAWING DFN045 Control box GPL-Tronique		Description of modification 644 Changing the pressure sensors and adding deactivation of the trunk security after 1min	
DevN° : 907 Drawing N° : PPN045 Metro : ATEX :	Code : 1073 Drawing N° associated with the related CEF file	D 10/10 Rev Folio	Modified on : 08/11/2018 Created on : 05/06/2012	by EG	ROC verified by XS CHR

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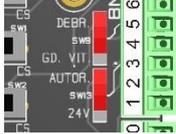
Electrical wiring control box RC LYNX version

Wiring diagram of the control box RC LYNX version:



Configuration of switches:

PTO (Power take off), Motor stop (AR MOT), High speed (GD. VIT.), RC LYNX, Truck trunk (COFFRE), Master Switch (M. SW), SW9 and SW13:

		
<p>Linear switching element for relays NC or NO contact</p>	<p>Three-position switch for common contact of the relay:</p> <p>1 → 24VDC 2 → GND (0V) 3 → CS (Free contact)</p>	<p>SW9 → DEBR. (Declutching) or GD. VIT. (H. speed) for semi trailer</p> <p>SW13 → 24V for PTO or AUTOR for semi trailer</p>

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TERMINAL ASSIGNMENT OF THE CONTROL BOX RC LYNX VERSION

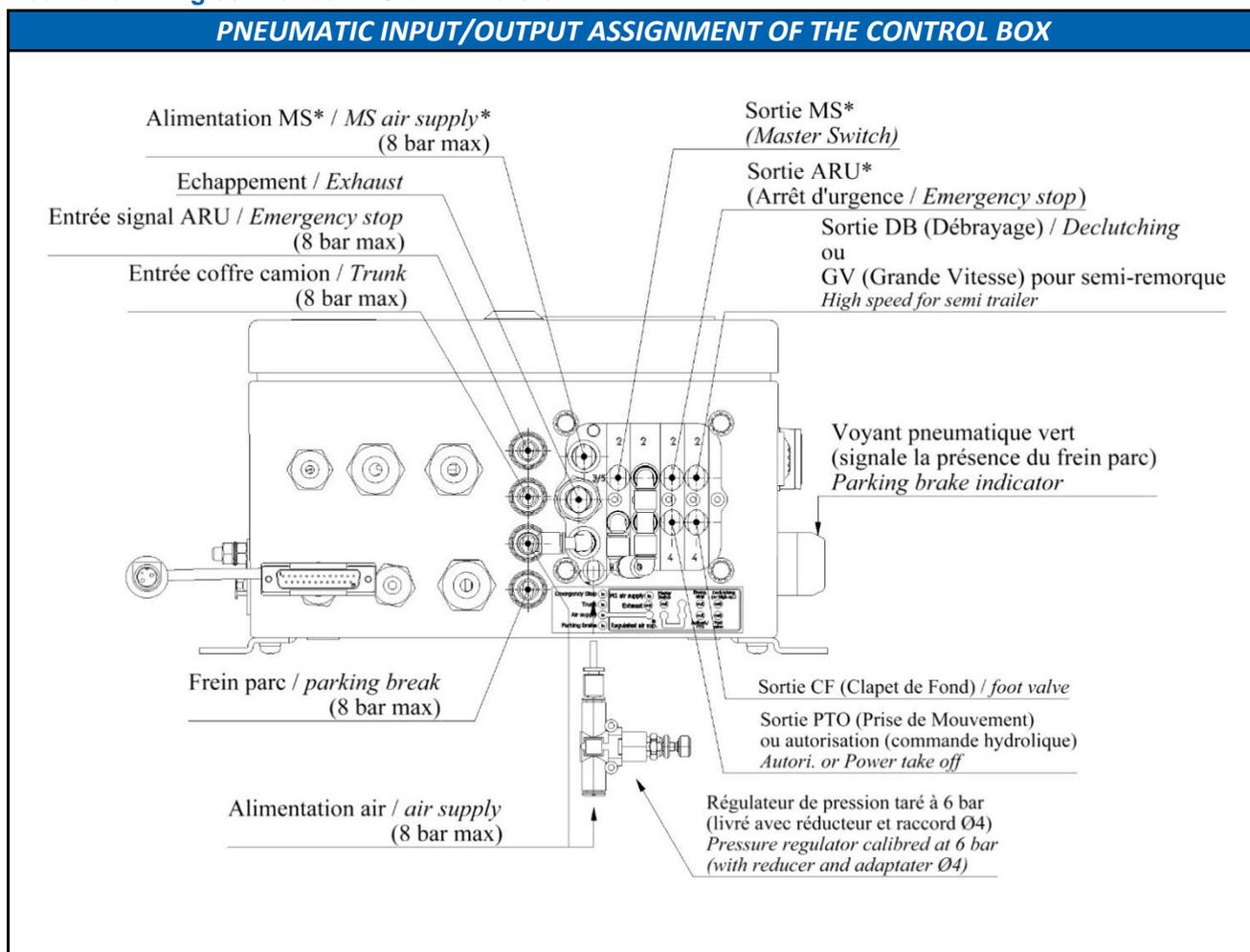


EQUIPMENT CONNECTED TO THE CONTROL BOX								CONTROL BOX TERMINAL BLOCKS			
Option	Equipement	Cable for information)				Function	Colour or No.	Block	Terminal	Function	Observation
		N°	CG*	Alma	Type						
MICROCOMPT+ Serial links	C6			12x0.34 sh	Tx	Vt	BN1	1	Rx	PRINTER	RS485 serial link Embedded computing (EC) Remote control (RC)
					Rx	Jn		2	Tx		
					0V	Nr		3	0V		
					RS485 -	Rs		4	RS485	EC + RC	
					RS485 +	Bc		5			
					Recop +	Rg		6	Recop +	RECOPIE	
					Recop -	Gr		7	Recop -		
					Measur. end	Vi		8		MEASURING END	
					PTO	Mr		9		PTO CONTROL	
					Tx	Bl		10			
					Rx	Rg/Bl		11	RS232	EC + RC	
PRINTER	C1		●	2x1	Rx	Vt	BN2	1	Rx	PRINTER	
					Tx	Jn		2	Tx		
					0V	Mr		3	0V		
					24VDC	Bc		4	24VDC		
POWER SUPPLY					24VDC		BN3 - Bornier client	1	24VDC	POWER SUPPLY	24VDC truck battery (after battery switch and protected by a fuse)
				0V		2		0V			
POWER SUPPLY REMOTE CONTROL				24VDC		3		24VDC	POWER SUPPLY RC		
				0V		4		0V			
RC LYNX BELL							5	-	-		
MOTOR STOP							6	24VDC/0V/CS	MOTOR STOP	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact	
							7	CS			
PTO							8	24VDC/0V/CS	PTO	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact	
							9	CS			
HIGH SPEED							10	24VDC/0V/CS	HIGH SPEED	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact	
							11	CS			
PTO CONTROL							12	-	-		
TRUCK TRUNK							13	CS	TRUCK TRUNK	Only used with configuration Free contact	
							14	24VDC/0V/CS	TRUCK TRUNK	Relay (Configuration 24V, 0V or Free contact)	
MICROCOMPT+ Commands	C5			12G1	24MC	1	BN4	1	24VDC	MICROCOMPT+ POWER SUPPLY	Fuse
					0MC	2		2	0V		
					Security	3		3	RELAY	SECURITY	Safety request
					Author.	4		4	EV 3/2NC	AUTHOR.	Authorisation
					HS	5		5	RELAY	HS	High speed
					PTO	6		6	EV 3/2NC	PTO	Power take off
					Stop	7		7	RELAY	MS	Motor Stop
					DC	8		8	EV 3/2NC	DC	Declutching (or High Speed)
					FV	9		9	EV 3/2NC	FV	Footvalve
				V/J							

*Refer to the Cable Glands Installation Instructions

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Pneumatic wiring control box RC LYNX version

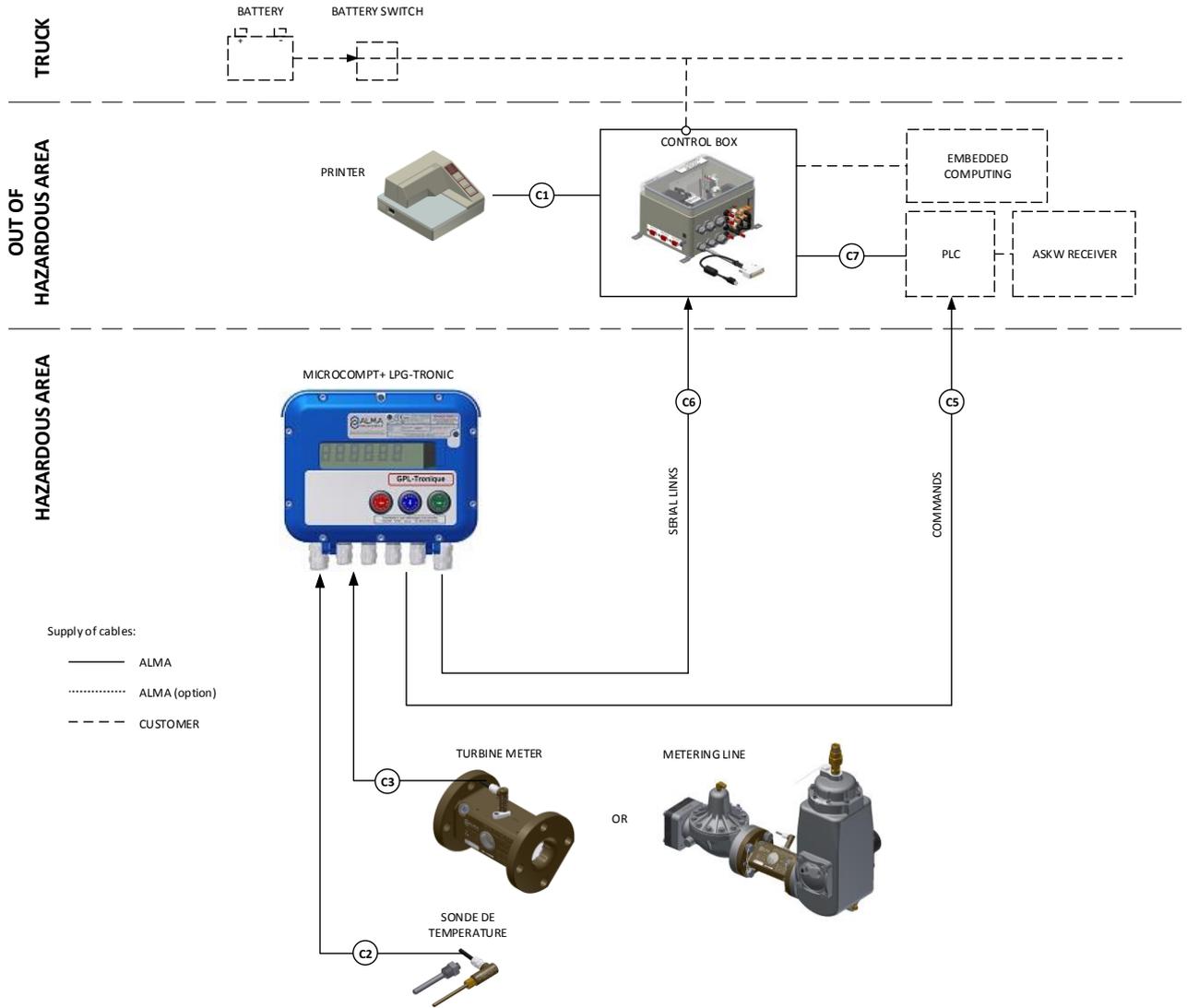


Label	Input	Output	Function	Observation
Air supply	X		Main supply of the control box + detector for pressure drop	Pressure >1 bar: green warning light Pressure <1 bar: orange warning light. Disable the security management for trunk, pressure drop and customer ARU
		X	Secondary supply of the control box	The 6 bar-calibrated regulator, the 6/4 reducer and the Ø4 coupling are packed in a bag inside the control box
Air from parking brake	X		Air from parking brake	
Exhaust		X	Exhaust	Put a tube L=100mm min. (no muffler)
Emergency stop*		X	Pneumatic emergency stop	
Declutching		X	Declutching actuator (or High speed)	With pneumatic declutching
Footvalve		X	Footvalve opening	
Power take off PTO or Authorisation		X	Power take off or Authorisation	Power take off: leave the plug in place and don't connect any tube in case of electrical control Authorisation: hydraulic control
ARU Emergency stop input	X		Detection of emergency stop requests	ARU are connected in series in a positive safety loop
Trunk	X		Detection of back trunk openings	No air=trunk opened
MS*		X	Timed Master switch	When using the MS pneumatic output
Supply MS*	X		Master switch air supply	When using the MS pneumatic output

*Unused ports must be plugged.

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5.5. ELECTRICAL WIRING WITH CONTROL BOX AND ASKW REMOTE CONTROL



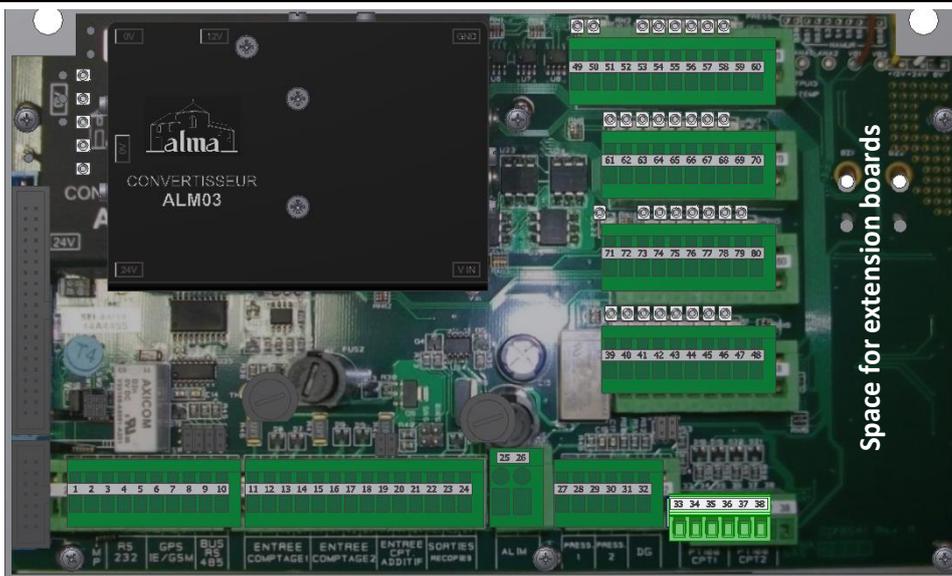
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	INSTALLATION GUIDE DI 005 EN J LPG-TRONIC	Units of measure: Length: mm Angle: degree (° ' ") Temperature: °C
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Terminal assignment of the MICROCOMPT+ power supply board ASKW version

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

TERMINAL ASSIGNMENT OF MICROCOMPT+ BOARDS

POWER SUPPLY BOARD



EQUIPMENTS CONNECTED TO THE MICROCOMPT+							POWER SUPPLY BOARD				
Option	Equipment	Cable (for information)			Function	Colour or No.	Terminal	Function		Observation	
		No.	CG*	Alma Type							
CONTROL BOX serial links	C6			ADR 12x0.34 sh.	Rx	Vt	1	Tx	PRINTER		
					Tx	Jn	2	Rx			
					0V	Nr	3	0V			
					Rx	Bl	4	Tx	RS232 EC + RC		Serial link RS232 Embedded computing (EC) Remote control (RC)
					Tx	Rg/Bl	5	Rx	RS485 EC + RC		
					RS485 +	Bc	9	RS485+	PULSES OUTPUT		Serial link RS485 Embedded computing (EC) Remote control (RC)
					RS485 -	Rs	10	RS485-			
					Pulses output +	Rg	22	S	MEASURING END		Anti- fraud, Final stop
Pulses output -	Gr	24	0V								
Mesur. End	Vi	53	24VDC	PTO CONTROL	PTO CONTROL						
PTO control	Mr	58	PTO								
TURBINE TRANSMITTER	C3	1/2"NPT		ADR 4x0.34 sh.	12V	Jn	11	12V	TURBINE INPUT	Connect the shielding	
					V1	Mr	12	V1			
					V2	Vt	13	V2			
0V	Bc	14	0V								
RECEIVER ASKW (PLC) Commands	C5			12G1	24VDC	1	25	24VDC	POWER SUPPLY 24VDC		
					0V	2	26	0V			
					HS	3	74	24VDC	HIGH SPEED		High speed
					Author.	4	75	24VDC	AUTHOR.		Authorisation
					Intermediate stop	5	49	24VDC	INTERM. STOP		Intermediate stop
Measuring end	6	50	24VDC	MEASURING END	Measuring end						
Pt1000 TEMPERATURE PROBE	C2	1/2"NPT		ADR 3x0.6 sh.	+	Jn	33	+	Pt100	Connect the shielding	
					-	Bc	34	-			
					-	Vt	35	-			

*Refer to the Cable Glands Installation Instruction

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**INSTALLATION GUIDE DI 005 EN J
LPG-TRONIC**

Units of measure:
Length: mm
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Control box LPG-TRONIC

M (1 : 2)

Emergency stop from customer

From Trunk

Air supply

From parking brake

Customer cable gland:
- 2 PG13 cable Ø6-12
- 1 PG09 cable Ø4-8

Pneumatic block

Pneumatic indicator (presence air brake park)

Luminous power button

3 Sub-D 9pin male

Regulator calibrated at 6 bar and fittings packed in bag

Driving beam ADR ISO 6722 - 12G1 - L=13m

Print cable L=5m power supply and RS232

Serial link beam shielded - L=13m

Vent plug (do not block)

Technical features

- Box (No ATEX): 250x200x159 material ABS with transparent lid.
- Protection level : IP50
- Temperature : -10° to +60°C
- Mass (except wiring): about 3.2 kg
- Electrical part:
 - Input power 24Vcc (truck)
 - Customer terminal block BN3: 1.5mm² max.
 - Solenoid valves control: 24Vdc ±10% - 1.2W
- Pneumatic part:
 - Pneumatic (4 output 3/2NC)
 - Fluid: 40µm filtered air lubricated or not
 - Operating Pressure: 10 bar max.
 - Flowrate at 6 bar: 500 Nl/min.
 - Pneumatic fittings: for tube Ø6.
 - Unused outputs must be plugged.

PRESENTATION DRAWING DFN045

Description of modification 644
Changing the pressure sensors and adding deactivation of the trunk security after 1min

Control box
GPL-Tronique

907 Dev N°
PPN045 Drawing N°
D 9 / 10 Modified on : 08/11/2018
Rev Folio Created on : 05/06/2012

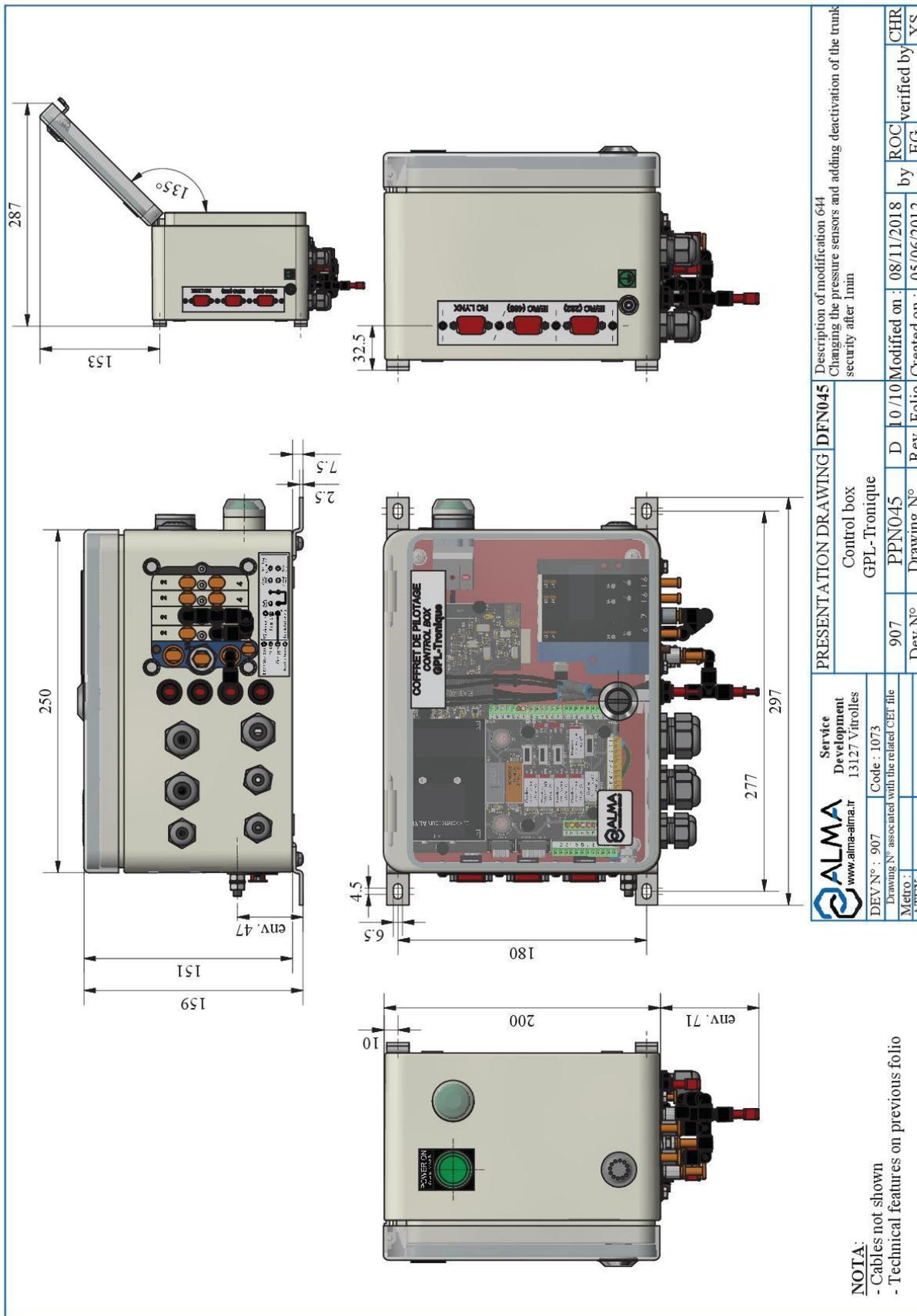
CHR verified by
EG

ALMA Service Development
www.alma-alma.fr 13127 Vitrolles
Code : 1073
DEV N° : 907
Drawing N° associated with the related Cdf file
Metro :
ATEX:

NOTE: Overall dimensions on next folio

Document available on website www.alma-alma.fr

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DEVN° : 907 Code : 1073
Drawing N° associated with the related CEF file
Metro :
ATEX :

PRESENTATION DRAWING DFN045
Control box
GPL-Tronique

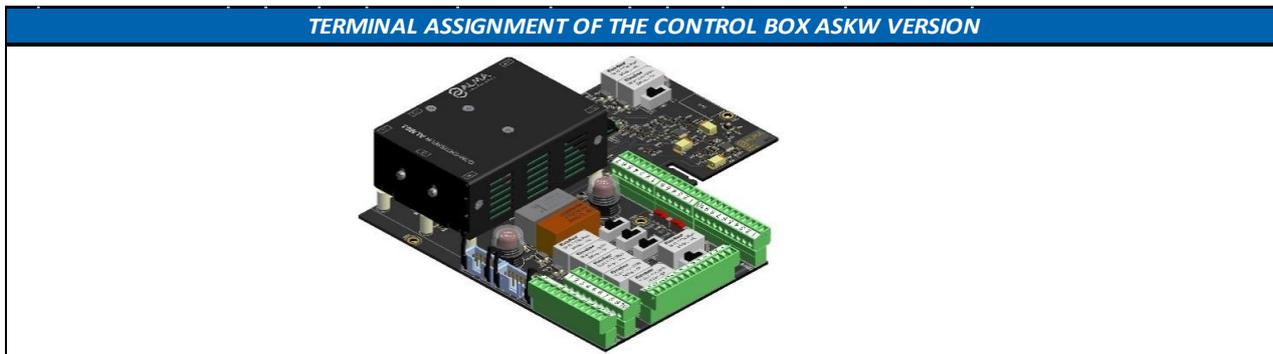
907 Dev N°
PPN045 Drawing N°
D 10/10 Rev Folio
M 10/10 Modified on : 08/11/2018
by EG
ROC verified by XS
CHR

Description of modification 644
Changing the pressure sensors and adding deactivation of the trunk security after 1min

NOTA:
- Cables not shown
- Technical features on previous folio

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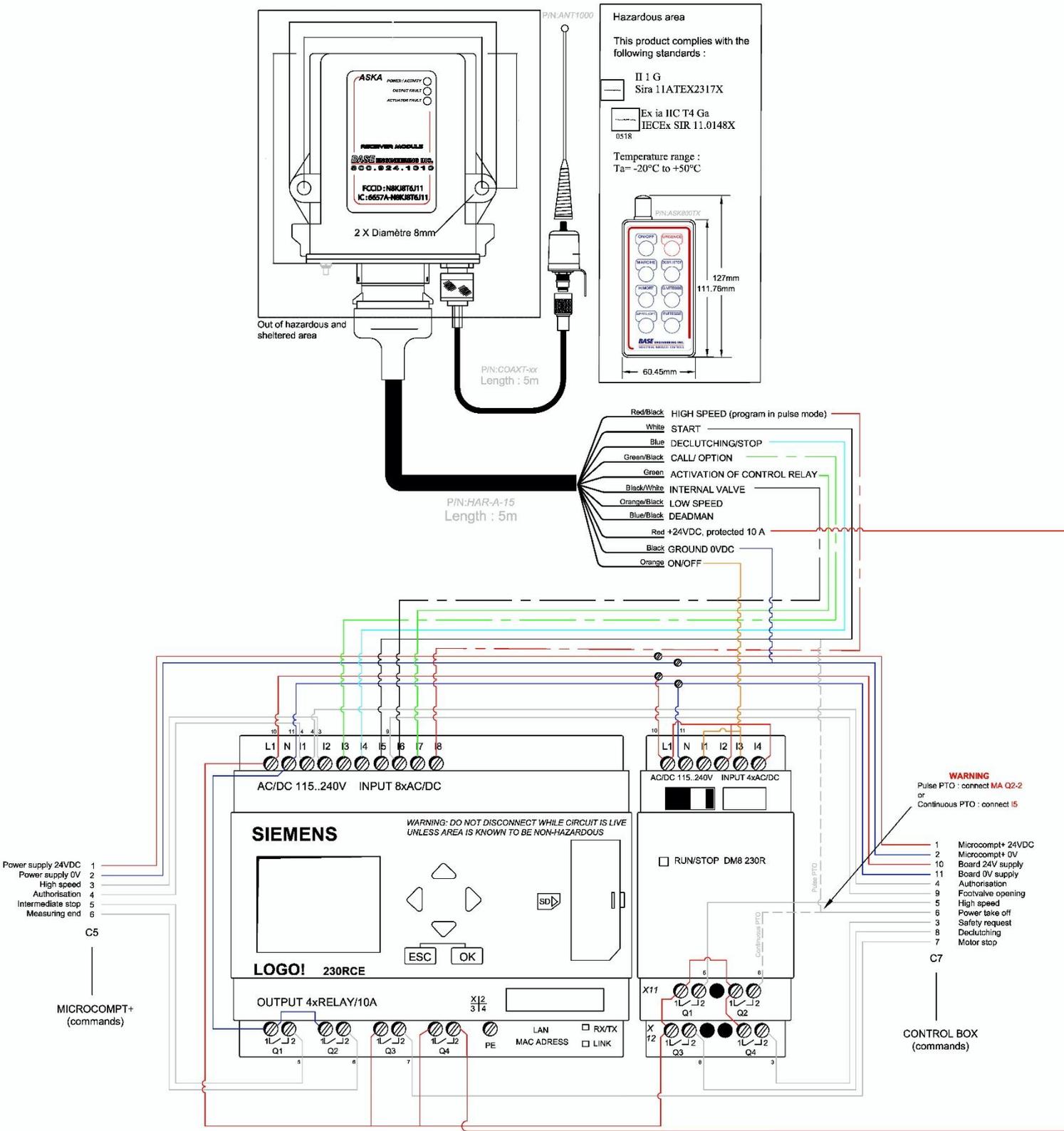
EQUIPMENT CONNECTED TO THE CONTROL BOX							CONTROL BOX TERMINAL BLOCKS							
Option	Equipement	Cable for information)				Function	Colour or No.	Block	Terminal	Function		Observation		
		N°	CG*	Alma	Type									
	MICROCOMPT+ Serial links	C6			12x0.34 sh	Tx	Vt	BN1	1	Rx	PRINTER	RS485 serial link Embedded computing (EC) Remote control (RC)		
						Rx	Jn		2	Tx				
						0V	Nr		3	0V				
						RS485 -	Rs		4	RS485	EC + RC			
						RS485 +	Bc		5	RS232				
						Tx	Bl		10	RS232	EC + RC		RS232 serial link Embedded computing (EC) Remote control (RC)	
Rx	Rg/Bl	11												
	PRINTER	C1		●	2x1	Rx	Vt	BN2	1	Rx	PRINTER			
						Tx	Jn		2	Tx				
						0V	Mr		3	0V				
						24VDC	Bc		4	24VDC				
	POWER SUPPLY					24VDC		BN3 - Bornier client	1	24VDC	POWER SUPPLY	24VDC truck battery (after battery switch and protected by a fuse)		
						0V			2	0V	POWER SUPPLY			
	POWER SUPPLY REMOTE CONTROL					24VDC		BN3 - Bornier client	3	24VDC	POWER SUPPLY RC			
	RC LYNX BELL					0V			4	0V				
	MOTOR STOP								6	24VDC/0V/CS	MOTOR STOP	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact		
	PTO								8	24VDC/0V/CS	PTO	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact		
	HIGH SPEED								10	24VDC/0V/CS	HIGH SPEED	Relay (Configuration 24V, 0V or Free contact) Only used with configuration Free contact		
	PTO CONTROL								11	CS				
	TRUCK TRUNK								12	-	-			
									13	CS	TRUCK TRUNK	Relay Only used with configuration Free contact		
									14	24VDC/0V/CS	TRUCK TRUNK	Relay (Configuration 24V, 0V or Free contact)		
	RECEIVER ASKW (PLC)	C7		●	12G1	24VDC	10		BN3	3	24VDC	POWER SUPPLY RC	MICROCOMPT+ POWER SUPPLY	Fuse
						0V	11			4	0V			
						24VDC	1		BN4	1	24VDC	AUTHOR.	Authorisation	
						0V	2			2	0V			
						Author.	4			4	EV 3/2NC			
						HS	5	5		RELAY	HS			High speed
						PTO	6	6		EV 3/2NC	PTO			Power take off
						Stop	7	7		RELAY	MS			Motor Stop
						DC	8	8		EV 3/2NC	DC			Declutching (or High Speed)
						FV	9	9		EV 3/2NC	FV			Footvalve
Security	3	BN6	5	RELAY	SECURITY	Safety request								
V/J														

*Refer to the Cable Glands Installation Instructions

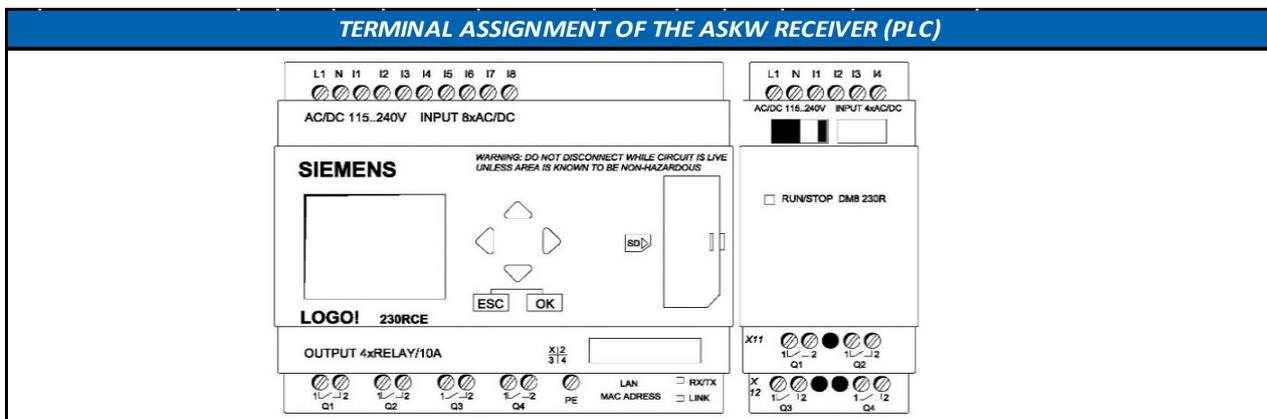
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Electrical wiring ASKW remote control receiver/PLC

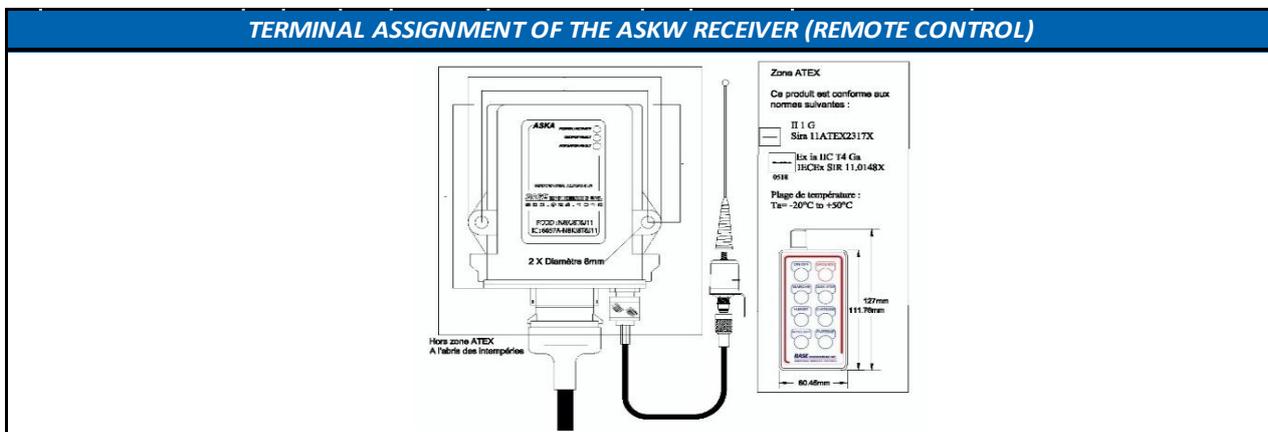
Wiring diagram ASKW receiver/PLC:



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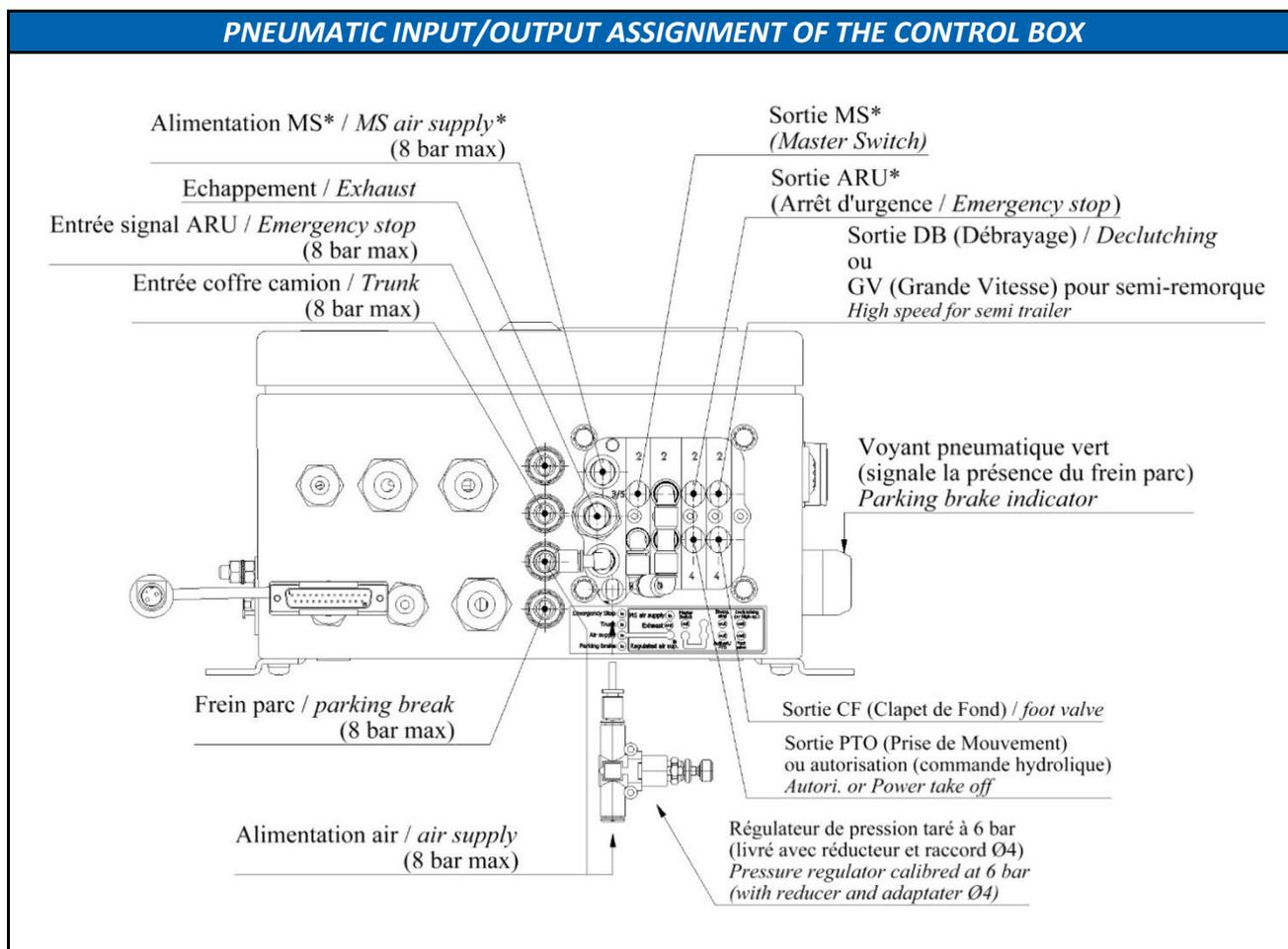
EQUIPMENT CONNECTED TO THE ASKW							TERMINAL BLOCK OF THE PLC FOR ASKW				
Option	Equipement	Cable (for information)			Function	Colour or No.	Block	Terminal	Function		Observation
		N°	CG*	Alma Type							
	MICROCOMPT+ Commands	C5		12G1	24VDC	1	C7	1	24VDC	Connect to C7	
					0V	2	C7	2	0V	Connect to C7	
					HS	3		I2	HS	High speed	
					Author.	4		I1	AUTHOR.	Authorisation	
					Interm. Stop	5		Q1	INTERMEDIATE STOP	Intermediate stop	
					Measur. End	6		Q2	MEASURING END	Measuring end	
	CONTROL BOX Commands	C7		12G1	EV Emergency	3	MAQ4	2	SAFETY REQUESTT	Emergency stop	
					EV Author.	4		I1	AUTHOR.	Authorisation	
					Relay HS	5	MAQ1	2	HS	High speed	
					EV PTO	6	MAQ2	15	PTO	CONTINUOUS Power take off	
								2		PULSE Power take off	
					Relay MS	7	Q3	2	MS	Motor Stop	
					EV DC	8	MAQ3	2	DC	Declutching	
					EV FV	9		I6	FV	Footvalve	
					24VDC	10		L1	BOARD 24V-SUPPLY		
								Q3			1
								Q4			1
								MAQ1			1
								MAQ2			1
							MAQ3	1			
							MAQ4	1			
		MA	L1								
			N								
0V	11		Q1	1	0V						
			Q2	1							
		MA	N								
Parking brake			MA	I2	24VDC	Parking brake	Present: +24VDC Absent: No authorisation				
							I4				



EQUIPMENT CONNECTED TO THE ASKW							ASKW REMOTE CONTROL CABLE		
Option	Equipement	Cable (for information)				Terminal	Block	Cable	Observation
		N°	CG*	Alma	Type				
	ASKW PLC					13		Vt/Nr	CALL/OPTION
						14		Bl	DECLUTCHING/STOP
						15		Bc	START Power take off
						16		Nr/Bc	INTERNAL VALVE
						17		Vt	ACTIVATION OF CONTROL-RELAY
						18		Rg/Nr	HIGH SPEED Program in pulse mode
						2	C4	Rg	24VDC Protected 10A
						11	M/A	Or	ON/OFF
					13				
	MICROCOMPT+	C5		•			2	Nr	GROUND 0V
	CONTROL BOX	C7		•			2		

*Refer to the Cable Glands Installation Instructions

Pneumatic wiring control box ASKW version



Label	Input	Output	Function	Observation
Air supply	X		Main supply of the control box + detector for pressure drop	Pressure >1 bar: green warning light Pressure <1 bar: orange warning light. Disable the security management for trunk, pressure drop and customer ARU
	X		Secondary supply of the control box	The 6 bar-calibrated regulator, the 6/4 reducer and the Ø4 coupling are packed in a bag inside the control box
Air from parking brake	X		Air from parking brake	
Exhaust		X	Exhaust	Put a tube L=100mm min. (no muffler)
Emergency stop*		X	Pneumatic emergency stop	
Declutching		X	Declutching actuator (or High speed)	With pneumatic declutching
Footvalve		X	Footvalve opening	
Power take off PTO or Authorisation		X	Power take off or Authorisation	Power take off: leave the plug in place and don't connect any tube in case of electrical control Authorisation: hydraulic control
ARU Emergency stop input	X		Detection of emergency stop requests	ARU are connected in series in a positive safety loop
Trunk	X		Detection of back trunk openings	No air=trunk opened
MS*		X	Timed Master switch	When using the MS pneumatic output
Supply MS*	X		Master switch air supply	When using the MS pneumatic output

*Unused ports must be plugged.

6. METERING LINE GPL-BALC

A View

M8x1.25 prof. 15 (x4)

Ø152

50

10

180

200

Thermowell

80 mesh filter

Flange for filter access

Clearance of 191min.

2 screws drilled for sealing (mounted diagonally)

Mass: about 30 kg

B View

Gas separator producer data plate

Producer data plate sealing

2 screws drilled for sealing (mounted diagonally)

Non-return valve threaded 2"NPT

110

167

114

79

INLET PRODUCT

3/4"NPT

1/4"NPT

Gas separator

Adriane turbine DN50-30 (ATEX II 2 G c II C T6)

To Microcompt+.

Shielded ADR cable 4x0.34mm² L=3m

White : 0v

Yellow : 6 a 24Vcc

Brown : channel 1

Green : channel 2

Differential valve

1/4"NPT

3/8"

G3/8"

Fitting and valve supplied not mounted

Refer to view A for fastening

Stamping area

200

143

148

5

165

60

254

124

Ø175

Valve sealing

1/4"NPT sealed nozzle for pressure tap

Turbine sealings

3/8"NPT sealed nozzle for thermowell

564

25

OUTLET PRODUCT

Threaded flange 2"NPT

PRESENTATION DRAWING DEF041

GPL-TRONIQUE

Metering line GPL-BALC

907

PPN041

C

5 / 5

Rev

Folio

Created on : 27/09/2010

Modified on : 27/06/2014

by EG

verified by DSM

Dev N°

Drawing N°

Service Development

www.alma-alma.fr

13127 Vitrolles

Code : 4045

DEV N° : 907

Drawing N° associated with the related CET file

Metro : -

ATEX: -

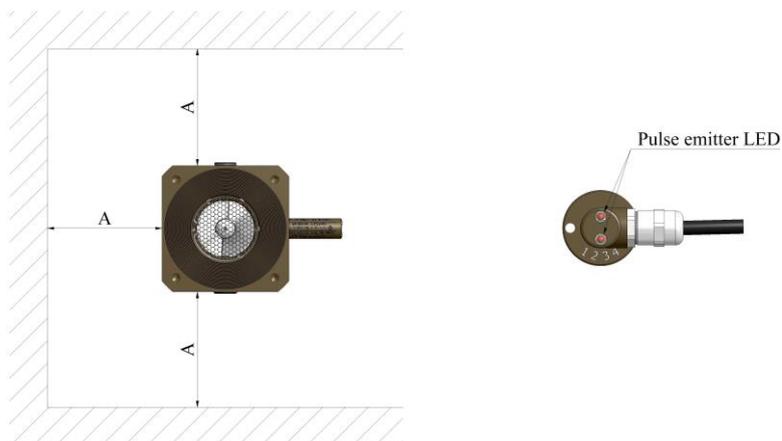
LEAVE FREE ACCESS:
to the turbine meter, to the gas separator, filter and thermowell, and to the every seals for maintenance or any other operation.

Document available on website www.alma-alma.fr

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6.1. INSTALLATION AND SEALING 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 400 μ 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.



- 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 and 1.0 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 and 5 times this diameter downstream.

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.

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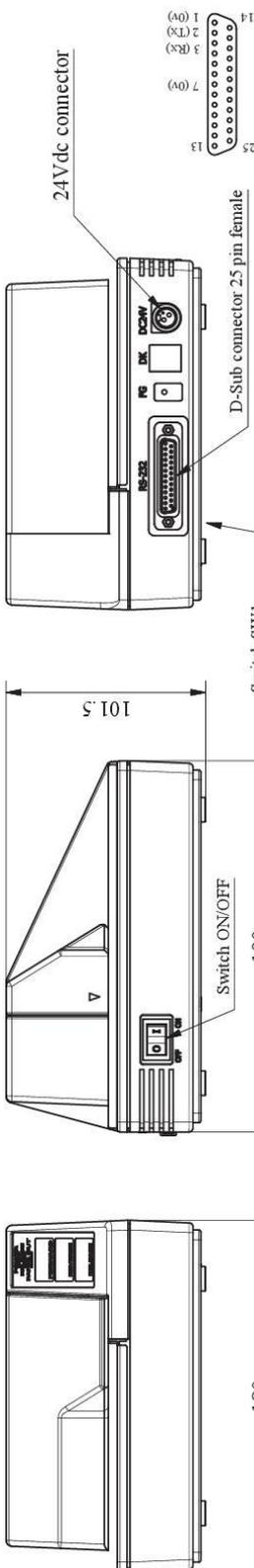
INSTALLATION GUIDE DI 005 EN J
LPG-TRONIC

Units of measure:
Length: mm
Angle: degree (° ' ")
Temperature: °C

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7. **PRINTER**



24Vdc connector

D-Sub connector 25 pin female

Switch SW1 (under printer)

Switch 3 ON

101.5

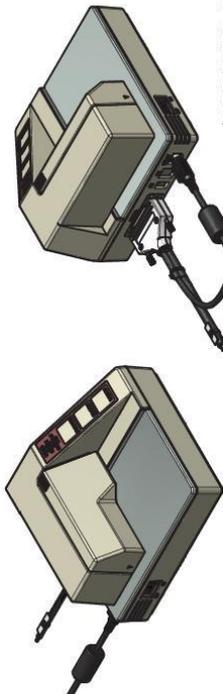
190

180

Technical data:

- Power supply : 24Vdc ±10%
- Current consumption (at 24V) :
 - Mean : approx. 600mA
 - Peak : approx. 5.5A
- Standby : approx. 100mA
- Temperature : +5°C to +40°C
- Mass: 1.6 kg

* ADR-RTMD - NF R13-413 cable



PRINTER LINK CABLE		
TYPE	CABLE	FUNCTION
	Cable 2x0.9mm ² ø ext. 5	24V 0v Shielding
	Shielded cable* 4x0.34mm ² ø ext. 5.4 L=10m / Code: 3370 L=25m / Code: 3436	Rx printer Tx printer 0v Not used Shielding
	Shielded cable* 4x0.75mm ² ø ext. 8 L=5m / Code: 4339 L=10m / Code: 4578	24V 0v Tx printer Rx printer Shielding

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

IF IT'S NOT IN THE TRUCK CABIN, THE PRINTER MUST BE INSTALLED IN A TIGHT BOX IN ORDER TO FACILITATE INTRODUCTION AND EXTRACTION OF PAPER.

DESCRIPTION OF THE AMENDMENT N° :

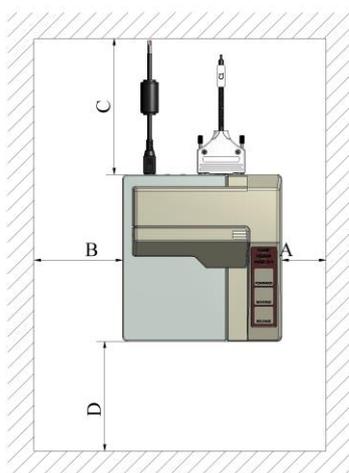
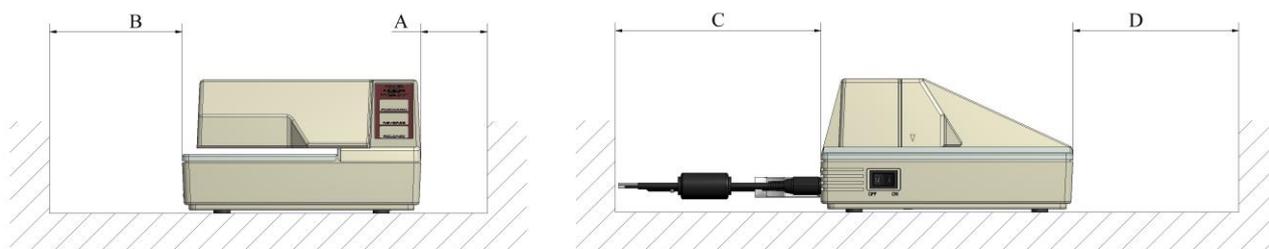
- English version of presentation drawing.

PRESENTATION DRAWING PPN901	
Flatbed printer	TM-U295
907	B 2 / 2
Drawing N°	Rev
Dev N°	Folio
Created on :	Modified on :
24/03/2010	05/05/2014
EG	EG
verified by	DSM
XS	XS

Document available on website [alma-alma.fr](http://www.alma-alma.fr)

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: $A \geq 50\text{mm}$, $B \geq 100\text{mm}$, $C \geq 120\text{mm}$.



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

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INSTALLATION GUIDE DI 005 EN J LPG-TRONIC

Units of measure:
Length: mm
Angle: degree (° '' ''')
Temperature: °C

This document is available at www.alma-alma.fr

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

Technical data:

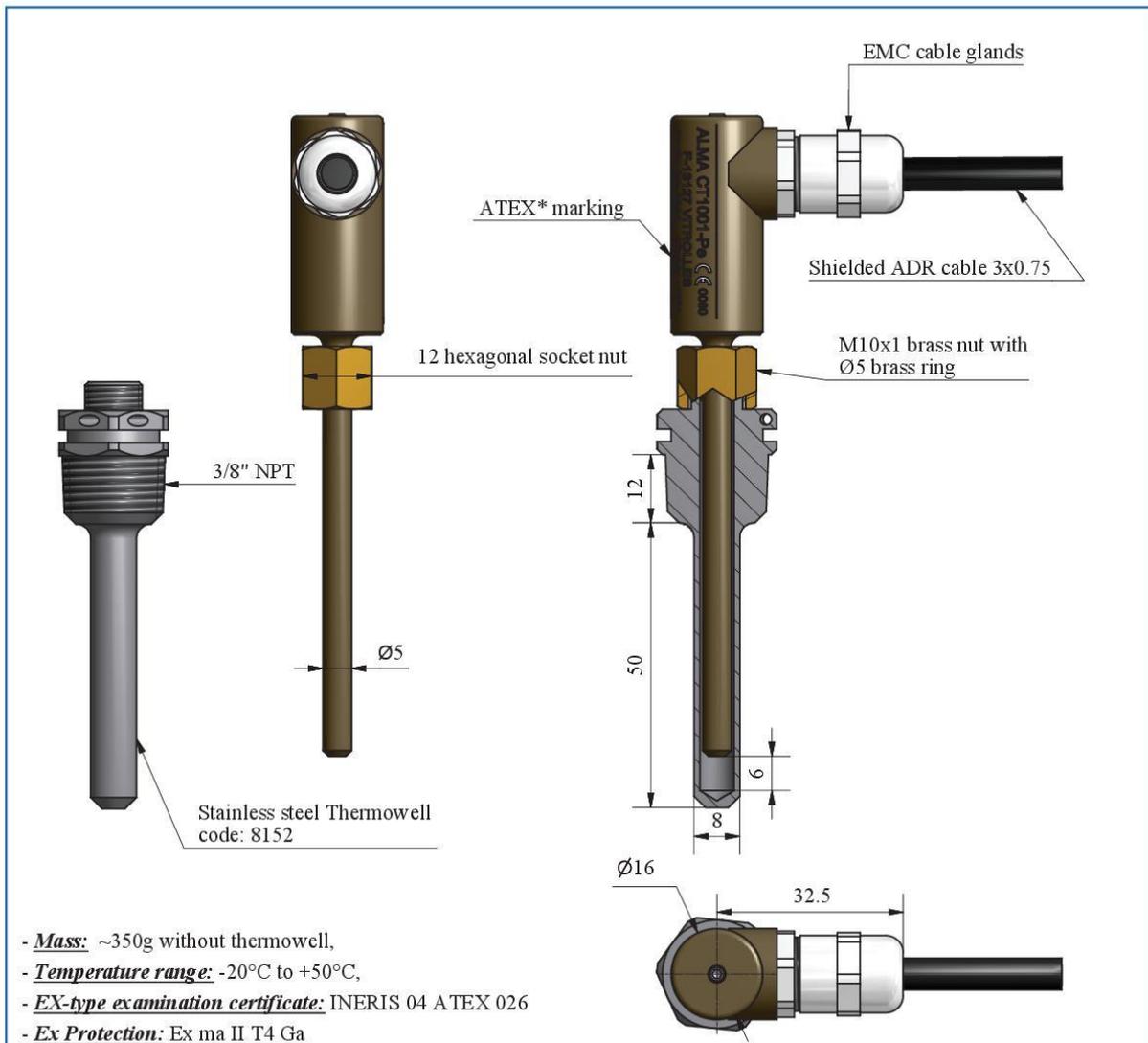
- V input : 19 to 36VDC
- V output : 24VDC
- Current max. : 2.1A
- Power : 50.4W
- Temperature range : -10°C à +60°C
- Mass : 0.38 kg

 Service Development 13127 Vitrolles www.alma-alma.fr		PRESENTATION DRAWING PPN908 24VDC/24VDC CONVERTER 2.1A - 50W		Description of the amendment: N° : - Creation.	
DEV N° : 907	Code : 4225	907	PPN908	A	2 / 2
Drawing N° associated with the related CEI file		Dev N°	Drawing N°	Rev	Folio
Metro :	ATEX :	Created on :	27/02/2014	by	EG
		verified by	EG		

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9. TEMPERATURE PROBE Pt100 – CT1001



- **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 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

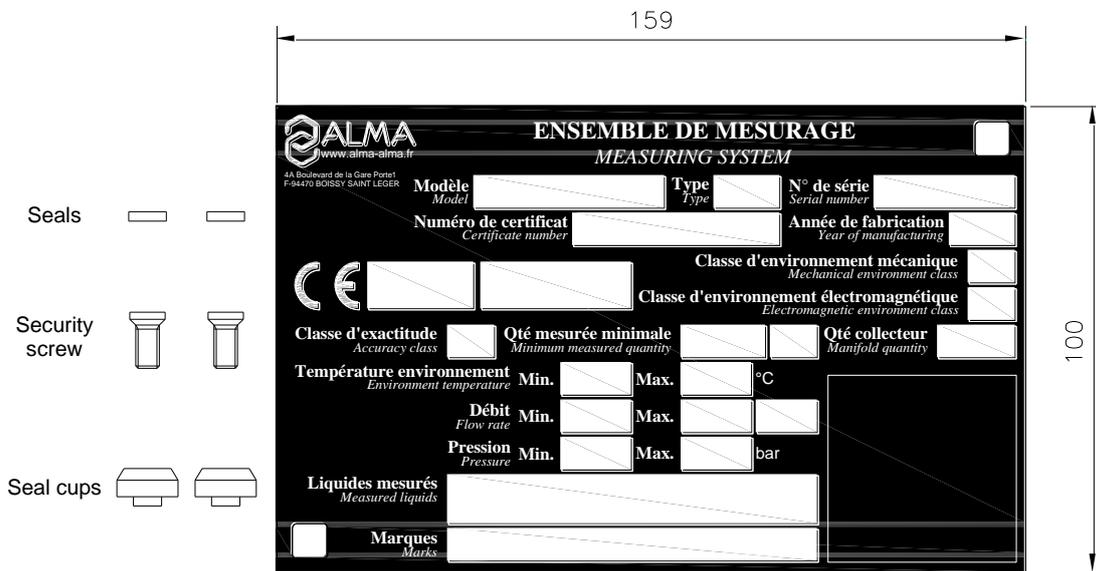
 Service Development 13127 Vitrolles www.alma-alma.fr	PRESENTATION DRAWING		DFV042		Description of the amendment N° 596						
	Temperature probe		CT1001-Pe		- Compliance with ATEX marking - Replacement of the ADR cable - Modification of CI051						
DEV N° : 949d	Code : 8151	949d	PPV042	K	5 / 7	Modified on :	21/02/2018	by	ROC	verified by	CC
Drawing N° associated with the related CET file		Dev N°	Drawing N°	Rev	Folio	Created on :	13/09/2003		BM		BM

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	INSTALLATION GUIDE DI 005 EN J LPG-TRONIC	Units of measure: Length: mm Angle: degree (° ' ") Temperature: °C
	This document is available at www.alma-alma.fr	

10. 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).

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