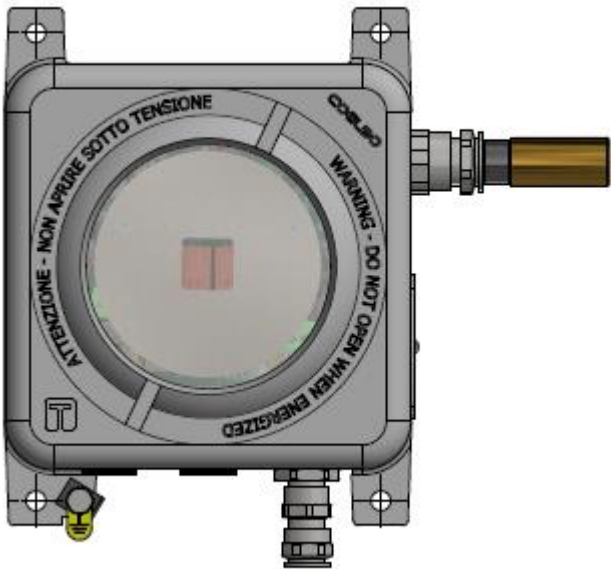



INSTALLATION GUIDE

DI 110 EN B
SECURITERRE 640




B	12/12/2023	Modification	ITB	MC
A	21/06/2019	Creation [EDV538]	DSM	MV
Issue	Date	Nature of modifications	Written by	Approved by

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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. MECHANICAL 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.
- ⇒ 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).

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.
- ⇒ 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.
- ⇒ 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).

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- ⇒ 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.
- ⇒ 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

2. SAFETY

The technician must have basic technical skills to be able to safely install the equipment. When the Securiterre is installed in a hazardous area, the technician must work in accordance with the (local) requirements for electrical equipment in hazardous areas.





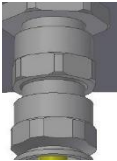
In hazardous areas it is compulsory to use personal protection and safety gear (hard hat, fire-resistant overall, safety shoes, safety glasses and working gloves).

Avoid possible generation of static electricity. Use non-sparking tools and explosion-proof testers.

Make sure no dangerous quantities of combustible gas mixtures are present in the working area.

Never start working before all parties have signed the work permit.

3. PART LIST

EQUIPMENTS INCLUDED IN THE MEASURING SYSTEM DELIVERED BY ALMA			
Item	Equipment	Designation	Qty
1		GROUNDING SYSTEM SECURITERRE 640 The Securiterre is configured for truck application	1
2		EARTHING CLAMP	1
3		EARTHING CABLE CLAMP	1

Non-contractual pictures

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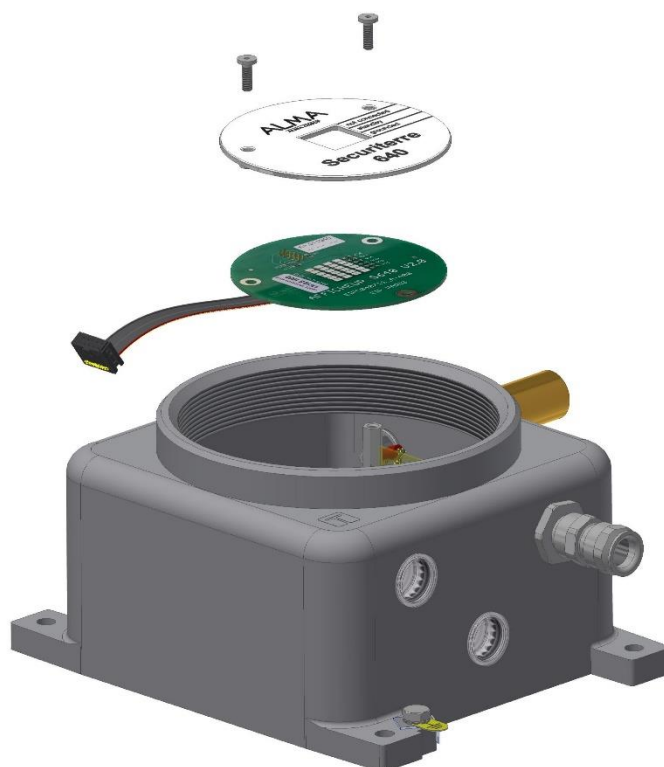
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- 1) Unscrew the top lid (comprising the glass window)



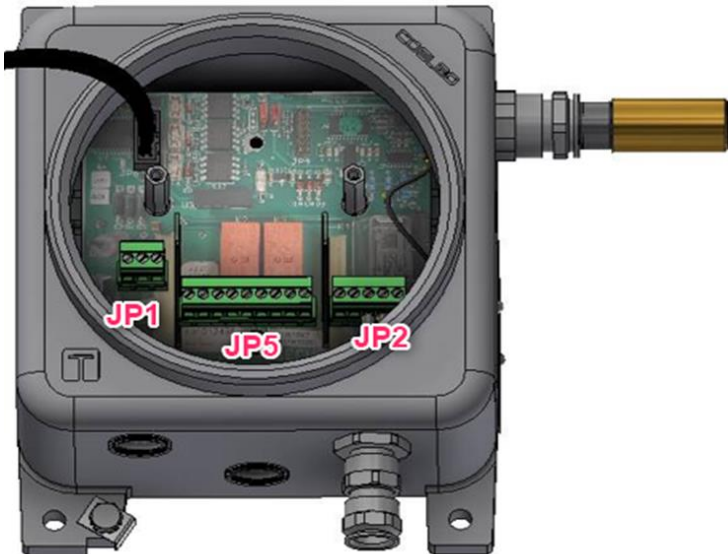
- 2) Loosen the two screws



- 3) Carefully disconnect the flat cable between display board and main board
- 4) Remove the display board.

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Then the main board becomes visible. At the bottom of the main board three connectors JP1, JP5 and JP2 can be located as depicted in the table that follows.


TERMINAL ASSIGNMENT OF THE SECURITERRE MAIN BOARD							
							
EQUIPMENTS CONNECTED TO THE SECURITERRE				SECURITERRE MAIN BOARD			
Equipment	Cable (for information)		Colour or No.	Block	Terminal	Function	Observation
	CG*	Type					
POWER SUPPLY	M20		Brown	JP1	1	Phase	Power supply 230Vac 5VA power supply
			Blue		2	Neutral	
			Yellow/green		3	GND	
EQUIPMENT CONNECTED TO RELAYS	M20	?		JP5	1	Relay_1 NC	Authorization exit N°1 Active when the process of analysing the vehicle and removing its electrostatic charge has been successfully completed.
					2	Relay_1 Common	
					3	Relay_1 NO	
					4	Relay_2 NC	Authorization exit N°2 Active when the clip is hooked onto the brass cylinder.
					5	Relay_2 Common	
					6	Relay_2 NO	
					7	NC	Loading authorization and rest position relay outputs Active when the clip is hooked onto the brass cylinder.
					8	Common	
					9	NO	
CABLE-CLAMP	M20	?	Yellow/green 4mm2	JP2	1	Clamp	Grounding management Analysis of the vehicle and removal of its electrostatic charge.
			-		2	-	
			Yellow/green 4mm2		3	GND	
			Black 1mm2		4	Rest plug	
			-		5		

*Refer to the Cable Glands installation instructions

NOTE: All pins numbered "1" are positioned on the left side of the connectors.

NOTE: If no other devices are connected, the cable entry should be closed with an approved M20 threaded blind plug.

NOTE: The Return point clamp (rest pin) is a brass pin intended to calibrate the clamp. The user should place the clamp on this pin when the clamp is not connected to a truck.

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Wiring of JP2 for Truck, Train and Barrel version

Connector JP2 is used for connecting the clamp, the rest plug and the ground are listed in the following table.

Pin number	Truck	Train	Barrel
1	Clamp	Clamp	Clamp 1
2	Clamp GND	N.C.	N.C.
3	Ground	Ground	Ground
4	Rest plug	Rest plug	Rest plug
5	N.C.	N.C.	Clamp 2

N.C.: Not Connected

Clamp GND: Only reel cable

Jumper configuration

The jumper settings have been adjusted to truck version in our factory.

Jumper	S2	S1
Truck	2-3	2-3
Train	1-2	2-3
Barrels	2-3	1-2



NOTE: S1 position 1-2 means that a jumper is inserted between positions 1 and 2 of S1.

Closing the Securiterre after wiring

See Figure 1 and proceed as follows:

- 1) Re-place the display board and secure it with the 3 screws, marked C
- 2) Re-connect the flat cable between display board and main board
- 3) Close the top lid, marked B.



Keep thread of top lid free from dirt. Before closing, grease the thread lightly with anti-seize grease.

When closing, never tighten the top lid before the thread is properly engaged. The top lid should be turned counterclockwise until the thread “clicks” into place, then turn clockwise until the top lid is fully closed. Close the top lid, tightening it firmly by hand to crush the seal. Then, tighten the locking screw embedded in the lid.

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NOTE: Do not yet apply power to the Securiterre in this stage; see the operating guide Securiterre 640.

6. REQUIREMENTS TO START AND CONTINUE GROUNDING

If the grounding system does not operate correctly, refer to the table that follows for the applicable requirements.

In the truck mode, when the grounding is started, if the minimum conditions of capacitance are not satisfied the product unlocks the ground safety.

Mode	Capacitance to ground	Resistance to ground	Resistance between the two terminals
Truck	> 470(pF)	> 330(Ω)	-
Train	-	< 500(Ω)	-
Barrel	-	-	< 20(Ω)

7. MAINTENANCE SECURITERRE

NOTE : Before working on the test pin, make sure you are in a safe environment and that the SECURITERRE power supply is switched off.

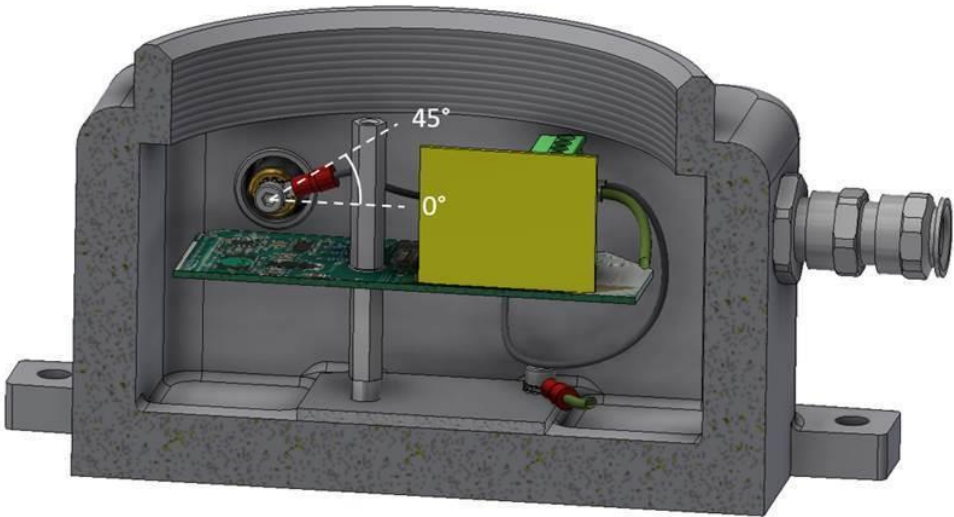
When installing the test pin :

- Ensure that the internal terminal does not touch the circuit:

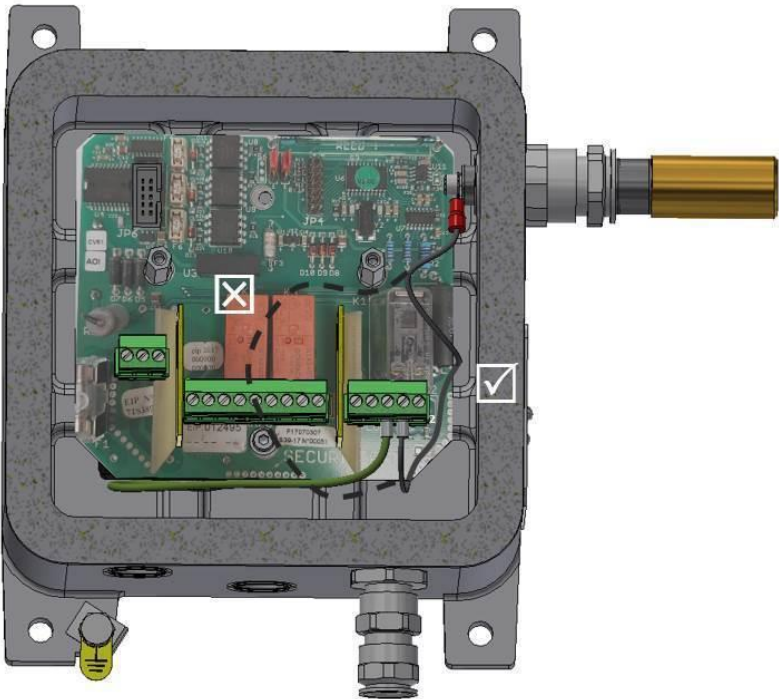
- Rotate the test pin so that the terminal is between 0° (parallel to the circuit) and 45°

-Tighten the cable-clamp to lock the test pin.


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Moreover, make sure that the cable is on the side of the terminal block to which it is connected. The cable must not go around the centre of the box:



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