
Installation guide 640 Securiterre

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Preface

This guide is intended for technicians involved in the mechanical and electrical installation of the Honeywell Enraf Series 640 Securiterre.

For commissioning and service of the 640 Securiterre, please refer to the Instruction manual of the 640 Securiterre. This guide solely describes the installation of the 640 Securiterre.

Legal aspects

Safe execution of the procedures described in this manual requires technical skill in the handling of tools and knowledge of the requirements for installation of explosion-proof equipment in hazardous areas.

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- Deviation from any of the prescribed procedures
- Execution of activities that are not prescribed
- Neglect of the safety regulations for handling tools and use of electricity

EC declaration of conformity

Refer to the declaration of conformity shipped with the instrument

Additional information

Please do not hesitate to contact Honeywell Enraf or its representative if you require any additional information.

Safety


Safety aspects of the 640 Securiterre

The Securiterre is entirely safe for mounting in hazardous areas.

Warning

Do not use the instrument for anything else than its intended purpose.

The housing of the 640 Securiterre is explosion proof and complies with European ATEX standards which include EN 50.014, EN 50.018, EN 50.020, EN13463 and EN50281-1-1 and is certified as:

 II 2 (1)/1 G D
EEx d [ia] ia IIC T6, IP6X T+85°C

Environmental conditions for the Securiterre are:

- Ambient temperature: -20 to +55°C
- Ingress protection: IP66

Caution

The Securiterre is an explosion proof instrument with an intrinsically safe circuit. Modifications to the instrument may only be carried out by trained a personnel authorized by Honeywell Enraf. Failure to adhere this will invalidate the approval certificates.

Personal 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.

Warning

In hazardous areas it is compulsory to use personal protection and safety gear such as: 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.

Safety conventions

“**Warnings**”, “**Cautions**”, and “**Notes**” are used throughout this installation guide to bring special matters to the immediate attention of the reader.

- A **Warning** concerns danger to the safety of the technician or user
- A **Caution** draws attention to an action which may damage the equipment
- A **Note** points out a statement deserving more emphasis than the general text, but not requiring a “Warning” or “Caution”.

Storage and unpacking

Storage

During storage, the Securiterre should preferably be kept in its original packing and stored indoors. When the Securiterre has already been installed on site and will be out of operation for a prolonged period, it is recommended to keep the mains on. When this is not possible, put some moisture-absorbing material such as silica gel in the electronic compartment of the Securiterre

Unpacking and inspection

Inspect the package upon arrival and immediately notify the transporter or representative of any damage. In any case do not throw away the packaging, as it will be of use for further transport on site or when the instrument is returned for service or warranty.

Inventory Checklist

- Electronics in Ex-d (flameproof) housing
- Coiled blue cable (extends to 15m) with grounding clamp, including one M20 cable gland with strain-relief,
or
Cable dispenser with 15 m cable and grounding clamp
- Installation guide (this document)

The identification code specifies the type of instrument and must agree with your order. The type plate is fastened on the outside of the Securiterre. When the type on the label of your Securiterre does not conform the identification code, consult your representative or Enraf B.V.

Mechanical installation

The Securiterre 640 is designed to be mounted in a hazardous area and to operate under extreme ambient temperatures. Installation as such should comply with ENIEC60079-14.

Warning

Make sure that all power to the instrument is switched off before opening any covers of the 640 Securiterre. Failure to do so may cause danger to persons or damage to the equipment. All covers of the 640 Securiterre must be closed before switching on the power.

Caution

The Securiterre may be installed in hazardous areas. The classification of the hazardous area may vary with the optional functions of the Securiterre and per approval certificate. Before starting the installation, check whether the actual area of installation complies with the area classification on the applicable approval certificate for your type Securiterre.

Mechanical installation of 640 Securiterre

The Securiterre should be mounted vertically to a loading rack by means of 2 bolts. The mounting position should be chosen near the truck in order to ensure a good visibility of the pilot LEDs (it is vital to provide for a solid mounting solution for the Securiterre).

Refer to Appendix A for the dimensional drawing.

Caution

Keep thread of cover free from dirt. After opening, grease the thread lightly with anti seize grease.

When closing, never tighten the cover before the thread is properly engaged. The cover should be turned counterclockwise until the thread “clicks” into place, then turn clockwise until the cover is fully closed. Close the cover finger tight only.

Mechanical installation of Cable Dispenser (optional)

Install the cable dispenser according to the enclosed instructions ‘Cable reels, series 0951’.

Keep in mind that the delivered cable has a length of 2 meters (6.5 ft) and hence, should be installed close to the 640 Securiterre.

Refer to Appendix A for the dimensional drawing.

Refer to Appendix B for electrical connection instructions.

Electrical installation

Ground connection

It is required to properly ground the 640 Securiterre to the loading rack by means of a ground wire. A 4 mm² single or stranded copper wire, which is generally accepted by the safety authorities, should be connected to the external ground terminal on the instrument.

The external ground terminal of the Securiterre is provided with two serrated washers and a 6 mm hex bolt. One washer is used to assure a good contact to the enclosure. The other washer is used to lock the bolt. Refer to figure 1; external ground terminal is marked **A**.

Cable glands

Explosion proof (Ex-d) cable glands must be used, depending on local requirements. Refer to the Ex-marking on the identification label of the 640 Securiterre to determine which type of cable gland is required, please use selection criteria 60079-14 as such.

Note: Mount the glands according to the suppliers' instructions

Depending on the wiring configuration, two to three M20 threaded cable glands may be required with the 640 Securiterre

Note: Seal the unused cable inlets with an approved M20 threaded blind plug.

Warning

Improper installation of cable glands or blind plugs will invalidate the Ex approval of your 640 Securiterre.

All not used entries must be closed with suitable blind-plugs.

Wiring to the 640 Securiterre

To connect the wiring to the 640 Securiterre, the top lid must be unscrewed and the display board removed. Refer to figure 1 and proceed as follows:

- 1) Unscrew the top lid (comprising the glass window), marked **B**;
- 2) Loosen the three screws, marked **C**;
- 3) Carefully disconnect the flat cable between display board and main board;
- 4) Remove the display board.

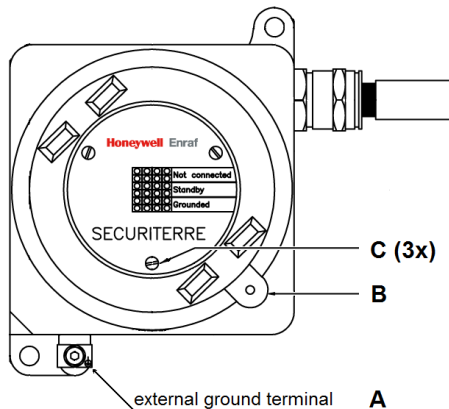


Figure 1 640 Securiterre

Then the main board becomes visible. At the bottom of the main board three connectors can be located as depicted in Figure 2.

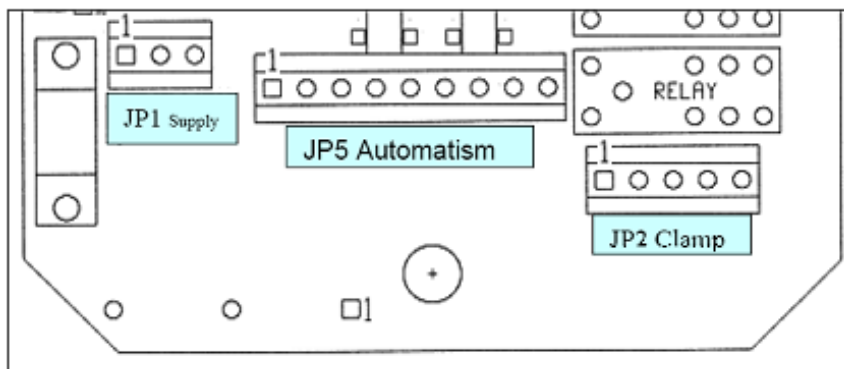


Figure 2 Location of connectors on main board

-
- JP1 Power Supply
 - JP2 Cable-Clamp Assembly
 - JP5 Authorization and rest position relay outputs

Note: All pins numbered “1” are positioned on the left side of the connectors and are marked by a square.

Wiring JP1 Power Supply

In connecting the power supply the cable gland should be fastened into the outer left cable entry and wired onto JP1 according the table depicted on the following page:

JP1 Pin number	110-240 Vac
1	Power (phase)
2	Power (null)
3	Ground

Wiring JP2 Ex Plug Reel / Cable-Clamp assembly

In connecting the cable-clamp assembly or the cable from the Securistore (reel), the cable gland should be screwed into the outer right cable entry and wired onto JP2 according the below depicted tables and drawings:

Note: The ground wire (yellow) and the rest plug wire (grey) are available as internal wires, they will not be passed through the cable gland.

Note: All wires to/from JP2 are Intrinsically Safe, they should be routed separately from other wires.

Note: When the Securiterre is supplied with the coiled cable, the coiled cable connections are already terminated inside the Securiterre.

Wiring Truck version Securiterre (Position 3 Model Selection Code = T)

JP2 pin number	Coiled cable (pos.8 MSC=C)	Securistore (pos.8 MSC=D)
1	Clamp *)	Reel **)
2	N.C.	Reel
3	Ground	Ground
4	Rest Plug	Rest Plug
5	N.C.	N.C.

*) Two wires connected to the same pin.

***) Wire from reel connector, marked with red dot.

N.C. Not Connected

MSC Model Selection Code

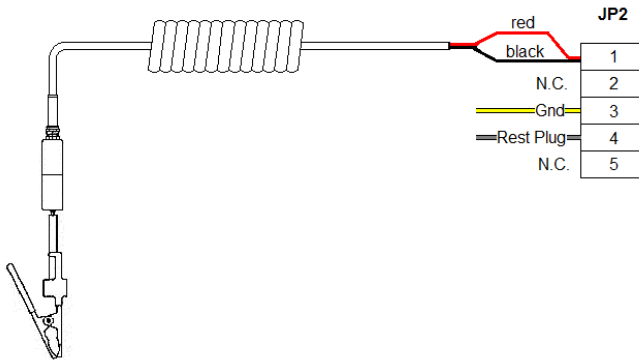


Figure 3 Wiring Coiled cable Truck version

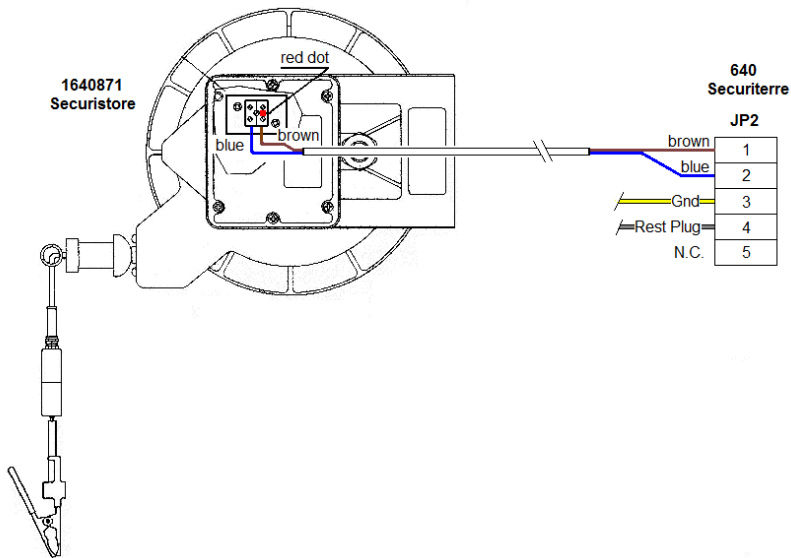


Figure 4 Wiring Securistore Truck version

Wiring Train wagon version Securiterre (Position 3 Model Selection Code = **W**)

JP2 pin number	Coiled cable (pos.8 MSC=C)	Securistore (pos.8 MSC=D)
1	Clamp *)	Reel *)
2	N.C.	N.C.
3	Ground	Ground
4	Rest Plug	Rest Plug
5	N.C.	N.C.

*) Two wires connected to the same pin.

N.C. Not Connected

MSC Model Selection Code

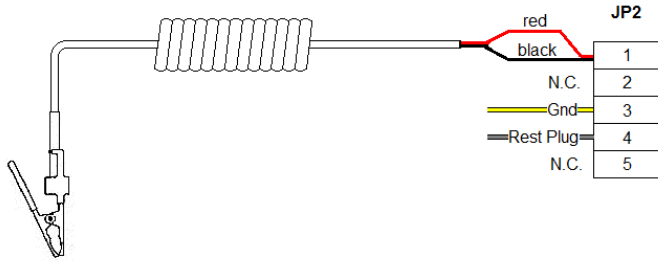


Figure 5 Wiring Coiled cable Train wagon version

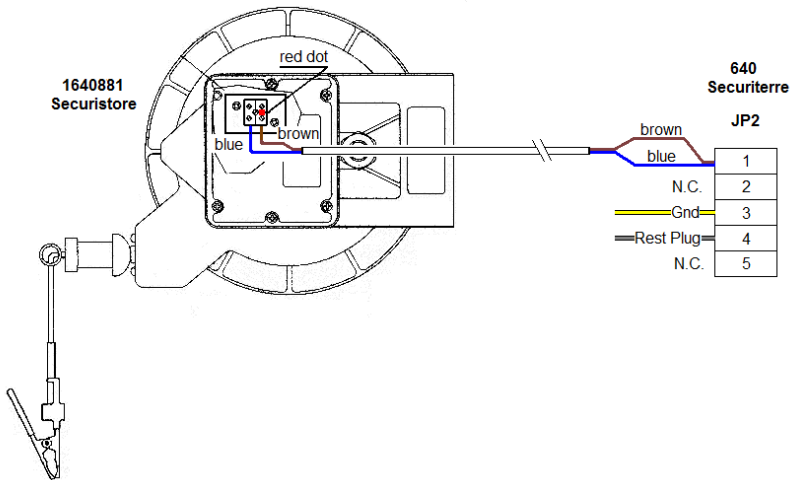


Figure 6 Wiring Securistore Train wagon version

Wiring Barrel version Securiterre (Position 3 Model Selection Code = B)

JP2 pin number	Securiterre produced before 2014 s/n ≤ 640010750	Securiterre produced from 2014 s/n > 640010750
1	Clamp (red)	Clamp (red)
2	Rest Plug	N.C.
3	Ground	Ground
4	Clamp (black)	Rest Plug
5	N.C.	Clamp (black)

N.C. Not Connected

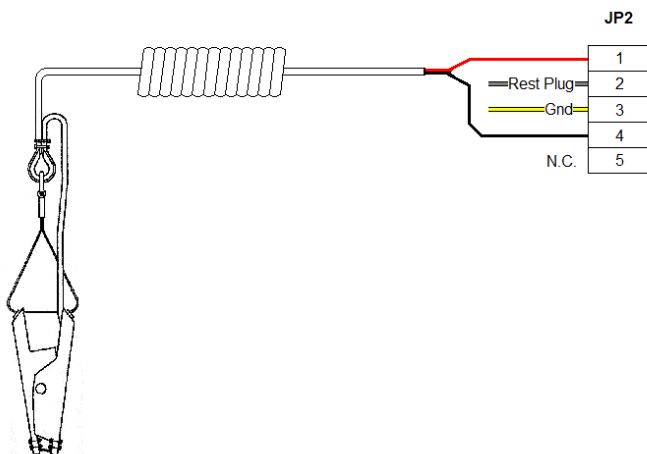


Figure 7 Wiring Coiled cable barrel version (s/n ≤ 640010750)

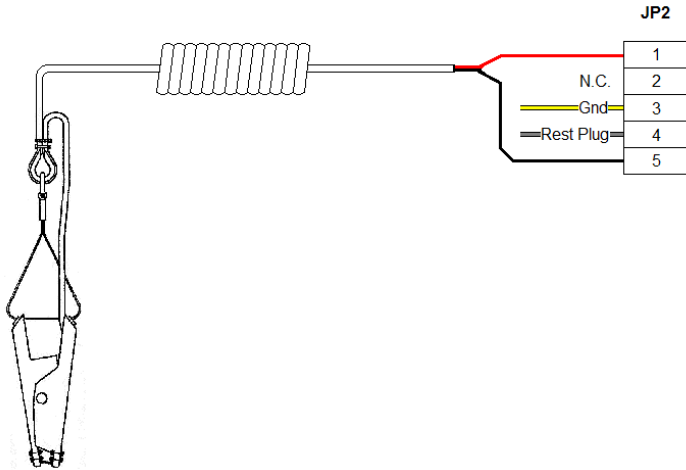


Figure 8

Wiring Coiled cable barrel version (s/n > 640010750)

Wiring JP5 Authorization and rest position relay outputs

JP5 can be utilized in the interconnection with Tanker-loading systems, pumps, valves, alarms, etc. As such the cable gland should be fastened into the middle cable entry and wired onto JP5. The following internal voltage free switch contacts can be utilized:

JP5 Pin number	Function
1	Loading authorization relay 1 N.C.
2	Loading authorization relay 1 Common
3	Loading authorization relay 1 N.O.
4	Loading authorization relay 2 N.C.
5	Loading authorization relay 2 Common
6	Loading authorization relay 2 N.O.
7	Rest position relay N.C.
8	Rest position relay Common
9	Rest position relay N.O.

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

Note: The rest position relay will not switch in barrel mode.

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.

Closing the Securiterre after wiring

Refer to Figure 1

- 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.

Caution

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 finger tight only.

Do not yet apply power to the Securiterre in this stage; refer to the instruction manual 640 Securiterre.

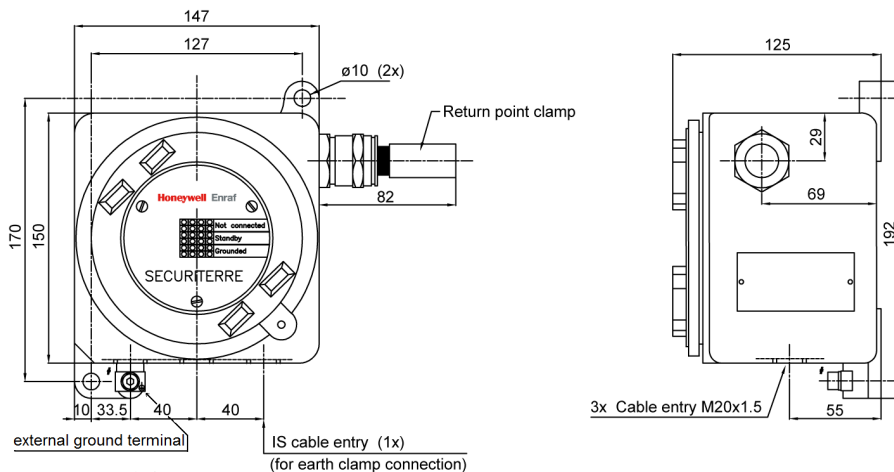
Remaining jumper settings

The 640 Securiterre does not require preventive maintenance. The instrument is adjusted in the factory to your specific application and carefully tested before shipping. Hence installation without any adjustments is possible after receipt of the instrument.

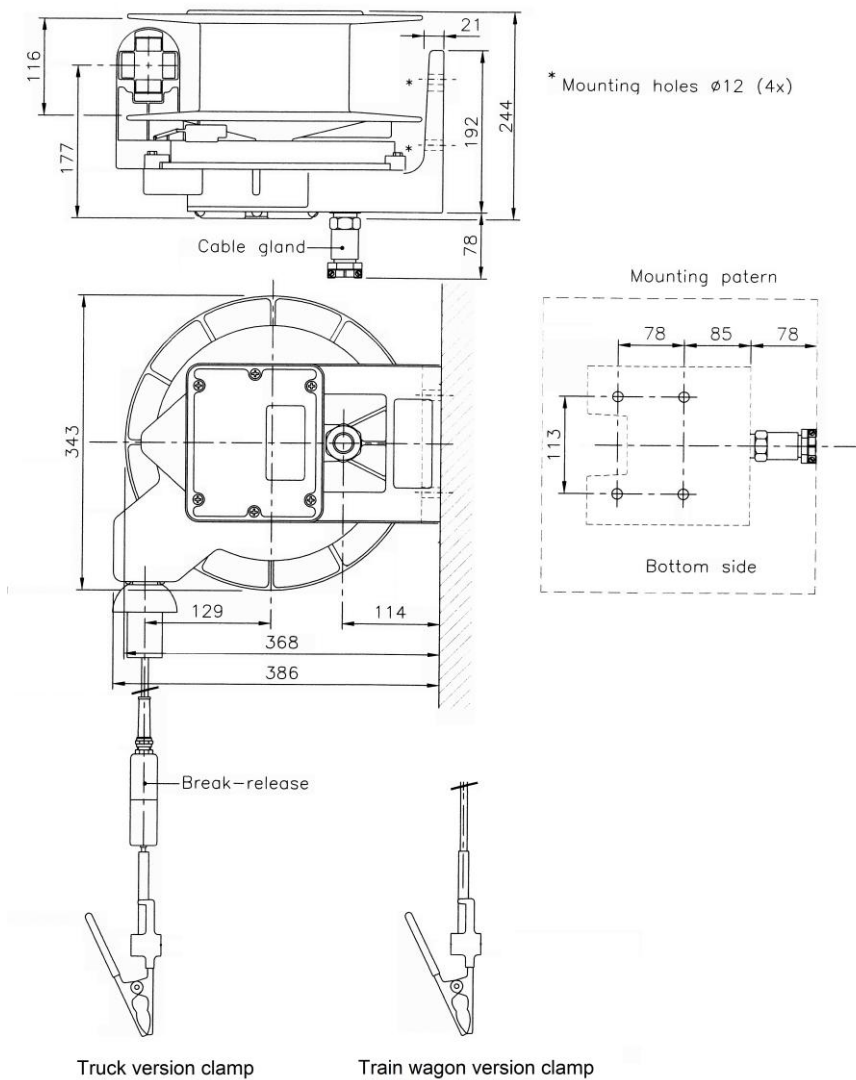
For commissioning and service details, please refer to the instruction manual of the Securiterre 640.

Appendix A Dimensional drawings

640 Securiterre



Cable dispenser



Appendix B Connecting wiring to Securistore

- 1) Open the connection box lid by loosening the six phillips head screws;
- 2) Carefully remove the gasket of the connection box;
- 3) Feed the cable from the Securiterre through the cable gland into the connection box;
- 4) Connect the wires according to the table of JP2 and/or Figures 4 or 6;
- 5) Make sure the connection box edge and gasket are clean, then position the gasket on the connection box;
- 6) Make sure the connection box lid is clean, then place the lid and secure it with the six phillips head screws.

Appendix C Spare Parts

Part	Function	Part number
Main Board	CPU circuits	S0640601
Display Board	Led display	S0640602
Rest Position Plug	Metal part	S0640102
Coiled Cable + Clamp (train wagon version)	Connection	S0640103
Coiled cable + Clamp (truck version)	Connection	S1640872
Coiled Cable + Clamp (barrel version)	Connection	S1640892
Clamp (truck version)	Connection	S0640104
Brine Magnet	Manual override	A0186236

Related publications

- Instruction manual Securiterre 640
- Brochure Load automation systems, for safety and precision
- Safety instructions

Notes:

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