

# MICROENER

## INSTRUCTIONS MANUAL REMOTE SIGNALLING AND CONTROL PANEL PR5

FDE n° : 15NLT1061638 Rév. A

BPA - LA 28 AVR. 2015

GESTION DES MODIFICATIONS				
Mod.	Description	Date	Création	Validation
Z	Création	16/04/2015	NLT	LA
A	Diffusion	17/04/2015	NLT	LA

## PR5

**REMOTE SIGNALLING AND CONTROL PANEL**  
to join to the following devices for the  
permanent insulation control:

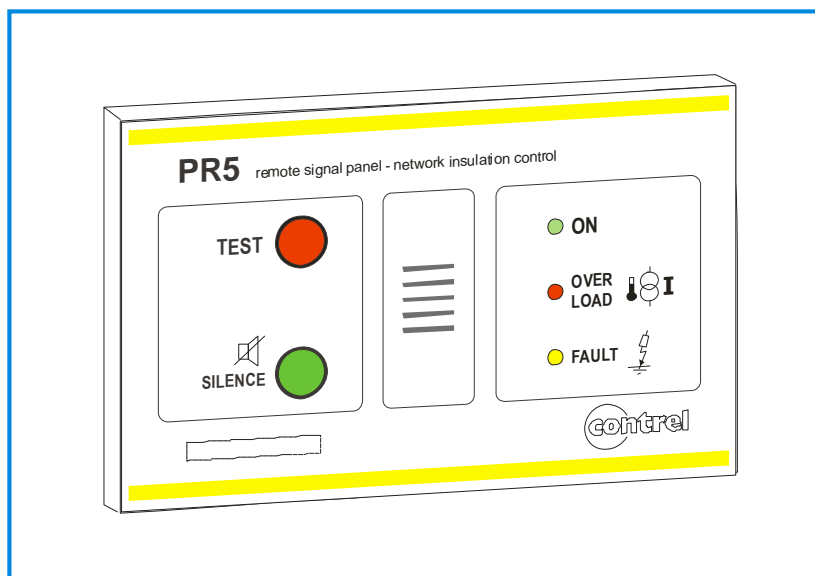
- **HRI-R40**
- **HRI-R22t**
- **HRI-R22**
- **HRI-R24**
- **HRI-R24N**

### GENERAL

The remote signalling panel type **PR5** allows to see the alarm signalling from insulation control device in medical network in according to the relative standards.

The device that can be joined are:

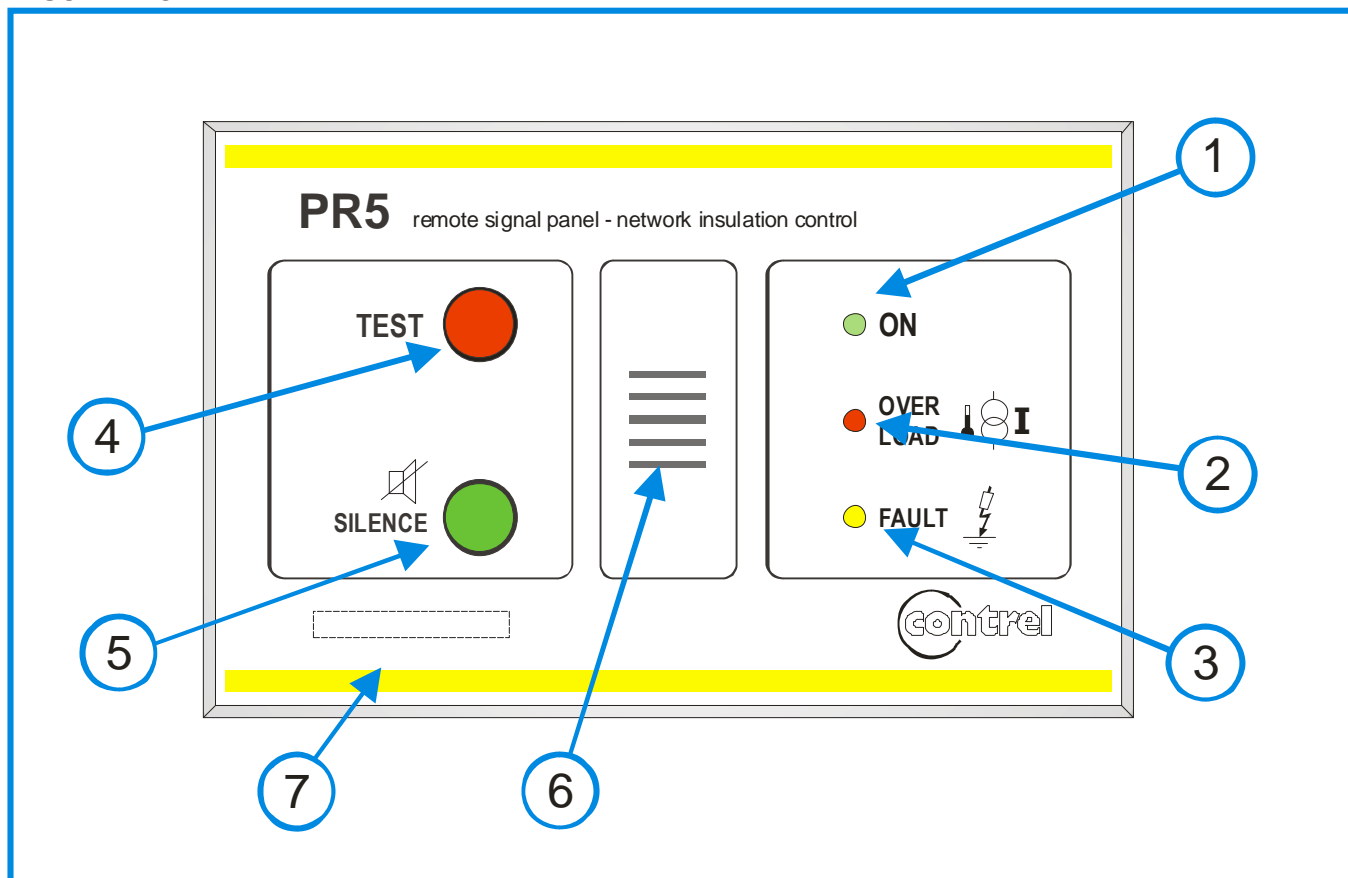
HRI-R40  
HRI-R22t  
HRI-R22  
HRI-R24  
HRI-R24N



The device HRI always controls the level of insulation and overload of hospital power supply lines (network IT-M). The alarm signalling of low insulation and/or overload could be signalled inside of rooms supplied from the same line thanks to PR5 panel, which has the corresponding signalling LED's on the front. These devices have inside an alarm buzzer, a TEST key and a SILENCE key to stop the acoustic signalling.

As request from the standard the signalling of the fail network must be indicated in all power room. The PR-5 can be installed in universal wall mounting boxes (E503) in order to be placed the rooms supplied by the network under control.

In the box there are two stickers of identification joined control device, so to indicate on the front panel if the signal are referred to 230 V or 24V.

**DESCRIPTION****LEGENDA:**

- 1: Green LED to signal that the device is on (presence of power supply)
- 2: Red LED to signal the network overload (over temperature and/or over current)  
(only in the connection with HRI-R40 / HRI-R22t)
- 3: Yellow LED to signal a failure (low insulation)  
(with the HRI-R40 to signal system error or anomaly too)
- 4: TEST button to verify the functionality of the system
- 5: SILENCE button to stop the acoustic alarm
- 6: Buzzer
- 7: Area to put the referring of the control device or the network under control

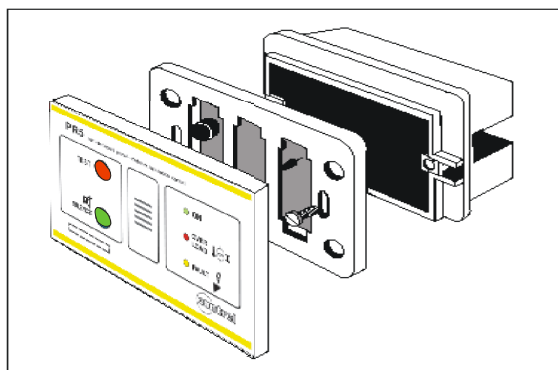
The functions are:

- Signalling of device on with green LED [ON]
- Signalling of low insulation level with yellow LED [FAULT]
- Signalling of electrical or thermic overload with red LED [OVERLOAD]  
(only with the connection to HRI-R40 / HRI-R22t)
- Acoustic signalling of low insulation and overload alarm
- Push-button to silence the acoustic signalling [SILENCE]
- Push-button to test the functionality of the device [TEST]

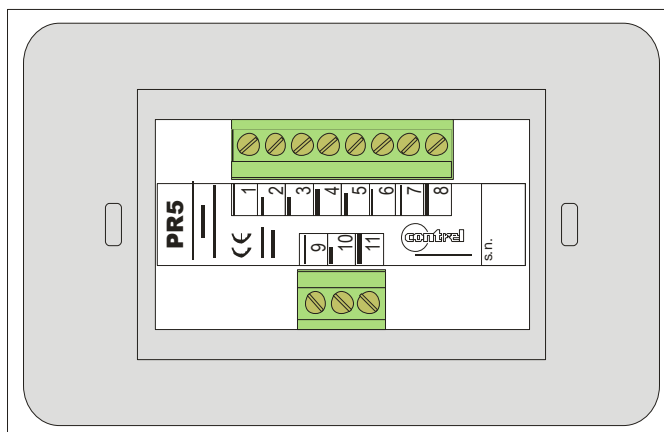
**INSTALLATION**

The installation must be carried out only by qualified and authorized personnel and in absence of voltage. Before carrying out the installation, make it sure that it has not suffered any damage during the transport. Make it also sure that the supply voltage of the product and the rated voltage correspond to the values prescribed for the instrument.

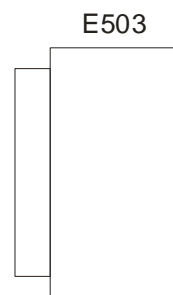
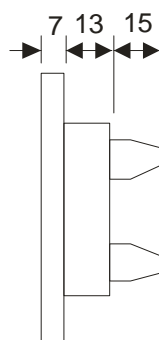
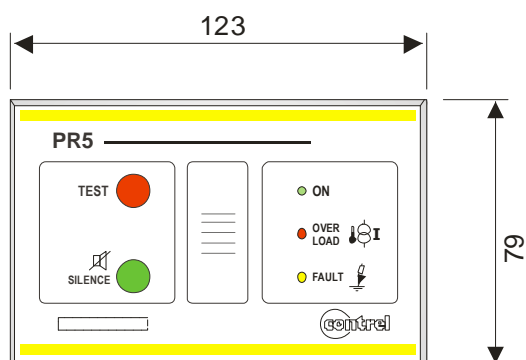
The PR4 is formed by a frontal plate and a housing in which is mounted the electronic circuit of the device: both suitable for every type of universal box (E503):



ASSEMBLY



CONNECTIONS PANEL

**DIMENSIONS**

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## TECHNICAL FEATURES

Auxiliary power supply	12-24Vca/cc (from HRI or from 24V network) – Max consumption 1,5 VA.
Signalling	green led: supply; red led: alarm, overload; yellow led alarm low insulation failure, acoustic BUZZER at 2400 Hz, intermittent 2 Hz
Buttons	TEST button; SILENCE button
Connections	screw terminals, max section 2,5 mmq
Protection degree	IP40 frontal panel, IP20 rear panel
Dimensions – enclosure	flush mounted universal box E503 – weight 200g
Working temperature	-10 ÷ 60°C, humidity 95% max
Storing temperature	-25 ÷ +80°C
Insulation	2500 Vrms 50 hz for 60 sec
Standard	safety CEI-EN 61010-1 product CEI-EN 61557-8 / CEI 64.8/7-710 V2/ IEC 60364-7-710 electromagnetic compatibility CEI-EN 61326-1

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## **FUNZIONALITY and INSTALLATION**

Depending the control device connected and the wiring the PR5 will do an self-configuration. After the connection of the panel to a control device and after the turning on, the PR5 will emit a sound to confirm the self-configuration.

### **Connection in completely mode to HRI-R40 devices**

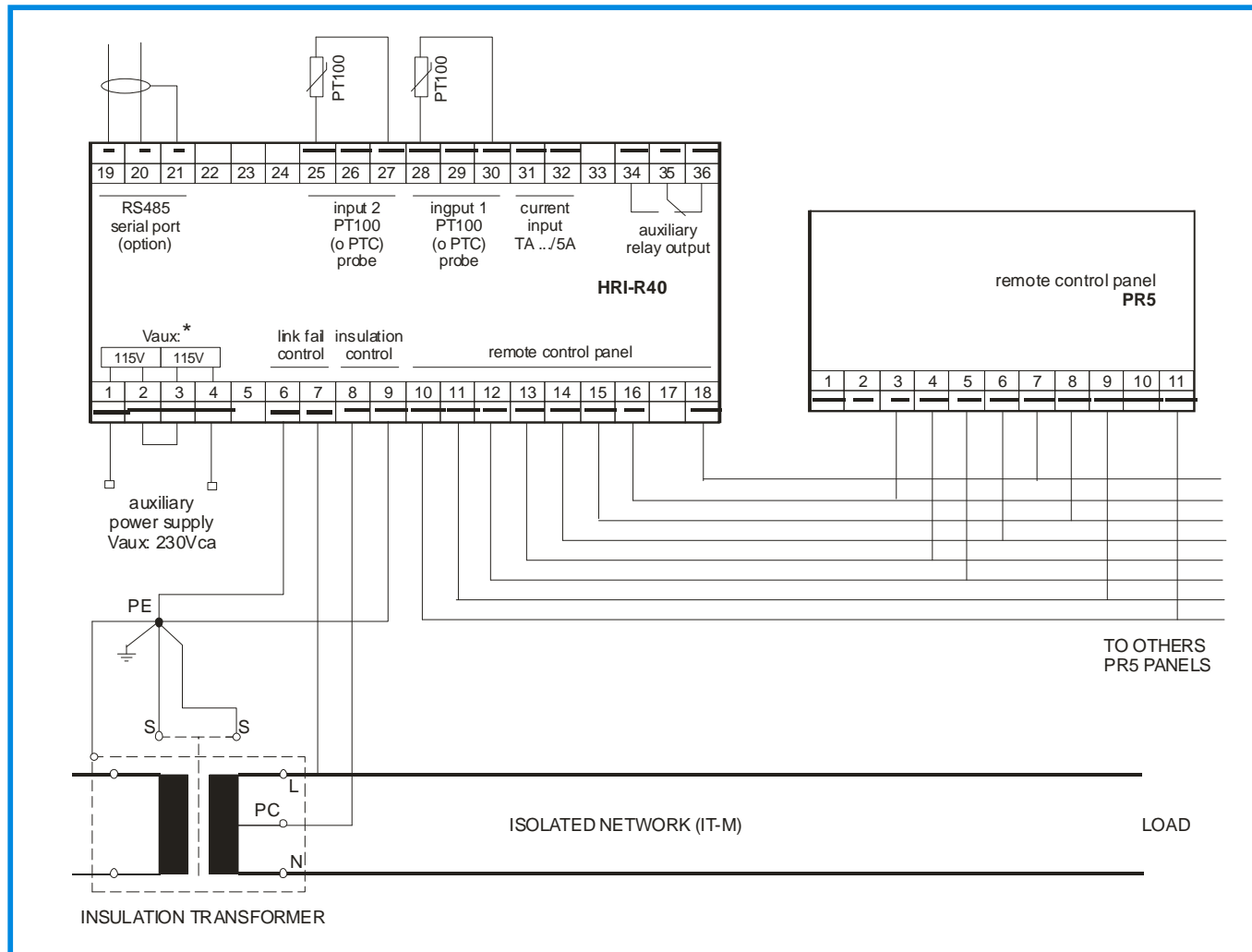
The PR5 must be connected exclusively to the HRI-R40 to take the power supply (max 24V) and the I/O signal. For each HRI device can be connected in parallel max 4 PR-5. The signalling are the same in all devices.

When there is a low insulation or overload of the network the relative frontal signalling will turn on and the acoustic signalling will be activated. When one of the silence button of the HRI or the PR5 panels is pressed, all the connected panels will be silenced. In the case of the alarm come back in the normal condition, all of the optical / acoustic signalling will be deleted. After the signalization of the alarm condition, on the HRI device it's possible to have more info on the measure. The alarm signalization can be activated in case of errors in the self-diagnostic test (as failures on temperature probes, none connection to the network under control, ecc.). For other info, it's necessary to see the instruction manual of HRI-R40.

The technical features of these panels are in accordance with the standards of the application on IT-M networks.

All the connection are made on the rear screw terminals. All wires will be connected to HRI or other PR5 panels. The maximum voltage is 24V supplied by the HRI.

## WIRING CONNECTION



## WIRING CONNECTION LEGEND

The 8 wires of the connection between the control device and the panel are identified with a initials:

- |               |                    |                                                                                               |
|---------------|--------------------|-----------------------------------------------------------------------------------------------|
| - COM-P       | "common panel"     | - common of power supply and signal                                                           |
| - V-P         | "voltage panel"    | - voltage supply of the panels, the output maximum voltage is 20 Vdc referred to COM-P common |
| - ACUS        | "acustical signal" | - signal to activate the acoustic signalling                                                  |
| - ACK         | "acknowledge"      | - signal to silence the acoustic signalling                                                   |
| - OVER        | "overload signal"  | - signal to activate the overload signalling                                                  |
| - FAULT       | "fault insulation" | - signal to activate the fail insulation                                                      |
| - TEST-/TEST+ | "test output"      | - output to test the functionality                                                            |

auxiliary power supply (from the HRI device)  
 terminals 3-8

connection for TEST function  
 terminals 9-11

signal to activate the acoustic signalling  
 terminal 4

signal to activate the acoustic silence  
 terminal 5

signal to activate the overload signalling  
 terminal 6

signal to activate the low insulation signalling  
 terminal 7

### Connection to HRI-R22 devices

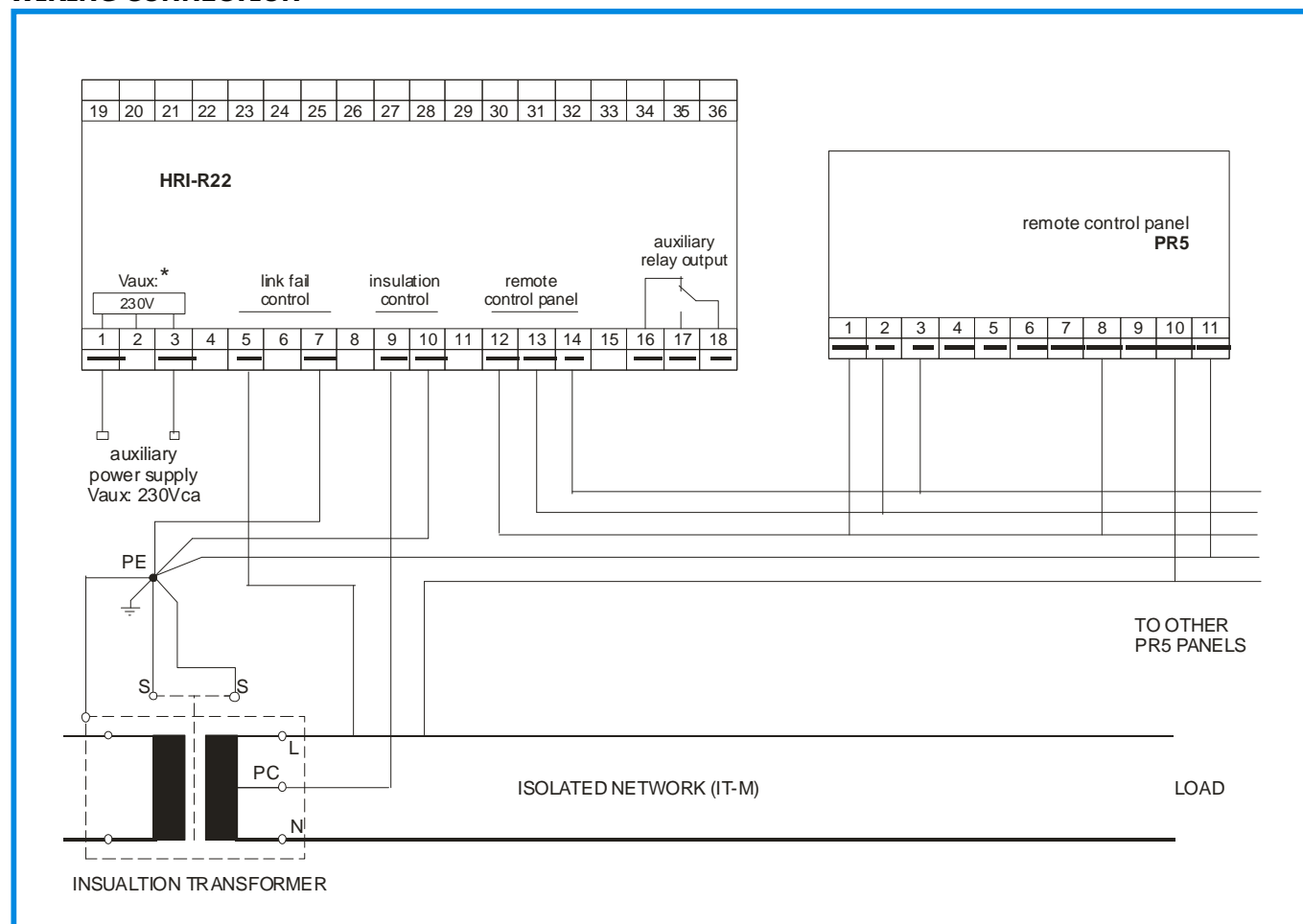
The PR5 must be connected to the HRI-R22 to take the power supply and to the line under control to take the signal. It's possible to connect at maximum 2 panel for each HRI-R22 device. All wires will be connected at the same way on all panels.

When there is a low insulation of the network the relative frontal signalling will turn on and the acoustic signalling will be activated. When one of the silence button of the HRI or the PR5 panels is pressed, all the connected panels will be silenced. In the case of the alarm come back in the normal condition, all of the optical / acoustic signalling will be deleted. For other info, it's necessary to see the instruction manual of HRI-R22.

The technical features of these panels are in accordance with the standards of the application on IT-M networks.

All the connection are made on the rear screw terminals. All wires will be connected to HRI, to the line and to the ground equipotential node for the test and to other PR5 panels.

### WIRING CONNECTION



### WIRING CONNECTION LEGEND

The 5 wires of the connection between the control device and the panel are identified with a initials:

- COM-P / COM-S "common panel" - common of power supply and signal
- V-P "voltage panel" - voltage supply of the panels, the output maximum voltage is 20 Vdc referred to COM-P common
- F-S "fault" - signal to activate the fail insulation
- TEST-S/TEST+ "test output" - output to test the functionality

auxiliary power supply (from HRI-R22 device)

terminals 1-3-8

connection for TEST function

terminals 10-11

signal to activate alarm

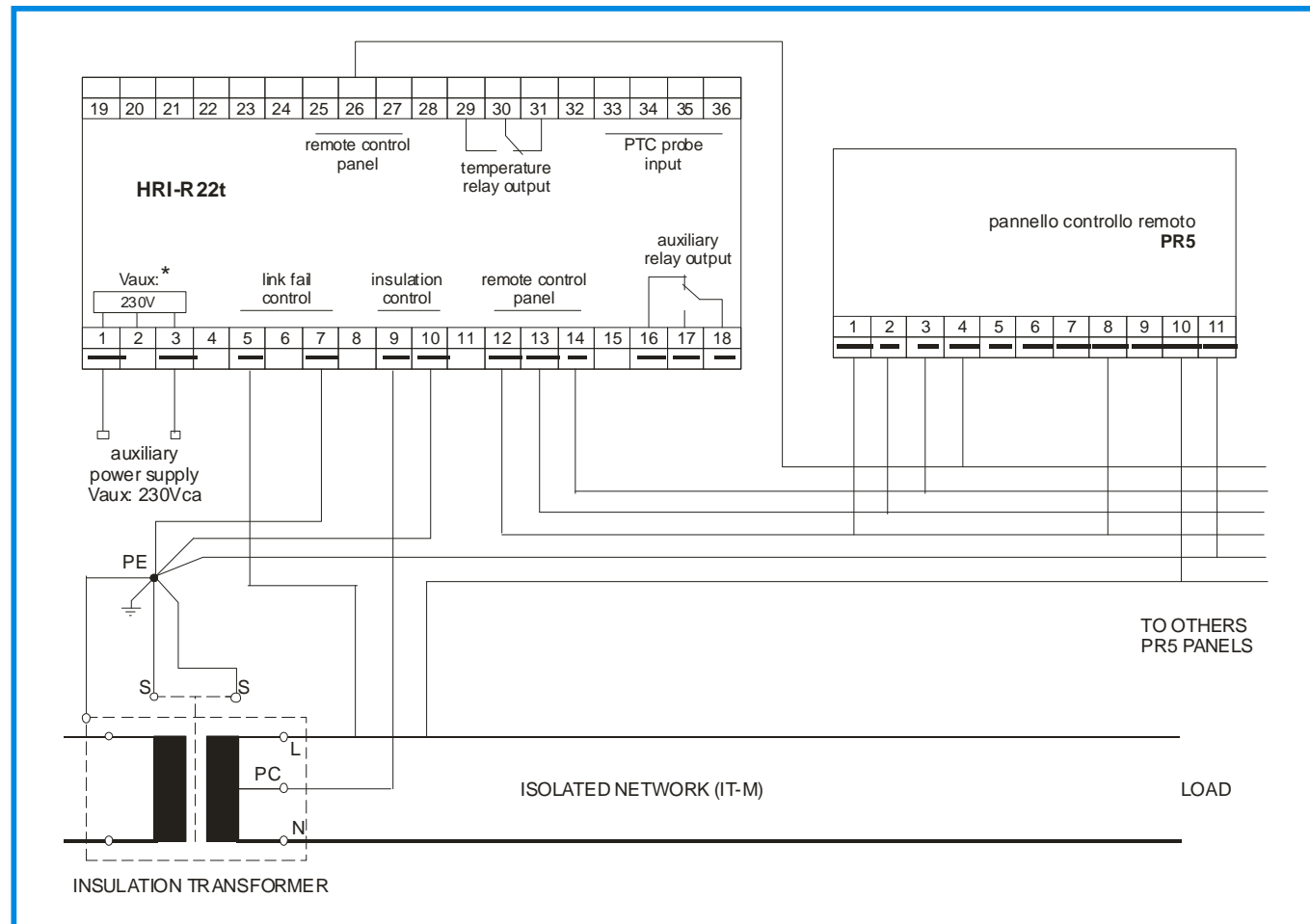
terminal 2



### Connection to HRI-R22t devices

The connection are the same of the HRI-R22. The different is only one wire to signal the thermic overload.

### WIRING CONNECTION



### WIRING CONNECTION LEGEND

The 6 wires of the connection between the control device and the panel are identified with a initials:

- COM-P / COM-S "common panel" - common of power supply and signal
- V-P "voltage panel" - voltage supply of the panels, the output maximum voltage is 20 Vdc referred to COM-P common
- F-S "fault" - signal to activate the fail insulation
- ACUS "overload signal" - signal to activate the optical/acoustic signalling for thermic overload (special connection for HRI-R22t)
- TEST-S/TEST+ "test output" - output to test the functionality

auxiliary power supply (from HRI-R22t device)  
 terminals 1-3-8

connection for TEST function  
 terminals 10-11

signal to activate alarm  
 terminal 2

signal to activate overload  
 terminal 6

### Connection to HRI-R24N devices

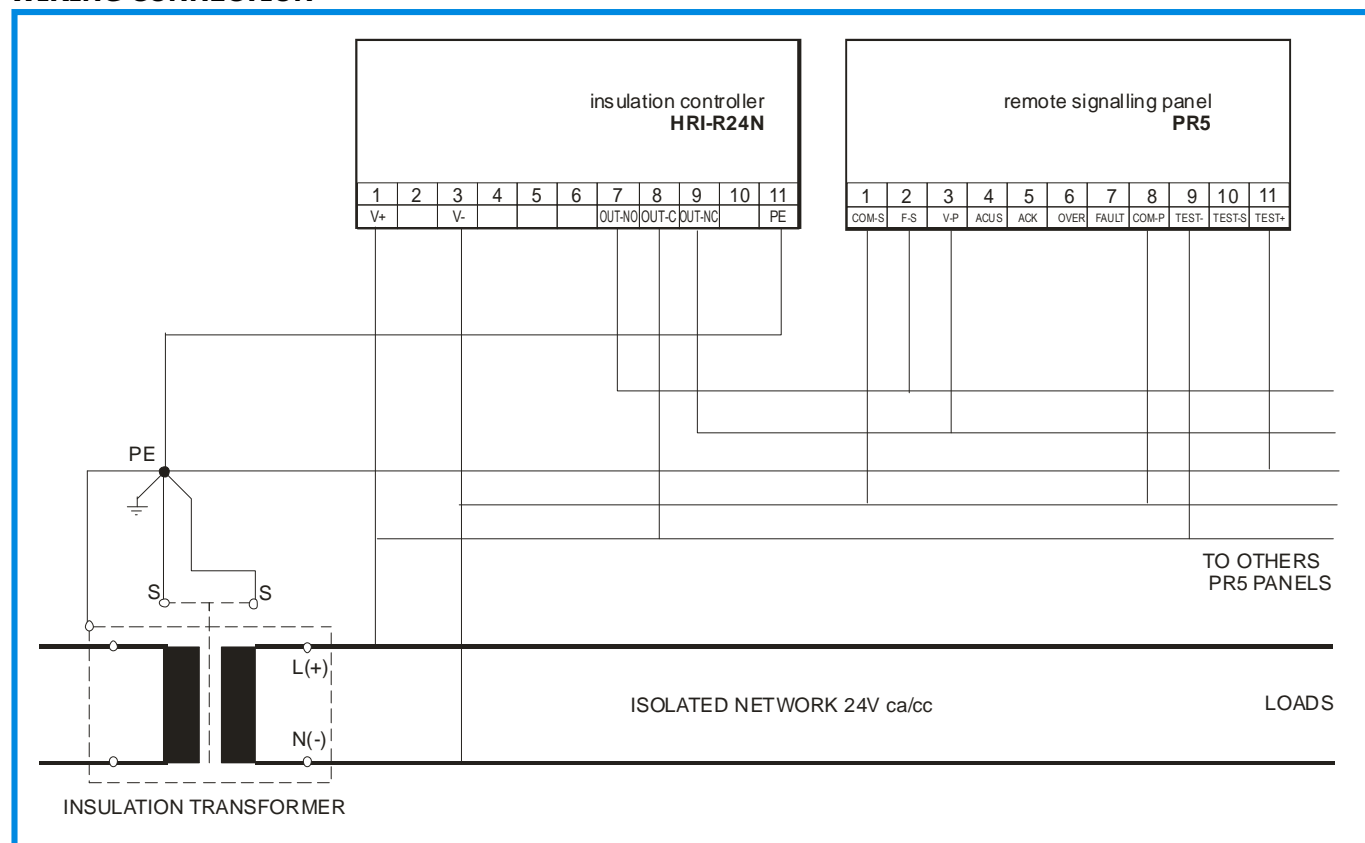
The PR5 must be connected to the HRI-R24N and the network under control to take the power supply (max 24V) from HRI-R24N and the signal for the test. For each HRI-R24N device can be connected in parallel max 4 PR-5. The signalling are the same in all devices.

When there is a low insulation of the network the relative frontal signalling will turn on and the acoustic signalling will be activated. When one of the silence button of the HRI or the PR5 panels is pressed, all the connected panels will be silenced. In the case of the alarm come back in the normal condition, all of the optical / acoustic signalling will be deleted. For other info, it's necessary to see the instruction manual of HRI-R24N.

The technical features of these panels are in accordance with the standards of the application on IT-M networks.

All the connection are made on the rear screw terminals. All wires will be connected to HRI, to the 24V line, to the ground equipotential node and to other PR5 panels. The maximum voltage of work is 24 Vdc/ac.

### WIRING CONNECTION



### WIRING CONNECTION LEGEND

The 5 wires of the connection between the control device and the panel are identified with a initials:

- COM-P / COM-S "common panel" - common of power supply and signal
- V-P "voltage panel" - voltage supply of the panels, the output maximum voltage is 20 Vdc referred to COM-P common
- F-S "fault" - signal to activate the fail insulation
- TEST-S/TEST+ "test output" - output to test the functionality

auxiliary power supply (from HRI-R22t device)

terminals 1-3-8

connection for TEST function

terminals 9-11

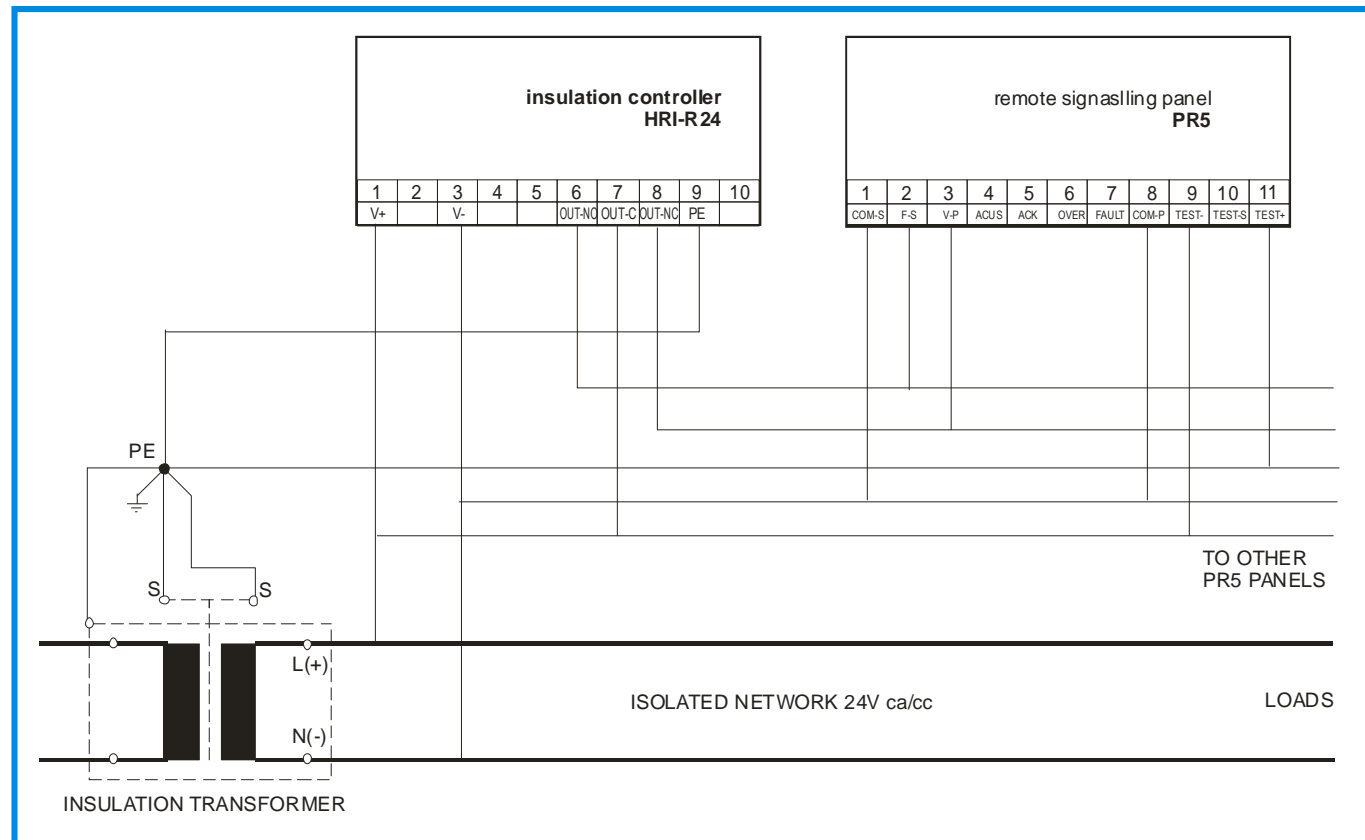
signal to activate alarm

terminal 2

### Connection to HRI-R24 devices

It functioning is the same at the HRI-R24N.

### WIRING CONNECTION



### WIRING CONNECTION LEGEND

The 5 wires of the connection between the control device and the panel are identified with a initials:

- COM-P / COM-S "common panel" - common of power supply and signal
- V-P "voltage panel" - voltage supply of the panels, the output maximum voltage is 20 Vdc referred to COM-P common
- F-S "fault" - signal to activate the fail insulation
- TEST-S/TEST+ "test output" - output to test the functionality

auxiliary power supply (from HRI-R22t device)  
 terminals 1-3-8

connection for TEST function  
 terminals 9-11

signal to activate alarm  
 terminal 2

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#### **Connection to HRI-R40 devices in reduce mode**

#### **DIFFERENCES WITH HRI-R40 AND HRI-R22(T) CONNECTED TO PR5 PANEL**

There are fundamental differences in some functions of the PR5 panels depending on the type of HRI connected. In the case of HRI-R22(t) you will get the following differences:

#### **Acknowledging signalling device (ACK)**

With the HRI-R40 version it's possible to silence the acoustic signalling from the HRI-R40 and from each panel, by pressing the RESET push-button.

In the HRI-R22(t) versions each acoustic signalling must be silenced from the relative remote signalling panel and it's not possible to manage on the HRI.

#### **Overload signalling (OVER)**

The overload signalling has the same differences. This function, with relative LED on the panel, is possible only with HRI-R40 and HRI-R22t versions.

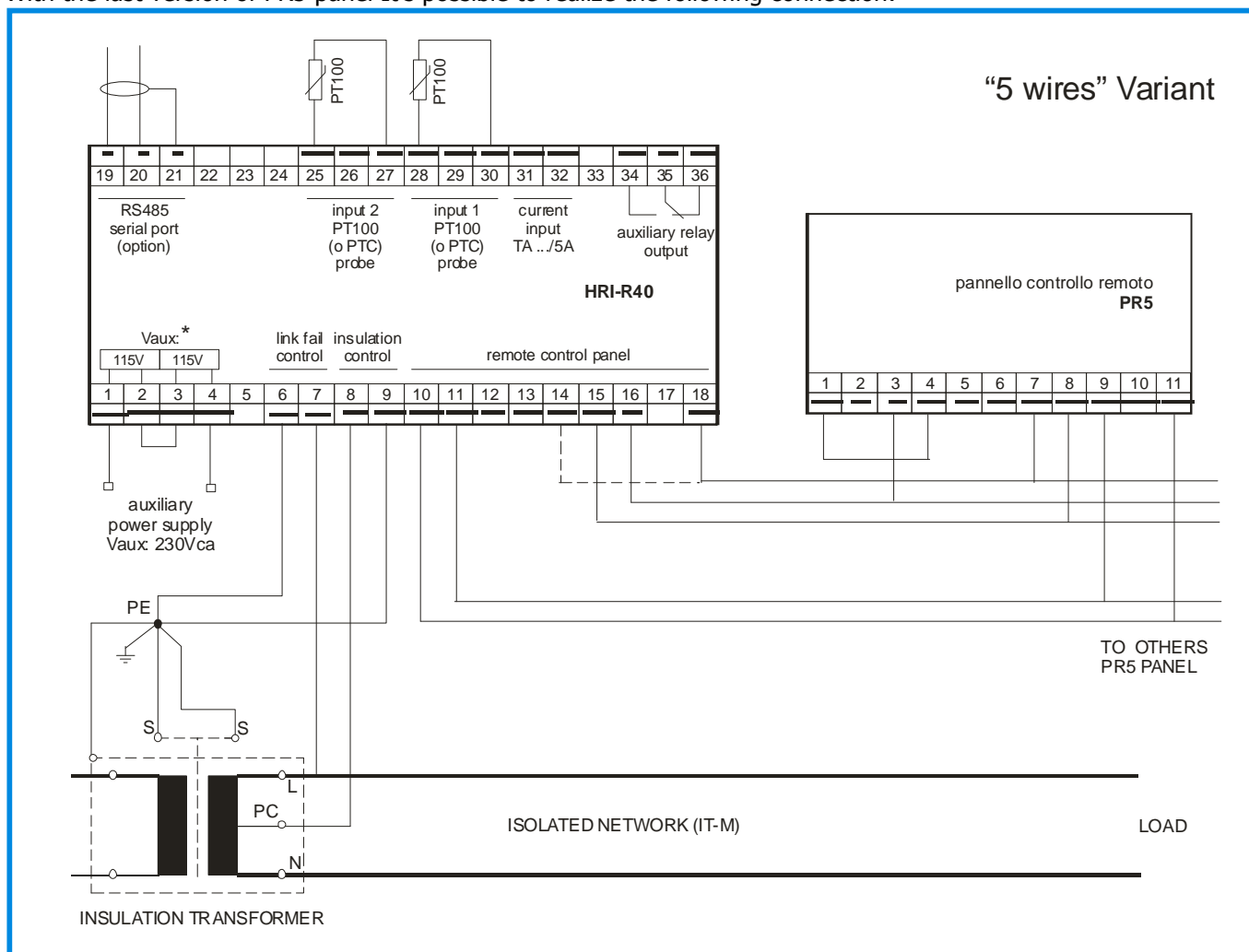
#### **TEST function**

In the HRI-R40 versions, the TEST is carried out thanks a signal from the panels to the HRI-R40 device to simulate a fail condition. In the HRI-R22(t) versions, the TEST is carried out directly on the isolated line: the real insulation is regulated to 35 Kohm about. In some standard the TEST function must be carried out without to change the real insulation of the line. In the Italian standard CEI64.8/7-710 V2 there's no indication.

### CONNECTION WITH HRI-R40 WITH 5 WIRES

In a system already built, in the case of replacement of the HRI-R22(t) and PR1/2 with HRI-R40 and PR5, it's possible to find difficulty in the correct connection of the remote signalling panels because only 5 wires were used instead of the 8 wires used now.

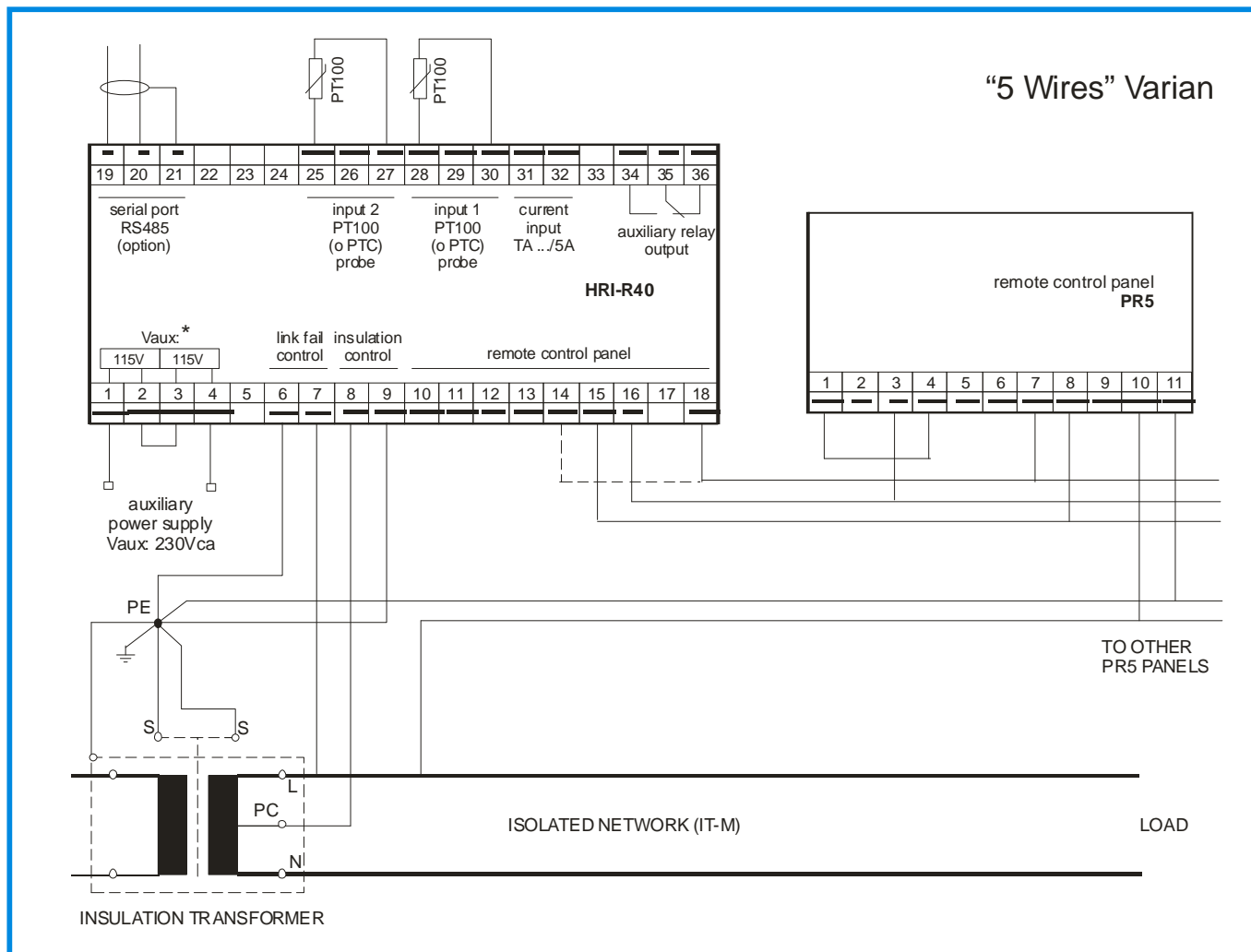
With the last version of PR5 panel It's possible to realize the following connection:



In this way, using the reduced functionality of test and reset of the HRI-R22(t) version and signalling all the alarm condition with the yellow LED, it's possible to use only 5 wires instead of the 8 required in the complete connection of the HRI-R40.

### Connection TEST modify

It's possible to keep the same test mode used by the HRI-R22(t) in the HRI-R40 version (with the same disadvantages saw before but in the case of exchange of component, it could be necessary to keep the same TEST condition).  
 For this modify it's necessari to follow this wiring connection:



It's necessary to connect the terminal 10 and 11 between ground (PE node) and the isolated network (on neutral or phase).

