

How to set up EARTH FAULT ALARM On Fronius inverters

According to AS/NZS 5033:2014

EARTH FAULT ALARM FOR FRONIUS INVERTERS

The installation of earth fault alarms for both functionally and non-functionally earthed arrays will be mandatory from 11 July 2015 to comply with AS/NZS 5033:2014.

There are two ways to implement the earth fault alarm using Fronius inverters.

1) Fronius Solar Web

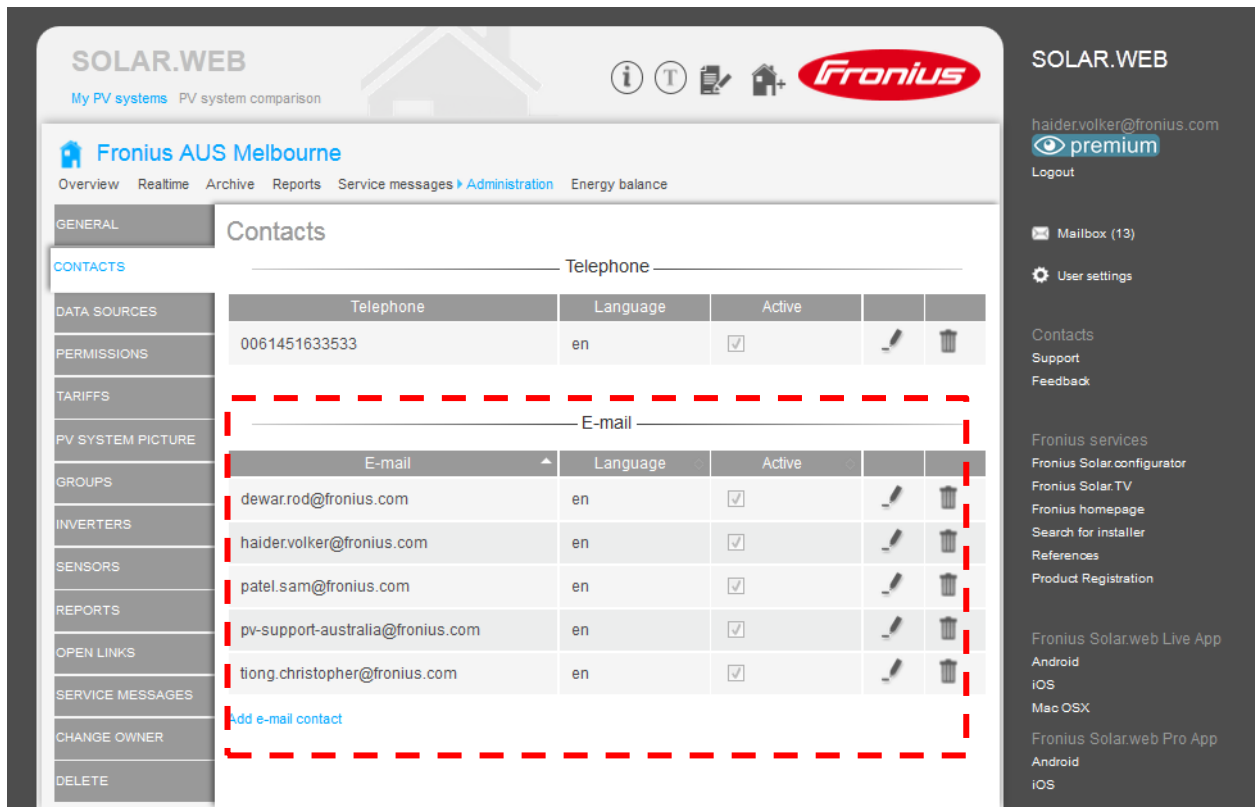
This works with Fronius IG Plus, Galvo, Primo, Symo, Eco (all the Fronius SnapInverter range), Agilo, Fronius CL inverters.

To be able to use the online monitoring platform SolarWeb, the PV system needs to be connected to the internet via the Fronius Datamanager card in the inverter (or the Fronius Datamanager box).

From July 11, 2015 all PV systems setup with location Australia or New Zealand in SolarWeb will get the Earth Fault Alarm activated automatically, provided the following conditions are met:

- Location is Australia or New Zealand (see SolarWeb 'Administration' – 'GENERAL')
- 'Receive service messages' is ticked under 'SERVICE MESSAGES'
- At least one email address is listed under 'CONTACTS'

The Earth Fault Alarm (or any permanent alarm) will send an email, once per hour, to alert all the users listed under 'CONTACTS'.



SOLAR.WEB
My PV systems PV system comparison

Fronius AUS Melbourne
Overview Realtime Archive Reports Service messages Administration Energy balance

CONTACTS Telephone

| Telephone | Language | Active | | |
|---------------|----------|-------------------------------------|--|--|
| 0061451633533 | en | <input checked="" type="checkbox"/> | | |

E-mail

| E-mail | Language | Active | | |
|----------------------------------|----------|-------------------------------------|--|--|
| dewar.rod@fronius.com | en | <input checked="" type="checkbox"/> | | |
| haider.volker@fronius.com | en | <input checked="" type="checkbox"/> | | |
| patel.sam@fronius.com | en | <input checked="" type="checkbox"/> | | |
| pv-support-australia@fronius.com | en | <input checked="" type="checkbox"/> | | |
| tieng.christopher@fronius.com | en | <input checked="" type="checkbox"/> | | |

[Add e-mail contact](#)

SOLAR.WEB
haider.volker@fronius.com
premium
Logout

Mailbox (13)
User settings

Contacts
Support
Feedback

Fronius services
Fronius Solar configurator
Fronius Solar TV
Fronius homepage
Search for installer
References
Product Registration

Fronius Solarweb Live App
Android
iOS
Mac OSX

Fronius Solarweb Pro App
Android
iOS

Figure 1. Fronius Solar Web Administration – CONTACTS

What if the customer has no internet access?

There are 2 possible solutions:

- / Install new USB 3G/4G internet dongle for cellular internet connection (for details, please request from the Fronius Australia Tech Support Hotline 03 8340 2910)
- / Or try option 2 as described below

2) Signal contact on inverter

This works with Fronius Galvo, Primo, Symo, Eco (all the Fronius SnapInverter range), Agilo, CL inverters.

The inverter's floating switch contact, also called the Signal Relay, is shown as (7) in Figure 2. This is a voltage free relay which can be programmed to operate a buzzer and/or LED to indicate an earth fault alarm. It comes with the orange mating connector.

Signal Relay specifications:

Max. AC 250 V AC / 4 A AC

Max. DC 30 V DC / 1 A DC

Max. 1.5 mm² (AWG 16) cable cross-section

Pin 1 = NO contact (Normally Open)

Pin 2 = C (Common)

Pin 3 = NC contact (Normally Closed)

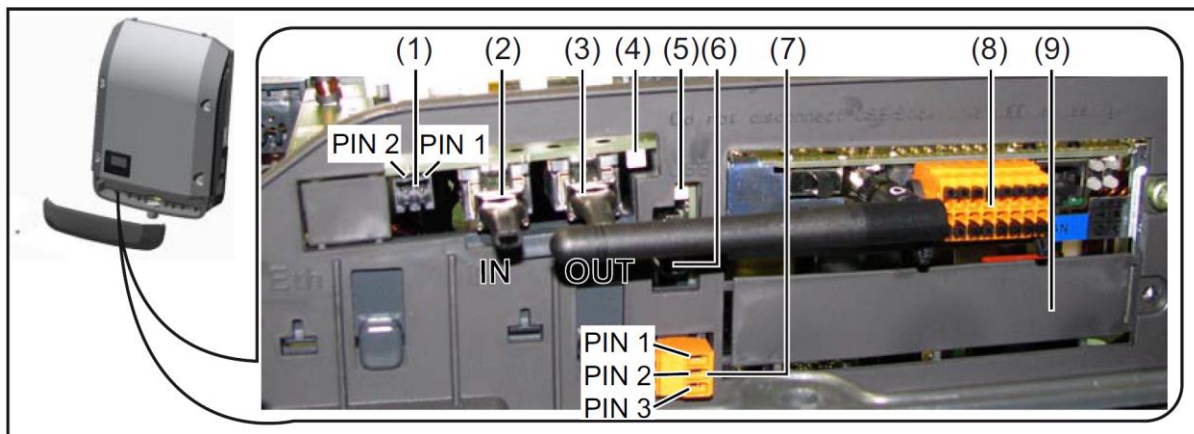


Figure 2. Fronius Inverter under Data communication cover



Figure 3. Fronius Symo Inverter Data communication area

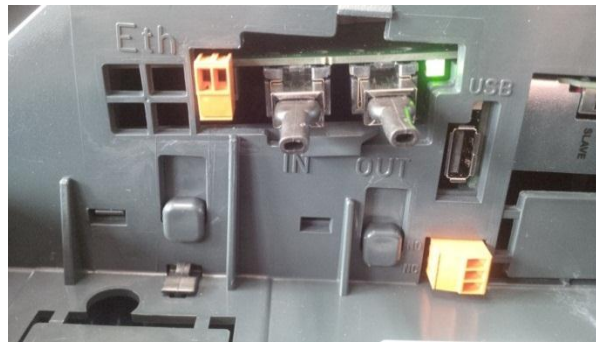


Figure 4. Data communication area – close view

Connect a buzzer to operate via the inverter’s Signal Relay with power supply from one of the following:

- / 12V supply from SOLAR NET RJ45 socket (current limited to 1A). Either RJ45 IN or OUT can be used.
- / 12V supply from the Datamanager card (current limited to 250mA).
- / 5V supply from the USB port. This USB option is useful if there are multiple inverters in the installation and your IN/ OUT sockets are already occupied. Use a corresponding 5V buzzer.

Common buzzers can be purchased from local electrical wholesalers or electronics online shops such as [RS-online](#) or [Element14](#).

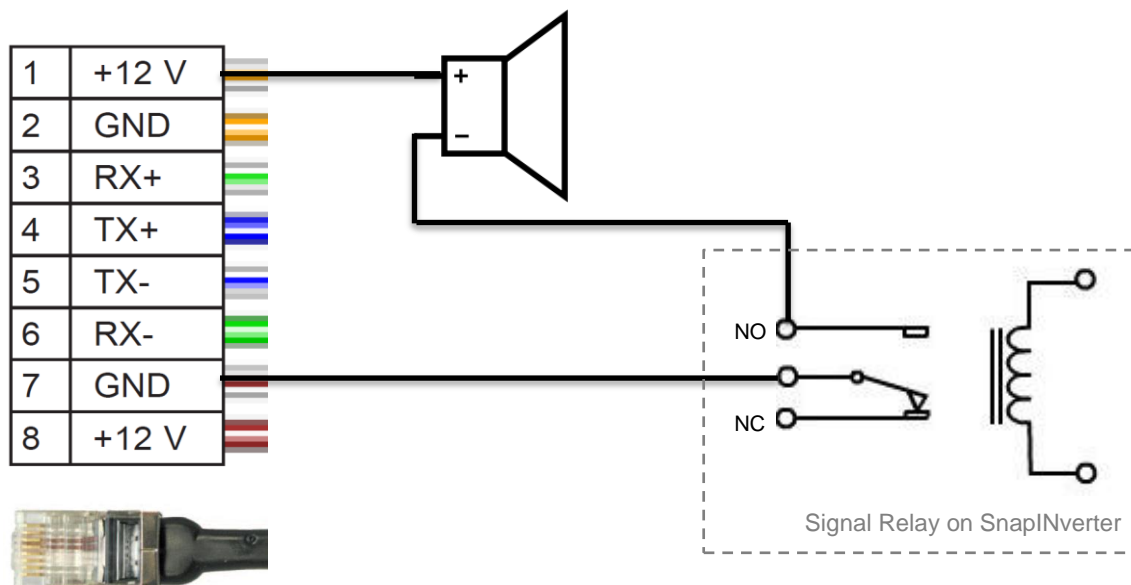


Figure 5. Earth fault alarm: Suggested wiring diagram showing Inverter’s Signal Relay, 12V supply from SOLAR NET RJ45 socket and external 12V buzzer



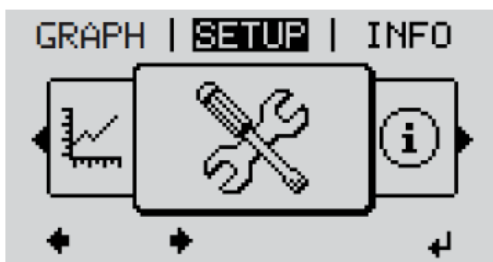
Figure 6. Signal Relay using 12V supply from RJ45 (left) with 12V buzzer mounted to underside of inverter (right)



Figure 7. Buzzer connection with Signal relay and 5V USB power supply

Program the Signal Relay via the front screen of the inverter:

1. Select SETUP and press Enter



Menu level, 'SETUP' selected

- 1 In the menu level, use the 'Left' or 'Right' keys to select the 'SETUP' menu item
- 2 Press the 'Enter' key

2. Select Relay and press Enter



3. Select Relay Mode and press Enter



4. Use +/- keys to Select Permanent and press Enter.
Permanent Relay Mode is active for permanent service codes such as the Earth Fault Alarm



5. Test the alarm by selecting Relay Test and press Enter. You should hear the alarm buzz on and off during the test. Return to main menu once completed.



Fronius reserves all rights, in particular rights of reproduction, distribution and translation. No part of this work may be reproduced in any way without the written consent of Fronius. It must not be saved, edited, reproduced or distributed using any electrical or electronic system. You are hereby reminded that the information published in this document, despite exercising the greatest of care in its preparation, is subject to change and that neither the author nor Fronius can accept any legal liability. Gender-specific wording refers equally to female and male form.