Rail350 IP
Network Installation Guide

The Rail350 IP meter is a standard Ethernet TCP/IP component designed for inclusion in computer networks – generically TCP/IP networks. Depending on the hardware and settings of the network, access to the meter may be made within the local intranet or over a wider area network such as the World Wide Web.

Connection to the meter is made via the integral CAT5 socket. Standard, low-cost cabling is then used to connect the meter to the network, direct to a CAT5 socket or using a, router, a wireless access point, mains signalling access point, etc. Selection of the connection method depends on the location of the meter and the layout of the network; it may need to take into account other factors such as security and cost.

Figure 1. Meter Network Options

1 Meter IP Addressing

For more information on IP Addresses, Subnet Masks and Gateways, please view a primer on networking or consult web based sources such as Wikipedia

1.1 Fixed IP Address

Each device on a single computer network is recognised by a unique identification number (IP address). Each device on a network must have a different IP address. The format of IP addresses is defined by the network protocol IP addresses are expressed as 4 numbers each in the range 0 to 255 and written down using “dot notation”.

The ***Rail350*** is factory set with a fixed **IP Address**:

192 . 168 . 1 . 127

The user may change the IP address using the keys/display on the meter.

1.2 Subnet Mask

In computer networks, a subnet is a portion of the network's computers and devices that have a common IP address prefix. All devices within a subnet can be reached in one "hop", implying that all devices in a subnet are connected to the same link. A link, however, can support multiple subnets.

The IP address prefix is normally expressed as a "subnet mask". Thus for a network with an IP address prefix of ‘192.168.1,’, the subnet mask is ‘255.255.255.0’. Thus, any device with an IP address in the range ‘192.168.1.0’ through to ‘192.168.1.255’ is connected to the same link.

Any device not within the IP address range as defined by the Meter’s IP Address and Subnet Mask is accessed via a Gateway – see below.

The ***Rail350*** is factory set with a **Sub-Net Mask**:

255 . 255 . 255 . 0

The user may change the Subnet Mask using the keys/display on the meter.

1.3 Default Gateway

The Gateway is the IP address of the device on the local area network (the subnet) providing access to the Wide Area Network.

The ***Rail350*** is factory set with a **Default Gateway**:

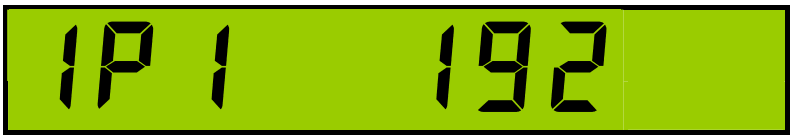
192 . 168 . 1 . 1

The user may change the Default Gateway using the meter keys & display.

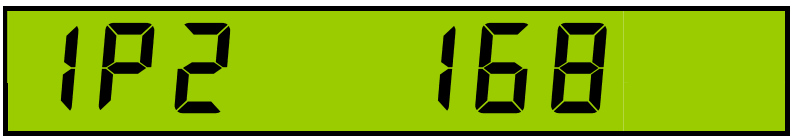
1.4 Changing The Meter Network Settings

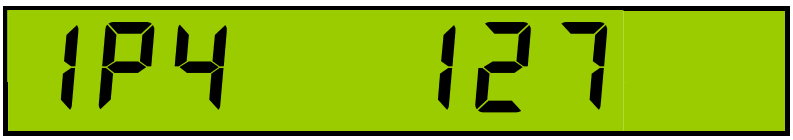
Before setup, obtain an allocated Fixed ***IP Address***, ***Subnet Mask*** and ***Default Gateway***. Your IT administrator should provide this information. Then follow the instructions below:

-
- Enter programming mode press I and V together and hold for approximately 5 seconds. (for further information on programming mode refer to the meter operating manual).
-
- Press I to step past each programming page until the ***IP Address*** setup page appears.



To change the IP Address, use P to increase it or E to decrease it. When set correctly, press I to move to the next part of the IP Address. Repeat until the four parts are correct.





IP Address 192.168.1.127

To change the Sub Net Mask.

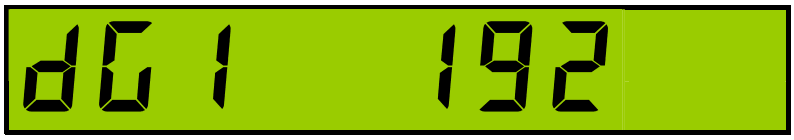
- Press I to move to the ***Subnet Mask***.

Subnet Mask 255.255.255.0

To change the Subnet Mask, use P to increase it or E to decrease it. When set correctly, press I to move to the next part of the Subnet Mask. Repeat until the four parts are correct.

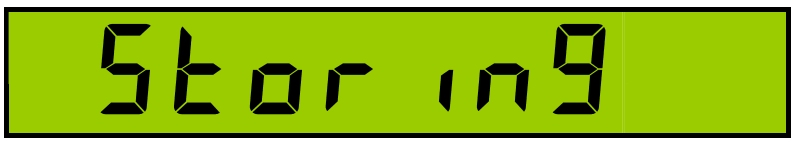
To change the Default Gateway.

- Press I to move to the ***Default Gateway***.



Default Gateway 192.168.1.254

- Press I to step through the four parts of the Default Gateway; use P to increase and E to decrease the parts of the Default Gateway until the correct numbers are displayed.
-
- Press I to store settings and return to standard monitoring mode.



1.5 Testing The Connection

Open a browser such as Internet Explorer or Firefox.
Enter the meter IP address in the Address Bar.

The meter web site should now be displayed in the browser window

The Meter Web-Site

1.6 Introduction

Each meter hosts a built in web site, which allows meter readings and other data to be viewed in a standard browser such as ***Microsoft Internet Explorer*** or ***Mozilla Firefox***.

It is possible to replace the standard web pages with alternative HTML pages allowing the meter to provide custom styles and data views.

1.6.1 Java Script

The standard web site uses Java Script to extract electricity data from the metering circuit and make them available for display on the web pages. ***Java Script must be enabled*** in the browser in order to see the meter readings.

1.6.2 SVG Viewer

The meter web site displays data as dynamic graphs and analogue meter images. This is made possible with ***Scalable Vector Graphics*** (SVG) format using a ***Scalable Vector Graphics Viewer***, which must be installed on the local computer (the PC running the browser). This is similar to viewing Portable Document Format (PDF) files over the internet.

Mozilla Firefox browser has a built in SVG viewer users of ***Microsoft Internet*** will need to download & install the SVG viewer.

The ***Firefox*** browser is available at:

www.mozilla.com/firefox