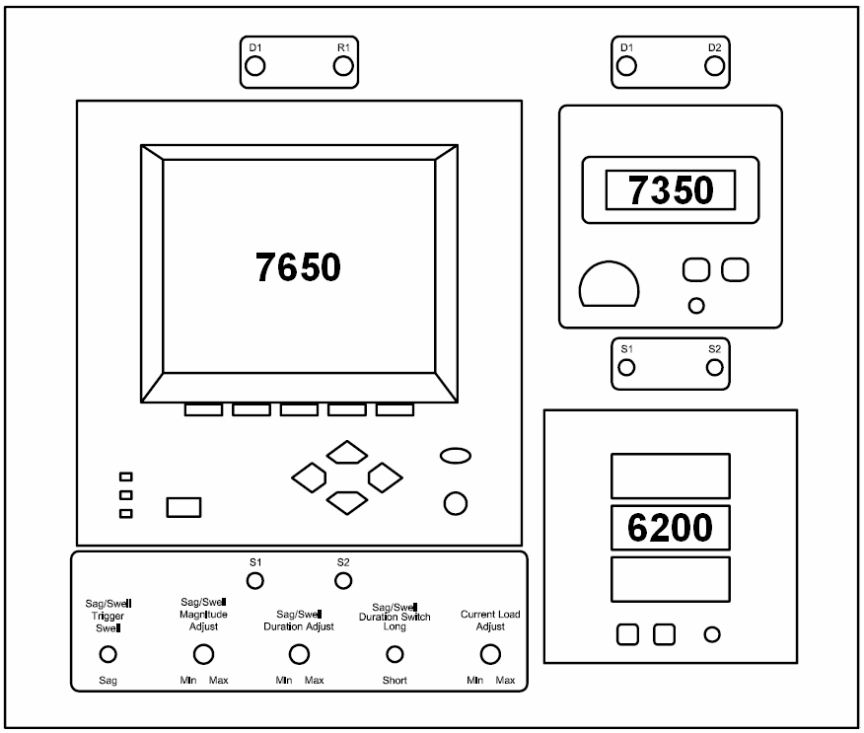
Powerlogic ION Demo Case

This document provides additional details on the Powerlogic ION Demo Case. It will describe some of the basic functionality of the demo case and explain the communications and wiring setup.



The ION Demo Case should come with the following accessories:

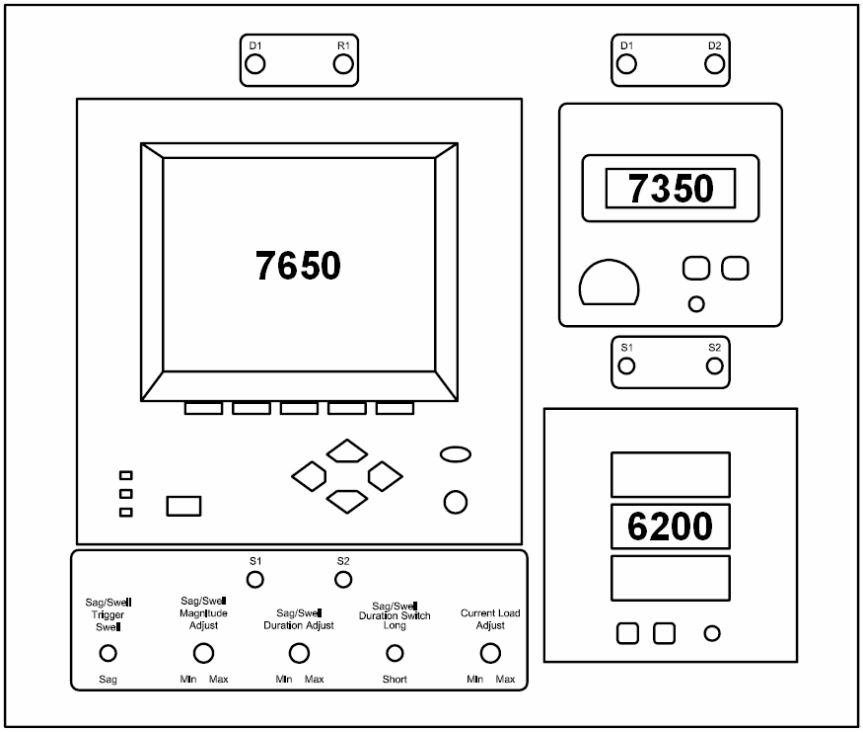
- Carrying case
- ION Demo Case User Guide
- North American power cable
- Foreign power adapter plug (for use on side of demo case)
- Two Phoenix connectors plugged into the side of the case
- Safety caps over Monitored Load receptacle

NOTE: To protect the control switches store and ship the ION Demo Case face down in the carrying case.

Schneider Electric

Front Panel Orientation

A standard ION Demo Case consists of an ION7650, ION7350, ION6200 and a power simulator control board. The output of the power simulator is connected to each of the meters.



ION7650
Serial Number __**PJ**-_____
Order Number __P7650B1C0B6C1A0A___
Inputs: S1 Switch connected to Digital Input 1, S2 Switch connected to Digital Input 2
Outputs: D1 Light connected to Digital Output 1, R1 Light connected to Relay Output 1

ION7350
Serial Number __**PC**-_____
Order Number __P7350A0B0B0E0A0A____
Inputs: S1 Switch connected to Digital Input 1, S2 Switch connected to Digital Input 2
Outputs: D1 Light connected to Digital Output 1, D2 Light connected to Digital Output 2

ION6200
Serial Number __**HA**-_____
Order Number __P6200A0A0B0A0B0R_____
Inputs: N/A
Outputs: N/A

Power Simulator Controls

The Power Simulator outputs approximately 32VAC when powered by 120VAC and 60VAC when powered by 220VAC. The Current Load Adjust ranges from 0 – 50mA. To make the values larger and more realistic use the following PT and CT values when the demo case is powered by 120VAC:

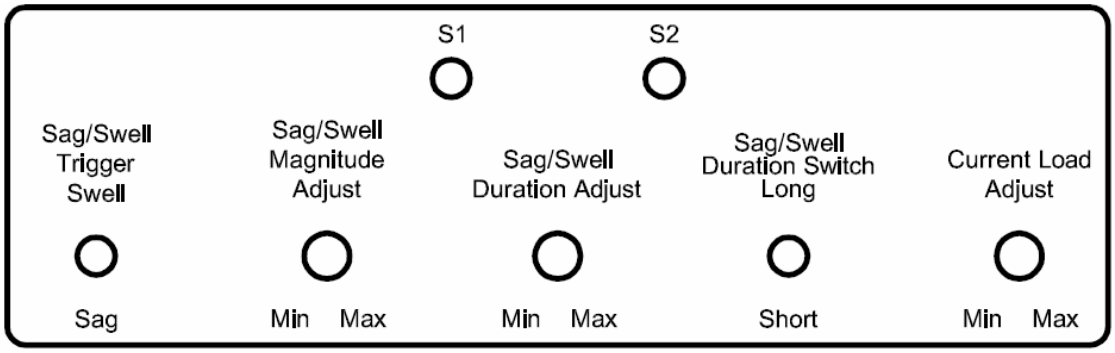
PT Primary : 120

PT Secondary : 32

CT Primary : 500

CT Secondary : 5

The Power Simulator control panel looks like the following:



Current Load Adjust
Turn this dial to change the load current applied to the meters.

NOTE: When load connected to Monitored Load plug, Current Load Adjust dial has little change on the load reading.

Sag/Swell Trigger
This switch can be pushed up and down. To generate a swell push the switch up and to generate a sag push the switch down.

NOTE: The sag or swell duration is NOT controlled by how long the switch is held in the up or down position.

Sag/Swell Trigger Magnitude
Turn this dial to adjust the size of the power quality event. When the dial is set to 'Max ' the generated swell or swell will be at it's largest deviation from nominal. A swell will be above nominal and a sag below nominal.

Sag/Swell Trigger Duration Adjust
Turn this dial to adjust the time of the power quality event.

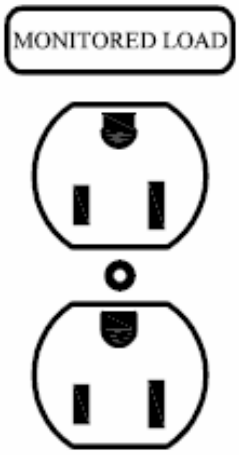
Sag/Swell Trigger Duration Switch
Use this switch to make larger changes to the duration of the power quality disturbance.

Summary of Power Quality Disturbance Times

Duration Switch Position	**Duration Adjust Position**	**PQ Duration** – approx.
Short	Min	0.0004 secs. (0.4 mSeconds)
Short	Max	0.150 secs (150 mSeconds)
Long	Min	0.010 secs (10 mSeconds)
Long	Max	0.400 secs (400 mSeconds)

Monitored Load

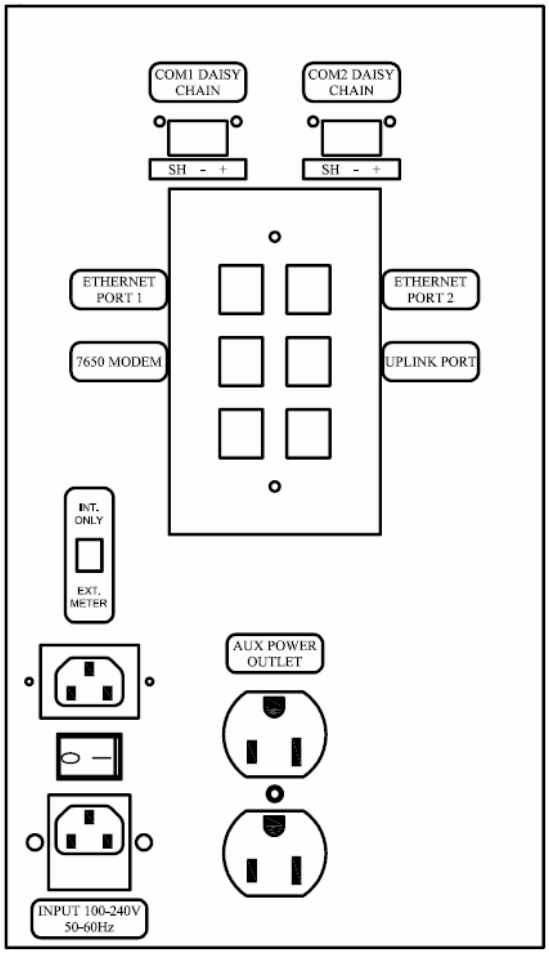
The right side of the ION Demo Case has a receptacle that allows a load to be connected and monitored by the meters in the case. There are safety caps covering the receptacle as a reminder to use the aux. power outlet for additional power use. Connecting a device to this side of the ION Demo Case will affect the measured current values of the meters in the case. To avoid burning the internal power input fuse only connect equipment that is rated under 150W to the monitored load receptacle.



NOTE: When load connected to Monitored Load plug, Current Load Adjust dial has little change on the load reading.

Communications and Expansion

The left side of the ION Demo Case contains connections for communications to the ION meters, supporting additional meters to be added to the system, and input and auxiliary power.



COM1 and COM2 Daisy Chain

Use these Phoenix connections to connect to the COM1 or COM2 Daisy Chain of the ION7650. Additional information on the wiring of the serial daisy chain can be found in one of the sections below.

NOTE: The Phoenix connector manufacturer's part # is MSTB2.5/3-ST-5.08

Ethernet Connections

All Ethernet enabled meters in the ION Demo Case are connected to an Ethernet Switch built into the case. The remaining ports on the switch are available on the side panel for connection to a meter or computer.

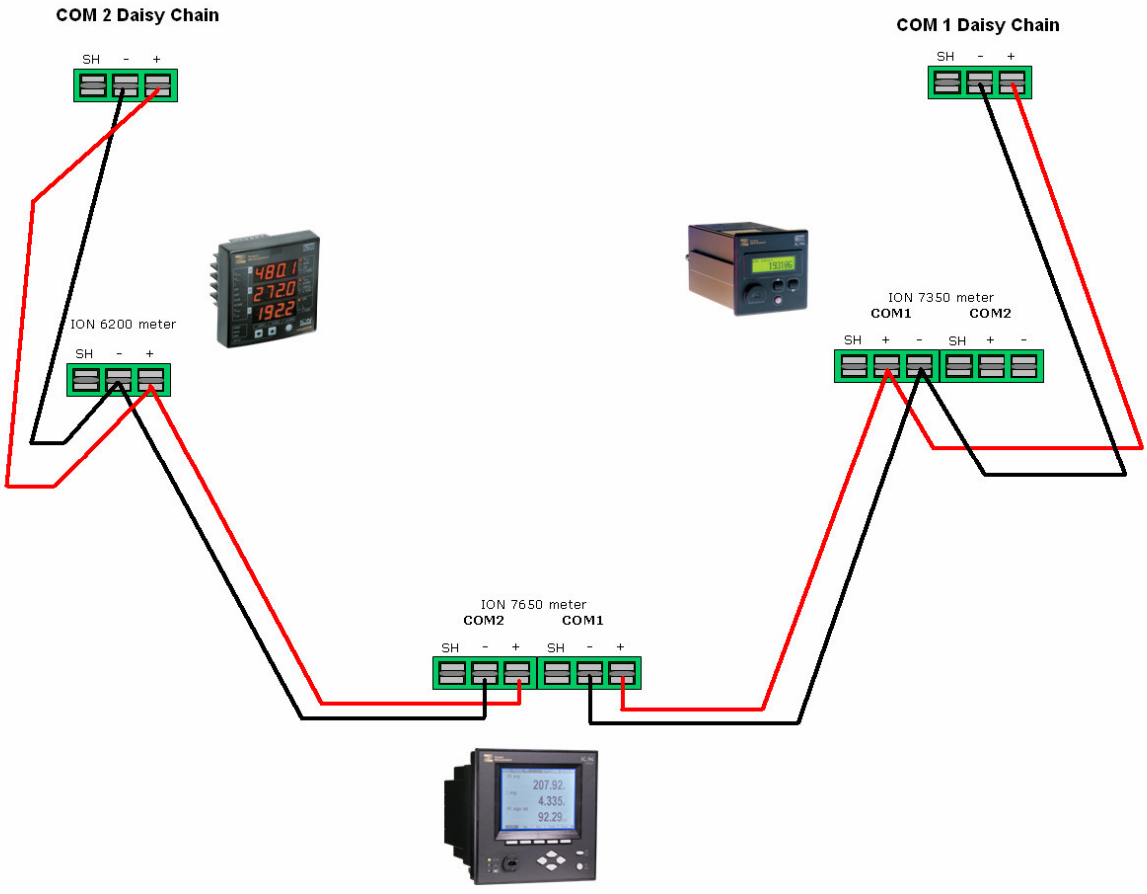
NOTE: All the ports on the Ethernet Switch have crossover auto-detection, straight or cross-over cables will both work.

Internal or External Meter Switch
This switch will allow an external meter to be connected to the Power Simulator in the ION Demo Case. Additional information on the wiring required can be found in one of the sections below.

Internal and Auxiliary Power
There is an ON/OFF switch to the Demo Case. This switch will turn off all power to the ION Demo Case including meters, Ethernet Switch and Power Simulator. The ION Demo Case can accept voltage input ranging from 100-240V AC (50-60Hz). The AUX POWER OUTLET can be used to power additional meters, portable computers or other electronic devices. This power receptacle is not monitored by the meters and does not affect the Power Simulator Load Current.

Serial Communications

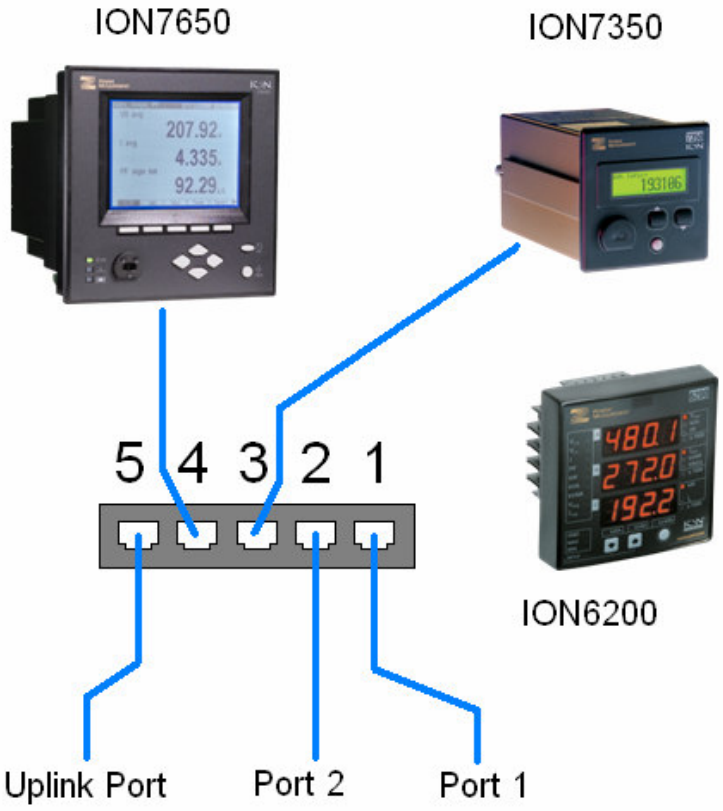
The ION7650 has two serial ports. The ION7650 COM1 is connected to COM 1 of the ION7350 and then to the external Phoenix connector. The ION7650 COM2 is connected to the serial port of the ION6200 and then to the external Phoenix connector.



NOTE: The Phoenix connector manufacturer's part # is MSTB2.5/3-ST-5.08

Ethernet Communications

The ION Demo Case is equipped with an internal 5 port Ethernet Switch. The ION7650 and ION7350 are connected to the switch. The ION6200 does not have Ethernet capability. The remaining Ethernet ports are available on the side panel.

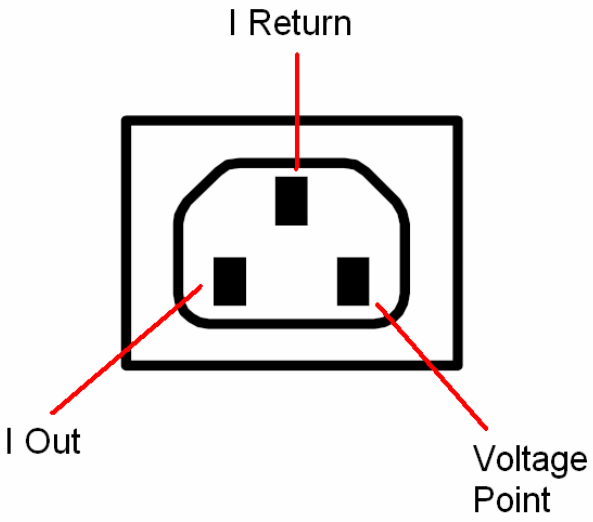


NOTE: All the ports on the Ethernet Switch have crossover auto-detection, straight or cross-over cables will both work.

Connecting External Meter to Power Simulator

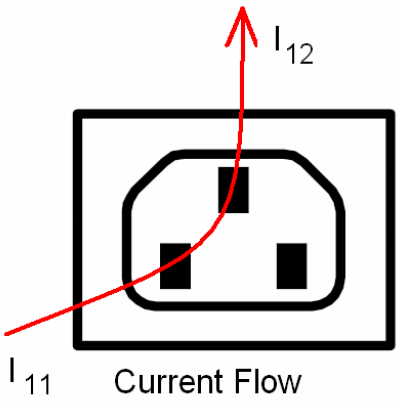
An external meter can be added to the ION Demo Case system by using one of the available serial or Ethernet connections available on the side. In addition to communications the meter can also be connected to the internal Power Simulator. The following diagrams will show how the External Power Simulator connector is wired to accommodate an additional meter.

Looking at the side of the case the External Power Simulator connector looks as follows:

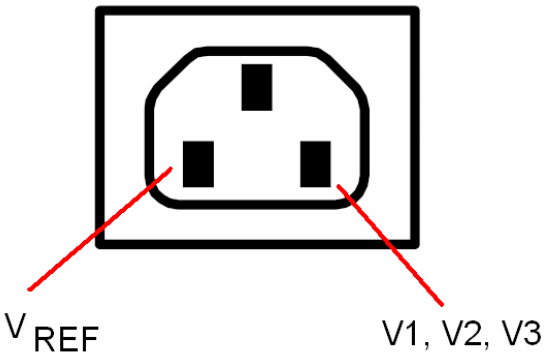


Location Name	Connection to External Meter
I Out	I 11 and V REF
I Return	I 21
Voltage Point	V1

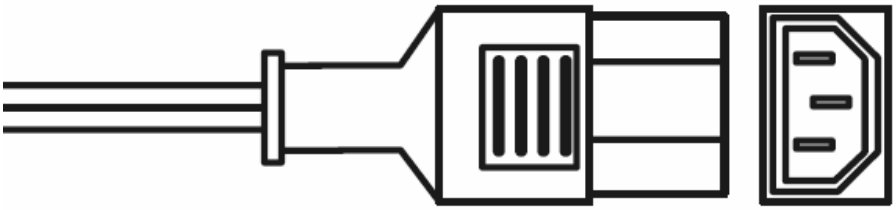
Current flows through the connection as shown below:



Voltage measurements can be connected as follows:



Use a Power Cable Extender to connect to the Ext Meter connection point.

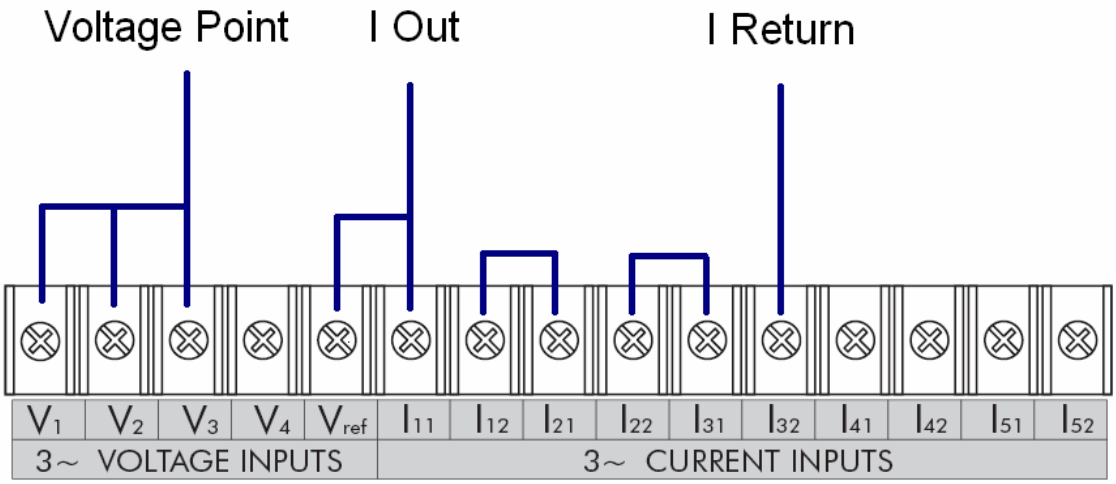


Following standard wiring convention the bare wire ends of the Power Cable Extender should be as follows:

I Out	Neutral	White coloured wire
I Return	Ground	Green coloured wire
Voltage Point	Line	Black coloured wire

NOTE: Please check the colour code with an ohmmeter before completing the connections.

An example of how the external meter can be wired is shown below:



Once the external meter is connected and the flip is switched all the meters in the system will be connected to the Power Simulator at the same time. Any sag/swell event will be sent to all meters. Any current adjustments will be seen by all the meters.

NOTE: To activate the connector use a small screwdriver to slide the switch towards Ext Meter.

Troubleshooting

Symptom	Solution
ION Demo Case has no power	□ Ensure power cable is tightly connected □ Check power switch is in the ON position (located on the left side of the case)
Meters measure no current	□ Check slider switch is in "Int. Meter" mode □ If "Ext. Meter" mode is being used, check the wiring on the external meter
Meter measures no Vll voltage	□ This is normal operation because of the single phase power simulator. Please look for Vln values instead.
Meter does not measure frequency	□ This is normal operation because the power simulator does not supply a large enough voltage for the meter to accurately measure frequency.
ION6200 displays only 0 (zero) or 60 Frequency	□ The Options Card is not inserted correctly. Disconnect power from the ION Demo Case, remove the back cover of the case, remove the power supply from the ION6200, slide out and re-insert the green options card. Refer to the ION6200 Installation and Operation Guide for additional details on re-inserting the options card.
Unable to contact an Ethernet device	□ Check IP address of meter is configured correctly □ Check subnet mask setting is configured correctly
Unable to contact a serial device	□ Check Protocol on all devices in the daisy chain □ Check Unit ID on all devices in the daisy chain □ Check Baud Rate on all devices in the daisy chain