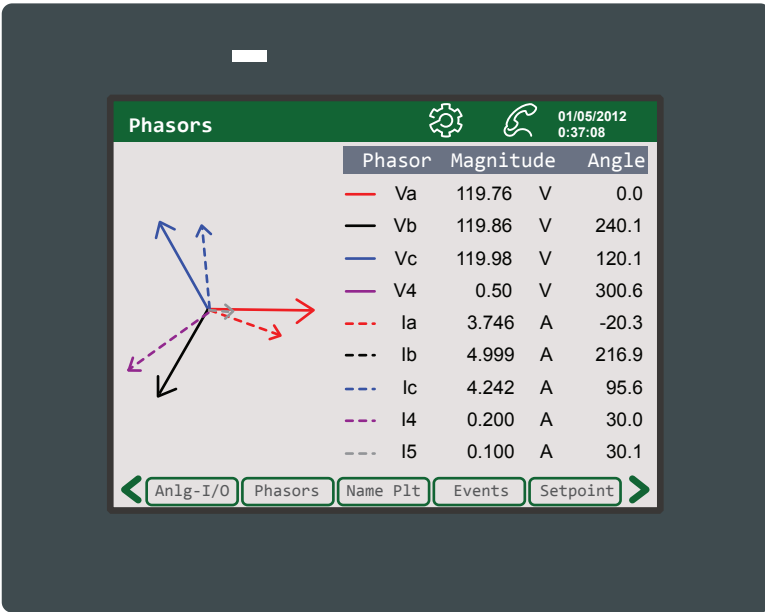


PowerLogic™ Remote Display

for ION7550, ION7650, and ION7550 RTU
Installation and user guide

7EN52-0267-00
04/2012



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Safety information

Important information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages following this symbol to avoid possible injury or death.

DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please note

Electrical equipment should be installed, operated, serviced and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Standards Compliance



Safety precautions

Installation, wiring, testing and service must be performed in accordance with all local and national electrical codes.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, CSA Z462 or applicable local standards.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Connect protective ground (earth) before turning on any power supplying this device.
- Do not use this device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Do not use displayed data as a substitute for proper workplace practices or equipment maintenance; they are supplemental only.

Failure to follow these instructions will result in death or serious injury.

Remote Display overview

The PowerLogic™ Remote Display is an interactive graphics terminal with a color touchscreen. The display communicates with ION7550/ION7650 meters (including remote terminal unit (RTU) and transducer (TRAN) models) through a serial or Ethernet connection.

Remote Display models

The Remote Display can be ordered on its own or as a kit (with a 24-volt power supply and Ethernet cable).

Order number	Descriptions
M765RD	Schneider Electric Remote Display without power supply or Ethernet cable
M765RDPS	M765RD Remote Display kit with power supply and 12-foot Ethernet cable
S765RD	Square D by Schneider Electric Remote Display without power supply or Ethernet cable
S765RDPS	S765RD Remote Display kit with power supply and 12-foot Ethernet cable

Remote Display package contents

The liquid present in the LCD screen contains an irritant.

CAUTION

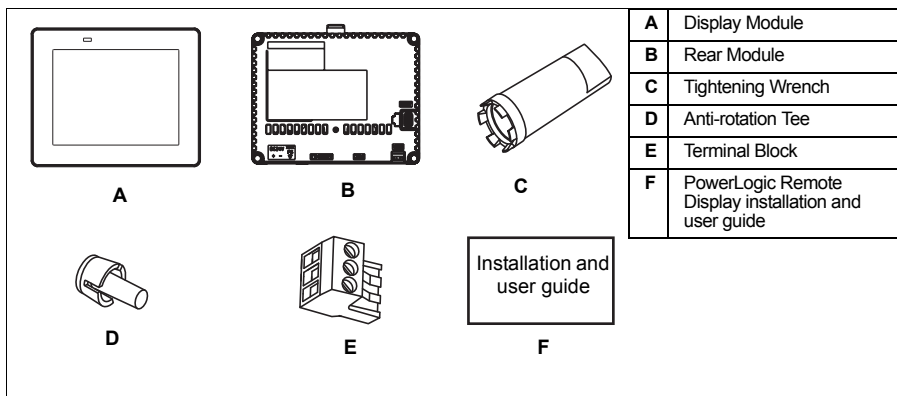
HAZARD OF SERIOUS EYE AND SKIN INJURY

- Wear gloves and protective eye wear when you handle a broken or leaking LCD screen.
- Do not use sharp objects or tools in the vicinity of the LCD screen.
- Handle the LCD screen carefully to prevent puncture, bursting, or cracking of the LCD screen material.

Failure to follow these instructions can result in serious injury.

If the LCD screen is damaged and any liquid comes in contact with your skin, immediately rinse the area with running water for at least 15 min. If the liquid gets in your eyes, immediately rinse your eyes with running water for at least 15 minutes and consult a doctor.

The Remote Display package contains the following items:



In addition, the Remote Display kits (M765RDPS or S765RDPS) include a 24 V power supply and 12-foot Ethernet cable.

 **Note**

If you did not order a Remote Display kit, you must provide your own 24 Vdc power supply and communications cable (Ethernet or serial).

Meter firmware version

 **Note**

New meters shipped from the factory have firmware v370 or higher.

To use the Remote Display with an existing meter, you may need to upgrade the meter's firmware. To communicate correctly with the Remote Display, the meter must have firmware version number 370 (v370) or higher.

You can find the current firmware version of the meter on the meter's front panel nameplate screen or in the ION Setup Setup Assistant for your meter.

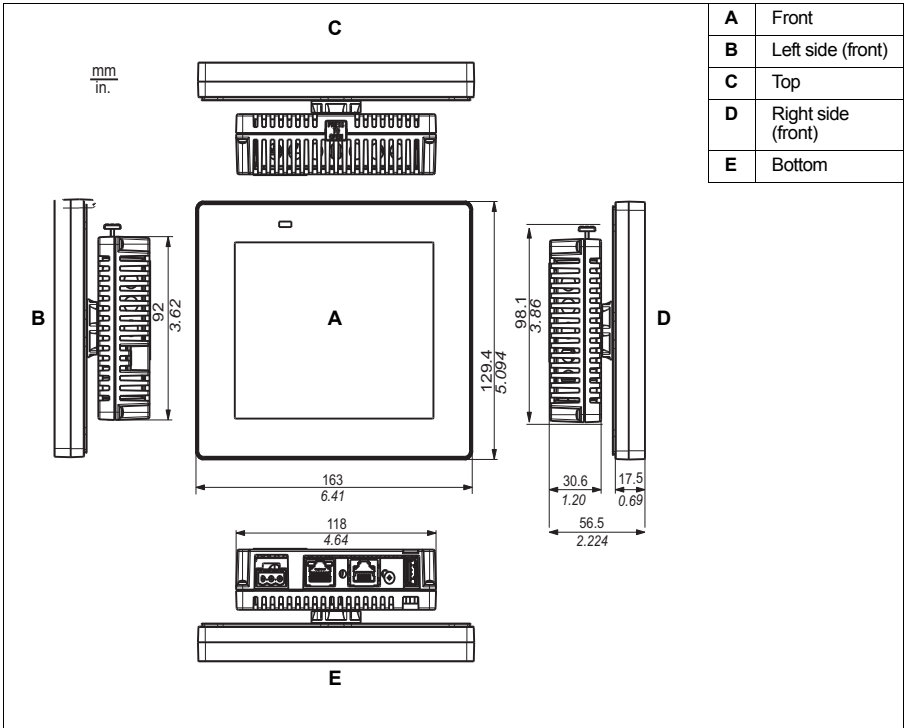
Additional information

For more information on the meter and the Remote Display, including the most recent documentation, firmware and ION Setup downloads, visit www.schneider-electric.com. Available technical documentation includes:

- ◆ *ION7550/ION7650 installation guide* - contains wiring and installation instructions for the meter.
- ◆ *ION7550/ION7650 user guide* - contains information on meter operation, communications, inputs/outputs, logging, alarm notification, and other features, as well as instructions on upgrading the meter's firmware.
- ◆ *ION7550/ION7650 TRAN model product option document* - contains information and instructions for areas where the TRAN model differs from the standard meter.

For more information, please contact your local Schneider Electric sales representative.

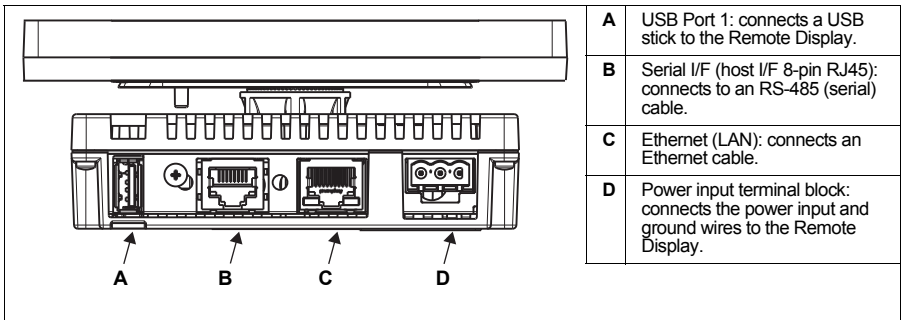
Remote Display dimensions



Remote Display connections

The Remote Display communications and USB ports and power connection are located on the bottom of the rear module.

Bottom of rear module



Remote Display installation

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, CSA Z462 or applicable local standards.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this device and the equipment in which it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Connect protective ground (earth) before turning on any power supplying this device.

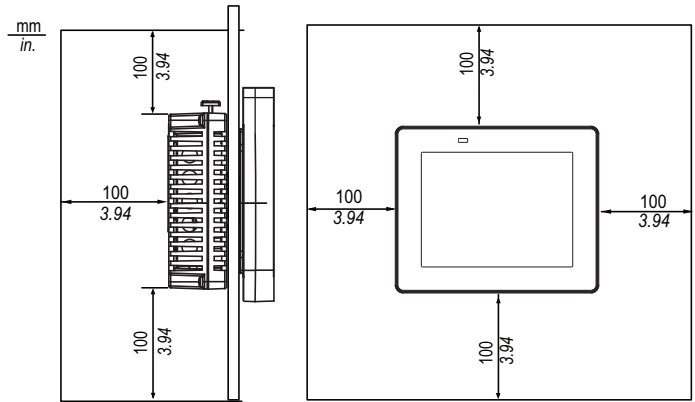
Failure to follow these instructions will result in death or serious injury.

Step 1. Prepare the panel

Mount the Remote Display in an enclosure that provides a clean, dry, and controlled environment. See “Specifications” on page 27 for environmental specifications.

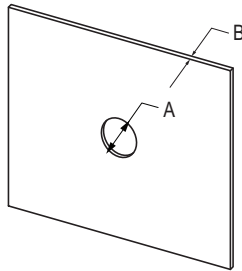
Before installing the Remote Display, verify that:

- ◆ The gasket is flat and not damaged.
- ◆ The installation panel or cabinet surface is flat (planarity tolerance: 0.5 mm [0.019 in.]), in good condition, and has no jagged edges.
- ◆ You may attach metal reinforcing strips to the inside of the panel, near the panel cut-out, to increase the rigidity.
- ◆ The panel is designed to avoid any induced vibration resonance on the rear module exceeding a punctual factor of 10 and to avoid any induced permanent vibration resonance.
- ◆ The ambient operating temperature and the ambient humidity are within the specified ranges for the Remote Display. See “Specifications” on page 27.
- ◆ The heat from surrounding equipment does not cause the Remote Display to exceed its specified operating temperature. See “Specifications” on page 27.
- ◆ The panel face is not inclined more than 30° when installing the Remote Display in a slanted panel.
- ◆ The Remote Display is at least 100 mm (3.94 in.) away from adjacent structures and other equipment for easier maintenance, operation, and improved ventilation. See the following illustration:



Follow these steps to prepare the panel:

1. Place the Remote Display on a clean level surface with the display screen facing downward.
2. Cut a hole in the panel. Hole size is based on the panel material. See “Mounting hole dimensions” below.



Mounting hole dimensions

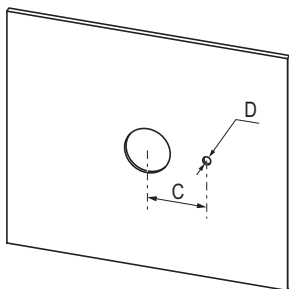
A (mm)	A (in.)	B (mm) steel sheet	B (in.) steel sheet	B (mm) Glass-fiber reinforced plastic ¹	B (in.) Glass-fiber reinforced plastic ¹
+0 22.50 -0.30	+0 0.88 -0.01	1.5 to 6	0.06 to 0.23	3 to 6	0.11 to 0.23

¹ Minimum GF30

Prepare the Tee insert (optional)

The tee insert stops Remote Display rotation when you apply torque. It also allows more torque to be applied when securing the Remote Display. Without the tee insert, the maximum torque that can be supported by the Remote Display module is 2.5 Nm (22.12 in-lb). With the tee insert, the maximum torque that can be supported by the Remote Display module is 6 Nm (53.10 in-lb).

If using the tee insert, drill a hole (D) in the panel, per the table below.

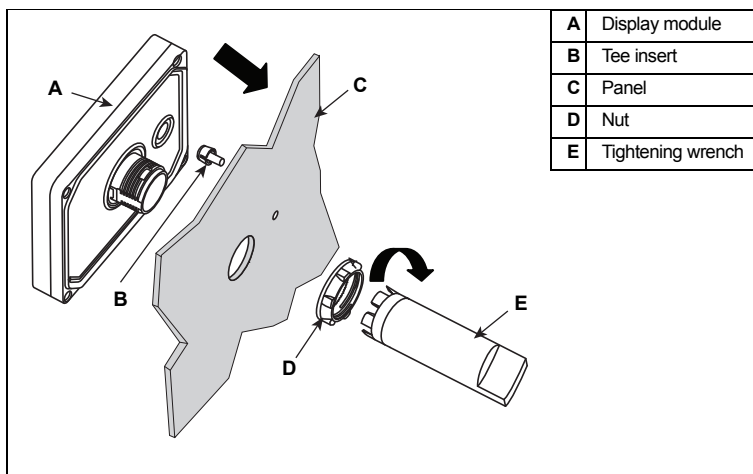


Tee insert hole dimensions

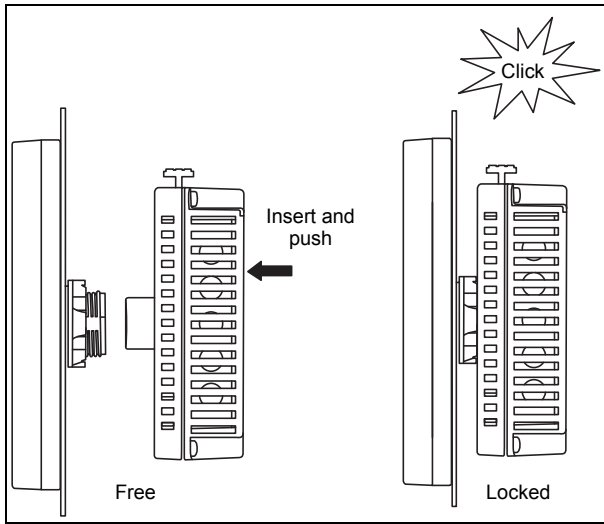
C (mm)	C (in.)	D (mm)	D (in.)
+0	+0	+0	+0
30.00	1.18	4.00	0.15
-0.20	-0.007	-0.20	0.007

Step 2. Mount the display

1. Insert the Remote Display module (with tee insert, if used) into the panel hole.
2. Use the tightening wrench to screw the nut to a torque between 1.2 and 2 Nm (10.62 and 17.70 in-lb.).

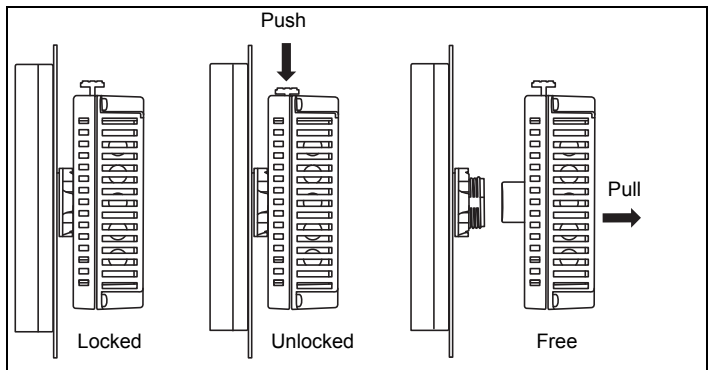


3. Insert and push the rear module until it locks into place.



Removing the Remote Display

To remove the rear module, push the yellow button to unlock it, then pull the rear module out.



Wire the control power

WARNING

HAZARD OF FIRE

Verify the power source for the Remote Display meets the specifications for the Remote Display as provided in the Specifications section of this document.

Failure to follow these instructions can result in death or serious injury.

Ensure that the instructions in this section for connecting the power cord to the Remote Display are followed, regardless of whether you ordered the Remote Display with or without the optional power supply.

Power supply options

- ◆ Remote Display kit: If you purchased the Remote Display kit (MS65RDPS or S765RDPS), the 24 V power supply is included in your shipment. Follow the instructions that came with the power supply to wire the power supply for the Remote Display.
- ◆ Remote Display (without the power supply order option): If you did not purchase the Remote Display kit (M765RD or S765RD), you must provide your own 24 V power supply that meets the specifications for the Remote Display. See "Specifications" on page 27.

Guidelines

Follow these recommendations when supplying power to the Remote Display:

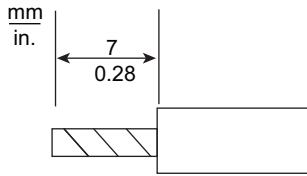
- ◆ Properly grounding the Remote Display helps:
 - ◆ Provide a safe path to protective ground (earth).
 - ◆ Protect the electronic circuitry in the Remote Display.
 - ◆ Properly operate communications ports.
 - ◆ Comply with all local and national regulations.
- ◆ Since the Remote Display is not equipped with a power switch, connect a power switch to the Remote Display's power supply.

Step 1. Prepare the power cord

- ◆ Verify the ground wire is the same gauge or heavier than the power wires.
- ◆ The conductor type must be solid or stranded wire.
- ◆ To reduce electromagnetic noise, make the power cord as short as possible.
- ◆ Do not solder the wire directly to the power receptacle pin.

Follow these steps to wire the cord:

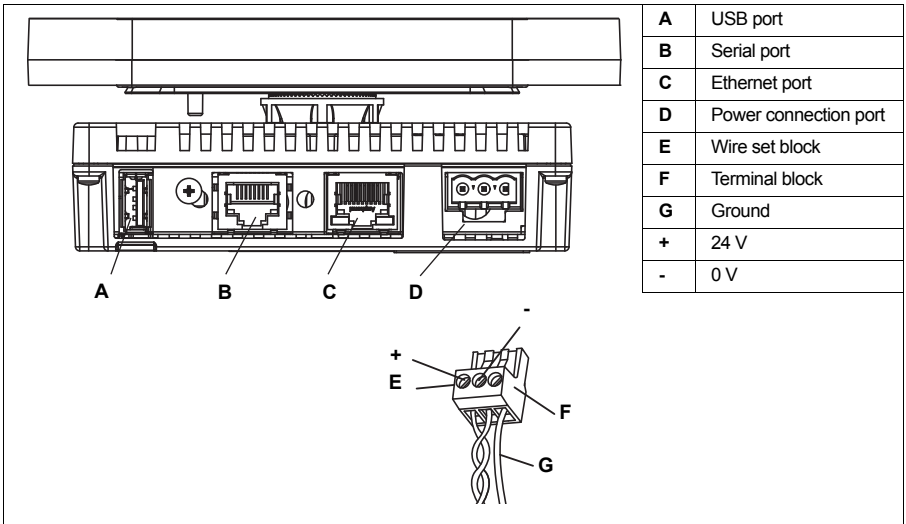
1. Remove 7 mm (0.28 in.) of the insulation of each of the power cord wires.



2. If using stranded wire, twist the ends. Tinning the ends with solder helps reduce the risk of fraying and enhances electrical transfer.
3. Connect the wires to the power plug by using a flat-blade screwdriver (size 0.6 x 3.5).
4. Tighten the mounting screws to 0.5 to 0.6 Nm (4.4 to 5.2 lb-in) of torque.
5. Insert the power plug into the Remote Display power connector.

Step 2. Connect the power cord

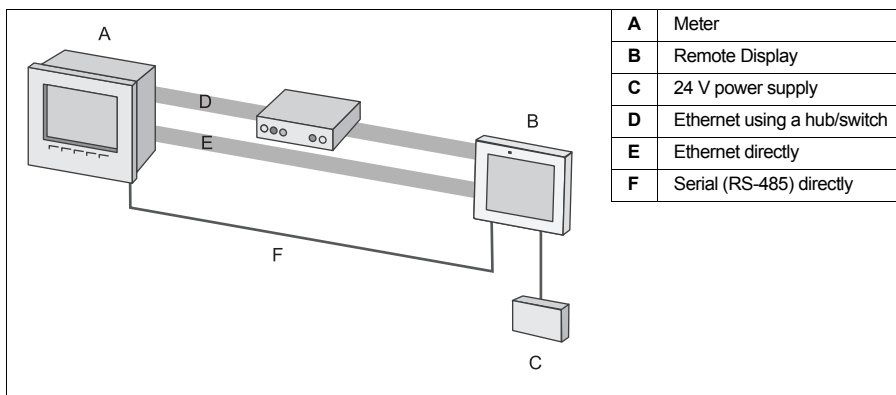
The following illustration displays the terminal block connection to the Remote Display.



Connect the Remote Display and the meter

You can communicate between the Remote Display and the meter in one of two ways:

- ◆ Ethernet: see “Option 1. Ethernet connection” on page 16.
- ◆ Serial: see “Option 2. Serial connection” on page 17.



Communications connection guidelines

- ◆ Securely attach communication cables to the panel or cabinet.
- ◆ Use only RJ45 connectors with a locking tab in good condition.
- ◆ Ensure there is no excessive weight or stress on communication cables as this may cause the cables to disconnect.

Option 1. Ethernet connection

See the *ION7550/ION7650 installation guide* for Ethernet connection instructions for the meter.

Connect one end of the Ethernet cable to the Ethernet port on the Remote Display. You can connect the other end of the cable directly to the meter's communication card or to a hub or a switch.

If you want to communicate to the meter using Ethernet for other purposes (for example, to bring data from the meter into software), it is recommended that you connect via a hub or switch. This enables the meter to communicate with both the Remote Display and with software or other devices over Ethernet.

You can use either a crossover or a straight cable when connecting directly to the meter; when connecting to a hub or switch, refer to the documentation for the hub or switch to determine what cable to use.

For instructions on setting up Ethernet communication between the Remote Display and the meter, see “Configuring Ethernet communications” on page 19.

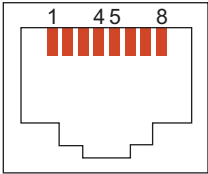
Option 2. Serial connection

Use the serial connection to connect the Remote Display to the meter via an RS-485 cable. Use an RJ45, 8-pin type connector.

It is recommended that you connect to the COM2 port on the meter. COM2 is a dedicated RS-485 port that has the required settings for communicating with the Remote Display as its default settings for meters shipped with v370 or higher firmware. If you connect to COM1, ensure that it is set to RS-485 and that the port settings match those provided in “Required and recommended settings if using a serial connection” on page 19.

For instructions on setting up serial communications between the Remote Display and the meter, see “Configuring serial communications” on page 19.

Serial interface RJ45 8-pin connector on the Remote Display

Remote Display port pin connections	Pin number	Signal name	Meter connection (COM port)	Description
<p>Front</p> 	1	Not used		
	2	Not used		
	3	Not used		
	4	D1	+	Transfer Data (RS-485)
	5	D0	-	Transfer Data (RS-485)
	6	Not used		
	7	Not used		
	8	Not used		

Connect shield on the meter COM port but do not connect it on the Remote Display.

Power up the Remote Display

Switching the power OFF and ON quickly can damage the Remote Display.

NOTICE

HAZARD OF EQUIPMENT DAMAGE

Wait at least 10 seconds between turning on and off power to the Remote Display.



Failure to follow these instructions can result in equipment damage.

Follow these steps to power up the Remote Display:

1. Ensure the ground wire is securely connected on both ends.
2. Ensure the Remote Display power supply voltage is within the allowed range.
3. Power up the meter.
4. Power up the Remote Display.

The Remote Display automatically powers up when you apply power to it. Messages display, telling you the runtime version that the Remote Display is loading, and that it is connecting.

When the DATE/TIME prompt displays, ignore it. You do not need to set up date and time; the DATE/TIME prompt disappears after a few seconds.

A message displays stating that the Remote Display is not configured. Press **OK**. The communications configuration screen appears, displaying the **TCP** () and **RS-485** () buttons; proceed with the instructions in “Communications between the meter and the Remote Display” on page 18.

Communications between the meter and the Remote Display

This section provides information and instructions on configuring Ethernet or serial communications between the Remote Display and the meter.

Before you begin

- ◆ Ensure that both the Remote Display and meter are powered on.
- ◆ Ensure that the Remote Display and meter are connected:
 - ◆ directly via the serial RS-485 connection;
 - ◆ directly via Ethernet; or
 - ◆ via Ethernet through a hub or switch.
- ◆ Record the following information:

Connection type	Record the following...	Additional information
All	Meter's serial number ¹	These values help you confirm that you are communicating with the correct meter.
	Meter's <i>Tag1</i> value ¹	
Direct Ethernet	Meter IP address ¹	Contact your network administrator to obtain IP addresses, and subnet mask and gateway addresses for Ethernet via a hub or switch.
	Remote Display IP address	
Ethernet via a hub or switch	Meter IP address ¹	Refer to the <i>ION7550 / ION7650 TRAN model</i> product option document for instructions on determining the default IP address.
	Remote Display IP address	
	Subnet mask address	
	Gateway address	
Serial	Meter's unit ID ¹	Ensure that the unit ID of the meter is between 1-247. This is the valid range for Modbus communications.

¹ You can view these settings on the meter's front panel or in its Setup Assistant in ION Setup. Refer to the meter's user guide for more instructions on viewing or configuring these settings if needed.

Additional information if connecting to an existing meter

Meter firmware version

If you are connecting the Remote Display to an existing meter, verify that the meter is using v370 firmware or later. See “Meter firmware version” on page 8 for more information.

Required and recommended settings if using a serial connection


For new meters, the COM2 settings are pre-configured to work with the Remote Display. However, for an existing meter that you want to connect to the Remote Display via RS-485, you need to configure certain settings for the meter COM port you are connecting to. Configure the following settings as noted:

- ◆ Protocol: Modbus RTU
- ◆ Serial Port: 8N1
- ◆ Baud Rate: 57600
- ◆ RS-485 Biasing: ON (this is the recommended setting if this parameter is available).

If connecting to an existing TRAN meter (without an integrated display), you must use ION Setup to view the current serial communications settings. See the *ION7550/ION7650 TRAN model* product option document for more information.


Configuring Ethernet communications

Follow these steps to establish Ethernet communication:

1. On the communications configuration screen, press **TCP** .
2. Type the IP addresses of the meter and the Remote Display. Enter the subnet mask and gateway address (if the meter and Remote Display are connected via a hub or switch, rather than directly connected).
3. Press **Connect**. A screen displays with the serial number and *Tag 1* value of the meter.
If the connection fails, verify that the connection information you entered is correct. If the connection still fails, see “Troubleshooting” on page 25.
4. Confirm that the serial number and *Tag 1* values match the meter you want to connect to. Press **Accept** to proceed with the connection or **Cancel** to enter different connection information.

Configuring serial communications

Follow these steps to establish serial communication between the meter and the Remote Display:

1. On the communications configuration screen, press **RS-485** .
2. Type the unit ID of the meter.
3. Press **Connect**. A screen displays with the serial number and *Tag 1* value of the meter.
If the connection fails, verify that the connection information you entered is correct. If the connection still fails, see “Troubleshooting” on page 25.
4. Confirm that the serial number and *Tag 1* values match the meter you want to connect to. Press **Accept** to proceed with the connection or **Cancel** to enter different connection information.

Viewing meter data on the Remote Display

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Do not use the Remote Display or the connected device for critical control or protection applications where human or equipment safety relies on the operation of the control circuit.
- Do not use displayed data as a substitute for proper workplace practices or equipment maintenance; they are supplemental only.

Failure to follow these instructions will result in death or serious injury.

WARNING








HAZARD OF UNINTENDED EQUIPMENT OPERATION

- Operate the touch panel with only one finger in order to avoid selecting an unintended object.
- Do not activate two or more points of the touch panel simultaneously.
- Do not use hard or pointed objects to operate the touch panel, since it can damage the panel surface.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Navigating the Remote Display screens

Press the buttons on the Remote Display screen to select the meter data you want to display. Where applicable, use the up and down arrows to show more options. Most of the buttons on the Remote Display correspond with buttons on the front panel of the meter:

Icon	Description
	This icon takes you to the Remote Display communications setup screen where you can configure Ethernet or serial communication between the Remote Display and the meter.
	This icon takes you to the previous screen. This functions in the same way as the ESC button on the meter front panel.
	This icon takes you to the meter setup screens. In most cases, this functions in the same way as the PROG/SELECT button on the meter front panel.
 	The up and down arrows take you through setup menus, entries in the event log and individual harmonics on the harmonics display screens. This functions in the same way as the up and down arrows on the meter front panel.
 	The right and left arrows, on the bottom of the meter viewing pages, let you scroll through the available display screens.


For more information regarding meter parameters, resets, and values, refer to the *PowerLogic ION7550/ION7650 user guide*.

Language of the Remote Display

The Remote Display displays the meter screens in the language configured for the meter front panel display, as long as that language is supported by the Remote Display. Contact your Schneider Electric sales representative for the latest information on languages supported by both the meter and the Remote Display.

Use the front panel, Remote Display or ION Setup to change the language used for the meter display.

Recognizing stale data

If the network slows down or is disabled, you might see stale data indicators (stale data is data that has not been refreshed in a certain amount of time). After four seconds of no new data being received by the Remote Display, you will see a series of alert icons (). When new data is received, the information is updated, and the icons disappear.

If you continue to see stale data indicators, see “Troubleshooting” on page 25 for instructions.

Configuring display options on the Remote Display

Configuring the display options for the Remote Display is optional. Use ION Setup 3.0 (or later) to change the following, if desired:

- ◆ the colors used on the Remote Display for the vectors on the phasor diagram screen.
- ◆ the colors used on the Remote Display for the events levels (low, medium and high) on the event log screen.
- ◆ the thresholds at which colors change in the event log screen on the Remote Display.

For additional information on using ION Setup, refer to the ION Setup online help.

Changing colors for phasors and events

Note

The Remote Display uses the phase labels that are configured on your meter. However, the ION Setup Setup Assistant labels the phases with numbers rather than letters (for example, V1, V2, V3 rather than Va, Vb, Vc) regardless of what is configured on the meter.

Follow these steps to change vector and event colors for the Remote Display:

1. Open the Setup Assistant for your meter. See the ION Setup online help for more information.
2. Select **Displays** then click the **Remote Display** tab.
The current color settings are displayed.
3. Select the parameter you want to change then click **Edit**. For example, to change the V1 vector color, select **I1/V1 Vector Colour**.

- Enter the meter password, if prompted, and click **OK**.
- A dialog box appears where you can select a new color.
4. Select a new color, and click **OK**. The color changes on the Remote Display.
 - ◆ **Vectors:** If you select a color already in use, a message appears stating that the color is already in use. Click **OK** and repeat the step above to select a different color.
 - ◆ **Event colors:** Although you can select a color that is already in use, it is recommended that you select different colors for each of the three event levels.
 5. Repeat the steps 3 and 4 for each color that you want to change.

Changing the event color thresholds

Follow these steps to change the threshold at which events on the Remote Display change color:


1. Open the Setup Assistant for your meter. See the ION Setup online help for more information.
2. Select **Displays** then click the **Remote Display** tab.
The current threshold levels for the event colors are displayed.
3. Select the parameter you want to change then click **Edit**. Enter the meter password, if prompted and click **OK**.
 - ◆ Select **Med Event Threshold** to configure when an event changes from the low event color to the medium event color.
 - ◆ Select **High Event Threshold** to configure when an event changes from the medium event color to the high event color.
4. Type a new threshold value in the dialog box and click **OK**.



Note

Changing the event color thresholds does not change the event priorities in the meter event log.

Viewing Remote Display diagnostics and connection information

To view information about the Remote Display and its connection to the meter, press ; then press **Diagnostics Information**. The following information is displayed:

- ◆ Remote Display firmware version
- ◆ Remote Display runtime version
- ◆ Connection status (connected or not connected)
- ◆ Connection type (TCP or serial)
- ◆ Meter information (serial number and *Tag 1* value)

 **Note**

If connection to the meter has been lost, the serial number and tag fields display alert icons rather than meter information.

Remote Display firmware upgrades

The Remote Display comes with a pre-configured firmware installed. However, periodic firmware upgrades may provide new features. You can upgrade the firmware when newer firmware becomes available for the Remote Display.

 **Note**

To maintain compatibility with your meter, you may also need to upgrade the meter firmware. See the *ION7550/ION7650 user guide* for instructions.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, CSA Z462 or applicable local standards.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying the equipment in which Remote Display it is installed before working on the device or equipment.
- Always use a properly rated voltage sensing device to confirm that all power is off.

Failure to follow these instructions will result in death or serious injury.

If you interrupt the firmware upgrade, you may render the Remote Display inoperable.

NOTICE

HAZARD OF EQUIPMENT DAMAGE

- Do not disconnect the USB drive during upgrade.
- Do not power down the Remote Display during upgrade.

Failure to follow these instructions can result in equipment damage.

Before you begin:

- ◆ For serial communication: record the meter serial number, meter Tag1 value, and meter unit ID
- ◆ For Ethernet communication: record the meter and Remote Display IP addresses, subnet mask and gateway address (if connected via a hub or switch), meter serial number, and meter Tag1 value.

You can find this information on the Remote Display Diagnostics page (see "Viewing Remote Display diagnostics and connection information")

on page 22).

- ◆ Download the latest Remote Display firmware from www.schneider-electric.com.
- ◆ Make sure the meter and Remote Display are powered up.

Follow these steps to upgrade the Remote Display firmware:

1. Unzip the downloaded package if it is zipped.
2. Copy the unzipped files to the root directory of a USB drive.



Note

Your USB drive must be formatted as FAT32 and not NTFS. To check the format of the drive, right-click the USB drive letter in Windows Explorer and select **Properties**.


3. Insert the USB drive into the USB1 port of the Remote Display.
A dialog box appears stating the following: "Install new project from USB drive? Warning: Back up your data. Installing erases all target files."
The backup feature is not supported at this time. You will need to enter meter and Remote Display connection information after you upgrade.
4. Press **Yes**.
The Remote Display boots and copies the new firmware files. When complete, the Remote Display beeps.
The **Runtime** screen appears.
5. Disregard the on-screen instructions. Remove the USB drive.
6. Press **Restart**.
A message displays stating that the Remote Display is not configured. Press **OK**.
The **Display Communication Setup** screen displays.
7. Set up communication with the meter again. "Communications between the meter and the Remote Display" on page 18.

If the Remote Display becomes unresponsive during the upgrade, contact Technical Support.

Troubleshooting

If you are unsuccessful in correcting problems after you follow these troubleshooting steps, contact Technical Support.

Step	Check/operation	Solution
Remote Display is blank		
1	Is the Remote Display connected to a properly rated power supply?	Verify the power supply ratings and connections.
2	Is the detected problem still not resolved?	Contact Technical Support.
No communications with intended meter		
1	Does the meter have power?	Verify that the meter is powered on.
2	Is the communication cable connected correctly?	See "Connect the Remote Display and the meter" on page 16.
3	Does the meter have the correct firmware?	The meter must have v370 firmware or higher.
4	Are communication settings (Ethernet or serial) correct on the meter?	<p>Confirm the following settings on the meter using ION Setup or the front panel:</p> <p>For Ethernet (over network):</p> <ul style="list-style-type: none"> ◆ Meter IP address: unique and entered correctly on the meter ◆ Subnet Mask and gateway addresses: verified with your system administrator and entered correctly on the meter <p>For Ethernet (directly connected):</p> <ul style="list-style-type: none"> ◆ Meter IP address: unique and entered correctly on the meter <p>For serial, ensure the COM port settings are set as follows:</p> <ul style="list-style-type: none"> ◆ <i>Protocol</i>: Modbus RTU ◆ <i>Baud rate</i>: 57600 ◆ <i>Unit ID</i>: user programmable (default is 101; ensure that the unit ID is between 1-247) ◆ <i>Serial Port</i>: 8N1 ◆ <i>RS-485 Biasing</i>: On (recommended setting if available) ◆ <i>Tran Delay</i>: 0.01 seconds ◆ <i>Rx Timeout</i>: 3 seconds
5	Are the settings of the Remote Display correct?	<p>Confirm the following settings on the Remote Display Diagnostics screen:</p> <p>For Ethernet (over network):</p> <ul style="list-style-type: none"> ◆ Remote Display IP address: unique and entered correctly ◆ Meter IP address: must match the meter ◆ Subnet Mask and gateway addresses: verified with your system administrator and entered correctly on the meter and the Remote Display <p>For Ethernet (directly connected):</p> <ul style="list-style-type: none"> ◆ Remote Display IP address: unique and entered correctly ◆ Meter IP address: must match the meter <p>For serial:</p> <ul style="list-style-type: none"> ◆ Unit ID: must match the meter (default is 101)
6	Is there more than one meter, or more than one Remote Display, using the same RS-485 loop (serial only)?	There should only be one meter and one Remote Display (and no other devices) on a RS-485 loop.

Step	Check/operation	Solution
7	Is the detected problem still not resolved?	Contact Technical Support.
Contents of the Remote Display screen are unintelligible		
1	Are the contents of the Remote Display unintelligible or in a language other than what you want?	<ul style="list-style-type: none"> ◆ Confirm that the meter front panel display language is set to the desired language using either the front panel, Remote Display or ION Setup. ◆ Confirm that the language set on the meter is supported by the Remote Display. Contact your Schneider Electric sales representative for the latest information on languages supported by both the meter and the Remote Display.
2	Is the detected problem still not resolved?	Contact Technical Support.
Remote Display response time is slow		
1	Are you receiving no new data?	Check the previous section: "No Communications with Intended Meter."
2	Are you seeing consistent or periodic timeouts, causing the stale data alert icon  to appear?	<p>For Ethernet:</p> <ul style="list-style-type: none"> ◆ Contact your network administrator. <p>For serial:</p> <ul style="list-style-type: none"> ◆ Confirm your RS-485 connections, including the shielding. ◆ Confirm the meter communications port has <i>RS-485 Biasing</i> set to ON (if this setting is available). ◆ Confirm that the meter communications port has <i>Tran Delay</i> set to 0.01 seconds. ◆ Confirm that the meter communications port has <i>Rx Timeout</i> set to 3 seconds. ◆ Confirm there is only one meter and one Remote Display on the loop and no other devices. ◆ If connected to COM1, ensure that this is set to RS-485
3	Is the detected problem still not resolved?	Contact Technical Support.

Maintenance

NOTICE

HAZARD OF EQUIPMENT DAMAGE

- Power off the Remote Display or disable communications between the Remote Display and the meter before cleaning the Remote Display.
- Do not use paint thinner, organic solvents, or a strong acid compound to clean the Remote Display.

Failure to follow these instructions can result in equipment damage

When the surface or the frame of the Remote Display gets dirty, soak a soft cloth in water with a mild detergent; wring the cloth until it is damp, and wipe the display.

Specifications

Remote Display environmental specifications		
	Specification	Remote Display
Physical environment	Ambient operating temperature (cabinet interior and panel face)	0 °C to +50 °C (32 °F to 122 °F)
	Storage temperature	-20 °C to +60 °C (-4 °F to 140 °F)
	Relative Humidity	85 % w/o condensation (Non-condensing, wet bulb temperature 39 °C (102.2 °F) or less)
	Air purity (dust)	≤ 0.1 mg/m ³ (10-7 oz/ft ³) (non-conductive levels)
	Corrosive gases	Free of corrosive gases
	Atmospheric pressure	800 hPa to 1,114 hPa (2000 m (6561 ft) or lower)
Mechanical environment	Vibration immunity (operating)	IEC 61131-2 1gn 5Hz to 150Hz (maximum 3.5 mm (0.13 in.))
	Protection (front panel)	IP 65 - (IEC 60529)
	Protection structure	Type 4X indoor, installed on a panel
	Protection (rear panel)	IP 20 - (IEC 60529)
	Shock immunity (operating)	IEC 61131-2 15gn 11 ms
	Cooling method	Natural air circulation
	Weight	0.25 kg (0.55 lb.) or less (main unit only)
	Color	Front bezel: dark gray
	Material	PC/PBT & PAA
Electrical environment	Noise immunity	Noise voltage: 1000 Vp-p Pulse width: 1 μs Rising time: 1 ns
	High energy surges	1 kV CM, 0.5 kV DM on DC power supply 1 kV CM on shielded cables
	Electrical fast transient burst	2 kV CM, 2 kV DM on DC power supply 1 kV on shielded cables
	Radiated radio frequency electromagnetic fields	10 V/m / 80 MHz to 2.7 GHz Sinus amplitude modulated 80 % 1 kHz + Internal clock frequency
	Electrostatic discharge immunity	6 kV direct contact 8 kV air contact
	Grounding	D type grounding (SG-FG connected)
CM Common Mode, DM Differential Mode		

Remote Display electrical specifications	
Specification	Remote Display
Rated Input Voltage	24 Vdc
Input Voltage Limits	20.4 Vdc to 28.8 Vdc
Acceptable Voltage Drop	≤ 7 ms
Power Consumption	≤ 6.8 W
In-Rush Current	≤ 30 A
Voltage endurance between power terminal and frame ground	1000 Vac

Insulation resistance between power terminal and frame ground	10 MΩ or higher at 500 Vdc
Remote Display wire and cable specifications	
Power cord	Use wires that are 0.2 to 2.5 mm ² (24 - 12 AWG) Cu only.

Meter Ethernet specifications	
Wire type	High quality Category 5 or 6 unshielded twisted pair cable
Connector type	RJ45 modular
Maximum length	100 m (328 ft)
Type	IEEE 802.3 10/100BASE-T for 10/100 Mbps base band CSMA/CD LANs
Data rate	10/100 Mbps
Isolation	Transformer isolated to 1500 V RMS
Max. connections allowed	8 simultaneous (32 via Modbus TCP/IP)

Remote Display serial interface specifications	
Serial interface RJ45 (COM1 on the Remote Display)	
Asynchronous transmission	RS-485
Data length	7 or 8 bits ¹
Stop bit	1 or 2 bits ¹
Parity	None, odd or even ¹
Data transmission speed	2,400 to 115,200 bps ¹
Maximum transmission distance	RS-485 1200 m (3,937 ft) at 100 kbps

¹ Even though the remote display can use different formats, the *Serial port* setting on the meter must be set to 8N1 (8 bits, no parity, 1 stop bit) and the *Baud rate* setting must be set to 56,700.

Remote Display certification and standards compliance	
Underwriters Laboratory (UL)	UL 508 and CSA C22.2 n°142 for Industrial Control Equipment UL 1604, ANSI/ISA 12.12.01 and CSA C22.2 n°212 for Electrical Equipment for Use in Class 1, Division 2 Hazardous Locations
UL Conditions of Acceptability and Handling Information	Suitable for use in hazardous locations in accordance with Class 1, Division 2 standards. All relevant local, state, and regional codes must be followed.
ATEX Certification	Ongoing by INERIS. Please refer to the product label.
Merchant Navy Bridge and Deck	Designed to comply with requirements. Refer to www.schneider-electric.com for installation guidelines.
Hazardous Substances	WEEE, Directive 2002/96/EC RoHS, Directive 2002/96/EC RoHS China, Standard SJ/T 11363-2006
CE Markings (based on compliance with IEC 61131-2)	2006/95/EC Low Voltage Directive 2004/108/EC EMC Directive

Remote Display display specifications	
Type	Color TFT LCD
Resolution (pixels)	320 x 240 (QVGA)

Active display area	W115.2 x H86.4 mm W4.53 x H3.40 in.
Colors	65536 colors
Backlight	LED backlight Lifetime: 50000 hours before dimmed to 50% brightness. Ambient temperature - 25°C (77°F) Non-exchangeable LED ON/OFF control, adjustable screen saver activation time
Brightness on LCD surface	White LED: 350 cd/m ² (33 cd/ft ²) maximum
View angle	80 degrees: left, right 70 degrees: up 70 degrees: down (Test condition: contrast ration > 2)

Remote Display USB1 interface for firmware upgrade

HOST Interface		
Transmission Speed	High speed	480 Mbps
	Full speed	12 Mbps
	Low speed	1.5 Mbps
Maximum current supplied		5 m (16.40 ft) at 12 Mbps
Connector		USB Type-A V2.0

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www.schneider-electric.com

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