Using the RS-232 Option with the ALPHA Plus® and A3 ALPHA® Meters

General

The RS-232 option board may be provided on ALPHA Plus and A3 ALPHA meters with timekeeping features. This option board provides a method for connecting a meter to another device for point-to-point communications up to 19.2 kbps. As an example, the RS-232 option may be used to connect the meter to an external telephone modem. The maximum cable length in RS-232 communications paths is 25 feet (7.6 meters). The RS-232 option can also be used to provide a direct connection between a meter and a computer using the serial port of the computer.

For more information about the ALPHA Plus meter, see the ALPHA Plus meter technical manual (TM42-2182E or later). For more information about the A3 ALPHA meter, see the A3 ALPHA meter technical manual (TM42-2190B or later).

⚠ WARNING

Use authorized utility procedures to install and service metering equipment. Dangerous voltages are present. Equipment damage, personal injury and death can result if safety precautions are not followed.
Use circuit closing devices on current transformer secondaries. Dangerous currents and voltages are present. Equipment damage, personal injury and death can result if circuit closing devices are not used.

RS-232 Option Board

The RS-232 option board is a single board design providing a cable connector for the RS-232 communication connections. This communication board may also be provided with two or four relays. See the meter's technical manual for information on configuring the relays. These relays are optional and must be specified at the time of order entry.

The RS-232 option board connects directly to the main circuit board of the ALPHA Plus and A3 ALPHA meter using the 20-pin connector (J4). See Figure 1 for an illustration of mounting the RS-232 option board on a meter with the CPS power supply. See Figure 2 for an illustration of mounting the RS-232 option board on a meter with the traditional power supply.

Elster Electricity, LLC
Raleigh, North Carolina USA
+1 800 338 5251 (US Technical Support)
+1 800 257 9754 (US Sales Support)
+1 919 212 4800 (US Main)
+1 905 634 4895 (Canada Main)
support@us.elster.com
www.elsterelectricity.com

ELSTER

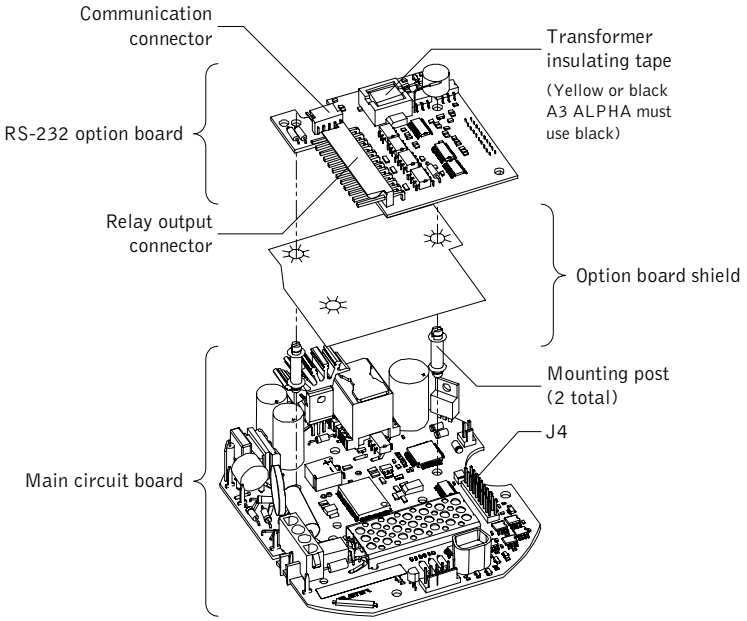


Figure 1. ALPHA Plus meter with CPS power supply and RS-232 option board (A3 ALPHA is similar)

Note. Only RS-232 option boards with black transformer insulating tape are approved for use on the A3 ALPHA meter with CPS power supply.

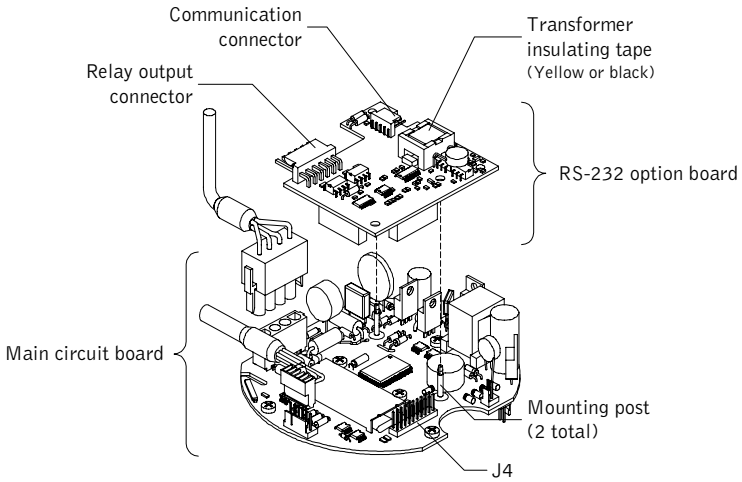


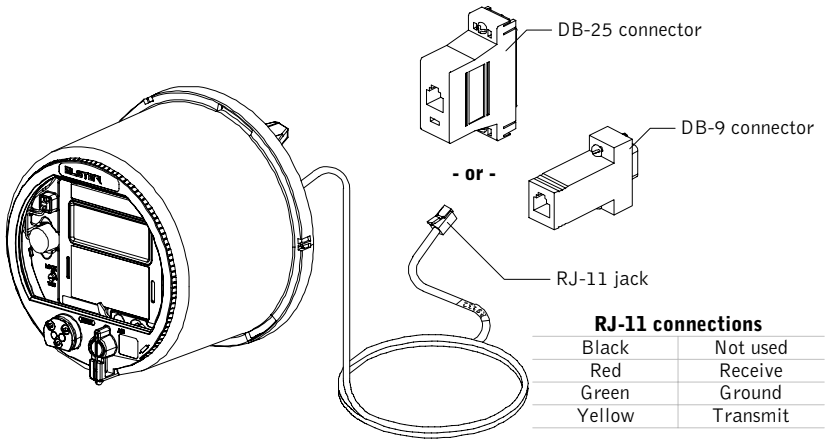
Figure 2. ALPHA Plus meter with traditional power supply and RS-232 option board (A3 ALPHA is similar)

External Connections

The RS-232 cable exits through the option cable opening in the meter base. This cable terminates in an RJ-11 jack. There is a wire marker, 6 inches from the RJ-11 end, with “RS 232” printed on it for identifying this option. An additional “interface adapter,” which is ordered separately, is also required and is available in the following styles:

- Style 1C11637H01: a male, 25-pin connector on one end and an RJ-11 termination on the other
- Style 1C11731H01: a male, 9-pin connector on one end and an RJ-11 termination on the other

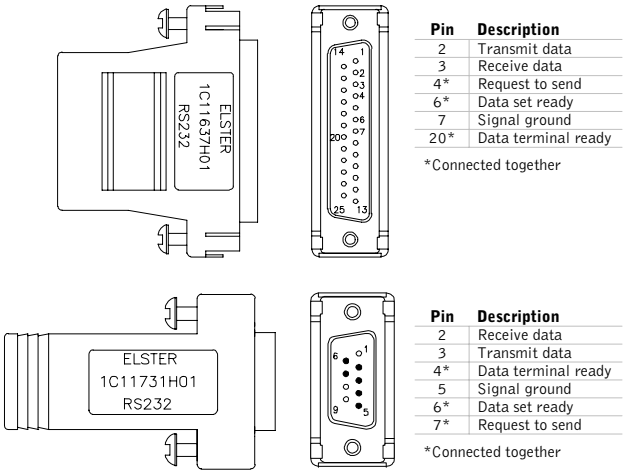
The RS-232 connections are shown in Figure 3; Figure 4 shows the interface adapters.



RJ-11 connections

Black	Not used
Red	Receive
Green	Ground
Yellow	Transmit

Figure 3. Meter with RS-232 cable and connectors



Pin	Description
2	Transmit data
3	Receive data
4*	Request to send
6*	Data set ready
7	Signal ground
20*	Data terminal ready

*Connected together

Pin	Description
2	Receive data
3	Transmit data
4*	Data terminal ready
5	Signal ground
6*	Data set ready
7*	Request to send

*Connected together

Figure 4. Interface adapters

Programming

If the RS-232 option is used for connection to an external telephone modem, the meter must be programmed to support this type of communication using an appropriate Remote Definitions developed by Elster Electricity meter support software. If the RS-232 is used to connect to a non-modem device, such as connecting directly to the serial port of a PC, then a null modem or null modem cable must be used between the RS-232 output and the device.

Relay Options

The pulse output relays (when present) are brought out of the meter base via a cable on the ALPHA Plus or A3 ALPHA meter. There can be 2 or 4 relays provided with the RS-232 option board.

The relay output cable uses the color coding below. Reference Figure 5 and Figure 6 to identify pulse output.

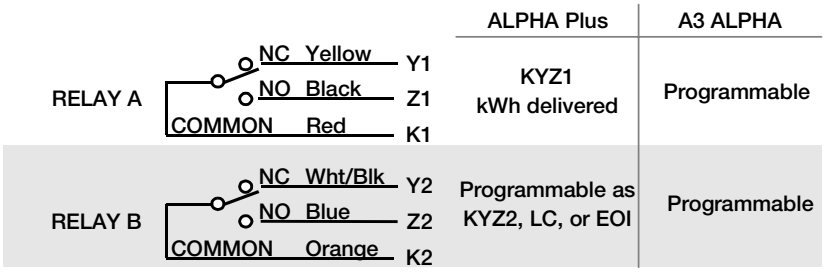


Figure 5. 2-relay output color coding

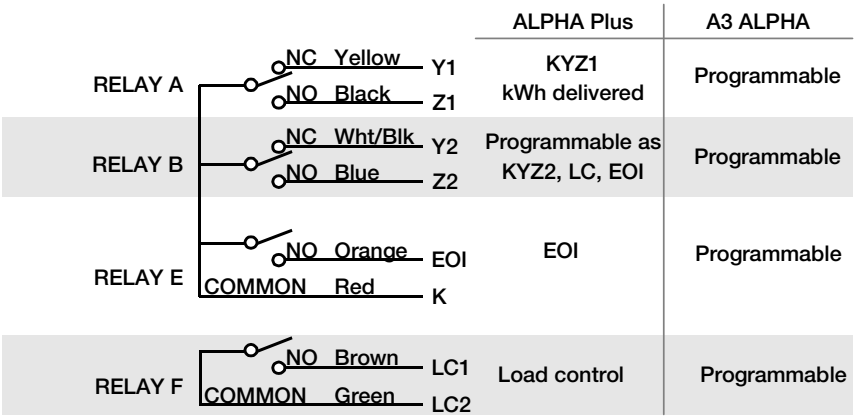


Figure 6. 4-relay output color coding

Elster Electricity, LLC
Raleigh, North Carolina USA

IL42-4015E