

Connecting the ALPHA® meter to a telephone line

Installation instructions
IL42-4008G

General

Elster's ALPHA meter is available with options that allow communicating over the dial-up telephone network. This leaflet explains how to connect an ALPHA meter with the external modem ready option or the internal modem option to the dial-up telephone lines. For information on installing the meter itself, see the instructional leaflet that pertains to the type of meter you have.

⚠ WARNING

Use authorized utility procedures to install and service metering equipment. Dangerous voltages are present. Personal injury, death, or equipment damage can result if safety precautions are not followed.

Use circuit closing devices on any current transformer secondaries (Form 35S (5S), 35A (5A), 36S (6S), 36A (6A), 9S, 10A meters). Personal injury, death, or equipment damage can result if circuit closing devices are not used.

Be careful to avoid pinching the telephone cable in the jaws of the meter socket or in the meter terminals, which would place potentially hazardous voltages on the telephone circuits.

- The remotely-readable ALPHA meter with the external modem ready option has a 4-conductor RS-232 cable exiting the meter with an RJ-11 connector on the end. There is a wire marker, 6 inches from the RJ-11 end, with "EXT MOD" printed on it for identifying this option. For installation instructions for this type of configuration, see "Connecting an ALPHA Meter For Use With An External Modem" on page 2.
- The remotely-readable ALPHA meter with an internal modem (ITM1) or the internal modems with outage reporting capabilities (ITM2 and ITM3) have a 4-conductor telephone cable exiting the meter with an RJ-11 connector on the end. For ITM1 and ITM2, there is a wire marker, 6 inches from the RJ-11 end, with "INT MOD" printed on it for identifying this option. For ITM3 and ITM3 version 2 (ITM3V2), there is a wire marker, 6 inches from the RJ-11 end, with "INT MOD" and "ITM3" printed on it for identifying this option. For installation instructions for this type of configuration, "Connecting An ALPHA Meter For Use With An Internal Modem" on page 3.

For more information on operation of ALPHA meters, see the technical manual for your meter. For more information on operation of the modem, see the Elster modems product guide (PG42-1006).

Regulatory information

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.
- The ALPHA meter's internal modem complies with Part 68 of the FCC rules. The FCC/ACTA REN for this device is 0.1B. If requested, this information must be provided to the telephone company.
- The ALPHA meter's internal modem complies with Industry Canada rules. The IC REN for this device is 0.1. If requested, this information must be provided to the telephone company.
- The connection to the telephone network is through a modular jack, USOC RJ11C.
- The Ringer Equivalence Number (REN) indicates the maximum number of devices allowed to be connected to a telephone interface. The termination of an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices not exceed five. L'indice d'équivalence de la sonnerie (IES) sert à indiquer le nombre maximal de terminaux qui peuvent être raccordés à une interface téléphonique. La terminaison d'une interface peut consister en une combinaison quelconque de dispositifs, à la seule condition que la somme d'indices d'équivalence de la sonnerie de tous les dispositifs n'excède pas cinq.
- If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
- The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will notify you in advance so that you can make any modifications necessary to maintain uninterrupted service.
- If you experience trouble with this equipment, please contact Elster Electricity's RMR Department at +1 919 212 4700. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
- Do not attempt to repair this equipment yourself unless you are replacing an entire module.
- This ALPHA meter cannot be used on digital PBX lines, party lines, or public coin phone service provided by the telephone company.

Connecting an ALPHA meter for use with an external modem

If ordered for use with an external modem, this ALPHA meter will have a 4-conductor RS-232 cable and an RJ-11 connector. The wire marker on the cable should read "EXT MOD" to be correct for this application. To continue you will need an Elster modem interface adapter, a suitable external modem with power supply, and a modular telephone line cord. These items are not normally supplied with the meter. The modem interface adapter is available from Elster as style #1C11412G01. The telephone modem must be compatible with the AT command set. A list of suitable modem types is available through your Elster sales office.

- 1 Install the meter as instructed in the installation information leaflet (IL) supplied with the meter, routing the RS-232 modem cable to the modem location as needed.

 CAUTION
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Do not plug the meter's RS-232 modem cable directly into a telephone jack. Plugging the meter's RS-232 modem cable into a telephone jack will damage the RS-232 interface inside the meter, and the meter will no longer function as a remotely readable meter.

- 2 Plug the modular plug on the RS-232 cable that exits the meter into the jack in the end of the Elster modem interface adapter. If necessary, you can use a telephone extension cable (maximum of 25 feet in length). Both the extension cable and the in-line connector must have straight-through pinning or the unit will not work. Make certain that the cable's wire marker has "EXT MOD" printed on it to indicate that the cable is to be attached to an external modem's RS-232 port.
- 3 Plug the modem interface adapter's 25-pin "D" connector into the serial interface connector on the modem. (In some cases, a 9-pin to 25-pin adapter may be required.)
- 4 Plug an RJ-11 modular telephone cable (maximum of 25 feet in length) from the "line" jack on the modem to the telephone line jack to be used.
- 5 Apply power to the modem. (Be sure to check the modem nameplate for the required voltage information.)
- 6 To verify that the meter, modem, and phone lines are operating properly, perform any verification tests that you prearranged with the utility central office.

Connecting An ALPHA meter for use with an internal modem

- 1 Install the ALPHA meter as instructed in the installation information leaflet (IL) supplied with the meter, routing the telephone cable to the telephone line jack as needed. Make sure that the cable's wire marker has "INT MOD" or "INT MOD ITM3" printed on it to indicate that the cable is to be directly attached to the telephone line.
- 2 Plug the RJ-11 modular plug from the meter into the telephone line jack to be used. You can use any standard length of telephone extension cable up to 200 feet to reach the jack.
- 3 To verify that the meter, modem, and phone lines are operating properly, perform any verification tests that you prearranged with the utility central office.

Relay connections

The external modem ready option may be equipped with 1, 2, or 6 relays. The ITM3 internal telephone modem may be equipped with 1, two, or six relays. Option boards with one or two relays have a 6-lead output cable (see Figure 1). The option board with 6 relays has a 12-lead output cable (see Figure 2). See Elster meter support software for more information on configuring relays.

See the Elster modems product guide (PG42-1006) for more information about relay and relay configuration.

Figure 1. Relay connections for 1 or 2 relays

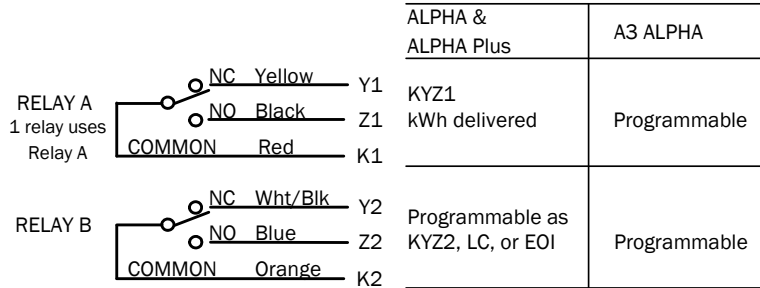
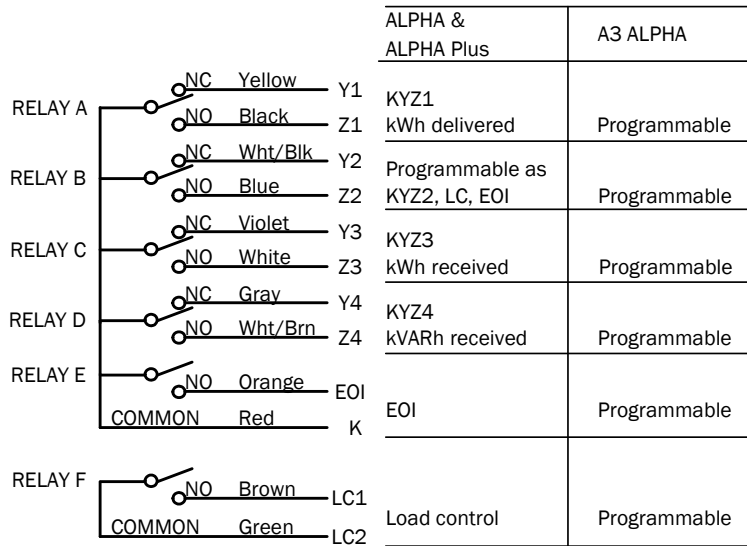
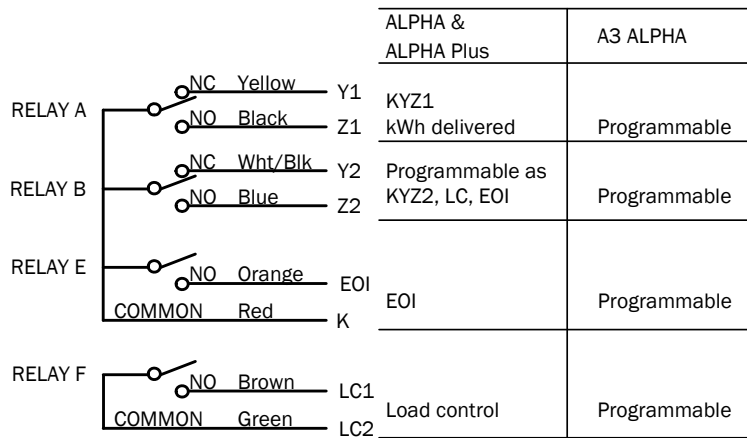


Figure 2. Relay connections used for 6 relays



The ITM1 and ITM2 option boards may be provided with 2 relays for ALPHA meters. In addition, ALPHA Plus meters may also have 2 additional relays added to the modem interface board. The relay cable drops through the meter base in either a 6-wire bundle (2 relays as shown in Figure 1) or an 8-wire bundle (4 relays as shown in Figure 3). See Elster meter support software for more information on configuring relays.

Figure 3. Relay connection for 4-relays



Notes:

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