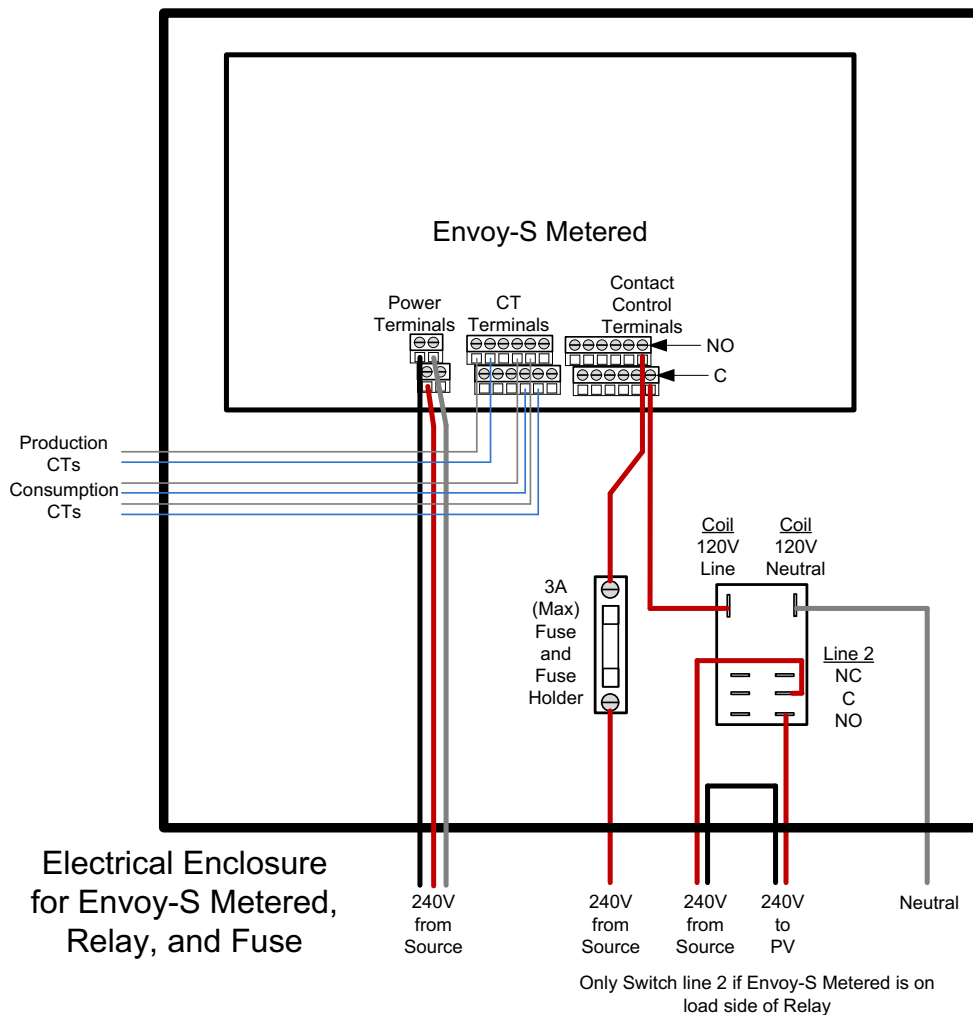


## Secondary Protection for Customer Self Supply

With an Enphase system, installers can configure the Enphase Envoy-S Metered™ to monitor site consumption and PV production. If a zero-export grid profile is applied to the system, the Envoy-S Metered regulates the Enphase Microinverter output to ensure that the PV production is not exported to the grid. Some utilities may require that a secondary protection circuit is provided. In that case, the normally opened contact within the Envoy-S Metered can be used to drive a contactor to provide this secondary level of protection.



### Wiring Envoy-S Metered to Line or Load Side of Relay

If you wire the Envoy-S Metered to the load side of the power relay, **it is absolutely critical that only Line 2 feeding the Envoy-S is switched by the relay.** This will always be the case when using an Enphase AC Combiner Box™. Switching Line 2 will turn off the microinverters and provide a secondary method of ensuring power export limiting without shutting off the Envoy-S. If Line 1 feeding the Envoy-S is de-energized, then the Envoy-S will also be powered down and the PV system will be unable to power back on.

It is acceptable to switch only one conductor of the PV circuit, since the relay is acting as a secondary control to prevent power export limiting and is not the disconnecting means of the system. Supply a disconnecting means and overcurrent protection device in addition to the relay.

### Envoy-S Metered Contact Specifications

The schematic on the previous page shows how installers can wire the far right, NO, and C terminals of the Envoy-S Metered to power a relay coil. The Envoy-S Metered contact is rated for 3A maximum, so must be protected by an overcurrent protective device rated at between 1A and 3A. The contact within the Envoy-S Metered is also rated for up to 250V, so can power either a 120V or 240V coil.

The Envoy-S contact terminal is normally opened, but will close when the Envoy-S is powered up and the system is operating properly. When the Envoy-S is powered off or if the PV system is inadvertently exporting power to the grid, the Envoy-S terminal opens, the relay contact opens, and the PV system is de-energized.

### Relay Specification

Use a relay with either a 120V or 240V coil. A 120V coil diagram is shown on the previous page. The relay must be rated for the full current of the PV system and must be rated for the ampacity of the overcurrent device on the supply side of the contact.

The specified relay must contain a normally opened (NO) contact. The relay contact must open when the Envoy-S contact is opened and the coil is de-energized. One of the following relays must be specified:

- normally opened, double-pole, single-throw (NO-DPST) relay
- double-pole, double-throw (DPDT) relay

#### *Example 1 – Dayton 1EJG7A (DPDT), double-pole, double-throw, 30A, encapsulated relay*



**Example 2 – Dayton 5X847N (DPDT), double-pole, double-throw, 40A, open contact relay**



**Enclosure Requirements**

Installers must provide an enclosure to prevent access to the exposed wiring terminals of the relay. You may place the Envoy-S Metered in the same enclosure as the relay and fuse.

The enclosure must be rated for the environment.

- If installed in an outdoor environment, it must be a NRTL Certified, NEMA type 3R (or better) enclosure with conduit attachment. Do not drill holes on the top of the enclosure or anywhere that allows moisture ingress.
- Use an appropriately rated enclosure if installing indoors.

A back plate is useful when mounting the equipment.

