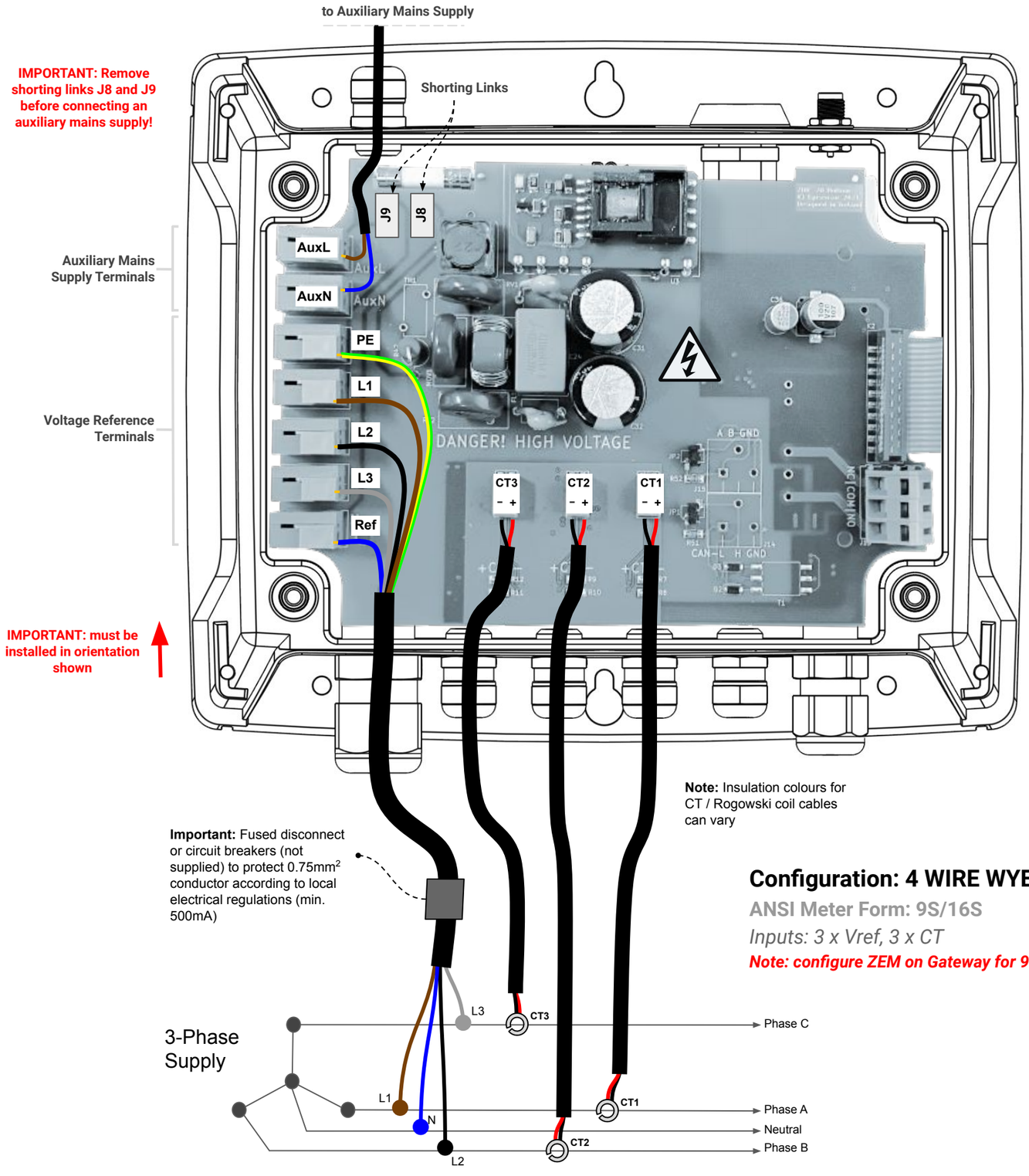
Voltage References & Current Transformer Wiring Diagram (4-wire WYE)

Auxiliary Mains Supply

By default, the ZEM is powered from a single-phase supply taken from voltage references L1 and N. To power the ZEM from an Auxiliary Mains Supply (85 - 480VAC ± 10%) first remove shorting links J8 and J9. **Important:** Use a fused disconnect or circuit breaker (not supplied) according to local electrical regulations (min. 500mA).



Configuration: 4 WIRE WYE

ANSI Meter Form: 9S/16S

Inputs: 3 x Vref, 3 x CT

Note: configure ZEM on Gateway for 9S/16S

Install Sheet

ZEM-63 // Wireless 3-Phase Electricity Monitor

Document Ref. EPI-222-00

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- ➔ NEVER work alone.
- ➔ Use appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- ➔ Only qualified electrical workers should install this equipment. Such work should be performed only after reading the entire set of installation instructions.
- ➔ If the equipment is not used in a manner specified by EpiSensor, the protection provided by the equipment may be impaired.
- ➔ Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power. Assume that all circuits are live until they have been completely de-energized, tested, and tagged. Pay particular attention to the design of the power system. Consider all sources of power, including the possibility of backfeeding.
- ➔ Turn off all power supplying the meter and the equipment in which it is installed before working on it.
- ➔ Always use a properly rated voltage sensing device to confirm that all power is off.
- ➔ Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment or panel.
- ➔ When removing or installing metering or other equipment, do not allow it to extend into the energised bus.
- ➔ The successful operation of this equipment depends upon proper handling,
- ➔ Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- ➔ Before performing Dielectric (Hi-Pot) or Megger testing on any equipment in which the energy meter is installed, disconnect all input and output wires to the energy meter.
- ➔ High voltage testing may damage electronic components contained in the meter.
- ➔ Failure to follow these instructions will result in death or serious injury.

Installation & Safety Notes

- ➔ EpiSensor equipment should be installed, operated, serviced and maintained only by qualified personnel. EpiSensor does not assume any responsibility for any consequences arising out of the use of this equipment.
- ➔ The ZEM voltage measurement inputs are rated for up to 277 V L-N or 480 V L-L. For any voltage exceeding 277 V L-N, an auxiliary power source must be used. Consult the ZEM-63 datasheet for more information on available product variants. For voltages exceeding 480 V L-L, a voltage transformer must be used.
- ➔ Fuse for neutral terminal is required if the source neutral connection is not grounded.
- ➔ Clearly label the device's disconnect circuit mechanism and install it within easy reach of the operator.
- ➔ The fuses / circuit breakers must be rated for the installation voltage and sized for the available fault current.
- ➔ Depending on the type of current transformers used with the EpiSensor ZEM, shorting links may be required. Please consult the user guide for more information.
- ➔ If Voltage Transformers are used, the VT ratio setting should be adjusted on the ZEM settings page on the Gateway.
- ➔ ZEM's using Rogowski coil or milliamp Current Transformers are individually calibrated and the current transformer cables should not be extended or interchanged.

Voltage References & Current Transformer Wiring Diagram (3-wire Delta)

Auxiliary Mains Supply

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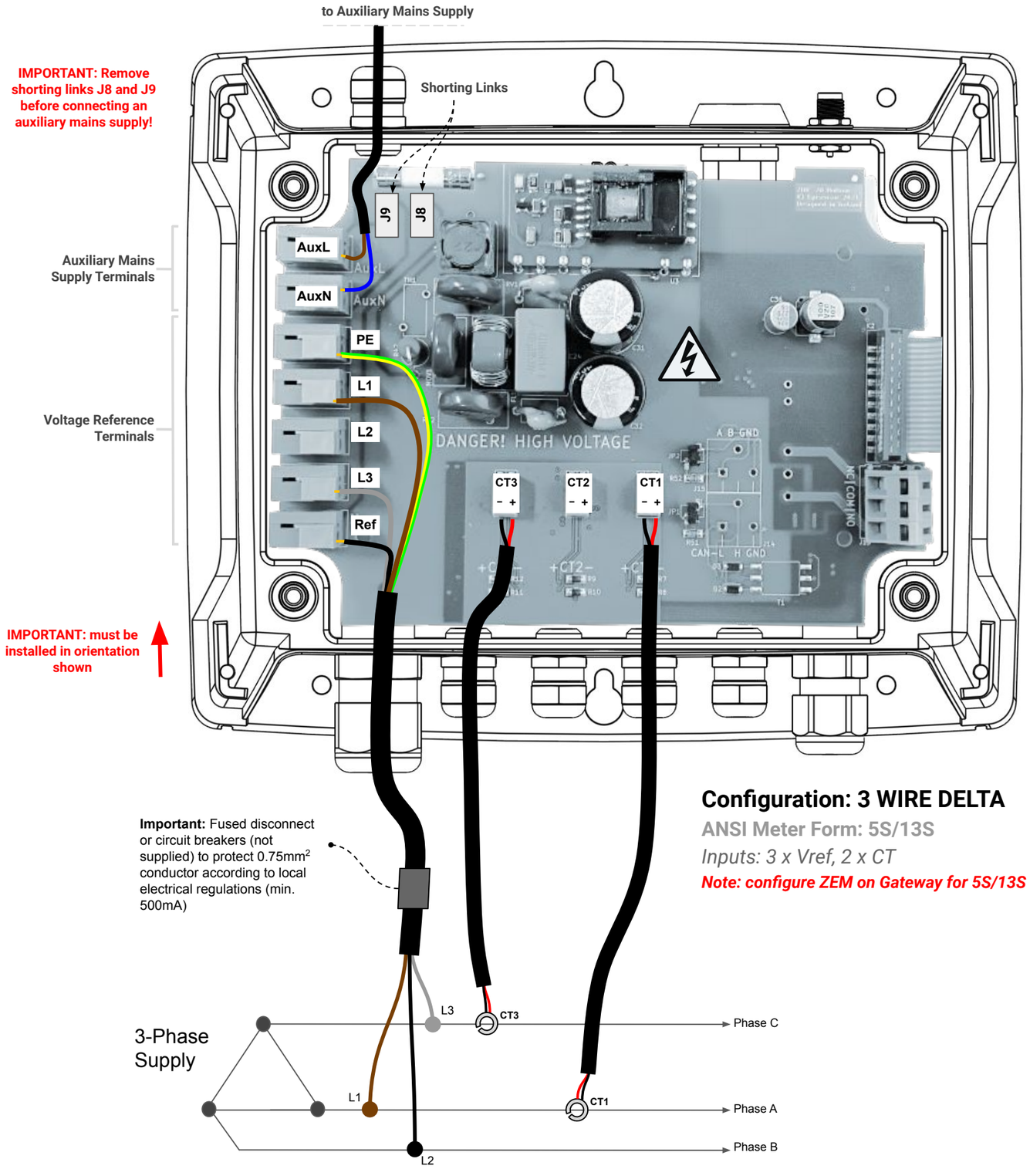

Install Sheet

ZEM-63 // Wireless 3-Phase Electricity Monitor

Document Ref. EPI-222-00

EPISENSOR

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- ➔ Turn off all power supplying the meter and the equipment in which it is installed before working on it.
- ➔ Always use a properly rated voltage sensing device to confirm that all power is off.
- ➔ Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment or panel.
- ➔ When removing or installing metering or other equipment, do not allow it to extend into the energised bus.
- ➔ The successful operation of this equipment depends upon proper handling,
- ➔ Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- ➔ Before performing Dielectric (Hi-Pot) or Megger testing on any equipment in which the energy meter is installed, disconnect all input and output wires to the energy meter.
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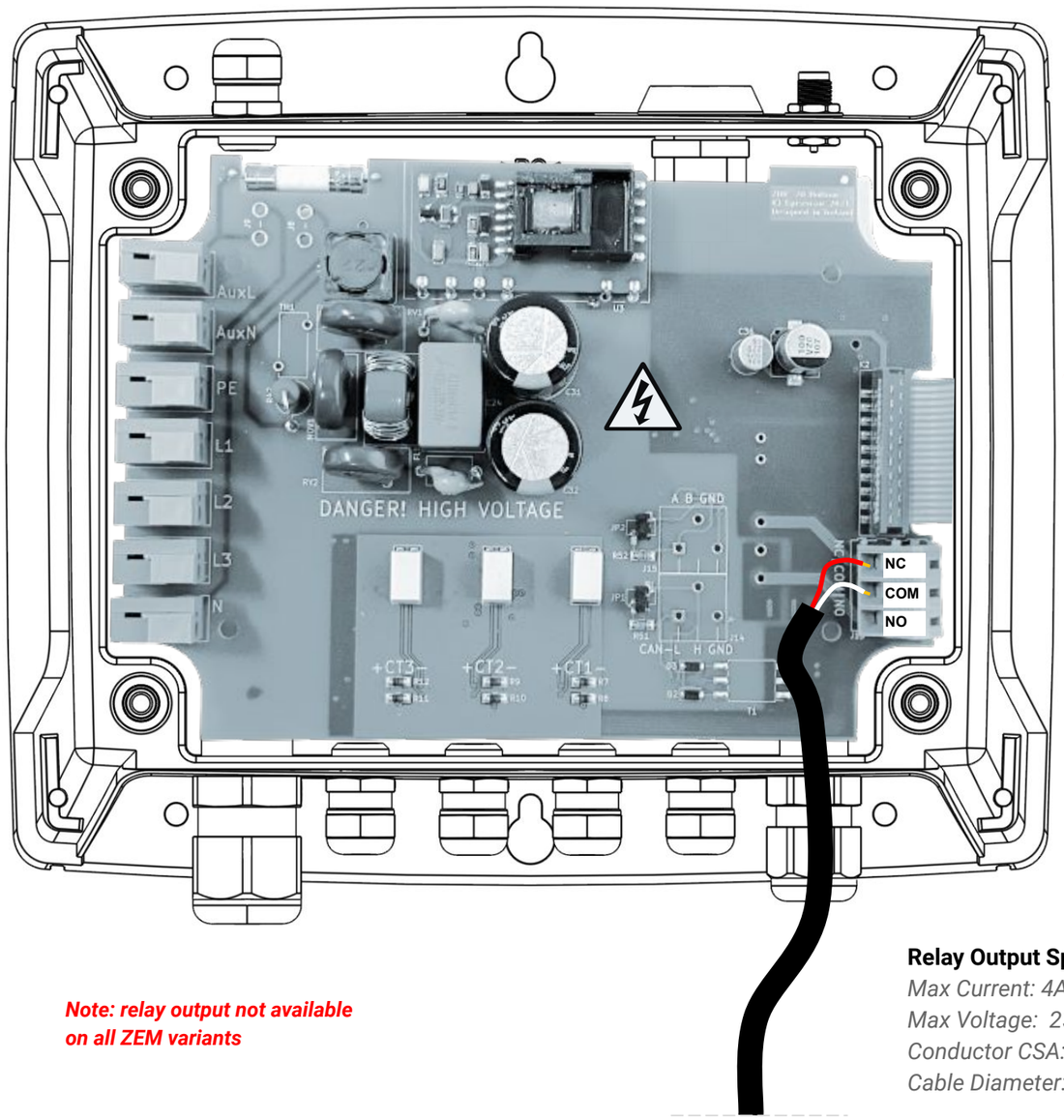
Connecting the relay output of the ZEM

Isolate power to ZEM before connecting the relay



IMPORTANT: must be installed in orientation shown

Note: relay output not available on all ZEM variants

Relay Output Specifications:

Max Current: 4A (250VAC, cosφ=1, 85°C)
Max Voltage: 250VAC
Conductor CSA: 0.08 to 3.3mm²
Cable Diameter: 4.5 to 7mm

to switched load

Install Sheet

ZEM-63 // Wireless 3-Phase Electricity Monitor

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EPISENSOR

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Install Sheet

ZEM-63 // Wireless 3-Phase Electricity Monitor

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EPISENSOR

Installation Checklist

1 Input Voltage

If the mains power supply of the ZEM is powered directly from the 3-phase voltage reference, ensure that the voltage does not exceed 480V AC L-L

2 Enclosure Contamination & Integrity

Ensure that there is no swarf or other dirt inside the ZEM enclosure, and that the enclosure has not been drilled or modified.

3 CT Polarity

Check that the arrows on each CT are aligned with the direction of flow of current for each conductor being monitored. Refer to the user guide for more information on labelling for each type of CT / Rogowski coil.

4 CT Pairing

Particularly if the CT's have been disconnect for threading through glands or bushings, ensure that the CT marked "CT1" is connected to the "CT1" input terminals on the ZEM (and similarly for CT2 and CT3).