

## INSTALLATION INSTRUCTIONS

### RISK OF SHOCK

**Disconnect power supply before**

**making electrical connections. Contact with components carrying hazardous voltage can cause electrical shock and may result in severe personal injury or death.**

Where failure or malfunction of the current transformer could lead to personal injury or property damage to the controlled equipment or other property, additional precautions must be designed into the control system. Incorporate and maintain other devices such as supervisory or alarm systems or safety and limit controls intended to warn off or protect against failure or malfunction of the product.

### NOTE:

Keep split core sensors clean. Be careful not to allow grit or dirt to build up on contacts. Operation can be impaired if the mating surfaces do not have a connection. Always check visually before closing.

### NOTE:

Leave at least one inch distance between the sensor and other magnetic devices.

### RANGE SELECTION

For models that feature field selectable ranges:

- Determine the normal operating amperage of the monitored circuit.

- Select the range that is equal to or slightly higher than the normal operating amperage.
- Place the range jumper in the appropriate position according to unit's label.

### INSTALLATION

#### Solid Core Versions:

- Sensor can be mounted using screw holes in any position or attach to cable using a cable tie in which case ensure ties are securely fastened and that the unit is stable.
- Run the wire you are monitoring through the opening in the sensor.
- Connect output wiring.

#### Split Core Versions:

- Sensor can be mounted using screw holes in any position or attach to cable using a cable tie in which case insure ties are securely fastened and that the unit is stable.
- To open, press the tab toward the sensor.
- After placing the wire in the opening, press the hinged portion down firmly until a definite click is heard and the tab pops out fully.
- Connect output wiring.

#### OUTPUT WIRING:

- Use 14 to 22 AWG copper wire.
- Tighten terminals securely.
- Be sure the output load or loop requirements are met.

*NOTE: Voltages or currents above the rated levels will damage the unit.*

### LED INDICATORS

For models with two LED indicators:

Green LED: indicates that current is passing through the core, but the set point of the unit has not been reached and the output is de-energized.

For models with one or two LED indicators:

Red LED: indicates that the set point has been reached and the output is energized.

### SET POINT CALIBRATION (adjustable models only)

Adjustable trip point current switches are factory set at the minimum switch point (adjustment fully clockwise). First, confirm that the monitored load is on.

To increase the set point: turn the potentiometer counterclockwise until the output is de-energized as indicated by the red LED.

Then turn the adjustment clockwise until the red LED comes back on indicating that the output is once again energized.

*NOTE: To avoid nuisance tripping, the adjustment screw should be turned slightly clockwise past this point.*

### MAINTENANCE

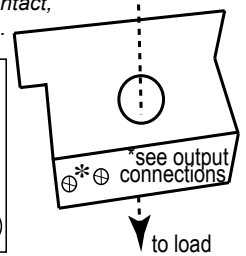
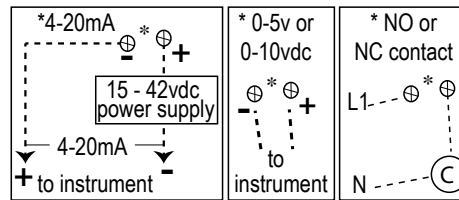
No routine maintenance is required. A periodic check of system calibration is recommended. These products not field serviceable and should be returned if repair is needed (**field repair should not be attempted and will void warranty**). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return of goods authorization number before shipping.

## TROUBLE SHOOTING

Symptom	Solution
Sensor has no output.	Check that the monitored AC load is on.
	Verify that the output's ratings have not been exceeded. Voltages or currents above the rated levels will damage the unit.
	For split core models: de-energize the monitored circuit, open the CT and clean the contact area.
	Monitored current is below minimal current required. De-energize the monitored circuit. Loop the monitored wire several times through the opening until the sensed current rises above the minimum. Sensed Amps=Actual Amps x Number of Loops. eg. 0.25A x 6 loops = 1.50A (Count the loops on the inside of the opening)
	For models with Vdc output, check and correct wiring polarity. For models with mAdc output, check loop power.
Set point potentiometer keeps turning.	Turn the potentiometer counterclockwise to return the unit to its original setting. Start the calibration procedure again.
Output signal is too low.	The jumper may be set in a range that is too high for the current being monitored. De-energize the monitored circuit and move the jumper to the correct range.
	For split core models: de-energize the monitored circuit, open the CT and clean the contact area.
	Check output load; be sure it is at least 100 kΩ and preferably 1 MΩ.
	The load current is not sinusoidal. Select one of our true RMS transformers.
Output signal is always at maximum.	The jumper may be set in a range that is too low for the current being monitored. De-energize the monitored circuit and move the jumper to the correct range.
Output signal is always at 4 mA.	Monitored load is not on.
Output signal is always at 20 mA.	The jumper may be set in a range that is too low for the current being monitored. De-energize the monitored circuit and move the jumper to the correct range.

## TYPICAL WIRING DIAGRAMS

There are 6 possible output types: NO or NC contact, 0-5vdc, 0-10vdc, 4-20mAdc or 4-20mAdc TRMS.



## SPECIFICATIONS

Setpoint: .....fixed at 0.5A for ZSF model  
 .....adjustable for ZSA & ZJA models  
 Contact rating:.....0.3 amps @ 135vac/dc max for models ending NO3 or NC3  
 .....1.0 amps @ 240vac max for models ending NO1 or NC1  
 Input current ranges: ..0-10/0-20/0-50 Amps (field selectable)  
 .....0-100/0-150 Amps (field selectable)  
 Response time: .....< 200 mS contact output  
 .....250 mS (0-90% step change) analog output  
 Frequency range:.....40 - 400Hz for contact output  
 .....10 - 400Hz for analog output  
 Analog accuracy: .....1%  
 Analog loading: .....1mΩ  
 Operating temp.: .....-30 to 70°C (-22 to 158°F)  
 Insulation class: .....600V  
 Isolation voltage:.....2000 V  
 Loop power: .....15 to 42 Vdc for mAdc output; otherwise, none required  
 Operating humidity: ...0 to 95% RH, non-condensing  
 Wiring connections: ...Rising clamp screw terminals (14 to 22 AWG)  
 Housing: .....UL 94V-0  
 Approvals: .....eULus Listed, CE