

# Real Power Sensor



## Applications

The Real Power Sensor is used with Woodward speed controls to measure generator output power and provide a kilowatt signal to the speed control.

### Features of each model:

**8272-387** provides kilowatt signal, readout meter drive, load sharing, speed and phase matching (SPM) synchronizer input, and isoch/droop operation (see manual 82350).

**8272-394** provides kilowatt signal and readout meter drive (see manual 82350).

**8272-695** provides kilowatt readout signal which can be used as a generator load signal to a meter, KW limiter, or other device; speed and phase match (SPM) synchronizer input; and kilowatt error signal to be used as input to a speed control providing for isochronous load sharing, KW droop, and base loading application (see manual 82048).

## Description

The Real Power Sensor is a solid state electronic device housed in a metal chassis intended for installation in a prime mover control cabinet.

The unit contains its own power supply and is powered separately from the speed control.

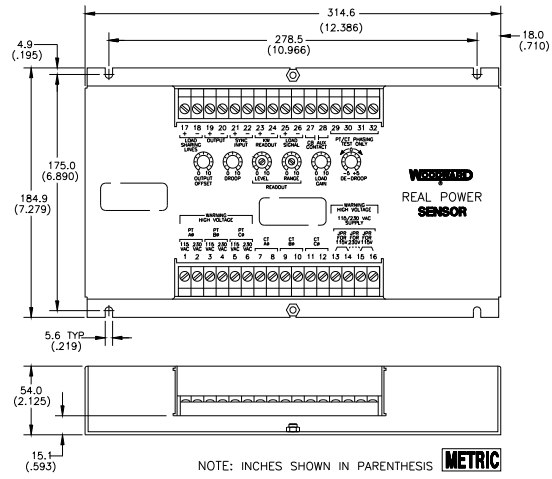
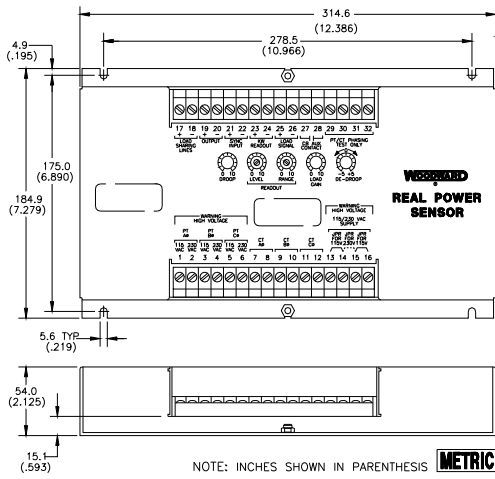
The Real Power Sensor constantly monitors the generator output voltage and current with transformers. These transformers are selected to provide potential voltage of 115 Vac or 230 Vac at nominal generator voltage. The current transformers are selected to provide a 5 A secondary current at full generator output.

The Real Power Sensor provides a signal to the speed control that is proportional to the output power of the generator.

## Specifications

Power Source	95-130 or 190-260 Vac, 50 or 60 Hz
Potential Voltage Range	80-150 or 160-300 Vac, 45 to 60 Hz.
Current Transformer Range	5-amp secondary current at full generator output Works with leading or lagging power factor to 0.2
Power Consumption	14 W typical (20 W maximum)

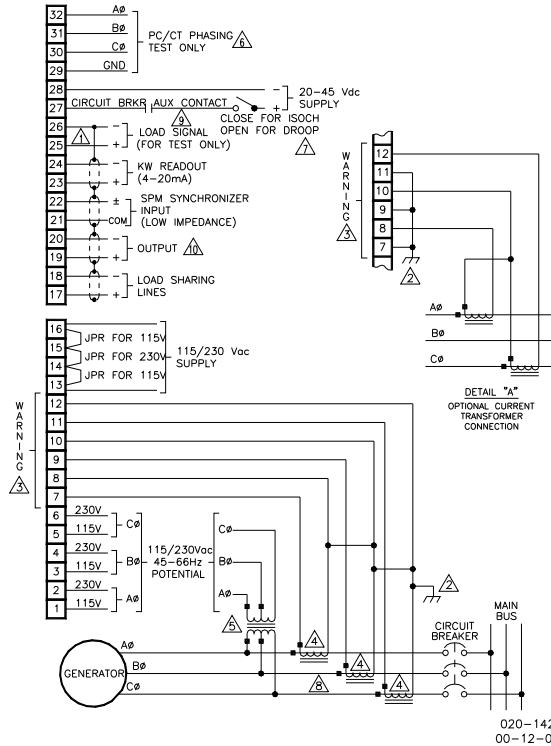
- Watt readout signal
- Internal power supply
- KW error signal for KW droop, base loading, isochronous load sharing
- Input for speed, phase match synchronizer



**Outline Drawing (8272-387, -394 left; 8272-695 right)**  
(Do not use for construction)

**NOTES:**

- ▲ SHIELDED WIRES TO BE TWISTED PAIRS WITH SHIELD GROUNDED AT SENSOR END ONLY.
- ▲ POINT OF GROUNDING IF REQUIRED BY WIRING CODE.
- ▲ INTERNAL CURRENT TRANSFORMER BURDEN MUST BE CONNECTED ACROSS POWER SOURCE CURRENT TRANSFORMERS AT ALL TIMES, TO PREVENT LETHAL HIGH VOLTAGES.
- ▲ POWER SOURCE CURRENT TRANSFORMERS SHOULD BE SIZED TO PRODUCE 5A SECONDARY CURRENT WITH MAXIMUM GENERATOR CURRENT. CURRENT TRANSFORMER BURDEN IS LESS THAN 0.1 VA PER PHASE.
- ▲ WITH A BALANCED THREE PHASE LOAD AND UNITY POWER FACTOR, THE CURRENT TRANSFORMERS SHOULD BE WIRED IN THE CORRECT POTENTIAL LEG AND MUST BE PHASED AT THE CONTROL AS FOLLOWS:  
 PHASE A: POTENTIAL TERMINAL 1 OR 2 WITH RESPECT TO NEUTRAL IN PHASE WITH CT TERMINALS 7 (●) TO 8.  
 PHASE B: POTENTIAL TERMINAL 3 OR 4 WITH RESPECT TO NEUTRAL IN PHASE WITH CT TERMINALS 9 (●) TO 10.  
 PHASE C: POTENTIAL TERMINAL 5 OR 6 WITH RESPECT TO NEUTRAL IN PHASE WITH CT TERMINALS 11 (●) TO 12.
- ▲ SHORT TERMINAL 30,31 OR 32 TO TERMINAL 29 TO DISABLE PHASE.
- ▲ FOR ISOCH CONTROL, WITHOUT ISOCH/DROOP SWITCH, SET DROOP POT MAX CCW AND REPLACE DROOP SWITCH WITH JUMPER. IF DROOP POT IS NOT MAX CCW, CONTROL IS IN DROOP WHEN ISOCH/ DROOP SWITCH OR CIRCUIT BREAKER AUXILIARY CONTACT IS OPEN.
- ▲ FOR OPTIONAL CURRENT TRANSFORMER CONNECTION, SEE DETAIL "A".
- ▲ CIRCUIT BREAKER AUXILIARY CONTACT CLOSING WHEN CIRCUIT BREAKER CLOSING.
- ▲ THIS OUTPUT IS 4-20 mA WITH 12 mA MEANING NO LOAD SHARING ERROR.



**Plant Wiring Diagram**



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