

# Watt—Current—Voltage Transducers

## Transducers with Voltage and Current Outputs

0-5 AMPS  
120-600 VAC



AC transducers for metering applications.

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The Robicon series of metering transducers includes the Single Phase Watt Transducer, Three Phase Watt Transducer, Current Transducer and Voltage Transducer. All four units can accept any AC waveform input, including non-sinusoidal waveforms such as those generated by silicon controlled rectifiers. The output of the transducers, which is accurate to within 2% for watt transducers and 1% for voltage and current transducers, can be used to drive meters, recorders, process controllers, computers and other instrumentation. All transducers now offer, in addition to voltage output, a current output capable of supplying up to 10 or 20 mA (as specified by customer) in low-impedance metering and current-loop applications. All transducers have their own built-in power supplies that operate on either 120 VAC or 240 VAC (customer specified).

## Single Phase Watt Transducer

The Single Phase Watt Transducer is a true solid-state watt transducer that is accurate with non-sinusoidal AC waveforms as well as pure sine waves. The current input is from an optional 0 to 5 ampere current transformer, which must be sized for the specific application. The measured voltage can be 120, 240, 400, 480 or 575 VAC. The voltage and current outputs are both representations of true watts and have an accuracy of 2.0%.

## Three Phase Watt Transducer

The Three Phase Watt Transducer is similar to the Single Phase Watt Transducer but is designed for three phase loads. The transducer requires two optional current transformers which must be sized for the specific application. The measured voltage input can be 120, 240, 400, 480 or 575 VAC. The voltage and current outputs are both representations of true watts. The transducer has an accuracy of 2.0%. (Should **not** be used on 4-wire loads.)

## Current Transducer

The Robicon Current Transducer senses current from an optional 0 to 5 ampere current transformer that must be sized for the specific application. The current can consist of any AC waveform including non-sinusoidal. The voltage and current outputs are both true RMS representations of the AC current and are accurate within 1%.

## Voltage Transducer

The Voltage Transducer can accept an input voltage of 120, 240, 400, 480 or 575 VAC consisting of any AC waveform including non-sinusoidal. The voltage and current outputs are both true RMS representations of the input voltage and are accurate within 1%.

|                        | Watt Transducer*   | Current Transducer  | Voltage Transducer  |
|------------------------|--|---|---|
| Current Input**        | Optional 0 - 5 A current transformer.<br>Single-Phase — One required.<br>Three-Phase — Two required.                           | Optional 0 - 5 A current transformer.                           |   |
| Voltage Signal Input** | 120, 240, 400, 480 or 575 VAC;<br>50/60 Hz; per order.   |   | 120, 240, 400, 480 or 575 VAC;<br>per order.                        |
| Output Voltage         | 0-5 or 0-10 VDC (per order) into<br>1000 ohms or greater impedance.  | 0-5 or 0-10 VDC (per order) into<br>1K or greater impedance.    | 0-5 or 0-10 VDC (per order) into<br>1000 ohms or greater impedance. |
| Output Current***      | 0-5 or 0-20 mA (per order) into<br>500 ohms or lower impedance.  | 0-5 or 0-20 mA (per order) into<br>500 ohms or lower impedance. | 0-5 or 0-20 mA (per order) into<br>500 ohms or lower impedance.     |
| Accuracy               | 2.0% of full-scale output.   | 1.0% of full-scale output.                                      | 1.0% of full-scale output.  |
| Output Ripple****      | 1% of full-scale output.   | 3% of full-scale output.  | 3% of full-scale output.  |
| Response Time          | Voltage output: 800 ms for a 10%<br>to 90% full-scale change.<br>Current output: 470 ms for a 10%<br>to 90% full-scale change. | 30 ms   | 30 ms   |
| Repeatability          | Single-phase 0.59% of full-scale.<br>Three-Phase 0.68% of full-scale.  | 0.04% of full-scale output.                                     | 0.04% of full-scale output.   |
| Calibration Adjustment | ±20%.  | ±20%.   | ±20%.   |
| Dielectric Test        | Per UL Specification 508.  | Per UL Specification 508.                                       | Per UL Specification 508.   |
| Power Required         | 120 or 240 VAC (per order),<br>50/60 Hz.   | 120 or 240 VAC (per order),<br>50/60 Hz, 6 VA.                  | 120 or 240 VAC (per order),<br>50/60 Hz, 6 VA.                      |
| Temperature Range      | 32°F to 122° F, 0° to 50°C.  | 32°F to 122° F, 0° to 50°C.                                     | 32°F to 122° F, 0° to 50°C.   |
| Weight                 | 3 lb., 1.4 kg.   | 2.5 lb., 1.14 kg.   | 2.5 lb., 1.14 kg.   |
| Size h x d x w         | 5 1/4 x 3 9/16 x 8 7/8 inches<br>133 x 90 x 225 mm   | 5 1/4 x 3 3/16 x 8 1/2 inches<br>133 x 90 x 225 mm              | 5 1/4 x 3 9/16 x 8 7/8 inches                                       |

\* An unfiltered voltage output may be used for feedback control. A feedback gain potentiometer allows a series resistance span of 1000 to 20,000 ohms.

\*\* Sinusoidal or non-sinusoidal AC waveform.

\*\*\* The output current, with no input signal applied, may be offset up to 5 mA via the current bias potentiometer. For example: 4 to 20 mA.

\*\*\*\* If output ripple exceeds customer specifications, consult factory. At the customer's request, the output ripple can be reduced, but the response time will be proportionately increased.