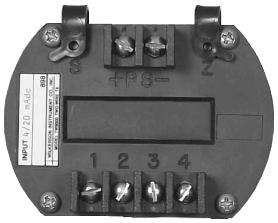
TW820X
AC INPUT
TWO-WIRE
TRANSMITTER



The TW8200 produces a DC output current proportional to its AC voltage or current input. A two-wire transmitter, its output regulates the current. Optional transformer input/output isolation is available.

DESCRIPTION

The TW8200 is connected in series between a source of DC power and a readout, controller or other receiving device. An internal voltage regulator feeds a controlled portion of the transmitter's current to its internal circuitry. The block diagram at the end of these instructions illustrates the transmitter's operation.

The input preamplifier amplifies, full-wave rectifies and filters the AC input. The resulting DC voltage is applied to a circuit which regulates the total current flowing though the transmitter and thusm through the series loop. The preamplifier responds to the average value of the rectified input: the transmitter is calibrated in equivalent rms volts or millamperes.

An optional input/output isolator chops the regulated supply voltage, couples it through a transformer and rectifies the resulting output to provide isolated DC power to the preamplifier.

The preamplifier's DC output also is chopped, transformer coupled and demodulated to drive the output current regulator. Transformer isolation allows separate grounding of, or even potential differences between, the input and output terminals.

The transmitter is protected by a gasketed, NEMA 4X glass-filled polyester housing and operates from -40° to +85°C.

MODEL NUMBERS

TW8200 AC Input, Nonisolated
TW8201 AC Input, Input/Output Isolated

OPTIONS

U All circuit boards conformal coated for protection againist moisture.

CONTROLS

Zero and span controls *(accessible through the top of the TW8200 housing)* calibrate the output current. The display option is calibrated with separate zero and span controls, and range and decimal select switches, located inside the transmitter.

OUTPUT CALIBRATION

The TW8200 is shipped precalibrated. If there is a need to recalibrate, proceed as follows:

Connect the transmitter's output in series with a 24 volt DC power supply and a precision digital current meter per the "Typical Connection" shown in the BLOCK DIAGRAM. Connect a precision AC voltage or current source covering the desired input range.

Set the input to the low-end of the input range and adjust the "Z" *(zero)* control for the low-end output current *(usually 4.00 or 10.00 mA)*. Increase the input to full scale and adjust the "S" *(span)* control for full scale output *(usually 20.00 or 50.00 mA)*. Repeat, as the controls may interact slightly.

SPECIFICATIONS

AC Input

Voltage

select any range between ±250 V max (min span 100 mV)

Current

select any range between ±5 A max (min span 10 µA, internal shunt)

Input Impedance

Voltage

10 megohms

(1 meg above 0.3V)

Current

100 mV drop max at full scale

Output

4/20 mA (2-wire),10-50 mA optional

Minimum Span

100 millivolts or

100 microamperes AC

Maximum Span

250 V or 5A AC

Temperature Stability

±0.01% of span per °C

Power Required

12 to 48 volts DC

Maximum load resistance

R max=(V supply-12)/I out max

Supply Voltage Effect

0.01% of span max., 12 to 48 volts

Input/Output Isolation

600 V rms (optional)

Temperature, Operating

-40 to 85 °C (-40 to 185 °F)

Environmental

NEMA-4X splashproof and corrosion resistant

MOUNTING

Mounting plate accessory DMP8500 allows the TW8200 to be mounted on a surface or in a 2¾ inch wide PVC tack. Use the mounting plate as a template to locate and drill holes for surface mounting, then screw the plate to the bottom of the transmitter using the #6 thread-cutting screws provided.

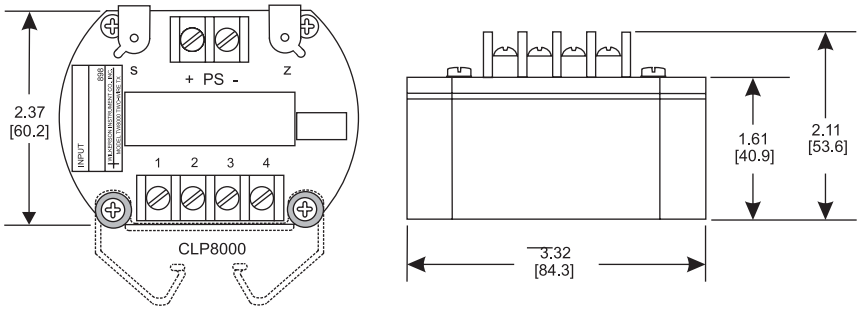
Spring retainer clip accessory CLP8000 *(factory installed)* holds the TW8200 in place inside a Killark HK Series Explosion-Proof Housing, or other housing with 3½ inch inside diameter.

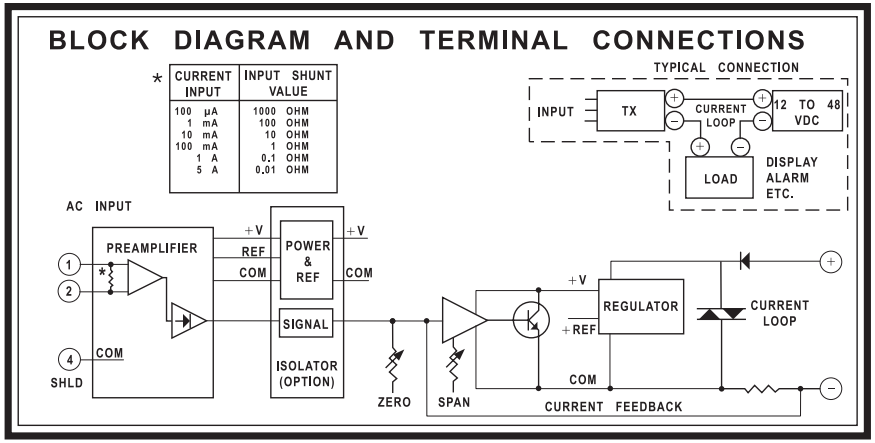
If you wish to provide your own mounting arrangements, use #6 type F thread-cutting screws or tap the bottom recesses with a #6-32 tap. The recesses are ½ inch deep. Exceeding this depth may damage the housing.

WARRANTY

The TW8000 Series of products carry a limited warranty of 5 + 5 years. In the event of a failure due to defective material or workmanship, during the 5 year period, the unit will be repaired or replaced at no charge. For a period of 5 years after the initial 5 year warranty, the unit will be repaired, if possible, for a cost of 10% of the original purchase price.

DIMENSIONS INCHES [mm]





NOTE: Do not connect input and output together, or ground both at once, unless the isolator option is installed. (TW8201)

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