

TopsTek AC Current Sensor TU20P-200A

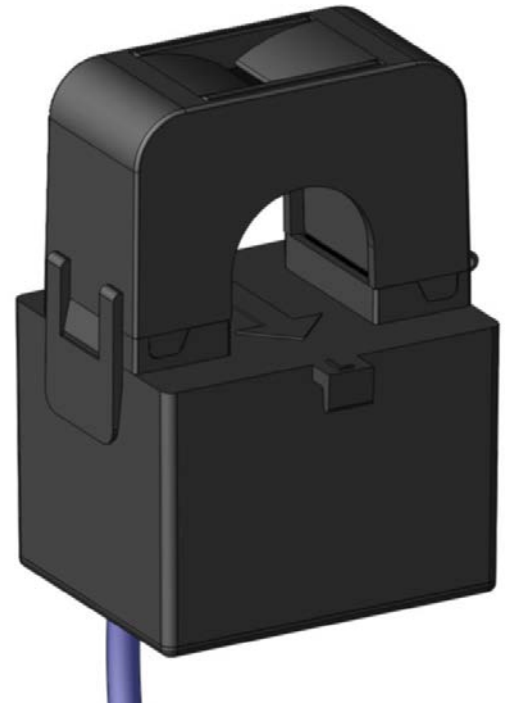
TU20P-200A

Features and Applications

- ◆ Accurate AC current monitoring/measuring device
- ◆ Fast clamp-on application on existing switchboard wire
- ◆ Excellent linearity of the output voltage over a wide input range
- ◆ Ferrite core ensuring fast response time and low phase lag
- ◆ Excellent frequency response (50 ~ 100 kHz) for accurate RMS measurement without DC component
- ◆ Wide measurement range (30mA ~ 200Amp AC)
- ◆ Good linearity for low current (30mA ~ 2A) detection
- ◆ Secondary coil equipped with two 7.5V surge suppression diodes for equipment protection and provide linear output up to 15.6V_{p-p} or 5.5V_{RMS}
- ◆ High voltage isolation between measuring circuit and current-carrying conductor (3500V 60Hz AC)
- ◆ Extended operating temperature range -25 °C to 70 °C
- ◆ Flame-Retardant plastic case using UL classified materials
- ◆ All materials used are RoHS compliant
- ◆ AC Current Sensor/Current Transducer applications like power meter current detectors or equipment over current protection circuits

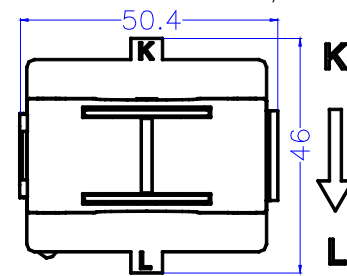
Specifications

Parameter	TU20P-200A
Rated Input Current Range I _{PN}	200A _{RMS} (50Hz/60Hz)
Max Continuous Current	350A _{RMS}
Linear Voltage Output Range	15.6V _{p-p} or 5.5V _{RMS}
Working Frequency Range	50Hz/60Hz
Output Current I _{OUT} @ I _{PN}	(I _{PN} / 3000) = 66.7 mA _{RMS}
Overall Accuracy @ 50Hz/60Hz	<±1 %
I _{OUT} Temperature Coefficient	<0.01 %/°C
Phase Shift	1.5° ± 1°
Secondary Coil Resistance	240 ± 30 Ω
Secondary Surge Voltage Clamping	2(two) 7.5V diodes
Dielectric Strength	AC 3.5KV 60sec
Isolation Resistance	>100MΩ @ 500VDC
Operating Temperature	-25 °C to 70 °C
Storage Temperature	-30 °C to 90 °C
Degrees of Protection	IP40
Case Material	UL94V0 Plastic
Output Cable (Standard)	UL 1007 AWG22 x 2, JST-SMR-02V-B Connector Length:150±10mm
Output Cable Option J	UL Style 2517 Jacketed Cord with AWG25 x 2 Length:5000±100mm
Output Cable Option A	Shielded Cable, With Mini Earphone Plug Length:150±10mm
Output Cable Option Y	UL 1007 AWG22 Wire, Length:3000±50mm Two Y4.3 Terminals with PVC Tube
Output Cable Option W	UL 1007 AWG22 Wire x 2, Length:3000±50mm 5mm tinned bare wire ends
Other Output Cable/Connector Option	Call factory for availability
Approximate Weight	125g (206g w/ 5-meter Cable)

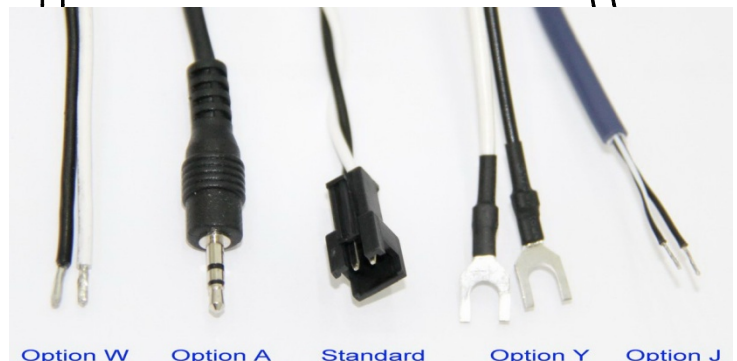
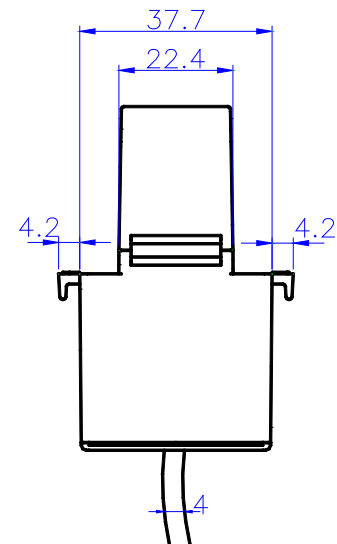
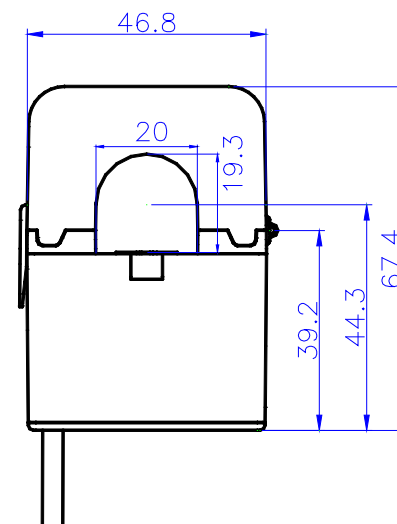
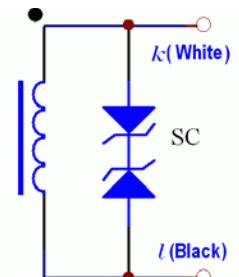


Dimensions and Pin Identification

All dimensions in mm ±0.5, holes -0, +0.5 except otherwise noted.



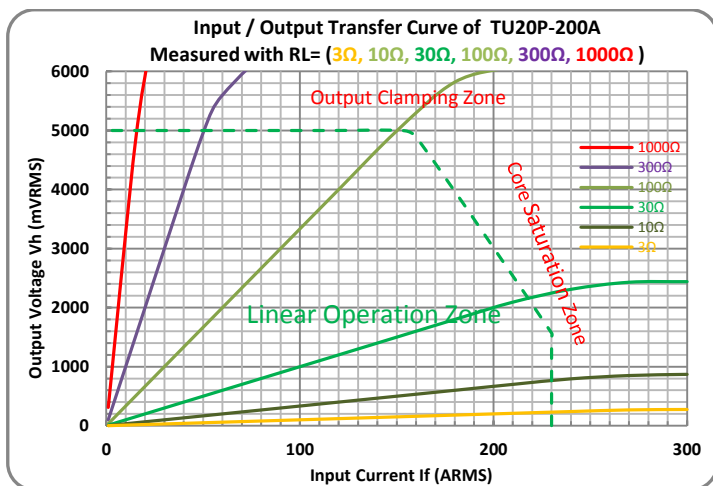
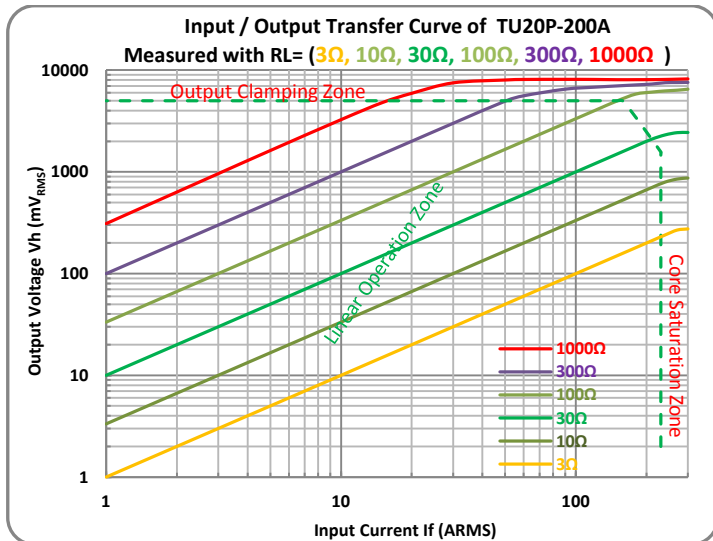
Equivalent Circuit Diagram



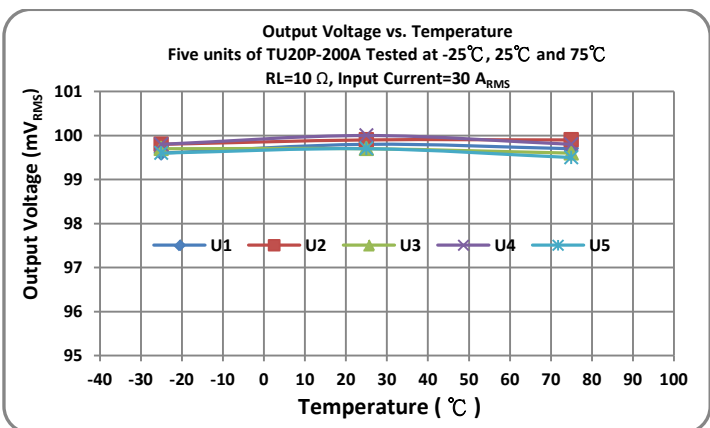
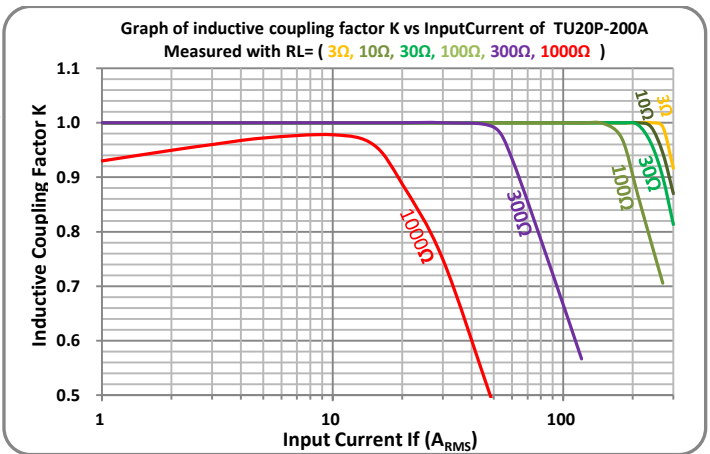
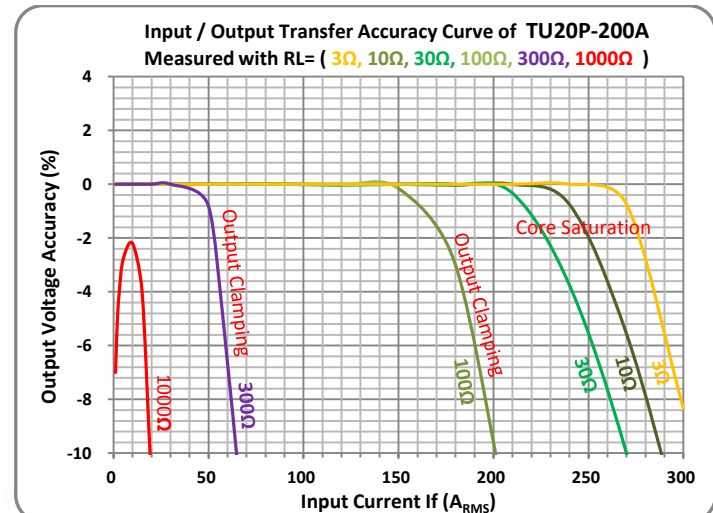
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I/O Transfer Characteristics with Sinusoidal 60Hz Input Current.

RL is the load resistor connected at output terminals. Note that there are two 7.5V surge voltage clamping diodes, output voltage higher than 7.5V will be cut off. The output AC voltage higher than $5V_{RMS}$ will begin to be clamped.



The following figure shows accuracy curve tested with different load resistors. Choosing a high resistance value will give high sensitivity, but the core saturation begins at lower input current also. In the case of a 300Ω load, the secondary voltage clamping occurs at $50A_{RMS}$ input because of the output is $5V_{RMS}$ which have a peak at $7.07V$



Frequency Response Curve with $RL = (10\Omega, 30\Omega, 50\Omega, 100\Omega)$

