

# Precision Purpose CTL-Z series

## Ultra small AC current sensor for precise measurement for PCB mounting vertically

AC current sensor

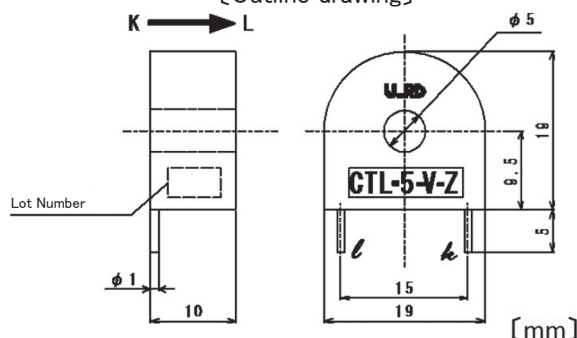


Model CTL-5-V-Z

### [Features]

- Optimum for secondary CT of high capacity 5A output type (Micro CT)
- Possible to apply until 20A max for power meter CT build in type
- Excellent characteristic with adoption of permalloy core of high magnetic permeability
- Possible to interface with electrical circuit directly by 800:1 high current ratio
- Possible to mount on PCB with ultra small size of  $\phi 5$  aperture and mass 8g.

### [Outline drawing]

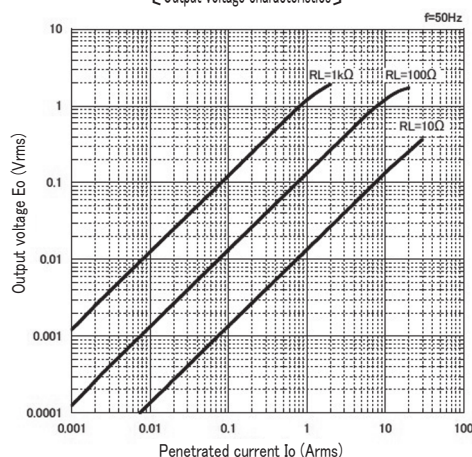


### [Specification] $T_a=25^\circ\text{C}$

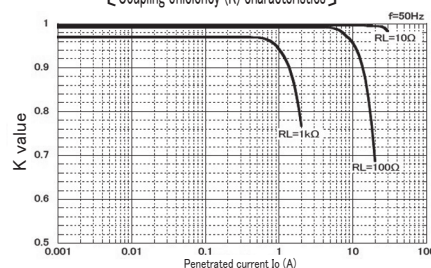
Model	CTL-5-V-Z
Primary current	1mA ~ 20Arms (50 / 60Hz)、 $R_L \leq 10\Omega$
Maximum primary current	80Arms continuous
Saturation limited current	30Arms (50 / 60Hz)、 $R_L \leq 1\Omega$
Output characteristics	Refer "Output voltage characteristics"
Linearity	Refer "Coupling efficiency [K] characteristics" (Use the flat range of [K] characteristic in the application as the linear sensor)
Secondary windings (n)	$800 \pm 2$ turn
Secondary windings resistance	$36\Omega$ (reference)
Withstand voltage	AC2000V(50/60Hz), 1min(between aperture and output terminal in a lump)
Insulation resistance	DC500V, $\geq 100M\Omega$ (between aperture and output terminal in a lump)
Operating temperature	$-20^\circ\text{C} \sim +75^\circ\text{C}$ , $\leq 90\%$ , no condensation, for indoor assembly, free direction for setting
Storage temperature	$-30^\circ\text{C} \sim +90^\circ\text{C}$ , $\leq 90\%$ , no condensation
Structure	PBT plastic case, potted by epoxy on one side
Output terminal	$\phi 1.0 \times 5\text{L}$ (hard copper pins), gold plating
Mass	approximately 8g

- Remark (1) Output voltage is changed by the penetrated current/load resistor/[K] characteristic and so on. Please set up the condition for use with careful investigation of each characteristic
- (2) Please use with enough margin if the range of coupling efficiency  $[K] \leq 0.9$ , because it is the range to happen the individual difference.
- (3) Opening the secondary during turn ON is hazardous and the cause of failure, because of generating high voltage
- (4) Please be careful of CT heating in case to use with high frequency, although this CT is basically used at 50/60Hz.

### [Output voltage characteristics]

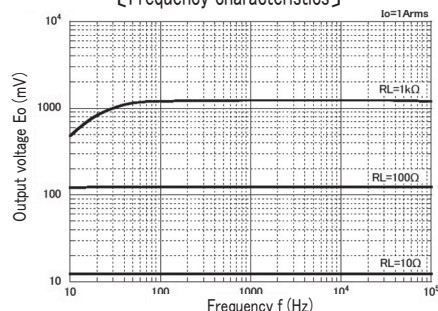


### [Coupling efficiency (K) characteristics]



(Possible to calculate output voltage with reading (K) from load resistor and penetrated current)  
 $E_o = K \cdot I_o \cdot R_L / n$  (Vrms)

### [Frequency characteristics]



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