

# Current Transducer JP-50

For the electronic measurement of currents : AC/DC current sensor, JP series has a good stability in high currents and is highly insulated between primary and secondary circuit.



## Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulated plastic case recognized according to UL 94-V0
- Panel mounting

## Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

## Advantages

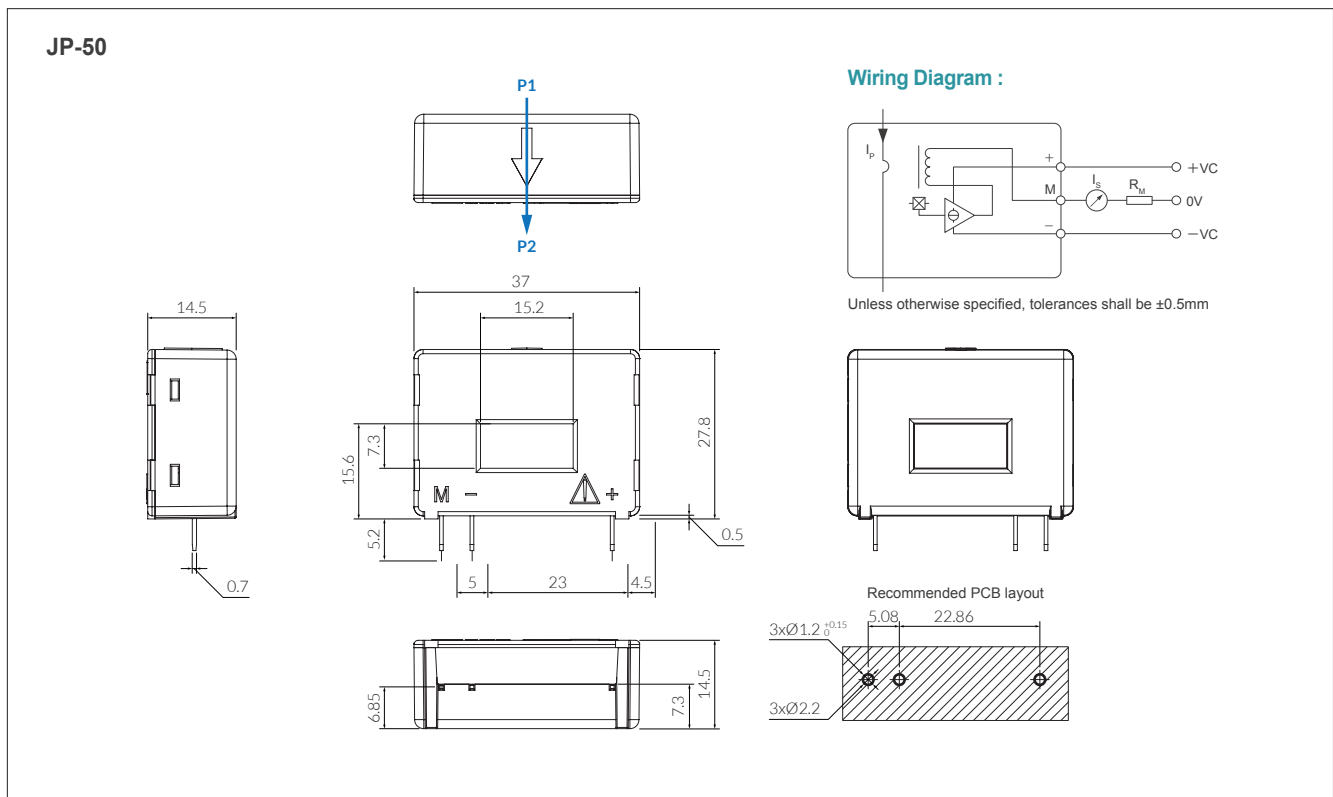
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.
- Excellent accuracy
- Very good linearity

## Specification

SPEC		MODEL	JP-50
Primary nominal RMS current	$I_P$		50A
Measuring resistance	$R_m$	$V_{CC}=\pm 12V$	@ $\pm 50A$ : $0\Omega \sim 122\Omega$ @ $\pm 70A$ : $0\Omega \sim 71\Omega$
		$V_{CC}=\pm 15V$	@ $\pm 50A$ : $0\Omega \sim 183\Omega$ @ $\pm 70A$ : $0\Omega \sim 81\Omega$
Secondary nominal RMS current	$I_O$		50mA (Turn ratio 1 : 1000)
Accuracy	%		$\pm 0.45$ ( $\pm 15V, +25^\circ C$ )
Offset current	$I_{of}$		$\leq \pm 0.1mA$ (at $I_f=0A$ )
Linearity error	$\epsilon_L$		$< \pm 0.15\%$ (at $I_f$ )
Supply voltage ( $\pm 5\%$ )	$V_{CC}$		$\pm 12V \sim \pm 15V$ (Rated output current is restricted by $V_{CC}$ )
Delay time @ 10% of $I_{PN}$	$t_{10}$		$< 500ns$
Delay time to 90% of $I_{PN}$	$t_{90}$		$< 1\mu S$ (at $di/dt=I_f/\mu s$ )
Frequency bandwidth	$f$		DC...200kHz (-1 dB)
Magnetic offset current	$I_{OM}$		$\leq 0.3mA$ (at $I_f=0A \rightarrow I_f \rightarrow I_f=0A$ )
Ambient Operating temperature	$T_A$		$-40^\circ C \sim +85^\circ C$
Ambient storage temperature	$T_S$		$-40^\circ C \sim +90^\circ C$
Resistance of Secondary winding	$R_S$		$26\Omega$ (@ $T_a=70^\circ C$ )
			$30\Omega$ (@ $T_a=85^\circ C$ )

# Current Transducer JP-50

## Dimensions JP-50 (in mm)



## Safety

The J&D CTs are UL/EN 61010-1, CE, RoHS compliant and certified, are also conformed up to Pollution degree 2, 600Vac CAT III rated devices.



Please be sure that Failure to follow these instructions can result in serious injury and/or cause damage. The transducer shall be used in electric/electronic equipment in accordance with the operating instructions of all related systems and component manufacturers with respect to applicable standards and safety requirements.

Follow corresponding national regulations and safe electrical work practices.

This equipment must only be installed and serviced by qualified personnel. And the qualified personnel is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

In addition, the installation and maintenance shall be done with the main power supply disconnected except if there are no hazardous live parts in or in close proximity to the system and if the applicable national regulations are fully observed.



When operating the transducer, there may be dangerous active voltages (e.g. primary conductor) in certain parts of the module. Users should make sure to take all necessary steps to protect against electric shock. The transducer is a built-in device containing conductive parts that are inaccessible after installation. Therefore, a protective enclosure or additional insulation barrier is necessary.

Safe and trouble-free operation of this converter can only be guaranteed if transport, storage and installation are carried out correctly and operation and maintenance are carried out carefully.

---

# Current Transducer JP-50

## Remark

- $I_o$  is positive when  $I_p$  flows in the direction of the arrow. (o : output, p : primary current)
- Temperature of the primary conductor should not exceed 100°C(212°F).
- Dynamic performances (di/dt and delay time) are the best with a single bar when the primary hole is completely filled.