



DC CURRENT SENSOR DC VOLTAGE SENSOR



J&D AC/DC CTs provide non-contact detection of AC/DC current.

The AC/DC CTs have two types of split-core & solid-core design with various utility, high reliability & cost-effective solution for precise current measurements.

The rated current range is 5A to 6000A AC/DC and secondary output value is 4/5/10V/333mV DC & 4-20mA, Instantaneous AC/DC current.

1) Measuring Principle of Open-Loop Current Technology

Open-loop Hall effect technology creates magnetic flux from the input primary current and its magnetic flux couples a proportional low voltage, which amplify before being output.

2) Measuring Principle of Closed-Loop Current Technology

The secondary current is generated by transferring the proportional voltage of the Hall Sensor originated by the magnetic flux from the primary current.

The feedback of the compensating current via the secondary winding closes the loop, where by this current is an exact representation of the primary current.

J&D AC/DC VT offers a comprehensive range of accurate, reliable and galvanically isolated devices to measure AC/DC voltage from 10V to 3000V across a range of technologies.

1) Measuring Principle of Closed-Loop Voltage Technology

When a primary voltage is applied to the input resistor R_i , the current I_p flows through the wire of the input W_1 coil and generates a magnetic flux passing the Hall Sensor.

The closed-loop feedback amplifier used the Hall Voltage to generate a compensating current which is applied to the secondary winding W_2 thereby creating the compensating magnetizing flux.

This current is exactly proportional to primary current I_p through R_i and the input voltage V_m and as it flows through the output metering resistor R_L , it creates a voltage drop V_m which equals the input voltage it $R_i=R_2$.

2) Measuring Principle of Isolation Amplifier Technology

Our Isolation Amplifier Technology Voltage Sensors – iSAST EVS series begins with an internal resistor network. This network measures DC voltage by directly contacting both the Positive High Voltage (+HT) and the Negative High Voltage (-HT).

This voltage signal is transmitted to the secondary side of the sensor through an insulated transformer that isolates the primary high voltage from the secondary low voltage. The resulting signal is then converted through an amplifier into either a current or a voltage signal. Therefore the circuit converts a primary voltage into a secondary current or voltage that is proportional to the input.



CONTENTS

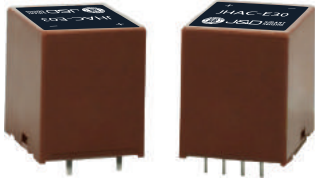
DC CURRENT SENSOR DC VOLTAGE SENSOR

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| 13 | JPC-500X |
| 15 | JPC-1000X |
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CLOSED LOOP HALL EFFECT CURRENT SENSOR

JHAC E03~E50 Series



FEATURES

- Excellent accuracy and linearity
- Low response time thermal drift
- High tolerance to external interference
- High bandwidth

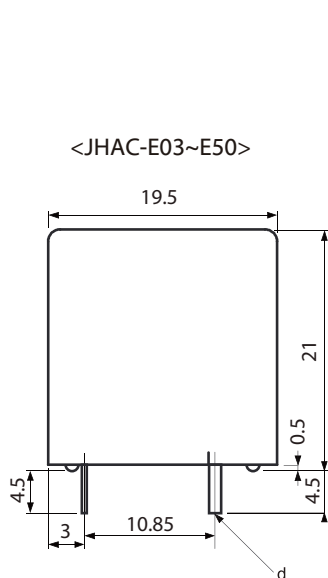
APPLICATIONS

- Servo motor drive
- Static converters for DC motor drive
- Inverter

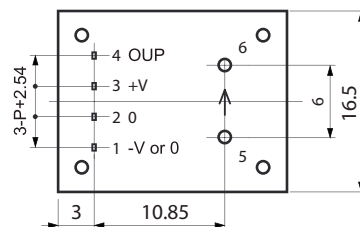
SPECIFICATION

| Type | JHAC-E03 | JHAC-E05 | JHAC-E7.5 | JHAC-E10 | JHAC-E15 | JHAC-E20 | JHAC-E25 | JHAC-E30 | JHAC-E50 |
|-----------------------------|---|----------|-----------|----------|----------|----------|----------|----------|----------|
| Nominal current (RMS) | 3A | 5A | 7.5A | 10A | 15A | 20A | 25A | 30A | 50A |
| Measuring range | 0~±9A | 0~±15A | 0~±22.5A | 0~±30A | 0~±45A | 0~±60A | 0~±75A | 0~±90A | 0~±150A |
| Output voltage | @ $I_p = \pm I_{pn}$ $\pm 4 \pm 0.5\%$ | | | | | | | | |
| Linearity | @ $I_p = 0 \pm I_{pn}$ ≤ 0.2 | | | | | | | | |
| Supply voltages | $\pm 15V \pm 5\%$ | | | | | | | | |
| Current consumption | $20 + I_p \times (N_p / N_s)$ | | | | | | | | |
| Isolation voltage | Between primary and secondary circuit; 3kV RMS/50Hz/1min | | | | | | | | |
| Offset current (Ta = +25°C) | $\pm 30mV$ max, for primary current I $N = 0$ | | | | | | | | |
| Temperature drift | $\pm 0.3mV / ^\circ C$ Max(-25°C ~ +85°C) | | | | | | | | |
| Response time | $2\mu s$ Max. at $di/dt = 30A/\mu s$ | | | | | | | | |
| Operating frequency range | 0~100kHz(@-3dB) | | | | | | | | |
| Operating temperature | (-25°C ~ +85°C) | | | | | | | | |
| Storage temperature | (-30°C ~ +90°C) | | | | | | | | |
| Weight | 10g | | | | | | | | |

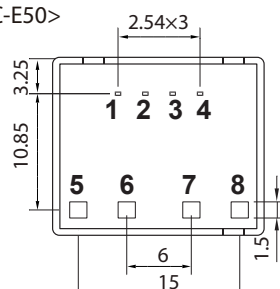
DIMENSIONS(UNIT : MM)



<JHAC-E03~E30>



<JHAC-E50>



Terminal Pin Identification

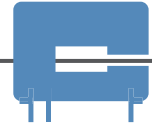
- 1 : -15V
- 2 : 0V(GND)
- 3 : +15V
- 4 : Output
- 5 : Primary input Current (+)
- 6 : Primary input Current (-)

| Primary conductor diameter | | | | |
|----------------------------|---------------|------|-------|------|
| JHAC | -E03 | -E05 | -E7.5 | -E10 |
| d | 0.6 | 0.8 | 0.8 | 1.0 |
| JHAC | -E15 | -E20 | -E25 | -E30 |
| d | 1.0 | 1.4 | 1.4 | 1.6 |
| JHAC | -E50 | | | |
| d | 1.6 × 1.5 × 2 | | | |

| Secondary pins dimension | |
|--------------------------|--|
| 0.5 X 0.25 | |

Terminal Pin Identification

- 1 : -15V
- 2 : 0V(GND)
- 3 : +15V
- 4 : Output
- 5 : Primary input Current (+)
- 6 : Primary input Current (+)
- 7 : Primary input Current (-)



CLOSED LOOP HALL EFFECT CURRENT SENSOR

JP-50/100



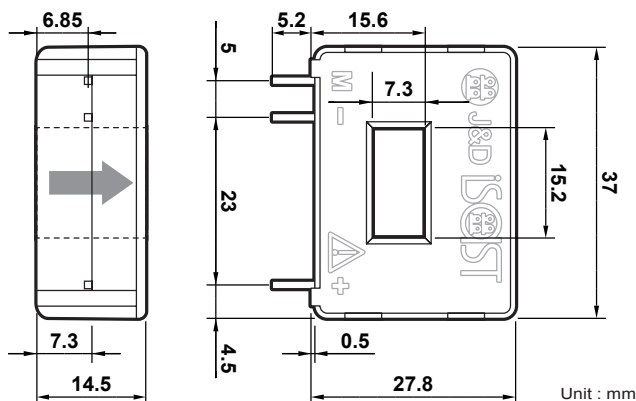
FEATURES

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

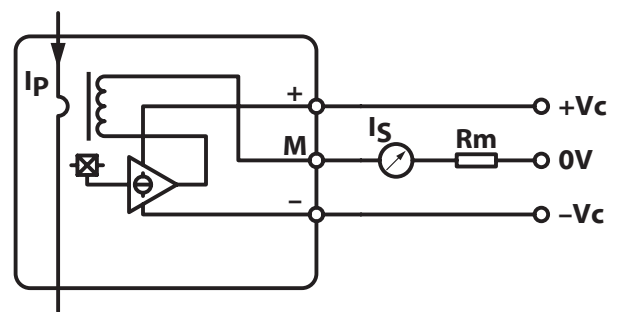
ELECTRICAL PROPERTIES

| Model | | JP-50 | JP-100 |
|-------------------------------|--------------|---|---|
| Primary nominal current | I_f | 50A | 100A |
| Measuring resistance | R_L | Vcc=±12V @ ±50A : 60Ω ~ 95Ω @ ±60A : 60Ω Vcc=±15V @ ±50A : 135Ω ~ 155Ω @ ±55A : 135Ω | Vcc=±12V @ ±100A : 0Ω ~ 42Ω @ ±120A : 0Ω ~ 14Ω Vcc=±15V @ ±100A : 20Ω ~ 102Ω @ ±150A : 20Ω ~ 25Ω |
| Rated output current | I_o | 50mA (Turn ratio 1 : 1000) | 50mA (Turn ratio 1 : 2000) |
| Output current accuracy | V | ±0.45 (±15V, +25°C) | ±0.65 (±15V, +25°C) |
| Offset current | I_{of} | ≤ ±0.1 mA (at $I_f=0A$) | ≤ ±0.2mA (at $I_f=0A$) |
| Output linearity | ϵ_L | ≤ ±0.15%(at I_f) | |
| Power supply voltage | V_{CC} | ±12V ±5% ~ ±15V ±5% (Rated output current is restricted by Vcc) | |
| Response time | t_r | ≤ 1μS(at $di/dt=I_f/\mu s$) | |
| Frequency characteristics | f | DC...200kHz (-1 dB) | |
| Thermal drift of gain | TCl_o | ≤ ± 0.01%/°C(Without Tclof) | |
| Thermal drift of offset | TCl_{of} | ≤ ± 0.5mA | |
| Hysteresis error | I_{oH} | ≤ 0.3mA (at $I_f=0A \rightarrow I_f \rightarrow I_f=0A$) | |
| Insulation voltage | V_D | AC3000V for 1 minute (Sensing current 0.5mA) inside of through hole ⇔ terminal | |
| Insulation resistance | R_{is} | ≥500MΩ (at DC500V) inside of through hole ⇔ terminal | |
| Ambient Operating temperature | T_A | -40°C ~ +85°C | |
| Ambient storage temperature | T_S | -40°C ~ +90°C | |
| Secondary coil resistance | R_s | 80Ω(@ $T_a=70^\circ C$) 85Ω(@ $T_a=85^\circ C$) | 120Ω(@ $T_a=70^\circ C$) 128Ω(@ $T_a=85^\circ C$) |

DIMENSION



CONNECTION

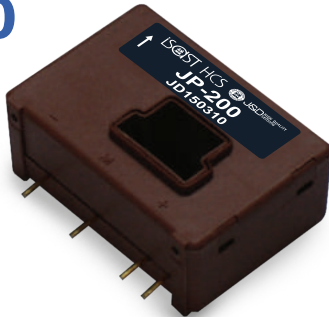


Unless otherwise specified, tolerances shall be ±0.5mm



CLOSED LOOP HALL EFFECT CURRENT SENSOR

JP-200



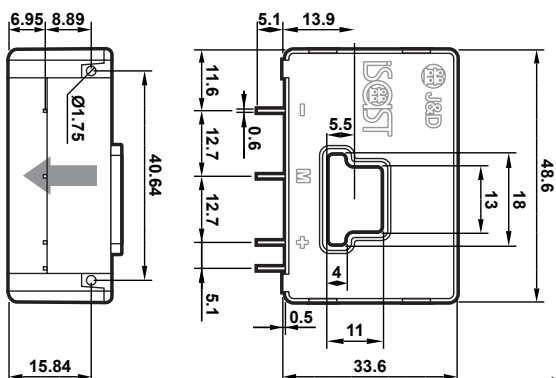
FEATURES

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

ELECTRICAL PROPERTIES

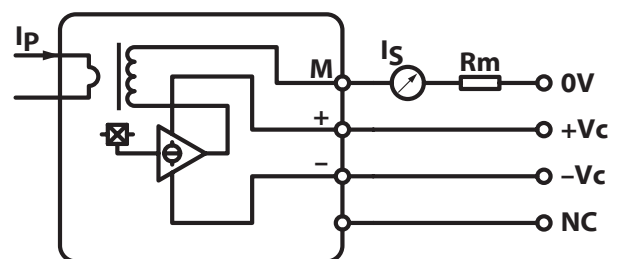
| | | |
|-------------------------------|--------------|--|
| Model | | JP-200 |
| Primary nominal current | I_f | 200A |
| Measuring resistance | R_L | $V_{CC}=\pm 12V @ \pm 200A : 0\Omega \sim 26\Omega$ @ $\pm 250A : 0\Omega \sim 4\Omega$ $V_{CC}=\pm 15V @ \pm 200A : 0\Omega \sim 56\Omega$ @ $\pm 300A : 0\Omega \sim 8\Omega$ |
| Rated output current | I_o | 100mA (Turn ratio 1 : 2000) |
| Output current accuracy | V | $\pm 0.4 (\pm 15V, +25^\circ C)$ |
| Offset current | I_{of} | $\leq \pm 0.2mA$ (at $I_f=0A$) |
| Output linearity | ϵ_L | $\leq \pm 0.15%$ (at I_f) |
| Power supply voltage | V_{CC} | $\pm 12V \pm 5\% \sim \pm 15V \pm 5\%$ (Rated output current is restricted by V_{CC}) |
| Response time | t_r | $\leq 1\mu S$ (at $di/dt=I_f/\mu s$) |
| Frequency characteristics | f | DC...100kHz (-1 dB) |
| Thermal drift of gain | TCl_o | $\leq \pm 0.01\%/^\circ C$ (Without T_{clof}) |
| Thermal drift of offset | TCl_{of} | $\leq \pm 0.5mA$ |
| Hysteresis error | I_{oH} | $\leq 0.3mA$ (at $I_f=0A \rightarrow I_f \rightarrow I_f=0A$) |
| Insulation voltage | V_D | AC3000V for 1 minute (Sensing current 0.5mA) inside of through hole \leftrightarrow terminal |
| Insulation resistance | R_{IS} | $\geq 500M\Omega$ (at DC500V) inside of through hole \leftrightarrow terminal |
| Ambient Operating temperature | T_A | $-40^\circ C \sim +85^\circ C$ |
| Ambient storage temperature | T_S | $-40^\circ C \sim +90^\circ C$ |
| Secondary coil resistance | R_s | 76 Ω (@ $T_a=70^\circ C$) 80 Ω (@ $T_a=85^\circ C$) |

DIMENSION



Unit : mm

CONNECTION



Unless otherwise specified,
tolerances shall be $\pm 0.5mm$



CLOSED LOOP HALL EFFECT CURRENT SENSOR

JPC-200X

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



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

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.

FEATURES

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

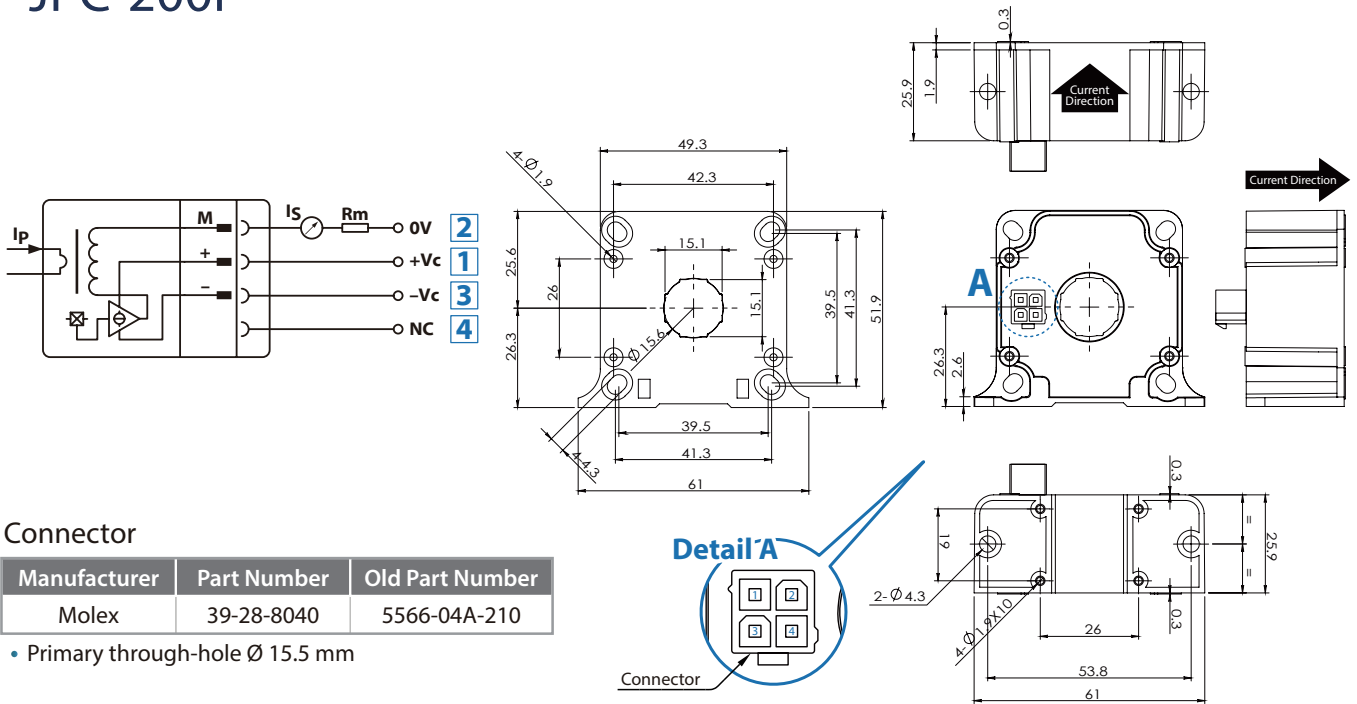
SPECIFICATION

| Model | | JPC-200F | JPC-200T | | |
|-----------------------------------|-------------|--|---------------------------------|-------------------|-------------------|
| Connector | - | 39-28-8040[5566-04A-210] Molex | 38-00-6293[6410-03C(102)] Molex | | |
| Primary nominal current rms | A | 200 | | | |
| Primary current, measuring range | A | 0 .. ± 420 | | | |
| Measuring resistance | Ω | ± 12V | @ ± 200A | Ta=70°C : 0 ~ 71 | Ta=85°C : 0 ~ 69 |
| | | | @ ± 420A | Ta=70°C : 0 ~ 14 | Ta=85°C : 0 ~ 12 |
| | | ± 15V | @ ± 200A | Ta=70°C : 0 ~ 100 | Ta=85°C : 23 ~ 98 |
| | | | @ ± 420A | Ta=70°C : 0 ~ 28 | Ta=85°C : 23 ~ 26 |
| Secondary nominal current rms | mA | 100 | | | |
| Conversion ratio | - | 1 : 2000 | | | |
| Supply voltage (+ 5 %) | V | ± 12 .. 15 | | | |
| Current consumption @ ± 15 V | mA | 17 + I _s | | | |
| Overall accuracy | % | ± 0.5 | | | |
| Linearity error | % | < 0.1 | | | |
| Offset current | mA | Max. ± 0.2 | | | |
| Magnetic offset current | mA | Max. ± 0.1 (@ I _p = 0 and specified R _M , after an overload of 3 x I _{PN}) | | | |
| Insulation voltage | VD | AC 3500V / 1min. | | | |
| Temperature variation | mA | Typ. ± 0.12 , Max. ± 0.4 (-45°C...+85°C) | | | |
| Reaction time to 10 % of IPN step | ns | < 500 | | | |
| Reaction time to 90 % of IPN step | μs | < 1 (With a di/dt of 100 A/μs.) | | | |
| di/dt accurately followed | A/μs | > 100 | | | |
| Frequency bandwidth (- 3 dB) | kHz | DC .. 100 | | | |
| Ambient Operating temperature | °C | - 40 .. + 85 | | | |
| Ambient storage temperature | °C | - 40 .. + 90 | | | |
| Secondary coil resistance | Ω | 33(@Ta=70°C) / 35(@Ta=85°C) | | | |
| Mass | G | 78 | | | |
| Standards | - | EN 50178: 1997 / IEC 61010-1 | | | |

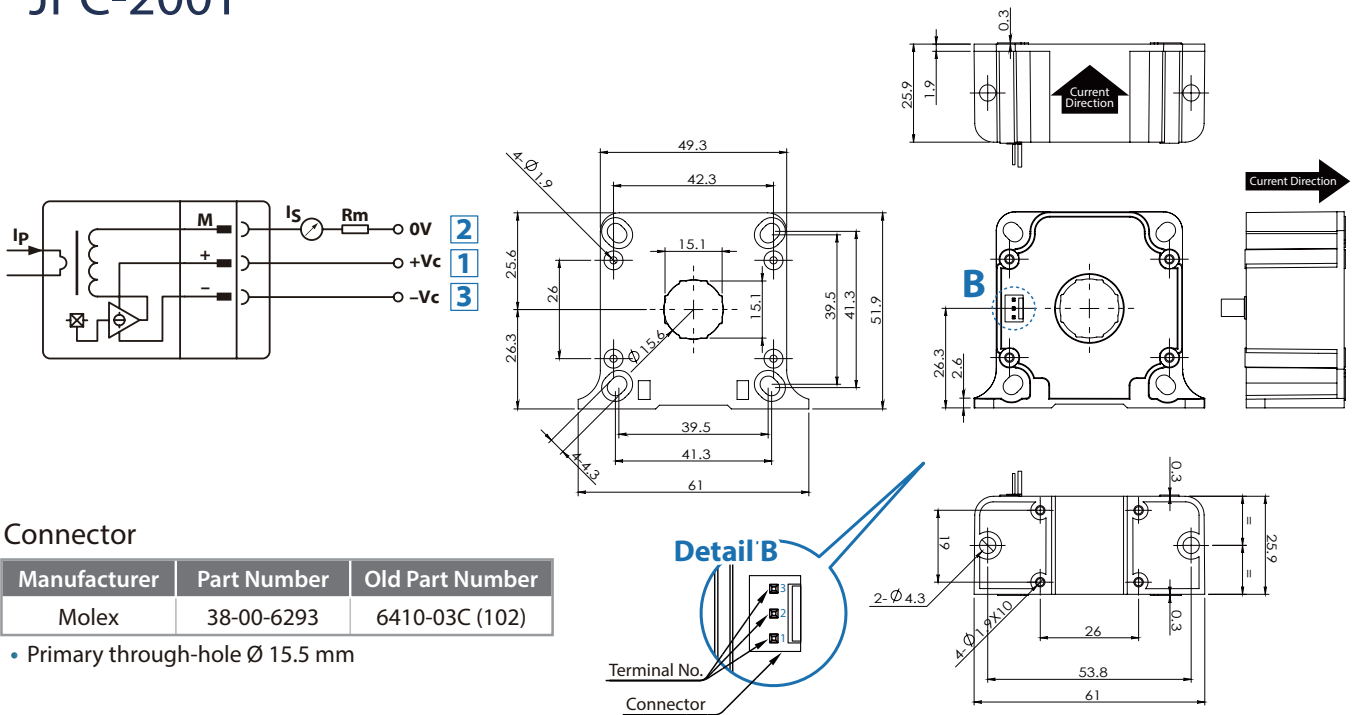


DIMENSIONS(MM)

JPC-200F



JPC-200T





CLOSED LOOP HALL EFFECT CURRENT SENSOR

JPC-300X

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



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

FEATURES

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

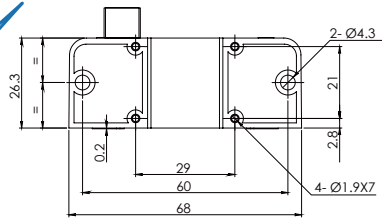
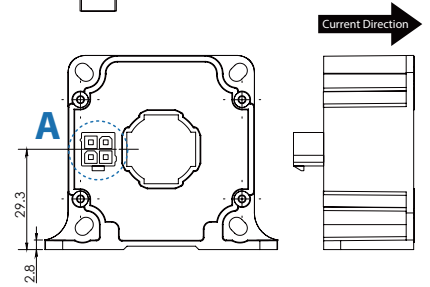
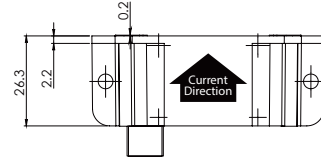
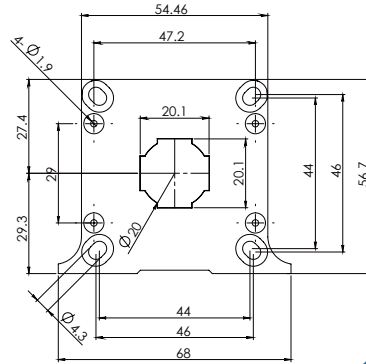
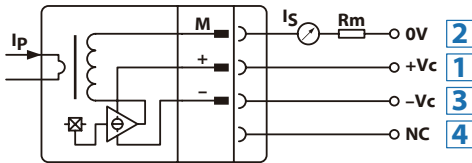
SPECIFICATION

| Model | | JPC-300F | JPC-300T | | |
|-----------------------------------|-------------|---|---------------------------------|------------------|------------------|
| Connector | - | 39-28-8040[5566-04A-210] Molex | 38-00-6293[6410-03C(102)] Molex | | |
| Primary nominal current rms | A | 300 | | | |
| Primary current, measuring range | A | 0 .. ± 500 | | | |
| Measuring resistance | Ω | ± 12V | @ ± 300A | Ta=70°C : 0 ~ 37 | Ta=85°C : 0 ~ 35 |
| | | | @ ± 500A | Ta=70°C : 0 ~ 10 | Ta=85°C : 0 ~ 8 |
| | ± 15V | @ ± 300A | Ta=70°C : 0 ~ 56 | Ta=85°C : 0 ~ 54 | |
| | | @ ± 500A | Ta=70°C : 0 ~ 21 | Ta=85°C : 0 ~ 19 | |
| | ± 20V | @ ± 300A | Ta=70°C : 0 ~ 88 | Ta=85°C : 0 ~ 86 | |
| | | @ ± 500A | Ta=70°C : 0 ~ 40 | Ta=85°C : 0 ~ 38 | |
| Secondary nominal current rms | mA | 150 | | | |
| Conversion ratio | - | 1 : 2000 | | | |
| Supply voltage (+ 5 %) | V | ± 12 .. 20 | | | |
| Current consumption @ ± 15 V | mA | 26(@ ±20V) + I _S | | | |
| Overall accuracy | % | ± 0.5 | | | |
| Linearity error | % | < 0.1 | | | |
| Offset current | mA | Max. ± 0.2 | | | |
| Magnetic offset current | mA | Max. ± 0.2(@ I _P = 0 and specified R _M , after an overload of 3 x I _{PN}) | | | |
| Insulation voltage | VD | AC 3800V / 1min. | | | |
| Temperature variation | mA | Typ. ± 0.2, Max. ± 0.7 (- 40°C .. + 85°C) / Typ. ± 0.1 , Max. ± 0.3 (- 10°C .. + 70°C) | | | |
| Reaction time to 10 % of IPN step | ns | < 500 | | | |
| Reaction time to 90 % of IPN step | μs | < 1 (With a di/dt of 100 A/μs.) | | | |
| di/dt accurately followed | A/μs | > 100 | | | |
| Frequency bandwidth (- 3 dB) | kHz | DC .. 100 | | | |
| Ambient Operating temperature | °C | - 40 .. + 85 | | | |
| Ambient storage temperature | °C | - 40 .. + 85 | | | |
| Secondary coil resistance | Ω | 33(@Ta=70°C) / 35(@Ta=85°C) | | | |
| Mass | G | 95 | | | |
| Standards | - | EN 50178: 1997 / IEC 61010-1 | | | |



DIMENSIONS(MM)

JPC-300F



Detail A

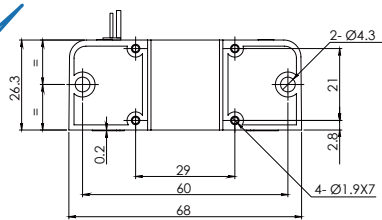
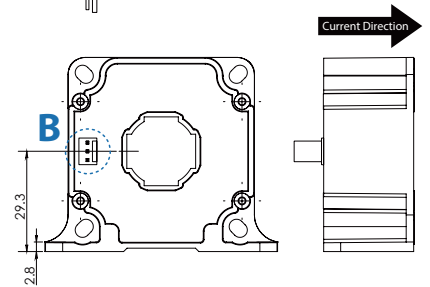
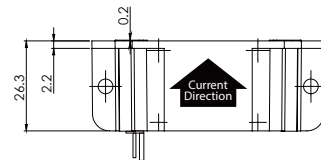
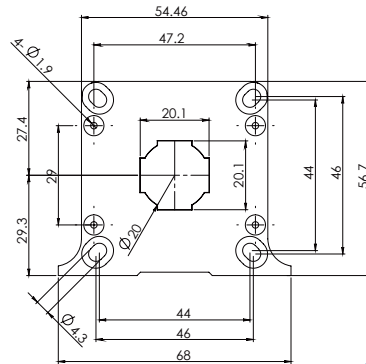
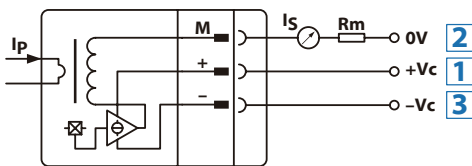
Connector

Connector

| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 39-28-8040 | 5566-04A-210 |

- Primary through-hole \varnothing 20.1 mm

JPC-300T



Detail B

Connector

Connector

| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 38-00-6293 | 6410-03C (102) |

- Primary through-hole \varnothing 20.1 mm



CLOSED LOOP HALL EFFECT CURRENT SENSOR

JPC-500X

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



ADVANTAGES

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

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.

FEATURES

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

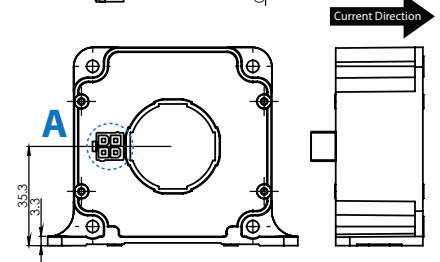
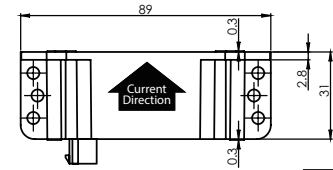
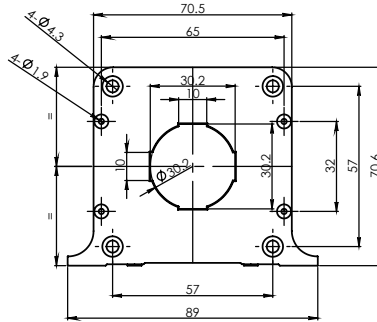
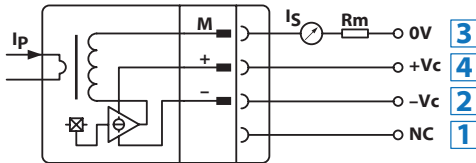
SPECIFICATION

| Model | | JPC-500F | | | JPC-500T | |
|---|-------------|--|----------|---------|---------------------------------|--------|
| Connector | - | 39-28-8040[5566-04A-210] Molex | | | 38-00-6293[6410-03C(102)] Molex | |
| Primary nominal current rms | A | 500 | | | | |
| Primary current, measuring range | A | 0 .. ± 800 | | | | |
| Measuring resistance @ | Ω | ± 15V | @ ± 500A | 0 ~ 60 | @ ± 800A | 0 ~ 11 |
| | | ± 18V | @ ± 500A | 0 ~ 92 | @ ± 800A | 0 ~ 30 |
| | | ± 24V | @ ± 500A | 5 ~ 149 | @ ± 800A | 5 ~ 65 |
| Secondary nominal current rms | mA | 100 | | | | |
| Conversion ratio | - | 1 : 5000 | | | | |
| Supply voltage (+ 5 %) | V | ± 15 .. 24 | | | | |
| Current consumption @ ± 15 V | mA | 24(@ ± 18V) + I _S | | | | |
| Overall accuracy | % | ± 0.6 | | | | |
| Linearity error | % | < 0.1 | | | | |
| Offset current | mA | Max. ± 0.4 | | | | |
| Magnetic offset current | mA | Max. ± 0.2 (@ IP = 0 and specified R _M , after an overload of 3 x I _{PN}) | | | | |
| Insulation voltage | VD | AC 3800V / 1min. | | | | |
| Temperature variation | mA | Typ. ± 0.1, Max. ± 0.4 (- 40 °C .. + 70 °C) | | | | |
| Reaction time to 90 % of I _{PN} step | μs | < 1 (With a di/dt of 100 A/μs.) | | | | |
| di/dt accurately followed | A/μs | > 100 | | | | |
| Frequency bandwidth (- 1 dB) | kHz | DC .. 100 | | | | |
| Ambient Operating temperature | °C | - 40 .. + 70 | | | | |
| Ambient storage temperature | °C | - 40 .. + 85 | | | | |
| Secondary coil resistance | Ω | 70 (@T _a =70°C) | | | | |
| Mass | g | 230 | | | | |
| Standards | - | EN 50178: 1997 / IEC 61010-1 | | | | |



DIMENSIONS(MM)

JPC-500F



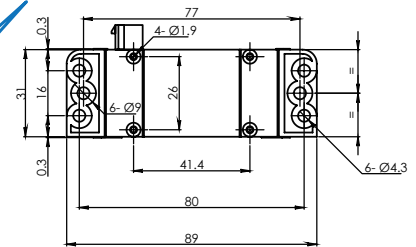
Connector

| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 39-28-8040 | 5566-04A-210 |

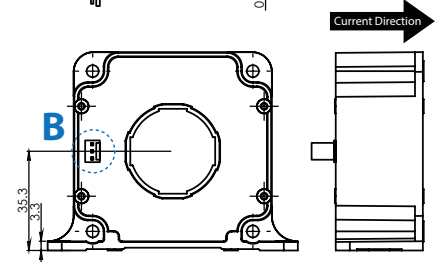
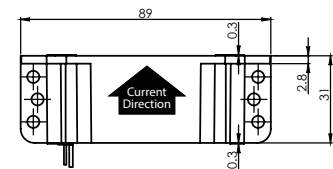
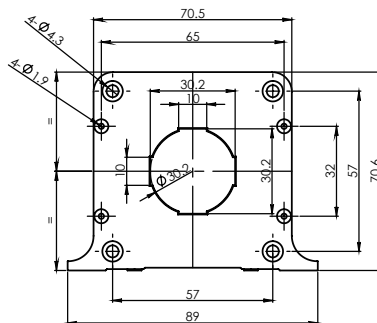
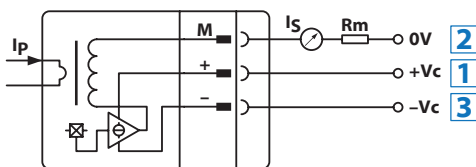
- Primary through-hole \varnothing 30.2 mm

Detail A

Connector



JPC-500T



Connector

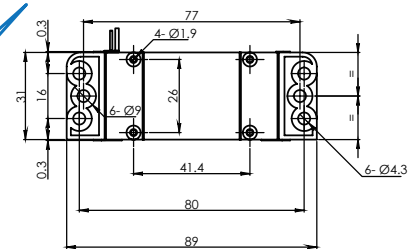
| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 38-00-6293 | 6410-03C (102) |

- Primary through-hole \varnothing 30.2 mm

Detail B

Terminal No.

Connector





CLOSED LOOP HALL EFFECT CURRENT SENSOR

JPC-1000X

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



ADVANTAGES

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

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.

FEATURES

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

SPECIFICATION

| Model | | JPC-1000F | JPC-1000T | | |
|---|----------------------|---|---------------------------------|--------------------|---------------------|
| Connector | - | 39-28-8040[5566-04A-210] Molex | 38-00-6293[6410-03C(102)] Molex | | |
| Primary nominal current rms | A | 1000 | | | |
| Primary current, measuring range | A | 0 .. ± 1500 | | | |
| Measuring resistance | Ω | ± 15V | @ ± 1000A | Ta=70°C : 0 ~ 18 | Ta=85°C : 0 ~ 15 |
| | | | @ ± 1200A | Ta=70°C : 0 ~ 7 | Ta=85°C : 0 ~ 4 |
| | | ± 24V | @ ± 1000A | Ta=70°C : 5 ~ 60.5 | Ta=85°C : 10 ~ 57.5 |
| | | | @ ± 1500A | Ta=70°C : 5 ~ 24 | Ta=85°C : 10 ~ 21 |
| Secondary nominal current rms | mA | 200 | | | |
| Conversion ratio | - | 1 : 5000 | | | |
| Supply voltage (+ 5 %) | V | ± 15 .. 24 | | | |
| Current consumption (± 1mV) | mA | 28(@ ±24V) + I _s | | | |
| Overall accuracy | % | ± 0.4 | | | |
| Linearity error | % | < 0.1 | | | |
| Offset current | mA | Max. ± 0.4 | | | |
| Magnetic offset current | mA | Max. ± 0.2(@ I _P = 0 and specified R _M , after an overload of 3 x I _{PN}) | | | |
| Insulation voltage | V_D | AC 3800V / 1min. | | | |
| Temperature variation | mA | Typ. ± 0.3, Max. ± 0.5 (- 10°C .. + 85°C) / Max. ± 0.8 (- 40°C .. - 10°C) | | | |
| Reaction time to 90 % of I _{PN} step | μs | < 1 (With a di/dt of 100 A/μs.) | | | |
| di/dt accurately followed | A/μs | > 100 | | | |
| Frequency bandwidth (- 1 dB) | kHz | DC .. 150 | | | |
| Ambient Operating temperature | °C | - 40 .. + 85 | | | |
| Ambient storage temperature | °C | - 45 .. + 100 | | | |
| Secondary coil resistance | Ω | 48 (@Ta=70°C) / 51 (@Ta=85°C) | | | |
| Mass | g | 550 | | | |
| Standards | - | EN 50178: 1997 / IEC 61010-1 | | | |



CLOSED LOOP HALL EFFECT CURRENT SENSOR

JPC-2000X

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



ADVANTAGES

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

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.

FEATURES

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

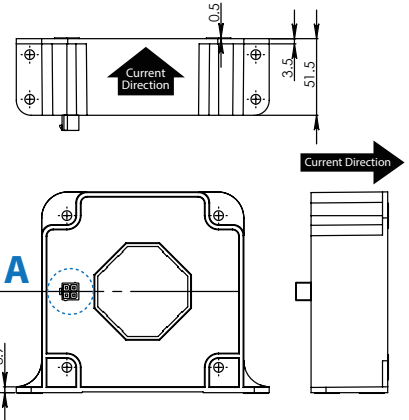
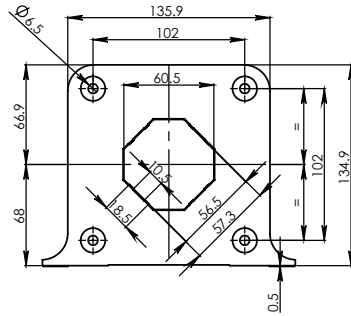
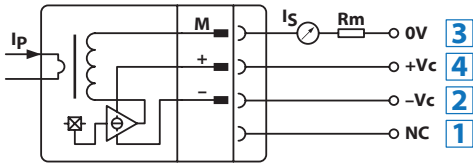
SPECIFICATION

| Model | | JPC-2000F | JPC-2000T | | |
|---|----------------------|--|---------------------------------|------------------|-------------------|
| Connector | - | 39-28-8040[5566-04A-210] Molex | 38-00-6293[6410-03C(102)] Molex | | |
| Primary nominal current rms | A | 2000 | | | |
| Primary current, measuring range | A | 0 .. ± 3000 | | | |
| Measuring resistance @ | Ω | ± 15V | @ ± 2000A | Ta=70°C : 0 ~ 8 | Ta=85°C : 0 ~ 7 |
| | | | @ ± 2200A | Ta=70°C : 0 ~ 5 | Ta=85°C : 0 ~ 4 |
| | | ± 24V | @ ± 2000A | Ta=70°C : 5 ~ 29 | Ta=85°C : 13 ~ 28 |
| | | | @ ± 2800A | Ta=70°C : ----- | Ta=85°C : 13 ~ 13 |
| | | | @ ± 3000A | Ta=70°C : 5 ~ 11 | Ta=85°C : ----- |
| Secondary nominal current rms | mA | 400 | | | |
| Conversion ratio | - | 1 : 5000 | | | |
| Supply voltage (+ 5 %) | V | ± 15 .. 24 | | | |
| Current consumption (± 1mV) | mA | 33(@ ±24V) + IS | | | |
| Overall accuracy | % | ± 0.3 | | | |
| Linearity error | % | < 0.1 | | | |
| Offset current | mA | Max. ± 0.5 | | | |
| Magnetic offset current | mA | Max. ± 0.2 (@ I _P = 0 and specified R _M , after an overload of 3 x I _{PN}) | | | |
| Insulation voltage | V_D | AC 6000V / 1min. | | | |
| Temperature variation | mA | Typ. ± 0.2, Max. ± 0.5 (- 25°C .. + 85°C) / Max. ± 1.5 (- 40°C .. - 25°C) | | | |
| Reaction time to 90 % of I _{PN} step | μs | < 1 (With a di/dt of 100 A/μs.) | | | |
| di/dt accurately followed | A/μs | > 50 | | | |
| Frequency bandwidth (- 1 dB) | kHz | DC .. 100 | | | |
| Ambient Operating temperature | °C | - 40 .. + 85 | | | |
| Ambient storage temperature | °C | - 50 .. + 90 | | | |
| Secondary coil resistance | Ω | 25 (@Ta=70°C) / 26 (@Ta=85°C) | | | |
| Mass | g | 1500 | | | |
| Standards | - | EN 50178: 1997 / IEC 61010-1 | | | |



DIMENSIONS(MM)

JPC-2000F

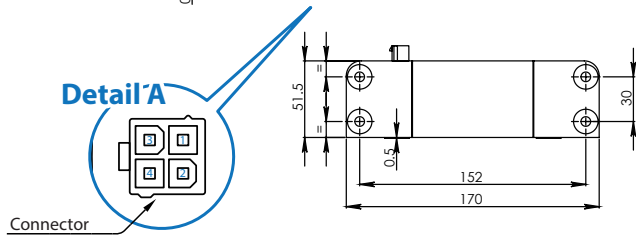


Connector

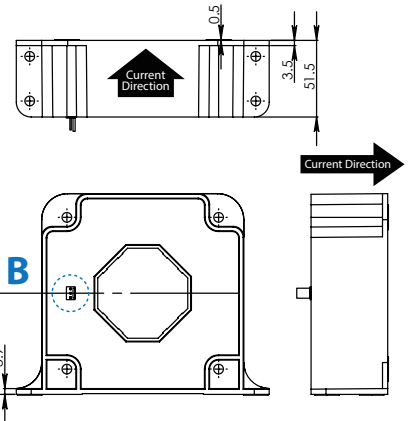
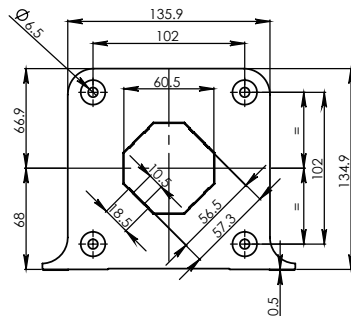
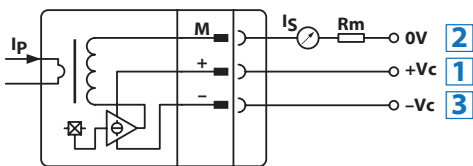
| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 39-28-8040 | 5566-04A-210 |

- Primary through-hole 60.5 x 20.5 mm or Ø max 57 mm

Detail A



JPC-2000T

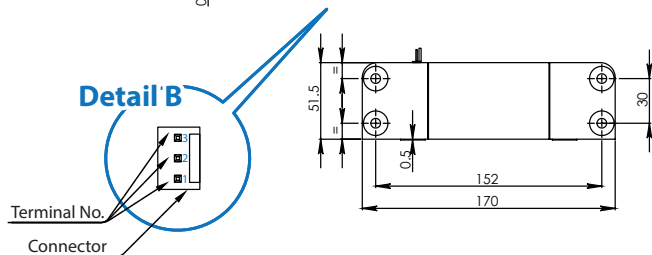


Connector

| Manufacturer | Part Number | Old Part Number |
|--------------|-------------|-----------------|
| Molex | 38-00-6293 | 6410-03C (102) |

- Primary through-hole 60.5 x 20.5 mm or Ø max 57 mm

Detail B





OPEN LOOP TECHNOLOGY CURRENT SENSORS

JHAO-XXXC(A/B) Series



FEATURES

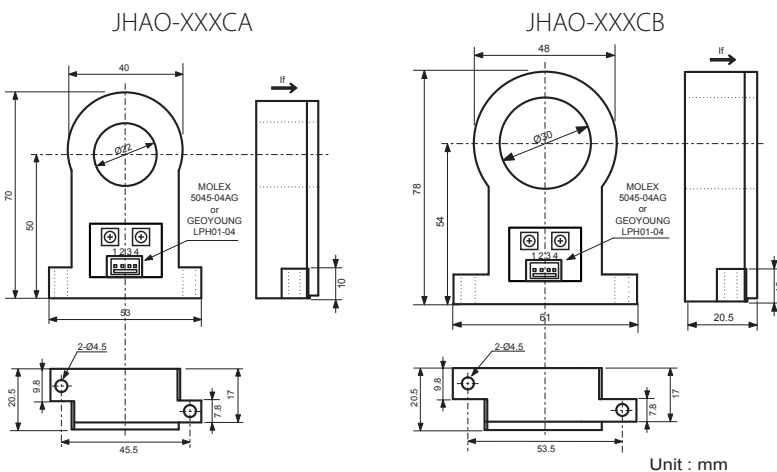
- Panel mounting
- Industrial temperature range
- Designed for round-hall wire, input-output connector type
- UL94-V0 compliance
- CE and RoHS available
- Two different size (A : 22Ø / B : 30Ø)

SPECIFICATION

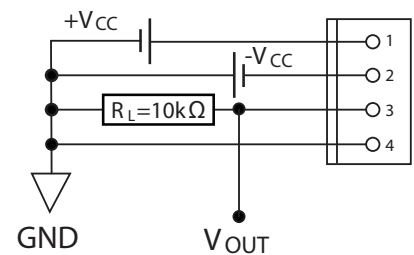
* Suffix(X)=A/B

| Model | JHAO-050C(X) | JHAO-075C(X) | JHAO-100C(X) | JHAO-150C(X) | JHAO-200C(X) | JHAO-300C(X) | JHAO-400C(X) | JHAO-500C(X) | JHAO-600C(X) | |
|--------------------------------------|--------------------------------------|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
| Rating current | 50A | 75A | 100A | 150A | 200A | 300A | 400A | 500A | 600A | |
| Saturation current | 150AT | 225AT | 300AT | 450AT | 600AT | 900AT | | | | |
| Output voltage | ±4 V, 1% at rated current RL=10KΩ | | | | | | | | | |
| Offset voltage | ±30mV max Less than | ±15 mV max | | | | | | ±50 mV max | | |
| Output linearity | ±1% rated current | | | | | | | | | |
| Power supply | ±15 V (±5%) 20mA | | | | | | | | | |
| Di/dt response time | 3 μ sec (Typ.) at di/dt = F.S/μ Sec. | | | | | | | | | |
| Output temperature character | ± 0.1% / °C (Typ.) | | | | | | | | | |
| Offset voltage temperature character | ± 2mV/°C | ± 1mV / °C (Typ.) | | | | | | | | |
| Hysteresis error | 30mV Less than 30mV | 25mV(IF=F.S) Less than 25mV | | | | | | | | |
| Insulation withstand voltage | AC 2500V / 1min. | | | | | | | | | |
| Insulation resistance | DC 500V / 500MΩ max | | | | | | | | | |
| Operating Condition | -15°C~+80°C | | | | | | | | | |
| Storage Condition | -15°C~+85°C | | | | | | | | | |

DIMENSION



CONNECTION

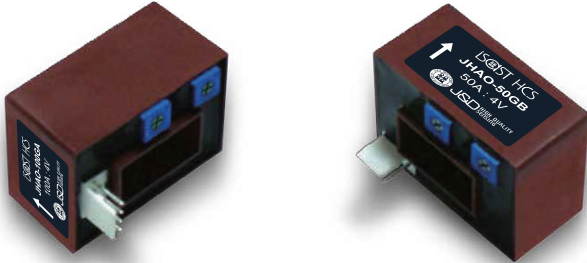


| Terminal Pin | 1 | 2 | 3 | 4 |
|--------------|-------|-------|--------|----|
| Function | + 15V | - 15V | Output | 0V |

Core=Silicon steel plate



OPEN LOOP TECHNOLOGY CURRENT SENSORS JHAO-XXXG(A/B) Series



FEATURES

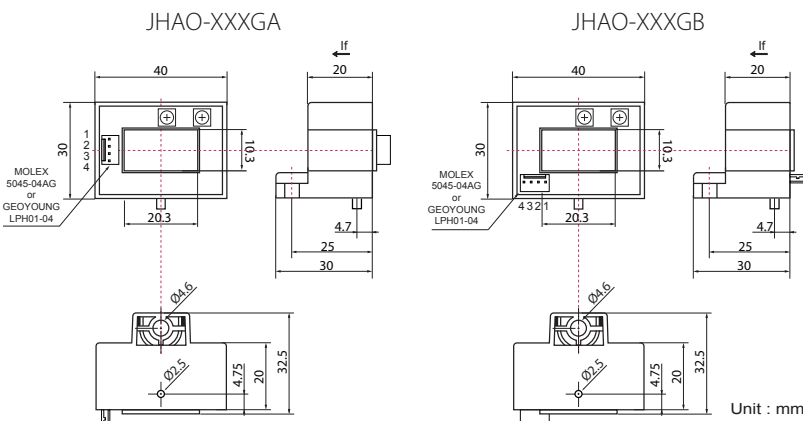
- Panel mounting
- Industrial temperature range
- UL94-V0 compliance
- CE and RoHS available
- Two different connector position

SPECIFICATION

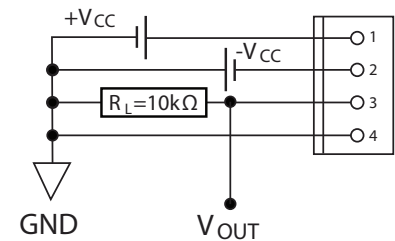
* Suffix(X)=A/B

| Model | JHAO-050G(X) | JHAO-075G(X) | JHAO-100G(X) | JHAO-150G(X) | JHAO-200G(X) | JHAO-300G(X) | JHAO-400G(X) | JHAO-500G(X) | JHAO-600G(X) | |
|--------------------------------------|---|-----------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--|
| Rating current | 50A | 75A | 100A | 150A | 200A | 300A | 400A | 500A | 600A | |
| Saturation current | 150AT | 225AT | 300AT | 450AT | 600AT | 900AT | | | | |
| Output voltage | ±4 V, 1% at rated current $R_L=10k\Omega$ | | | | | | | | | |
| Offset voltage | ±30mV max Less than | ±15 mV max | | | | | | ±50 mV max | | |
| Output linearity | ±1% rated current | | | | | | | | | |
| Power supply | ±15 V (±5%) 20mA | | | | | | | | | |
| Di/dt response time | 3 μ sec (Typ.) at di/dt = F.S/ μ Sec. | | | | | | | | | |
| Output temperature character | ± 0.1% / °C (Typ.) | | | | | | | | | |
| Offset voltage temperature character | ± 2mV/°C | ± 1mV / °C (Typ.) | | | | | | | | |
| Hysteresis error | 30mV Less than 30mV | 25mV(IF=F.S) Less than 25mV | | | | | | | | |
| Insulation withstand voltage | AC 2500V / 1min. | | | | | | | | | |
| Insulation resistance | DC 500V / 500M Ω max | | | | | | | | | |
| Frequency bandwidth | 20kHz | | | | | | | | | |
| Operating Condition | -15°C~+80°C | | | | | | | | | |
| Storage Condition | -15°C~+85°C | | | | | | | | | |

DIMENSION



CONNECTION



| Terminal Pin | 1 | 2 | 3 | 4 |
|--------------|-------|-------|--------|----|
| Function | + 15V | - 15V | Output | 0V |

Core=Silicon steel plate



OPEN LOOP TECHNOLOGY CURRENT SENSORS JHAO-XXXX Series



FEATURES

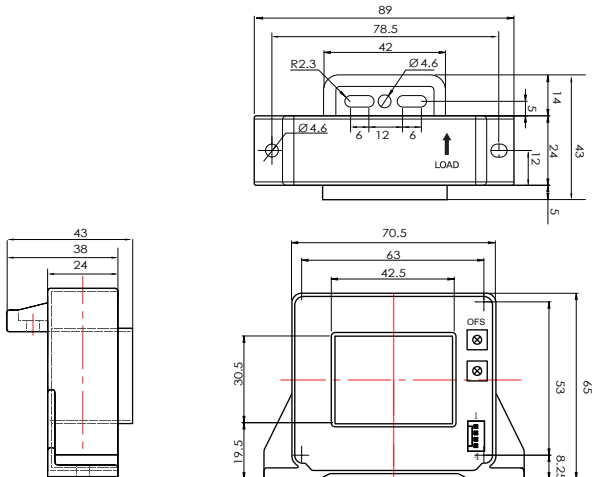
- Panel mounting
- Industrial temperature range
- UL94V0 compliance
- CE and RoHS available

SPECIFICATION

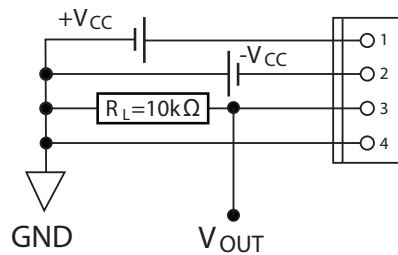
* Suffix(X)=A/B

| Model | JHAO-200D(X) | JHAO-400D(X) | JHAO-500D(X) | JHAO-600D(X) | JHAO-750D(X) | JHAO-800D(X) | JHAO-1000D(X) | JHAO-1200D(X) | JHAO-1500D(X) |
|--------------------------------------|--------------------------------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|
| Rating current | ±200A | ±400A | ±500A | ±600A | ±750A | ±800A | ±1000A | ±1200A | ±1500A |
| Saturation current | ±600A | ±1200A | ±1500A | ±1800A | ±2250A | ±2400A | ±3000A | | |
| Output voltage | ±4 V, 1% at rated current RL=10KΩ | | | | | | | | |
| Offset voltage | ±30 mV | | | | | | | | |
| Output linearity | ±1% rated current | | | | | | | | |
| Power supply | ±15 V (±5%) | | | | | | | | |
| Di/dt response time | 7 μ sec (Typ.) at di/dt = F.S/μ Sec. | | | | | | | | |
| Output temperature character | ± 0.1% / °C (Typ.) | | | | | | | | |
| Offset voltage temperature character | ± 1mV / °C (Typ.) | | | | | | | | |
| Hysteresis error | 25mV(IF=F.S) Less than 25mV | | | | | | | | |
| Insulation withstand voltage | AC 2500V / 1min. | | | | | | | | |
| Insulation resistance | DC 500V / 500MΩ max | | | | | | | | |
| Operating Condition | -40°C ~ +105°C | | | | | | | | |
| Storage Condition | -40°C ~ +125°C | | | | | | | | |

DIMENSION(UNIT : MM)



CONNECTION



| Terminal Pin | 1 | 2 | 3 | 4 |
|--------------|------|------|--------|----|
| Function | +15V | -15V | Output | 0V |

Core=Silicon steel plate



CLOSED LOOP TECHNOLOGY VOLTAGE SENSOR

JHVC-A25



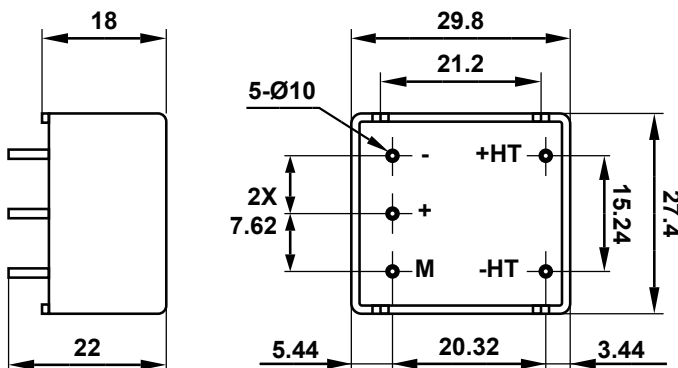
FEATURES

- Excellent accuracy and linearity
- Low response time thermal drift
- High tolerance to external interference
- High bandwidth

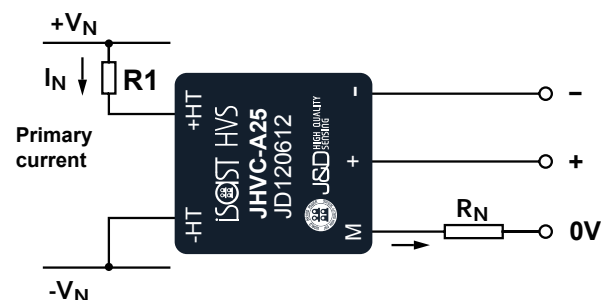
SPECIFICATION

| | |
|--|--|
| Model | JHVC-A25 |
| Nominal input | 10mArms (10V...500V) |
| Measuring range | 0~±14mA |
| Measuring resistor (Vs = ±12...15V) | Vcc=±12V @ ±10mA : 30Ω ~ 190Ω Vcc=±15V @ ±10mA : 100Ω ~ 350Ω Vcc=±12V @ ±14mA : 30Ω ~ 100Ω Vcc=±15V @ ±14mA : 100Ω ~ 190Ω |
| Output current(I _m) | ±25mA |
| Accuracy (Ta=+25°C) | IN±1.0% |
| Turns ratio | 2500:1000 |
| Supply voltages(Vs) | ±12V~±15V (±5%) |
| Current consumption | 10mA+I _m |
| Isolation voltage | 2.5kV RMS/ 50Hz/1min. |
| Offset current (Ta=+25°C) | ±0.2mA Max for primary current I _N =0 |
| Temperature drift | ±0.2mA Typical; ±0.3mA Max (0°C~+70°C) |
| Linearity | < 0.1% |
| Response time | < 10μs |
| Operating Frequency range | 0~20kHz |
| Operating temperature | 0°C~+70°C |
| Storage temperature | -40°C~+85°C |
| Secondary resistor | 110Ω (Ta=+70°C) |
| Primary resistance | 250Ω (Ta=+70°C) |
| Weight | 22g |

DIMENSIONS(UNIT : MM)



CONNECTION





DIGITAL ISOLATION AMPLIFIER VOLTAGE SENSOR EVS30-XXXX



Voltage transducer uses special Isolation Barrier technology to measure AC and DC or Pulsed voltages. The primary input voltage and the output signal is highly electric isolated. It can be used in Power Utility, Converters, Traction, Telecom, Oil & Gas, and New energy fields.

FEATURES

- AC, DC, Pulsed voltage measurement
- Included primary resistor
- Good linearity
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- High immunity to external interference
- Low thermal drift
- Higher voltage can measure than EVS30

ELECTRICAL CHARACTERISTICS

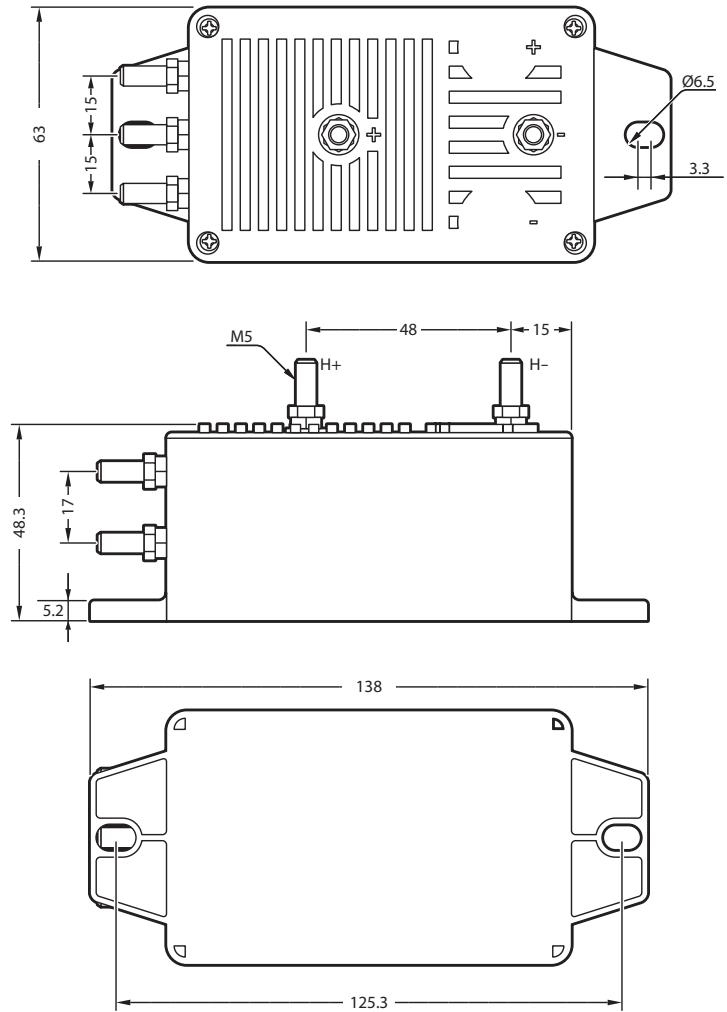
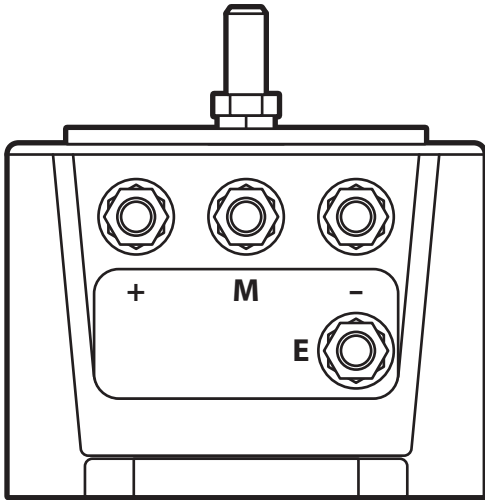
| | | |
|--|-----------------------|---|
| Primary nominal voltage (Vrms) | V_{PN} | 50, 125, 150, 250, 500, 750, 1000, 1500, 2000, 2500, 3000 V |
| Primary voltage, measuring range (Vrms) | V_P | 150% x V _{PN} |
| Secondary Current output | I_{SN} | 50 mA (EVS30-XXXX-A) |
| Secondary Voltage output | V_{SN} | 0 ± 5V (EVS30-XXXX-V) |
| Accuracy (T _a =+25°C) | X_G | ≤ 0.5% |
| Linearity error | ε_L | ≤ 0.1% |
| Power supply voltage (± 15V) | V_C | PN (± 5%) |
| Offset current (T _A = +25 °C) | I₀ | ≤ ± 0.15 mA |
| Response time | T_R | ≤ 10 μs |
| Frequency bandwidth | f | DC-1kHz(-3dB) |
| Current consumption | I_C | 50mA (for current output: + I _S) |
| Load resistance | R_L | ≤ 150Ω(for current output) or >5KΩ(for voltage output) |
| Primary input resistance | R_P | 60MΩ |
| Isolation test (50Hz,1min) | V_D | 6.0 kV |

GENERAL DATA

| | | |
|-------------------------------|----------------------|----------------------|
| Ambient operating temperature | T_A | -40 °C... +85 °C |
| Ambient storage temperature | T_S | -50 °C... +90 °C * |
| Mass | W | 350g |
| Standards | S_T | EN50178 |
| Ambient operating humidity | H_A | 20-90% RH |
| Case material | | According to UL94-V0 |

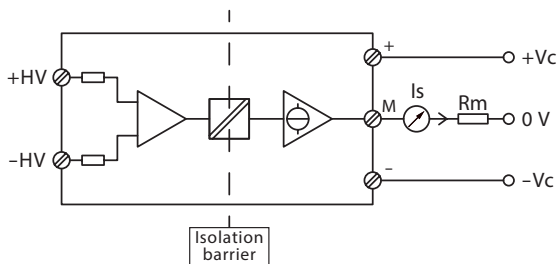


DIMENSIONS(MM)



| General tolerance | Terminals | Fastening |
|-------------------|-----------------------------------|--|
| ± 1mm | Input : 2 x M5 Output : 2 x M5 | Bottom : 2xØ6.5(mm) Side : 2xØ4.8(mm) |

CONNECTION DIAGRAM



OUTPUT FIGURE

0 ± 5V (EVS30-XXXX-V)

50 mA (EVS30-XXXX-A)

