

DCT-200A

DC Current Transducer

Main Advantages

- High Accuracy over high bandwidth.
- Very low output noise and offset drift.
- Negligible insertion losses.
- High immunity to interference.
- Overload Capability.
- Excellent linearity.

Applications

- AC variable speeds drives and servo motors
- Battery supplied applications
- Uninterruptable Power Supplies (UPS)
- Static converters for DC motors
- Switch mode power supplies (SMPS)
- Power supplies for welding applications



Electrical Parameters

| | | |
|--|----------------------|----------|
| Primary Current | 0 to 200 A DC | I_{pn} |
| Measuring Range $\pm 15V_{cc}$ | ± 200 A DC | I_p |
| Overload Condition | ± 1000 A (100ms) | I_{ov} |
| Burden Resistor Range ($I_p = 200A$) $V_{cc} = \pm 15V$ | 2.7 Ω Min | R_b |
| Secondary Nominal Current | 200 mA | I_s |
| Conversion Ratio | 1:1000 | N |
| Supply Voltage ($\pm 10\%$) | ± 12 to 15 VDC | V_{cc} |
| Current Consumption $V_{cc} = \pm 15V$ | 50 mA + I_s | I_{cc} |

Accuracy

| | | |
|--|-----------------------|------------------|
| Accuracy at $I_p T = 25^\circ C$ | < 0.1% | |
| Linear Error (Between 50 to 200 A) $V_{cc} = \pm 15V, R_b = 2.7 \Omega$ | < 5 ppm | ϵ_{LFR} |
| Linear Error (Between 10A to 50A) $V_{cc} = \pm 15V, R_b = 27 \Omega$ | < 10 ppm | ϵ_{LMR} |
| Linear Error (Between 0.01 to 10A) $V_{cc} = \pm 15V, R_b = 50 \Omega$ | < 50 ppm | ϵ_{LLR} |
| Offset Current | 5uA Max | I_{os} |
| Offset Current Temperature Drift | < 5 ppm/ $^\circ C$ | K_{Ios} |
| Time Response (10% to 90% of I_p) | < 1us | T_R |
| di/dt Followed Accurately | > 100A/us | |
| Frequency Bandwidth ($I_p = 10A$ DC) | DC to 100kHz (-3dB) | F_c |

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General Data

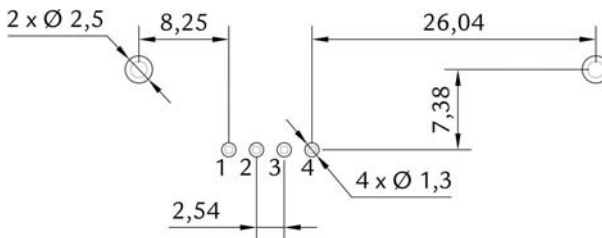
| | | |
|--|-----------------------|----------------|
| Operating Temperature | -20 to +70 °C | T _A |
| Storage Temperature | -20 to +85 °C | T _S |
| Weight | 300 g | |
| Primary Diameter Hole | < 12 mm | |
| Basic Insulation (Between Primary and Measurement Current) | 3500 V AC 50Hz 1' | V _I |
| Fault Operation Condition (Led Power Off) | I _p > 120% | |
| Compensation Winding Maximum Resistance (T = 70°C) | 40 Ω | R _C |
| Length Two Wire Cable to R Burden (Connected between pin 1 and 3) | 50 cm (typical) | |

According To

- UNE EN 50178
- UNE EN 50155

Mounting Information

This current transducer has been developed to offer a tool able to provide accuracy measurements of AC and DC currents up to 200A and used in application implemented over a PCB or electronic control board. The transducer has the output-input connector in a 2,54 mm standard pitch, and includes two additional pins to improve PCB placement, avoiding problems under severe vibration conditions.



Recommended PCB Layout
View in Mounting Direction

Notes

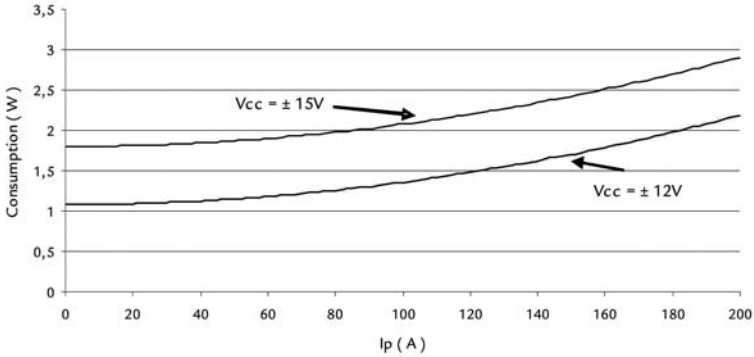
Grid Tolerance $\pm 0,2$ mm

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Power Consumption Characteristics

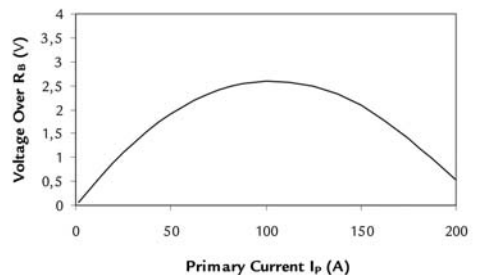
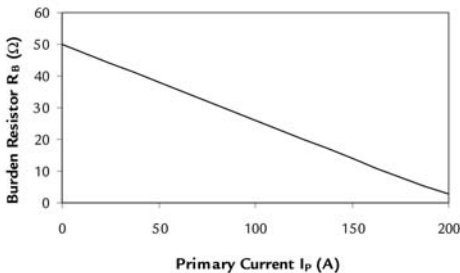
Total Consumption Vs Primary Current



Current consumption for full range measure and nominal conditions.
Burden resistor 2.7 Ohm.

Burden resistor and voltage range

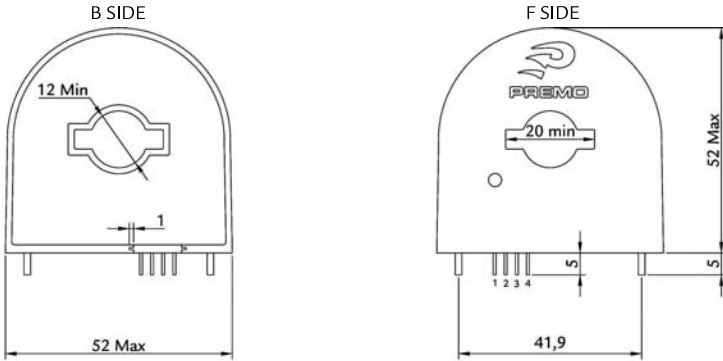
The burden resistor can be changed in function of the primary current. Premo advice to use this graph in order to get the best measurements, in terms of accuracy and linearity for each current range expected in the primary side. The values of R burden and maximum voltage generated are showed below.



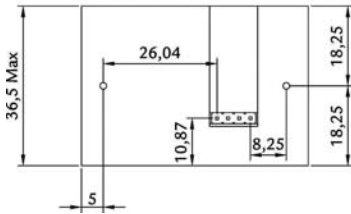
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Dimensions



BOTTOM SIDE (Pins View)

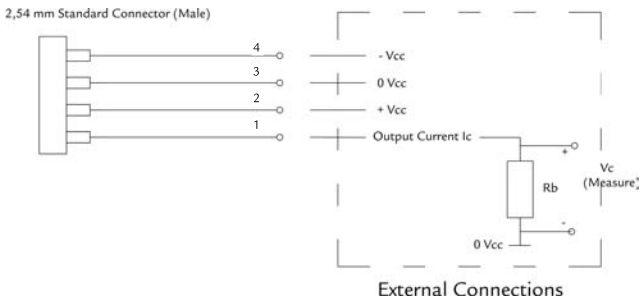


Notes:

General Tolerance $\pm 0,2$ mm

DCT-200A Installation

In the following picture we show as to connect the secondary side of current transducer.



The current transducer includes a light signal to show normal operation state. The measure under this situation will be correct and inside of electrical parameters showed in the characteristics tables.

OUTPUT-INPUT Connector

Pin 1 : Output Current + (Current Direction F to B)

Pin 2 : + Vcc Supply

Pin 3 : 0V (General Reference of the circuit)

Pin 4 : - Vcc Supply