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 ± 15Vcc	± 200 A DC	I_p
Overload Condition	± 1000 A (100ms)	I_{OV}
Burden Resistor Range (IP =200A) Vcc = ± 15V	2.7 Ω Min	R_B
Secondary Nominal Current	200 mA	I_S
Conversion Ratio	1:1000	N
Supply Voltage (± 10 %)	± 12 to15 VDC	V_{cc}
Current Consumption Vcc = ±15V	50 mA +I_S	I_{cc}

Accuracy

Accuracy at Ip T = 25 °C	< 0.1%	
Linear Error (Beetwen 50 to 200 A) Vcc = ±15V, Rb = 2.7 Ω	< 5 ppm	ε_{LFR}
Linear Error (Beetwen 10A to 50A) Vcc = ±15V, Rb = 27 Ω	< 10 ppm	ε_{LMR}
Linear Error (Beetwen 0.01 to 10A) Vcc = ±15V, Rb = 50 Ω	< 50 ppm	ε_{LLR}
Offset Current	5uA Max	I_{OS}
Offser Current Temperature Drift	< 5 ppm/°C	KI_{OS}
Time Response (10% to 90% of Ip)	<1us	T_R
di/dt Followed Accurately	> 100A/us	
Frequency Bandwidth (Ip = 10A DC)	DC to 100kHz (-3dB)	F_C

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General Data

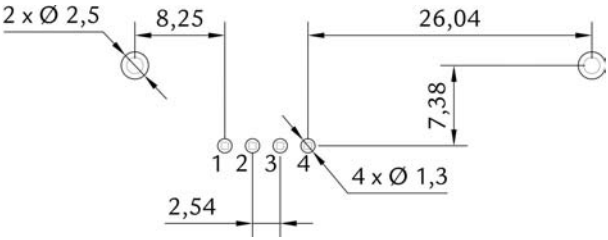
Operating Temperature	-20 to +70 °C	T_A
Storage Temperature	-20 to +85 °C	T_S
Weight	300 g	
Primary Diameter Hole	< 12 mm	
Basic Insulation (Between Primary and Measurement Current)	3500 V AC 50Hz 1'	V_I
Fault Operation Condition (Led Power Off)	Ip > 120%	
Compensation Winding Maximum Resistance (T = 70°C)	40 Ω	R_C
Lenght 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.



Recommeded PCB Layout
View in Mounting Direction

Notes

Grid Tolerance ±0,2 mm

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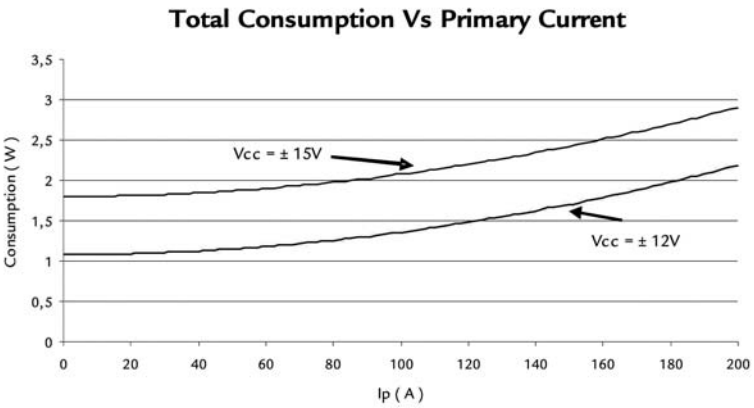
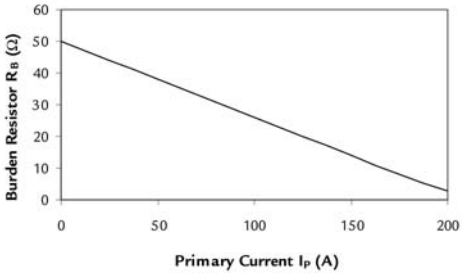
Power Consumption Characteristics

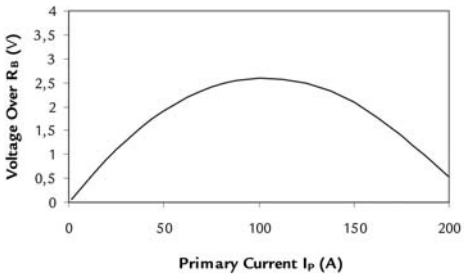


Current consumption for full range measure and nominal conditions.
Burden resistor 2.7 Ohm.

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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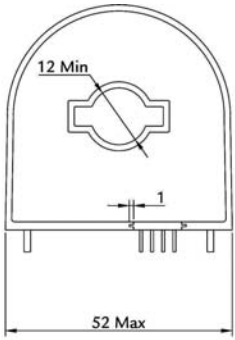
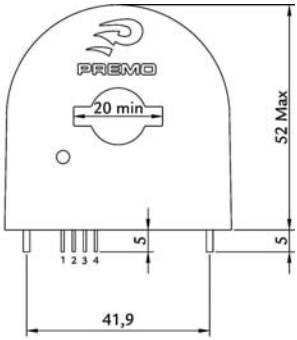
Dimensions

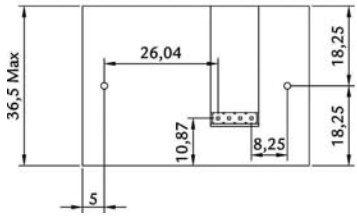
B SIDE



F SIDE



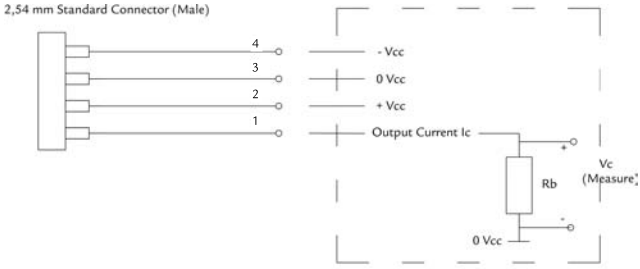
BOTTOM SIDE (Pins View)



Notes:
General Tolerance ±± 0,2 mm

DCT-200A Installation

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



External Connections

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