DCT-400A

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

- Precise and high stability inverters
- Energy measurements
- High Precision Power Supplies
- Feed back element in high performance gradient amplifiers for MRI
- Medical Equipment

Electrical Parameters

Primary Current	0 to 400 A DC	I_{pn}
Measuring Range ± 15Vcc	± 400 A DC	I_p
Overload Condition	± 2000 A (100ms)	I_{OV}
Burden Resistor Range (IP =400A) Vcc = ± 15V	1.8 Ohm Min	R_B
Secondary Nominal Current	400 mA	I_S
Conversion Ratio	1:1000	N
Supply Voltage (± 10 %)	± 12 to15 VDC	V_{cc}
Current Consumption Vcc = ±15V	80 mA +I_S	I_{cc}

Accuracy

Accuracy at Ip T = 25 °C	< 0.1%	
Linear Error (Beetwen 100 to 400 A) Vcc = ±15V, Rb = 1.8 Ohm	< 5 ppm	ε_{LFR}
Linear Error (Beetwen 10A to 100A) Vcc = ±15V, Rb = 10 Ohm	< 10 ppm	ε_{LMR}
Linear Error (Beetwen 0.1 to 10A) Vcc = ±15V, Rb = 33 Ohm	< 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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Output Inputs Connector Information

Connector	DB-9 Standard Type (Female)	
Fault Operation Condition (Led Power OFF)	Ip > 120%	
Maximum Switching Current (pins 3 to 8 and pin 3 to 7)	2A	
Maximum Switching Voltage (pins 3 to 8 and pin 3 to 7)	30 VDC/120 VAC	
Compensation Winding Maximum Resistance (T = 50°C)	30 Ohm	R_C
Lenght Two Wire Cable to R Burden (Connected between pin 1 and 6)	50 cm (Typical)	

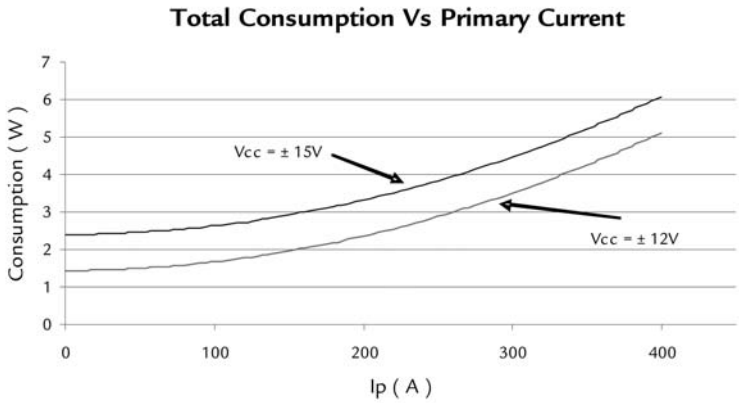
General Data

Operating Temperature	-20 to +70 °C	T_A
Storage Temperature	-20 to +85 °C	T_S
Weight	400 g	
Primary Diameter Hole	25 mm	
Basic Insulation (Between Primary and Measurement Current)	3500 V AC 50Hz 1'	V_I

According To

- UNE EN 50178
- UNE EN 50155

Power Consumption Characteristics



Current Consumption for full range measurements and Burden resistor 1.8 Ohm.

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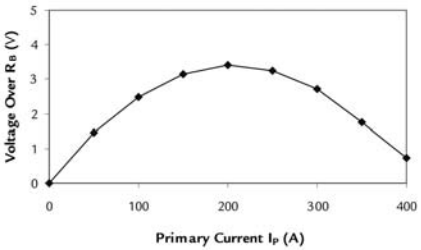
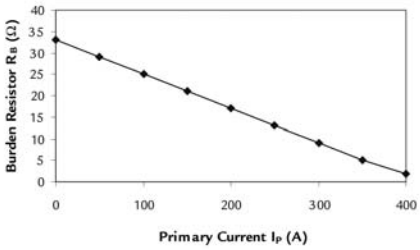
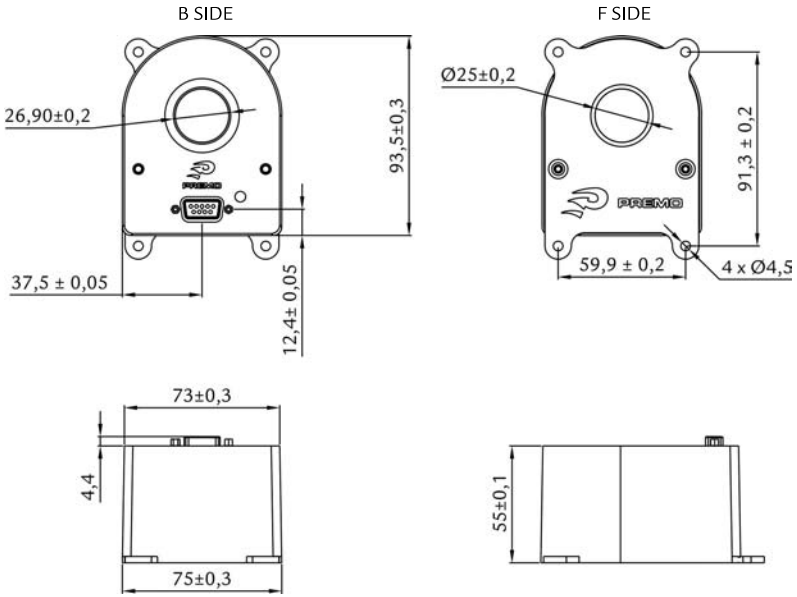
Burden resistor and voltage range

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.





Dimensions



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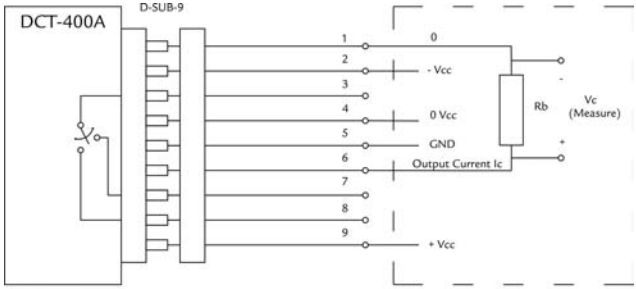
DCT-400A Installation

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



External Connections

Between the pins 3 and 8 the DCT have a normally closed switch while the measure is correct. In the same manner, DCT provide a normally open switch while the measure is correct between pins 3 and 7.

D-SUB standard connector

The D-sub connection correspond to the next table.

9-POLE D-SUB
Pin 1 : Connected to 0V internally
Pin 2 : - Vcc Supply
Pin 3 : Input to normally closed/open Switch
Pin 4 : 0V
Pin 5 : Earth connexion (GND)
Pin 6 : Output Current + (Current Direction F to B)
Pin 7 : Output to normally open switch (1A DC MAX)
Pin 8 : Output to normally closed switch (1A DC MAX)
Pin 9 : + Vcc Supply