

DCT-700A

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 700 A DC	I_{pn}
Measuring Range 10 Vin	± 700 A DC	I_p
Overload Condition	± 2000 A (100ms)	I_{ov}
Burden Resistor Range ($I_p = 700A$) $V_{cc} = \pm 12V$	1 Ohm Min	R_b
Secondary Nominal Current	700 mA	I_s
Conversion Ratio	1:1000	N
Supply Voltage ($\pm 10\%$)	+ 10 to 30 VDC	V_{cc}
Current Consumption $V_{cc} = \pm 12V$	100 mA + I_s	I_{cc}

Accuracy

Accuracy at $I_p T = 25^\circ C$	< 0.1%	
Linear Error (Between 400 to 700 A) $V_{cc} = \pm 12V, R_b = 1$ Ohm	< 5 ppm	ϵ_{LFR}
Linear Error (Between 150A to 400A) $V_{cc} = \pm 12V, R_b = 5$ Ohm	< 10 ppm	ϵ_{LMR}
Linear Error (Between 0.1 to 150A) $V_{cc} = \pm 12V, R_b = 20$ Ohm	< 100 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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Output Connector

Connector	DB-9 Standard Type (Female)	
Fault Operation Condition (Led Power OFF)	$I_p > 120\%$	
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)	10 Ohm	R _c
Lenght Two Wire Cable to R Burden (Connected between pin 1 and 6)	50 cm (Typical)	

General Data

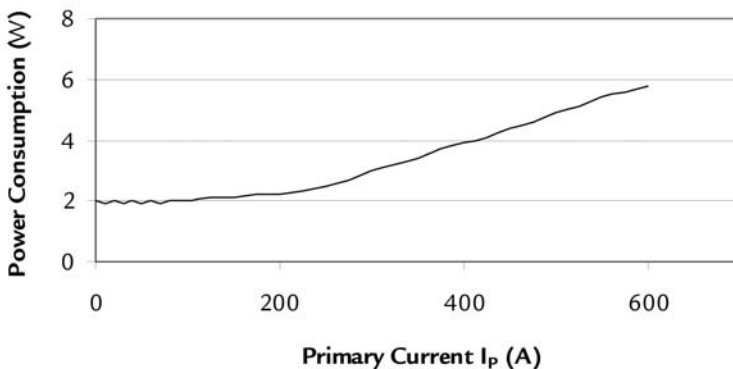
Operating Temperature	-20 to +70 °C	T _A
Storage Temperature	-20 to +85 °C	T _S
Weight	800 g	
Primary Diameter Hole	30 mm	
Basic Insulation (Between Primary and Measurement Current)	3500 V AC 50Hz 1'	V _I

According To

- UNE EN 50178
- UNE EN 50155

Power Consumption Characteristics

Total Power Consumption Vs Primary Current



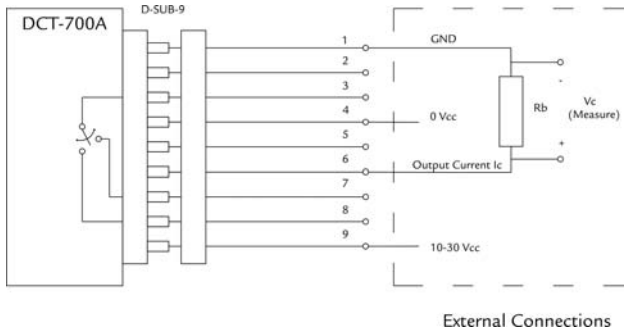
Power Consumption for full range measurements and nominal conditions . Burden resistor = 1 Ohm.

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DCT-700A Installation

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



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 GND internally

Pin 2 : (For Factory use only)

Pin 3 : Input to normally closed/open Switch

Pin 4 : 0V

Pin 5 : Earth connexion

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)

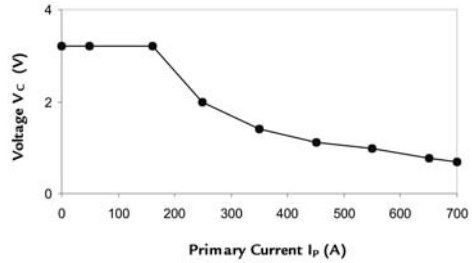
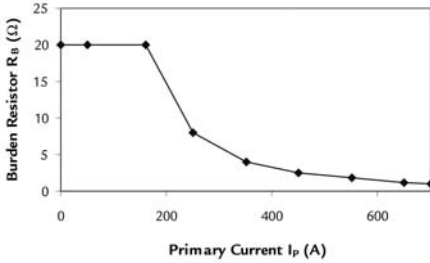
Pin 9 : Vcc

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Burden resistor and voltage range

The burden resistor (R_b in the picture) must be changed in function of the primary current. The values of R burden and maximum voltage generate are showed below. Premo advice to use this values (at least approximately) to ensure a good response of the transducer in terms of accuracy, linearity and power consumption.



These values are recommended for a resistances that can dissipate 0,5W.

Dimensions

