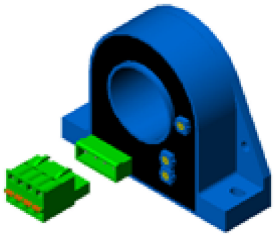
AC/DC Current transducer DHR-C10

I_{PN} = 100..1000 A

The transducer for the electronic measurement of DC & distorted AC waveform currents, with galvanic isolation between the primary circuit (power) and the secondary circuit (measurement). True RMS 0-10V voltage output.



Electrical data

Primary Nominal DC & AC Current I_{PN} (A.t.RMS)	Primary AC Current Max. Peak Value I_P (A) (*)	Output voltage (Analog) V_{OUT} (VDC)	Type
100	600	0-10	**DHR 100 C10**
200	600	0-10	**DHR 200 C10**
300	1000	0-10	**DHR 300 C10**
400	1000	0-10	**DHR 400 C10**
500	1800	0-10	**DHR 500 C10**
600	1800	0-10	**DHR 600 C10**
1000	1800	0-10	**DHR 1000 C10**

R_L	Load resistance	≥ 10	kΩ
V_C	Supply voltage	+ 20 .. 50	V DC
I_C	Current Consumption	30	mA
V_{SL}	Output voltage limitation (0-10V)	< 14	V
$\hat{I}_P$	Overload capability (Ampere Turns)	30000	A.t

Performance data

X	Accuracy @ I_{PN}, T_A = 25°C (excluding offset)	< ± 1	% of I_{PN}
ε_L	Linearity error (1% of I_{PN} .. ± I_{PN})	< ± 1.0	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C	< ± 1.0	% of I_{PN}
TCV_{OE}	Temperature coefficient of V_{OE} (0..+60 °C)	± 2.0	mV/K
	(-40..+70 °C)	± 4.0	mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	± 0.1	%/K
t_r	Response time tp 90% of I_{PN} step	< 150	m s
BW	Frequency bandwidth (±1dB)	DC 20..6000	Hz

General data

T_A	Ambient operating temperature	- 40 .. + 70	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
m	Mass	260	g
IPxx	Protection degree	IP20	

Note : (*) The Max. Peak AC Current is the highest peak level of the primary signal that is taken into account for accurate True RMS calculation. Yet the device is designed for maximum continuous True RMS value equal to I_{PN}, whereas the output is limited by the above specified output limitation.

Features

- VFD and SCR waveforms current measurement
- True RMS output
- Panel mounting
- Eliminates insertion loss
- Insulated plastic case recognized according to UL94-V0

Advantages

- Large aperture for cable up to Ø32mm
- High isolation between primary and secondary circuits
- Easy installation

Applications

- ***VFD Controlled Loads***
  VFD output indicates how the motor and attached load are operating.
- ***SCR Controlled Loads***
  Acurate measurement of phase angle fired or burst fired (time proportioned) SCRs. Current measurement gives faster response than temperature measurement.
- ***Switching Power Supplies and Electronic Ballasts***
  True RMS sensing is the most accurate way to measure power supply or ballast input power.

Application domain

- Energy and Automation

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without prior notice.

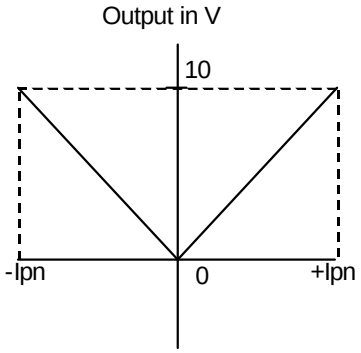
Current Transducer DHR-C10

Isolation characteristics

V_b	Rated isolation voltage rms	300	V
	with IEC 61010-1 acc. to the 61326 standards and following conditions :		
	- Reinforced isolation		
	- Over voltage category CAT III		
	- Pollution degree PD2		
	- Heterogeneous field		
V_d	Rms voltage for AC isolation test [1], 50 Hz, 1min	4.6	kV
dCp	Creepage distance	8.89	mm
dCl	Clearance distance	8.89	mm
CTI	Comparative tracking index (Group I)	> 600	

Note : [1] Between primary (completely filling the aperture) and secondary.

Output polarity with DC input



Safety

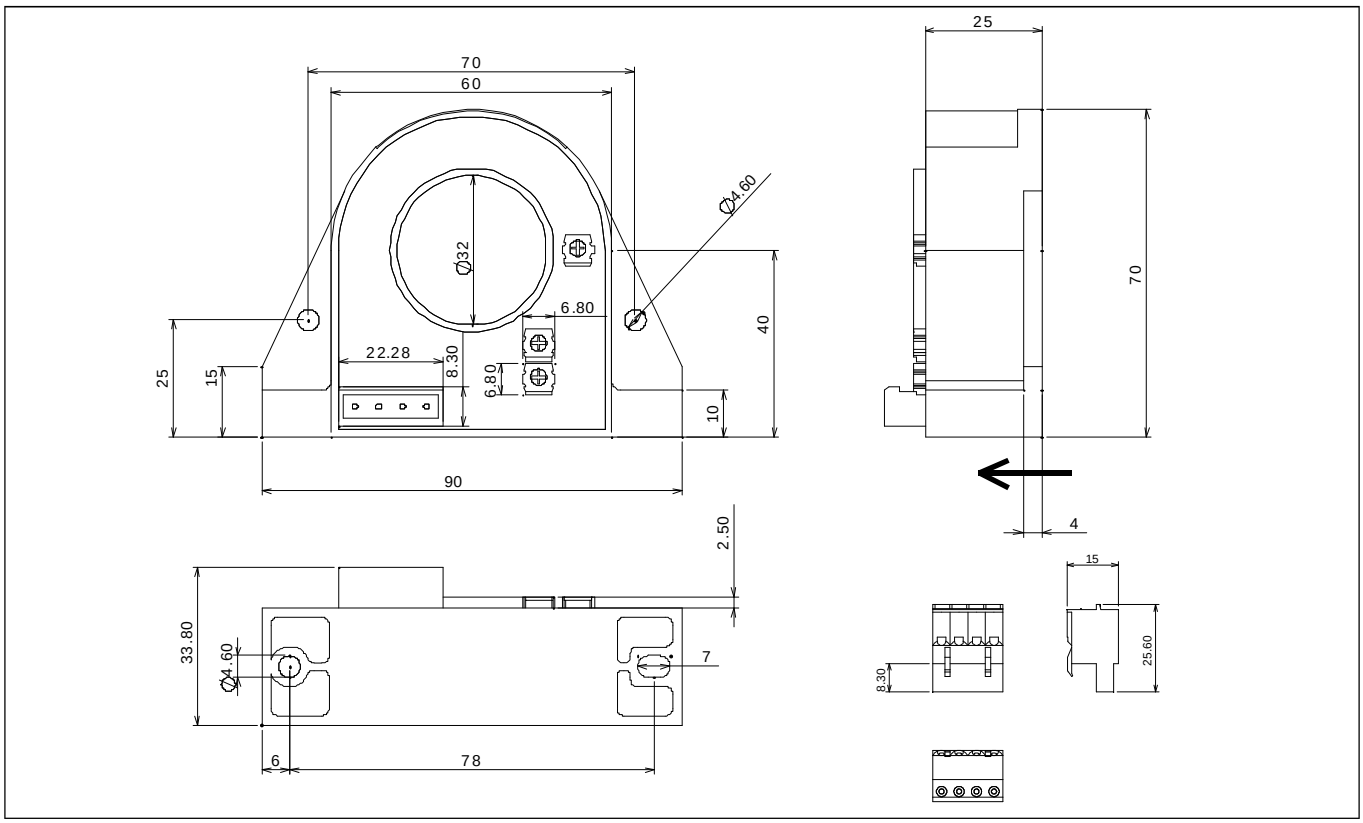
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.
Installation and maintenance should be done with main power supply disconnected.
The operator must have an accreditation to install this material.

Caution! Risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary conductor, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
The user must take care of all protection guarantee against electrical shock.
This transducer is a built-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

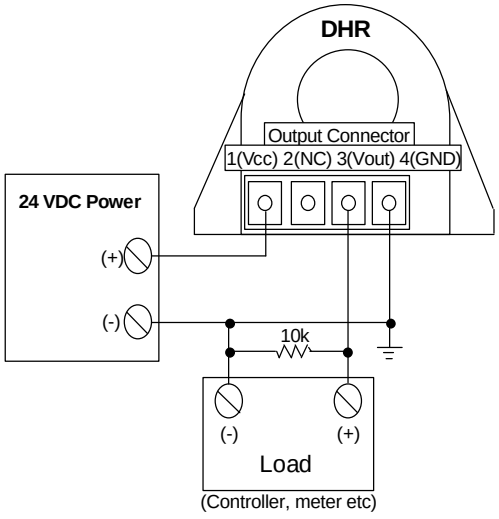
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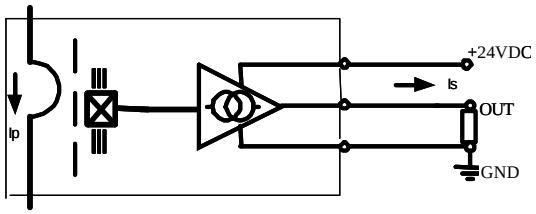
Dimensions DHR-C10 (in mm. 1 mm = 0.0394 inch)



Connections

- Wires up to 2 mm ∅
- Female connector provided (screw terminals)





Mechanical characteristics

• General tolerance	±1 mm
• Primary aperture	∅ 32.0 mm
• Panel mounting	4 holes ∅ 4.6 mm
• Distance between holes	70.0 mm & 78 mm (see above dimensions)

For panel mounting, replace M4 screws by new one (not supplied) with appropriate length to panel´s thickness.

Remarks

- V_{OUT} is positive when I_P flows in the direction of the arrow.
- The return busbar and primary conductor elbow must be located at least at 2.5 x window length more far away from the transducer case.
- The temperature of the primary busbar can not exceed 90 °C.
- Dynamic performances are the best with a primary busbar completely filling the primary aperture.
- This is a standard model. For different versions (supply voltages, different outputs, bidirectional measurements...), please contact us.

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