Current Transducer CD 100-S/SP8

I_{PN} = 2 × 100 A

I_{PRM} = 0 ... ±1 A

For the detection of a differential current between two primary conductors carrying opposing currents, with galvanic separation between the primary circuit (high power) and the secondary circuit (electronic circuit).

Electrical data

I_{PN}	Primary nominal RMS current	2 × 100	A
I_{PRM}	Primary residual current, measuring range [1]	0 ... ±1	A
U_C	Supply voltage (±5 %)	±15	V
U_{out}	Output voltage @ $I_{PR\,max}$	±5	V
$I_{C\,max}$	Maximum current consumption	60	mA
R_L	Load resistance	> 1	kΩ

Accuracy - Dynamic performance data

ε_{tot}	Total error @ T_A = −40 °C … +85 °C (1 A)	±3	%
	(0.5 A)	±5	%
	(0.1 A)	±20	%
$t_{D\,63}$	Delay time to 63 % of the final output value for I_{PN} (±20 %)	15	ms
BW	Frequency bandwidth (−3 dB) @ I_{PR} = 1 A, (±20 %)	DC … 11	Hz

General data

T_A	Ambient operating temperature	−40 … +85	°C
$T_{A\,st}$	Ambient storage temperature	−45 … +95	°C
m	Mass	0.75	kg
	Standards	EN 50155: 1995 EN 50121-3-2: 2016	

Features

- Closed loop (compensated) current transducer
- Insulating plastic case recognized according to UL 94-V0.

Special features

- I_{PRM} = 0 ... ±1 A
- T_A = −40 … +85 °C.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized delay time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

Application

- Railway security systems.

Application Domain

- Railway (fixed installations and onboard).

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Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	6	kV
d_{Cp}	Creepage distance	50	mm
d_{Cl}	Clearance distance	40	mm

Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.

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.

Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a build-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

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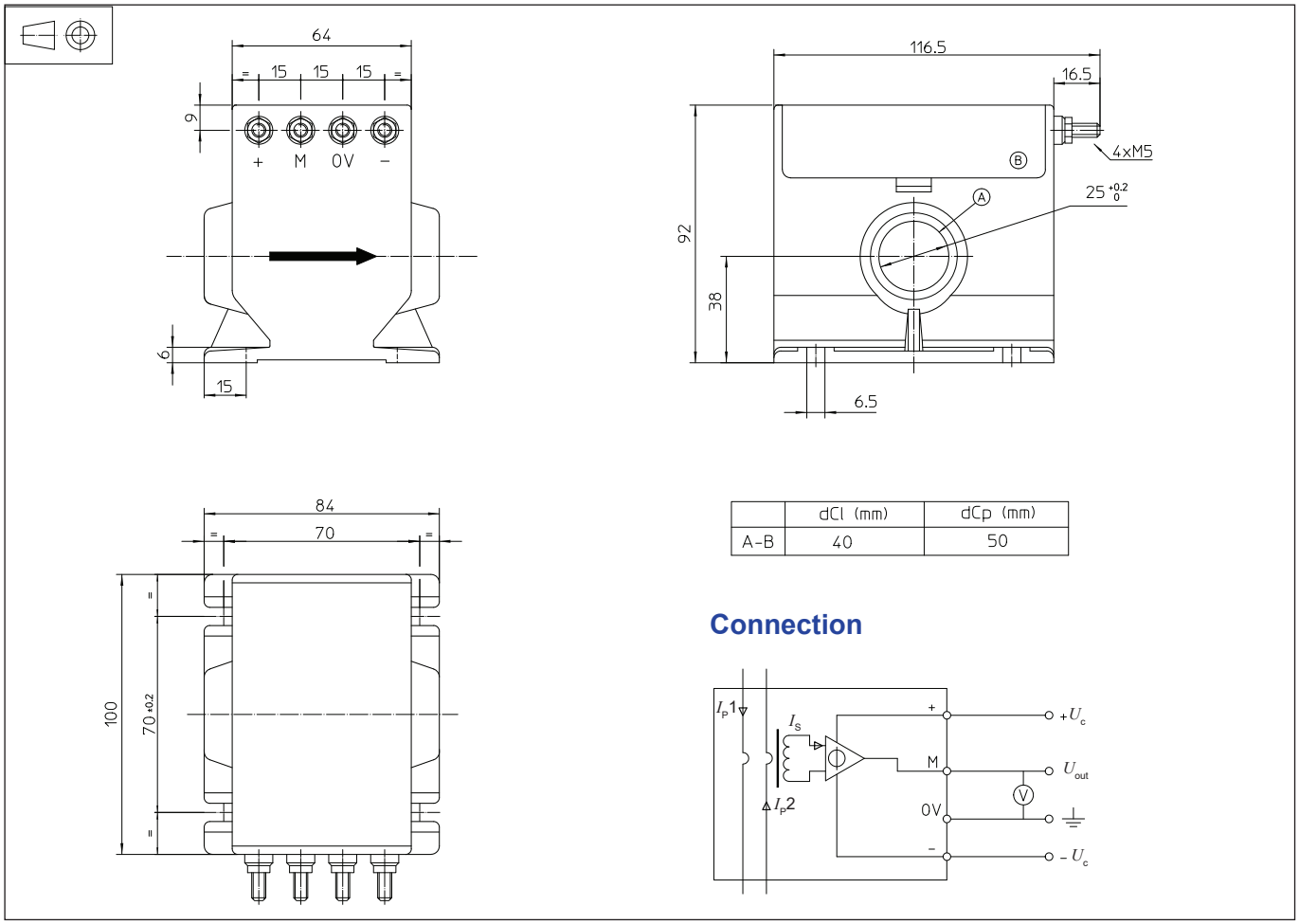
Dimensions CD 100-S/SP8 (in mm)



	dCl (mm)	dCp (mm)
A-B	40	50

Connection

Mechanical characteristics

- General tolerance ±0.5 mm
- Transducer fastening 4 slots ⌀ 6.5 mm
  or 4 M6 steel screws
  Recommended fastening torque 4.5 N·m
- Primary through-hole ⌀ 25 mm
- Connection of secondary 4 M5 threaded studs
  Recommended fastening torque 2.2 N·m

Remarks

- U_{out} is positive when I_S flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100 °C.
- The 2 primary conductors should be positioned so that their centers are separated by 20 mm maximum, to insure the indicated accuracy.
- When the residual current is high (> 2 A), the magnetic measuring cores are saturated and the output signal is maintained at ”+” or “ –” by a memory. The sign corresponds normally to the direction of the residual current, except upon rapid current inversion.
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: https://www.lem.com/en/file/3137/download/.

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