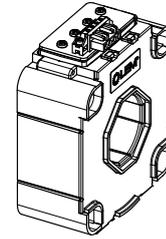


Current Transducer LTC 1000-S/SP28

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



$$I_{PN} = 1000 \text{ A}$$



Electrical data

I_{PN}	Primary nominal RMS current	1000	A
I_{PM}	Primary current, measuring range @ $\pm 24 \text{ V}$	0 ... ± 2400 ¹⁾	A
\hat{I}_{Pmax}	Primary withstand peak current (maximum)	60 / 250	kA/ μs
R_M	Measuring resistance with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{max}$	R_{Mmin} 0 R_{Mmax} 15 Ω
		@ $\pm 1200 \text{ A}_{max}$	0 7 Ω
	with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ A}_{max}$	0 50 Ω
		@ $\pm 2000 \text{ A}_{max}$	0 7 Ω
I_{SN}	Secondary nominal RMS current	200	mA
N_P/N_S	Turns ratio	1 : 5000	
U_C	Supply voltage ($\pm 5 \%$)	± 15 ... 24	V
I_C	Current consumption	$< 32 (@ \pm 24 \text{ V}) + I_S$	mA

Accuracy - Dynamic performance data

ϵ_{tot}	Total error @ $I_{PN}, T_A = 25 \text{ }^\circ\text{C}$	± 0.4	%
		@ $I_{PN}, T_A = -40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$	± 1
ϵ_L	Linearity error	< 0.1	%
		Max	
I_O	Offset current @ $I_P = 0, T_A = 25 \text{ }^\circ\text{C}$	± 0.5	mA
I_{OT}	Temperature variation of I_O	$-40 \text{ }^\circ\text{C} \dots +85 \text{ }^\circ\text{C}$ ± 1	mA
t_{D90}	Delay time to 90 % of the final output value for I_{PN} step ²⁾ < 1		μs
BW	Frequency bandwidth (-1 dB)	DC ... 100	kHz

General data

T_A	Ambient operating temperature	$-40 \dots +85$	$^\circ\text{C}$
T_{Ast}	Ambient storage temperature	$-45 \dots +90$	$^\circ\text{C}$
R_S	Resistance of secondary winding @ $T_A = 85 \text{ }^\circ\text{C}$	44	Ω
m	Mass	785	g
	Standards	EN 50155: 2017 ³⁾ EN 50121-3-2: 2006	

Notes: ¹⁾ For a $di/dt = 5 \text{ A}/\mu\text{s}$
²⁾ For a $di/dt = 100 \text{ A}/\mu\text{s}$
³⁾ Additional information available on request.

Features

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

Special features

- $\hat{I}_{Pmax} = 60 \text{ kA} / 250 \mu\text{s}$
- Improved short-circuit withstand strength
- Connection to secondary circuit on WAGO 722-234/031-000 connector.

Advantages

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

Applications

- Single or three phase inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Railway (fixed installations and onboard).

Current Transducer LTC 1000-S/SP28

Insulation coordination			
U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	13.4 ¹⁾	kV
		1.5 ²⁾	kV
U_e	Partial discharge extinction RMS voltage @ 10 pC	≥ 4.1 ³⁾	kV
		Min	
d_{cp}	Creepage distance ⁴⁾	64.2	mm
d_{ci}	Clearance ⁴⁾	45.9	mm
CTI	Comparative tracking index (group I)	600	

- Notes: ¹⁾ Between primary and secondary + shield
²⁾ Between secondary and shield
³⁾ Test carried out with a busbar \varnothing 40 mm centred in the through-hole
⁴⁾ Distance between "A" and "B", see outline drawing.

Safety

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



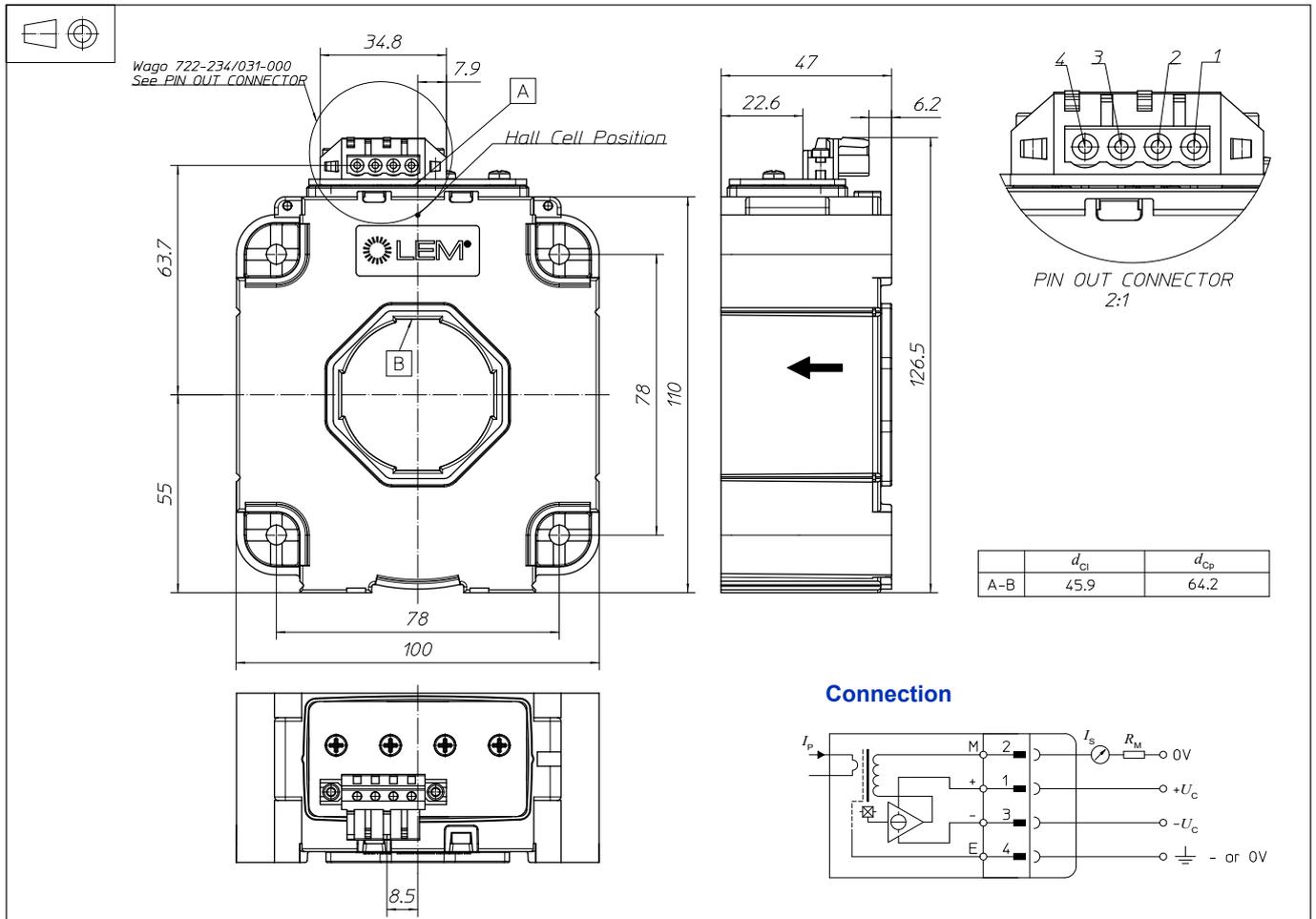
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. 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.

Dimensions LTC 1000-S/SP28 (in mm)



Mechanical characteristics

- General tolerance ± 1 mm
- Transducer fastening
4 holes $\varnothing 5.5$ mm
4 M5 screws
Recommended fastening torque 3.4 N·m
- Primary through-hole $\varnothing 42$ mm
- Connection of secondary WAGO 722-234/031-000

Remarks

- I_s is positive when I_p flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100 °C.
- Dynamic performances (di/dr and delay time) are best with a single bar completely filling the primary hole.