

Current Transducer LF 2005-S/SP28

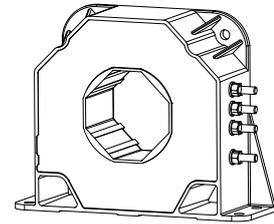
For the electronic measurement of currents: DC, AC, pulsed..., with galvanic isolation between the primary circuit and the secondary circuit.



16150



$I_{PN} = 2000 \text{ A}$



Electrical data

I_{PN}	Primary nominal current rms	2000	A					
I_{PM}	Primary current, measuring range @ $\pm 24 \text{ V}$	0 .. ± 3500	A					
R_M	Measuring resistance @	$T_A = 70^\circ\text{C}$	$T_A = 85^\circ\text{C}$					
				$R_{M \text{ min}}$	$R_{M \text{ max}}$	$R_{M \text{ min}}$	$R_{M \text{ max}}$	
		with $\pm 15 \text{ V} (\pm 5 \%)$	@ $\pm 2000 \text{ A}_{\text{max}}$	0	9	0	7.5	Ω
			@ $\pm 2200 \text{ A}_{\text{max}}$	0	6	0	4.5	Ω
		with $\pm 24 \text{ V} (\pm 5 \%)$	@ $\pm 2000 \text{ A}_{\text{max}}$	5	30	5	28.5	Ω
	@ $\pm 3000 \text{ A}_{\text{max}}$	5	12	5	10.5	Ω		
	with $\pm 24 \text{ V} (0 \%)$	@ $\pm 3500 \text{ A}_{\text{max}}$	5	8	5	6	Ω	
I_{SN}	Secondary nominal current rms	400	mA					
K_N	Conversion ratio	1 : 5000						
V_C	Supply voltage ($\pm 5 \%$)	$\pm 15 \dots 24$	V					
I_C	Current consumption	33 (@ $\pm 24 \text{ V}$) + I_S	mA					

Accuracy - Dynamic performance data

X	Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.5	%
ε_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Max
I_{OM}	Magnetic offset current @ $I_p = 0$ and specified R_M , after an overload of $3 \times I_{PN}$		± 0.4
I_{OT}	Temperature variation of I_O	- $25^\circ\text{C} \dots + 70^\circ\text{C}$	± 0.25
		- $40^\circ\text{C} \dots + 85^\circ\text{C}$	± 0.4
t_r	Response time ¹⁾ to 90 % of I_{PN} step	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
BW	Frequency bandwidth (- 1 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 40 .. + 85	$^\circ\text{C}$
R_S	Secondary coil resistance	@ $T_A = 70^\circ\text{C}$	24
		@ $T_A = 85^\circ\text{C}$	26
m	Mass	1.5	kg
	Standards	EN 50155: 2001	

Note: ¹⁾ With a di/dt of 100 A/ μs .

Features

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

Special features

- $V_d = 12 \text{ kV}$
- $T_A = - 40^\circ\text{C} \dots + 85^\circ\text{C}$
- Shield between primary and secondary
- Connection to secondary on M5 threaded studs
- Hall sensor on the bottom
- Barcode label.

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 inverters
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Traction.

Current Transducer LF 2005-S/SP28

Isolation characteristics

V_d	Rms voltage for AC insulation test, 50 Hz, 1 min	12 ¹⁾	kV
		1 ²⁾	kV
V_e	Partial discharge extinction voltage rms @ 10 pC	≥ 4.8 ³⁾	kV
dCp	Creepage distance	Min	mm
dCl	Clearance	52	mm
CTI	Comparative Tracking Index (group I)	600	

Notes: ¹⁾ Between primary and secondary + shield
²⁾ Between shield and secondary
³⁾ Test carried out with a non insulated primary bar, diameter 40 mm, centered in the through-hole.

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.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

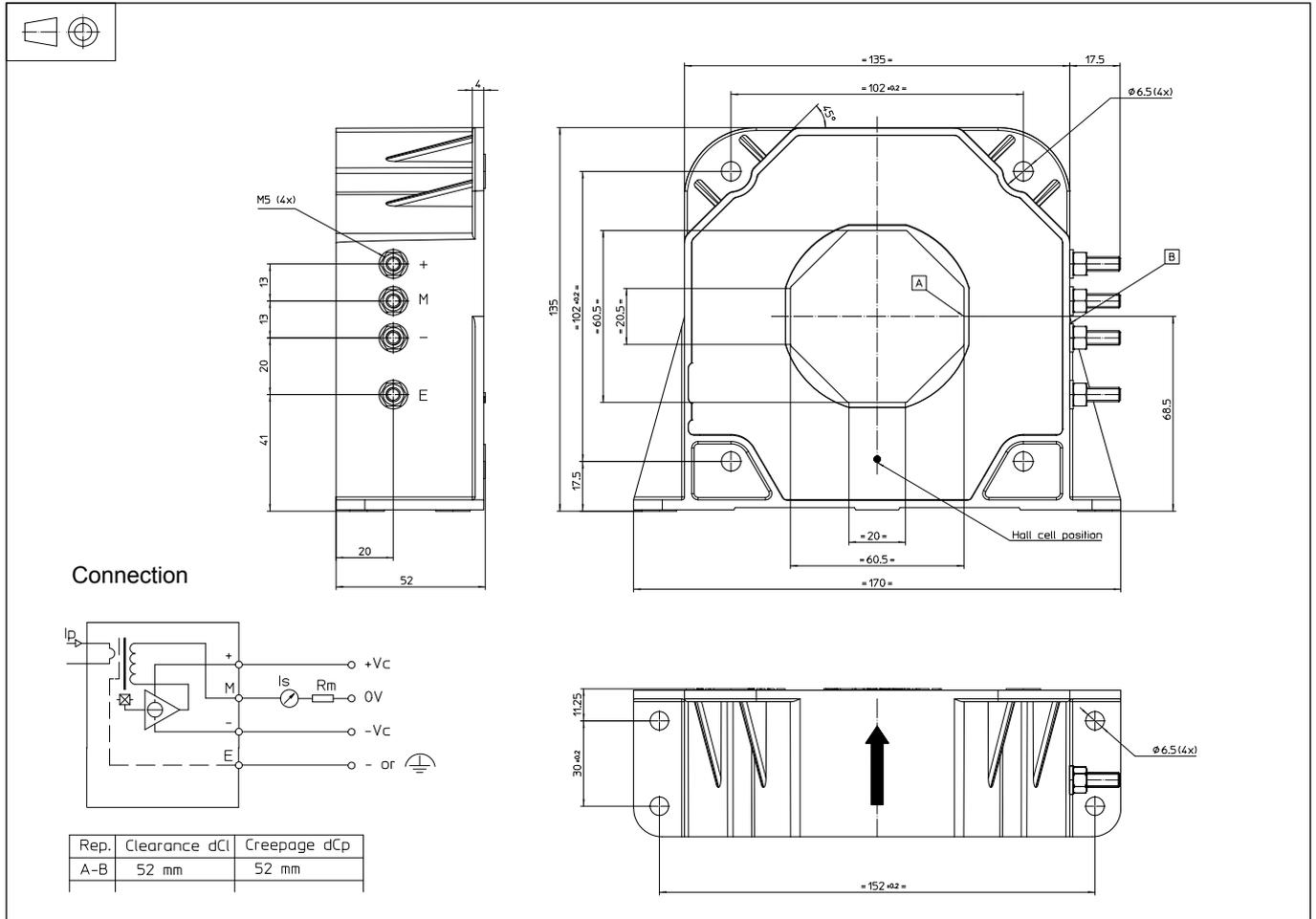
Ignoring this warning can lead to injury and/or cause serious damage.

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 LF 2005-S/SP28 (in mm)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
Flat or vertical position 4 holes $\text{Ø } 6.5$ mm
Recommended fastening torque 5.5 Nm
- Primary through-hole
Or 60.5×20.5 mm
Or $\text{Ø } 56$ mm
- Connection of secondary
Recommended fastening torque 2.2 Nm

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/dt and response time) are best with a single bar completely filling the primary hole.