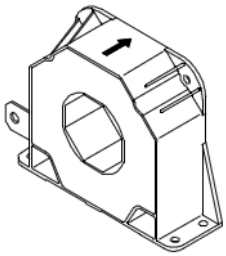
Current Transducer LF 2005-S/SP13

I_{PN} = 2000 A

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

16144



Electrical data

I_{PN}	Primary nominal current rms			2000	A
I_{PM}	Primary current, measuring range			0 .. ± 3500	A
$\hat{I}_P$	Overload capability @ 10 ms			20	kA
R_M	Measuring resistance			$R_{M\,min}$ $R_{M\,max}$	
	with ± 15 V	@ ± 2000 A_{max}		0 4	Ω
	with ± 24 V	@ ± 2000 A_{max}		0 23	Ω
		@ ± 3100 A_{max}		0 6	Ω
		@ ± 3500 A_{max}		0 2	Ω
I_{SN}	Secondary nominal current rms			400	mA
K_N	Conversion ratio			1 : 5000	
V_C	Supply voltage [1]			± 15 .. 24	V
I_C	Current consumption (± 1)			33 (@ ± 24 V) + I_S	mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C			± 0.3	%
ε_L	Linearity error			< 0.1	%
				Typ Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.5	mA
I_{OM}	Magnetic offset current @ I_p = 0 and specified R_M, after an overload of 3 x I_{PN}			± 0.2	mA
I_{OT}	Temperature variation of I_O	- 25°C .. + 80°C	± 0.2	± 0.4	mA
		- 40°C .. - 25°C		± 1.5	mA
t_r	Response time [2] to 90 % of I_{PN} step			< 1	µs
di/dt	di/dt accurately followed			> 100	A/µs
BW	Frequency bandwidth (- 1 dB)			DC .. 150	kHz

General data

T_A	Ambient operating temperature		- 40 .. + 80	°C
T_S	Ambient storage temperature		- 50 .. + 85	°C
R_S	Secondary coil resistance @	T_A = 70°C	24.8	Ω
		T_A = 80°C	25.6	Ω
m	Mass		1.5	kg
	Standard		EN 50155: 2001	

Features

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

Special features

- V_C = ± 15 .. 24 V
- V_d = 10 kV
- T_A = - 40°C .. + 80°C
- Internal shield connected to "- V_C"
- Connection to secondary circuit on LEMO EEJ.1B.305.CYC.

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.

Notes: [1] ± 15 V (- 5 %) .. ± 24 V (+ 20 %)
[2] With a di/dt of 100 A/µs.

Current Transducer LF 2005-S/SP13

Isolation characteristics

V_d	Rms voltage for AC insulation test, 50 Hz, 1 min	10 [1)] 100 [2)]	kV V
V_e	Partial discharge extinction voltage rms @ 10 pC	> 4.8 Min	kV
dCp	Creepage distance	43.2	mm
dCl	Clearance	42.2	mm
CTI	Comparative Tracking Index (group I)	600	

Notes: [1)] Between primary and secondary + shield
[2)] Between secondary and shield.

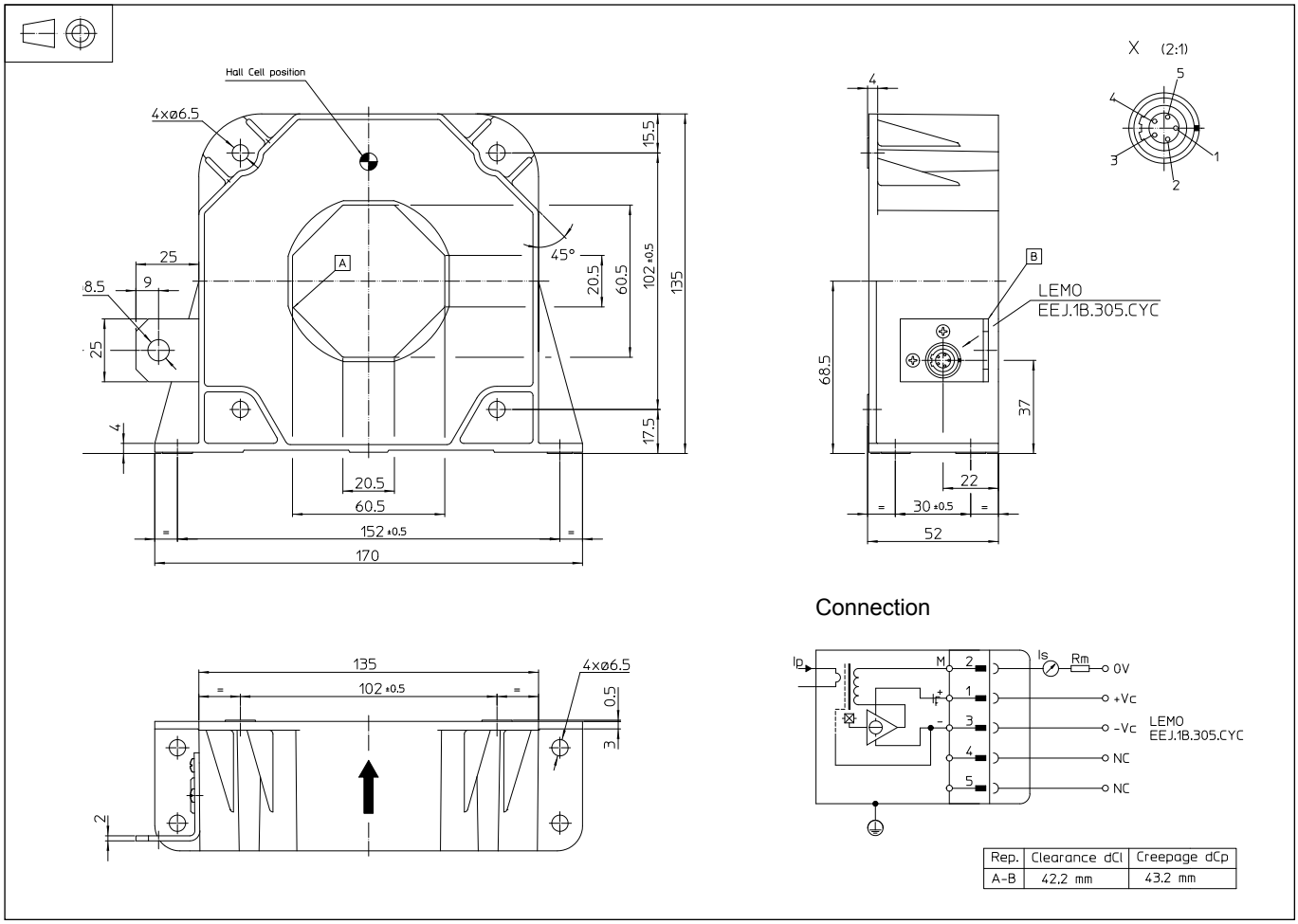
Safety

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/SP13 (in mm)



Rep.	Clearance dCl	Creepage dCp
A-B	42.2 mm	43.2 mm

Mechanical characteristics

- General tolerance ± 1 mm
- Transducer fastening
  Vertical or flat position 4 holes Ø 6.5 mm
  4 M6 steel screws
  Recommended fastening torque 4.2 Nm
- Primary through-hole 60.5 x 20.5 mm
  Or Ø max 57 mm
- Connection of secondary LEMO EEJ.1B.305.CYC
- Connection to the ground hole Ø 8.5 mm

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.