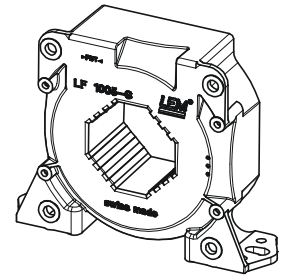


Current Transducer LF 1005-S/SP32

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

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



Electrical data

I_{PN}	Primary nominal current rms	1000	A			
I_{PM}	Primary current, measuring range	0 .. ± 1200	A			
R_M	Measuring resistance	$R_{M \text{ mini}}$	$R_{M \text{ maxi}}$			
		with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{\text{maxi}}$	0	22	Ω
			@ $\pm 1200 \text{ A}_{\text{maxi}}$	0	11	Ω
I_{SN}	Secondary nominal current rms	200	mA			
K_N	Conversion ratio	1 : 5000				
V_C	Supply voltage ($\pm 5 \%$)	± 15	V			
I_C	Current consumption	$19 + I_S$	mA			

Features

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

Special features

- $V_C = \pm 15 \text{ V}$
- Connection to secondary circuit on SUB-D 9 P female.

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.4	%	
\mathcal{E}_L	Linearity error	< 0.1	%	
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Maxi	
			± 0.4	mA
I_{OT}	Temperature variation of I_O	$-10^\circ\text{C} \dots +70^\circ\text{C}$	± 0.4	mA
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 .. 150	kHz	

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.

General data

T_A	Ambient operating temperature	-10 .. +70	$^\circ\text{C}$
T_S	Ambient storage temperature	-25 .. +85	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	46	Ω
m	Mass	500	g
	Standards	EN 50178: 1997	

Applications

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

Application domain

- Industrial.

Note: ¹⁾ With a di/dt of 100 A/ μs .

Current Transducer LF 1005-S/SP32

Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	3 ¹⁾ 6 ²⁾	kV
dCp	Creepage distance	Mini 11.5	mm
dCl	Clearance distance	11.5	mm
CTI	Comparative Tracking Index (Group IIIa)	175	

Application examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
dCp, dCl	Rated isolation voltage	Nominal voltage
Single isolation	1000 V	1000 V
Reinforced isolation	500 V	500 V

Notes: ¹⁾ With a primary bar which fills the through-hole.

²⁾ With a rectangular bar (30 x 5 mm) placed horizontally in the through-hole, not in contact with the housing.

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).

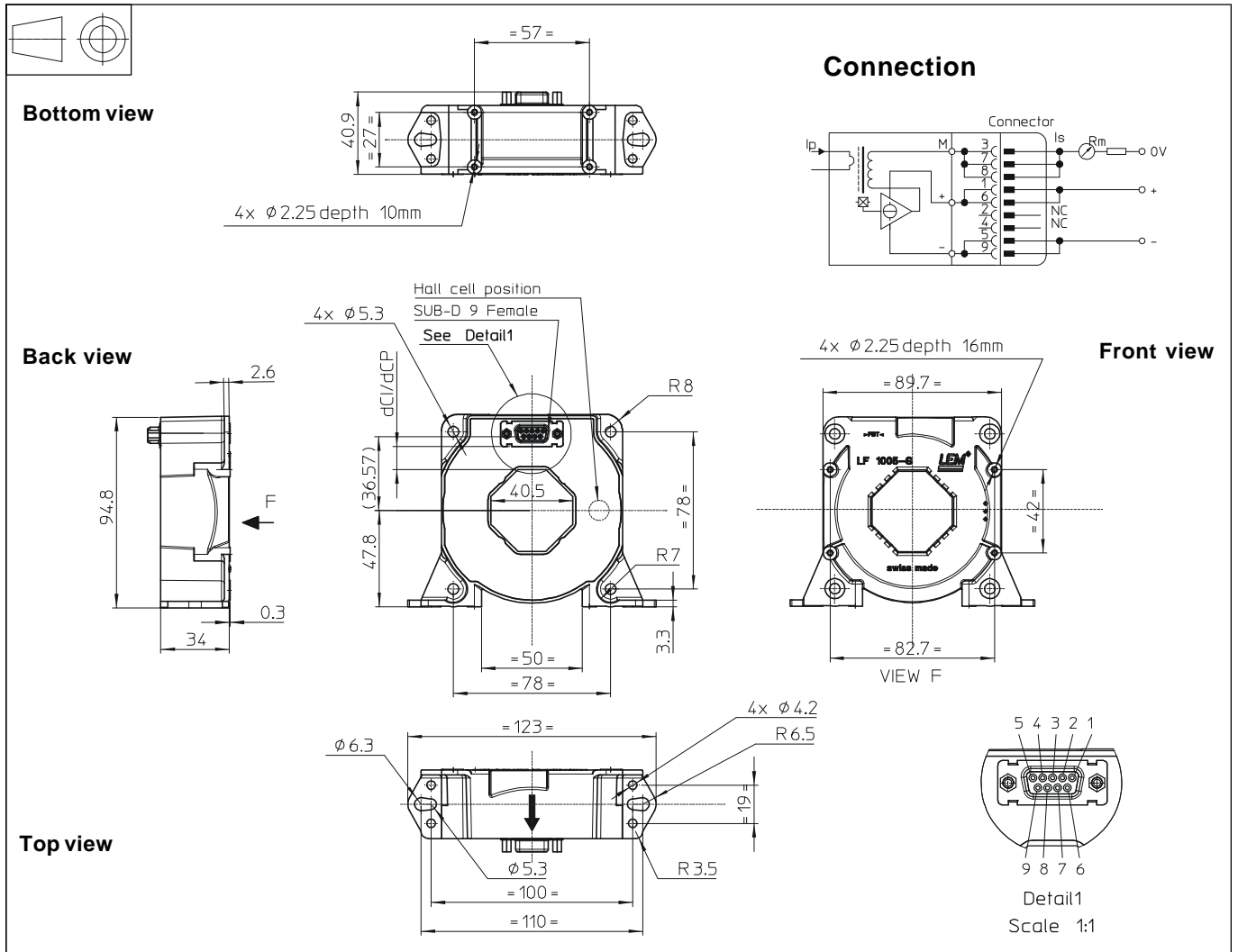
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-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 1005-S/SP32 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- | | | | |
|------------------------------|---|------------------------------|---|
| • General tolerance | ± 0.5 mm | • Transducer fastening | |
| • Transducer fastening | | Horizontal position: | 4 holes ϕ 5.3 mm
4 M5 steel screws |
| Vertical position: | 2 holes ϕ 6.3 mm
2 M6 steel screws | Recommended fastening torque | 4 Nm or 2.52 Lb. - Ft. |
| Recommended fastening torque | 5 Nm or 3.69 Lb. - Ft. | or | 4 holes ϕ 2.25 mm
depth 16 mm
4 x PT KA30 screws
long 16 mm |
| or | 2 holes ϕ 5.3 mm
2 M5 steel screws | Recommended fastening torque | 1 Nm or 0.63 Lb. - Ft. |
| Recommended fastening torque | 4 Nm or 2.52 Lb. - Ft. | | |
| or | 4 holes ϕ 4.2 mm
4 M4 steel screws | | |
| Recommended fastening torque | 3.2 Nm or 2.02 Lb. - Ft. | | |
| or | 4 holes ϕ 2.25 mm
depth 10mm
4 x PT KA30 screws
long 10mm | | |
| Recommended fastening torque | 0.9 Nm or 0.57 Lb. - Ft. | | |

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.