

Current Transducer LF 1005-S/SP25

$I_{PN} = 1188 \text{ A}$

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).



16123

Electrical data

I_{PN}	Primary nominal r.m.s. current	1188	A		
I_P	Primary current, measuring range	0 .. ± 3400	A		
R_M	Measuring resistance with $\pm 24 \text{ V}$	$R_{M \min}$	$R_{M \max}$		
				@ $\pm 1188 \text{ A}_{\max}$	0
		@ $\pm 1412 \text{ A}_{\max}$	0	30	Ω
		@ $\pm 3400 \text{ A}_{\max}$	1	1	Ω
I_{SN}	Secondary nominal r.m.s. current	396	mA		
K_N	Conversion ratio	1 : 3000			
V_C	Supply voltage ($\pm 5 \%$)	± 24	V		
I_C	Current consumption	$28 + I_S$	mA		

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.4	%
e_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	± 0.4 mA
		Max	± 0.7 mA
I_{OT}	Thermal drift of I_O	± 0.4	mA
t_r	Response time ¹⁾ @ 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
f	Frequency bandwidth (-1 dB)	DC .. 150	kHz

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 @ $T_A = 70^\circ\text{C}$	17	Ω
m	Mass	555	g
	Standards	EN 50178 : 1997	

Features

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

Special features

- $I_{PN} = 1188 \text{ A}$
- $I_P = 0 .. \pm 3400 \text{ A}$
- $I_{SN} = 396 \text{ mA}$
- $K_N = 1 : 3000$
- $V_C = \pm 24 (\pm 5 \%) \text{ V}$
- $T_A = - 10^\circ\text{C} .. + 70^\circ\text{C}$
- Connection to secondary circuit on JST B 3P-VH 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

- 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 .

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Isolation characteristics

\hat{V}_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	14	kV
		Min	
dCp	Creepage distance	17.4	mm
dCI	Clearance distance	16.6	mm
CTI	Comparative Tracking Index (Group IIIa)	175	

Application examples

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

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

	EN 50178	CEI 61010-1
dCp, dCI, \hat{V}_w	Rated isolation voltage	Nominal voltage
Single isolation	1600 V	Cat III 1600 V rms
Reinforced isolation	800 V	Cat III 800 V rms

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).

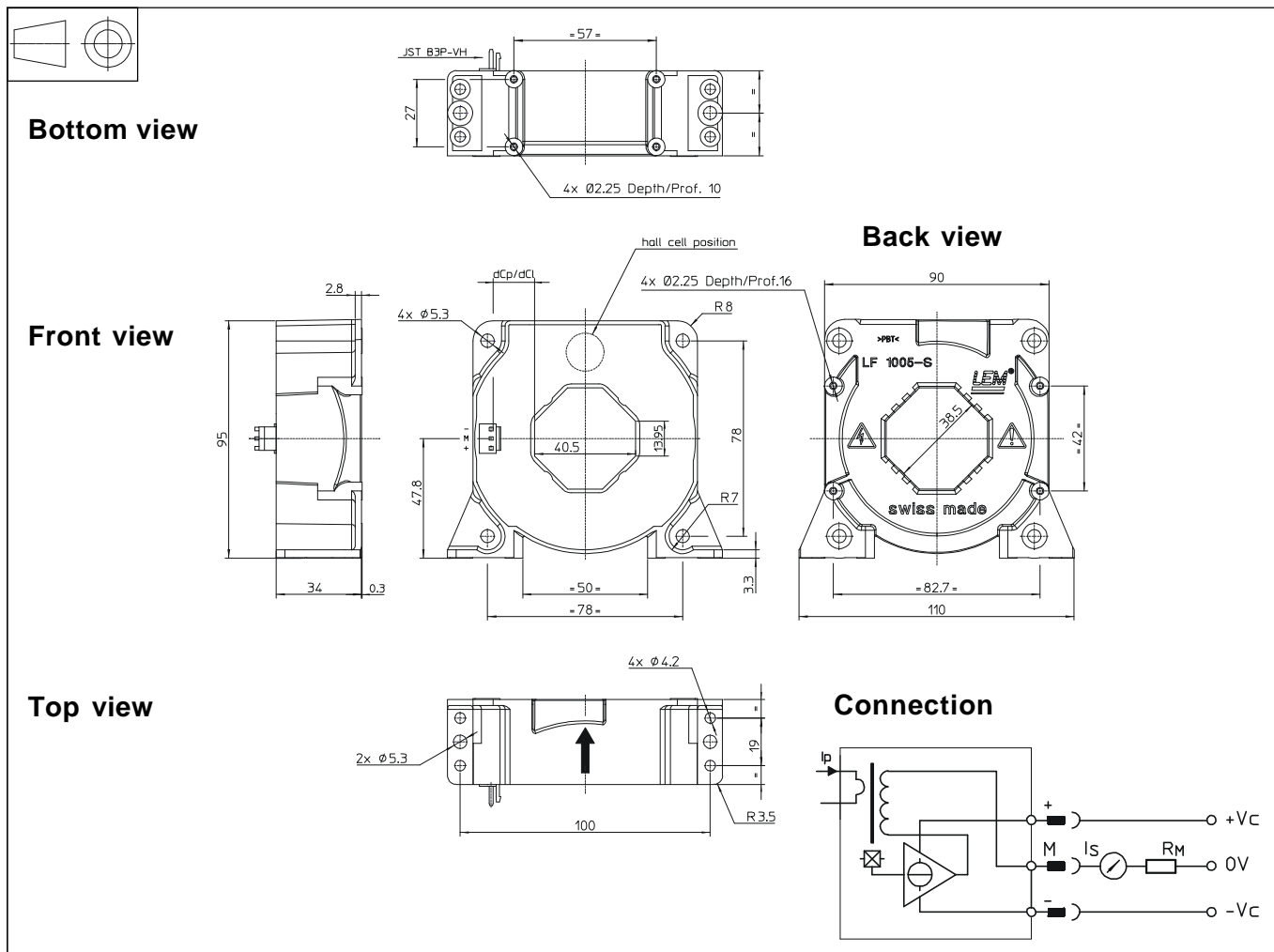
Ignoring this warning can lead to injury and/or cause serious damage.

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/SP25 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - Vertical position
 - 2 holes $\varnothing 5.3$ mm
 - 2 M5 steel screws
 - Recommended fastening torque 4 Nm or 2.52 Lb. - Ft.
 - or
 - 4 holes $\varnothing 4.2$ mm
 - 4 M4 steel screws
 - Recommended fastening torque 3.2 Nm or 2.02 Lb. - Ft.
 - or
 - 4 holes $\varnothing 2.25$ mm depth 10 mm
 - 4 x PT KA30 screws long 10 mm
 - Recommended fastening torque 0.9 Nm or 0.57 Lb. - Ft.
 - Horizontal position
 - 4 holes $\varnothing 5.3$ mm
 - 4 M5 steel screws
 - Recommended fastening torque 4 Nm or 2.52 Lb. - Ft.
 - or
 - 4 holes $\varnothing 2.25$ mm depth 16 mm
 - 4 x PT KA30 screws long 16 mm
 - Recommended fastening torque 1 Nm or 0.63 Lb. - Ft.
- Primary through-hole 40.5 x 40.5 mm
- Connection of secondary JST B 3P-VH

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.