

Current Transducer LF 1005-S/SP16

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

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 r.m.s. current	1000	A
I_p	Primary current, measuring range	0 .. ± 2100	A
R_M	Measuring resistance with $\pm 24 \text{ V}$	$R_{M \min}$	$R_{M \max}$
		@ $\pm 1000 \text{ A}_{\max}$	0 60.5 Ω
		@ $\pm 2100 \text{ A}_{\max}$	0 4 Ω
I_{SN}	Secondary nominal r.m.s. current	200	m A
K_N	Conversion ratio	1 : 5000	
V_C	Supply voltage ($\pm 5 \%$)	± 24	V
I_C	Current consumption	$20 + I_s$	m A
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	k V

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.4	%
e_L	Linearity	< 0.1	%
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Max
I_{OT}	Thermal drift of I_O - $10^\circ\text{C} \dots +70^\circ\text{C}$	± 0.3	± 0.4 m A
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	k Hz

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 @ $T_A = 70^\circ\text{C}$	48	Ω
m	Mass	500	g
	Standards ²⁾	EN 50178	

Features

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

Special features

- $I_p = 0 \dots \pm 2100 \text{ A}$
- $V_C = \pm 24 (\pm 5\%) \text{ V}$
- $T_A = -10^\circ\text{C} \dots +70^\circ\text{C}$
- 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

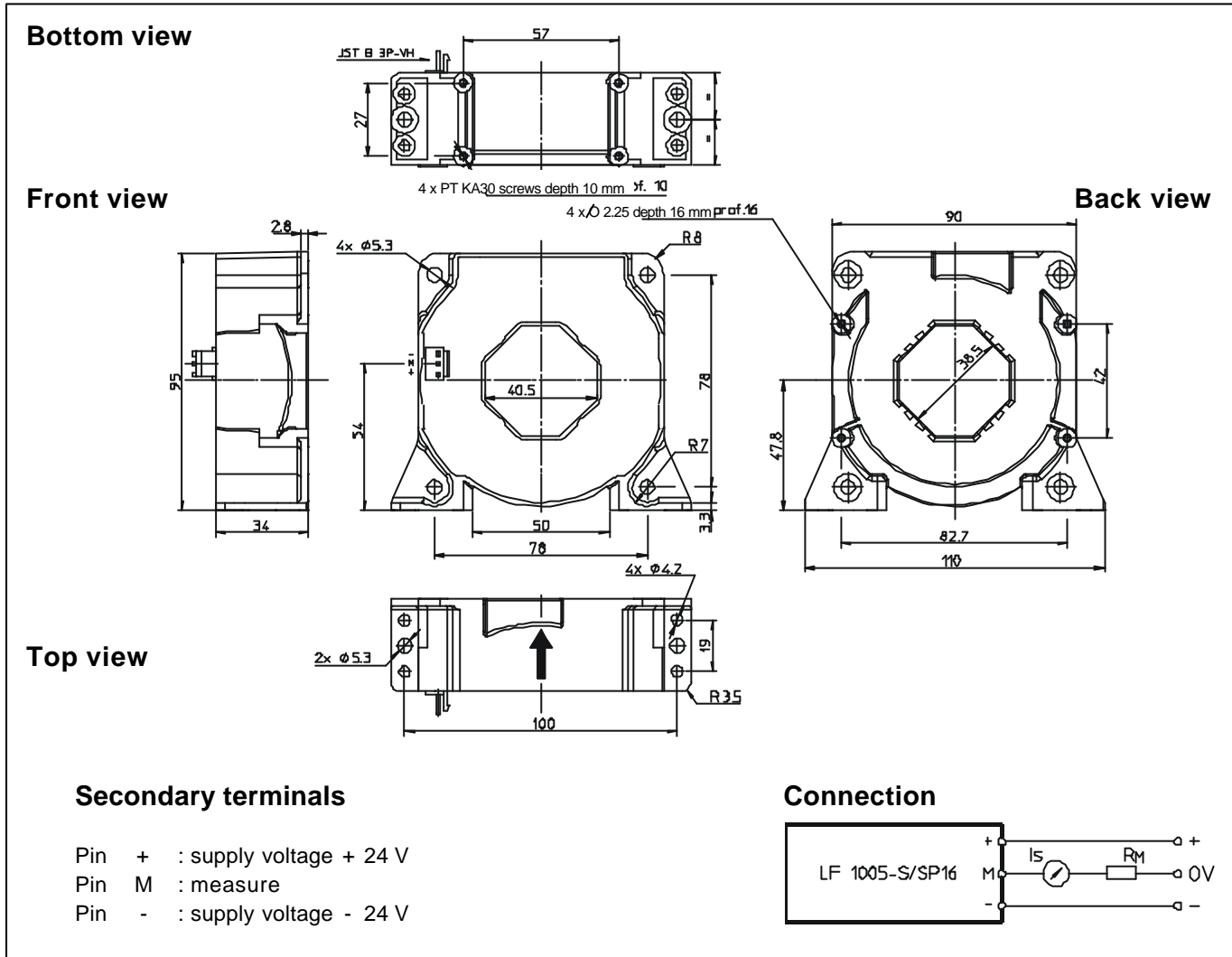
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

Notes : ¹⁾ With a di/dt of 100 A/ μs

²⁾ A list of corresponding tests is available.

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Dimensions LF 1005-S/SP16 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - Vertical position
 - 2 holes Ø 5.3 mm
 - 2 M5 steel screws
 - Fastening torque, max. or
 - 4 Nm or 2.92 Lb. - Ft.
 - 4 holes Ø 4.2 mm
 - 4 M4 steel screws
 - Fastening torque, max. or
 - 3.2 Nm or 2.34 Lb. - Ft.
 - 4 holes Ø 2.25 mm depth 10 mm
 - 4 x PT KA30 screws long 10 mm
 - Fastening torque, max.
 - 0.9 Nm or 0.66 Lb. - Ft.
- Transducer fastening
 - Horizontal position
 - 4 holes Ø 5.3 mm
 - 4 M5 steel screws
 - Fastening torque, max. or
 - 4 Nm or 2.92 Lb. - Ft.
 - 4 holes Ø 2.25 mm depth 16 mm
 - 4 x PT KA30 screws long 16 mm
 - Fastening torque, max.
 - 1 Nm or 0.73 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.