Current Transducer LF 1005-S/SP14

I_{PN} = 1000 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).

16199

Electrical data

I_{PN}	Primary nominal r.m.s. current		1000		A
I_P	Primary current, measuring range		0 .. ± 1500		A
R_M	Measuring resistance		$R_{M\ min}$	$R_{M\ max}$	
	with ± 24 V	@ ± 1000 A_{max}	3	50	Ω
		@ ± 1500 A_{max}	3	15	Ω
I_{SN}	Secondary nominal r.m.s. current		200		mA
K_N	Conversion ratio		1 : 5000		
V_C	Supply voltage (± 5 %)		± 24		V
I_C	Current consumption		28 + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		6 [1) 2)]		kV
			1 [3)]		kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25 °C		± 0.5		%
ε_L	Linearity		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25 °C			± 0.4	mA
I_{OT}	Thermal drift of I_O	- 40 °C .. + 85 °C	± 0.3	± 0.8	mA
t_r	Response time [4)] @ 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	- 40 .. + 85		°C
T_S	Ambient storage temperature	- 45 .. + 100		°C
R_S	Secondary coil resistance @ T_A = 85 °C	55		Ω
m	Mass	500		g
	Standards	EN 50155		

Notes : 1) With a primary bar which fills the through-hole
2) Between primary and secondary + shield
3) Between secondary and shield
4) With a di/dt of 100 A/µs.

Features

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

Special features

- V_C = ± 24 (± 5 %) V
- V_d = 6 kV
- T_A = - 40 °C .. +85 °C
- Shield between primary and secondary
- Connection to secondary circuit on M4 threaded studs
- Railway equipment.

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

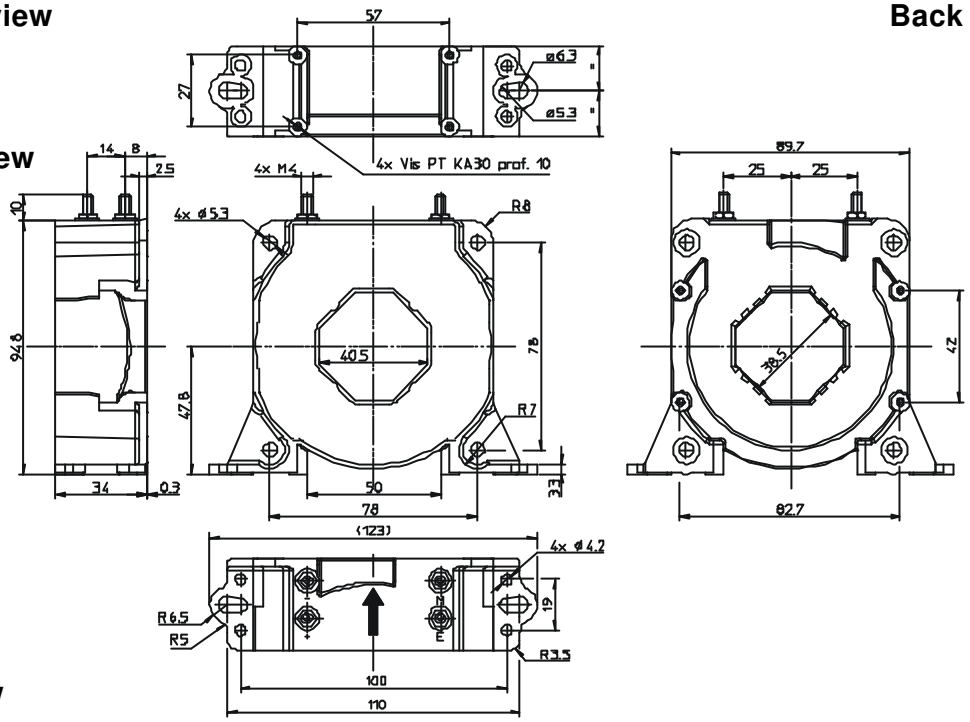
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

Dimensions LF 1005-S/SP14 (in mm. 1 mm = 0.0394 inch)

Bottom view

Back view

Right view

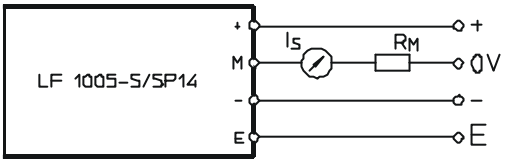


Top view

Secondary terminals

Terminal	+	: supply voltage + 24 V
Terminal	M	: measure
Terminal	-	: supply voltage - 24 V
Terminal	E	: Shield

Connection



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
  Vertical position 2 holes ∅ 5.3 mm
  2 M5 steel screws
  Fastening torque, max. 4 Nm or 2.92 Lb. - Ft.
  or 2 holes ∅ 6.3 mm
  2 M6 steel screws
  Fastening torque, max. 5 Nm or 3.69 Lb. - Ft.
  or 4 holes ∅ 4.2 mm
  4 M4 steel screws
  Fastening torque, max. 3.2 Nm or 2.34 Lb. - Ft.
  or 4 holes ∅ 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 ∅ 5.3 mm
  4 M5 steel screws
  Fastening torque, max. 4 Nm or 2.92 Lb. - Ft.
  or 4 holes ∅ 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 M4 threaded studs
  Fastening torque, max. 1.2 Nm or .88 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.