Current Transducer LF 1005-S/SP13

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).

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		$R_{M\ min}$	$R_{M\ max}$	
	avec ± 15 V	@ ± 1000 A_{max}	0	24	Ω
		@ ± 1500 A_{max}	0	7	Ω
I_{SN}	Secondary nominal r.m.s. current		250		mA
K_N	Conversion ratio		1 : 4000		
V_C	Supply voltage (± 5 %)		± 15		V
I_C	Current consumption		20 + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		6		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			± 0.5	mA
I_{OT}	Thermal drift of I_O	- 10°C .. + 70°C	± 0.2	± 0.5	mA
t_r	Response time [1] @ 90 % of I_{PN}		< 1		µs
di/dt	di/dt accurately followed		> 100		A/µs
	Frequency bandwidth (- 1 dB)		DC .. 150		kHz

General data

T_A	Ambient operating temperature		- 10 .. + 70	°C
T_S	Ambient storage temperature		- 25 .. + 100	°C
R_S	Secondary coil resistance @ T_A = 70°C		28	Ω
m	Mass		570	g
	Standards [2]		EN 50178	

Features

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

Particularités

- K_N = 1 : 4000
- V_C = ± 15 (± 5 %) V
- V_d = 6 kV
- Connection to secondary circuit on cable and Faston 6.3 x 0.8 mm.

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.

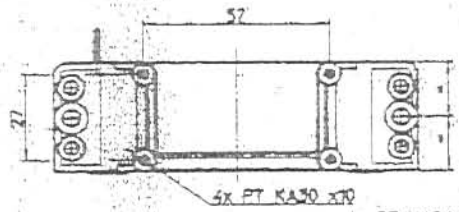
Applications

- 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

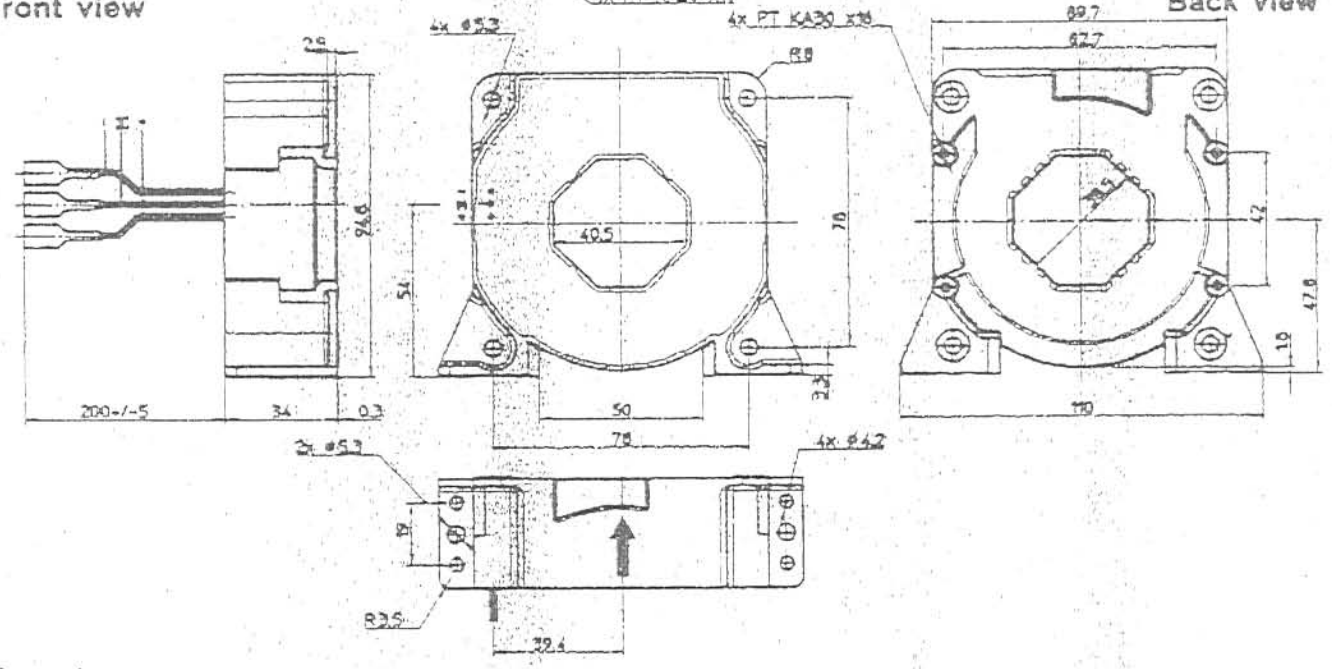
Dimensions LF 1005-S/SP13 (in mm. 1 mm = 0.0394 inch)

Bottom view



Front view

Back view

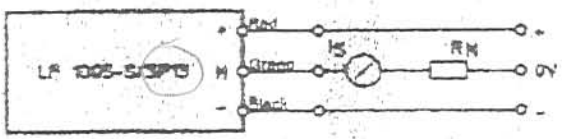


Top view

Secondary terminals

Terminal + : supply voltage + 15V
Terminal M : measure
Terminal - : supply voltage - 15V

Connection



Mechanical characteristics

• General tolerance	± 0.5 mm
• Fastening	see drawing
• Primary through-hole	40.5 x 40.5 mm
• Connection of secondary	Cable and Faston 6.3 x 0.8 mm

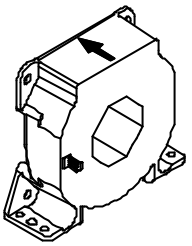
Remarks

- 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.

Current Transducer LF 1005-S

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).



Electrical data

				T_A = 70°C		T_A = 85°C	
				$R_{M\,min}$	$R_{M\,max}$	$R_{M\,min}$	$R_{M\,max}$
I_{PN}	Primary nominal r.m.s. current			1000			A
I_P	Primary current, measuring range			0 .. ± 1500			A
R_M	Measuring resistance @						
	with ± 15 V	@ ± 1000 A_{max}		0	18	0	15 Ω
		@ ± 1200 A_{max}		0	7	0	4 Ω
	with ± 24 V	@ ± 1000 A_{max}		5	60.5	10	57.5 Ω
		@ ± 1500 A_{max}		5	24	10	21 Ω
I_{SN}	Secondary nominal r.m.s. current			200			mA
K_N	Conversion ratio			1 : 5000			
V_C	Supply voltage (± 5 %)			± 15 .. 24			V
I_C	Current consumption			20 (@±24V) + I_S			mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn			3			kV

Accuracy - Dynamic performance data

				Typ	Max
X_G	Overall accuracy @ I_{PN}, T_A = 25°C				± 0.4 %
ε_L	Linearity				< 0.1 %
I_O	Offset current @ I_P = 0, T_A = 25°C				± 0.4 mA
I_{OT}	Thermal drift of I_O	- 10°C .. + 85°C		± 0.3	± 0.5 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 .. + 85	°C
T_S	Ambient storage temperature		- 25 .. + 100	°C
R_S	Secondary coil resistance @	T_A = 70°C	48	Ω
		T_A = 85°C	51	Ω
m	Mass		500	g
	Standards [2]		EN 50178	

Notes : [1] With a di/dt of 100 A/µs
[2] A list of corresponding tests is available.

Features

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

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
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- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

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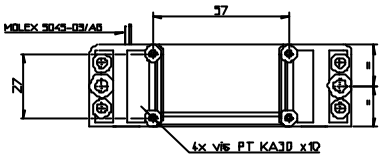
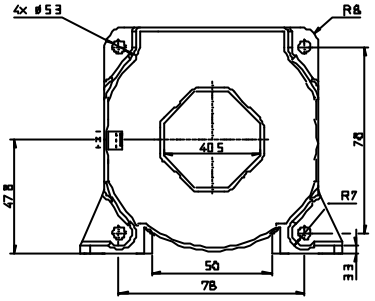
Dimensions LF 1005-S (in mm. 1 mm = 0.0394 inch)

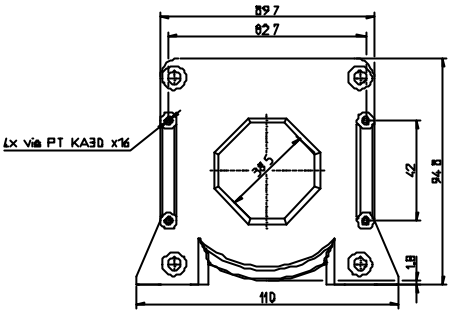
Bottom view



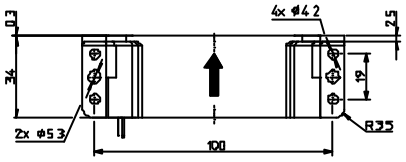
Front view



Back view



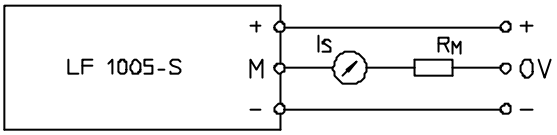
Top view



Secondary terminals

Pin + : supply voltage +15 .. 24 V
Pin M : measure
Pin - : supply voltage - 15 .. 24 V

Connection



Mechanical characteristics

• General tolerance	± 0.5 mm
• Transducer fastening	
Vertical position	2 holes ∅ 5.3 mm
	2 M5 steel screws
Fastening torque, maxi	4 Nm or 2.52 Lb. - Ft.
or	4 holes ∅ 4.2 mm
	4 M4 steel screws
Fastening torque, maxi	3.2 Nm or 2.02 Lb. - Ft.
or	4 holes ∅ 2.25 mm depth 10 mm
	4 x PT KA30 screws long 10 mm
Fastening torque, maxi	0.9 Nm or 0.57 Lb. - Ft.
• Transducer fastening	
Horizontal position	4 holes ∅ 5.3 mm
	4 M5 steel screws
Fastening torque, maxi	4 Nm or 2.52 Lb. - Ft.
or	4 holes ∅ 2.25 mm depth 16 mm
	4 x PT KA30 screws long 16 mm
Fastening torque, maxi	1 Nm or 0.63 Lb. - Ft.
• Primary through-hole	40.5 x 40.5 mm
• Connection of secondary	Molex 5045-03/AG

Remarks

- $\mathbf{I}_S$ is positive when $\mathbf{I}_P$ 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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.