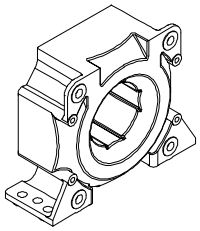
Current Transducer LF 505-S

I_{PN} = 500 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).

Preliminary



Electrical data

I_{PN}	Primary nominal r.m.s. current		500		A
I_P	Primary current, measuring range		0 .. ± 800		A
R_M	Measuring resistance		$R_{M\ min}$	$R_{M\ max}$	
	with ± 15 V	@ ± 500 A_{max}	0	60	Ω
		@ ± 800 A_{max}	0	11	Ω
	with ± 18 V	@ ± 500 A_{max}	0	92	Ω
		@ ± 800 A_{max}	0	30	Ω
	with ± 24 V	@ ± 500 A_{max}	5	149	Ω
		@ ± 800 A_{max}	5	65	Ω
I_{SN}	Secondary nominal r.m.s. current		100		mA
K_N	Conversion ratio		1 : 5000		
V_C	Supply voltage (± 5 %)		± 15 .. 24		V
I_C	Current consumption		24 (@ ± 18 V) + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		3		kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , T_A = 25°C		± 0.6		%
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	- 10°C .. + 70°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 .. 100		kHz

General data

T_A	Ambient operating temperature		- 10 .. + 70	°C
T_S	Ambient storage temperature		- 25 .. + 85	°C
R_S	Secondary coil resistance @	T_A = 70°C	70	Ω
m	Mass		230	g
	Standards [2]		EN 50155 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

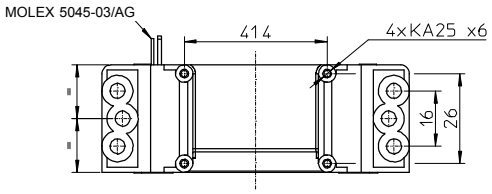
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

Applications

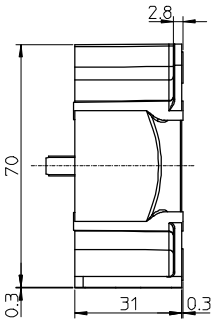
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

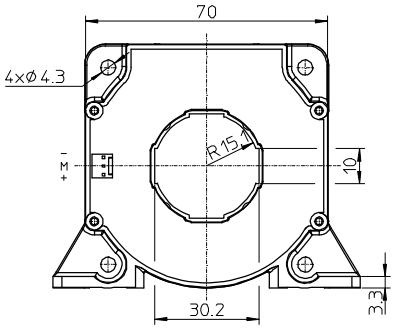
Dimensions LF 505-S (in mm. 1 mm = 0.0394 inch)

Bottom view

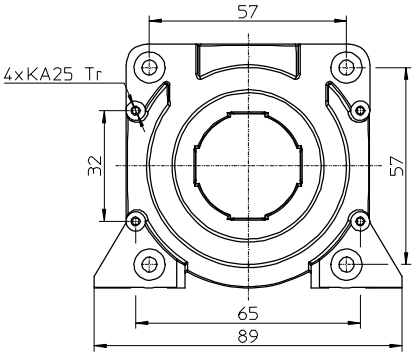


Right view

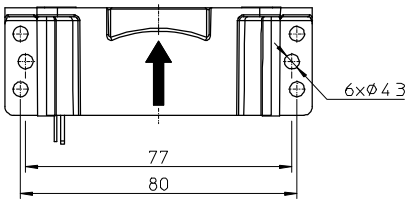




Back view



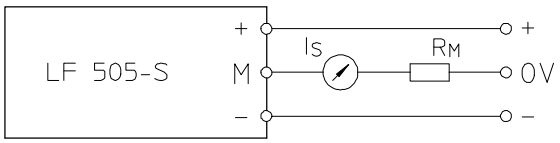
Top view



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
• Fastening	see drawing
• Primary through-hole	30.2 x 30.2 mm
• Connection of secondary	MOLEX 5045-03/AG

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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.