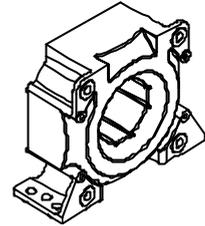


Current Transducer LF 505-S/SP25

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).



$I_{PN} = 500 \text{ A}$



Electrical data

I_{PN}	Primary nominal current rms	500	A
I_{PM}	Primary current, measuring range	0 .. ± 1200	A
R_M	Measuring resistance with $\pm 24 \text{ V}$		$R_{M \text{ mini}}$ $R_{M \text{ maxi}}$
		@ $\pm 500 \text{ A}_{\text{maxi}}$	3 133 Ω
		@ $\pm 800 \text{ A}_{\text{maxi}}$	3 55 Ω
		@ $\pm 1200 \text{ A}_{\text{maxi}}$	3 11 Ω
I_{SN}	Secondary nominal current rms	100	mA
K_N	Conversion ratio	1 : 5000	
V_C	Supply voltage (-7 / + 5 %)	± 24	V
I_C	Current consumption	$34 + I_S$	mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.6	%
ϵ_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Maxi
			± 0.5 mA
I_{OT}	Temperature variation of I_O -40°C .. +85°C	± 0.3	± 0.8 mA
t_r	Response time ¹⁾ to 90 % of I_{PN} step	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
BW	Frequency bandwidth (-1 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	-40 .. +85	$^\circ\text{C}$
T_S	Ambient storage temperature	-40 .. +90	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 85^\circ\text{C}$	71	Ω
	Secondary total resistance @ $T_A = 85^\circ\text{C}$	75	Ω
m	Mass	230	g
	Standards	EN 50178: 1997	

Features

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

Special features

- $I_{PM} = 0 .. \pm 1200 \text{ A}$
- $V_C = \pm 24 (-7 / + 5 \%) \text{ V}$
- $T_A = -40 .. + 85^\circ\text{C}$
- Shield between primary and secondary
- Secondary connection on screened cable 3 x 0.5 mm².

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

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	3 ²⁾	kV
		0.5 ³⁾	kV
		Mini	
dCp	Creepage distance	22 ⁴⁾	mm
dCI	Clearance distance	22 ⁴⁾	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	2000 V	2000 V
Reinforced isolation	1000 V	1000 V

Notes: ²⁾ Between primary and secondary + shield
³⁾ Between shield and secondary
⁴⁾ Distance without lenght cable.

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.

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