Current Transducer LF 505-S/SP23

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).

16157

Electrical data

I_{PN}	Primary nominal r.m.s. current		500		A
I_P	Primary current, measuring range		0 .. ± 1000		A
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 24 V	@ ± 500 A_{max}	0	114	Ω
		@ ± 1000 A_{max}	0	9	Ω
I_{SN}	Secondary nominal r.m.s. current		100		mA
K_N	Conversion ratio		1 : 5000		
V_C	Supply voltage (± 5 %)		± 24		V
I_C	Current consumption		34 + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		6 [1]		kV
			0.5 [2]		kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C		± 0.6		%
ε_L	Linearity error		< 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 [3] @ 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		- 40 .. + 85	°C
T_S	Ambient storage temperature		- 45 .. + 90	°C
R_S	Secondary coil resistance @ T_A = 85°C		96	Ω
m	Mass		230	g
	Standards		EN 50155 (95.11.01)	
			EN 50178 (97.10.01)	

Notes : [1] Between primary and secondary + shield
insulation voltage of the cable confirmed by Huber & Suhner
[2] Between secondary and shield
[3] 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

- I_P = 0 .. ± 1000 A
- V_C = ± 24 (± 5 %) V
- T_A = - 40°C .. + 85°C
- Shield between primary and secondary
- Connection to secondary on screened cable 3 x 0.5 mm².

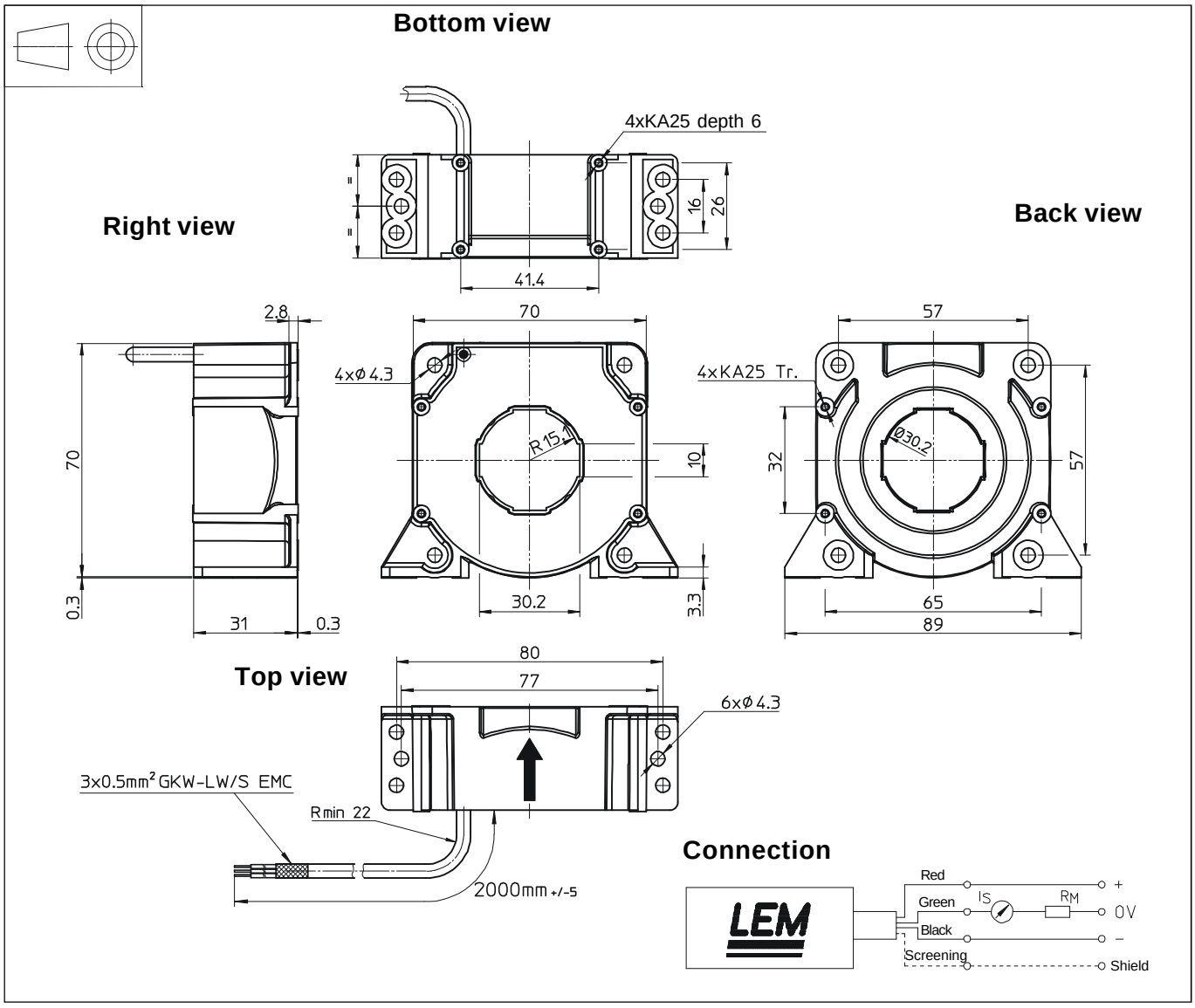
Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses.

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/SP23 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance	± 0.5 mm
• Transducer fastening	
Vertical or flat lying position	4 or 6 holes ∅ 4.3 mm
	4 or 6 steel screws M4
Recommended fastening torque	3.2 Nm or 2.36 Lb.-Ft.
Or vertical position	4 holes ∅ 1.9 mm, Depth:6 mm
	4 screws PTKA 25, length: 6 mm
Recommended fastening torque	0.7 Nm or 0.52 Lb.-Ft.
Or flat lying position	4 holes ∅ 1.9 mm, crossing
	4 screws PTKA 25, length:10 mm
Recommended fastening torque	0.75 Nm or 0.55 Lb.-Ft.
• Primary through-hole	Ø 30.2 mm
• Connection of secondary	screened cable 3 x 0.5 mm²

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.