

Current Transducer LA 305-S/SP19

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

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).



16236

Electrical data

I_{PN}	Primary nominal r.m.s. current	500	A					
I_P	Primary current, measuring range (@ $\pm 24V$)	0 .. ± 1000	A					
\hat{I}_P	Overload capability during 10 ms	40	kA					
R_M	Measuring resistance @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$				
		R_{Mmin}	R_{Mmax}	R_{Mmin}	R_{Mmax}			
		with $\pm 15 V$	@ $\pm 600 \text{ A}_{max}$	0	13	0	10	Ω
			@ $\pm 650 \text{ A}_{max}$	0	8	0	5	Ω
			@ $\pm 680 \text{ A}_{max}$	0	6	0	3	Ω
		with $\pm 24 V$	@ $\pm 600 \text{ A}_{max}$	3	13	3	10	Ω
			@ $\pm 950 \text{ A}_{max}$	3	8	3	5	Ω
	@ $\pm 1000 \text{ A}_{max}$	3	6	3	3	Ω		
I_{SN}	Secondary nominal r.m.s. current	142.8	mA					
K_N	Conversion ratio	1 : 3500						
V_C	Supply voltage ($\pm 5\%$)	$\pm 15 \dots 24$	V					
I_C	Current consumption	28 (@ $\pm 24 V$) + I_S	mA					
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	6	kV					
V_e	R.m.s. voltage for partial discharges extinction @ 10 pC	< 2.8	kV					

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.8	%
ϵ_L	Linearity	< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max
			± 0.15 mA
			± 0.30 mA
I_{OM}	Residual current ¹⁾ @ $I_P = 0$, after an overload of $3 \times I_{PN}$	± 0.30	mA
I_{OT}	Thermal drift of I_O	- 40°C .. + 70°C	± 0.30 mA
		- 50°C .. + 85°C	± 0.80 mA
t_{ra}	Reaction time @ 10 % of I_{PN}	< 500	ns
t_r	Response time ²⁾ @ 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
f	Frequency bandwidth (- 3 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	- 40 (- 50) ³⁾ .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 50 .. + 90	$^\circ\text{C}$
R_S	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	70 Ω
		$T_A = 85^\circ\text{C}$	73 Ω
m	Mass	350	g
	Standards	EN 50155	

- Notes : ¹⁾ The result of the coercive field of the magnetic circuit
²⁾ With a di/dt of 100 A/ μs
³⁾ No guarantee on this value, tests not carried out during production.

Features

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

Special features

- $I_{PN} = 500 \text{ A}$
- $I_P = 0 \dots \pm 1000 \text{ A}$ (@ $\pm 24 V$)
- $K_N = 1 : 3500$
- $V_C = \pm 15 \dots 24 (\pm 5\%) V$
- $T_A = - 40^\circ\text{C} (- 50^\circ\text{C})$ ³⁾ .. + 85 $^\circ\text{C}$
- Connection to secondary circuit on shielded cable 3 x 0.5 mm²
- Internal shield connected to shielded cable
- Serigraphy with customer specification number
- Railway equipment.

Advantages

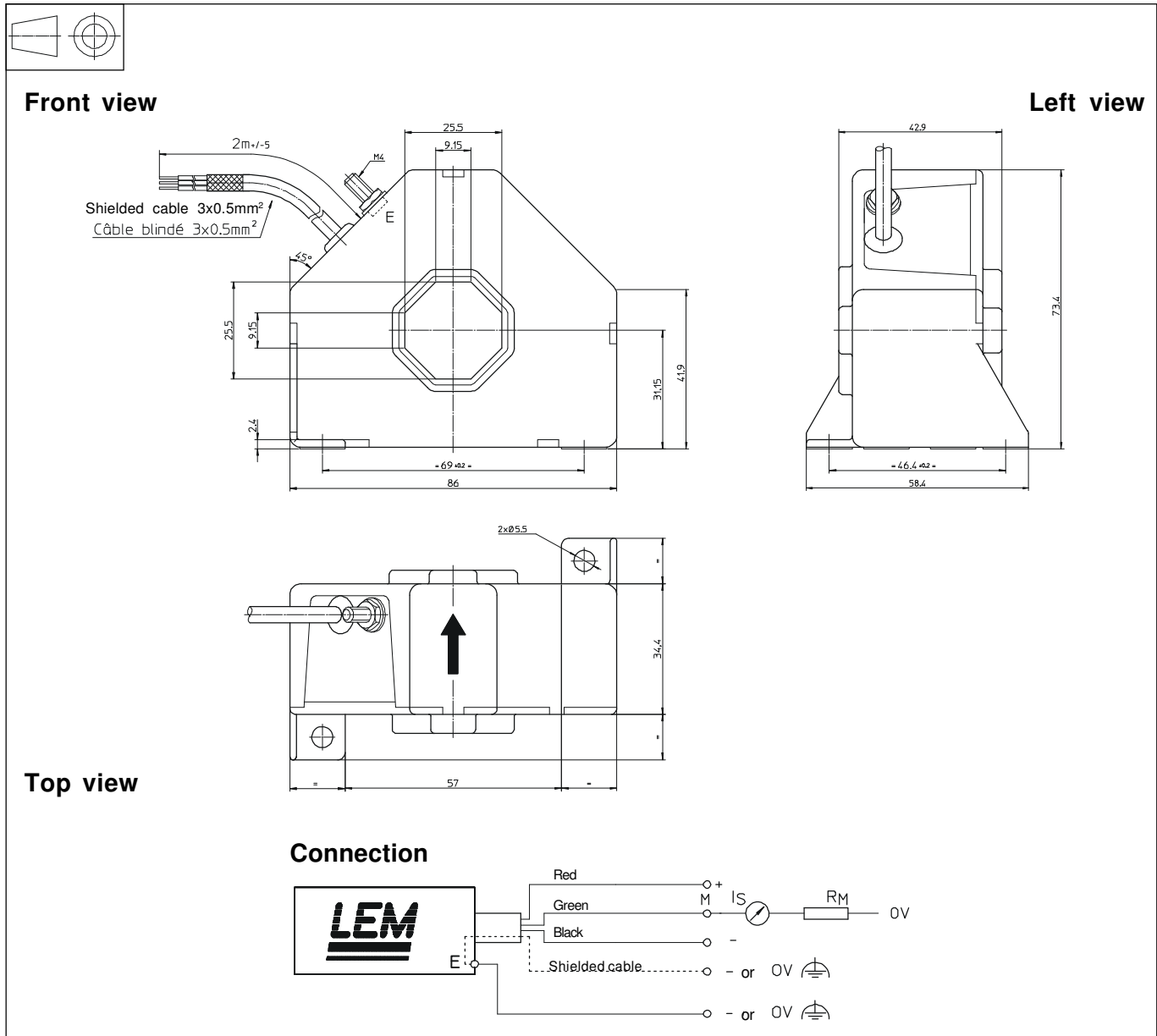
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

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.

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Dimensions LA 305-S/SP19 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 2 holes Ø 5.5 mm
2 M5 steel screws
Fastening torque, max. 4 Nm or 2.95 Lb. - Ft.
- Primary through-hole 25.5 x 25.5 mm
- Connection of secondary shielded cable 3 x 0.5 mm²
- Connection of screen 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.