

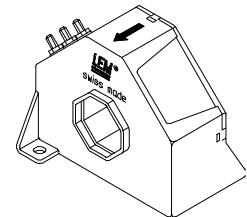
Current Transducer LA 305-S/SP4

$$I_{PN} = 300 \text{ A}$$

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).



16321



Electrical data

I_{PN}	Primary nominal r.m.s. current	300	A																																
I_P	Primary current, measuring range	0 .. ± 500	A																																
R_M	Measuring resistance @	<table><tr><th colspan="2">$T_A = 70^{\circ}\text{C}$</th><th colspan="2">$T_A = 85^{\circ}\text{C}$</th></tr><tr><th>$R_{M\min}$</th><th>$R_{M\max}$</th><th>$R_{M\min}$</th><th>$R_{M\max}$</th></tr><tr><td colspan="2">with $\pm 12\text{ V}$</td><td colspan="2"></td></tr><tr><td></td><td>@ $\pm 300\text{ A}_{\max}$</td><td>0</td><td>46</td></tr><tr><td></td><td>@ $\pm 500\text{ A}_{\max}$</td><td>0</td><td>14</td></tr><tr><td colspan="2">with $\pm 15\text{ V}$</td><td colspan="2"></td></tr><tr><td></td><td>@ $\pm 300\text{ A}_{\max}$</td><td>0</td><td>70</td></tr><tr><td></td><td>@ $\pm 500\text{ A}_{\max}$</td><td>0</td><td>28</td></tr></table>	$T_A = 70^{\circ}\text{C}$		$T_A = 85^{\circ}\text{C}$		$R_{M\min}$	$R_{M\max}$	$R_{M\min}$	$R_{M\max}$	with $\pm 12\text{ V}$					@ $\pm 300\text{ A}_{\max}$	0	46		@ $\pm 500\text{ A}_{\max}$	0	14	with $\pm 15\text{ V}$					@ $\pm 300\text{ A}_{\max}$	0	70		@ $\pm 500\text{ A}_{\max}$	0	28	
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I_{SN}	Secondary nominal r.m.s. current	120	mA																																
K_N	Conversion ratio	1 : 2500																																	
V_C	Supply voltage ($\pm 5\%$)	$\pm 12 \dots 15$	V																																
I_C	Current consumption	20 (@ $\pm 15\text{ V}$) + I_S	mA																																
V_b	R.m.s. rated voltage ¹⁾ , safe separation	1750	V																																
	basic isolation	3500	V																																

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.8	%
e_L	Linearity	< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max
I_{OM}	Residual current ²⁾ @ $I_P = 0$, after an overload of $3 \times I_{PN}$		± 0.20 mA
I_{OT}	Thermal drift of I_O - $25^\circ\text{C} \dots +85^\circ\text{C}$	± 0.12	± 0.40 mA
t_{ra}	Reaction time @ 10 % of I_{PN}	< 500	ns
t_r	Response time ³⁾ @ 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	- 25 .. + 85	°C						
T_S	Ambient storage temperature	- 40 .. + 90	°C						
R_S	Secondary coil resistance @	<table><tr><td>T_A = 70°C</td><td>35</td><td>Ω</td></tr><tr><td>T_A = 85°C</td><td>37</td><td>Ω</td></tr></table>	T_A = 70°C	35	Ω	T_A = 85°C	37	Ω	
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T_A = 85°C	37	Ω							
m	Mass	200	g						
	Standards	EN 50155							

Notes : ¹⁾ Pollution class 2. With a non insulated primary bar which fills the through-hole

²⁾ The result of the coercive field of the magnetic circuit

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 feature

- $T_A = -25^\circ\text{C} \dots +85^\circ\text{C}$
- Connection secondary on 3 M4 threaded studs
- Potted
- Railway equipment.

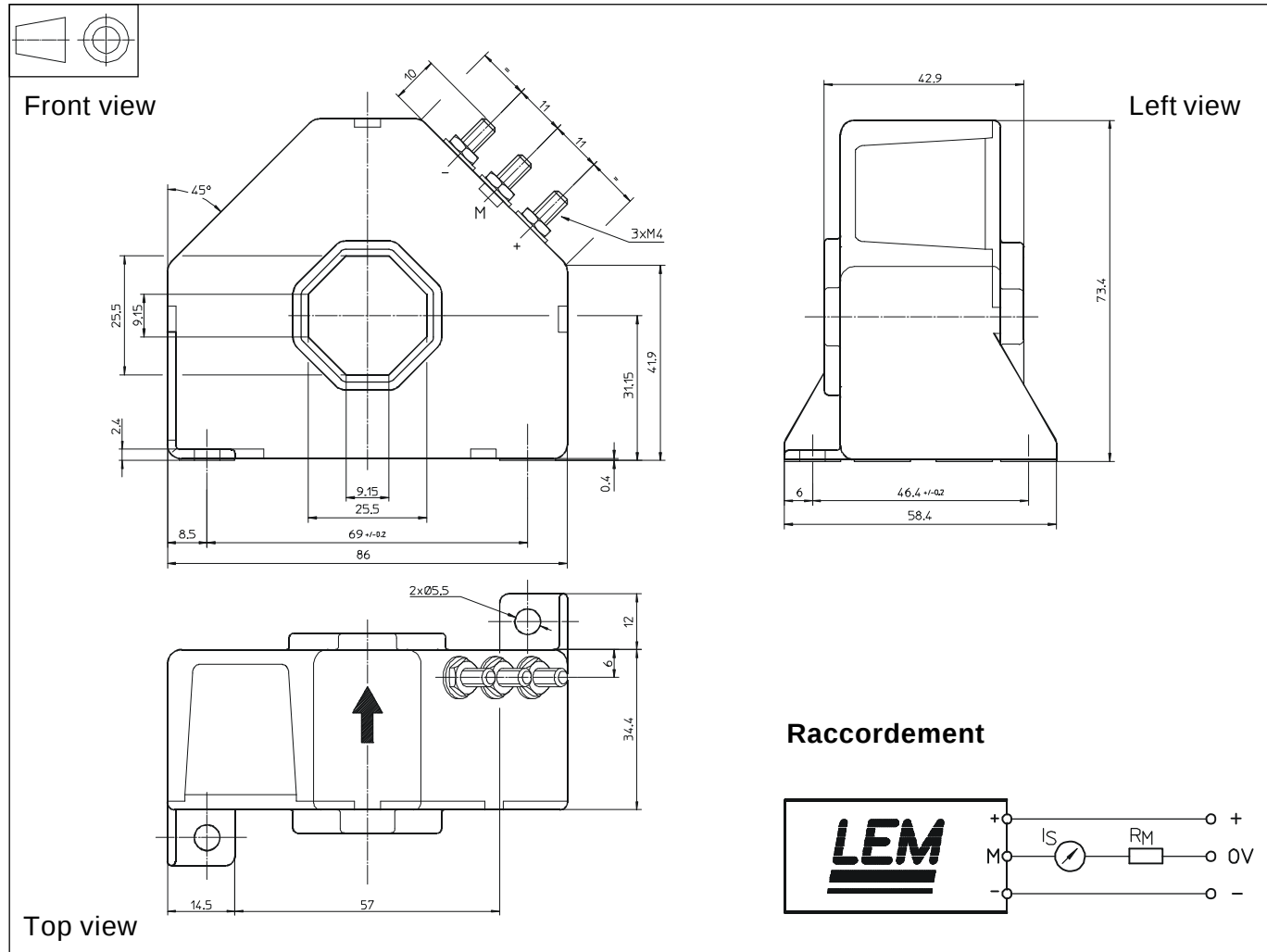
Advantages

- 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.

Dimensions LA 305-S/SP4 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - 2 holes $\varnothing 5.5$ 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 M4 threaded studs
- Fastening torque 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.

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