Current Transducer LA 305-S/SP8
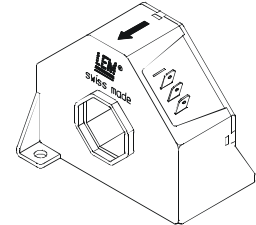
For the electronic measurement of currents : DC, AC, pulsed...,
with a galvanic isolation between the primary circuit (high power)
and the secondary circuit (electronic circuit).

I_{PN} = 300 A

RoHS COMPLIANT 2002/95/EC
16223

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 @		$T_A = 70°C$			$T_A = 85°C$		
			$R_{M min}$	$R_{M max}$	$R_{M min}$	$R_{M max}$		
	with ± 12 V	@ ± 300 A $_{max}$	0	47	0	45		Ω
		@ ± 500 A $_{max}$	0	14	0	12		Ω
	with ± 15 V	@ ± 300 A $_{max}$	0	70	5	68		Ω
		@ ± 500 A $_{max}$	0	28	5	26		Ω
I_{SN}	Secondary nominal r.m.s. current				120			mA
K_N	Conversion ratio				1 : 2500			
V_C	Supply voltage (± 5 %)				± 12 .. 15			V
I_C	Current consumption				20 (@ ±15 V) + I_S			mA
V_b	R.m.s. rated voltage [1], safe separation				1750			V
		basic isolation			3500			V
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn				6			kV

Accuracy - Dynamic performance data

			Typ	Max	
X_G	Overall accuracy @ I_{PN} , $T_A = 25°C$			± 0.8	%
ε_L	Linearity error			< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25°C$			± 0.20	mA
I_{OM}	Residual current [2] @ $I_P = 0$, after an overload of 3 x I_{PN}			± 0.40	mA
I_{OT}	Thermal drift of I_O	- 40°C .. + 85°C	± 0.2	± 0.50	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		- 40 .. + 85	°C
T_S	Ambient storage temperature		- 50 .. + 90	°C
R_S	Secondary coil resistance @	$T_A = 70°C$	35	Ω
		$T_A = 85°C$	37	Ω
m	Mass		290	g
	Standards		EN 50155 (95.11.01)	

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.

Specials features

- $T_A = -40°C .. + 85°C$
- Connection to secondary circuit on 3 Faston 6.3 x 0.8 mm.
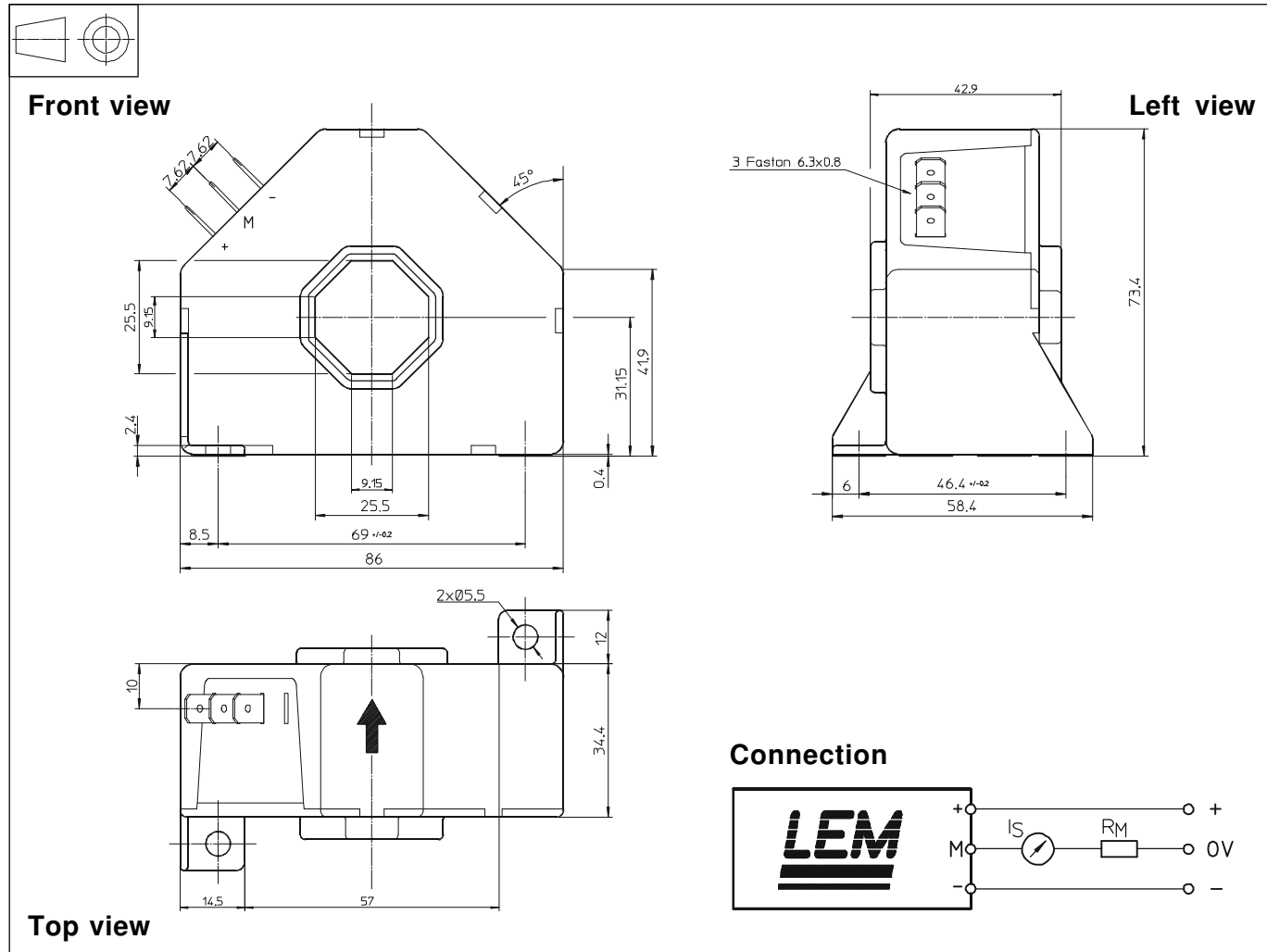- Potted
- Railway equipment.

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.

060913/4

Dimensions LA 305-S/SP8 (in mm. 1 mm = 0.0394 inch)

Front view

Left view

3 Faston 6.3x0.8

42.9

73.4

6

46.4 +/-0.2

58.4

7.62 7.62

M

−

+

45°

25.5

9.15

41.9

31.15

2.4

9.15

25.5

0.4

8.5

69 +/-0.2

86

Top view

2x⌀5.5

12

10

34.4

14.5

57

Connection

LEM

+
M
−

Is

RM

+
0V
−

Mechanical characteristics

- General tolerance   ± 0.5 mm
- Transducer fastening   2 holes ⌀ 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   Faston 6.3 x 0.8 mm

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.