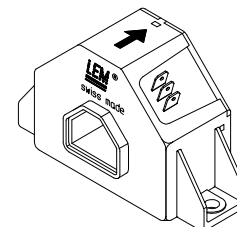# Current Transducer LA 255-S

$\mathbf{I_{PN}} = 250\ A$

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).

CE

RoHS COMPLIANT 2002/95/EC
16112

Electrical data

$\mathbf{I_{PN}}$	Primary nominal r.m.s. current		250				A
$\mathbf{I_P}$	Primary current, measuring range		0 .. ± 500				A
$\hat{\mathbf{I}}_{P\,max}$	Measuring overload [1]		600				A
$\mathbf{R_M}$	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	@ ± 250 A $_{max}$	0	49	0	47	Ω
		@ ± 500 A $_{max}$	0	7	0	5	Ω
	with ± 15 V	@ ± 250 A $_{max}$	5	70	5	68	Ω
		@ ± 500 A $_{max}$	5	17	5	15	Ω
	with ± 18 V	@ ± 250 A $_{max}$	25	93	25	91	Ω
		@ ± 500 A $_{max}$	25	29	25	27	Ω
$\mathbf{I_{SN}}$	Secondary nominal r.m.s. current		125				mA
$\mathbf{K_N}$	Conversion ratio		1 : 2000				
$\mathbf{V_C}$	Supply voltage (± 5 %)		± 12 .. 18				V
$\mathbf{I_C}$	Current consumption		20 (@ ± 15 V) + I_S				mA
$\mathbf{V_b}$	R.m.s. rated voltage [2], safe separation		1625				V
	basic isolation		3250				V

Accuracy - Dynamic performance data

$\mathbf{X_G}$	Overall accuracy @ I_{PN} , $T_A = 25°C$		± 0.8		%
$\mathbf{e_L}$	Linearity error		< 0.1		%
			Typ	Max	
$\mathbf{I_O}$	Offset current @ $I_P = 0$, $T_A = 25°C$			± 0.15	mA
$\mathbf{I_{OM}}$	Residual current [3] @ $I_P = 0$, after an overload of 3 x I_{PN}			± 0.50	mA
$\mathbf{I_{OT}}$	Thermal drift of I_O - 10°C .. + 85°C		± 0.15	± 0.30	mA
$\mathbf{t_{ra}}$	Reaction time @ 10 % of $I_{P\,max}$		< 500		ns
$\mathbf{t_r}$	Response time [4] @ 90 % of $I_{P\,max}$		< 1		µs
$\mathbf{di/dt}$	di/dt accurately followed		> 100		A/µs
$\mathbf{f}$	Frequency bandwidth (- 3 dB)		DC .. 100		kHz

General data

$\mathbf{T_A}$	Ambient operating temperature		- 10 .. + 85	°C
$\mathbf{T_S}$	Ambient storage temperature		- 40 .. + 90	°C
$\mathbf{R_S}$	Secondary coil resistance @ $T_A = 70°C$		35	Ω
	$T_A = 85°C$		37	Ω
$\mathbf{m}$	Mass		110	g
	Standards [5]		EN 50178	

Notes : [1] 3 mn/hour @ $V_C = ± 15\ V$, $R_M = 5\ \Omega$
[2] Pollution class 2. With a non insulated primary bar which fills the through-hole
[3] The result of the coercive field of the magnetic circuit
[4] With a di/dt of 100 A/µs
[5] A list of corresponding tests is available

Features

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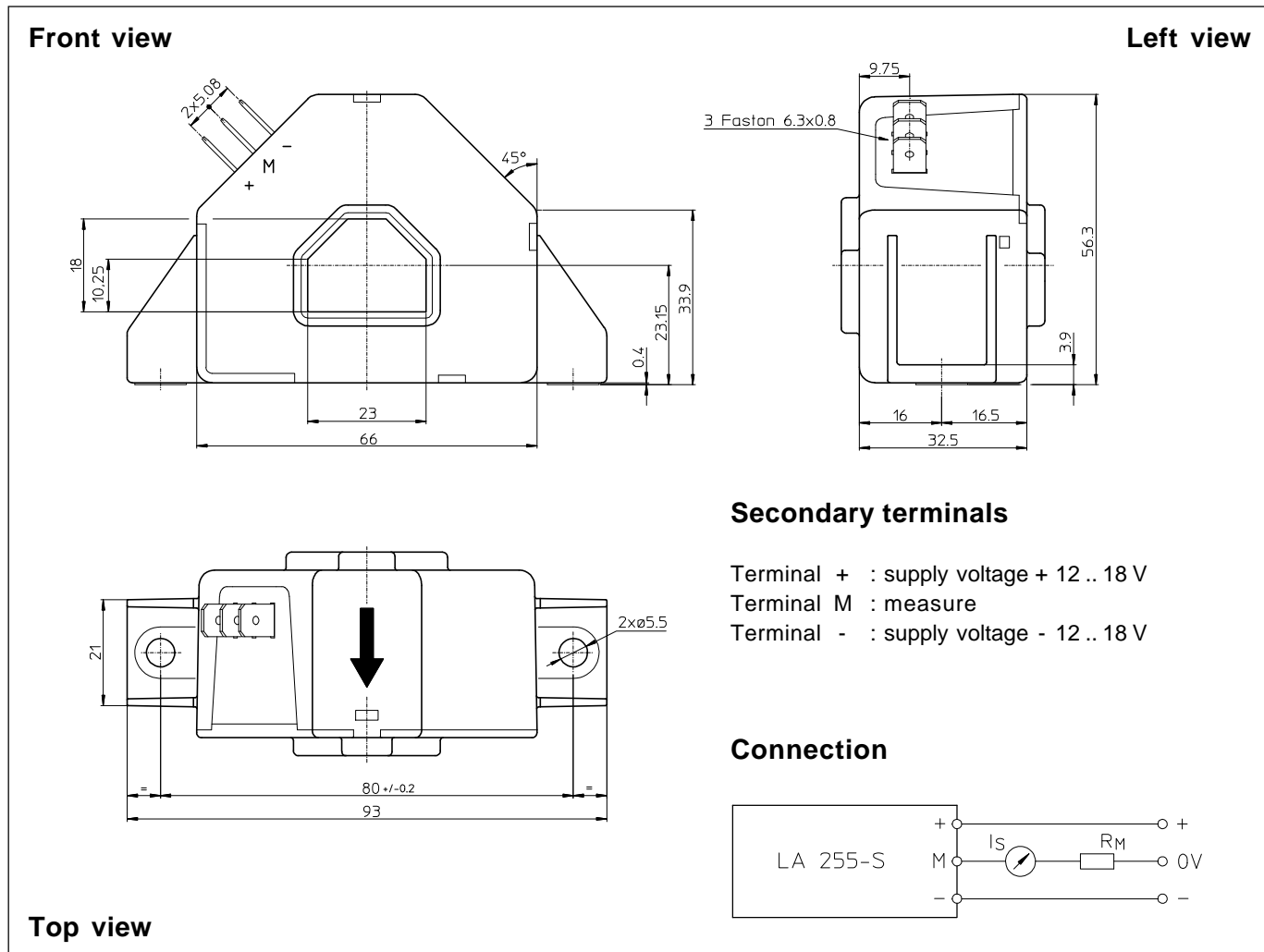- Insulated plastic case recognized according to UL 94-V0.

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 255-S (in mm. 1 mm = 0.0394 inch)

Front view

Left view

3 Faston 6.3x0.8

Secondary terminals

Terminal + : supply voltage + 12 .. 18 V
Terminal M : measure
Terminal - : supply voltage - 12 .. 18 V

Connection

LA 255-S

Top view

Mechanical characteristics

- General tolerance   ± 0.5 mm
- Fastening   2 holes ∅ 5.5 mm
- Primary through-hole   23 x 18 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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

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