

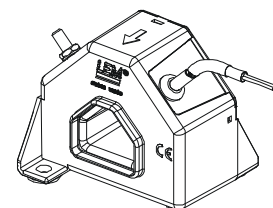
# Current Transducer LA 205-S/SP21

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

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).



16195



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	300	A					
$I_P$	Primary current, measuring range	0 .. ± 640	A					
$I_{P \text{ max}}$	Measuring overload <sup>1)</sup>	600	A					
$R_M$	Measuring resistance @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$				
		$R_{M \text{ min}}$	$R_{M \text{ max}}$	$R_{M \text{ min}}$	$R_{M \text{ max}}$			
		with ± 15 V		@ ± 300 A <sub>max</sub>		0 35	0 30	Ω
				@ ± 350 A <sub>max</sub>		0 15	0 10	Ω
				@ ± 380 A <sub>max</sub>		0 8	0 3	Ω
		with ± 24 V		@ ± 300 A <sub>max</sub>		3 120	3 116	Ω
		@ ± 600 A <sub>max</sub>		3 13	3 10	Ω		
		@ ± 640 A <sub>max</sub>		3 6	3 3	Ω		
$I_{SN}$	Secondary nominal r.m.s. current	100	mA					
$K_N$	Conversion ratio	1 : 3000						
$V_C$	Supply voltage (± 5 %)	± 15 .. 24	V					
$I_C$	Current consumption	35 (@ ± 24 V) + $I_S$	mA					

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.8	%	
$\epsilon_L$	Linearity error	< 0.1	%	
$I_O$	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	Max	
			± 0.15	mA
			± 0.50	mA
$I_{OM}$	Residual current <sup>2)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$	± 0.20	± 0.50	mA
$I_{OT}$	Thermal drift of $I_O$	- 25 °C .. + 70 °C	± 0.50	mA
		- 50 °C .. + 85 °C	± 0.80	mA
$t_{ra}$	Reaction time @ 10 % of $I_{PN}$	< 500	ns	
$t_r$	Response time <sup>3)</sup> @ 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) .. + 85	°C	
$T_S$	Ambient storage temperature	- 50 .. + 85	°C	
$R_S$	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	95	Ω
		$T_A = 85^\circ\text{C}$	100	Ω
$m$	Mass Standards		200	g
			EN 50155 : 1995	

Notes : <sup>1)</sup> 3 mn/hour @  $V_C = \pm 15 \text{ V}, R_M = 5 \Omega$

<sup>2)</sup> The result of the coercive field of the magnetic circuit.

<sup>3)</sup> 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
- Patent pending.

## Special features

- $I_{PN} = 300 \text{ A}$
- $I_P = 0 \dots \pm 640 \text{ A}$
- $K_N = 1 : 3000$
- $V_C = \pm 15 \dots 24 \text{ V} (\pm 5 \%)$
- $T_A = - 40^\circ\text{C} (-50^\circ\text{C}) \dots + 85^\circ\text{C}$
- Secondary connection on screened cable  $3 \times 0.5 \text{ mm}^2$
- Shield between primary and secondary connected to the cable screening
- Potted
- Railway equipment
- Customer marking.

## 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.

## Application domain

- Traction

060911/4

**Current Transducer LA 205-S/SP21****Isolation characteristics**

<b>V<sub>d</sub></b>	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	6	kV
<b>dCp</b>	Creepage distance	25	mm
<b>dCl</b>	Clearance distance	23.25	mm
<b>CTI</b>	Comparative tracking index (Group III)	225	

**Safety**

This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

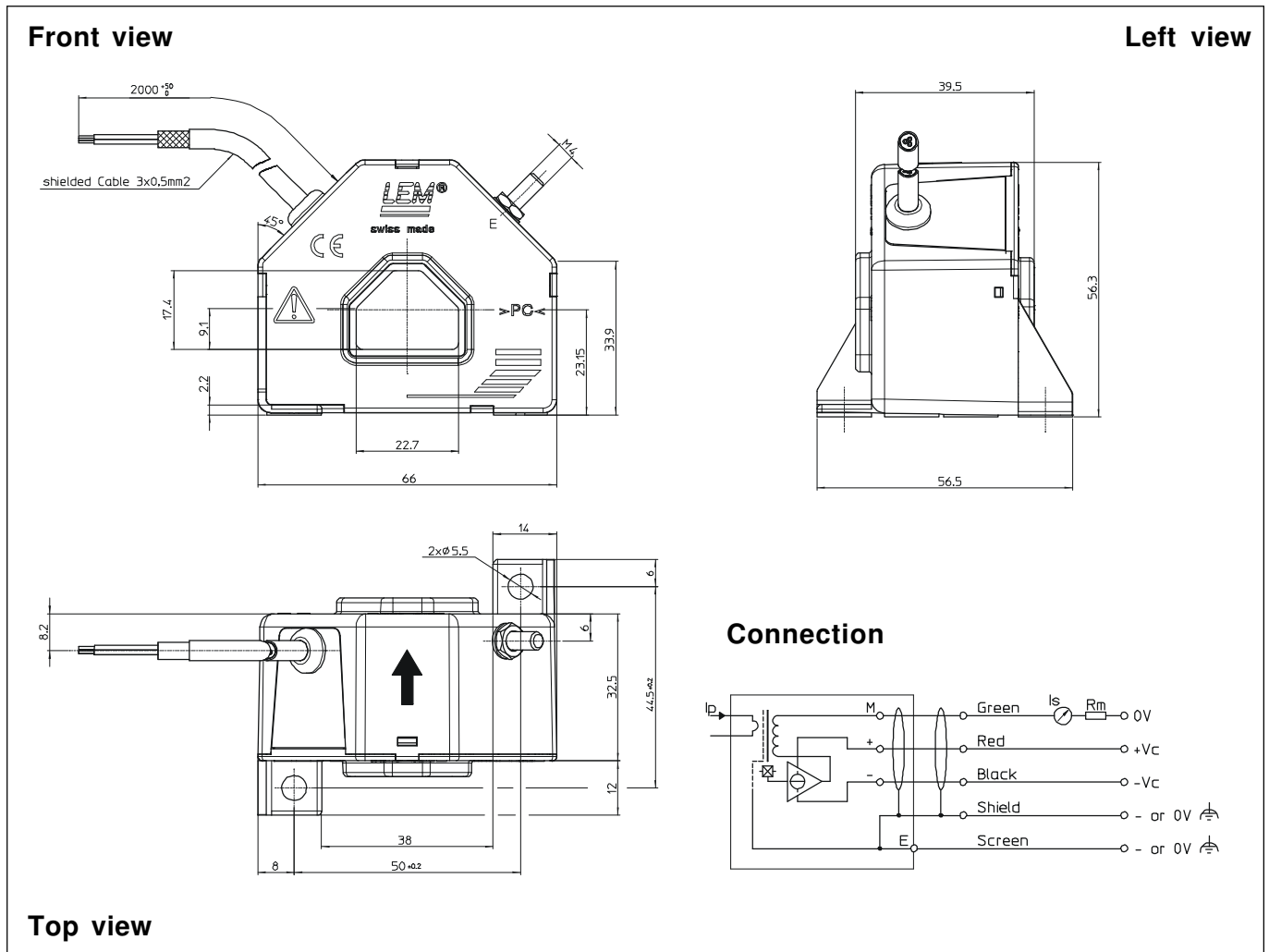
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-in device, whose conducting parts must be inaccessible after installation.

A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

## Dimensions LA 205-S/SP21 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Transducer fastening  
2 holes  $\varnothing 5.5$  mm  
2 M5 steel screws  
Fastening torque max. 4 Nm or 2.96 Lb. - Ft.
- Primary through-hole 22.7 x 17.4 mm
- Connection of secondary screened cable 3 x 0.5 mm<sup>2</sup>
- Connection to terminal E M4 threaded stud  
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.