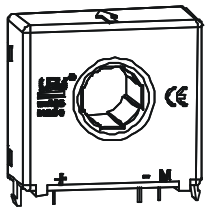
Current Transducer LF 205-P/SP1

I_{PN} = 200 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).



Electrical data

I_{PN}	Primary nominal r.m.s. current			200			A
I_P	Primary current, measuring range			0 .. ± 420			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	@ ± 200 A_{max}	0	71	0	69	Ω
		@ ± 420 A_{max}	0	14	0	12	Ω
	with ± 15 V	@ ± 200 A_{max}	0	100	23	98	Ω
		@ ± 420 A_{max}	0	28	23	26	Ω
I_{SN}	Secondary nominal r.m.s. current			100			mA
K_N	Conversion ratio			1 : 2000			
V_C	Supply voltage (± 5 %)			± 12 .. 15			V
I_C	Current consumption @ ± 15V			17 + I_S			mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn			3.5			kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , T_A = 25°C		± 0.5		%
ε_L	Linearity		< 0.1		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.2	mA
I_{OM}	Residual current [1] @ I_P = 0, after an overload of 3 x I_{PN}			± 0.1	mA
I_{OT}	Thermal drift of I_O	- 40°C .. + 85°C	± 0.12	± 0.4	mA
t_{ra}	Reaction time @ 10 % of $I_{P\ max}$		< 500		ns
t_r	Response time [2] @ 90 % of $I_{P\ max}$		< 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		- 40 .. + 90	°C
R_S	Secondary coil resistance @ T_A = 70°C		33	Ω
	@ T_A = 85°C		35	Ω
m	Mass		58	g
	Standards [3]		EN 50178	

Notes : [1] The result of the coercive field of the magnetic circuit
[2] With a di/dt of 100 A/µs
[3] 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.

Special features

- Mounting clips molded into the transducer housing, attach to printed circuit boards 1.6mm thick.

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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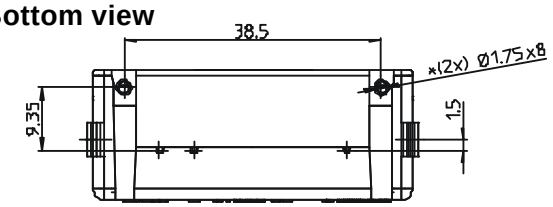
Dimensions LF 205-P/SP1 (in mm. 1 mm = 0.0394 inch)

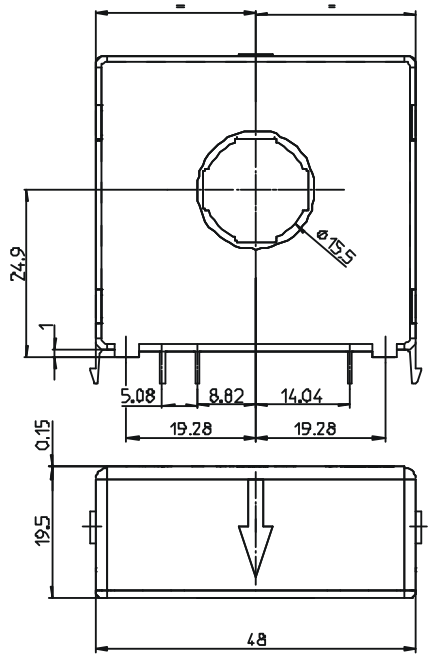
Bottom view



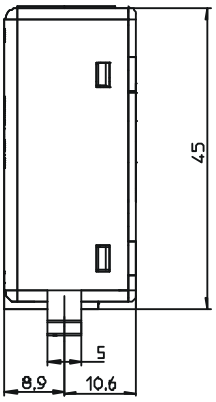
Secondary terminals

Terminal + : supply voltage + 12 .. 15 V
Terminal M : measure
Terminal - : supply voltage - 12 .. 15 V

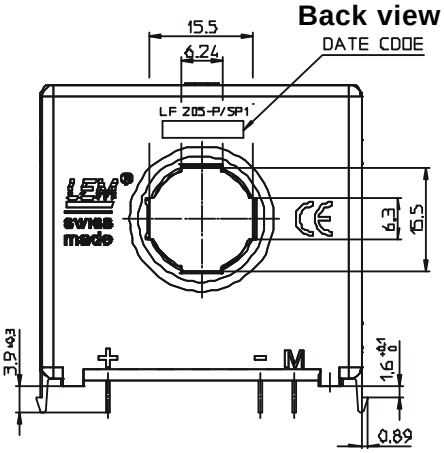
Front view



Left view

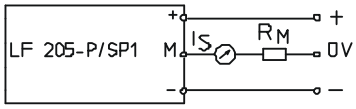


Back view



Top view

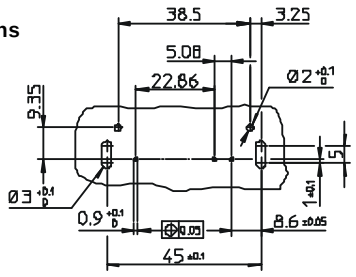
Connection



Mechanical characteristics

• General tolerance	± 0.2 mm
• Fastening & secondary connection	3 pins 0.63x0.56 mm
Recommanded PCB hole	∅ 0.9 mm
• Primary through-hole	∅ 15.5 mm
• Supplementary fastening	2 holes ∅ 1.75 mm
Recommended PCB hole	2.4 mm
Recommended screws	KA22 x 6
LEM code	47.30.60.006.0

Recommended dimensions for mounting holes when using the mounting clips.



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.
- Mounting clips molded into the transducer housing, attach to printed circuit board 1.6mm thick.

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.

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