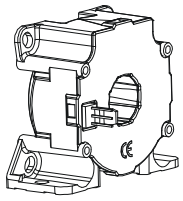
Current Transducer LF 205-S

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).

16135



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 @ ± 15 V			17 + I_S			mA

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C		± 0.5		%
ε_L	Linearity error		< 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_{PN}		< 500		ns
t_r	Response time [2] @ 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		- 40 .. + 90	°C
R_S	Secondary coil resistance	@ T_A = 70°C	33	Ω
		@ T_A = 85°C	35	Ω
m	Mass		78	g
	Standards		EN 50178 : 1997	

Notes : [1] The result of the coercive field of the magnetic circuit
[2] 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.

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

- Industry.

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Isolation characteristics

V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	3.5	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs	8.8	kV
V_e	R.m.s. voltage for partial discharge extinction @ 10pC	> 2	kV
		Min	
dCp	Creepage distance	11	mm
dCl	Clearance distance	10.2	mm
CTI	Comparative Tracking Index (Group III a)	175	

Application examples

According to EN 50178 and IEC 61010-1 standards and following conditions :

- Over voltage category OV 2
- Pollution degree PD3
- Non-uniform field

	EN 50178	IEC 61010-1
dCp, dCl, $\hat{V}_w$	Rated isolation voltage	Nominal voltage
Single isolation	500 V	500 V
Reinforced isolation	250 V	250 V

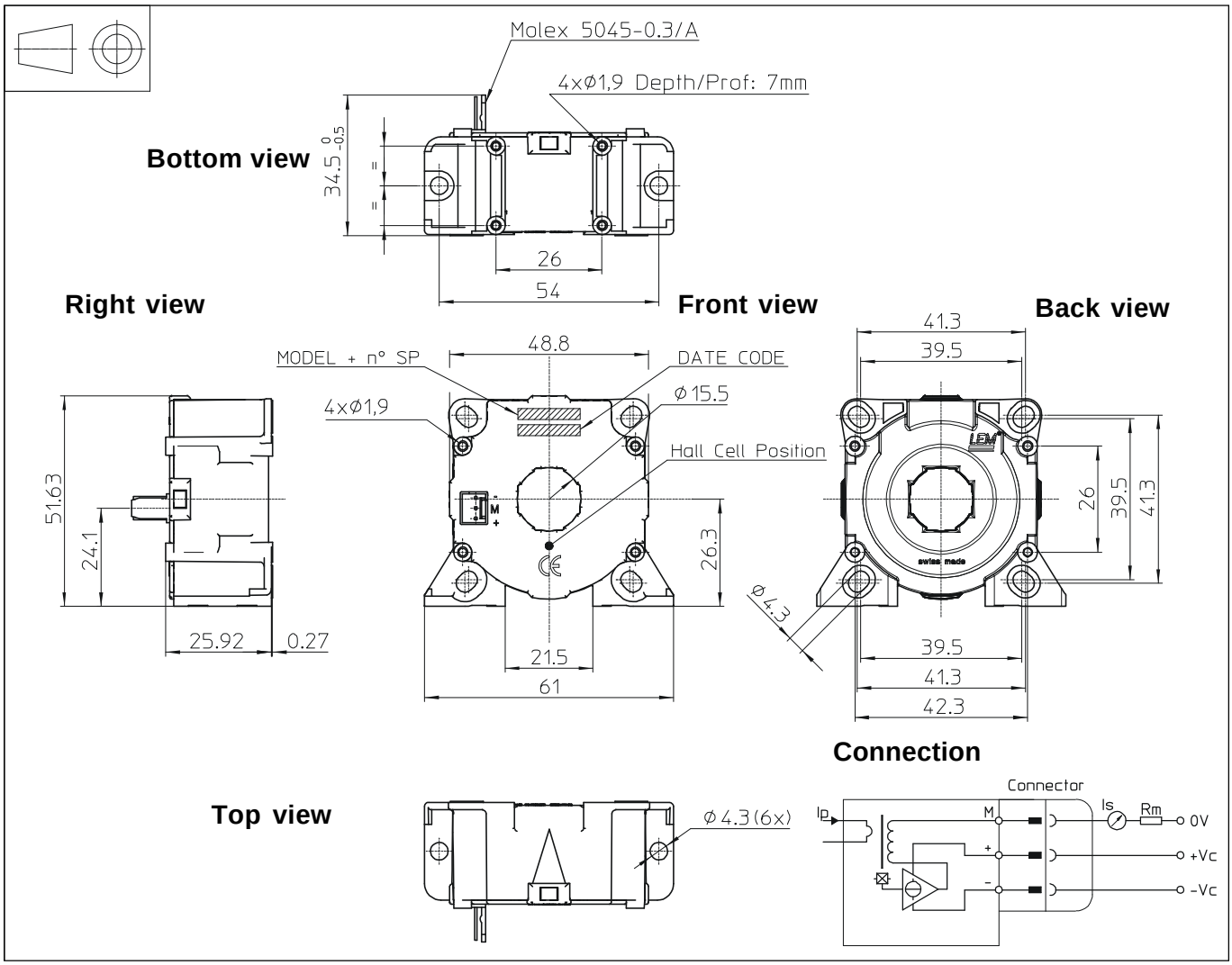
Safety

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 LF 205-S (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

• General tolerance	± 0.2 mm
• Transducer fastening	
Vertical position	2 holes ∅ 4.3 mm
	2 M4 steel screws
Fastening torque, max	3.2 Nm or 2.37 Lb. - Ft.
or	4 holes ∅ 1.9 mm depth 7 mm
	4 x PT KA25 screws long 6 mm
• Transducer fastening	
Horizontal position	4 holes ∅ 4.3 mm
	4 M4 steel screws
Fastening torque, max	3.2 Nm or 2.37 Lb. - Ft.
or	4 holes ∅ 1.9 mm
	4 x PT KA25 screws
Fastening torque, max	0.7 Nm or 0.52 Lb. - Ft.
• Primary through-hole	∅ 15.5 mm
• Connection of secondary	Molex 5045-0.3/A

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.