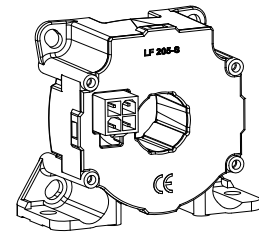


Current Transducer LF 205-S/SP5

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



$$I_{PN} = 100 \text{ A}$$



Electrical data

I_{PN}	Primary nominal rms current	100	A				
I_{PM}	Primary current, measuring range	0 .. ± 200	A				
R_M	Measuring resistance @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$			
			$R_{M \min}$	$R_{M \max}$	$R_{M \min}$	$R_{M \max}$	
		with $\pm 12 \text{ V}$	@ $\pm 100 \text{ A}_{\max}$	0	95	15	94
			@ $\pm 150 \text{ A}_{\max}$	0	59	15	58
			@ $\pm 200 \text{ A}_{\max}$	0	40	15	39
		with $\pm 15 \text{ V}$	@ $\pm 100 \text{ A}_{\max}$	16	123	47	122
	@ $\pm 150 \text{ A}_{\max}$	16	78	47	77		
	@ $\pm 200 \text{ A}_{\max}$	16	55	47	54		
I_{SN}	Secondary nominal rms current	100	mA				
K_N	Conversion ratio	1 : 1000					
U_C	Supply voltage (+ 5 %)	$\pm 12 \dots 15$	V				
I_C	Current consumption @ $\pm 15 \text{ V}$	$17 + I_S$	mA				

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.6	%
ϵ_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	± 0.2
		Max	± 0.2
I_{OM}	Magnetic offset current ¹⁾ @ $I_P = 0$ and specified R_M , after an overload of $3 \times I_{PN}$		± 0.2
I_{OT}	Temperature variation of I_O - $40^\circ\text{C} \dots +85^\circ\text{C}$	± 0.25	± 0.65
t_{ra}	Reaction time to 10 % of I_{PN} step	< 500	ns
t_r	Step response time ²⁾ to 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
BW	Frequency bandwidth (- 3 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 40 .. + 90	$^\circ\text{C}$
R_S	Secondary coil resistance	@ $T_A = 70^\circ\text{C}$	10
		@ $T_A = 85^\circ\text{C}$	11
m	Mass		78
		Standard	EN 50155: 2001

Notes: ¹⁾ The result of the coercive force of the magnetic circuit

²⁾ With a di/dt of 100 A/ μs .

Features

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

Special features

- $I_{PN} = 100 \text{ A}$
- $I_{PM} = 0 \dots \pm 200 \text{ A}$
- $K_N = 1 : 1000$
- Connection to secondary circuit on Molex Minifit Jr 5566 with gold-plated pins.

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

- Single or three phase inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Traction.

Current Transducer LF 205-S/SP5

Isolation characteristics

U_d	Rms voltage for AC insulation test, 50/60 Hz, 1 min	3.5	kV
\hat{U}_W	Impulse withstand voltage 1.2/50 μ s	8.8	kV
U_e	Partial discharge extinction voltage rms @ 10 pC	> 2	kV
		Min	
d_{cp}	Creepage distance	9.5	mm
d_{cl}	Clearance	9.5	mm
CTI	Comparative Tracking Index (group IIIa)	175	

Applications examples

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

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
$d_{cp}, d_{cl}, \hat{U}_W$	Rated insulation voltage	Nominal voltage
Basic insulation	500 V	500 V
Reinforced insulation	250 V	250 V

Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the 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 build-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.

