

Current Transducer LA 205-S/SP33

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).

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



Electrical data

I_{PN}	Primary nominal current rms	300	A
I_{PM}	Primary current, measuring range	0 .. ± 600	A
$I_{P \max}$	Measuring overload	600	A
R_M	Measuring resistance @ $T_A = 70^\circ\text{C}$		
	with $\pm 15 \text{ V}$		
	@ $\pm 300 \text{ A}_{\max}$	$R_{M \min}$ 5	$R_{M \max}$ 49 Ω
	@ $\pm 600 \text{ A}_{\max}$	5	7 Ω
I_{SN}	Secondary nominal current rms	150	mA
K_N	Conversion ratio	1 : 2000	
V_C	Supply voltage ($\pm 5 \%$)	± 15	V
I_C	Current consumption	$20 + I_S$	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 ± 0.15	Max ± 0.15 mA
I_{OM}	Magnetic offset current ²⁾ @ $I_P = 0$ and specified R_M , after an overload of $3 \times I_{PN}$	± 0.20	± 0.50 mA
I_{OT}	Temperature variation of I_O - $40^\circ\text{C} \dots +70^\circ\text{C}$	± 0.20	± 0.50 mA
t_{ra}	Reaction time @ 10 % of I_{PN} step	< 500	ns
t_r	Response time ³⁾ to 90 % of I_{PN} step	< 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 .. + 70	$^\circ\text{C}$
T_S	Ambient storage temperature	- 50 .. + 95	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	35	Ω
m	Mass	190	g
	Standards	EN 50155: 1995	

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

²⁾ The result of the coercive force (H_c) of the magnetic circuit

³⁾ With a di/dt of 100 A/ μs .

Features

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

Special features

- $I_{PM} = 300 \text{ A}$
- $I_{PM} = 0 \dots \pm 600 \text{ A}$
- $V_C = \pm 15 \text{ V}$ ($\pm 5 \%$)
- $T_A = -40 \dots +70^\circ\text{C}$
- Connection to secondary circuit on shielded cable GKW 3 x 0.5 mm²
- Potted
- VRT burn-in.

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 LA 205-S/SP33

Isolation characteristics

V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	6	kV
V_b	Rated isolation voltage rms ⁴⁾ , reinforced isolation	1625	V
		basic isolation	3250
		Min	
dCp	Creepage distance	32.8	mm
dCI	Clearance distance	30.5	mm
CTI	Comparative Tracking Index (group IIIa)	225	

Note: ⁴⁾Pollution class 2. With a non insulated primary bar which fills the through-hole

Safety



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).

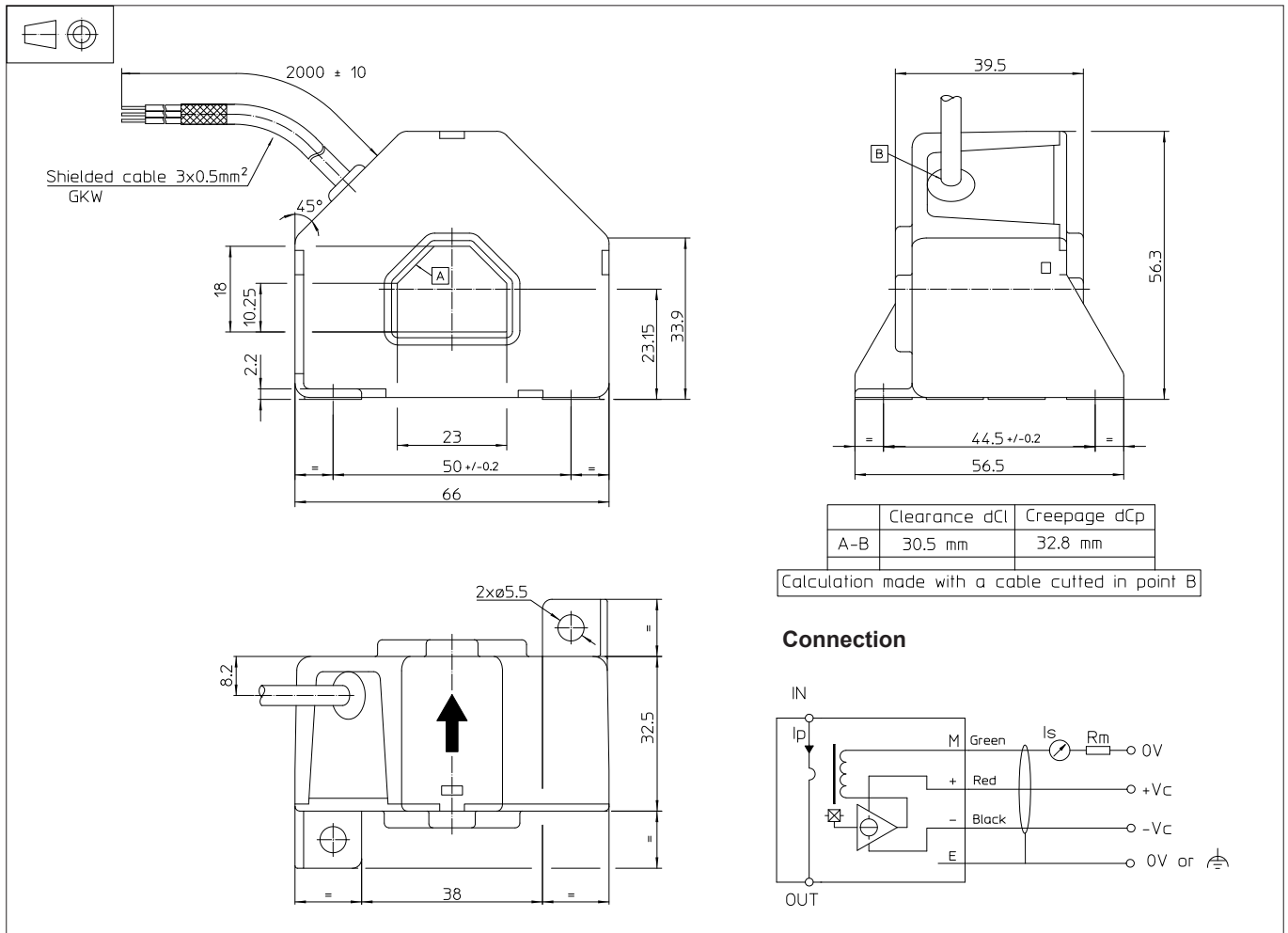
Ignoring this warning can lead to injury and/or cause serious damage.

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.

Dimensions LA 205-S/SP33 (in mm)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 2 holes Ø 5.5 mm
2 M5 steel screws
- Recommended fastening torque 4 Nm
- Primary through-hole 23 x 18 mm
- Connection of secondary Shielded cable
GKW 3 x 0.5 mm²

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.