

Current Transducer LTC 1000-T

$$I_{PN} = 1000 \text{ A}$$

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).



Electrical data

I_{PN}	Primary nominal r.m.s. current	1000	A
I_P	Primary current, measuring range @ 24 V	0 .. ± 2400 ¹⁾	A
\dot{I}_P	Max overload not measurable	10 / 10	kA/ms
R_M	Measuring resistance	$R_{M \min}$ $R_{M \max}$	
	with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$	0 15 Ω
		@ $\pm 1200 \text{ A}_{\max}$	0 7 Ω
	with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$	0 50 Ω
	@ $\pm 2000 \text{ A}_{\max}$	0 7 Ω	
I_{SN}	Secondary nominal r.m.s. current	200	mA
K_N	Conversion ratio	1 : 5000	
V_C	Supply voltage ($\pm 5 \%$)	$\pm 15 \dots 24$	V
I_C	Current consumption	$< 30 (@ \pm 24 \text{ V}) + I_S$	mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	13.4 ²⁾	kV
		1.5 ³⁾	kV
V_e	R.m.s. voltage for partial discharge extinction	> 2.8	kV

Features

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

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.

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$< \pm 0.4$	%
		@ $I_{PN}, T_A = -40^\circ\text{C} \dots +85^\circ\text{C}$	$< \pm 1$
e_L	Linearity	< 0.1	%
		Max	
I_O	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	± 0.5	mA
I_{OT}	Thermal drift of I_O $-40^\circ\text{C} \dots +85^\circ\text{C}$	± 1	mA
t_r	Response time ⁴⁾ @ 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
f	Frequency bandwidth (-1 dB)	DC .. 100	kHz

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.

General data

T_A	Ambient operating temperature	$-40 \dots +85$	$^\circ\text{C}$
T_S	Ambient storage temperature	$-45 \dots +90$	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 85^\circ\text{C}$	44	Ω
m	Mass	1270	g
	Standards	EN50155(01.12.20)	

Notes : ¹⁾ With a di/dt of $> 5 \text{ A}/\mu\text{s}$

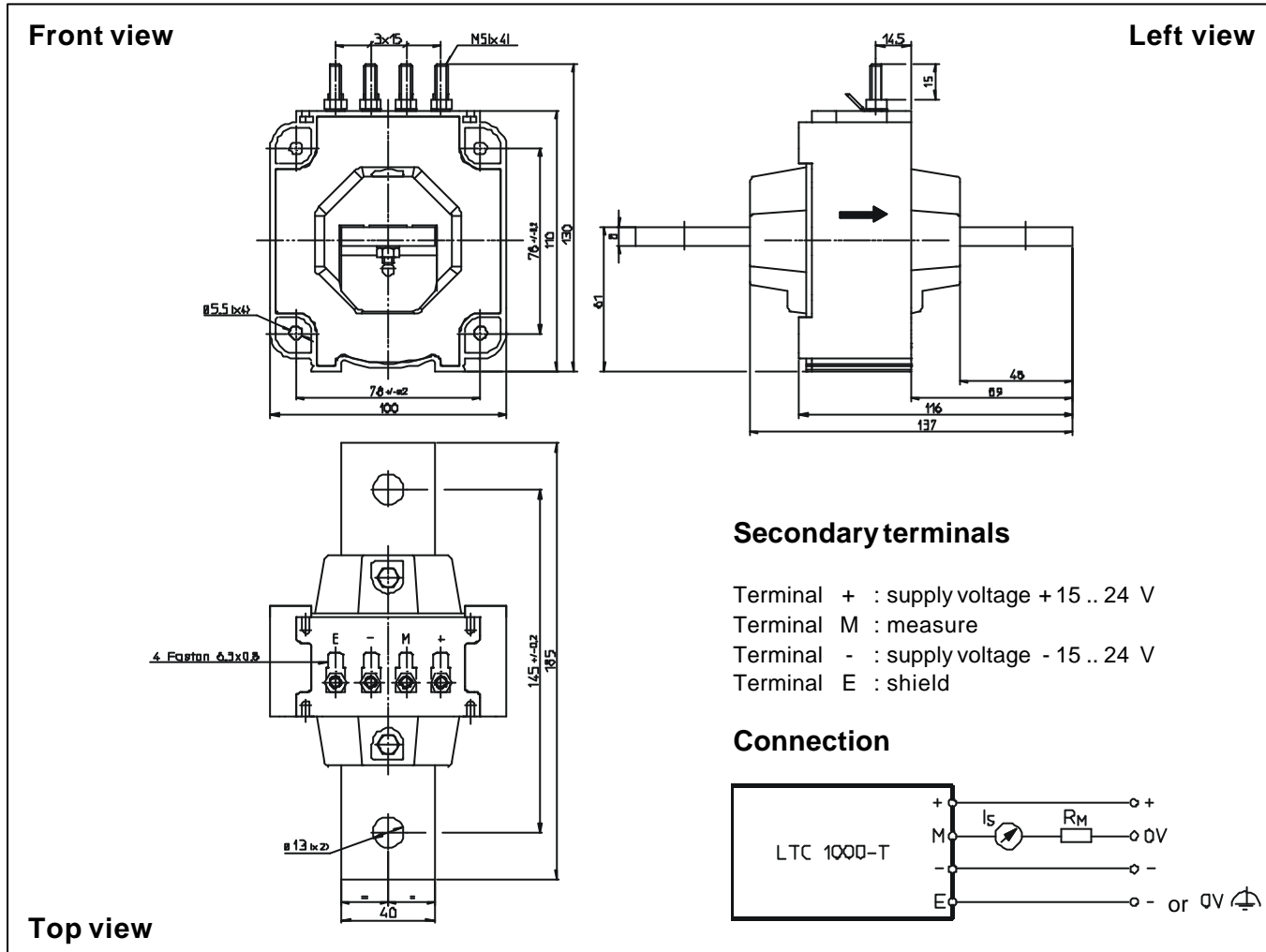
²⁾ Between primary and secondary + shield

³⁾ Between secondary and shield

⁴⁾ With a di/dt of $100 \text{ A}/\mu\text{s}$.

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Dimensions LTC 1000-T (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 1 mm
- Fixing the transducer
 - 2 holes $\varnothing 13$ mm
 - or by the primary bar
 - 2 steel screws M12
 - Fastening torque max 24.5 Nm
- Connection of secondary
 - M5 threaded studs
 - Fastening torque max 2.2 Nm or 1.62 Lb.-Ft.
 - Faston 6.3 x 0.8 mm

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.