

Current Transducer LT 1005-S/SP33

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

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 @ $\pm 15 \text{ V}$ @ $+ 24 \text{ V}$	0 .. ± 1500 0 .. + 2000	A A			
R_M	Measuring resistance	R_{Mmin}	R_{Mmax}			
				with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{max}$	0
			@ $\pm 1500 \text{ A}_{max}$	0	3	Ω
		with $+ 24 \text{ V}$	@ $+ 1000 \text{ A}_{max}$	0	55	Ω
	@ $+ 2000 \text{ A}_{max}$	0	6	Ω		
I_{SN}	Secondary nominal r.m.s. current	200	mA			
K_N	Conversion ratio	1 : 5000				
V_C	Supply voltage ($\pm 5 \%$) ($\pm 5 \%$)	± 15	V			
		0 .. + 24	V			
I_C	Current consumption	30 (@ +24 V) + I_s	mA			
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	12 ¹⁾	kV			
		1 ²⁾	kV			

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.4	%
e_L	Linearity	< 0.1	%
I_o	Offset current @ $I_p = 0$, $T_A = 25^\circ\text{C}$	Typ	Max
I_{OT}	Thermal drift of I_o - $25^\circ\text{C} \dots + 70^\circ\text{C}$	± 0.25	± 0.50 mA
t_r	Response time ³⁾ @ 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 50	A/ μs
f	Frequency bandwidth (- 1 dB)	DC .. 150	kHz

General data

T_A	Ambient operating temperature	- 25 .. + 70	$^\circ\text{C}$
T_S	Ambient storage temperature	- 25 .. + 85	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	43	Ω
m	Mass	850	g
	Standards	EN 50155	

Notes : ¹⁾ Between primary and secondary + shield

²⁾ Between secondary and shield

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

- $V_C = \pm 15 (\pm 5 \%) \text{ V}$ or 0 .. + 24 ($\pm 5 \%$) V (The customer must add two diodes in series with the measuring resistance)
- $K_N = 1 : 5000$
- $V_d = 12 \text{ kV}^{1)}$
- $T_A = - 25^\circ\text{C} \dots + 70^\circ\text{C}$
- Potted
- Connection to secondary circuit on M4 threaded studs
- Shield
- Railway equipment.

Advantages

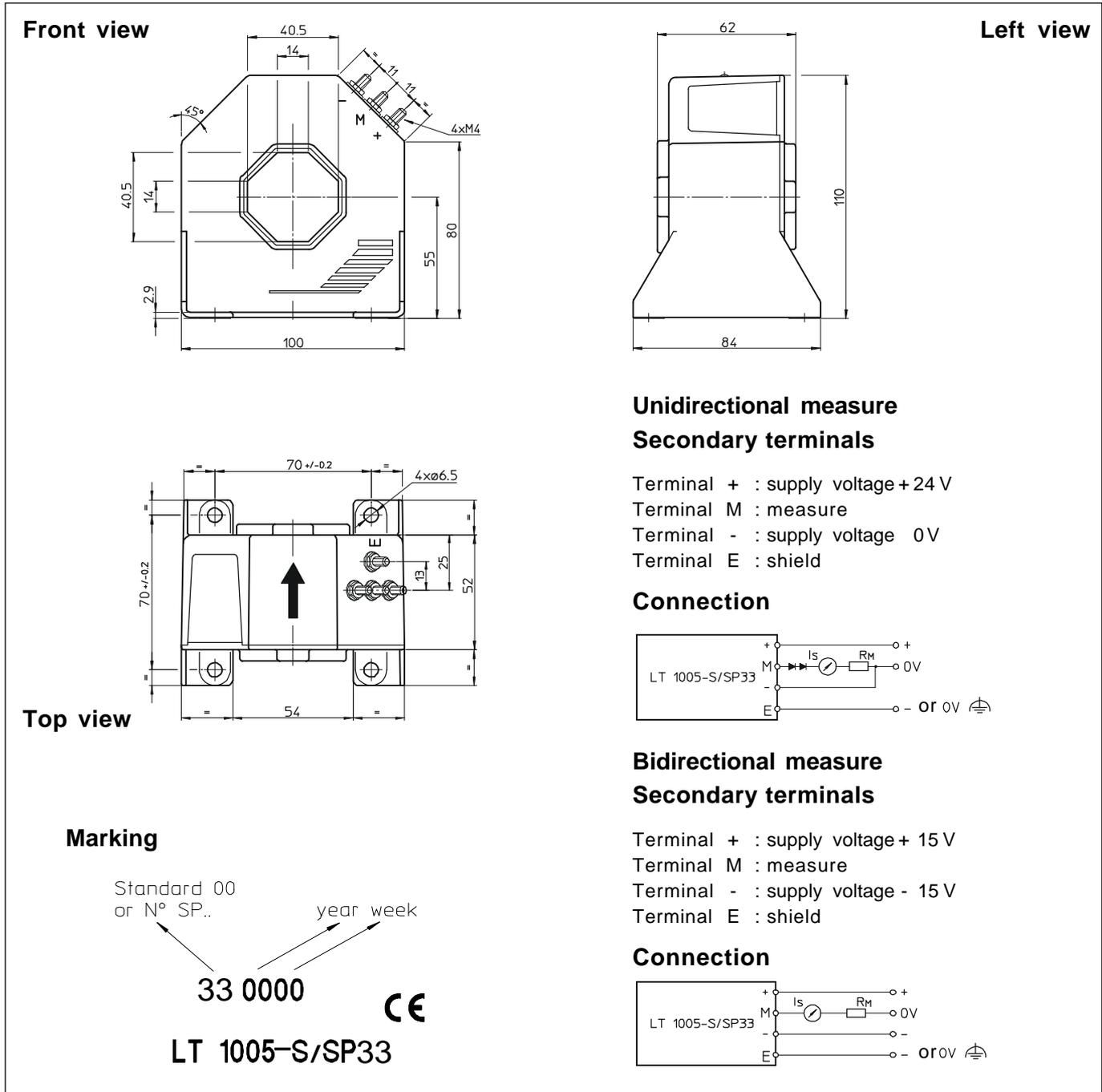
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

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.

070808/2

Dimensions LT 1005-S/SP33 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- | | |
|---------------------------|-----------------------|
| • General tolerance | ± 1.0 mm |
| • Fastening | 4 holes Ø 6.5 mm |
| • Primary through-hole | 40.5 x 40.5 mm |
| • Connection of secondary | M4 threaded studs |
| Fastening torque | 1.2 Nm or .88 Lb - Ft |

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.