

Current Transducer LT 1005-S/SP29

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

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).



16205

Electrical data

I_{PN}	Primary nominal r.m.s. current	1000	A					
I_P	Primary current, measuring range	0 .. ± 2400	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 $\pm 15 \text{ V}$	@ $\pm 1300 \text{ A}_{\max}$	0	10	@ $\pm 1250 \text{ A}^1$	0	10	Ω
		@ $\pm 1400 \text{ A}_{\max}$	0	7		0	5	Ω
		@ $\pm 1500 \text{ A}_{\max}$	0	4	@ $\pm 1450 \text{ A}^1$	0	3	Ω
	with $\pm 24 \text{ V}$	@ $\pm 2200 \text{ A}_{\max}$	0	10	@ $\pm 2100 \text{ A}^1$	3	10	Ω
@ $\pm 2300 \text{ A}_{\max}$		0	7		3	5	Ω	
@ $\pm 2400 \text{ A}_{\max}$		0	5		3	3	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	12 ²⁾	kV					
		1.5 ³⁾	kV					
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC	4.1	kV					

Features

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

Special features

- $I_p = 0 \dots \pm 2400 \text{ A}$
- $V_C = \pm 15 \dots 24 \text{ V} (\pm 5 \%)$
- $V_d = 12 \text{ kV}$
- $T_A = -40^\circ\text{C} \dots +85^\circ\text{C}$
- Secondary connection on screened cable and Wago 721-604 connector
- Shield between primary and secondary connected to the cable screening and to 4 pin of connector
- Railway equipment
- Customer marking.

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.

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.5	%
e_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Max
			± 0.25 mA
I_{OT}	Thermal drift of I_O	$-40^\circ\text{C} \dots +85^\circ\text{C}$	± 0.1 mA
t_r	Response time ⁴⁾ @ 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	$-40 \dots +85$	$^\circ\text{C}$
T_S	Ambient storage temperature	$-50 \dots +85$	$^\circ\text{C}$
R_S	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	40 Ω
		$T_A = 85^\circ\text{C}$	42 Ω
m	Mass Standards ⁵⁾	700	g
		EN50155	

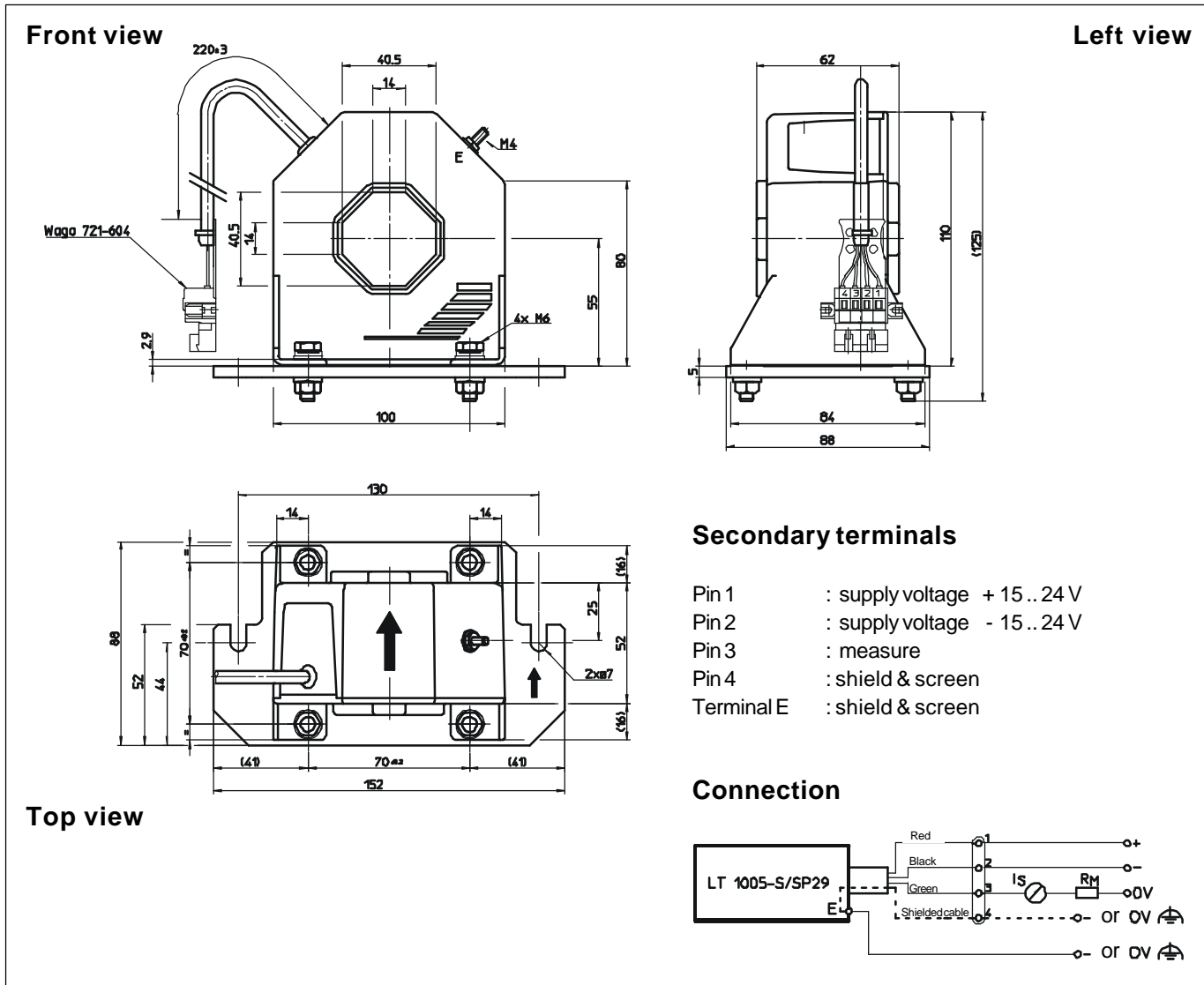
Notes: 1) $I_{P \max}$ @ $+85^\circ\text{C}$ & customer measuring resistance. 2) Between primary and secondary + internal shield + screened cable. 3) Between secondary and internal shield + screened cable. 4) With a di/dt of 100 A/ μs 5) A list of corresponding tests is available.

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LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.

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Dimensions LT 1005-S/SP29 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Fastening 4 holes $\varnothing 6.5$ mm
- Primary through-hole 40.5 x 40.5 mm
- Connection of secondary Wago 721-604 connector

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.