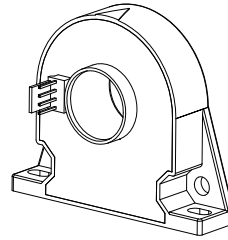


## Current Transducer LT 58-S7

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

$$I_{PN} = 50 \text{ A}$$



77204

### Electrical data

$I_{PN}$	Primary nominal current rms	50	A	
$I_{PM}$	Primary current, measuring range	0 .. $\pm 70$	A	
$R_M$	Measuring resistance	$R_{M \min}$ $R_{M \max}$		
				with $\pm 12 \text{ V}$
		@ $\pm 70 \text{ A}_{\max}$	0   70	$\Omega$
	with $\pm 15 \text{ V}$	@ $\pm 50 \text{ A}_{\max}$	0   200	$\Omega$
	@ $\pm 70 \text{ A}_{\max}$	0   110	$\Omega$	
$I_{SN}$	Secondary nominal current rms	50	mA	
$K_N$	Conversion ratio	1 : 1000		
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12 \dots 15$	V	
$I_C$	Current consumption	20 (@ $\pm 15 \text{ V}$ ) + $I_S$	mA	

### Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.8$	%
$\epsilon_L$	Linearity error	$< 0.2$	%
$I_{OE}$	Electrical offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max
			$\pm 0.20$
$I_{OM}$	Magnetic offset current <sup>1)</sup> @ $I_P = 0$ , and specified $R_M$ , after an overload of $1 \times I_{PN}$	Typ	Max
			$\pm 0.10$
$I_{OT}$	Temperature variation of $I_O$ - $10^\circ\text{C} \dots +70^\circ\text{C}$	$\pm 0.35$ $\pm 0.64$	mA
$t_{ra}$	Reaction time to 10 % of $I_{PN}$ step	$< 500$	ns
$t_r$	Response time <sup>2)</sup> to 90 % of $I_{PN}$ step	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 100$	A/ $\mu\text{s}$
<b>BW</b>	Frequency bandwidth (-3 dB)	DC .. 100	kHz

### General data

$T_A$	Ambient operating temperature	- 10 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 80	$^\circ\text{C}$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	11	$\Omega$
<b>m</b>	Mass	64	g
	Standard	EN 50178: 1997	

### Features

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

### 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.

### Application Domain

- Industrial.

**Notes:** <sup>1)</sup> Result of the coercive field of the magnetic circuit.

<sup>2)</sup> With a  $di/dt$  of 100 A/ $\mu\text{s}$ .

## Current Transducer LT 58-S7

### Isolation characteristics

$V_d$	Rms voltage for AC isolation test <sup>1)</sup> , 50 Hz, 1 min	3.52	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 $\mu$ s	6.5	kV
		Min	
<b>dCp</b>	Creepage distance <sup>2)</sup>	10	mm
<b>dCI</b>	Clearance <sup>2)</sup>	6	mm
<b>CTI</b>	Comparative Tracking Index (group IIIa)	275	

**Notes:** <sup>1)</sup> Between primary and secondary.

<sup>2)</sup> On housing.

### 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
<b>dCp, dCI, <math>\hat{V}_w</math></b>	Rated insulation voltage	Nominal voltage
Basic insulation	600 V	600 V
Reinforced insulation	300 V	300 V

### 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).

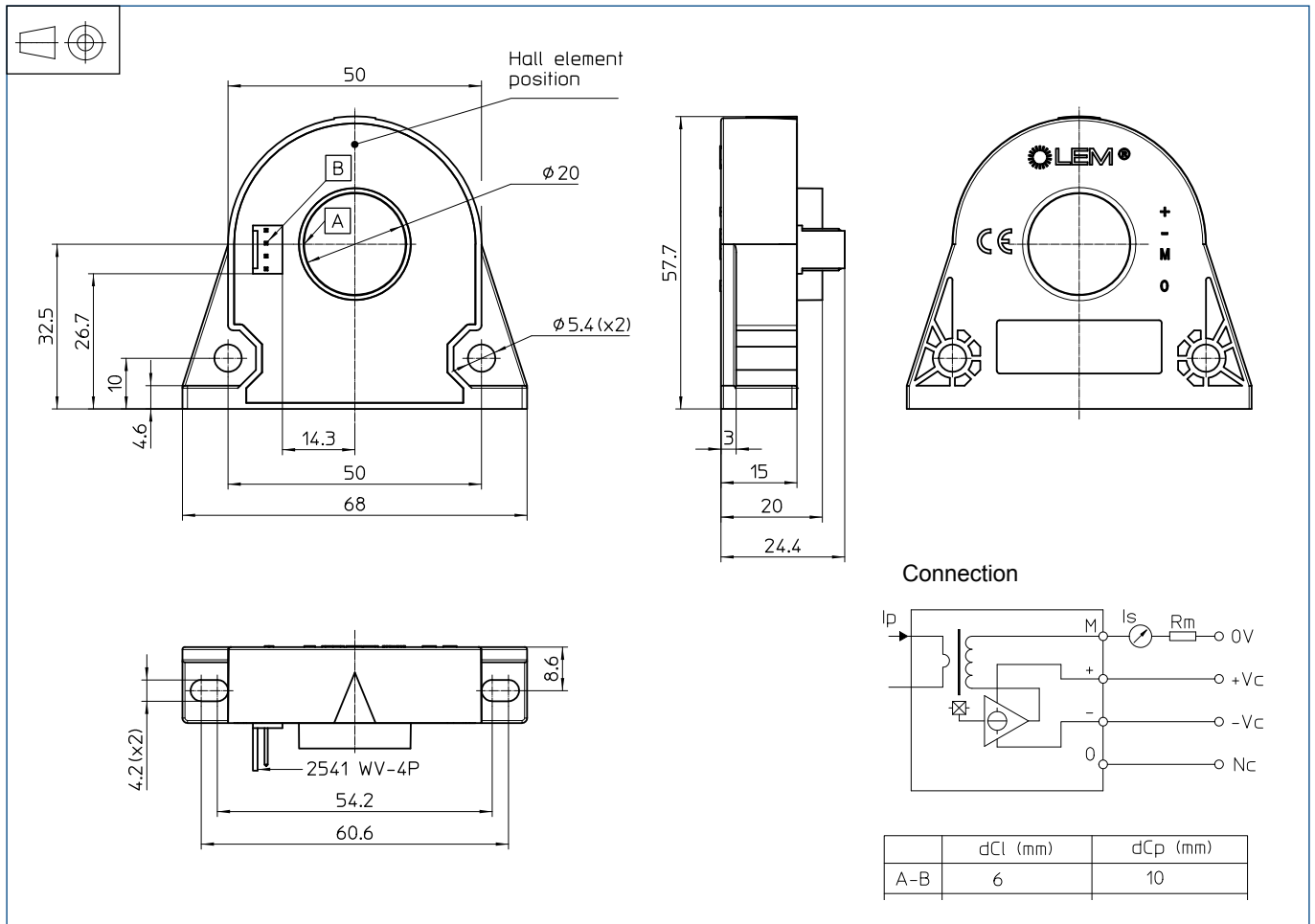
Ignoring this warning can lead to injury and/or cause serious damage.

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 LT 58-S7 (in mm)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Transducer fastening
  - 2 holes  $\phi 5.4$  mm
  - 2 M5 steel screws
  - Recommended fastening torque 1.5 Nm ( $\pm 10\%$ )
  - Or
  - 2 notches 4.2 mm
  - 2 M4 steel screws
  - Recommended fastening torque 0.75 Nm ( $\pm 10\%$ )
- Primary through-hole  $\phi 20$  mm
- Connection of secondary Socket 2541 WV-4P (Gallant, Shanghai)

### Remarks

- $I_s$  is positive when  $I_p$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed  $100^\circ\text{C}$ .
- Dynamic performances ( $di/dt$  and response time) are best with a single bar completely filling the primary hole.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.