

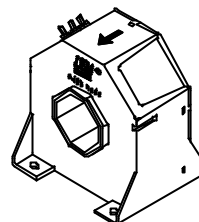
## Current Transducer LT 505-S/SP4

$$I_{PN} = 720 \text{ A}$$

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).



16130



### Electrical data

|          |  |  |                                      |
|----------|--|--|--------------------------------------|
| $I_{PN}$ | Primary nominal r.m.s. current                       | 720  | A                                    |
| $I_P$    | Primary current, measuring range                     | 0 .. $\pm 1400$  | A                                    |
| $R_M$    | Measuring resistance                                 | $R_{M \min}$ $R_{M \max}$  |                                      |
|          | with $\pm 15 \text{ V}$                              | @ $\pm 720 \text{ A}_{\max}$<br>@ $\pm 1150 \text{ A}_{\max}^{1)}$ | 0   40 $\Omega$<br>0   5 $\Omega$    |
|          | with $\pm 24 \text{ V}$                              | @ $\pm 720 \text{ A}_{\max}$<br>@ $\pm 1400 \text{ A}_{\max}$      | 10   90 $\Omega$<br>10   23 $\Omega$ |
| $I_{SN}$ | Secondary nominal r.m.s. current                     | 144  | 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    | 6  | kV                                   |
| $V_b$    | R.m.s. rated voltage <sup>2)</sup> , safe separation | 1750   | V                                    |
|          | basic isolation                                      | 3500   | V                                    |

### Features

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

### Special features

- $I_{PN} = 720 \text{ A}$
- $I_P = 0 \dots \pm 1400 \text{ A}$
- $T_A = -40^\circ\text{C} \dots +80^\circ\text{C}$
- Railway equipment
- Connection to secondary circuit on M4 threaded studs.

### 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 @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ | $\pm 0.5$           | %                |
| $\epsilon_L$ | Linearity error  | $< 0.1$             | %                |
| $I_O$        | Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$  | Typ   Max           |                  |
| $I_{OT}$     | Thermal drift of $I_O$                                 |                     |                  |
|              | - $25^\circ\text{C} \dots +70^\circ\text{C}$           | $\pm 0.2$ $\pm 0.3$ | mA               |
|              | - $40^\circ\text{C} \dots +80^\circ\text{C}$           | $\pm 0.2$ $\pm 0.8$ | mA               |
| $t_r$        | Response time <sup>3)</sup> @ 90 % of $I_{PN}$         | $< 1$               | $\mu\text{s}$    |
| $di/dt$      | $di/dt$ accurately followed                            | $> 50$              | A/ $\mu\text{s}$ |
| $f$          | Frequency bandwidth (-1 dB)                            | DC .. 150           | kHz              |

### General data

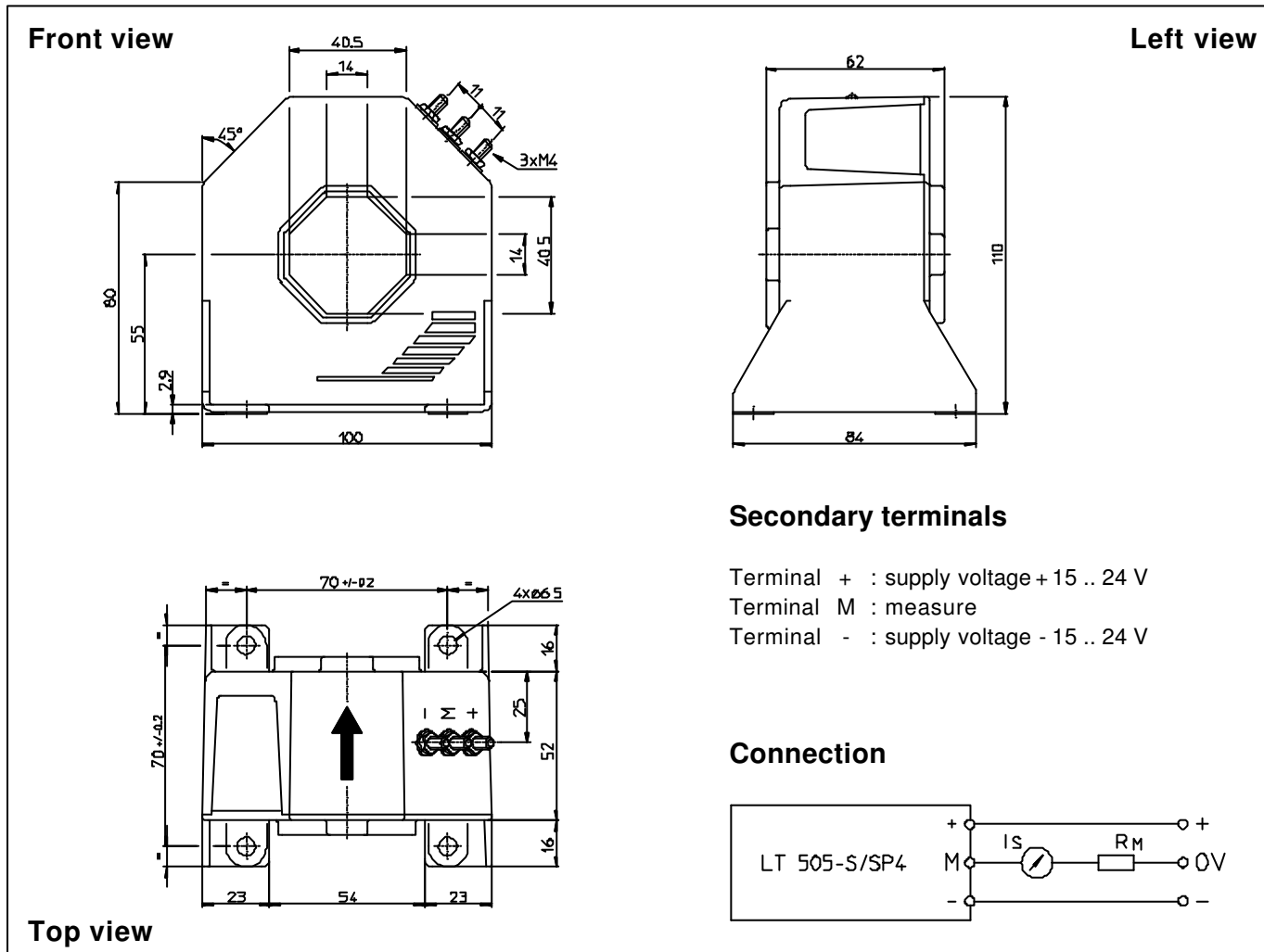
|       |  |            |                  |
|-------|--|------------|------------------|
| $T_A$ | Ambient operating temperature                        | -40 .. +80 | $^\circ\text{C}$ |
| $T_S$ | Ambient storage temperature                          | -50 .. +85 | $^\circ\text{C}$ |
| $R_S$ | Secondary coil resistance @ $T_A = 80^\circ\text{C}$ | 52         | $\Omega$         |
| $m$   | Mass   | 600        | g                |
|       | Standards  | EN 50155   |                  |

**Notes :** <sup>1)</sup> Maximum measurable current @  $V_C = \pm 15 \text{ V}$  ( $\pm 5 \%$ ),  $R_M = 5 \Omega$

<sup>2)</sup> Pollution class 2. With a non insulated primary bar which fills the through-hole

<sup>3)</sup> With a  $di/dt$  of 100 A/ $\mu\text{s}$ .

## Dimensions LT 505-S/SP4 (in mm. 1 mm = 0.0394 inch)



## Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Fastening 4 holes  $\varnothing 6.5$  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.