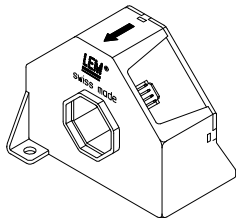
# Current Transducer LA 305-S

$I_{PN}$ = 300 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 | | | 300 | | | A |
| $I_P$ | Primary current, measuring range | | | 0 .. ± 500 | | | A |
| $R_M$ | Measuring resistance @ | | $T_A$ = 70°C | | $T_A$ = 85°C | | |
| | | | $R_{M\,min}$ | $R_{M\,max}$ | $R_{M\,min}$ | $R_{M\,max}$ | |
| | with ± 12 V | @ ± 300 A $_{max}$ | 0 | 52 | 0 | 50 | Ω |
| | | @ ± 500 A $_{max}$ | 0 | 17 | 0 | 15 | Ω |
| | with ± 15 V | @ ± 300 A $_{max}$ | 0 | 75 | 5 | 73 | Ω |
| | | @ ± 500 A $_{max}$ | 0 | 31 | 5 | 29 | Ω |
| $I_{SN}$ | Secondary nominal r.m.s. current | | | 120 | | | mA |
| $K_N$ | Conversion ratio | | | 1 : 2500 | | | |
| $V_C$ | Supply voltage (± 5 %) | | | ± 12 .. 15 | | | V |
| $I_C$ | Current consumption | | | 20 (@ ± 15 V) + $I_S$ | | | mA |
| $V_b$ | R.m.s. rated voltage [1], safe separation | | | 1750 | | | V |
| | basic isolation | | | 3500 | | | V |

## Accuracy - Dynamic performance data

| | | | | | |
|---|---|---|---|---|---|
| $X_G$ | Overall accuracy @ $I_{PN}$ , $T_A$ = 25°C | | ± 0.8 | | % |
| $\varepsilon_L$ | Linearity | | < 0.1 | | % |
| | | | Typ | Max | |
| $I_O$ | Offset current @ $I_P$ = 0, $T_A$ = 25°C | | | ± 0.20 | mA |
| $I_{OM}$ | Residual current [2] @ $I_P$ = 0, after an overload of 3 x $I_{PN}$ | | | ± 0.40 | mA |
| $I_{OT}$ | Thermal drift of $I_O$ | - 10°C .. + 85°C | ± 0.12 | ± 0.30 | mA |
| $t_{ra}$ | Reaction time @ 10 % of $I_{P\,max}$ | | < 500 | | ns |
| $t_r$ | Response time [3] @ 90 % of $I_{P\,max}$ | | < 1 | | µs |
| di/dt | di/dt accurately followed | | > 100 | | A/µs |
| f | Frequency bandwidth (- 3 dB) | | DC .. 100 | | kHz |

## General data

| | | | | |
|---|---|---|---|---|
| $T_A$ | Ambient operating temperature | | - 10 .. + 85 | °C |
| $T_S$ | Ambient storage temperature | | - 40 .. + 90 | °C |
| $R_S$ | Secondary coil resistance @ | $T_A$ = 70°C | 35 | Ω |
| | | $T_A$ = 85°C | 37 | Ω |
| m | Mass | | 200 | g |
| | Standards [4] | | EN 50178 | |

Notes : [1] Pollution class 2. With a non insulated primary bar which fills the through-hole
[2] The result of the coercive field of the magnetic circuit
[3] With a di/dt of 100 A/µs
[4] A list of corresponding tests is available

### Features

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

### 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.

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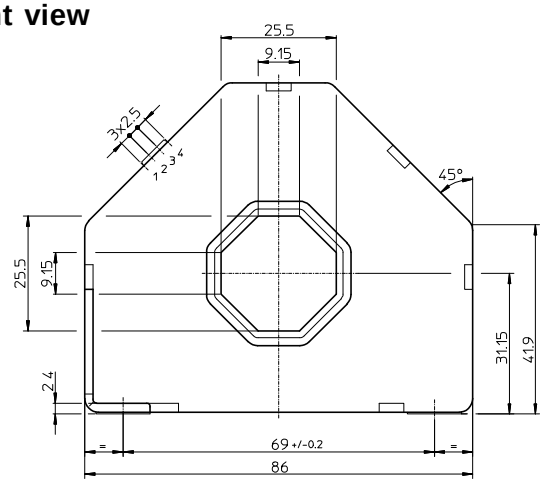
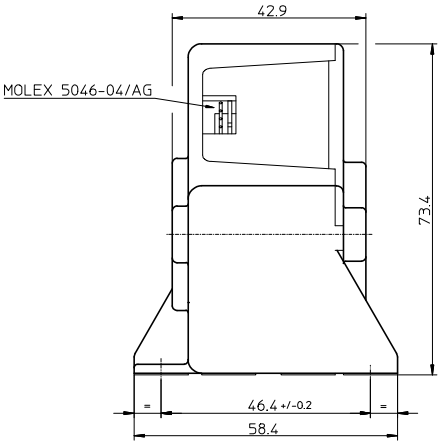
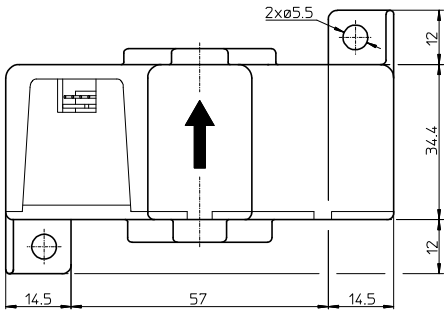
## Dimensions LA 305-S (in mm. 1 mm = 0.0394 inch)

**Front view**




**Left view**



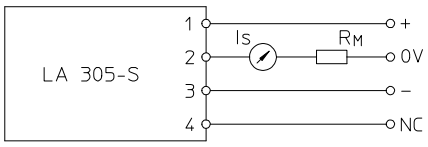




**Top view**

### Secondary terminals

Pin 1 : supply voltage + 12 .. 15 V
Pin 2 : measure
Pin 3 : supply voltage - 12 .. 15 V
Pin 4 : NC

### Connection




### Mechanical characteristics

| | |
|---|---|
| • General tolerance | ± 0.5 mm |
| • Fastening | 2 holes ∅ 5.5 mm |
| • Primary through-hole | 25.5 x 25.5 mm |
| • Connection of secondary | Molex 5046-04/AG |

### Remarks

- $\mathbf{I}_S$ is positive when $\mathbf{I}_P$ 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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.