

Current Transducer LF 2005-S

$$I_{PN} = 2000 \text{ A}$$

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 | 2000 | A | | |
| I_P | Primary current, measuring range @ $\pm 24 \text{ V}$ | 0 .. ± 3000 | A | | |
| R_M | Measuring resistance | R_{Mmin} | R_{Mmax} | | |
| | | with $\pm 15 \text{ V}$ | @ $\pm 2000 \text{ A}_{max}$ | 0 | 8 |
| | with $\pm 24 \text{ V}$ | @ $\pm 2200 \text{ A}_{max}$ | 0 | 5 | Ω |
| | | @ $\pm 2000 \text{ A}_{max}$ | 5 | 29 | Ω |
| | @ $\pm 3000 \text{ A}_{max}$ | 5 | 11 | Ω | |
| I_{SN} | Secondary nominal r.m.s. current | 400 | mA | | |
| K_N | Conversion ratio | 1 : 5000 | | | |
| V_C | Supply voltage ($\pm 5 \%$) | $\pm 15 \dots 24$ | V | | |
| I_C | Current consumption | 33 (@ $\pm 24 \text{ V}$) + I_S | mA | | |
| V_d | R.m.s. voltage for AC isolation test, 50 Hz, 1 mn | 6 | kV | | |

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.

Accuracy - Dynamic performance data

| | | | | |
|----------|--|---|-----------------------|----|
| X_G | Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ | ± 0.3 | % | |
| 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 | - $25^\circ\text{C} \dots + 70^\circ\text{C}$ | ± 0.2 ± 0.4 | mA |
| | | | | mA |
| t_r | Response time ¹⁾ @ 90 % of I_{PN} | < 1 | μs | |
| di/dt | di/dt accurately followed | > 50 | A/ μs | |
| f | Frequency bandwidth (- 1 dB) | DC .. 100 | kHz | |

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.

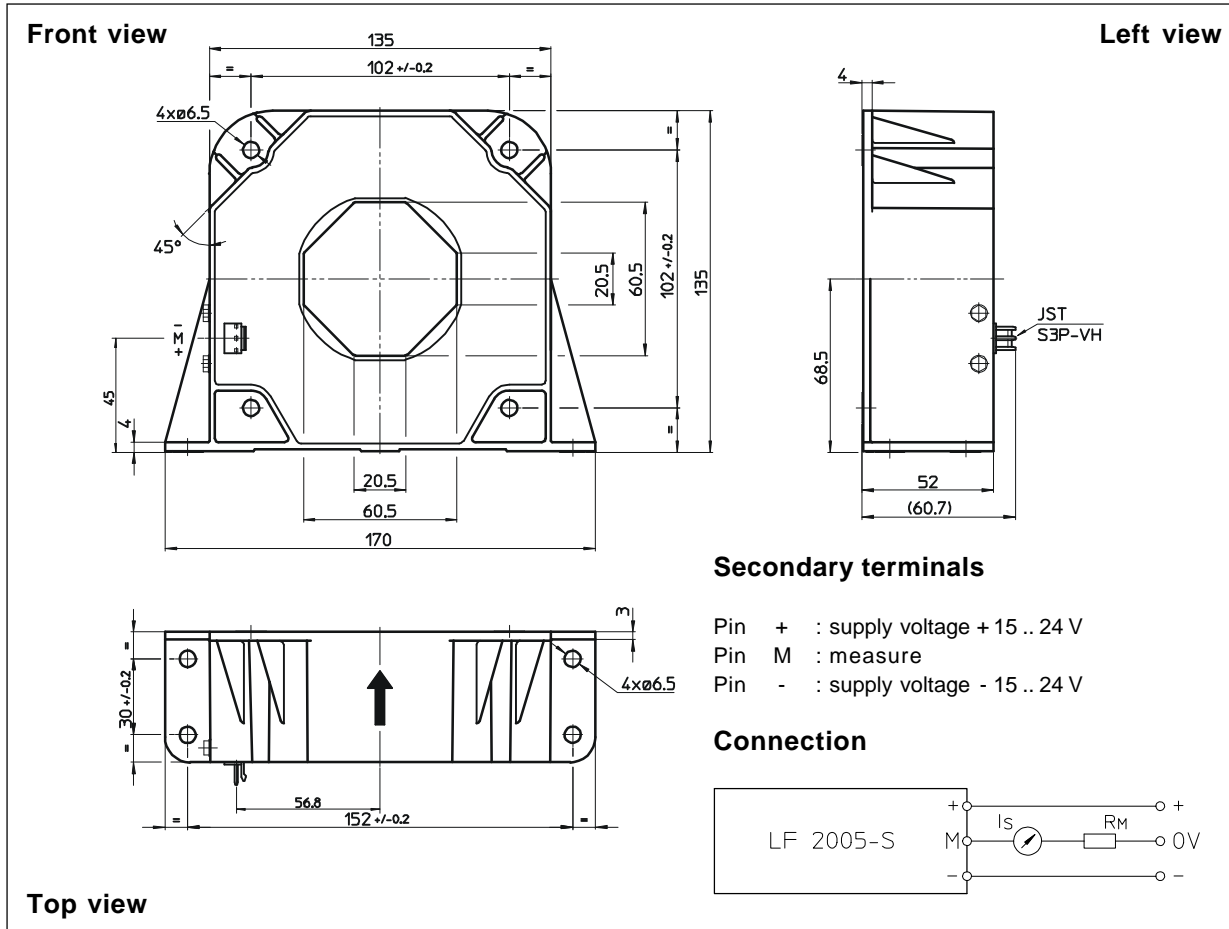
General data

| | | | |
|-------|--|--------------|------------------|
| T_A | Ambient operating temperature | - 25 .. + 70 | $^\circ\text{C}$ |
| T_S | Ambient storage temperature | - 40 .. + 85 | $^\circ\text{C}$ |
| R_S | Secondary coil resistance @ $T_A = 70^\circ\text{C}$ | 25 | Ω |
| m | Mass | 1.5 | kg |
| | Standards ²⁾ | EN 50178 | |

Notes : ¹⁾ With a di/dt of 100 A/ μs
²⁾ A list of corresponding tests is available.

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Dimensions LF 2005-S (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Fastening transducer 4 holes $\varnothing 6.5$
Flat or vertical position 4 screw M6 steel
Fastening torque 5.5 Nm or 4.05 Lb. - Ft.
- Primary through-hole 60.5 x 60.5 mm
- Connection of secondary S3P-VH

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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.