

Current Sensor HCMR 2000A-S-50-SB5-N



Image is for illustration purposes only. Please refer to product description.

| | |
|--------------------|---|
| Part number | 20 31 200 9101 |
| Specification | Current Sensor HCMR 2000A-S-50-SB5-N |
| HARTING eCatalogue | https://b2b.harting.com/20312009101 |

Identification

| | |
|-------------------|--|
| Category | Current measurement |
| Series | HCMR |
| Element | Current sensor |
| Sensor technology | Hall-Effekt Closed loop |
| Features | Hall effect compensated current sensor Measurable currents: AC, DC, pulsed, mixed ... High accuracy over the entire measuring range Galvanic insulation between primary and secondary current Internal screen between primary and secondary circuit Switchboard mounting Housing material and potting mass have a flammability rating UL 94 V-0 Applications: frequency converters, electrical drives, auxiliary converters |

Version

| | |
|----------------------|--|
| Termination | 4x screw lock with Faston (6.3 x 0.8 mm) |
| Field of application | Railway version |

Technical characteristics

| | |
|---|--|
| I_{PN} Nominal primary current | 2,000 A |
| I_{PM} Primary current, measuring range | 0 ... $\pm 3,600$ A |
| R_M Measuring resistance @ $I_{PM \max}$, $U_C \max$, $T_A \max$ | 1 ... 5 Ω For other primary currents see diagram. |
| I_{SN} Nominal secondary current | 400 mA |
| K_N Turns ratio | 1 : 5000 |
| U_C Power supply | ± 15 ... ± 24 V ± 5 % |



Technical characteristics

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|---|--|
| I_C Current consumption @ U_C min | 20 mA + I_S |
| X Overall accuracy @ I_{PN} , $T_A = 25\text{ °C}$ | $\pm 0.3\%$ |
| E_L Linearity | $< 0.1\%$ |
| I_O Offset current @ $I_P = 0\text{ A}$, $T_A = 25\text{ °C}$ | $\pm 0.5\text{ mA}$ |
| I_{OT} maximum temperature drift of I_O | $\pm 1\text{ mA}$ |
| t_r Response time @ I_{PN} | $< 1\text{ }\mu\text{s}$ |
| di/dt with optimal coupling | $> 100\text{ A}/\mu\text{s}$ |
| f Frequency | 0 ... 100 kHz |
| T_A Ambient temperature | $-40\text{ ... }+85\text{ °C}$ |
| T_S Storage temperature | $-45\text{ ... }+90\text{ °C}$ |
| R_S Secondary coil resistance @ $T_{A\text{ max}}$ | 28 Ω |
| U_D Test voltage, effective (50 Hz, 1 min) | 12 kV Primary - secondary 1.5 kV Secondary - screen |
| U_{St} Rated impulse voltage (1,2/50 μs) | 20 kV |
| U_B Rated voltage | 2,000 V |
| Overvoltage category | III |
| Pollution degree | 2 |
| L_S Clearance distance | 52.9 mm |
| K_S Creepage distance | 54.9 mm |
| Tightening torque | 4.2 Nm (4x steel screw M6 - Vertical) 4.2 Nm (4x steel screw M6 - Horizontal) |

Material properties

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|---|--------------------|
| Material (hood/housing) | Polycarbonate (PC) |
| Material flammability class acc. to UL 94 | V-0 |
| RoHS | compliant |
| ELV status | compliant |
| China RoHS | e |
| REACH Annex XVII substances | Not contained |
| REACH ANNEX XIV substances | Not contained |



Material properties

| | |
|--------------------------------------|---------------|
| REACH SVHC substances | Not contained |
| California Proposition 65 substances | Yes |
| California Proposition 65 substances | Nickel |

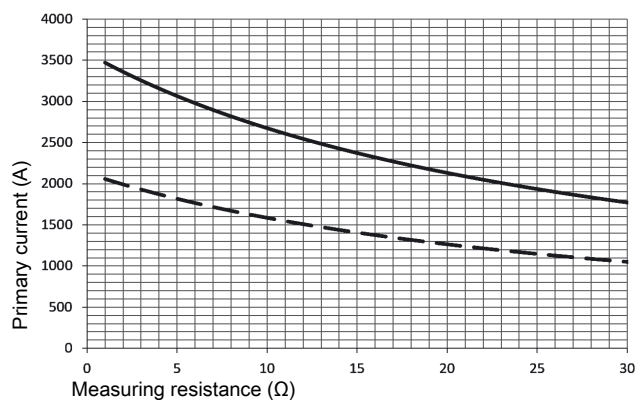
Specifications and approvals

| | |
|----------------|---|
| Specifications | EN 50155 IEC 61373 |
| Approvals | DNV GL |
| UL / CSA | UL 508 NMTR2.E359667 CSA-C22.2 No. 14-13 NMTR8.E359667 |
| CE | Yes |

Commercial data

| | |
|--------------------------------|------------------------------|
| Packaging size | 1 |
| Net weight | 1,771 g |
| Country of origin | Romania |
| European customs tariff number | 90303370 |
| GTIN | 5713140134058 |
| eCl@ss | 27210902 Current transformer |

Measuring resistance



— $U_C = \pm 24 \text{ V} -5 \%$, $T_A = 85 \text{ °C}$

- - - $U_C = \pm 15 \text{ V} -5 \%$, $T_A = 85 \text{ °C}$

Primary currents higher than I_{PM} only for peak!

Remark

- If I_P flows in the direction of the arrow I_S is positive.
- Over currents ($\gg I_{PN}$) or the missing of the supply voltage can cause an additional permanent magnetic offset.
- The temperature of the primary conductor may not exceed 100 °C.
- To achieve specified accuracy level in the temperature range of -40 ... -35 °C a warm up time of typically 20 minutes is recommended.

Safety note



These transformers may only be used in electrical or power electronic applications which fulfill the relevant regulations (standards, EMC requirements,...).

This transformer must be used in limited-energy secondary circuits according to IEC 61010-1.

Caution, risk of electric shock



- Pay attention to protect non-insulated high-power current carrying parts against direct contact (e.g. with a protective enclosure).
- When installing this sensor please make sure that the safe separation (between primary circuit and secondary circuit) is maintained over the whole circuits and their connections.
- The sensor may only be connected to a power supply respecting the SELV/PELV protective regulations according to EN 50 178. The installation of the power supply must be short-circuit-proof.
- Disconnecting the main power must be possible.
- The current sensors support a safe separation. The creepage and clearance distances are taken as a basis for the rated voltage. They are the shortest distance between the secondary connection and the sensor's window. The actual clearance and creepage distances depend on the position of the primary conductor respectively on the actual shortest distance between the primary conductor and the secondary connection.