

## Current Sensor HCM 2000A-0-50-CCA-C

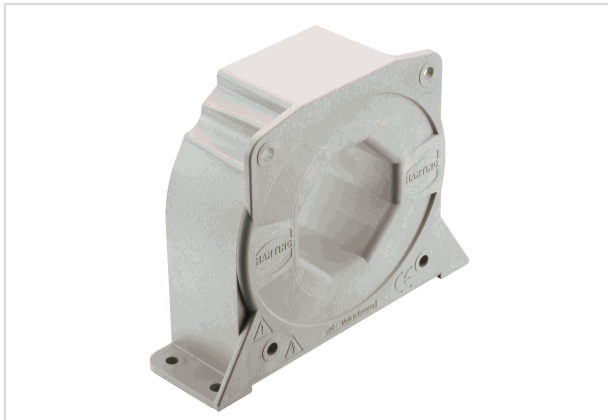


Image is for illustration purposes only. Please refer to product description.

|                    |   |
|--------------------|---|
| Part number        | 20 31 200 0201  |
| Specification      | Current Sensor HCM 2000A-0-50-CCA-C   |
| HARTING eCatalogue | <a href="https://b2b.harting.com/20312000201">https://b2b.harting.com/20312000201</a> |

### Identification

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

### Version

|                      |                            |
|----------------------|----------------------------|
| Termination          | Metz Typ 320 (PT11503VBBN) |
| Field of application | Industrial version         |
| Pack contents        | Connecting cable included  |

### Technical characteristics

|   |  |
|---|--|
| $I_{PN}$ Nominal primary current  | 2,000 A  |
| $I_{PM}$ Primary current, measuring range                               | 0 ... $\pm$ 3,000 A                                      |
| $R_M$ Measuring resistance<br>@ $I_{PM \max}$ , $U_C \max$ , $T_A \max$ | 1 ... 5 $\Omega$ For other primary currents see diagram. |
| $I_{SN}$ Nominal secondary current                                      | 400 mA   |
| $K_N$ Turns ratio   | 1 : 5000   |



## Technical characteristics

|   |  |
|---|--|
| U <sub>C</sub> Power supply   | ±15 ... ±24 V ±5 %   |
| I <sub>C</sub> Current consumption<br>@ U <sub>C min</sub>                      | 20 mA + I <sub>S</sub>   |
| X Overall accuracy<br>@ I <sub>PN</sub> , T <sub>A</sub> = 25 °C                | ±0.3 %   |
| E <sub>L</sub> Linearity  | <0.1 %   |
| I <sub>O</sub> Offset current<br>@ I <sub>P</sub> = 0 A, T <sub>A</sub> = 25 °C | ±0.5 mA  |
| I <sub>OT</sub> maximum temperature drift of I <sub>O</sub>                     | ±1.2 mA  |
| t <sub>r</sub> Response time<br>@ I <sub>PN</sub>                               | <1 μs  |
| di/dt with optimal coupling   | >100 A/μs  |
| f Frequency   | 0 ... 100 kHz  |
| T <sub>A</sub> Ambient temperature  | -40 ... +85 °C   |
| T <sub>S</sub> Storage temperature  | -45 ... +90 °C   |
| R <sub>S</sub> Secondary coil resistance<br>@ T <sub>A max</sub>                | 28 Ω   |
| U <sub>D</sub> Test voltage, effective (50 Hz, 1 min)                           | 4.5 kV Primary - secondary   |
| U <sub>SI</sub> Rated impulse voltage (1,2/50 μs)                               | 15 kV  |
| U <sub>B</sub> Rated voltage  | 1,500 V  |
| Overvoltage category  | III  |
| Pollution degree  | 2  |
| L <sub>S</sub> Clearance distance   | 21.1 mm  |
| K <sub>S</sub> Creepage distance  | 33.3 mm  |
| Tightening torque   | 4.2 Nm (4x steel screw M6 - Vertical)<br>4.2 Nm (4x steel screw M6 - Horizontal) |

## Material properties

|   |  |
|---|--|
| Material (hood/housing)                   | Polycarbonate (PC)                                     |
| Material flammability class acc. to UL 94 | V-0  |
| RoHS                                      | compliant with exemption                               |
| RoHS exemptions                           | 6(c): Copper alloy containing up to 4 % lead by weight |
| ELV status                                | compliant with exemption                               |
| China RoHS                                | 50   |
| REACH Annex XVII substances               | Not contained  |



## Material properties

|                                      |               |
|--------------------------------------|---------------|
| REACH ANNEX XIV substances           | Not contained |
| REACH SVHC substances                | Yes           |
| REACH SVHC substances                | Lead          |
| California Proposition 65 substances | Yes           |
| California Proposition 65 substances | Lead          |

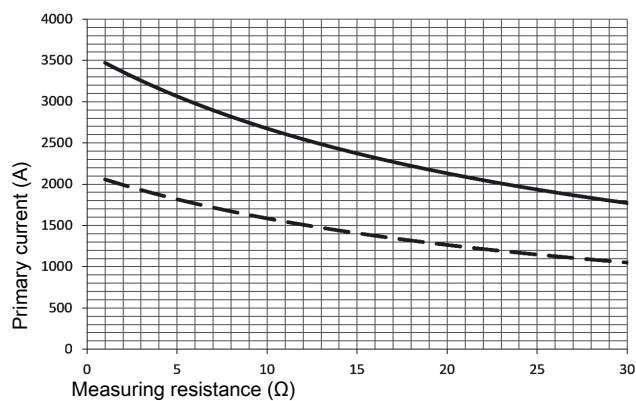
## Specifications and approvals

|                |                       |
|----------------|-----------------------|
| Specifications | EN 50178<br>IEC 61373 |
| Approvals      | DNV GL                |
| CE             | Yes                   |

## Commercial data

|                                |                              |
|--------------------------------|------------------------------|
| Packaging size                 | 1                            |
| Net weight                     | 1,375.14 g                   |
| Country of origin              | Romania                      |
| European customs tariff number | 90303370                     |
| 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.

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