## Insulation coordination

| Parameter | Symbol | Unit | Value | Comment |
|---|---|---|---|---|
| Rms voltage for AC insulation test 50 Hz/1 min | $U_d$ | kV | 5.4 | |
| Impulse withstand voltage 1.2/50 µs | $\hat{U}_W$ | kV | 10.1 | |
| Partial discharge extinction rms voltage @ 10 pC | $U_e$ | kV | 1.65 | |
| Clearance (pri. - sec.) | $d_{Cl}$ | mm | 11 | Shortest distance through air |
| Creepage distance (pri. - sec.) | $d_{Cp}$ | mm | 11 | Shortest path along device body |
| Comparative tracking index | *CTI* | V | 600 | |
| Application example | - | V | 1000 | Reinforced insulation, CAT III, PD2 non uniform field according to EN 50178 |
| Application example | - | V | 600 | Reinforced insulation, CAT III, PD3 non uniform field according to EN 50178, IEC 61010 |

## Environmental and mechanical characteristics

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Ambient operating temperature | $T_A$ | °C | -40 | | 105 | |
| Ambient storage temperature | $T_S$ | °C | -50 | | 105 | |
| Mass | *m* | g | | 28 | | |


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## Electrical data CTSR 0.3-P

At $T_A$ = 25 °C, $U_C$ = ± 5 V, output voltage referred to $V_{ref}$, unless otherwise noted (see Min., Max., typical definition paragraph) in page 10.

| Parameter | Symbol | Unit | Min | Typ | Max | Comment |
|---|---|---|---|---|---|---|
| Primary nominal residual rms current | $I_{PRN}$ | mA | | 300 | | |
| Primary residual current, measuring range | $I_{PRM}$ | mA | -500 | | 500 | |
| Supply voltage | $U_C$ | V | 4.75 | 5 | 5.25 | |
| Current consumption | $I_C$ | mA | 16 | 17.5 | 21.6 | + $I_P$ (mA)/$N_S$<br>With $N_S$ = 1000 turns<br>- 40 .. 105 °C |
| Output voltage referred to GND (during Degauss cycle) | $V_{out}$ | V | | 0.3 | 0.5 | Note [1] |
| Output voltage referred to $V_{ref}$ (test current) | $V_{out}$ | V | 0.7 | 1.2 | 1.7 | Note [1] |
| Reference voltage @ $I_P$ = 0 | $V_{ref}$ | V | 2.495 | 2.5 | 2.505 | Internal reference |
| External reference voltage | $V_{ref}$ | V | 2.3 | | 4 | Internal reference of $V_{ref}$ input = 499 Ω<br>Note [1] |
| Electrical offset current referred to primary (Note [2]) | $I_{OE}$ | mA | -24 | 7 | 24 | |
| Temperature coefficient of $V_{ref}$ @ $I_P$ = 0 | $TCV_{ref}$ | ppm/K | | | ±50 | - 40 .. 105 °C |
| Temperature coefficient of $V_{OE}$ @ $I_P$ = 0 | $TCV_{OE}$ | ppm/K | | | ±570 | ppm/K of 2.5 V<br>- 40 .. 105 °C |
| Theoretical sensitivity | $G_{th}$ | V/A | | 4 | | |
| Sensitivity error (Note [2]) | $\varepsilon_G$ | % | -1.6 | 0.5 | 1.6 | $R_L$ > 500 kΩ |
| Temperature coefficient of $G$ | $TCG$ | ppm/K | | | ±230 | - 40 .. 85 °C |
| | | | | | ±400 | - 40 .. 105 °C |
| Linearity error | $\varepsilon_L$ | % of $I_{PRM}$ | | 0.5 | 1 | |
| Magnetic offset current (1000 x $I_{PRN}$) referred to primary | $I_{OM}$ | mA | | 17 | | |
| Output rms voltage noise (spectral density) 1 .. 10 kHz referred to primary | $V_{no}$ | mV | | 6 | | $R_L$ > 500 kΩ |
| Reaction time @ 10 % of $I_{PRN}$ | $t_{ra}$ | µs | | 7 | | $R_L$ > 500 kΩ,<br>d$i$/d$t$ > 5 A/µs |
| Response time @ 90 % of $I_{PN}$ | $t_r$ | µs | | 50 | | $R_L$ > 500 kΩ,<br>d$i$/d$t$ > 5 A/µs |
| Frequency bandwidth (- 1 dB) | $BW$ | kHz | | 3.5 | | $R_L$ > 500 kΩ |
| Accuracy (Note [3]) | $X$ | % | | | 1.9 | = $(\varepsilon_G^2 + \varepsilon_L^2)^{1/2}$ |

Notes:
[1] See “Application information” section.
[2] Only with a primary nominal residual current, see paragraph “Primary nominal residual current and primary nominal current”.
[3] Accuracy @ $T_A$ and $I_P$: $X_{TA} = (X^2 + (TCG \cdot 100 \cdot (T_A - 25))^2 + (TCV_{OE} \cdot 2.5 \cdot (T_A - 25)/G_{th} \cdot 100/I_P)^2)^{1/2}$.


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