

**Insulation coordination**

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC isolation test 50/60 Hz/1 min <sup>1)</sup>	$U_d$	kV	4.3	
Impulse withstand voltage 1.2/50 $\mu$ s	$\dot{U}_w$	kV	8	
Partial discharge extinction rms voltage @ 10 pC	$U_e$	V	1650	
Clearance (pri. - sec.)	$d_{Cl}$	mm	8	Shortest distance through air
Creepage distance (pri. - sec.)	$d_{cp}$	mm	8	Shortest path along device body
Case material			V0 according to UL 94	
Comparative tracking index	$CTI$	V	600	
Application example	-	-	600 V CAT III PD2	Reinforced insulation, non uniform field according to EN 50178
Application example	-	-	300 V CAT III PD2	Reinforced insulation, non uniform field according to IEC 61010
Application example	-	-	1000 V CAT III PD2	Simple insulation, 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	-40		105	
Surrounding temperature according to UL 508		°C			105	
Mass	$m$	g		10		

**Note:** <sup>1)</sup> Voltage of Retention pins has to be consider. If it is same as primary electrical potential, insulation is no issue.  
If it is same as secondary electrical potential, insulation of primary bus bar has to be considered.

**Electrical data  $I_{PN} = 6\text{ A}$** 

 At  $T_A = 25^\circ\text{C}$ ,  $U_C = +3.3\text{ V}$ ,  $N_P = 1$  turn,  $R_L = 10\text{ K}\Omega$  unless otherwise noted (see Min, Max, typ. definition paragraph in page 7).

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal rms current	$I_{PN}$	A		6		
Primary current, measuring range	$I_{PM}$	A	-20		20	
Number of primary turns	$N_P$			1,2,3		
Supply voltage	$U_C$	V	3.14	3.3	3.46	
Current consumption	$I_C$	mA			25	
Reference voltage	$V_{ref}$	V	1.636	1.65	1.664	Internal reference
External reference voltage	$V_{ref}$	V	0.5		1.85	@ $U_C = 3.3 \approx 3.46\text{ V}$
			0.5		1.7	@ $U_C = 3.14 \approx 3.3\text{ V}$
Output voltage range @ $I_{PM}$	$V_{out} - V_{ref}$	V	-1.15		1.15	
Output voltage @ $I_P = 0\text{ A}$	$V_{out}$	V		$V_{ref} + V_{OE}$		
Electrical offset voltage	$V_{OE}$	mV	-7		7	
Temperature coefficient of $V_{ref}$	$TCV_{ref}$	ppm/K			$\pm 170$	-20 °C .. 85 °C Internal reference
					$\pm 190$	-40 °C .. 105 °C Internal reference
Temperature coefficient of $V_{OE}$	$TCV_{OE}$	mV/K			$\pm 0.14$	-40 °C .. 105 °C
Theoretical sensitivity	$G_{th}$	mV/A		76.67		460 mV / $I_{PN}$ @ $U_C = 3.3\text{ V}$
Sensitivity error	$\epsilon_G$	%			$\pm 0.85$	Factory adjustment
Temperature coefficient of G	$TCG$	ppm/K			$\pm 250$	
Linearity error 0 .. $I_{PN}$	$\epsilon_L$	% of $I_{PN}$			$\pm 0.5$	@ $U_C = 3.3\text{ V}$
Linearity error 0 .. $I_{PM}$	$\epsilon_L$	% of $I_{PM}$			$\pm 0.8$	@ $U_C = 3.3\text{ V}$
Gain error with respect to $U_C \pm 10\%$		%/%			$\pm 0.4$	Gain error per $U_C$ drift
Magnetic offset voltage @ $I_P = 0$ after $2.5 \times I_{PN}$	$V_{OM}$	mV			$\pm 3$	
Reaction time @ 10 % of $I_{PN}$	$t_{ra}$	$\mu\text{s}$			2	$di/dt = I_{PN}/\mu\text{s}$
Response time @ 90 % of $I_{PN}$	$t_r$	$\mu\text{s}$			3.5	$di/dt = I_{PN}/\mu\text{s}$
Frequency bandwidth (-3 dB)	$BW$	kHz		250		
Output rms voltage noise (spectral density) (DC .. 100 kHz)	$e_{no}$	$\mu\text{V}/\sqrt{\text{Hz}}$			18.9	
Output voltage noise (DC .. 20 MHz)	$V_{no}$	mVpp		40		
Over-current detect		V	$2.6 \times I_{PN}$	$2.9 \times I_{PN}$	$3.2 \times I_{PN}$	peak value
Accuracy @ $I_{PN}$	X	% of $I_{PN}$			$\pm 1.35$	$\epsilon_G + \epsilon_L$
Accuracy @ $I_{PN}$ @ $T_A = +85^\circ\text{C}$	X	% of $I_{PN}$			$\pm 4.68$	See formula note <sup>1)</sup>
Accuracy @ $I_{PN}$ @ $T_A = +105^\circ\text{C}$	X	% of $I_{PN}$			$\pm 5.79$	See formula note <sup>1)</sup>

Note: <sup>1)</sup> Accuracy @  $I_P$  and  $X_{TA} = \pm [X + (TCG/10000) \cdot (T_A - 25) + TCV_{OE} \cdot 100 \cdot (T_A - 25) / (G_{th} \cdot I_P)]$ .