Insulation coordination

Parameter	Symbol	Unit	Value	Comment
Rms voltage for AC insulation test, 50 Hz, 1 min	U_d	kV	3.8	
Impulse withstand voltage 1.2/50 µs	$\hat{U}_W$	kV	10	
Insulation resistance	R_{IS}	MΩ	1000	measured at 3.8 kV AC
Comparative tracking index	*CTI*		600	
Application example			300 V CAT III, PD2	Reinforced insulation, non uniform field according to EN 50178, IEC 61010
Application example			1000 V CAT III, PD2	Basic insulation, non uniform field according to EN 50178, IEC 61010
Case material	-	-	V0 according to UL 94	
Clearance and creepage	See dimensions drawing on page 7			

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	°C	−40		85	
Ambient storage temperature	T_S	°C	−50		90	
Mass	*m*	g		107		

Electrical data

At T_A = 25 °C, $\pm U_C$ = ±15 V, R_M = 1 Ω, unless otherwise noted.
Lines with a * in the conditions column apply over the −40 … 85 °C ambient temperature range.

Parameter	Symbol	Unit	Min	Typ	Max	Conditions	
Primary nominal rms current	I_{PN}	A			300	*	
Primary current, measuring range	I_{PM}	A	−500		500	*	
Measuring resistance	R_M	Ω	0			*	Max value of R_M is given in figure 1
Secondary nominal rms current	I_{SN}	A	−0.15		0.15	*	
Resistance of secondary winding	R_S	Ω			22.5		$R_S(T_A) = R_S \times (1 + 0.004 \times (T_A + \Delta temp - 25))$ Estimated temperature increase @ I_{PN} is Δtemp = 15 °C
Secondary current	I_S	A	−0.25		0.25	*	
Number of secondary turns	N_S			2000			
Theoretical sensitivity	G_{th}	mA/A		0.5			
Supply voltage	$\pm U_C$	V	±11.4		±21	*	
Current consumption	I_C	mA		33 + I_S 35 + I_S 38 + I_S			$\pm U_C$ = ±12 V $\pm U_C$ = ±15 V $\pm U_C$ = ±20 V
Offset current, referred to primary	I_O	A	−0.2		0.2		
Temperature variation of I_O, referred to primary	I_{OT}	A	−0.2		0.2	*	
Magnetic offset current, referred to primary	I_{OM}	A		±0.2			After 3 × I_{PN}
Sensitivity error	ε_G	%	−0.1		0.1	*	
Linearity error	ε_L	% of I_{PN}	−0.05		0.05	*	
Overall accuracy at I_{PN}	X_G	% of I_{PN}	−0.2 −0.2		0.2 0.2	*	25 … 85 °C −40 … 85 °C
Output rms noise current referred to primary	I_{no}	mA		35			1 Hz to 100 kHz (see figure 4)
Reaction time @ 10 % of I_{PN}	t_{ra}	μs		0.5			0 to 300 A, 100 A/μs R_M = 10 Ω
Step response time to 90 % of I_{PN}	t_r	μs		0.5			0 to 300 A, 100 A/μs R_M = 10 Ω (see figure 2)
Frequency bandwidth	BW	kHz		100			R_M = 50 Ω; −3 dB

Definition of typical, minimum and maximum values

Minimum and maximum values for specified limiting and safety conditions have to be understood as such as well as values shown in “typical” graphs.
On the other hand, measured values are part of a statistical distribution that can be specified by an interval with upper and lower limits and a probability for measured values to lie within this interval.
Unless otherwise stated (e.g. “100 % tested”), the LEM definition for such intervals designated with “min” and “max” is that the probability for values of samples to lie in this interval is 99.73 %.
For a normal (Gaussian) distribution, this corresponds to an interval between −3 sigma and +3 sigma. If “typical” values are not obviously mean or average values, those values are defined to delimit intervals with a probability of 68.27 %, corresponding to an interval between −sigma and +sigma for a normal distribution.
Typical, minimum and maximum values are determined during the initial characterization of the product.