

E-CUBE TECHNICAL DATASHEET



REFERENCE	E-CUBE-ZB35AO		E-CUBE-ZB180AO		E-CUBE-ZB500AO	
MEASURE RANGE	0,5 A to 35 A		2,5A to 180 A		7 A to 500 A	
MAXIMUM VOLTAGE	300 Vac		600 Vac		600 Vac	
CURRENT ACCURACY +/-	+/- 2% FSD (Full Scale Deflection)		+/- 2,5 % FSD (Full Scale Deflection)		+/- 2,5 % FSD (Full Scale Deflection)	
POWER ESTIMATION RANGE @ 230V	115 W to 8 050 W		575 W to 41 400 W		1 610 W to 115 000 W	
POWER ESTIMATION RANGE @ 110V	55 W to 3 050 W		275 W to 19 800 W		770 W to 55 000 W	
ENERGY ESTIMATION UNIT	kWh					
MEASUREMENT FREQUENCIES (MAIN)	50 Hz & 60Hz					
ENVIRONMENT	Indoor					
PROTECTION (IP)	IP40					
CALIBRATION	Not required					
TEMPERATURE RANGE	-20 °C to +60°C					
STORAGE TEMPERATURE	-30°C +90°C					
OPERATING TEMPERATURE	-20°C +60°C					
TEMPERATURE ACCURACY	+/- 5 % FSD					
RADIO PROTOCOL	IEEE 802.15					
RADIO FREQUENCY	2.4 GHz					
RADIO POWER	+ 5 dBm					
RADIO TRANSMISSION RATE DEPENDING ON CURRENT	0,5A => 22s		2,5A => 30s		7A => 40s	
RADIO TRANSMISSION RATE DEPENDING ON CURRENT	35A => 0.3s		180A => 0.3s		500A => 0.3s	
TEST RESULT AMBIANT TEMPERATURE						
START AMBIENT TEMPERATURE	0,21A		1A		3A	
MAX ERROR FSD** AMBIENT TEMPERATURE	0.5A to 5A [-1,2%:2,4%] [-0,06A:0,12A]	5A to 35A [-2,2%:0,8%] [-0,77A:0,04A]	2.5A to 25A [-1,37%:-0,97%] [-0,34A:-0,24A]	25A to 180A [-1,48%:0,65%] [-2,66A:1,17A]	7A to 70A [-2,1%:0,3%] [-1,47A:0,21A]	70A to 500A [-2,5%:1,0%] [-12,5A:5A]
RMSE*** AMBIENT TEMPERATURE	0.5A to 5A 0,05A	5A to 35A 0,25A	2.5A to 25A 0,31A	25A to 180A 0,89A	7A to 70A 1,28A	70A to 500A 3,87A
TEST RESULT ON WHOLE TEMPERATURE RANGE [-20°C; 70°C]						
START AMBIENT TEMPERATURE	0,36A		1A		4,5A	
MAX ERROR FSD	0.5A to 5A [-4,5%:9,1%] [-0,23A:0,46A]	5A to 35A [-9,4%:5,9%] [-3,28A:2,07A]	2.5A to 25A [-1,37%:-0,97%] [-0,34A:-0,24A]	25A to 180A [-1,48%:0,65%] [-2,66A:1,17A]	7A to 70A [-3,4%:2,2%] [-2,45A:1,54A]	70A to 500A [-6,9%:2,8%] [-34,5A:14A]
RMSE	0.5A to 5A 0,26A	5A to 35A 1,57A	2.5A to 25A 0,31A	25A to 180A 0,89A	7A to 70A 1,78A	70A to 500A 13,29A
TEST RESULT ON EXTREME						
START -20°C	0,36A		1,04A		4,5A	
MAX ERROR FSD	0.5A to 5A [-2%:9,1%] [-0,1A:0,46A]	5A to 35A [0%:5,9%] [0A-2,07A]	2.5A to 25A [-1 %:0,47%] [-0,25A:0,12A]	25A to 180A [0%:5,21%] [0A:9,38A]	7A to 70A [-1,9%:2,2%] [-1,3A:1,54A]	70A to 500A [0,6%:2,8%] [3A-14A]
RMSE	0.5A to 5A 0,26A	5A to 35A 1,56A	2.5A to 25A 0,12	25A to 180A 6,65A	7A to 70A 1,16A	70A to 500A 9,17A
START 70°C	0,2A		1A		4,5A	
MAX ERROR FSD	0.5A to 5A [-4,5%:-1,8%] [-0,23A:-0,09A]	5A to 35A [-9,4%:0%] [3,28A:0A]	2.5A to 25A [-3,48%:-2,2%] [-0,87A:-0,55A]	25A to 180A [-10,39%:0%] [-18,7A:0A]	7A to 70A [-3,4%:-2,2%] [-2,45A:-1,54A]	70A to 500A [-6,9%:-0,3%] [-34,5A:-1,5A]
RMSE	0.5A to 5A 0,17A	5A to 35A 1,57A	2.5A to 25A 0,73A	25A to 180A 9,85A	7A to 70A 1,78A	70A to 500A 13,29A
BOARD DIMENSION	50 x 25 mm					
SENSOR MATERIAL	PC cristal LEXAN 925 (UL N°E45 329)					
SENSOR DIMENSION	61mm x 35mm x 35mm					
WIRE LENGHT	90 mm					
SPLIT CORE MECHANICAL PARAMETER						
CASE	PC / UL94-V0					
BOBBIN	PBT					
CORE	Silicon steel					
INTERNAL STRUCTURE	Epoxy					
CONSTRUCTION	Tie					
OPERATING TEMPERATURE	-25°C ~ +75°C					
OPERATING HUMIDITY	< 85%					
SPLIT CORE DIMENSIONS 35 A	40 x 30 x 27 mm		70 x 51,5 x 39 mm		84 x 65 x 41 mm	
SPLIT CORE DIAMETER	10 mm		24 mm		35 mm	

****FSD: FULL SCALE DEFLECTION** CALCULATES THE ERROR ON THE FULL SCALE OF MEASUREMENT OF THE PRODUCT. IT IS EXPRESSED AS A PERCENTAGE OF THE RANGE OF MEASUREMENT. THE TAB TAKES THE MAX ERROR OBSERVED ON THE SET OF SENSORS TESTED.

*****RMSE: ROOT MEAN SQUARE ERROR.** RMSE CALCULATION IS MADE WITH AN INTERPOLATION (CUBIC SPINE INTERPOLATION) OF THE CURVES WITH A 0.5A STEP.