

E-CUBE TECHNICAL DATASHEET



REFERENCE	E-CUBE-ZB35A0		E-CUBE-ZB180A0		E-CUBE-ZB500A0	
MEASURE RANGE	0,5 A to 35 A		2,5A to 180 A		7 A to 500 A	
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 8050 W					
POWER ESTIMATION RANGE @ 110V	55 W to 3050 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 ACCORDING TO THE CURRENT	0,5A => 22s		2,5A => 30s		7A => 40s	
RADIO TRANSMISSION RATE ACCORDING TO THE CURRENT	35A => 0,3s		180A => 0,3s		500A => 0,3s	
TEST RESULT AMBIANT TEMPERATURE						
START AMBIENT TEMPERATURE	0,21A		1A		3A	
MAX ERROR FSD**	0,5A to 5A	5A to 35A	2,5A to 25A	25A to 180A	7A to 70A	70A to 500A
AMBIENT TEMPERATURE	[-1,2%; 2,4%] [-0,06A; 0,12A]	[-2,2%; 0,8%] [-0,77A; 0,04A]	[-1,37%; -0,97%] [-0,34A; -0,24A]	[-1,48%; 0,65%] [-2,66A; 1,17A]	[-2,1%; 0,3%] [-1,47A; 0,21A]	[-2,5%; 1,0%] [-12,5A; 5A]
RMSE***	0,05A	0,25A	0,31A	0,89A	1,28A	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	5A to 35A	2,5A to 25A	25A to 180A	7A to 70A	70A to 500A
	[-4,5%; 9,1%] [-0,23A; 0,46A]	[-9,4%; 5,9%] [-3,28A; 2,07A]	[-1,37%; -0,97%] [-0,34A; -0,24A]	[-1,48%; 0,65%] [-2,66A; 1,17A]	[-3,4%; 2,2%] [-2,45A; 1,54A]	[-6,9%; 2,8%] [-34,5A; 14A]
RMSE	0,26A	1,57A	0,31A	0,89A	1,78A	13,29A
TEST RESULT ON EXTREME						
START -20°C	0,36A		1,04A		4,5A	
MAX ERROR FSD	0,5A to 5A	5A to 35A	2,5A to 25A	25A to 180A	7A to 70A	70A to 500A
	[-2%; 9,1%] [-0,1A; 0,46A]	[0%; 5,9%] [0A; 2,07A]	[-1 %; 0,47%] [-0,25A; 0,12A]	[0%; 5,21%] [0A; 9,38A]	[-1,9%; 2,2%] [-1,3A; 1,54A]	[0,6%; 2,8%] [3A; 14A]
RMSE	0,26A	1,56A	0,12	6,65A	1,16A	9,17A
START 70°C	0,2A		1A		4,5A	
MAX ERROR FSD	0,5A to 5A	5A to 35A	2,5A to 25A	25A to 180A	7A to 70A	70A to 500A
	[-4,5%; -1,8%] [-0,23A; 0,09A]	[-9,4%; 0%] [3,28A; 0A]	[-3,48%; -2,2%] [-0,87A; -0,55A]	[-10,39%; 0%] [-18,7A; 0A]	[-3,4%; -2,2%] [-2,45A; -1,54A]	[-6,9%; -0,3%] [-34,5A; -1,5A]
RMSE	0,17A	1,57A	0,73A	9,85A	1,78A	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	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.

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