

# E-Cube technical datasheet



	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	
<b>Test result ambient temperature</b>						
Start Ambient temperature	0,21A		1A		3A	
Max error FSD**	0.5A to 5A		2.5A to 25A		7A to 70A	
Ambient temperature	5A to 35A		25A to 180A		70A to 500A	
RMSE***	0.5A to 5A		2.5A to 25A		7A to 70A	
Ambient temperature	5A to 35A		25A to 180A		70A to 500A	
	0,05A	0,25A	0,31A	0,89A	1,28A	3,87A
<b>Test result on whole temperature range [-20°C; 70°C]</b>						
Start Ambient temperature	0,36A		1A		4,5A	
Max error FSD	0.5A to 5A		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
RMSE	0.5A to 5A		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
	0,26A	1,57A	0,31A	0,89A	1,78A	13,29A
<b>Test result on extreme</b>						
Start -20°C	0,36A		1,04A		4,5A	
Max error FSD	0.5A to 5A		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
RMSE	0.5A to 5A		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
	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		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
RMSE	0.5A to 5A		2.5A to 25A		7A to 70A	
	5A to 35A		25A to 180A		70A to 500A	
	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					
<b>Split Core mechanical parameter</b>						
Case	PC / UL94-V0					
Bobbin	PBT					
Core	Silicon steel					
Internal structure	Epoxy					
Conctruction	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	
<b>**FSD: Full Scale Deflection</b> 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.						
<b>***RMSE: Root Mean Square Error.</b> RMSE calculation is made with an interpolation (cubic spine interpolation) of the curves with a 0.5A step.						