FOXTAM CONTROLS
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HOW FAR CAN THE CT'S BE FROM THE KWh METER

Firstly, you have to allow double the distance, the return cabling has to be allowed for, therefore 15 mtrs is in fact 30 mtrs.

The formula for calculating the VA required is **$I^2R=VA$**

Where I is the secondary current of the CT.

Where R is the resistance, the resistance if the secondary CT per meter multiplied by the number of meters.

Typical resistance of tri rated cable per meter is as follows at an ambient temperature of 20°C. However, we advise that the customer specifically checks with his own cable supplier as specification will slightly vary.

0.5 mm	=	0.039	Ohms/mtr
0.75 mm	=	0.026	Ohms/mtr
1.0 mm	=	0.0195	Ohms/mtr
1.5 m	=	0.0133	Ohms/mtr
2.5 mm	=	0.00798	Ohms/mtr
4.0 mm	=	0.00495	Ohms/mtr
6.00 mm	=	0.0033	Ohms/mtr

The input burden must also be allowed for, typically with modern digital units this is very low approx 0.1 to 0.2 VA, but analogue meters this can be up to 1.5 VA.

An example calculation:

A meter sited 6 meters away from the CT with a 5 Amp secondary, utilising 1.5 mm secondary cabling. What VA output from the CT is required:-

5^2x (12x0.0133) + 0.2 VA (the meter) = 4.19 VA output required

The VA required can be reduced by utilising 1 Amp secondary CT's because 5^2 becomes 1^2, therefore the VA required reduces by 25x or the distance achievable increased by 25x depending on how you view the application.

Increasing the secondary cable size will also increase the distance achievable.