

SELECTION CRITERIA FOR A CURRENT CONVERTER FOR THE FRONIUS SMART METER 50KA-3

/ Primary current

Maximum current per phase. A current converter with a primary current greater than the maximum expected current per phase should be selected. The closer the expected current is to this value, the more precise the measurement will be.

/ Secondary current

1 - 5 A

/ Power

The Fronius Smart Meter needs 0.3 VA to carry out its measurements. Losses also occur on the outgoing and return leads. The power of the current converter must be greater than the sum total of the power of the Fronius Smart Meter and the leads. The higher the power, the better.

For example: Outgoing and return lead between Fronius Smart Meter and current converter (together):
 2 x 0.5 m = 1 m length with a copper cable cross-section of 1.5 mm² -> 1 x 0.6 VA

Fronius Smart Meter self-consumption = 0.3 VA

Sum total = 0.9 VA

A current converter with a rating of 1 VA, 1.5 VA, 5 VA or higher is suitable here.

Line resistances at different cross-sections (copper wires)

Secondary current [A]	Cross-section [mm ²]	Line resistances at different lead lengths (outgoing and return lead)				
		0.5 m	1.0 m	2.5 m	5 m	10 m
5	1.5	0.3 VA	0.6 VA	1.5 VA	2.9 VA	5.8 VA
5	2.5	0.2 VA	0.4 VA	0.9 VA	1.8 VA	3.6 VA
5	4.0	-	-	0.6 VA	1.1 VA	2.2 VA

/ Accuracy class

Class 1 or better (Class 0.5, 0.2, etc.) is recommended. Class 1 is equivalent to a deviation of ± 1% of the secondary current at maximum power.

/ Assembly

Rigid or hinged. "Rigid" is usually cheaper with better power and accuracy values. "Hinged" can be installed in a system without interrupting the voltage.