

## Power Meters

### Power and Energy Measurements

Each PV plant has its own energy measurement requirements. Solar-Log™ offers different power meters from which it can be selected the one that best fits with the project.

The following power meters can be configured for different operating modes in the Solar-Log. This depends on the requested use for the meter. It is possible to record the production output (generator), the consumption (consumption meter or bi-directional meter) and the sub-consumption values such as the registration of battery charge or battery discharge levels.



Solar-Log™ PRO1



Solar-Log™ PRO2



Solar-Log™ PRO380



Solar-Log™ PRO380-CT

Power Meter	Solar-Log™ PRO1	Solar-Log™ PRO2	Solar-Log™ PRO380	Solar-Log™ PRO380-CT
Manufacturer	Solar-Log GmbH			
Short description	Single-phase meter, MID (calibrated)		Three-phase meter, MID (calibrated)	Current transformer meter
Interfaces	RS485, 2-pin S <sub>0</sub> -Out		RS485, RS485, External tariff switching/ 4-pin S <sub>0</sub> -Out for A+, A-	
Communication	Modbus RTU (maximum 32 units)			
Direct connection (measurement)	45 A	100 A	100 A	-
Current transformer connection	-	-	-	6 A x/1, x/5A (Transformer input)
Number of phases	1	1	3	3
Voltage measurement	230 V AC		3 x 230/400V AC (-20% bis +20%)	
Voltage supply	230 V AC		3 x 230/400V AC (-20% bis +20%)	
Power frequency	50 Hz	50 Hz	50 Hz	50 Hz
Measuring range	20 mA - 45 A	20 mA - 100 A		6 mA - 6 A
Self-consumption	≤ 2 W/phase - ≤ 10VA/phase			
Dimensions (wxhxd) in mm	17,5 x 117 x 63	35,8 x 141,5 x 63	70 x 140 x 63	70 x 140 x 63
Wire diameter	≤ 25 mm <sup>2</sup> , ≤ 2,5 mm <sup>2</sup> (Additional terminals)			
Protection level	IP51			
LCD Display	4 + 2 Digits (5 +1 digits >9999.99 kWh)	5 + 2 Digits (6 +1 digits >99999.99 kWh)	6 + 2 Digits (7 +1 digits >999999.99 kWh)	
Measurement interval	-	-	-	-
Misc.	Illuminated display. display for active and reactive power in 2 energy directions. Display: I, U, P, S, F, cos phi			
Warranty	2 years			
Article number	255914	256324	255913	256059

Solar-Log also offers universal power meters. These can be used as utility meters in addition to the above-mentioned operating modes - for example, for its use at the grid connection point (e.g. for EZA controllers according to VDE-4110 in Germany).

They can be integrated into both the low-voltage and the medium-voltage network (via transformers). In addition to voltage-controlled reactive power control Q(U), they are used for reactive power control at the feed-in point and for recording measured values for feedback to the grid operator. They are also suitable as consumption meters for large loads.



Utility Meter UMG 104



Utility Meter UMG 604 E-PRO & UMG 604 E-PRO (24V)

Power Meter	Utility Meter UMG 104	Utility Meter UMG 604 E-PRO	Utility Meter UMG 604 E-PRO (24V)
Manufacturer	Janitza electronics GmbH		
Short description	Utility Meter, for measurement on medium voltage side with current transformers		
Interfaces	RS485, RS232 2 Digital inputs, 2 Digital outputs	RS485, RS232 Ethernet 10/100 BaseTX, 2 Digital inputs, 2 Digital outputs	
Communication	Modbus RTU (maximum 32 units)	Modbus RTU (maximum 32 units), Modbus TCP	
Direct connection (measurement)	-	-	-
Current transformer connection	6 A x/1, x/5A (Transformer input)		
Voltage measurement	3		
Number of phases	L-N: 10 - 300 V AC, L-L: 17-520 V AC		
Voltage supply	95V AC - 240V AC, 135V DC - 340V DC	95V AC - 240V AC, 135V DC - 340V DC	20 V AC - 50 V AC, 20 V DC - 70 V DC
Power frequency	45 - 65 Hz		
Measuring range	0,005 - 7,5 A	0,005 - 7 A	
Self-consumption	max. 3,2W, max. 9VA		max. 5 W / 8 VA
Dimensions (w x h x d) in mm	90 x 82 x 107,5		
Wire diameter	≤ 1,5mm <sup>2</sup> (when using ferrules)	≤ 2,5mm <sup>2</sup> (when using ferrules)	
Protection level	IP20		
LCD Display	multi-info, 8 digits		
Measurement interval	200 ms		
Misc.	LCD backlight can be adjusted, voltage transformer connection for medium voltage measurement. Display: I, U, P, S, F, cos phi		
Warranty	1 year		
Article number	255385	257197	257272

A classification of the power meters according to their operating modes is as follows

Operating modes	Solar-Log™ PRO1	Solar-Log™ PRO2	Solar-Log™ PRO380	Solar-Log™ PRO380-CT	Utility Meter UMG 104	Utility Meter UMG 604 E-PRO	Utility Meter UMG 604 E-PRO (24V)
<b>Consumption meter, sub-consumer meter, generator meter</b>							
1-phase	●	●	-	-	-	-	-
3-phase	-	-	●	●	●	●	●
<b>Battery meter</b>							
1-phase	●	●	-	-	-	-	-
3-phase	-	-	●	●	●	●	●
<b>Total plant meter consumption meter as a bi-directional meter at the grid connection point</b>							
3-phase	-	-	●	●	●	●	●
<b>Utility meter (measuring point for EZA controller according to VDE 4110)</b>							
Voltage	-	-	-	-	●	●	●
Voltage + Current	-	-	-	-	●	●	●
Voltage + Current Self-consumotion	-	-	-	-	●	●	●

We offer the following current transformers for the Solar-Log™ PRO380-CT meter

#### Article number

Solar-Log™ PRO380-CT 500A Measuring transformer for conductor line 30 x 10 mm or compact round cable up to 26 mm Class 1, uncalibrated, secondary current 5A	256067
Solar-Log™ PRO380-CT 250A Measuring transformer for conductor line 30 x 10 mm or compact round cable up to 26 mm Class 1, uncalibrated, secondary current 5A	256068
Solar-Log™ PRO380-CT 100A Measuring transformer for conductor line 30 x 10 mm or compact round cable up to 26 mm Class 1, uncalibrated, secondary current 5A	256069
Solar-Log™ PRO380-CT 500A Cable split core current transformer Class 1, round cable up to 32 mm, uncalibrated, small size model, connecting cable 2.5 m included, secondary current 1A	256070
Solar-Log™ PRO380-CT 250A Cable split core current transformer Class 3, round cable up to 18 mm, uncalibrated, small size model, connecting cable 2.5 m included, secondary current 1A	256071
Solar-Log™ PRO380-CT 100A Cable split core current transformer Class 3, round cable up to 18 mm, uncalibrated, small size model, connecting cable 2.5 m included, secondary current 1A	256072
Solar-Log™ PRO380-CT 500A, Class 0.5, Measuring transformerfor conductor line 30 x 10 mm or compact round cable up to 26 mm, Declaration of Conformity, approval for billing, secondary current 5A	256073
Solar-Log™ PRO380-CT 250A, Class 0.5, Measuring transformer for conductor line 30 x 10 mm or compact round cable up to 26 mm, Declaration of Conformity, approval for billing, secondary current 5A	256074
Solar-Log™ PRO380-CT 100A, Class 0.5, Measuring transformer for conductor line 30 x 10 mm or compact round cable up to 26 mm, Declaration of Conformity, approval for billing, secondary current 5A	256075



Measuring transformer



Cable split core current transformer