

## Voltha single phase systems datasheet

| <b>Model</b>                                | <b>AI-W5.1-3.6P1-EU</b>                 | <b>AI-W5.1-5P1-EU</b> | <b>AI-W5.1-6P1-EU</b> | <b>AI-W5.1-7.6P1-EU</b> | <b>AI-W5.1-8P1-EU</b> |
|---|---|-----------------------|-----------------------|-------------------------|-----------------------|
| <b>Battery Input Data</b>                   |   |                       |                       |                         |                       |
| Battery Type                                | Lead-acid or Li-Ion                     |                       |                       |                         |                       |
| Battery Voltage Range(V)                    | 40-60V                                  |                       |                       |                         |                       |
| Max. Charging Current(A)                    | 90A                                     | 120A                  | 135A                  | 190A                    | 190A                  |
| Max. Discharging Current(A)                 | 90A                                     | 120A                  | 135A                  | 190A                    | 190A                  |
| Charging Curve                              | 3 Stages / Equalization                 |                       |                       |                         |                       |
| External Temperature Sensor                 | yes                                     |                       |                       |                         |                       |
| Charging Strategy for Li-Ion Battery        | Self-adaption to BMS                    |                       |                       |                         |                       |
| <b>PV String Input Data</b>                 |   |                       |                       |                         |                       |
| Max. DC Input Power(W)                      | 4680W                                   | 6500W                 | 7800W                 | 9880W                   | 10400W                |
| PV Input Voltage(V)                         | 370V (125V~500V)                        |                       |                       |                         |                       |
| MPPT Range(V)                               | 150~425V                                |                       |                       |                         |                       |
| Full Load DC Voltage Range                  | 300~425V                                |                       | 200~425V              |                         |                       |
| Start-up Voltage(V)                         | 125V                                    |                       |                       |                         |                       |
| PV Input Current(A)                         | 13A+13A                                 |                       | 26A+26A               |                         |                       |
| No. of MPPT Trackers                        | 2                                       |                       |                       |                         |                       |
| No. of Strings Per MPPT Tracker             | 1+1                                     |                       | 2+2                   |                         |                       |
| <b>AC Output Data</b>                       |   |                       |                       |                         |                       |
| Rated AC Output and UPS Power(W)            | 3600                                    | 5000                  | 6000                  | 7600                    | 8000                  |
| Max. AC Output Power(W)                     | 3960                                    | 5500                  | 6600                  | 8360                    | 8800                  |
| Peak Power(off grid)                        | 2 times of rated power, 10 S            |                       |                       |                         |                       |
| AC Output Rated Current(A)                  | 16.4/15.7A                              | 22.7/21.7A            | 27.3/26.1A            | 34.5/33A                | 36.4/34.8A            |
| Max. AC Current(A)                          | 18/17.2A                                | 25/23.9A              | 30/28.7A              | 38/36.3A                | 40/38.3A              |
| Max. Continuous AC Passthrough(A)           | 35A                                     |                       | 40A                   | 50A                     |                       |
| Power Factor                                | 0.8 leading to 0.8 lagging              |                       |                       |                         |                       |
| Output Frequency and Voltage                | 50/60Hz; L/N/PE 220/230V (single phase) |                       |                       |                         |                       |
| Grid Type                                   | Single Phase                            |                       |                       |                         |                       |
| Total Harmonic Distortion (THD)             | <3% (of nominal power)                  |                       |                       |                         |                       |
| DC current injection                        | <0.5% In                                |                       |                       |                         |                       |
| <b>Efficiency</b>                           |   |                       |                       |                         |                       |
| Max. Efficiency                             | 97.60%                                  |                       |                       |                         |                       |
| Euro Efficiency                             | 96.50%                                  |                       |                       |                         |                       |
| MPPT Efficiency                             | >99%                                    |                       |                       |                         |                       |
| <b>Protection</b>                           |   |                       |                       |                         |                       |
| PV Input Lightning Protection               | Integrated                              |                       |                       |                         |                       |
| Anti-islanding Protection                   | Integrated                              |                       |                       |                         |                       |
| PV String Input Reverse Polarity Protection | Integrated                              |                       |                       |                         |                       |
| Insulation Resistor Detection               | Integrated                              |                       |                       |                         |                       |
| Residual Current Monitoring Unit            | Integrated                              |                       |                       |                         |                       |
| Output Over Current Protection              | Integrated                              |                       |                       |                         |                       |
| Output Shorted Protection                   | Integrated                              |                       |                       |                         |                       |
| Surge Protection                            | DC Type II / AC Type II                 |                       |                       |                         |                       |
| Over Voltage Category                       | DC Type II / AC Type III                |                       |                       |                         |                       |

| <b>Certifications and Standards</b> |  |
|-------------------------------------|--|
| Grid Regulation                     | VDE4105,IEC61727/62116,VDE0126,AS4777.2,CEI 0 21,EN50549-1, G98,G99,C10-11,UNE217002,NBR16149/NBR16150 |
| EMC/Safety Regulation               | IEC/EN 62109-1,IEC/EN 62109-2,IEC/EN 61000-6-1, IEC/EN 61000-6-2,IEC/EN 61000-6-3,IEC/EN 61000-6-4     |
| <b>General Data</b>                 |  |
| Operating Temperature Range( C )    | -40~60 C , >45 C Derating  |
| Cooling                             | Smart cooling  |
| Noise(dB)                           | <30 dB   |
| Communication with BMS              | RS485; CAN   |
| Weight(kg)                          | 29   |
| Cabinet size(mm)                    | 720W×380H×254D (Excluding connectors and brackets)   |
| Protection Degree                   | IP65   |
| Installation Style                  | Wall-mounted   |
| Warranty                            | 5 years  |

| <b>Model</b>                        | <b>AI - W5.1</b>   |              |              |              |              |     |
|-------------------------------------|--|--------------|--------------|--------------|--------------|-----|
| <b>Main Parameter</b>               |  |              |              |              |              |     |
| Battery Chemistry                   | LiFePO4  |              |              |              |              |     |
| Battery Module Energy (kWh)         | 5.12   |              |              |              |              |     |
| Battery Module Voltage (V)          | 51.2   |              |              |              |              |     |
| Battery Module Capacity (Ah)        | 100  |              |              |              |              |     |
| Scalability                         | 2  | 3            | 4            | 5            | 6            |     |
| Nominal Voltage (V)                 | 51.2   |              |              |              |              |     |
| Operating Voltage(V)                | 43.2~57.6  |              |              |              |              |     |
| Energy (kWh)                        | 10.24  | 15.36        | 20.48        | 25.6         | 30.72        |     |
| Usable Energy (kWh)                 | 9.2  | 13.8         | 18.4         | 23.0         | 27.6         |     |
| Charge/Discharge Current (A)        | Recommend  | 100          | 150          | 200          | 200          | 200 |
|                                     | Max.   | 180          | 210          | 240          | 250          | 250 |
|                                     | Peak(10s,25°C)   | 270          | 315          | 360          | 360          | 360 |
| <b>Other Parameter</b>              |  |              |              |              |              |     |
| Recommend Depth of Discharge        | 90%  |              |              |              |              |     |
| System Dimension (W/D/H, mm)        | 720*255*765  | 720*255*1050 | 720*255*1335 | 720*255*1620 | 720*255*1905 |     |
| System Weight (kg)                  | 124  | 177          | 230          | 283          | 336          |     |
| Battery Module Dimension(W/D/H, mm) | 720*255*285  |              |              |              |              |     |
| Battery Module Weight (kg)          | 53   |              |              |              |              |     |
| Master LED Indicator                | 5LED(SOC:20%~100%), 3LED (working, alarming, protecting) |              |              |              |              |     |
| IP Rating of Enclosure              | IP65   |              |              |              |              |     |
| Operating Temperature               | Charge: 0~55°C / Discharge: -20°C~55°C                   |              |              |              |              |     |
| Storage Temperature                 | -20°C ~ 35°C   |              |              |              |              |     |
| Humidity                            | 5%~95%   |              |              |              |              |     |
| Altitude                            | ≤2000m   |              |              |              |              |     |
| Cycle Life                          | ≥6000(25°C±2°C,0.5C/0.5C,70%EOL)                         |              |              |              |              |     |
| Installation                        | Floor-Mounted  |              |              |              |              |     |
| Communication Port                  | CAN2.0, RS485  |              |              |              |              |     |
| Warranty Period                     | 10 years   |              |              |              |              |     |
| Energy Throughput                   | 16MWh(Battery Module @70%EOL)                            |              |              |              |              |     |
| Certification                       | IEC62619, CE,VDE2510-10, CEI 0-21, UN38.3                |              |              |              |              |     |