

| Address     | Name                                    | Type     | Value/Description                                                                                                                                             | Unit                     | Access |
|-------------|-----------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------|
| Header      |                                         |          |                                                                                                                                                               |                          |        |
| 0           | Hash of "OpenEMS"                       | uint16   | "0x6201"                                                                                                                                                      |                          | RO     |
| 1           | Length of block " _meta"                | uint16   | "199"                                                                                                                                                         |                          | RO     |
| 2           | OpenEMS Version Major                   | uint16   | "2024"                                                                                                                                                        |                          | RO     |
| 3           | OpenEMS Version Minor                   | uint16   | "4"                                                                                                                                                           |                          | RO     |
| 4           | OpenEMS Version Patch                   | uint16   | "10"                                                                                                                                                          |                          | RO     |
| 5           | Manufacturer                            | string16 | "Volfang GmbH"                                                                                                                                                |                          | RO     |
| 21          | Manufacturer Model                      | string16 | "VEMS"                                                                                                                                                        |                          | RO     |
| 37          | Manufacturer Options                    | string16 | ""                                                                                                                                                            |                          | RO     |
| 53          | Manufacturer Version                    | string16 | "2024.4.10-SNAPSHOT"                                                                                                                                          |                          | RO     |
| 69          | Manufacturer Serial Number              | string16 | "c8:3e:a7:11:6f:fc"                                                                                                                                           |                          | RO     |
| 85          | Manufacturer EMS Serial Number          | string16 | "100500000"                                                                                                                                                   |                          | RO     |
| ESS Cluster |                                         |          |                                                                                                                                                               |                          |        |
| 200         | Component-ID                            | string16 | "ess99"                                                                                                                                                       |                          | RO     |
| 216         | Length of block "ess99"                 | uint16   | "780"                                                                                                                                                         |                          | RO     |
| 220         | Hash of "OpenemsComponent"              | uint16   | "0xb3dc"                                                                                                                                                      |                          | RO     |
| 221         | Length of block "OpenemsComponent"      | uint16   | "80"                                                                                                                                                          |                          | RO     |
| 222         | ess99/State                             | enum16   | 0:Ok, 1:Info, 2:Warning, 3:Fault                                                                                                                              |                          | RO     |
| 300         | Hash of "SymmetricEss"                  | uint16   | "0x42ee"                                                                                                                                                      |                          | RO     |
| 301         | Length of block "SymmetricEss"          | uint16   | "100"                                                                                                                                                         |                          | RO     |
| 302         | ess99/Soc                               | uint16   |                                                                                                                                                               | Percent [%]              | RO     |
| 303         | ess99/GridMode                          | uint16   | 1:On-Grid, 2:Off-Grid                                                                                                                                         |                          | RO     |
| 304         | ess99/ActivePower                       | float32  | Negative values for Charge; positive for Discharge                                                                                                            | Watt [W]                 | RO     |
| 306         | ess99/ReactivePower                     | float32  |                                                                                                                                                               | VoltAmpereReactive [var] | RO     |
| 308         | ess99/MaxApparentPower                  | float32  |                                                                                                                                                               | VoltAmpere [VA]          | RO     |
| 310         | ess99/Capacity                          | float32  |                                                                                                                                                               | WattHours [Wh]           | RO     |
| 312         | ess99/ActiveChargeEnergy                | float64  |                                                                                                                                                               | CumulatedWattHours [Wh]  | RO     |
| 316         | ess99/ActiveDischargeEnergy             | float64  |                                                                                                                                                               | CumulatedWattHours [Wh]  | RO     |
| 400         | Hash of "ManagedSymmetricEss"           | uint16   | "0xa3ed"                                                                                                                                                      |                          | RO     |
| 401         | Length of block "ManagedSymmetricEss"   | uint16   | "100"                                                                                                                                                         |                          | RO     |
| 402         | Minimum Power Set-Point                 | float32  |                                                                                                                                                               | Watt [W]                 | RO     |
| 404         | Maximum Power Set-Point                 | float32  |                                                                                                                                                               | Watt [W]                 | RO     |
| 406         | ess99/SetActivePowerEquals              | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 408         | ess99/SetReactivePowerEquals            | float32  |                                                                                                                                                               | VoltAmpereReactive [var] | WO     |
| 410         | ess99/SetActivePowerLessOrEquals        | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 412         | ess99/SetReactivePowerLessOrEquals      | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 414         | ess99/SetActivePowerGreaterOrEquals     | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 416         | ess99/SetReactivePowerGreaterOrEquals   | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 500         | Hash of "AsymmetricEss"                 | uint16   | "0x958f"                                                                                                                                                      |                          | RO     |
| 501         | Length of block "AsymmetricEss"         | uint16   | "100"                                                                                                                                                         |                          | RO     |
| 502         | ess99/ActivePowerL1                     | float32  | AC-side power of Energy Storage System on phase L1. Includes excess DC-PV production for hybrid inverters. Negative values for charge; positive for discharge | Watt [W]                 | RO     |
| 504         | ess99/ActivePowerL2                     | float32  | AC-side power of Energy Storage System on phase L2. Includes excess DC-PV production for hybrid inverters. Negative values for charge; positive for discharge | Watt [W]                 | RO     |
| 506         | ess99/ActivePowerL3                     | float32  | AC-side power of Energy Storage System on phase L3. Includes excess DC-PV production for hybrid inverters. Negative values for charge; positive for discharge | Watt [W]                 | RO     |
| 600         | Hash of "ManagedAsymmetricEss"          | uint16   | "0x5470"                                                                                                                                                      |                          | RO     |
| 601         | Length of block "ManagedAsymmetricEss"  | uint16   | "100"                                                                                                                                                         |                          | RO     |
| 602         | ess99/SetActivePowerL1Equals            | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 604         | ess99/SetActivePowerL2Equals            | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 606         | ess99/SetActivePowerL3Equals            | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 608         | ess99/SetReactivePowerL1Equals          | float32  |                                                                                                                                                               | VoltAmpereReactive [var] | WO     |
| 610         | ess99/SetReactivePowerL2Equals          | float32  |                                                                                                                                                               | VoltAmpereReactive [var] | WO     |
| 612         | ess99/SetReactivePowerL3Equals          | float32  |                                                                                                                                                               | VoltAmpereReactive [var] | WO     |
| 614         | ess99/SetActivePowerL1LessOrEquals      | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 616         | ess99/SetActivePowerL2LessOrEquals      | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 618         | ess99/SetActivePowerL3LessOrEquals      | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 620         | ess99/SetReactivePowerL1LessOrEquals    | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 622         | ess99/SetReactivePowerL2LessOrEquals    | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 624         | ess99/SetReactivePowerL3LessOrEquals    | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 626         | ess99/SetActivePowerL1GreaterOrEquals   | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 628         | ess99/SetActivePowerL2GreaterOrEquals   | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 630         | ess99/SetActivePowerL3GreaterOrEquals   | float32  |                                                                                                                                                               | Watt [W]                 | WO     |
| 632         | ess99/SetReactivePowerL1GreaterOrEquals | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 634         | ess99/SetReactivePowerL2GreaterOrEquals | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 636         | ess99/SetReactivePowerL3GreaterOrEquals | float32  |                                                                                                                                                               | VoltAmpere [VA]          | WO     |
| 700         | Hash of "EssClusterImpl"                | uint16   | "0x9095"                                                                                                                                                      |                          | RO     |
| 701         | Length of block "EssClusterImpl"        | uint16   | "300"                                                                                                                                                         |                          | RO     |
|             |                                         |          |                                                                                                                                                               |                          |        |

In case a modbus value is 'undefined', the following value will be read:

| type     | value                              |  |
|----------|------------------------------------|--|
|          |                                    |  |
| enum16   | 0xffff                             |  |
| uint16   | 0xffff                             |  |
| uint32   | 0xffffffff                         |  |
| float32  | 0x7fc000                           |  |
| float64  | 0x7ff8000000                       |  |
| string16 | 0x00000000000000000000000000000000 |  |