

## MODBUS POWER CONTROL INTERFACE REGISTER (BLUELOG NEO)

### WRITE VALUES (Function Code 16)

| Register                                      | Abbreviation                | Description                                                         | Unit | Data type | Range     | Comment |
|-----------------------------------------------|-----------------------------|---------------------------------------------------------------------|------|-----------|-----------|---------|
| <b>GRID CONNECTION POINT (ACTIVE POWER)</b>   |                             |                                                                     |      |           |           |         |
| 10000                                         | PPC_GCP_P_LIM_FEEDIN_REL    | Active power feed-in limitation (grid operator, relative)           | %    | F32       | 0...125   |         |
| 10002                                         | PPC_GCP_P_LIM_FEEDIN_ABS    | Active power feed-in limitation (grid operator, absolute)           | W    | F32       | unlimited |         |
| 10004                                         | PPC_GCP_P_LIM_IMPORT_REL    | Active power import limitation (grid operator, relative)            | %    | F32       | -125... 0 |         |
| 10006                                         | PPC_GCP_P_LIM_IMPORT_ABS    | Active power import limitation (grid operator, absolute)            | W    | F32       | unlimited |         |
| 10008-10018                                   |                             | Reserved                                                            |      |           |           |         |
| <b>PV (ACTIVE POWER)</b>                      |                             |                                                                     |      |           |           |         |
| 10020                                         | PPC_PV_P_LIM_REL            | Active power generation limitation PV (grid operator, relative)     | %    | F32       | 0... 125  |         |
| 10022                                         | PPC_PV_P_LIM_ABS            | Active power generation limitation PV (grid operator, absolute)     | W    | F32       | unlimited |         |
| 10024-10038                                   |                             | Reserved                                                            |      |           |           |         |
| <b>BATTERY (ACTIVE POWER)</b>                 |                             |                                                                     |      |           |           |         |
| 10040                                         | PPC_BAT_P_LIM_CHARGE_REL    | Active power charge limitation battery (grid operator, relative)    | %    | F32       | -125... 0 |         |
| 10042                                         | PPC_BAT_P_LIM_CHARGE_ABS    | Active power charge limitation battery (grid operator, absolute)    | W    | F32       | unlimited |         |
| 10044                                         | PPC_BAT_P_LIM_DISCHARGE_REL | Active power discharge limitation battery (grid operator, relative) | %    | F32       | 0... 125  |         |
| 10046                                         | PPC_BAT_P_LIM_DISCHARGE_ABS | Active power discharge limitation battery (grid operator, absolute) | W    | F32       | unlimited |         |
| 10048-10058                                   |                             | Reserved                                                            |      |           |           |         |
| 10060-10098                                   |                             | Reserved                                                            |      |           |           |         |
| <b>GRID CONNECTION POINT (REACTIVE POWER)</b> |                             |                                                                     |      |           |           |         |

|       |                         |                                                                                               |     |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                       |
|-------|-------------------------|-----------------------------------------------------------------------------------------------|-----|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10200 | PPC_Q_SET_MODE          | Reactive power setpoint command method                                                        | -   | F32 | 1: Variable fixed value $\cos \phi_{var}$ fix<br>2: Variable fixed value $\cos \phi_{var}$ DI<br>3: Variable fixed value $\cos \phi_{var}$ AI<br>4: Variable fixed value $\cos \phi_{var}$ Modbus<br>5: Characteristic curve $\cos \phi_{var}$ (P)<br>6: Characteristic curve $\cos \phi_{var}$ (V)<br>7: Variable fixed value Qvar fix<br>8: Variable fixed value Qvar DI<br>9: Variable fixed value Qvar AI<br>10: Variable fixed value Qvar Modbus<br>11: Characteristic curve Q (P)<br>12: Characteristic curve Q (V)<br>13: Characteristic curve Q ( $\tan \phi$ )<br>14: Voltage control Q (V droop)<br>15: Characteristic curve Q(V) Modbus<br>16: Characteristic curve $\cos \phi$ (P) Modbus |                                                                                                                                                                                                                                                       |
| 10202 | PPC_PF_SET              | Power factor setpoint                                                                         | -   | F32 | -0.999...1.0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative values = underexcited, positive values = overexcited                                                                                                                                                                                         |
| 10204 | PPC_Q_SET_REL           | Reactive power setpoint                                                                       | %   | F32 | -100... 1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Negative values = underexcited, positive values = overexcited                                                                                                                                                                                         |
| 10206 | PPC_Q_SET_ABS           | Reactive power setpoint                                                                       | var | F32 | unlimited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                       |
| 10208 | PPC_V_REF_Q_V_SHIFT     | Voltage shift $\Delta V_{Q0}$ for Q(V) curve                                                  | V   | F32 | -16,800...24,200                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | The voltage shift $\Delta V_{Q0}$ is added to the nominal voltage $V_c$ to obtain the reference voltage at which the reactive power setpoint is 0 %. Example: With $V_c = 20$ kV and $\Delta V_{Q0}=200$ V a reference voltage of 20.2kV is obtained. |
| 10210 | PPC_V_SET_ABS           | Absolute voltage setpoint for "Q (V droop)"                                                   | V   | F32 | Value range depends on the agreed supply voltage $V_c$ and the Vsetpoint,min and Vsetpoint,max settings in method Q (V droop).<br>e.g. $V_c = 20$ kV, Vsetpoint,min = 0.9 and Vsetpoint,max 1.1: value range is 18,000...22,000 V                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                       |
| 10212 | PPC_Q_REF_V_DROOP_SHIFT | Setpoint reference reactive power $Q\Delta V_0$ for parallel shift of the voltage droop $s_v$ | var | F32 | -1,000,000,000...1,000,000,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Negative values = underexcited, positive values = overexcited                                                                                                                                                                                         |

|                         |                |                                                                        |                    |     |               |  |
|-------------------------|----------------|------------------------------------------------------------------------|--------------------|-----|---------------|--|
| 10214                   | PPC_QV_P_IN    | Lock-in active power Plock-in for characteristic curve "Q(V) Modbus"   | %                  | F32 | 0...125       |  |
| 10216                   | PPC_QV_P_OUT   | Lock-out active power Plock-out for characteristic curve "Q(V) Modbus" | %                  | F32 | 0...125       |  |
| 10218                   | PPC_QV_V1      | Reference point voltage 1 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 | 0.1...1.5     |  |
| 10220                   | PPC_QV_V2      | Reference point voltage 2 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 | 0.1...1.5     |  |
| 10222                   | PPC_QV_V3      | Reference point voltage 3 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 | 0.1...1.5     |  |
| 10224                   | PPC_QV_V4      | Reference point voltage 4 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 | 0.1...1.5     |  |
| 10226                   |                | Reserved                                                               |                    |     |               |  |
| 10228                   | PPC_PFP_V_IN   | Lock-In voltage Vlock-in for characteristic curve "cos φ (P) Modbus"   | V/V <sub>c</sub>   | F32 | 1...1.1       |  |
| 10230                   | PPC_PFP_V_OUT  | Lock-out voltage Vlock-out for characteristic curve "cos φ (P) Modbus" | V/V <sub>c</sub>   | F32 | 0.9...1       |  |
| 10232                   | PPC_PFP_PF1    | Reference point cos φ 1 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 | -0.999 ... 1  |  |
| 10234                   | PPC_PFP_PF2    | Reference point cos φ 2 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 | -0.999 ... 1  |  |
| 10236                   | PPC_PFP_PF3    | Reference point cos φ 3 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 | -0.999 ... 1  |  |
| 10238                   | PPC_PFP_P1     | Reference point P 1 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 | 0...1         |  |
| 10240                   | PPC_PFP_P2     | Reference point P 2 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 | 0...1         |  |
| 10242                   | PPC_PFP_P3     | Reference point P 3 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 | 0...1         |  |
| 10244-10998             |                | Reserved                                                               |                    |     |               |  |
| <b>TESTING COMMANDS</b> |                |                                                                        |                    |     |               |  |
| 11000                   | PPC_V_SIM_TEST | Simulated test voltage                                                 | V                  | F32 | 0 ... 132,000 |  |
| 11002                   | PPC_F_SIM_TEST | Simulated test frequency                                               | Hz                 | F32 | 0 ... 70      |  |

## READ VALUES (Function Code 03)

| Register                                    | Abbreviation              | Description                                                                   | Unit | Data type | Range | Comment                                                             |
|---------------------------------------------|---------------------------|-------------------------------------------------------------------------------|------|-----------|-------|---------------------------------------------------------------------|
| <b>DEVICE DATA</b>                          |                           |                                                                               |      |           |       |                                                                     |
| 1000                                        | PPC_VENDOR                | Vendor                                                                        | -    | U32       |       | "mc": meteocontrol<br>hex: 0x6D630000                               |
| 1002                                        | PPC_MD                    | Model                                                                         | -    | U32       |       | "bl": blueLog<br>hex: 0x626C0000                                    |
| 1004                                        | PPC_QS_TS                 | Current timestamp of device                                                   | -    | U32       |       | This value returns a current timestamp for device health detection. |
| 1006-1016                                   |                           | Reserved                                                                      |      |           |       |                                                                     |
| <b>PLANT DATA</b>                           |                           |                                                                               |      |           |       |                                                                     |
| 1018                                        | PPC_P_AV_E                | Agreed connected active power $P_{AV}$                                        | W    | F32       |       |                                                                     |
| 1020                                        | PPC_S_AV_E                | Agreed connected apparent power $S_{AV}$                                      | VA   | F32       |       |                                                                     |
| 1022                                        | PPC_P_INST                | Total installed active power $P_{inst}$                                       | W    | F32       |       |                                                                     |
| 1024                                        | PPC_P_INST_PV             | Installed active power PV $P_{inst,PV}$                                       | W    | F32       |       |                                                                     |
| 1026                                        | PPC_P_INST_BAT            | Installed active power battery $P_{inst,bat}$                                 | W    | F32       |       |                                                                     |
| 1028                                        | PPC_S_MAX                 | Total maximum apparent power $S_{max}$                                        | VA   | F32       |       |                                                                     |
| 1030                                        | PPC_V_C                   | Agreed supply voltage $V_c$                                                   | V    | F32       |       |                                                                     |
| 1028-1048                                   |                           | Reserved                                                                      |      |           |       |                                                                     |
| <b>GRID CONNECTION POINT (ACTIVE POWER)</b> |                           |                                                                               |      |           |       |                                                                     |
| 1050                                        | PPC_GCP_P_LIM_FEEDIN_REL  | Active power feed-in limitation (grid operator, relative)                     | %    | F32       |       | GCP = grid connection point or location of reference meter          |
| 1052                                        | PPC_GCP_P_LIM_FEEDIN_ABS  | Active power feed-in limitation (grid operator, absolute)                     | W    | F32       |       |                                                                     |
| 1054                                        | PPC_GCP_P_LIM_IMPORT_REL  | Active power import limitation (grid operator, relative)                      | %    | F32       |       | GCP = grid connection point or location of reference meter          |
| 1056                                        | PPC_GCP_P_LIM_IMPORT_ABS  | Active power import limitation (grid operator, absolute)                      | W    | F32       |       |                                                                     |
| 1058-1062                                   |                           | Reserved                                                                      |      |           |       |                                                                     |
| 1064                                        | PPC_RPC_GCP_P_LIM_REL_ACT | Activation "Active power feed-in limitation at GCP (energy trader, relative)" | -    | F32       |       | 0: off<br>1: on                                                     |
| 1066                                        | PPC_RPC_GCP_P_LIM_REL     | Active power feed-in limitation at GCP (energy trader, relative)              | %    | F32       |       |                                                                     |
| 1068                                        | PPC_RPC_GCP_P_LIM_ABS_ACT | Activation "Active power feed-in limitation at GCP (energy trader, absolute)" | -    | F32       |       | 0: off<br>1: on                                                     |

|                                        |                       |                                                                  |     |     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------------------|-----------------------|------------------------------------------------------------------|-----|-----|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1070                                   | PPC_RPC_GCP_P_LIM_ABS | Active power feed-in limitation at GCP (energy trader, absolute) | W   | F32 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1072-1198                              |                       | Reserved                                                         |     |     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| GRID CONNECTION POINT (REACTIVE POWER) |                       |                                                                  |     |     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1200                                   | PPC_Q_SET_MODE        | Reactive setpoint command mode                                   | -   | F32 |  | 0: No configuration found<br>1: Variable fixed value cos $\phi$ var fix<br>2: Variable fixed value cos $\phi$ var DI<br>3: Variable fixed value cos $\phi$ var AI<br>4: Variable fixed value cos $\phi$ var Modbus<br>5: Characteristic curve cos $\phi$ (P)<br>6: Characteristic curve cos $\phi$ (V)<br>7: Variable fixed value Qvar fix<br>8: Variable fixed value Qvar DI<br>9: Variable fixed value Qvar AI<br>10: Variable fixed value Qvar Modbus<br>11: Characteristic curve Q (P)<br>12: Characteristic curve Q (V)<br>13: Characteristic curve Q (tan $\phi$ )<br>14: Voltage control Q (V droop)<br>15: Characteristic curve Q(V) Modbus<br>16: Characteristic curve cos $\phi$ (P) Modbus<br>100: Reactive power compensation<br>200: Fail-safe operation (setpoint failure)<br>201: Fail-safe operation (meter failure)<br>202: Fail-safe operation (system fallback) |
| 1202                                   | PPC_PF_SET            | Power factor setpoint                                            | -   | F32 |  | negative values = underexcited, positive values = overexcited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1204                                   | PPC_Q_SET_REL         | Reactive power setpoint                                          | %   | F32 |  | negative values = underexcited, positive values = overexcited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1206                                   | PPC_Q_SET_ABS         | Absolute reactive power setpoint                                 | var | F32 |  | negative values = underexcited, positive values = overexcited                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1208                                   |                       | Reserved                                                         |     |     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1210                                   | PPC_V_SET_ABS         | Absolute voltage setpoint for "Q (V droop)"                      | V   | F32 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1212                                   |                       | Reserved                                                         |     |     |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1214                                   | PPC_Q_V_LIMIT         | Lower / upper limit reached "Q(V)"                               |     | F32 |  | 0: Q (V) limit not reached.<br>1: Q (V) lower limit reached.<br>2: Q (V) upper limit reached                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                          |                  |                                                                        |                    |     |  |                           |
|--------------------------|------------------|------------------------------------------------------------------------|--------------------|-----|--|---------------------------|
| 1216                     | PPC_QV_P_IN      | Lock-in active power Plock-in for characteristic curve "Q(V) Modbus"   | %                  | F32 |  |                           |
| 1218                     | PPC_QV_P_OUT     | Lock-out active power Plock-out for characteristic curve "Q(V) Modbus" | %                  | F32 |  |                           |
| 1220                     | PPC_QV_V1        | Reference point voltage 1 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 |  |                           |
| 1222                     | PPC_QV_V2        | Reference point voltage 2 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 |  |                           |
| 1224                     | PPC_QV_V3        | Reference point voltage 3 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 |  |                           |
| 1226                     | PPC_QV_V4        | Reference point voltage 4 for characteristic curve "Q(V) Modbus"       | V/V <sub>c</sub>   | F32 |  |                           |
| 1228                     | PPC_QV_STAT      | Status Q(V) control                                                    | -                  | F32 |  | 0: off<br>1: on<br>2: act |
| 1230                     |                  | Reserved                                                               |                    |     |  |                           |
| 1232                     | PPC_PFP_V_IN     | Lock-in voltage Vlock-in for characteristic curve "cos φ (P) Modbus"   | V/V <sub>c</sub>   | F32 |  |                           |
| 1234                     | PPC_PFP_V_OUT    | Lock-out voltage Vlock-out for characteristic curve "cos φ (P) Modbus" | V/V <sub>c</sub>   | F32 |  |                           |
| 1236                     | PPC_PFP_PF1      | Reference point cos φ 1 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 |  |                           |
| 1238                     | PPC_PFP_PF2      | Reference point cos φ 2 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 |  |                           |
| 1240                     | PPC_PFP_PF3      | Reference point cos φ 3 for characteristic curve "cos φ (P) Modbus"    | -                  | F32 |  |                           |
| 1242                     | PPC_PFP_P1       | Reference point P 1 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 |  |                           |
| 1244                     | PPC_PFP_P2       | Reference point P 2 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 |  |                           |
| 1246                     | PPC_PFP_P3       | Reference point P 3 for characteristic curve "cos φ (P) Modbus"        | P/P <sub>ref</sub> | F32 |  |                           |
| 1248                     | PPC_PFP_STAT     | Status cos φ (P) control                                               | -                  | F32 |  | 0: off<br>1: on<br>2: act |
| 1250-1298                |                  | Reserved                                                               |                    |     |  |                           |
| <b>PV (ACTIVE POWER)</b> |                  |                                                                        |                    |     |  |                           |
| 1300                     | PPC_PV_P_LIM_REL | Active power generation limitation PV (grid operator, relative)        | %                  | F32 |  |                           |
| 1302                     | PPC_PV_P_LIM_ABS | Active power generation limitation PV (grid operator, absolute)        | W                  | F32 |  |                           |

|           |                          |                                                                 |    |     |  |                                                                                                                                                                                                                                                |
|-----------|--------------------------|-----------------------------------------------------------------|----|-----|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1304      | PPC_RPC_PV_P_SET_REL_ACT | Activation "Active power setpoint PV (energy trader, relative)" | -  | F32 |  | 0: off<br>1: on                                                                                                                                                                                                                                |
| 1306      | PPC_RPC_PV_P_SET_REL     | Active power setpoint PV (energy trader, relative)              | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1308      | PPC_RPC_PV_P_SET_ABS_ACT | Activation "Active power setpoint PV (energy trader, absolute)" | -  | F32 |  | 0: off<br>1: on                                                                                                                                                                                                                                |
| 1310      | PPC_RPC_PV_P_SET_ABS     | Active power setpoint PV (energy trader, absolute)              | W  | F32 |  |                                                                                                                                                                                                                                                |
| 1312-1318 |                          | Reserved                                                        |    |     |  |                                                                                                                                                                                                                                                |
| 1320      | PPC_PV_LFSMO_P_SET_REL   | Active power setpoint (LFSM-O)                                  | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1322-1330 |                          | Reserved                                                        |    |     |  |                                                                                                                                                                                                                                                |
| 1332      | PPC_PV_LFSMU_P_SET_REL   | Active power setpoint (LFSM-U)                                  | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1334-1342 |                          | Reserved                                                        |    |     |  |                                                                                                                                                                                                                                                |
| 1344      | PPC_PV_FSM_P_SET_REL     | Active power setpoint (FSM)                                     | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1346      | PPC_PV_FSM_STATUS        | Status of Frequency Sensitive Mode (FSM)                        | -  | F32 |  | 0: off<br>1: on<br>If "Activation FSM via Modbus" is activated this values corresponds to the value set via Modbus.<br>If "Activation via Modbus" is not activated, this value correponds to the FSM activation toggle in ther user interface. |
| 1348      | PPC_PV_FSM_DELTA_P       | Active power change calculated by FSM curve                     | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1350      | PPC_PV_FSM_DELTA_P_U     | Active power range $ \Delta P_1 /P_{inst}$ - underfrequency     | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1352      | PPC_PV_FSM_DELTA_P_O     | Active power range $ \Delta P_1 /P_{inst}$ - overfrequency      | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1354      | PPC_PV_FSM_DROOP_U       | Frequency droop $s_f$ - underfrequency                          | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1356      | PPC_PV_FSM_DROOP_O       | Frequency droop $s_f$ - overfrequency                           | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1358      | PPC_PV_FSM_DB_U          | Dead band $\Delta f_{DB}$ - underfrequency                      | Hz | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1360      | PPC_PV_FSM_DB_O          | Dead band $\Delta f_{DB}$ - overfrequency                       | Hz | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1362      | PPC_PV_P_REF             | Reference active power $P_{ref}$ for frequency control P(f)     | W  | F32 |  | If LFSM-O/LFSM-U/FSM is active, this register contains the currently used reference active power.<br>If LFSM-O/LFSM-U/FSM is not active, this register contains the value NaN.                                                                 |

|                               |                             |                                                                      |     |     |  |                                                                                                                                                                                                       |
|-------------------------------|-----------------------------|----------------------------------------------------------------------|-----|-----|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1364                          | PPC_PV_P_MOM                | Momentary active power $P_{\text{mom}}$ for frequency control P(f)   | W   | F32 |  | If LFSM-O/LFSM-U/FSM is active, this register contains the momentary active power when crossing the frequency threshold.<br>If LFSM-O/LFSM-U/FSM is not active, this register contains the value NaN. |
| 1366                          | PPC_PV_P_CTRL_REL           | Active power correction value PV                                     | %   | F32 |  |                                                                                                                                                                                                       |
| 1368                          | PPC_PV_P_AC_INV             | Sum of inverter active power PV                                      | W   | F32 |  | This value corresponds to the sum of all inverters connected to the master and slave device.                                                                                                          |
| 1370-1400                     |                             | Reserved                                                             |     |     |  |                                                                                                                                                                                                       |
| <b>PV (REACTIVE POWER)</b>    |                             |                                                                      |     |     |  |                                                                                                                                                                                                       |
| 1402                          | PPC_PV_Q_CTRL_REL           | Reactive power correction value PV                                   | %   | F32 |  |                                                                                                                                                                                                       |
| 1404                          | PPC_PV_PF_CTRL              | Power factor correction value PV                                     | -   | F32 |  |                                                                                                                                                                                                       |
| 1406                          | PPC_PV_Q_AC_INV             | Sum of inverter reactive power (PV)                                  | var | F32 |  | This value corresponds to the sum of all inverters connected to the master and slave device.                                                                                                          |
| 1408-1420                     |                             | Reserved                                                             |     |     |  |                                                                                                                                                                                                       |
| <b>PV (OTHER)</b>             |                             |                                                                      |     |     |  |                                                                                                                                                                                                       |
| 1422                          | PPC_PV_INV_INST             | Number of installed inverters (PV)                                   | -   | F32 |  |                                                                                                                                                                                                       |
| 1424                          | PPC_PV_INV_AVAIL            | Number of active inverters (PV)                                      | -   | F32 |  |                                                                                                                                                                                                       |
| 1426-1450                     |                             | Reserved                                                             |     |     |  |                                                                                                                                                                                                       |
| <b>BATTERY (ACTIVE POWER)</b> |                             |                                                                      |     |     |  |                                                                                                                                                                                                       |
| 1452                          | PPC_BAT_P_LIM_CHARGE_REL    | Active power charge limitation battery (grid operator, relative)     | %   | F32 |  |                                                                                                                                                                                                       |
| 1454                          | PPC_BAT_P_LIM_CHARGE_ABS    | Active power charge limitation battery (grid operator, absolute)     | W   | F32 |  |                                                                                                                                                                                                       |
| 1456                          | PPC_BAT_P_LIM_DISCHARGE_REL | Active power discharge limitation (grid operator, relative)          | %   | F32 |  |                                                                                                                                                                                                       |
| 1458                          | PPC_BAT_P_LIM_DISCHARGE_ABS | Active power discharge limitation battery (grid operator, absolute)  | W   | F32 |  |                                                                                                                                                                                                       |
| 1460                          | PPC_RPC_BAT_P_SET_REL_ACT   | Activation "Active power setpoint battery (energy trader, relative)" | -   | F32 |  |                                                                                                                                                                                                       |
| 1462                          | PPC_RPC_BAT_P_SET_REL       | Active power setpoint battery (energy trader, relative)              | %   | F32 |  |                                                                                                                                                                                                       |
| 1464                          | PPC_RPC_BAT_P_SET_ABS_ACT   | Activation "Active power setpoint battery (energy trader, absolute)" | -   | F32 |  |                                                                                                                                                                                                       |
| 1466                          | PPC_RPC_BAT_P_SET_ABS       | Active power setpoint battery (energy trader, absolute)              | W   | F32 |  |                                                                                                                                                                                                       |
| 1468-1480                     |                             | Reserved                                                             |     |     |  |                                                                                                                                                                                                       |
| 1482                          | PPC_BAT_LFSMO_P_SET_REL     | Active power setpoint (LFSM-O)                                       | %   | F32 |  |                                                                                                                                                                                                       |

|           |                         |                                                              |    |     |  |                                                                                                                                                                                                                                                |
|-----------|-------------------------|--------------------------------------------------------------|----|-----|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1484-1494 |                         | Reserved                                                     |    |     |  |                                                                                                                                                                                                                                                |
| 1494      | PPC_BAT_LFSMU_P_SET_REL | Active power setpoint (LFSM-U)                               | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1496-1506 |                         | Reserved                                                     |    |     |  |                                                                                                                                                                                                                                                |
| 1508      | PPC_BAT_FSM_P_SET_REL   | Active power setpoint (FSM)                                  | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1510      | PPC_BAT_FSM_STATUS      | Status of Frequency Sensitive Mode (FSM)                     | -  | F32 |  | 0: off<br>1: on<br>If "Activation FSM via Modbus" is activated this values corresponds to the value set via Modbus.<br>If "Activation via Modbus" is not activated, this value correponds to the FSM activation toggle in ther user interface. |
| 1512      | PPC_BAT_FSM_DELTA_P     | Active power change calculated by FSM curve                  | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1514      | PPC_BAT_FSM_DELTA_P_U   | Active power range $ \Delta P_1 /P_{inst}$ - underfrequency  | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1516      | PPC_BAT_FSM_DELTA_P_O   | Active power range $ \Delta P_1 /P_{inst}$ - overfrequency   | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1518      | PPC_BAT_FSM_DROOP_U     | Frequency droop $s_f$ - underfrequency                       | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1520      | PPC_BAT_FSM_DROOP_O     | Frequency droop $s_f$ - overfrequency                        | %  | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1522      | PPC_BAT_FSM_DB_U        | Dead band $\Delta f_{DB}$ - underfrequency                   | Hz | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1524      | PPC_BAT_FSM_DB_O        | Dead band $\Delta f_{DB}$ - overfrequency                    | Hz | F32 |  | Configuration parameter for FSM charactersitic curve                                                                                                                                                                                           |
| 1526      | PPC_BAT_P_REF           | Reference active power $P_{ref}$ for active P(f) mode        | W  | F32 |  | If LFSM-O/LFSM-U/FSM is active, this register contains the currently used reference active power.<br>If LFSM-O/LFSM-U/FSM is not active, this register contains the value NaN.                                                                 |
| 1528      | PPC_BAT_P_MOM           | Momentary active power $P_{mom}$ for frequency control P(f). | W  | F32 |  | If LFSM-O/LFSM-U/FSM is active, this register contains the momentary active power when crossing the frequency threshold.<br>If LFSM-O/LFSM-U/FSM is not active, this register contains the value NaN.                                          |
| 1530      | PPC_BAT_P_CTRL_REL      | Active power correction value battery                        | %  | F32 |  |                                                                                                                                                                                                                                                |
| 1532      | PPC_BAT_P_AC_INV        | Sum of inverter active power battery                         | W  | F32 |  | This value corresponds to the sum of all inverters connected to the master and slave device.                                                                                                                                                   |
| 1534-1566 |                         | Reserved                                                     |    |     |  |                                                                                                                                                                                                                                                |

| BATTERY (REACTIVE POWER)                              |                    |                                                                 |                  |     |  |  |
|-------------------------------------------------------|--------------------|-----------------------------------------------------------------|------------------|-----|--|--|
| 1568                                                  | PPC_BAT_Q_CTRL_REL | Reactive power correction value battery                         | %                | F32 |  |  |
| 1570                                                  | PPC_BAT_PF_CTRL    | Power factor correction value battery                           | -                | F32 |  |  |
| 1572                                                  | PPC_BAT_Q_AC_INV   | Sum of inverter reactive power battery                          | var              | F32 |  |  |
| 1574-1584                                             |                    | Reserved                                                        |                  |     |  |  |
| BATTERY (OTHER)                                       |                    |                                                                 |                  |     |  |  |
| 1586                                                  | PPC_BAT_SOC        | State of charge (relative)                                      | %                | F32 |  |  |
| 1588                                                  | PPC_BAT_SOC_ABS    | State of charge (absolute)                                      | Wh               | F32 |  |  |
| 1590                                                  | PPC_BAT_CAP        | Battery capacity                                                | Wh               | F32 |  |  |
| 1592-2998                                             |                    | Reserved                                                        |                  |     |  |  |
| MEASURED DATA (METER)                                 |                    |                                                                 |                  |     |  |  |
| 3000                                                  | PPC_P_AC           | Actual active power                                             | W                | F32 |  |  |
| 3002                                                  | PPC_PF             | Actual power factor $\cos \varphi$                              | -                | F32 |  |  |
| 3004                                                  | PPC_Q_AC           | Actual reactive power                                           | var              | F32 |  |  |
| 3006                                                  | PPC_S_AC           | Actual apparent power                                           | VA               | F32 |  |  |
| 3008                                                  | PPC_F_AC           | Actual grid frequency                                           | Hz               | F32 |  |  |
| 3010                                                  | PPC_V_PHASE_AB     | Actual phase voltage $V_{PhA-PhB}$                              | V                | F32 |  |  |
| 3012                                                  | PPC_V_PHASE_BC     | Actual phase voltage $V_{PhB-PhC}$                              | V                | F32 |  |  |
| 3014                                                  | PPC_V_PHASE_CA     | Actual phase voltage $V_{PhC-PhA}$                              | V                | F32 |  |  |
| 3016                                                  | PPC_I_PHASE_A      | Actual current $I_{PhA}$                                        | A                | F32 |  |  |
| 3018                                                  | PPC_I_PHASE_B      | Actual current $I_{PhB}$                                        | A                | F32 |  |  |
| 3020                                                  | PPC_I_PHASE_C      | Actual current $I_{PhC}$                                        | A                | F32 |  |  |
| 3022                                                  | PPC_V_PHASE_AN     | Line-to-neutral voltage $V_{PhA-N}$                             | V                | F32 |  |  |
| 3024                                                  | PPC_V_PHASE_BN     | Line-to-neutral voltage $V_{PhB-N}$                             | V                | F32 |  |  |
| 3026                                                  | PPC_V_PHASE_CN     | Line-to-neutral voltage $V_{PhC-N}$                             | V                | F32 |  |  |
| 3028-3078                                             |                    | Reserved                                                        |                  |     |  |  |
| MEASURED DATA (USED FOR SPECIFIC POWER CONTROL MODES) |                    |                                                                 |                  |     |  |  |
| 3080                                                  | PPC_F_AC_PF        | Frequency used for frequency control modes: LFSM-U, LFSM-O, FSM | Hz               | F32 |  |  |
| 3082-3118                                             |                    | Reserved                                                        |                  |     |  |  |
| MEASURED DATA (OTHER)                                 |                    |                                                                 |                  |     |  |  |
| 3120                                                  | PPC_GHI            | Actual global irradiation                                       | W/m <sup>2</sup> | F32 |  |  |
| 3122                                                  | PPC_T_AMBIENT      | Actual ambient temperature                                      | °C               | F32 |  |  |
| 3124-4998                                             |                    | Reserved                                                        |                  |     |  |  |