REMOTE POWER CONTROL INTERFACE REGISTER
Version 1.42

WRITE AND READ VALUES (without Hybrid EMS)

Data type: Little-Endian, byte swapped

If the setpoint is written to register 5000, it remains valid for the valid time (register 5006).

A further setpoint command resets the expiration timer and the setpoint command is active again for the valid time (register 5006).

Alternatively, register 5008 (watchdog) can be written instead of sending a new setpoint command to reset the expiration timer.

In case a new value gets written into register 5006 this will reset the expiration timer.

If the watchdog register is written after the valid time has expired, the setpoint remains invalid and a new setpoint command must be set.

Register	Abbreviation	Description	Unit	Data type	Range	Comment
5000	PPC_P_SET_RPC_REL	Active power setpoint (relative, 3rd party)	%	F32	-10,000…125	Write values between 0...100 % up to firmware 14.0.5. Write values between 0...125 % from firmware 15.1.8. Write values between -10,000...125 % from firmware 23.2.11.
5002	PPC_P_SET_RPC_ABS	Active power setpoint (absolute, 3rd party)	W	F32		From firmware 33.0.10
5004-5005		Reserved. Possible to write / read from firmware 16.0.4.				
5006	PPC_RPC_VALID_TIME		min	F32	1…255 min (Default: 10 min)	
5008	PPC_RPC_WATCHDOG		-	F32	-	

READ VALUES (without Hybrid EMS)

Data type: Little-Endian, byte swapped

Register	Abbreviation	Description	Unit	Data type	Range	Comment
0	PPC_P_AC_INV	Inverter active power	W	F32	0… 1,000,000,000.000 W	
2	PPC_P_AC_FEED_IN	Actual feed-in power at grid connection point (actual value)	W	F32	Active power value from selected meter at RPC	From firmware 29.0.9 Negative values = import, Positive values = export
4	PPC_P_SET_REL	Active power setpoint	%	F32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
6	PPC_P_SET_GRIDOP_REL	Active power setpoint (grid operator)	%	F32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
8	PPC_P_SET_RPC_REL	Active power setpoint (3rd party)	%	F32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
10	PPC_P_AC_GRIDOP_MAX	Maximum active power at power limitation (grid operator)	W	F32	0… 1,000,000,000.000 W	PPC_P_AV x PPC_P_SET_GRIDOP_REL (PAV = 1.000.000 W, PPC_P_SET_GRIDOP_REL = 50 % → PPC_P_AC_GRIDOP_MAX = 500.000 W).
12	PPC_P_AC_RPC_MAX	Maximum active power at power limitation (3rd party)	W	F32	0… 1,000,000,000.000 W	From firmware 16.0.4 PPC_P_AV x PPC_P_SET_RPC_REL (PAV = 1.000.000 W, PPC_P_SET_RPC_REL = 60 % → PPC_P_AC_RPC_MAX = 600.000 W).

Register	Abbreviation	Description	Unit	Data type	Range	Comment
14	PPC_P_SET_MODE	Active power control method (*)	-	F32	0: No configuration found 1: Fixed value method without interface (continuous limitation) 2: Fixed value method Pvar DI 3: Fixed value method Pvar AI 4: Fixed value method Pvar Modbus 5: Remote Power Control (RPC) 100: LFSM-O (**) 101: LFSM-U (3*) 102: FSM (4*) 112: RPC & FSM (5*) 120: Controller freeze (undervoltage) (6*) 121: Controller freeze (overvoltage) (6*) 200: Fail-safe operation (last valid setpoint) 201: Fail-safe operation (default setpoint) 202: Fail-safe operation (system fallback setpoint) 203: Fail-safe operation (Automatic grid disconnection)	(*) From firmware 16.0.4 (**) From firmware 17.0.11 (3*) From firmware 19.2.10 (4*) From firmware 25.0.13 (5*) From firmware 33.1.12 (6*) From firmware 34.1.5
16	PPC_P_SET_LFSMO_REL	Active power setpoint (LFSM-O)	%	F32		
18	PPC_P_SET_LFSMU_REL	Active power setpoint (LFSM-U)	%	F32		
20	PPC_GHI	Actual global irradiation	W/m²	F32		From firmware 23.0.8
22	PPC_T_AMBIENT	Actual ambient temperature	°C	F32		From firmware 23.0.8
24	PPC_P_AC_AVAIL	Available active power	W	F32		From firmware 25.0.13
26	PPC_Q_AC_AVAIL	Available reactive power	Var	F32		From firmware 25.0.13
28	PPC_INV_INST	Number of installed inverters	-	F32		From firmware 29.0.9
30	PPC_INV_AVAIL	Number of active inverters	-	F32		From firmware 29.0.9
32	PPC_BAT_SOC	State of charge relative	%	F32		From firmware 33.1.12
34	PPC_BAT_SOC_ABS	State of charge absolute	Wh	F32		From firmware 33.1.12
36	PPC_BAT_CAP	Battery capacity	Wh	F32		From firmware 33.1.12
38	PPC_BAT_P_AC_INV	Sum of inverter active power (battery)	W	F32		From firmware 33.1.12
40	PPC_PV_P_AC_INV	Sum of inverter active power (PV)	W	F32		From firmware 33.1.12
42	PPC_F_AC	Grid frequency	Hz	F32		From firmware 33.1.12
44	PPC_P_SET_RPC_ABS	Absolute active power setpoint (3rd party)	W	F32		From firmware 33.0.10
46-99		Reserved				

Register	Abbreviation	Description	Unit	Data type	Range	Comment
100	PPC_P_AC_INV	Inverter active power	W	I32	0… 1,000,000,000.000 W	
102	PPC_P_AC_FEED-IN	Actual feed-in power at grid connection point (actual value)	W	I32	Active power value from selected meter at RPC	Negative values = import, Positive values = export. From firmware 32.0.6. In previous versions, the value came from the selected meter at power control.
104	PPC_P_SET_REL	Active power setpoint	%	I32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
106	PPC_P_SET_GRIDOP_REL	Active power setpoint (grid operator)	%	I32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
108	PPC_P_SET_RPC_REL	Active power setpoint (3rd party)	%	I32	-10,000.000 … 125.000 %	Read values between 0...100 % up to firmware 14.0.5. Read values between 0...125 % from firmware 15.1.8. Read values between -10,000...125 % from firmware 23.2.11.
110	PPC_P_AC_GRIDOP_MAX	Maximum active power at power limitation (grid operator)	W	I32	0… 1,000,000,000.000 W	PPC_P_AV x PPC_P_SET_GRIDOP_REL (PAV = 1.000.000 W, PPC_P_SET_GRIDOP_REL = 50 % → PPC_P_AC_GRIDOP_MAX = 500.000 W).
112	PPC_P_AC_RPC_MAX	Maximum active power at power limitation (3rd party)	W	I32	0… 1,000,000,000.000 W	PPC_P_AV x PPC_P_SET_RPC_REL (PAV = 1.000.000 W, PPC_P_SET_RPC_REL = 60 % → PPC_P_AC_RPC_MAX = 600.000 W).

Register	Abbreviation	Description	Unit	Data type	Range	Comment
114	PPC_P_SET_MODE	Active power control method (*)	-	I32	0: No configuration found 1: Fixed value method without interface (continuous limitation) 2: Fixed value method Pvar DI 3: Fixed value method Pvar AI 4: Fixed value method Pvar Modbus 5: Remote Power Control (RPC) 100: LFSM-O (**) 101: LFSM-U (3*) 102: FSM (4*) 112: RPC & FSM (5*) 120: Controller freeze (undervoltage) (6*) 121: Controller freeze (overvoltage) (6*) 200: Fail-safe operation (last valid setpoint) 201: Fail-safe operation (default setpoint) 202: Fail-safe operation (system fallback setpoint) 203: Fail-safe operation (Automatic grid disconnection)	(*) From firmware 16.0.4 (**) From firmware 17.0.11 (3*) From firmware 19.2.10 (4*) From firmware 25.0.13 (5*) From firmware 33.1.12 (6*) From firmware 34.1.5
116	PPC_P_SET_LFSMO_REL	Active power setpoint (LFSM-O)	%	I32		
118	PPC_P_SET_LFSMU_REL	Active power setpoint (LFSM-U)	%	I32		
120	PPC_GHI	Actual global irradiation	W/m²	I32		
122	PPC_T_AMBIENT	Actual ambient temperature	°C	I32		From firmware 23.0.8
124	PPC_P_AC_AVAIL	Available active power	W	I32		From firmware 25.0.13
126	PPC_Q_AC_AVAIL	Available reactive power	Var	I32		From firmware 25.0.13
128	PPC_INV_INST	Number of installed inverters	-	I32		From firmware 23.0.8
130	PPC_INV_AVAIL	Number of active inverters	-	I32		From firmware 29.0.9
132	PPC_BAT_SOC	State of charge	%	I32		From firmware 33.1.12
134	PPC_BAT_SOC_ABS	State of charge absolute	Wh	I32		From firmware 33.1.12
136	PPC_BAT_CAP	Battery capacity	Wh	I32		From firmware 33.1.12
138	PPC_BAT_P_AC_INV	Sum of inverter active power (battery)	W	I32		From firmware 33.1.12
140	PPC_PV_P_AC_INV	Sum of inverter active power (PV)	W	I32		From firmware 33.1.12
142	PPC_F_AC	Grid frequency	Hz	I32		From firmware 33.1.12
144	PPC_P_SET_RPC_ABS	Absolute active power setpoint (3rd party)	W	I32		From firmware 33.0.10
146-3999		Reserved				

Register	Abbreviation	Description	Unit	Data type	Range	Comment
3900	PPC_QS_TS	Current timestamp of device	---	U32		This value returns a current timestamp for device health detection. From firmware 34.2.6
3902	PPC_RPC_V_MAJOR	Remote Power Control major version	-	U16		
3903	PPC_RPC_V_MINOR	Remote Power Control minor version	-	U16		
4000	PPC_P_AV_E	Agreed connected active power PAV	W	F32	0… 1,000,000,000.000 W	

REMOTE POWER CONTROL INTERFACE REGISTER (HYBRID EMS)
Version 2.1

WRITE AND READ VALUES (only with Hybrid EMS)

Data type: Little-Endian, byte swapped

For each setpoint, two registers must be written: one for activation (0/1) and one for the setpoint value.

If the setpoint value register is written while the activation register remains set to 0, the setpoint will not be processed.

Register	Abbreviation	Description	Unit	Data type	Range	Comment
		GRID CONNECTION POINT (GCP)				
10000	PPC_RPC_GCP_P_SET_REL_ACT	Activation "Active power setpoint at GCP (energy trader, relative)"	-	F32	0 = off, 1 = on	
10002	PPC_RPC_GCP_P_SET_REL	Active power setpoint at GCP (energy trader, relative)	%	F32	-125 … 125 %	
10004	PPC_RPC_GCP_P_SET_ABS_ACT	Activation "Active power setpoint at GCP (energy trader, absolute)"	-	F32	0 = off, 1 = on	
10006	PPC_RPC_GCP_P_SET_ABS	Active power setpoint at GCP (energy trader, absolute)	W	F32	unlimited	
10008-1098		Reserved				
		PV				
10100	PPC_RPC_PV_P_SET_REL_ACT	Activation "Active power setpoint PV (energy trader, relative)"	-	F32	0 = off, 1 = on	
10102	PPC_RPC_PV_P_SET_REL	Active power setpoint PV (energy trader, relative)	%	F32	0 … 125 %	
10104	PPC_RPC_PV_P_SET_ABS_ACT	Activation "Active power setpoint PV (energy trader, absolute)"	-	F32	0 = off, 1 = on	
10106	PPC_RPC_PV_P_SET_ABS	Active power setpoint PV (energy trader, absolute)	W	F32	unlimited	
10108	PPC_RPC_PV_FSM_ACT	Activation FSM for PV	-	F32	0 = off, 1 = on	
10110	PPC_RPC_PV_FSM_P_RANGE	FSM active power range for PV	%	F32	0....125%	Applicable if FSM curve is configured as symmetrical.
10112	PPC_RPC_PV_FSM_P_RANGE_U	FSM active power range - underfrequency for PV	%	F32	0....125%	Applicable if FSM curve is configured as asymmetrical.
10114	PPC_RPC_PV_FSM_P_RANGE_O	FSM active power range - overfrequency for PV	%	F32	0....125%	Applicable if FSM curve is configured as asymmetrical.
10116	PPC_RPC_PV_FSM_DROOP	FSM droop for PV	%	F32	0.001 …100%	Applicable if FSM curve is configured as symmetrical.
10118	PPC_RPC_PV_FSM_DROOP_U	FSM droop - underfrequency for PV	%	F32	0.001 …100%	Applicable if FSM curve is configured as asymmetrical.

Register	Abbreviation	Description	Unit	Data type	Range	Comment
10120	PPC_RPC_PV_FSM_DROOP_O	FSM droop - overfrequency for PV	%	F32	0.001 …100%	Applicable if FSM curve is configured as asymmetrical.
10122-10198		Reserved				
		BATTERY				
10200	PPC_RPC_BAT_P_SET_REL_ACT	Activation "Active power setpoint battery (energy trader, relative)"	-	F32	0 = off, 1 = on	
10202	PPC_RPC_BAT_P_SET_REL	Active power setpoint battery (energy trader, relative)	%	F32	-125 … 125 %	
10204	PPC_RPC_BAT_P_SET_ABS_ACT	Activation "Active power setpoint battery (energy trader, absolute)"	-	F32	0 = off, 1 = on	
10206	PPC_RPC_BAT_P_SET_ABS	Active power setpoint battery (energy trader, absolute)	W	F32	unlimited	
10208	PPC_RPC_BAT_FSM_ACT	Activation FSM for battery	-	F32	0 = off, 1 = on	
10210	PPC_RPC_BAT_FSM_P_RANGE	FSM active power range for battery	%	F32	0....125%	Applicable if FSM curve is configured as symmetrical.
10212	PPC_RPC_BAT_FSM_P_RANGE_U	FSM active power range - underfrequency for battery	%	F32	0....125%	Applicable if FSM curve is configured as asymmetrical.
10214	PPC_RPC_BAT_FSM_P_RANGE_O	FSM active power range - overfrequency for battery	%	F32	0....125%	Applicable if FSM curve is configured as asymmetrical.

READ VALUES (only with Hybrid EMS)

Data type: Little-Endian, byte swapped

Register	Abbreviation	Description	Unit	Data type	Range	Comment
			GENERAL			
3900	PPC_QS_TS	Current timestamp of device	-	U32		This value returns a current timestamp for device health detection. From firmware 34.2.6
3902	PPC_RPC_V_MAJOR	Remote Power Control major version	-	U16		
3903	PPC_RPC_V_MINOR	Remote Power Control minor version	-	U16		
4000	PPC_P_AV_E	Agreed connected active power P_{AV}	W	F32		
4002-5000		Reserved				
5100	PPC_GCP_P_LIM_FEEDIN_REL	Active power feed-in limitation (grid operator, relative)	%	F32		
5102	PPC_GCP_P_LIM_FEEDIN_ABS	Active power feed-in limitation (grid operator, absolute)	W	F32		
5104	PPC_GCP_P_LIM_IMPORT_REL	Active power import limitation (grid operator, relative)	%	F32		
5106	PPC_GCP_P_LIM_IMPORT_ABS	Active power import limitation (grid operator, absolute)	W	F32		
5108-5198		Reserved				
			PV			
5200	PPC_PV_P_LIM_REL	Active power generation limitation PV (grid operator, relative)	%	F32		
5202	PPC_PV_P_LIM_ABS	Active power generation limitation PV (grid operator, absolute)	W	F32		
5204	PPC_PV_LFSMO_P_SET_REL	Active power setpoint (LFSM-O)	%	F32		
5206	PPC_PV_LFSMU_P_SET_REL	Active power setpoint (LFSM-U)	%	F32		
5208	PPC_PV_FSM_P_SET_REL	Active power setpoint (FSM)	%	F32		
5210	PPC_PV_FSM_DELTA_P	Active power change calculated by FSM curve	%	F32		
5212	PPC_PV_P_AC_INV	Sum of inverter active power (PV)	W	F32		This value corresponds to the sum of all PV inverters connected to the master and slave devices.
5214		Reserved				
5216	PPC_PV_INV_INST	Number of installed inverters (PV)	-	F32		
5218	PPC_PV_INV_AVAIL	Number of active inverters (PV)	-	F32		

Register	Abbreviation	Description	Unit	Data type	Range	Comment
5220-5298		Reserved				
		BATTERY				
5300	PPC_BAT_P_LIM_CHARGE_REL	Active power charge limitation battery (grid operator, relative)	%	F32		
5302	PPC_BAT_P_LIM_CHARGE_ABS	Active power charge limitation battery (grid operator, absolute)	W	F32		
5304	PPC_BAT_P_LIM_DISCHARGE_REL	Active power discharge limitation battery (grid operator, relative)	%	F32		
5306	PPC_BAT_P_LIM_DISCHARGE_ABS	Active power discharge limitation battery (grid operator, absolute)	W	F32		
5308	PPC_BAT_LFSMO_P_SET_REL	Active power setpoint (LFSM-O)	%	F32		
5310	PPC_BAT_LFSMU_P_SET_REL	Active power setpoint (LFSM-U)	%	F32		
5312	PPC_BAT_FSM_P_SET_REL	Active power setpoint (FSM)	%	F32		
5314	PPC_BAT_FSM_DELTA_P	Active power change calculated by FSM curve	%	F32		
5316	PPC_BAT_P_AC_INV	Sum of inverter active power battery	W	F32		This value corresponds to the sum of all battery inverters connected to the master and slave devices.
5318	PPC_BAT_SOC	State of charge relative	%	F32		
5320	PPC_BAT_SOC_ABS	State of charge absolute	Wh	F32		
5322	PPC_BAT_CAP	Battery capacity	Wh	F32		
5324-5398		Reserved				
		MEASURED DATA				
5400	PPC_GHI	Actual global irradiation	W/m²	F32		
5402	PPC_T_AMBIENT	Actual ambient temperature	°C	F32		
5404	PPC_F_AC_PF	Grid frequency	Hz	F32		Measured frequency used for frequency control LFSM-U, LFSM-O and FSM
5406	PPC_P_AC_FEED_IN	Active power at grid connection point	W	F32		Active power value from selected meter at RPC.
5408-9998		Reserved				