

skycontrol CP

Power Plant Controller with integrated Data Logger



The alliance of a power plant controller and a data logger in one device makes the skycontrol CP a compact and versatile component. skycontrol CP is able to read and process various devices regardless of manufacturer via CAN, RS485 or Ethernet and integrates these in skytron® energy's cloud-based PVGuard supervision platform. The controller meets grid operators' requirements for utility-scale PV installations to ensure controlled grid injection, both at the medium

and high voltage level. skycontrol CP can be flexibly adjusted to comply with different regional, national and international grid codes. The telecontrol gateway optionally contained complements the skycontrol CP to the protocols IEC60870, IEC61850 and DNP3. Of course, the controller uses the genuine closed-loop control principle, ensuring high-precision control by measurement of all relevant physical quantities at the grid connection point.



skycontrol CP



Powder-coated steel cabinet with mounting frames

KEY FEATURES

- > Closed-loop control of active and reactive power
- > Fast and precise settlement of control functions
- > Feedback of actual values from grid connection point at medium or high voltage level
- > Support of inverters from various manufacturers as listed in the skytron® energy compatibility list
- > Data buffer in case of internet breakdown, depending on system configuration (string or central inverters): 1–4 weeks
- > Fully integrated in the monitoring and control system of skytron® energy

MONITORED DEVICES

- > Inverters, for example:
 - inverter state, failure state, energy production
- > skyCONNi, data gateway for the connection of several devices such as:
 - energy meters
 - temperature sensors
 - irradiation sensors
 - weather stations
 - analog sensors and actuators
 - alarm systems and process control systems (inputs and outputs)

The skycontrol series of skytron® energy makes a substantial contribution to the global integration of renewable energy sources into existing power grids. Through a stable and predictable feed-in management, power grids can be optimally utilized to decrease the costs of grid expansion.

To date, worldwide, PV power plants with an accumulated power of more than 3 GWp are equipped with skytron® energy's skycontrol power plant controller.



TECHNICAL DATA

HARDWARE	PV59.YX	ALTERNATIVE: PV60.YX	
1 DC UPS	24 V DC		
2 Industry-PC	Flash Card up to 1 GB, battery-backed clock		
1 Ethernet switch	fibre-optic networking		
Optional: Industry router	DSL or UMTS/LTE		
SYSTEM PROPERTIES			
Reference inputs for active power curtailment	four increments (100%, 60%, 30%, 0%)		via telecontrol protocol
Feedback to grid operator	Acknowledge of the four active power specification levels via relay contacts		via telecontrol protocol
Closed-loop control of reactive power	Fixed value or according to defined characteristic curves: $\cos\phi(P)$, $\cos\phi(V)$, $Q(V)$		via telecontrol protocol
Closed-loop control based on reference data (e.g. $\cos\phi = 1.0$)	yes		
Power reduction in the event of overfrequency P(f)	yes (in conformity with German (BDEW) regulations respectively TransmissionCode 2007)		
Capping of the maximum power injection	yes (active and apparent power)		
Powering up and down with maximum power gradients	yes (ramp function)		
Time resolution for the control system	1 s		
Grid analyser to be installed at POD	Janitza UMG 604, measurements in 100 ms intervals		
INTERFACES			
Ethernet, copper overvoltage protected	-/2/4		
Ethernet, FOC	1x 10/100BaseT (for Janitza grid analyser) • multimode, e.g. HITRONIC® HQN outdoor cable with SC connector 4G50/125, up to 4 km • optional: single mode, e.g. HITRONIC® HQN outdoor cable with SC connector 4E9/125, up to 20 km		
RS485 HD overvoltage protected	-/2/4 (for inverters)		
CAN	2x 2.0B (for sensors and grid stability management upgrades)		only 1x for sensors
Digital inputs	-/4x (for grid stability management, reference value)		on request only
Digital outputs	-/4x (for grid stability management, feedback value)		on request only
Analog in-/outputs	-		on request only
Telecontrol protocols	-		IEC 60870-5-101, -104; DNP3; IEC61850
Remote Interface (RI)	optional access to control functions, e.g. via a remotely located PC		
Energy meter interfaces	1x RS485, 2x S0		
Sensor Systems (2 x CAN Bus)			
Protocol	CANopen as to CiA standard DS-301		
Data rate	20 kBit/s		
Recommended cable	Li2YCYv (TP) 8x2x0,5		
Number of users per CAN Bus	max. 27		
ELECTRICAL DATA			
Power supply	195-265 V AC/47-63 Hz mains UL version: 110 to 230 V AC / 2.5 to 1.2 A AC / 44 to 66 Hz mains		
Power supply for field sensors	24 V DC over DC-UPS		
Backup system	24 V DC, 2 batteries AGM 12 V, 40 h		
Overvoltage protector	230 VAC, 24 V DC and CAN Bus		
CONFORMITY			
Standards	UL 60950-1, CSA C22.2 No. 60950-1, EN 60950-1, EN 61000-6		
MECHANICAL DATA	SWITCH CABINET ¹⁾	BATTERIES	BATTERY CABINET
Degree of protection	IP 66	IP 10	IP 54
Coastal installations ²⁾	Severity level 1 acc. to DIN EN 60068-2-52:1996		
Dimensions h x w x d	700 x 500 x 250 mm / 27.6 x 19.67 x 9.84 in	175 x 166 x 350 mm / 6.90 x 6.53 x 13.78 in	380 x 380 x 250 mm / 15.0 x 15.0 x 9.84 in
Outdoor cabinet including batteries h x w x d (option)	1000 x 1000 x 320 mm / 39.4 x 39.4 x 12.6 in	each	
Weight	27 kg / 59.524 lb; 30 kg / 66.138 lb with package	13.6 to 20 kg / 28.66 to 44.10 lb each	6.7 kg / 14.8 lb
Material of cabinet	powder-coated steel, mounting frames		powder-coated steel, mounting frames
AMBIENT CONDITIONS	SWITCH CABINET	BATTERIES	BATTERY CABINET
Operating temperature	-20 °C to +50 °C / -4 °F to 122 °F	-15 °C to 50 °C / 5 °F to 122 °F	-15 °C to 50 °C / 5 °F to 122 °F
Storage temperature	-20 °C to +70 °C / -4 °F to 158 °F	-15 °C to 40 °C / 5 °F to 104 °F	-15 °C to 40 °C / 5 °F to 104 °F
Relative air humidity	up to 95 % non-condensing	up to 85 % non-condensing	

1) For indoor use only

2) Only valid for the outdoor version of the device