

POWER PLANT CONTROLLER (PPC)

Reliable grid code compliance



Actual product may vary

DESCRIPTION OF FUNCTIONS

The Power Plant Controller (PPC) supports both national and international grid codes and thus enables grid-compliant feed-in from PV systems at medium-voltage and high-voltage levels worldwide.

The high-performance blue'Log X-Series offers for this purpose a wide range of features for active and reactive power control, which guarantees grid stability – in fact manufacturer independent. Modularity and scalability allow customized plant control and provide the necessary flexibility in order to meet the needs of the high diversity of grid connection requirements.

ACTIVE POWER MANAGEMENT

Active power constraint:

Characteristic curve control:

Log:

Ramp rate control:

Soft start:

Fast stop:

Curtailment of actual active power output to fixed / variable setpoint

Automatic active power adjustment $P(f)$ at frequency deviation (over- / under-frequency)

Archiving all curtailment actions throughout the entire operational life (VCOM license required)

Limiting active power output increase and decrease rate

Soft start-up after reconnection

Fast safety shutdown triggered by external command

REACTIVE POWER MANAGEMENT

Fixed setpoint control:

Characteristic curve control:

Ramp rate control:

Reactive power compensation:

Control of reactive power or power factor to fixed setpoint

Automatic reactive power adjustment according to characteristic curve $Q(V)$, $Q(P)$, $Q(\tan \varphi)$, $\cos \varphi(V)$, $\cos \varphi(P)$ and voltage control $Q(V \text{ droop})$

Limiting reactive power supply / absorption increase and decrease rate

Controlling reactive power capable pv inverters beyond feed-in operation (at night) and capacitor banks

CONTROLLER OPERATION

Control loop:

Switching setpoint method:

Manual operation:

Fail-safe operation:

Controller operation within open (control) or closed loop (regulation) at Point of Common Coupling (PCC)

Switching between different methods for active / reactive power management

Manual operation of active / reactive power management

Fail-safe operation of the controller

PROCESS DATA EXCHANGE

Setpoint feedback:

Status signals:

Utility measurements:

Weather data:

Feedback (acknowledgement) of setpoint commands for signal monitoring

Feedback of status signals for alarming

Feedback of electrical parameters measured at PCC (e.g. P , Q , Power factor, f , V , I)

Feedback of environmental parameters measured at plant location

INTERFACES

Ethernet, Copper:	RJ45 (10/100 Mbit/s)
Ethernet, Fibre optic:	Optional
RS485/RS422:	2 per blue'Log X-Series basic module, extendable via MX-Module RS485/422
CAN:	1 per blue'Log X-Series basic module
Digital Inputs / Outputs (Relays):	24 V DC, 20 mA / 250 V AC / DC, 6 A
Analog Inputs / Outputs:	4 ... 20 mA / -20 ... 20 mA, 0 ... 10 V

PROTOCOLS

Setpoint commands / Process data exchange (TSO/DSO, SCADA):	Modbus TCP, Optional: IEC 60870-5-101 /-104, IEC 61850, DNP3
Measured value feedback (power analyzer):	Modbus TCP / RTU
Correction value commands (inverters):	Modbus TCP / RTU, Proprietary

COMPATIBILITY

Inverter:	See driver datasheets blue'Log X-Series
Power analyzer / Environmental sensors:	See compatibility list blue'Log X-Series

TECHNICAL DATA (CONTROL CABINET)

Power supply:	100 ... 240 V AC / 16 A / redundant power supply on request
Uninterruptible power supply (UPS):	24 V DC, 5 A, 7.2 Ah / up to 76 Ah on request
Surge protection:	Optional
Protection class:	IP 65
Altitude (NHN):	max. 2,000 m / up to 4,000 m on request
Dimensions (H x W x D):	750 x 750 x 320 mm
Weight:	46.0 kg (Indoor) / 49.0 kg (Outdoor)
Operating temperature:	0 ... 40 °C (Indoor) / -20 ... 55 °C (Outdoor)
Relative humidity:	max. 95 %, non-condensing

ADDITIONAL NOTES

IT security:	User access management, built-in remote access with TLS encryption, end-to-end encrypted configuration and data transmission
Conformity:	CE, IEC 61439-1, -2, IEC 60204-1, 2014/30/EU, 2014/35/EU
Warranty:	2 years / 5 years on request

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