

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:
 Back-up disconnection:

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
 Galvanic isolation of the PV system when a defined switching threshold is exceeded

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 ϕ), cos ϕ (V), cos ϕ (P) and voltage control Q (V 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:	47.5 kg (Indoor) / 50.5 kg (Outdoor)
Operating temperature:	0 ... 30 °C (Indoor) / -20 ... 50 °C (Outdoor)
Storage temperature:	-15 ... 40 °C
Relative humidity:	max. 95 %, non-condensing

ADDITIONAL NOTES

Grid Code Compliance:	VDE-AR-N 4105, VDE-AR-N 4110, VDE-AR-N 4120 / Further country or project specific grid connection requirements on request
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, IEC 61000-4-30 Class A (UMG 512-PRO), IEC 61724-1 Class A (UMG 512-PRO), IEC 61724-1 Class B (UMG 604-E PRO), IEC 60068-2-1 /-2-2 /-2-14 /-2-30 /-2-78
Warranty:	2 years / 5 years on request

Further information: www.meteocontrol.com