



e.pac IP / DP



e.pac EC

The time synchronized acquisition of measurement data is only part of the needs of today's demanding testing applications. Supervisory Control Functions, Signal Analysis, and more are needed to make a reliable and cost effective system. When an e.series Programmable Automation Controller (PAC) is added to an e.bloxx system all of these capabilities and more can easily be achieved without a permanent Personal Computer involved.

With e.con, the needed PAC control algorithms and functionality can be defined graphically in an intuitive and visually appealing way. The e.con programming environment comes with a large library of predefined algorithms, functions, and User Interface widgets to make any application development fast and easy.

### Extensive function block library

Sequences, data archive, PID-controller and further transfer functions, mathematic, numeric, Boolean combinations, function generator

### Data memory 16 Mbytes (DL-version 128 Mbytes Flash)

Configurable memory for measurements, I/Os and conditioned variables

### Synchronizing

Synchronized data acquisition and PAC functionality up to 1 kHz

### Open file structure

Total integration in OEM automation systems, access to all configuration parameters and variables via text files and FTP

### Different interfaces

Ethernet TCP/IP (all versions), Profibus-DP (DP-version), EtherCAT (EC-version), CANopen (CO version), USB Host (DL-version)

### Order Information:

Product	Article No.
e.pac IP	439988
e.pac DP	439786
e.pac EC	637685
e.pac CO	722074
e.pac DL	152677
Accessories	
USB Memory 1 GByte	636886
Graphic Programming system	
e.con - Advanced	304373
e.con - Lite	438987
Configuration software	
e.commander	234476
Patch cable Ethernet cross	496524

### Additional Features

- Profibus-DP with up to 12 Mbps
- EtherCAT according specification ETG
- CANopen according ISO 11898
- Ethernet with 10/100 Mbps, FTP, TCP/IP, UDP
- 4 x RS 485 slave interface for connection of e.bloxx modules
- RS 232 and RS 485 host interface
- Divisible measurement storage (8 x 2 MByte)
- 128 MByte non-volatile flash memory, extendable by USB
- Time stamp for all measurement values
- Synchronized measurement (maximal 20 µs Jitter)
- Synchronization between data acquisition and PAC function
- Galvanic isolation of I/O-signals, power supply, and communication interface
- Power supply 10 to 30 VDC
- DIN rail mounting (DIN EN 50022 rail)
- Electromagnetic compatibility according to EN 61000-4 and EN 55011

## Programmable Automation Controller (PAC)

### Host-Interface RS 232

Data format	8E1, 8O1, 8N1
Protocols	ASCII, Modbus RTU (parts)
Baud rate	9.6 kbps up to 115.2 kbps
Connection	RX, TX, COM, RTS, CTS

### Host-Interface RS 485

Data format	8E1, 8O1, 8N1
Protocols	ASCII, Modbus RTU (pieces)
Baud rate	9.6 kbps up to 115.2 kbps
Connectable devices	max. 32 at one line

### Host-Interface Ethernet

Protocols	TCP/IP, UDP, PING, ASCII, Modbus TCP/IP
Services	DHCP, FTP-Server
Baud rate	10/100Mbps
Number of simultaneous Clients	max. 10
Isolation voltage	500 V

### Host-Interface EtherCAT (e.gate EC only)

Standard	Ethernet
Number of channels	max. 256 Byte data
Baud rate	100 Mbps
Cycle time	>= 100µs
Isolation voltage	500 V

### Host-Interface Profibus-DP (e.pac DP only)

Standard	RS 485
Data format	8E1
Baud rate	9.6 kbps up to 12 Mbps
Connectable devices	max. 32 without repeater, max. 127 with repeater
Isolation voltage	500 V

### Host-Interface CANopen (e.gate CO only)

Standard	CAN 2.0B, CANopen acc. ISO11898
DS404 basic frame	1 SDO Client, 2 SDO Server
Baud rates	number PDOs by DS404
Isolation voltage	20 kbps to 1 Mbps
	500 V

### Host-Interface USB (e.pac DL only)

Version	USB 2.0
Data rate	typ. 100 kByte/s

### Slave-Interface RS 485 (4 per e.pac)

Standard	RS 485, 2-wire
Data format	8E1
Protocols	Gantner Local-Bus
Baud rate	9.6 kbps up to 6 Mbps
Connectable devices	max. 32 at one line
Isolation Voltage	500 V

### Data memory

RAM	16 MByte, 8 Data archives each 2 MByte
Flash (e.pac DL only)	128 MByte

### Digital In/Output

Inputs	
Function	fixed definition synchronization
Input voltage	max. 30 VDC
Input current	max. 1.5 mA
Upper switching threshold	>3.5 V (high)
Lower switching threshold	<1.0 V (low)

Outputs	
Function	fixed definition synchronization, monitoring
Type of output	Open-Collector
Output voltage	max. 30 VDC
Output current	max. 100 mA

### Power Supply

Power supply	10 to 30 VDC
Power consumption	over voltage and overload protection approx. 5 W

### Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D) and weight	129 x 90 x 83 mm (5.08 x 3.54 x 3.27 in), 500 g (1.10 lb)
Protection system	IP20
Mounting	DIN EN rail

### Connection

Plug-in screw terminals	wire cross-section up to max. 1.5 mm <sup>2</sup>
Profibus-DP	Sub-D9 plug
Ethernet	RJ 45 plug

### Environmental

Operating temperature	-20 °C to +60 °C
Storage temperature	-40 °C to +85 °C
Relative humidity	5 % to 95 % at 50 °C non condensing

### Operating system independent

Standardized Interface	Ethernet (FTP/Berkeley-Socket)
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### Performance Examples (no. of channels at data rate)

In each case: Read variables - run function - write variables

Function	Rate 1000/s	Rate 500/s
Controller type PID	20	44
FIR Filter, 100 coefficients	4	20
Alarm and limit control	30	60
Linearization, 16 pole interpolation	20	40
Arithmetic	90	180

Valid from August 2008. Specification subject to change without notice gantner-e.pac-ip-dp-ec-co-dl.pdf (Version 0611)