



## E Series - e.gate IP / DP / EC / CO Data Concentrator and Communication Gateway



The e.bloxx series is designed for industrial and experimental test systems requiring precise high speed measurement of electrical, thermal, and mechanical quantities in engine and component test beds.

All units are based on a clean modular design, and easily connect to the wide variety of field devices used in today's test beds. Sample rates up to 5000 Hz and resolutions up to 19 bit are possible depending on the module and signal type used. Standardised communication protocols (Profibus-DP and Modbus-RTU) allow the e.bloxx family to work with a wide variety of application hardware and software.

Adding an e.series Test Controller dramatically increases the system's throughput and connectivity options. An e.series Test Controller is a data concentrator, communication gateway, and optionally a Programmable Automation Controller (PAC) with 100Mbps Ethernet, Profibus-DP, EtherCAT, or CANopen.



e.gate IP/DP



e.gate EC

### Profibus DP / EtherCAT / CANopen and Ethernet interfaces

High throughput data access for synchronous or asynchronous collection

High speed data sampling and transmission rate

Up to 48.000 real values/s, input and output data

Recording of a high number of channels

Profibus-DP: 244 byte, max. 120 integer or 60 real values

Ethernet: 1024 Byte, max. 304 integer- oder 192 real values

EtherCAT: 256 Byte

CANopen: Dynamically, regarding numbers of PDOs

Internal data buffer memory (16 MB)

Data buffer at block transfer of measurements (FTP/Socket)

Open file structure

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

### 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 the connection of e.bloxx modules
- RS 232 host interface
- High speed to memory data recording without gaps (1000 Hz)
- Time stamp for all measurement values
- Synchronized measurement (maximal 20 µs Jitter)
- Galvanic isolation of I/O-signals, power supply, and communication interface
- Power supply 10 to 30 VDC
- DIN rail mounting (EN 50022 rail)
- Electromagnetic Compatibility according to EN 61000-4 and EN 55011

## Order Information

Product	Article No.
e.gate IP	439887
e.gate DP	439584
e.gate EC	636684
e.gate CO	721982
Accessories	
Configuration Software	
e.commander	234476
Patch cable Ethernet cross	496524

# Specifications

## 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 Ethernet

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

## Host Interface Profibus-DP (e.gate 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 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 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

## Slave interface RS 485 (4 per e.gate)

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

## Digital In-/Output

Inputs	
Function	fixed definition
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
Type of output	Open-Collector
Output voltage	max. 30 VDC
Output current	max. 100 mA

## Mechanical

Case	Aluminium and ABS
Dimensions (W x H x D)	129 x 90 x 83 mm
Weight	500 g
Protective system	IP20
Mounting	DIN EN-Rail

## Connection

Plug-in screw terminals	Wire cross-section up to 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

Standardised interface Ethernet (FTP/Berkeley-Socket)

Performance Examples	Slave	Input Data	Output Data	Mode	Rate
Input data	UART 1	12 modules, 1 var. 4 Byte	-	synchr.	1000/s
	Profibus-DP active	12 modules, 1 var. 4 Byte	-	synchr.	1000/s
	Ethernet active	12 modules, 1 var. 4 Byte	-	synchr.	1000/s
	UART 4	12 modules, 1 var. 4 Byte	-	synchr.	1000/s
Input and output data	UART 1	8 modules, 1 var. 4 Byte	4 modules, 1 var. 4 Byte	synchr.	1000/s
	Profibus-DP active	8 modules, 1 var. 4 Byte	4 modules, 1 var. 4 Byte	synchr.	1000/s
	Ethernet active	8 modules, 1 var. 4 Byte	4 modules, 1 var. 4 Byte	synchr.	1000/s
	UART 4	8 modules, 1 var. 4 Byte	4 modules, 1 var. 4 Byte	synchr.	1000/s

At lower data rates the limitation of the transmission is the principle maximum number of values.  
 Profibus-DP: 120 integer or 60 real values, EtherCAT: 304 integer values or 192 real values, Ethernet: 304 integer values or 196 real values.  
 (Limitation due to the address range or the frame length).