Q.pac DL / EC

Test Controller

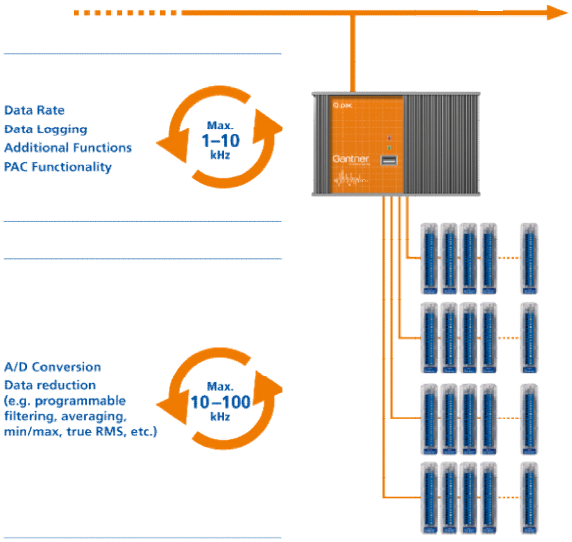
The Q.series has been designed for demanding measurements found in today's most industrial measuring and testing environments. The range of applications starts from single stand-alone solutions up to networked multi-channel applications in the field of component testing, engine testing, process performance testing and structural monitoring.

The range and flexibility of the modules allows an optimized solution for each single task:
Dynamic signal acquisition up to 100 kHz, in/outputs for all types of signals, galvanic isolation of in/outputs, multi-channel solutions, high density packaging and intelligent signal conditioning.

Data exchange between Test Controller and automation level is communicated via Ethernet TCP/IP or fieldbus system EtherCAT. Further Ethernet-based industrial standards are in preparation.

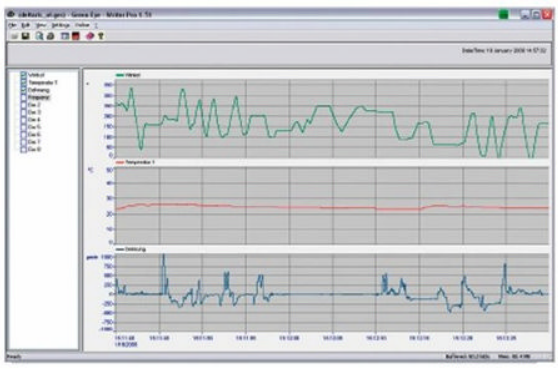
Most important features:

- **Connection of up to 64 Q.bloxx modules**
  via 4 UARTS, Baud rate up to 24 MBaud each UART
  Recording of up to 256 variables (real format 4 Byte)
- **Synchronization and time stamp of measurement values**
  IRIG based master slave principle on RS485 standard
  DCF77, AFNOR etc, GPS time and position data, SNTP over Ethernet
- **Ethernet interface for configuration and data output**
  FTP, TCP/IP, UDP
- **FTP Server and FTP Client functionality**
  configurable function
- **Optional fieldbus interface EtherCAT**
  EtherCAT according specification ETG,
  256 read and 256 write variable with 10 kHz
- **High data rate over Ethernet**
  128 real variables with 1 kHz (block transfer)
  16 real variables with 10 kHz (block transfer)
  64 real variables with 300 Hz (online)
- **Data buffer memory dyn. 16 MByte (RAM), stat. 128 MByte (flash)**
  Data buffer at block transfer of measurements
- **Mathematic, controlling and combination functionality**
- **PAC functionality with extensive function block library**
  Sequences, data logger, PID-controller, transfer functions, mathematic, numeric, Boolean combinations, functions generator
- **Galvanic isolation**
  of power supply and interfaces
- **Power supply 10…30 VDC**
- **DIN rail mounting (EN 50022)**



Ethernet
TCP / IP

EtherCAT Technology Group



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Q.pac DL / EC

Test Controller

Host Interface Ethernet	
Protocols	TCP/IP, UDP, PING, ASCII, Modbus TCP/IP
Services	DHCP, FTP-Server, FTP-Client, e-Mail-Send-Client (SMTP)
Baud rate	10/100 Mbps
Data rate	max. 800 kByte/s
Number of simultaneous Clients	10
Isolation voltage	500 V
Host Interface EtherCAT (Q.pac EC only)	
Standard	Ethernet
Number of channels	1024 Byte read and write data
Baud rate	100 Mbps
Cycle time	≥100 µs
Isolation voltage	500 V
Host Interface USB	
Version	USB 2.0
Data rate	Typ. 100 kByte/s
Devices	Data storage, formatted with FAT oder FAT 32
Slave Interfaces RS 485	
Number of interfaces	4
Standard	RS 485
Data format	8E1
Protocol	Local Bus
Baud rate	9,6 kbps up to 24 Mbps
Connectable devices	max. 16 modules at one UART line
Isolation voltage	500 V
Digital 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)
Digital Outputs	
Function	fixed definition
Type of output	Open Drain p-Kanal MOSFET
Output voltage	max. 30 VDC
Output current	max. 100 mA

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Q.pac DL / EC

Test Controller

Data Memory	
RAM	16 MByte (optional 90 MByte), cycle buffer
Flash	128 MByte
Operating system independent	
Standardized Interface	Ethernet (FTP/Berkeley-Socket)
Synchronization of a Multi Test Controller System	
Interface	RS485 Standard
Mode	Master Slave principle, IRIG standard
	DCF77, AFNOR etc, GPS over IRIG standard
	GPS NMEA over RS232
	SNTP over Ethernet
Power Supply	
Power supply	10 bis 30 VDC, over voltage and overload protection
Power consumption	approx. 4,5 W
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
Mechanical	
Case	Aluminium
Dimensions (W x H x D)	(175 x 110 x 55) mm
Weight	700 g
Mounting	DIN EN rail
PAC Functionality	
Cycle time	≥1 ms
Processing	cyclic or synchronized with data acquisition

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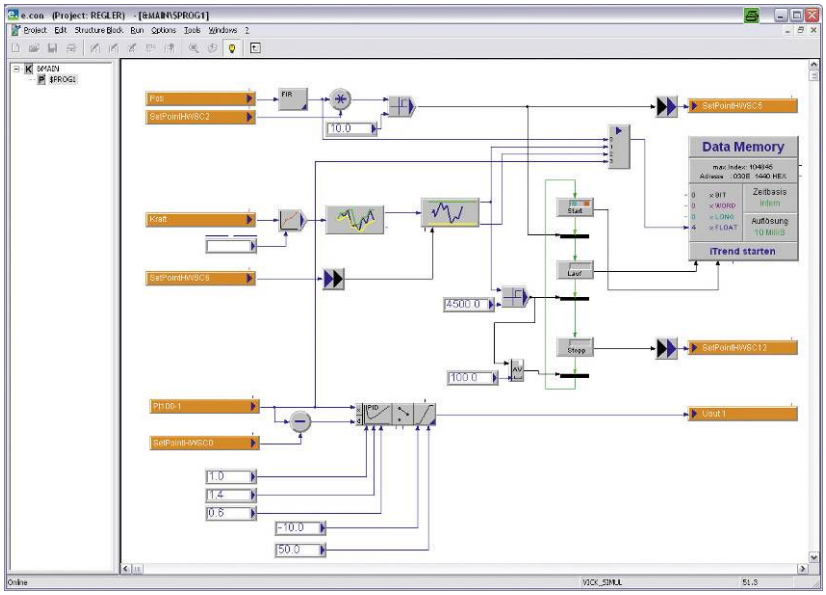
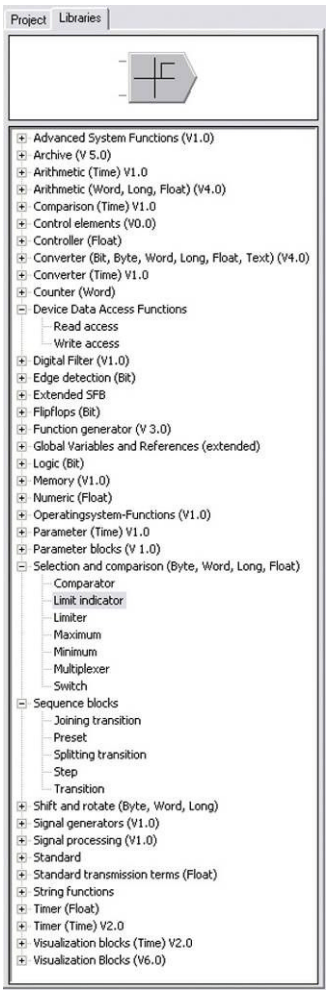
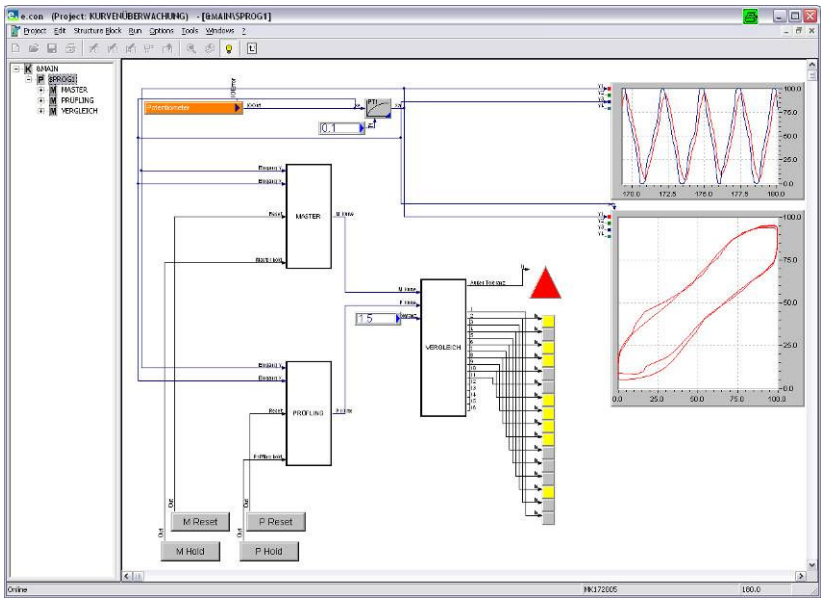
Programming Tool test.con

Using test.con for programming of the PAC-function in a graphical way:







Valid from January 2011. Specification subject to change without notice
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