Q.pac DL / EC

Test Controller

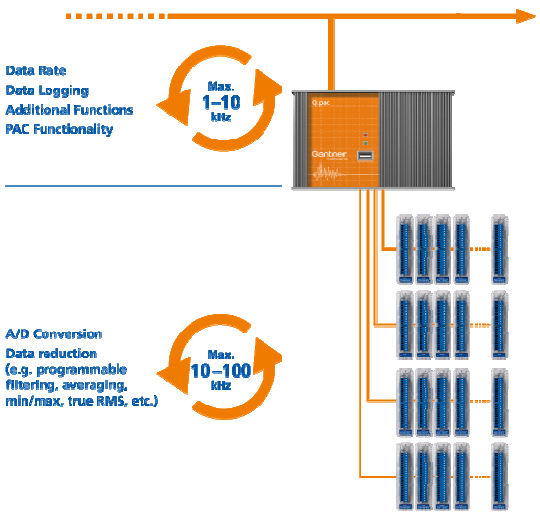
The Q.series has been designed for demanding measurements found in today's most industrial measuring and testing environments. The range of applications starts from single stand-alone solutions up to networked multi-channel applications in the field of component testing, engine testing, process performance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

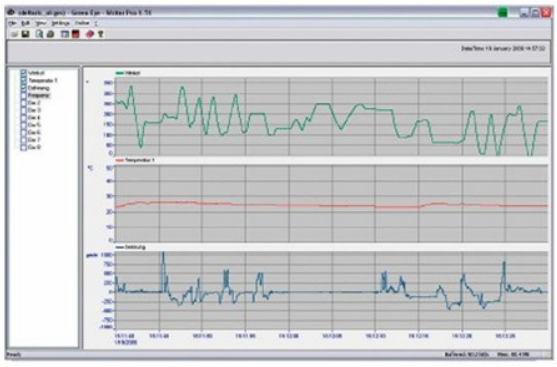
Most important features:

- **Connection of up to 32 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 according specification ETG, data rate 10000 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. 12 MByte, stat. 128 MByte**
  Data buffer at block transfer of measurements
- **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
- **Electromagnetic Compatibility**
  according EN 61000-4 and EN 55011
- **Power supply 10…30 VDC**
- **DIN rail mounting (EN 50022)**



Ethernet
TCP / IP

EtherCAT Technology Group



Gantner Instruments Test & Measurement GmbH · www.gantner-instruments.com · office@gantner-instruments.com
Silvrettastraße 11-13 · A-6780 Schruns/Austria · Tel. +43 (0) 5556 77463-0 · Fax +43 (0) 5556 77463-300
Industriestraße 12 · D-64297 Darmstadt/Germany · Tel. +49 (0) 6151 95136-0 · Fax +49 (0) 6151 95136-26

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	256 Byte 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

Gantner Instruments Test & Measurement GmbH · www.gantner-instruments.com · office@gantner-instruments.com
Silvrettastraße 11-13 · A-6780 Schruns/Austria · Tel. +43 (0) 5556 77463-0 · Fax +43 (0) 5556 77463-300
Industriestraße 12 · D-64297 Darmstadt/Germany · Tel. +49 (0) 6151 95136-0 · Fax +49 (0) 6151 95136-26

Q.pac DL / EC

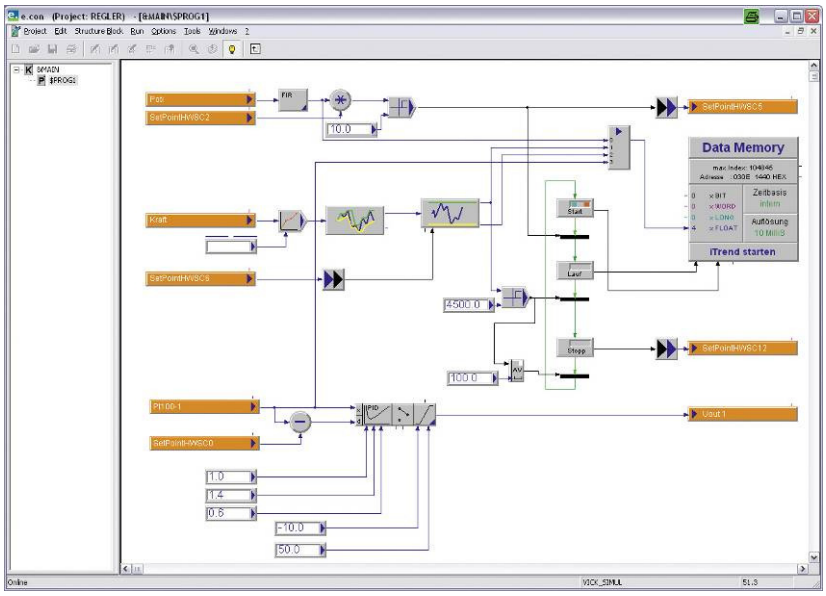
Test Controller

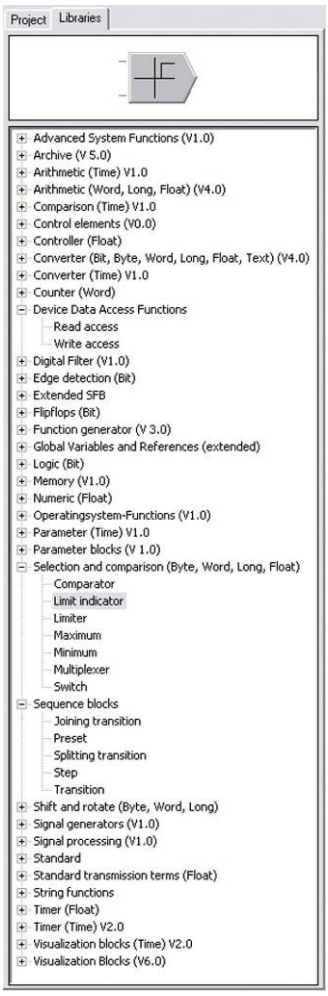
Data Memory		
RAM	12 MByte, cycle buffer	
Flash	128 MByte	
Operating system independent		
Standardized Interface	Ethernet (FTP/Berkeley-Socket)	
Synchronization of a Multi Test Controller System		
Interface	RS485 Standard	
Mode	Master Slave principle, IRIG standard	
	DCF77, AFNOR etc, GPS over IRIG standard	
	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		
Performance examples	no. of channels at data rate	
Function	**Rate 1000/s**	**Rate 500 Hz/s**
PID controller	20	44
FIR Filter 100 coefficients	4	20
Alarm and limit control	30	60
Linearization, 16 pole interpolation	20	40
Arithmetic	90	180

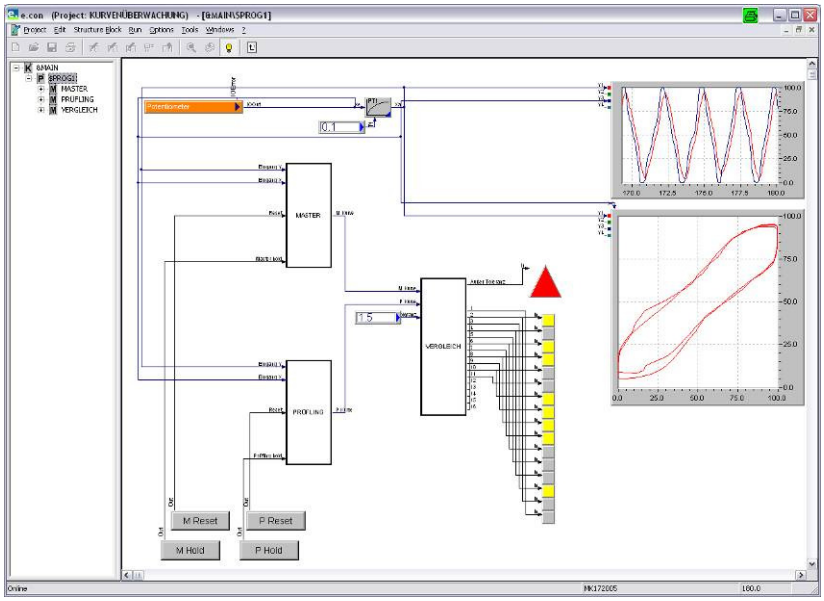
Gantner Instruments Test & Measurement GmbH · www.gantner-instruments.com · office@gantner-instruments.com
Silvrettastraße 11-13 · A-6780 Schruns/Austria · Tel. +43 (0) 5556 77463-0 · Fax +43 (0) 5556 77463-300
Industriestraße 12 · D-64297 Darmstadt/Germany · Tel. +49 (0) 6151 95136-0 · Fax +49 (0) 6151 95136-26

Programming Tool test.con

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







Valid from April 15th 2010. Specification subject to change without notice
DB_Q.pac_E_11.doc

Gantner Instruments Test & Measurement GmbH · www.gantner-instruments.com · office@gantner-instruments.com
Silvrettastraße 11-13 · A-6780 Schruns/Austria · Tel. +43 (0) 5556 77463-0 · Fax +43 (0) 5556 77463-300
Industriestraße 12 · D-64297 Darmstadt/Germany · Tel. +49 (0) 6151 95136-0 · Fax +49 (0) 6151 95136-26