



The Q.series has been designed for the demanding measurements found in today's industrial measuring and testing environments. Applications range from single, stand-alone solutions to networked, multi-channel systems in real-world areas such as component testing, engine testing, materials testing and structural monitoring.

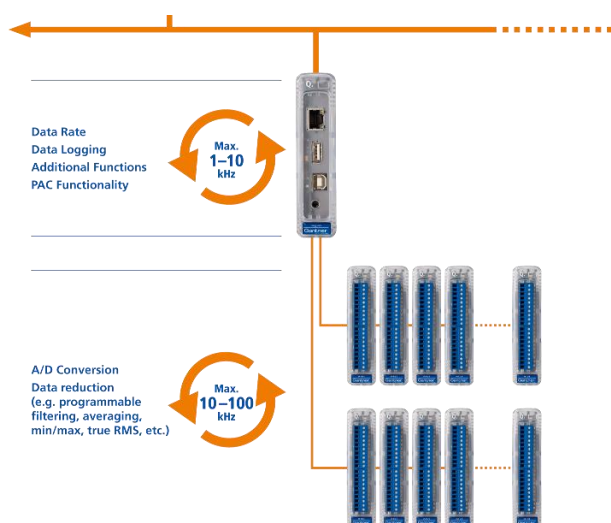
The range and flexibility of the modules allows for an optimized solution for each and every measurement and control point:

- Dynamic signal acquisition up to 100 kHz per channel
- inputs and outputs for all types of signals and sensors
- Galvanic isolation (up to 1200V) of inputs and outputs
- Multi-channel, High-density packaging
- Intelligent signal conditioning on every channel.

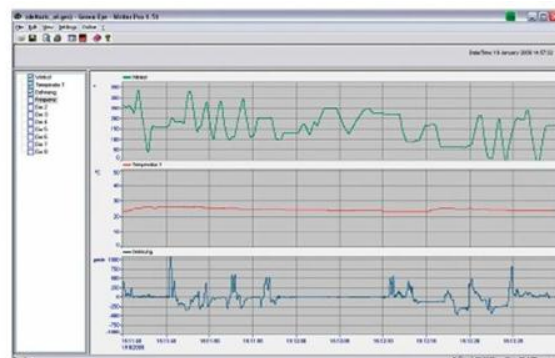
All modules connect to a Q.series test controller (Q.gate, Q.pac or Q.station) for synchronization and buffering, and data exchange between the test controller and automation system is handled via Ethernet TCP/IP, EtherCAT, Profibus-DP, CANopen, or through additional industrial fieldbus standards.

### Key Features:

- **Connection of up to 32 Q.bloxx modules**  
via 2 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  
optional fieldbus interface Profibus-DP, 12 Mbps
- **FTP Server and FTP Client functionality**  
configurable function
- **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 16 MByte**  
Data buffer at block transfer of measurements,  
different logger possibilities, extendable by USB device
- **PAC functionality**  
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**



### Ethernet TCP / IP





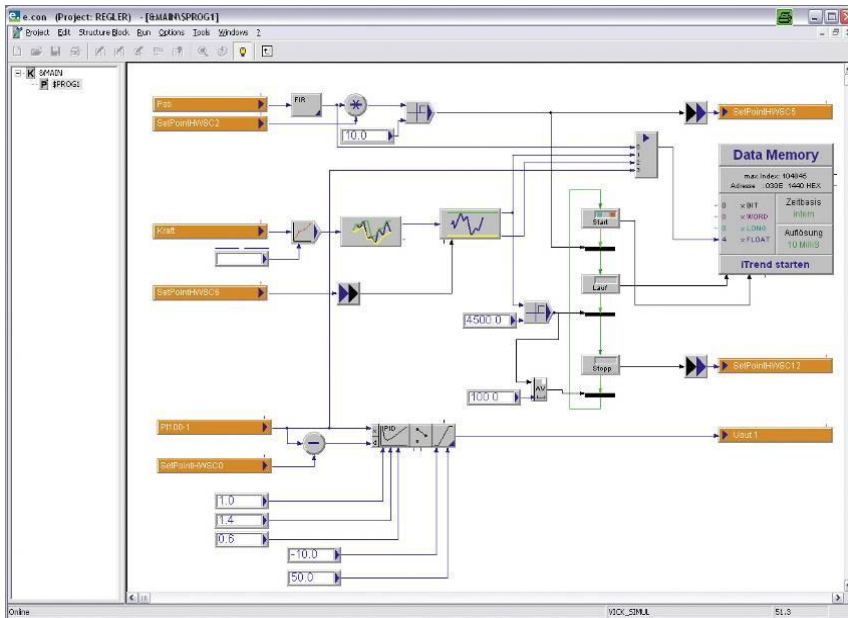
<b>Host Interface Ethernet</b>	
Protocols	TCP/IP, UDP, PING, ASCII, Modbus TCP/IP
Services	DHCP, FTP-Server, FTP-Client, e-Mail-Send-Client (SMTP)
Baud rate	10/100 Mbps
Data rate	max. 800 kByte/s
Number of simult. Clients	10
Isolation voltage	500 V
<b>Host Interface Profibus-DP (Q.gate DP only)</b>	
Standard	RS 485
Data format	8E1
Baud rate	9.6 kbps up to 12 Mbps
Connectable devices	max. 32 without, max. 127 with repeater
Isolation voltage	500 V
<b>Host Interface USB</b>	
Version	USB 2.0
Data rate	typ. 100 kByte/s
Devices	Data storage, formatted with FAT or FAT 32
<b>Slave Interfaces RS 485</b>	
Number of interfaces	2
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
<b>Data Memory</b>	
RAM	16 MByte (optional 90 MByte), cycle buffer
Flash	128 MByte
<b>Synchronization of a Multi Test Controller System</b>	
Interface	RS485 Standard
Mode	Master Slave principle, IRIG standard
	DCF77, AFNOR etc, GPS over IRIG standard
	GPS NMEA over RS232
	SNTP over Ethernet



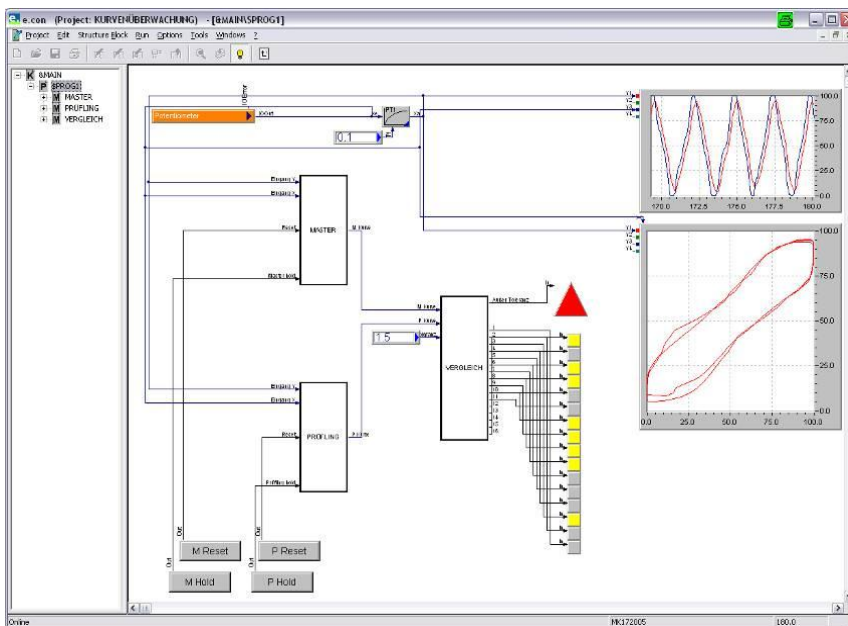
<b>Operating System Independent</b>	
Standardized interface	Ethernet (FTP/Berkeley-Socket)
<b>Power Supply</b>	
Power supply	10 up to 30 VDC, over voltage and overload protection
Power consumption	approx. 3 W
<b>Environmental</b>	
Operating temperature	-20°C up to +60°C
Storage temperature	-40°C up to +85°C
Relative humidity	5 % up to 95 % at 50°C, non condensing
<b>Mechanical</b>	
Case	Aluminum and ABS
Dimensions (W x H x D)	(27 x 120 x 125) mm
Weight	approx. 250 g
Mounting	DIN EN-rail
<b>PAC Functionality</b>	
Cycle time	≥1 ms
Processing	cyclic or synchronized with data acquisition

Programming Tool test.con

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



- Project Libraries
- Advanced System Functions (V1.0)
  - Archive (V 5.0)
  - Arithmetic (Time) V1.0
  - Arithmetic (Word, Long, Float) (V4.0)
  - Comparison (Time) V1.0
  - Control elements (V0.0)
  - Controller (Float)
  - Converter (Bit, Byte, Word, Long, Float, Text) (V4.0)
  - Converter (Time) V1.0
  - Counter (Word)
  - Device Data Access Functions
    - Read access
    - Write access
  - Digital Filter (V1.0)
  - Edge detection (Bit)
  - Extended SFB
  - Flipflops (Bit)
  - Function generator (V 3.0)
  - Global Variables and References (extended)
  - Logic (Bit)
  - Memory (V1.0)
  - Numeric (Float)
  - Operatingsystem-Functions (V1.0)
  - Parameter (Time) V1.0
  - Parameter blocks (V 1.0)
  - Selection and comparison (Byte, Word, Long, Float)
    - Comparator
    - Limit indicator
    - Limiter
    - Maximum
    - Minimum
    - Multiplexer
    - Switch
  - Sequence blocks
    - Joining transition
    - Preset
    - Splitting transition
    - Step
    - Transition
  - Shift and rotate (Byte, Word, Long)
  - Signal generators (V1.0)
  - Signal processing (V1.0)
  - Standard
  - Standard transmission terms (Float)
  - String Functions
  - Timer (Float)
  - Timer (Time) V2.0
  - Visualization blocks (Time) V2.0
  - Visualization blocks (V6.0)



Valid from January 2011. Specification subject to change without notice  
gantner-q.gate-ip-ec-dp.pdf (Version 0511)