Vaisala Data Logger QML201C is built using proven sensor technology by Vaisala. A 32-bit central processing unit (CPU), 24-bit A/D conversion (ADC), autocalibration of the ADC, and measurement electronics, coupled with advanced data quality control and validation software, ensure the accuracy of data measurement.

**Easy to use**

Sensor measurements, statistical calculations, data logging, and data transmissions are performed according to configuration done with the Vaisala Lizard Setup Software. The software has many setup options and advanced features.

**Easy to upgrade**

The system architecture enables QML201C to be easily upgraded with new sensors, calculations, output formats, and logging schedules at any time to accommodate the changing requirements of the users.

The basic system provides RS-232, RS-485, and SDI-12 ports for interfacing with almost any type of telemetry, terminal, display, and smart sensor. With optional plug-in modules, the number of serial ports can be extended from 2 to up to 8 ports, enabling multiple RS-232, RS-485, SDI-12, and Ethernet connections.

**Easy to expand**

QML201C can also be expanded with another QML201C unit that offers 10 additional differential analog channels and serial lines. A digital I/O unit adds 8 digital outputs and 8 digital inputs for sensors, power optimizing, and unmanned control functions based on user-defined requirements.
Technical data

Operating environment

Operating temperature: -50 ... +60 °C (−58 ... +140 °F)
Extended operating temperature: -60 ... +70 °C (−76 ... +158 °F)
Storage temperature: -60 ... +70 °C (−76 ... +158 °F)
Operating humidity: 0 ... 100 %RH

Inputs and outputs

Processor: 33 MHz, 32-bit Motorola
A/D conversion: 24-bit
Memory: 2 MB RAM and 4 MB program
Data logging memory: 3.3 MB internal Flash memory
External memory card capacity: 2 GB on CompactFlash card
Sensor inputs: 10 analog inputs (20 single-ended inputs), 2 counter/frequency inputs
External powering: 8 ... 30 V DC
Power consumption: < 10 mA / 12 V (typically with basic 5 sensors)

Communication specifications

Serial

Standard: RS-232, 2-wire RS-485, SDI-12
Optional: 2 optional plug-in slots for communication modules to increase the number of the serial I/O channels up to 8 pcs, Fast serial expansion bus for connecting digital I/O module, for example
Speed: 300 ... 38 400 bps
Configurable parameters: Speed, start bits, data bits, stop bits, parity, XON/XOFF, and checksum

Ethernet

Standard: IEEE 802.3, 2 plug-in slots for Ethernet modules (DSE101)
Speed: 10 Mbps (10BASE-T), 100 Mbps (100BASE-T) networks with 10 Mbps
Parameters: Full/Half duplex with auto-negotiation

TCP/IP

Supported protocols: ARP, UDP/IP, TCP/IP, FTP, SMTP, PPP (with PAP or CHAP authentication), HTTP (GET), Telnet, ICMP Echo, DHCP, NTP, DNS, serial port tunneling over TCP/IP

Accuracy specifications

All data for ambient temperature range -50 ... +60 °C (−58 ... +140 °F) unless otherwise specified.

Temperature measurement (Pt100 sensor)

Measurement range: -60 ... +70 °C (−76 ... +158 °F)
Uncertainty over -60 ... +70 °C: ±0.02 °C, typically
Maximum error over -50 ... +60 °C: ±0.04 °C
Maximum error over -60 ... +70 °C: ±0.08 °C
Maximum error at 0 °C (+32 °F): ±0.02 °C

Voltage measurement

Uncertainty over temperature range -5 ... +30 °C (14 ... +86 °F):
±5 V range: ±0.06 % of reading ±100 μV
±2.5 V range: ±0.04 % of reading ±50 μV
±250 mV range: ±0.06 % of reading ±6 μV
±25 mV range: ±0.06 % of reading ±5 μV
Uncertainty over temperature range -40 ... -60 °C (−40 ... −140 °F):
±5 V range: ±0.06 % of reading ±100 μV
±2.5 V range: ±0.04 % of reading ±50 μV
±250 mV range: ±0.15 % of reading ±15 μV
±25 mV range: ±0.15 % of reading ±10 μV
Uncertainty over temperature range -50 ... +60 °C (−58 ... +140 °F):
±5 V range: ±0.08 % of reading ±100 μV
±2.5 V range: ±0.08 % of reading ±50 μV
±250 mV range: ±0.15 % of reading ±15 μV
±25 mV range: ±0.15 % of reading ±10 μV
Uncertainty over temperature range -60 ... +70 °C (−76 ... +158 °F):
±5 V range: ±0.12 % of reading ±150 μV
±2.5 V range: ±0.12 % of reading ±80 μV
±250 mV range: ±0.20 % of reading ±20 μV
±25 mV range: ±0.20 % of reading ±10 μV
Common mode range: +7 V / −3 V

Frequency measurement

Uncertainty over temperature range -60 ... +70 °C (−76 ... +158 °F):
20 Hz ... 8000 Hz: ±0.04 % of reading
8000 Hz ... 20000 Hz: ±0.40 % of reading

Real-time clock (standard)

Accuracy: Better than 20 s/month
Backup time: 5 years minimum with CR220 battery

Compliance

EMC immunity: EN 61326-1, industrial environment
EMC emissions: CISPR 32 / EN 55032, Class B
Compliance marks: CE, RCM

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