

### Features

- Easy to install, economical to maintain and upgrade
- Field-proven reliability and accuracy in harsh environments
- Low power consumption
- Extensive calculation and data logging capability
- Good expandability and high level of customization through open and modular design
- Built-in TCP/IP connectivity
- Compact design

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.

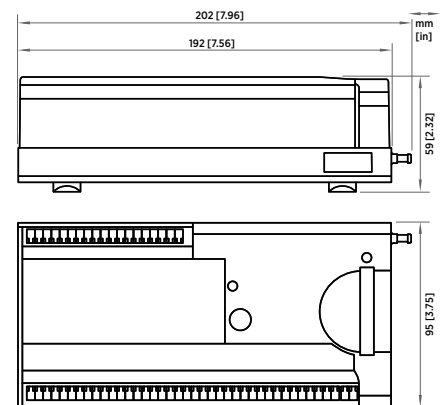
The basic system provides RS-232, RS-485, and SDI-12 ports for interfacing with almost any type of telemetry, terminal, display, and smart sensor. With

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.



QML data logger dimensions

# 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

<b>Serial</b>	
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
<b>Ethernet</b>	
Standard	IEEE 802.3 2 plug-in slots for Ethernet modules DSE101
Speed	10 Mbps (10BASE-T) Can also be connected to 100/1000 Mbps (100/1000BASE-T) networks with 10 Mbps
Parameters	Full/Half duplex with auto-negotiation
<b>TCP/IP</b>	
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.

<b>Temperature measurement (Pt100 sensor)</b>	
Measurement range	-60 ... +70 °C (-76 ... +158 °F)
Uncertainty over -60 ... +70 °C (-76 ... +158 °F)	< ±0.02 °C, typically
Maximum error over -50 ... +60 °C (-58 ... +140 °F)	< ±0.04 °C
Maximum error over -60 ... +70 °C (-76 ... +158 °F)	< ±0.08 °C
Maximum error at 0 °C (+32 °F) <sup>1)</sup>	< ±0.02 °C

<b>Voltage measurement</b>	
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

<b>Frequency measurement</b>	
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

<b>Real-time clock (standard)</b>	
Accuracy	Better than 20 s/month
Backup time	5 years minimum with CR1220 battery

<sup>1)</sup> Verified with GML data logger at 0 °C (+32 °F).

## Compliance

EU directives	EMC Directive (2014/30/EU) RoHS Directive (2011/65/EU) amended by 2015/863
EMC immunity	EN 61326-1, industrial environment
EMC emissions	CISPR 32 / EN 55032, Class B
Compliance marks	CE, RCM



www.vaisala.com

Published by Vaisala | B210718EN-H © Vaisala 2021

All rights reserved. Any logos and/or product names are trademarks of Vaisala or its individual partners. Any reproduction, transfer, distribution or storage of information contained in this document is strictly prohibited. All specifications — technical included — are subject to change without notice.