



Code 3420

AQuire V4

4-Channel Frontend with Network and USB Port for End-of-Line Applications

OVERVIEW

AQure V4

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Analog 4-channel frontend with network and USB port for continuous operation in end-of-line applications

Testing a product unit at the end of the production line is an important step in the production process. Any products that do not meet the final specification must be reliably identified and separated from the flawless units.

In combination with our conTEST software, AQure V4 is a cost-effective and uncomplicated end-of-line solution, enabling you to perform tests on a large number of product units in automated continuous operation. AQure V4 records vibroacoustic and other analog measured quantities which are then automatically checked and evaluated using conTEST.

AQure V4 can be used as a desktop device on a desk, e.g., in the control room of a test bench, or permanently mounted for continuous operation, e.g., in a measuring station, using the top hat rail (DIN EN 60715 TH35) supplied. AQure V4 is connected to the computer on which conTEST is installed via LAN or USB. In addition, AQure V4 can be used as a frontend for data acquisition with ArtemiS SUITE.

You can connect a maximum of four analog microphones or accelerometers, a pulse source, and the CAN FD bus system of a vehicle to the analog and digital inputs. Electrical isolation of the four analog inputs from all other inputs ensures the best possible signal quality. The switchable sensor supply enables a variety of different external sensors to be supplied with power.

With its wide range of power supply options, AQure V4 is very easy to integrate into an existing infrastructure. Options for power supply include Power over Ethernet, USB 3.0, DC coaxial power connectors, or the three-pole terminal.

KEY FEATURES

Cost-effective end-of-line solution for continuous operation in automation and industry

Suitable for use on a desk or in a measuring station (permanent mounting using the top hat rail supplied)

Wide range of power supply options

- › USB-C
- › Power over Ethernet (PoE)
- › Power adapter
- › Three-pole plug connector

Connection options

- › A maximum of four analog sensors
- › Pulse source
- › CAN FD vehicle bus system
- › LAN and USB

High signal quality due to electrically isolated inputs

Evaluation using conTEST, our stand-alone software for integrated recording and evaluation

Compatible with ArtemiS SUITE

APPLICATION

Fast acoustic tests of a large number of product units, e.g., for quality assurance at the end of the production line

Applications that only require a small number of channels

CONNECTORS

CAN FD

You can use this connector to establish a connection to a CAN FD bus system. CAN FD data is recorded at 5 Mbit/s and in accordance with ISO 11898-2:2015 and ISO 15765-4.

Pulse In

The pulse input is available for connecting a pulse source. AQuire V4 records this pulse source at a maximum of 250 kHz and provides an adjustable threshold and hysteresis.



Power Supply

AQuire V4 provides a wide range of power supply options. Depending on the equipment of your measuring station, you can supply AQuire V4 with power via the USB-C connector (USB 3.0 required), the power adapter PS 24-25 C (Code 0625, optional accessory), the three-pole plug connector, or via Power over Ethernet.

Analog Input

The analog input provides four input channels for voltage/ICP sensors with switchable power supply as well as an alternative connection option for a pulse source. The four input channels are electrically isolated from all other inputs. You can connect a maximum of four sensors to AQuire V4, e.g., by using the CDB XIV.1 breakout cable (Code 3461-1, optional accessory).

Using the alternative connection option for the pulse source requires one of the breakout cables D-Sub to 6 x BNC (CDB II.xx, CDB II-V1.xx, CDB X.xx, or CDB X-V1.xx, optional accessories).

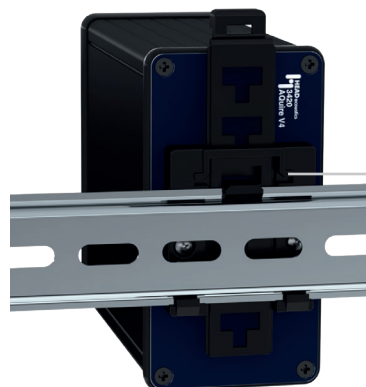
Connection to the Computer

The recorded data is transferred to the computer via LAN or USB connection (USB 2.0) and then analyzed, processed, and displayed using our conTEST or ArtemiS SUITE software.

In addition, you can use the PoE feature of the LAN connection as well as the USB connection to supply AQuire V4 with power.

Sensor Power Supply

AQuire V4 provides a switchable power supply ($\pm 5V$, $\pm 12V$, $\pm 15V$) to supply a variety of different external sensors with power. We will be pleased to assist you with the implementation of your specific requirements.



Top Hat Rail

The integrated top hat rail (DIN EN 60715 TH35) enables AQuire V4 to be permanently integrated into a measuring station or control cabinet and used in automated continuous operation.

SCOPE OF DELIVERY

- › AQuire V4 (Code 3420)
Analog 4-channel frontend with network and USB port for continuous operation in end-of-line applications
- › CUSB IV.2 (Code 5476-2)
USB cable type A to type C, 2 m
- › 4 x housing base, adhesive
- › Connection block for the three-pole plug connector
- › Top hat rail
- › 2 x flat head screw ISO 7045 M3x8
Zinc-plated steel, cross-recessed pan-head screw for mounting the top hat rail

OPTIONAL ACCESSORIES

- › Power adapter PS 24-25-C (Code 0625)
- › CDB XIII.1 (Code 3460-1)
Breakout cable D-Sub 25-pin to 4x BNC (female) with markings 1 – 4, 1 m
- › CDB XIV.1 (Code 3461-1)
Breakout cable D-Sub 25-pin to 4 x BNC (male) with markings 1 – 4, 1 m
- › CDB II.xx¹ (Code 3556-xx)
Breakout cable D-Sub 25-pin to 6 x BNC (male), available lengths: 0.3 m, 1 m
- › CDB II-V1.xx¹ (Code 3579-V1-xx)
Breakout cable D-Sub 25-pin to 6 x BNC (male) with markings 1 – 6, available lengths: 0.3 m, 1 m
- › CDB X.xx¹ (Code 3792-xx)
Breakout cable D-Sub 25-pin to 6 x BNC (female), available lengths: 0.3 m, 1 m
- › CDB X-V1.xx¹ (Code 3792-V1-xx)
Breakout cable D-Sub 25-pin to 6 x BNC (female) with markings 1 – 6, xx m
- › CDO X.xx¹ (Code 3786B-xx)
Connection cable OBD-II type B, xx m
- › CDL III.xx¹ (Code 9880-xx)
LAN cable

¹xx = cable length in m. The item is available in different cable lengths.

TECHNICAL DATA

General

Data acquisition/generation connectors	4 x Voltage/ICP In
Communication interfaces	1 x USB host, 1 x LAN
Supply connectors	1 x DC coaxial power connector, 1 x three-pole terminal, 1 x RJ45 with Power over Ethernet, 1 x USB-C (as of 3.0)
Supply voltage	
DC coaxial power connector	12 V – 28 V _{DC}
Three-pole terminal	12 V – 28 V _{DC}
Power over Ethernet	37 V – 57 V _{DC}
USB 3.0	5 V
Reverse polarity protection	Yes
Power consumption	
Power adapter 24 V/ three-pole terminal	3 W 4 W with ICP supply and activated sensor supply voltage
USB	3.6 W 4.3 W with ICP supply 5.5 W with ICP supply and activated sensor supply voltage The USB bus requires at least 1.1 A!
PoE	4 W 7 W with ICP supply and activated sensor supply voltage
Sensor supply voltage	Switchable: ±5 V, ±12 V, ±15 V (current limit ±11 mA)
System sampling rate	48 kHz
Max. sampling rate	48 kHz
Cooling	Convection, without fan
Operating temperature	-10 °C – +60 °C, 14 °F – +140 °F
Storage temperature	-20 °C – +70 °C, -4 °F – +158 °F
Housing dimensions	106 x 133 x 58 mm
IP code	IP40 with plug connector on the three-pole terminal

USB Device Connector

Plug connector	USB-C with lateral screw connection
Number of interfaces	1
USB specification	USB 2.0 (USB 3.0 required for power supply)
Data rate (gross)	480 Mbit/s
Electrical isolation	No

LAN

Plug connector	1 x RJ45
Number of interfaces	1
Standard	IEEE 802.3u
Data rate (gross)	100 Mbit/s
Electrical isolation	Yes
Power over Ethernet (PoE)	IEEE 802.3af

Analog Voltage/ICP Input

Plug connector	1 x D-Sub 25-pin		
Number of channels	4		
Measured quantity	Voltage		
Measurement ranges	1 V _p , 10 V _p		
Input impedance	1000 kΩ		
Frequency range	0 Hz – 22 kHz		
Coupling	DC, AC, ICP		
Analog highpass filter	1.6 Hz, 1st order, ±10%; 22 Hz, 2nd order, switchable, ±5%		
Digital highpass filter at F _s =48 kHz, proportional to F _s	1.5 Hz		
Digital lowpass filter at F _s =48 kHz, proportional to F _s	22 kHz		
Resolution	24 bit		
Equalization	No		
Electrical isolation input/output	Yes		
Electrical isolation per channel	No		
Electric strength	24 V		
ICP voltage	22.8 V		
ICP current	4 mA (-7.5% / +25%)		
Measurement ranges	1 V _p	10 V _p	
S/N	112 dB(A)	112 dB(A)	
Crosstalk at 1 kHz	130 dB	125 dB	
THD+N	-107 dB	-105 dB	
Dynamics (5 Hz analysis bandwidth)	149 dB	149 dB	
Input related noise (24 kHz bandwidth)	2,5 μV	25 μV	
Accuracy DC	0.1 %	0.1 %	
Accuracy AC (at 1 kHz)	0.6 %	0.6 %	
Frequency response 20 Hz – 20 kHz at F _s = 48 kHz re 1 kHz	-0,05 dB/ +0,1 dB	-0,05 dB/ +0,1 dB	
Linearity (dB below full scale)			
0 dB – 80 dB	0.09 dB	0.05 dB	
0 dB – 100 dB	0.14 dB	0.12 dB	

Digital Pulse Input

Plug connector	1 x BNC or D-Sub (25-pin)
Number of channels	1
Switchable power source (substitute for pull-up)	5 mA (±1 mA) / 5 V
Maximum pulse frequency	250 kHz
Threshold value digitally adjustable	Yes
Hysteresis digitally adjustable	Yes
Resolution of threshold value/hysteresis	5 mV
Input impedance	33 kΩ
Input voltage range	0 V – 10 V
Electric strength	±50 V

Digital CAN FD Input

Plug connector	1 x D-Sub 9-pin
Number of interfaces	1
Data rate (gross)	5 Mbit/s
Electrical isolation	Yes
Identifier	11 Bit (CAN 2.0A) and 29 Bit (CAN 2.0B)
Standards	ISO 11898-2:2015; ISO 15765-4
Termination	120 Ω , switchable
Electric strength	± 18 V

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