istec



VibSys®

Software Manual

MAN_VSY_SW_v1.18.4.docx

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1 Change Log

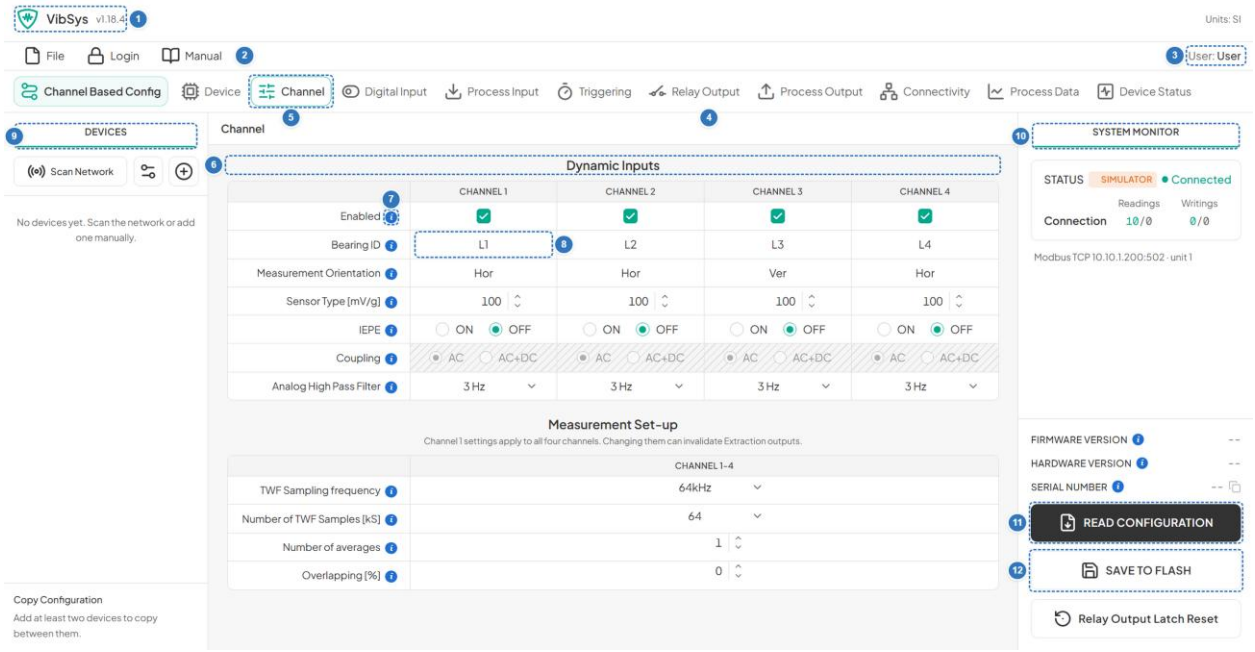
Changes to this document. Changes to the configurator itself are in chapter 8, Release notes.

Version	Date	Change
1.18.4	2026-10-30	Initial version of SW manual for first VibSys A01 release

This edition describes configurator version 1.18.4. Every time when the Configurator is renewed, a new manual will be supplied.

2 Getting started

2.1 The screen



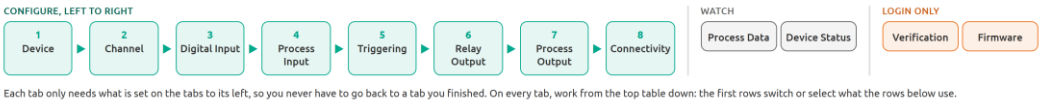
The configurator on the Channel tab. The numbers refer to the list below.

1	Logo, application name and version
2	Menu row: File, Login and the Manual link
3	Who is working: User, Service or Firmware
4	Tabs, in the order you configure them: left to right
5	The selected tab
6	A table: title, short description, then its settings from top to bottom
7	Help icon: hover it for the function and the range or options
8	A setting: written to the unit as soon as you complete it
9	Devices: the units you know; scan, add, select
10	System Monitor: connection status and the unit's identity
11	READ CONFIGURATION: read every value from the unit
12	SAVE TO FLASH: keep the values after a power cycle

- **Header** — the VibSys logo and version; below it the **File** menu, the **Login** menu and the **Manual** link, and on the right who is working: **User: User/Service/Firmware**. As Service also **STOP/START**.
- **Tabs** — one tab per function of the unit, in the order you configure them: Device, Channel, Digital Input, Process Input, Triggering, Relay Output, Process Output and Connectivity; then the live tabs Process Data and Device Status; as Service also Verification, as Firmware also Firmware. Work from left to right, and on each tab from top to bottom.
- **Devices** (left) — the list of known units: scan, add, select, copy configurations.
- **System Monitor** (right) — connection status (SIMULATOR or LIVE DEVICE, and Connected), the Connection counters (readings and writings, successful/failed), the unit's firmware version, hardware version and serial number, and the **READ CONFIGURATION**, **SAVE TO FLASH** and **Relay Output Latch Reset** buttons.

2.2 Working order

Configure the unit from left to right through the tabs, and on each tab from top to bottom. The tabs are ordered so that you never have to go back to a tab you have finished.



Tab order: configure from left to right; then watch the live tabs.

Around the configuration, every session follows the same steps:



The steps of every session.

2.3 Icons

Every tab and action has its own icon. A selected tab shows its icon in green; a status colour and a dot on an icon draw attention to it (for example SAVE TO FLASH turns yellow while values are not yet saved, Device Status turns red when the unit reports a fault).

	Device the unit and its connection		**Channel** sensor and measurement set-up per channel
	Digital Input pulse and speed inputs		**Process Input** analog inputs
	Triggering when extractions are taken and uploaded		**Relay Output** alarms and the relay outputs they switch
	Process Output 4–20 mA outputs		**Connectivity** where the unit publishes its data
	Process Data live values and graphs		**Device Status** health of the unit and the Event Log
	Verification check a unit against its factory defaults (Service)		**Firmware** update the unit's firmware (Firmware login)
	File export and import a configuration		**Login** change role: User, Service, Firmware
	Manual this manual		**Scan Network** search the network for units
	Add device add a unit by its address		**READ CONFIGURATION** read every value from the unit
	SAVE TO FLASH keep the values after a power cycle		**Relay Output Latch Reset** release latched relay outputs

2.4 First connection

1. Start the configurator. Check the System Monitor: **Connected** (green) means a unit answers at the address shown below it.
2. If no unit answers, click **Scan Network** in the left sidebar, or enter the unit's address on the **Device** tab (Modbus TCP Connection).
3. Click a found unit in the device list to connect to it.

2.5 Reading and changing a configuration

1. Click **READ CONFIGURATION**. All tabs now show the values stored in the unit.
2. Change a field and complete it — click elsewhere, press Tab or Enter, or choose an option. The value is **sent to the unit immediately**, but the unit does not use it yet. A value the unit cannot accept is refused: the field returns to its last value with a red outline, and the Event Log on the Device Status tab says why.
3. Click **SAVE TO FLASH**. Only then does the unit take the changed settings into use; there is no stage in between. Until then the System Monitor shows: *Values are only active after Save to Flash.*

2.6 Help in the configurator

Every field has a blue ⓘ icon. Hover it to see what the field does and its range or options.

The **Manual** link in the menu row, next to **File** and **Login**, opens this manual in its own window.

2.7 Roles

The configurator starts as **Default user**. The **Login** menu offers two more roles, each with its own credentials:

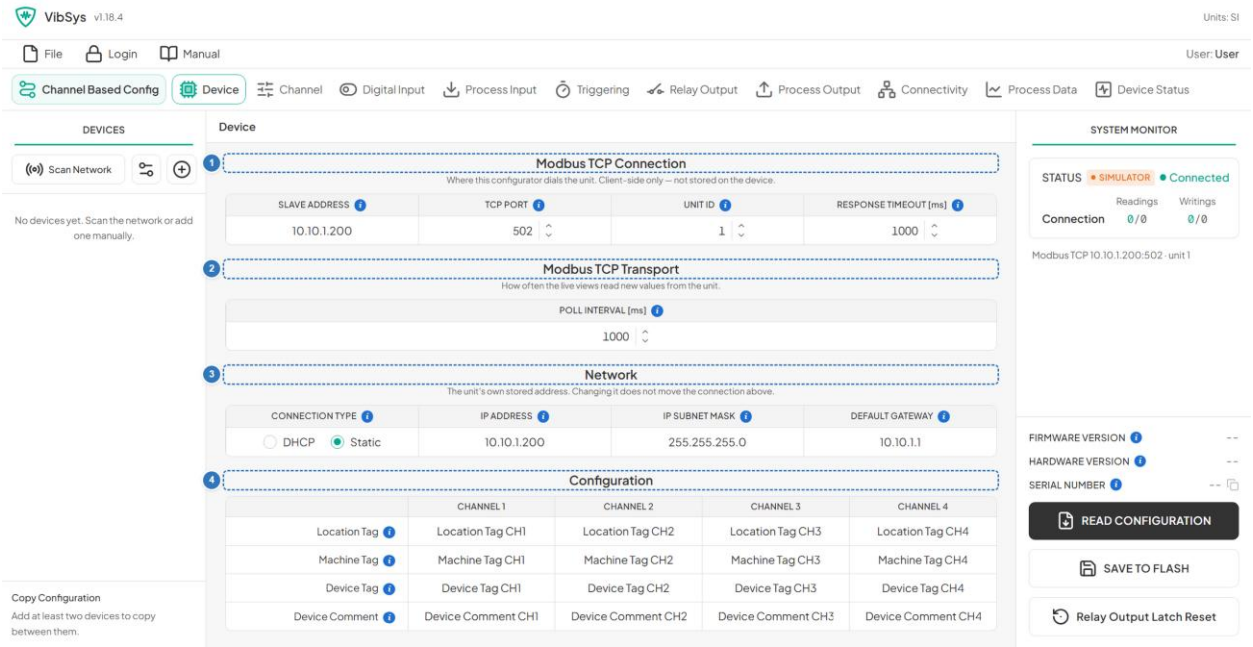
- **Service** — the advanced tools: STOP/START, the Verification tab and the Device Connection settings.
- **Firmware** — the Firmware tab, for firmware updates.

Only one of the two can be active. Ticking the other one ends the current session and asks for the other login. Restarting the configurator always returns to Default user.

3 User interface reference

One section per tab, in the order of the tab bar, with the tab's icon. For every field: what it does and its range or options — the same information as the field's ⓘ icon in the configurator. The help ID identifies the field in both places.

3.1 Device



Device tab. The numbers refer to the list below.

1	**Modbus TCP Connection** — Where this configurator dials the unit. Client-side only — not stored on the device.
2	**Modbus TCP Transport** — How often the live views read new values from the unit.
3	**Network** — The unit's own stored address. Changing it does not move the connection above.
4	**Configuration**

Modbus TCP Connection

Where this configurator dials the unit. Client-side only — not stored on the device.

Field	Function	Range / options
SLAVE ADDRESS `device.modbusTcp.connection#1`	IP address or hostname of the VibSys unit this configurator talks to. Stored in this app only, not on the device.	—
TCP PORT `device.modbusTcp.connection#2`	Modbus TCP port of the unit. The standard Modbus port is 502.	Range: 1 – 65535
UNIT ID `device.modbusTcp.connection#3`	Modbus unit ID (slave ID) the unit answers to.	Range: 1 – 247
RESPONSE TIMEOUT [ms] `device.modbusTcp.connection#4`	How long the configurator waits for an answer before it treats the unit as not responding.	Range: 100 ms – 60000 ms

Modbus TCP Transport

How often the live views read new values from the unit.

Field	Function	Range / options
POLL INTERVAL [ms] `device.modbusTransport.transport#1`	How often the live views (Process Data, Device Status) read new values from the unit.	Range: 200 ms – 60000 ms

Network

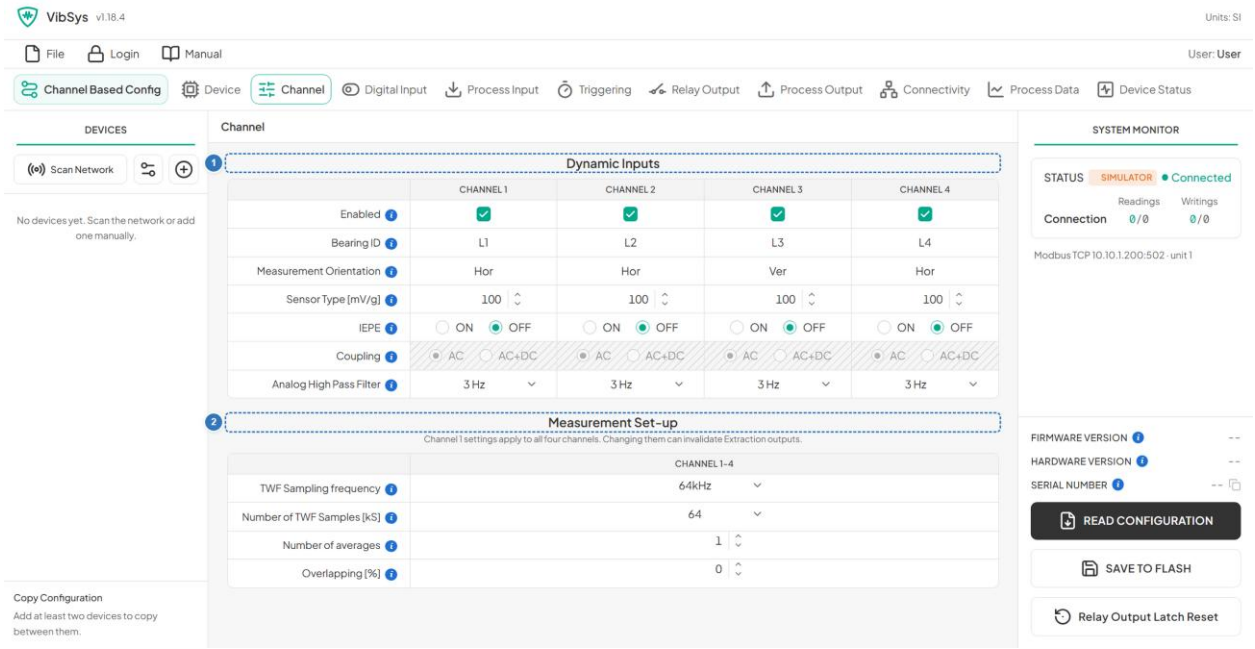
The unit's own stored address. Changing it does not move the connection above.

Field	Function	Range / options
CONNECTION TYPE `device.network.network#1`	How the unit gets its own IP address: Static uses the address below, DHCP gets one from the network. Stored on the unit.	Options: DHCP/Static
IP ADDRESS `device.network.network#2`	The unit's own IP address, used in Static mode. Changing it does not move this configurator's connection; update the Modbus TCP Connection above as well. Under DHCP this column shows the address the unit was assigned: the address this configurator is connected to.	—
IP SUBNET MASK `device.network.network#3`	The unit's IP subnet mask, used in Static mode.	—
DEFAULT GATEWAY `device.network.network#4`	The unit's default gateway, used in Static mode. Under DHCP the unit does not report the gateway it was assigned.	—

Configuration

Field	Function	Range / options
Location Tag `device.configuration.locationTag`	Free text naming where the measuring point is, per channel.	Maximum 16 characters
Machine Tag `device.configuration.machineTag`	Free text naming the machine the channel measures on.	Maximum 16 characters
Device Tag `device.configuration.deviceTag`	Free text naming the device or component at the measuring point.	Maximum 16 characters
Device Comment `device.configuration.deviceComment`	Free comment per channel, for notes about the measuring point.	Maximum 32 characters

3.2 Channel



Channel tab. The numbers refer to the list below.

1	**Dynamic Inputs**
2	**Measurement Set-up** — Channel 1 settings apply to all four channels. Changing them can invalidate Extraction outputs.

Dynamic Inputs

Field	Function	Range / options
Enabled `channel.dynamicInputs.enabled`	Switches the channel's acquisition on or off. A disabled channel produces no measurements.	On/Off
Bearing ID `channel.dynamicInputs.bearingId`	Free text identifying the bearing the sensor is mounted on.	Maximum 16 characters
Measurement Orientation `channel.dynamicInputs.measurementOrientation`	Free text for the sensor direction, for example Hor (horizontal), Ver (vertical) or Ax (axial).	Maximum 16 characters
Sensor Type [mV/g] `channel.dynamicInputs.sensorType`	Sensitivity of the connected accelerometer, in mV per g. Take it from the sensor datasheet or calibration sheet.	Range: 1 mV/g – 1000 mV/g
IEPE `channel.dynamicInputs.iepe`	Switches the IEPE constant-current supply for the sensor on or off. IEPE sensors need it on.	On/Off
Coupling `channel.dynamicInputs.coupling`	Input coupling. Not adjustable on this device.	Read-only
Analog High Pass Filter `channel.dynamicInputs.analogHighPassFilter`	Cut-off frequency of the analog high-pass filter at the channel input. It removes the DC part and very low frequencies.	Options: 0.2 Hz, 1 Hz, 3 Hz

Measurement Set-up

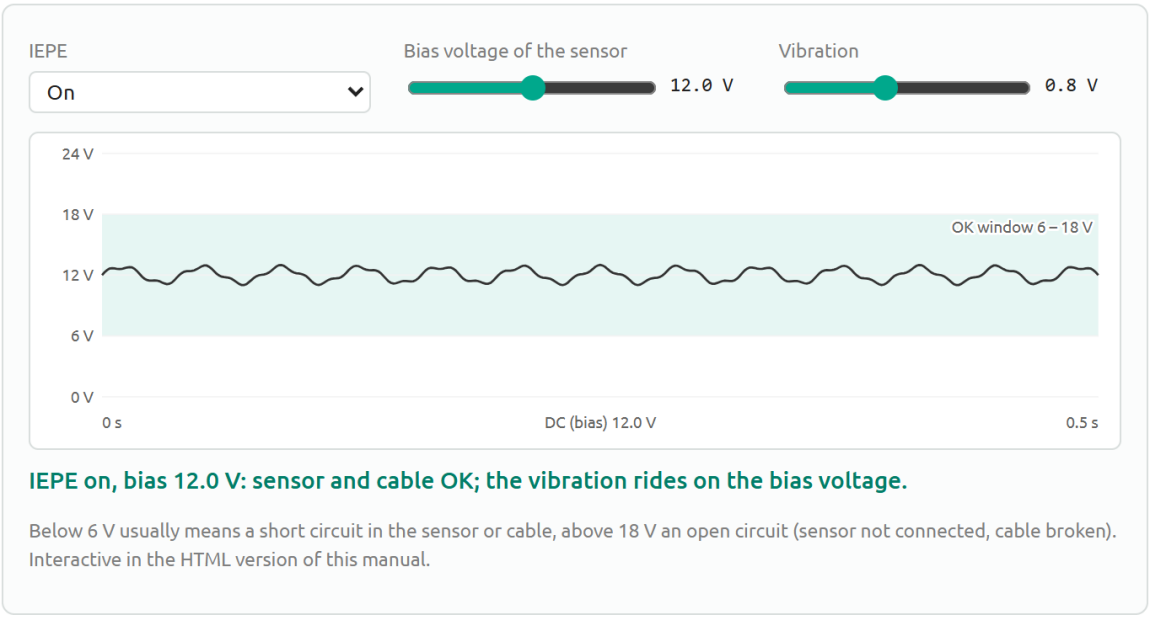
Channel 1 settings apply to all four channels. Changing them can invalidate Extraction outputs.

Field	Function	Range / options
TWF Sampling frequency `channel.measurementSetup.sampleFrequency`	Sampling rate of the time waveform (TWF). Applies to all four channels. Changing it can invalidate Extraction outputs.	Options: 1kHz, 2kHz, 4kHz, 8kHz, 16kHz, 32kHz, 64kHz, 128kHz, 256kHz

Field	Function	Range / options
Number of TWF Samples [kS] `channel.measurementSetup.nsamples`	Length of one time-waveform record, in kS (1 kS = 1024 samples). Applies to all four channels. Changing it can invalidate Extraction outputs.	Options: 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024
Number of averages `channel.measurementSetup.averages`	Number of spectra averaged in the FFT calculation. Applies to all four channels. Changing it can invalidate Extraction outputs.	Range: 1 – 100
Overlapping [%] `channel.measurementSetup.overlapping`	How much consecutive time-waveform blocks overlap in the FFT calculation, in percent: 0 is no overlap. Applies to all four channels. Changing it can invalidate Extraction outputs.	Range: 0 % – 99 %

Try it: IEPE on and off

An IEPE sensor needs power from the unit. With IEPE on, the unit feeds it a constant current; the sensor's output then sits on a bias voltage (the DC value on the Process Data tab) with the vibration on top. Between 6 and 18 V the sensor and its cable are OK. With IEPE off an IEPE sensor gets no power and gives no signal.

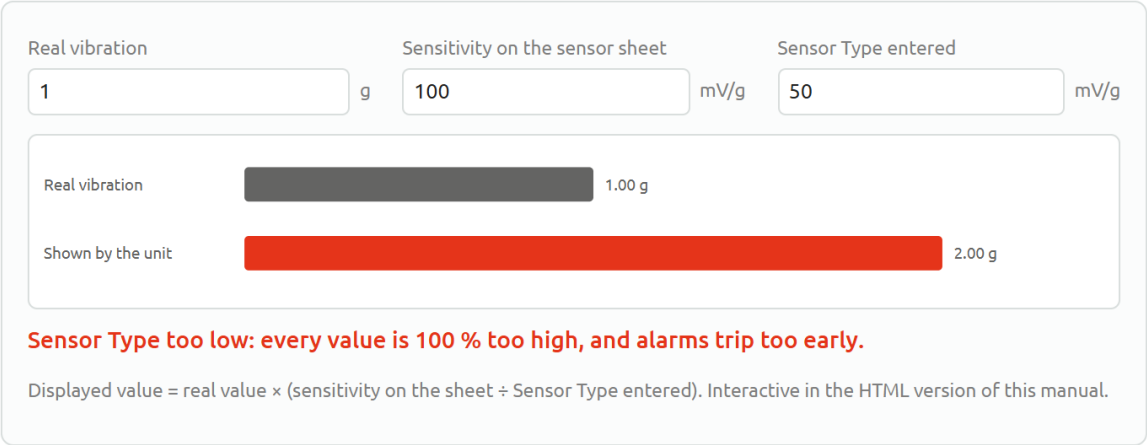


IEPE on, bias 12.0 V: sensor and cable OK; the vibration rides on the bias voltage.

Below 6 V usually means a short circuit in the sensor or cable, above 18 V an open circuit (sensor not connected, cable broken). Interactive in the HTML version of this manual.

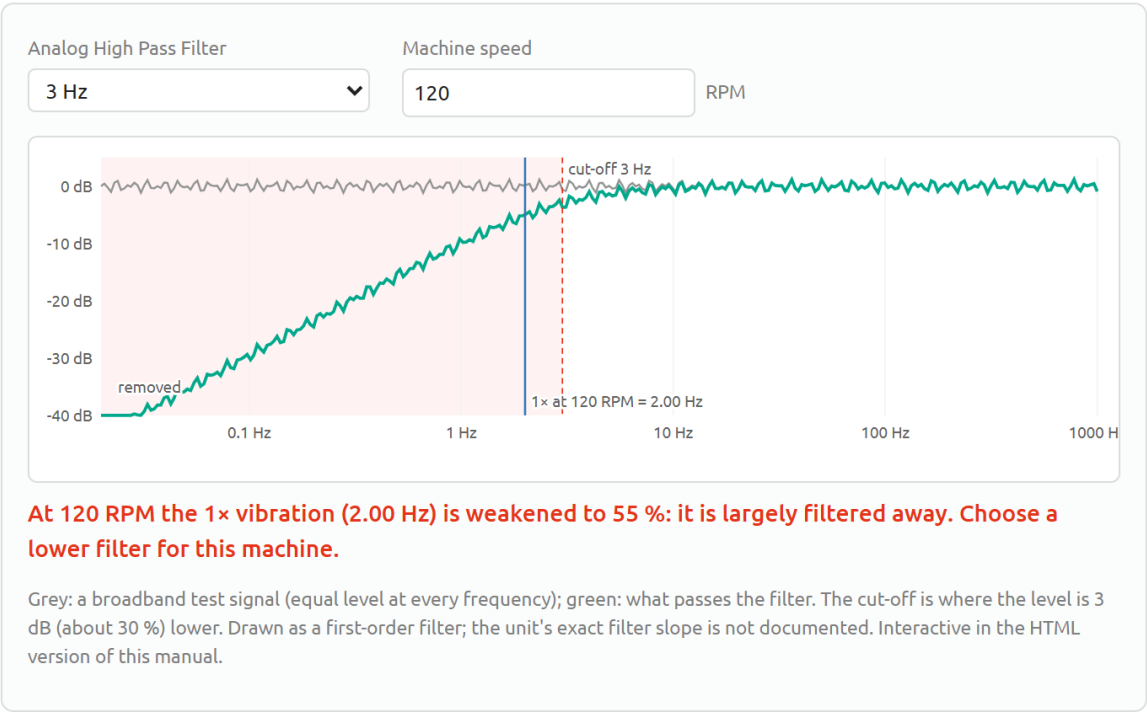
Try it: a wrong Sensor Type (sensitivity)

The unit turns the sensor's millivolts into g with the sensitivity you enter as Sensor Type. If it differs from the sensitivity on the sensor's calibration sheet, every value is off by the same factor — and so are the alarms that use it.



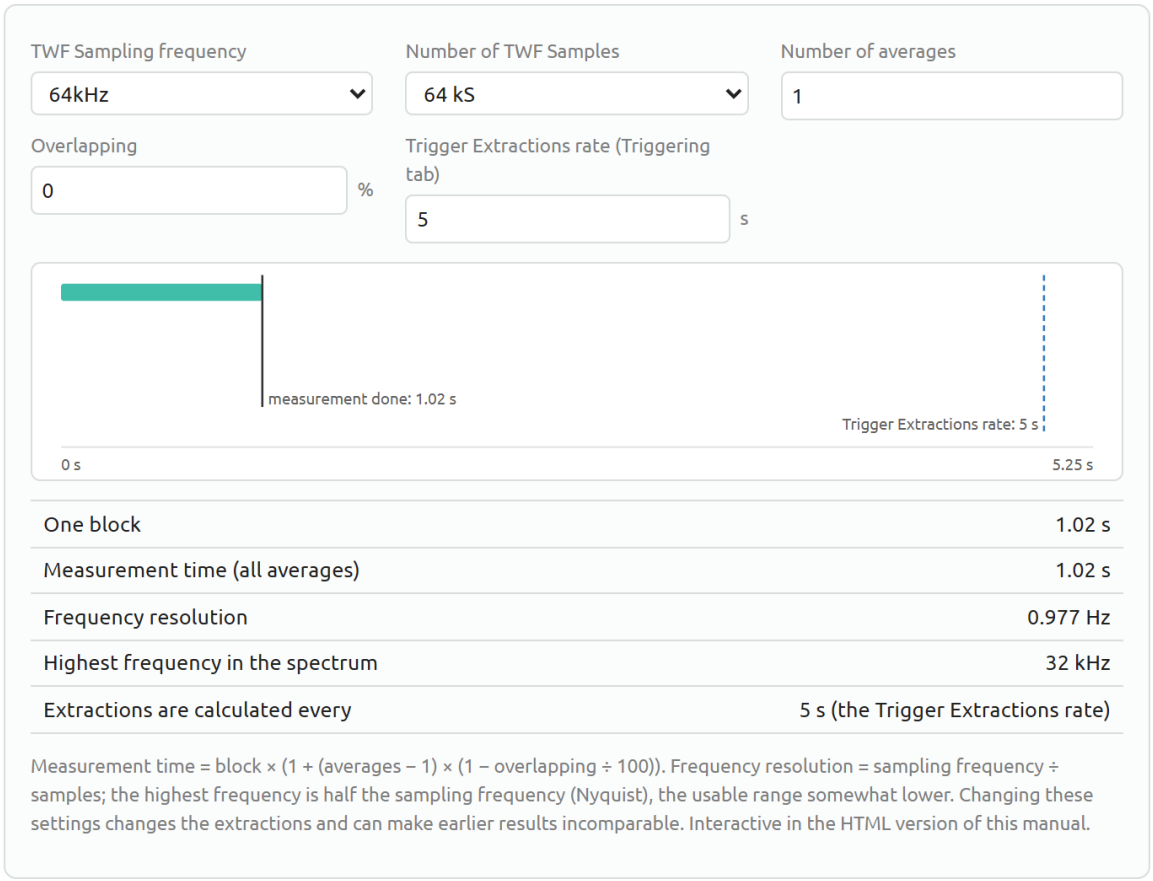
Try it: the Analog High Pass Filter

The filter removes the DC part and very low frequencies before the measurement. Below its cut-off frequency the signal is weakened, the further below the more. Choose a filter and a machine speed to see what happens to the vibration at 1× the running speed.



Try it: what the Measurement Set-up does to the measurement time

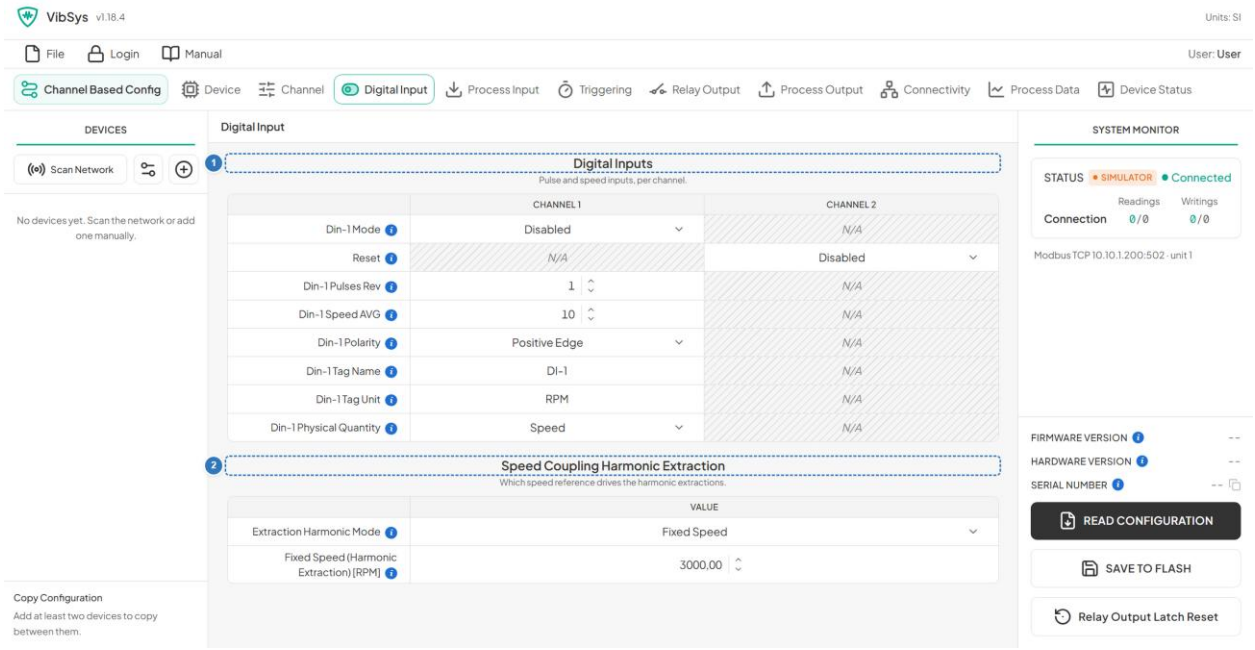
One block takes Number of TWF Samples ÷ TWF Sampling frequency. Averaging needs more blocks; Overlapping lets them share part of their samples, which saves time.



One block	1.02 s
Measurement time (all averages)	1.02 s
Frequency resolution	0.977 Hz
Highest frequency in the spectrum	32 kHz
Extractions are calculated every	5 s (the Trigger Extractions rate)

Measurement time = block × (1 + (averages − 1) × (1 − overlapping ÷ 100)). Frequency resolution = sampling frequency ÷ samples; the highest frequency is half the sampling frequency (Nyquist), the usable range somewhat lower. Changing these settings changes the extractions and can make earlier results incomparable. Interactive in the HTML version of this manual.

3.3 Digital Input



Digital Input tab. The numbers refer to the list below.

1	**Digital Inputs** — Pulse and speed inputs, per channel.
2	**Speed Coupling Harmonic Extraction** — Which speed reference drives the harmonic extractions.

Digital Inputs

Pulse and speed inputs, per channel.

Field	Function	Range / options
Din-1 Mode `digitalInput.digitalInputs.din1Mode`	What digital input 1 is used for: Disabled, Static (on/off state) or Speed (pulse input for rotation speed).	Options: Disabled, Static, Speed
Reset `digitalInput.digitalInputs.din2Reset`	Digital input 2 is used as a reset input on this hardware. Its other settings do not apply.	Options: Disabled, Static, Speed
Din-1 Pulses Rev `digitalInput.digitalInputs.din1PulsesRev`	Number of pulses per shaft revolution from the speed sensor (Speed mode only).	Range: 1 – 1000
Din-1 Speed AVG `digitalInput.digitalInputs.din1SpeedAvg`	Number of pulses averaged to calculate the speed (Speed mode only). Higher values give a steadier but slower reading.	Range: 1 – 1000
Din-1 Polarity `digitalInput.digitalInputs.din1Polarity`	Which edge of the input signal counts: in Speed mode the edge used as trigger reference, in Static mode the active level.	Options: Positive Edge/Negative Edge
Din-1 Tag Name `digitalInput.digitalInputs.din1TagName`	Free text name for the digital input.	Maximum 16 characters
Din-1 Tag Unit `digitalInput.digitalInputs.din1TagUnit`	Free text unit shown with the digital input value, for example RPM.	Maximum 16 characters
Din-1 Physical Quantity `digitalInput.digitalInputs.din1PhysicalQuantity`	The physical quantity the digital input represents.	Options: Static/Speed

Speed Coupling Harmonic Extraction

Which speed reference drives the harmonic extractions.

Field	Function	Range / options
Extraction Harmonic Mode `digitalInput.extractionHarmonic.extractionHarmonicMode`	Speed reference for the harmonic extractions (1×, 2×, 3× …): a fixed speed, or the speed measured on digital input 1.	Options: Fixed Speed/DI1 Speed
Fixed Speed (Harmonic Extraction) [RPM] `digitalInput.extractionHarmonic.fixedSpeedHarmonicExtraction`	Rotation speed used for the harmonic extractions when the mode is Fixed Speed.	Range: 0 RPM – 100000 RPM Decimals: 2

Try it: from pulses to Hz and RPM

In Speed mode the digital input counts pulses from a speed sensor (for example one mark on the shaft). Din-1 Pulses Rev tells the unit how many pulses one revolution gives; the polarity chooses which edge of the pulse is counted; Speed AVG averages over that many pulses.

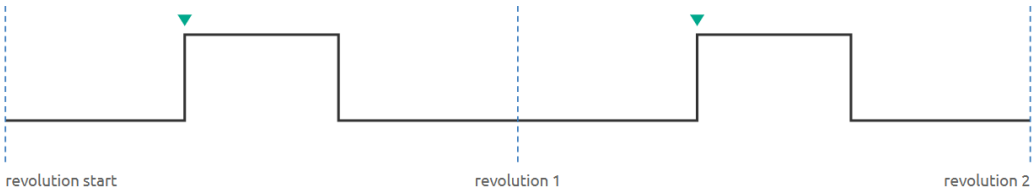
Real shaft speed: 1500 RPM

Pulses per revolution on the shaft: 1

Din-1 Pulses Rev (setting): 1

Din-1 Polarity: Positive Edge

Din-1 Speed AVG: 10 pulses



green markers: the rising (positive) edges the unit counts — 1 per revolution

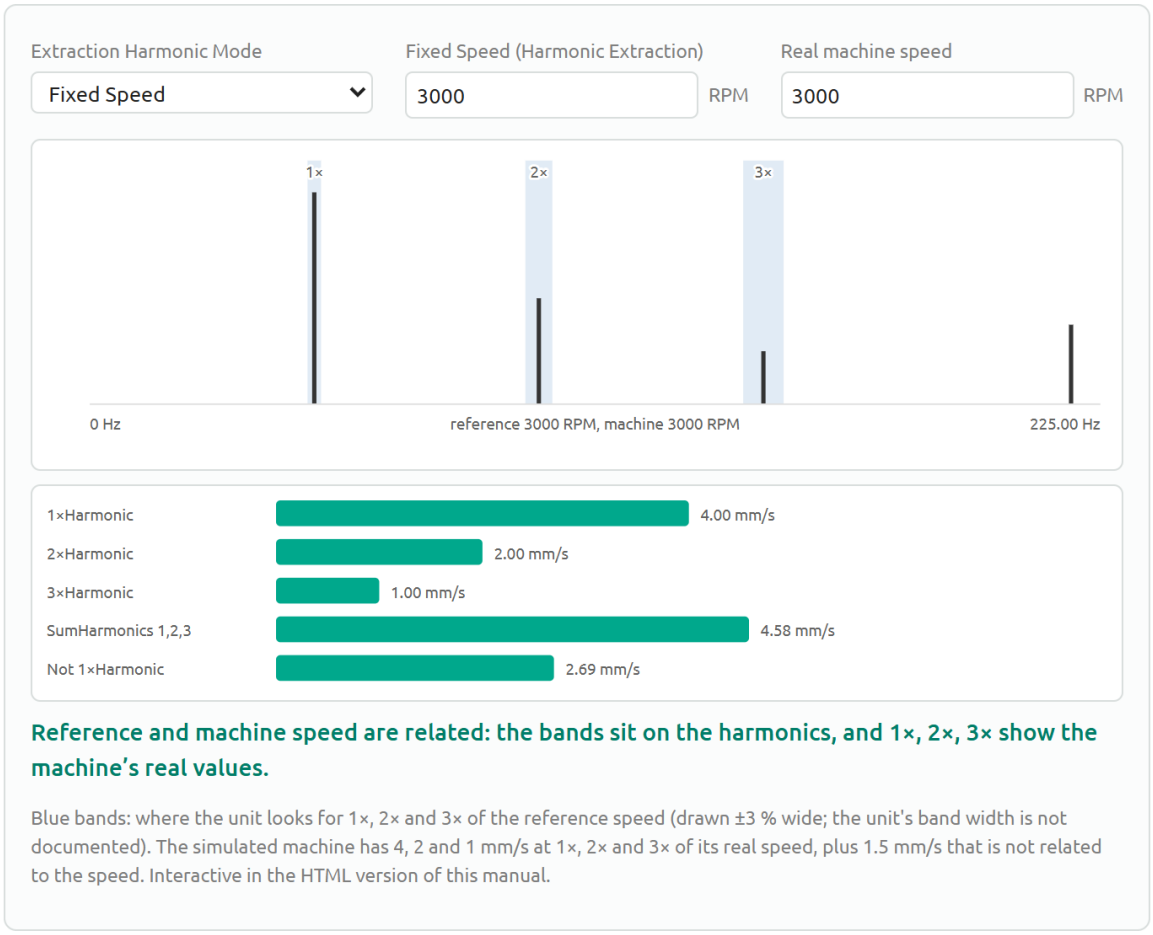
Pulse frequency at the input	25.00 Hz
Speed shown by the unit	1500 RPM
New speed value every	400 ms (10 pulses averaged)

Pulses Rev matches the shaft: the unit shows the real speed. Speed AVG 10 gives a steadier value, updated every 400 ms.

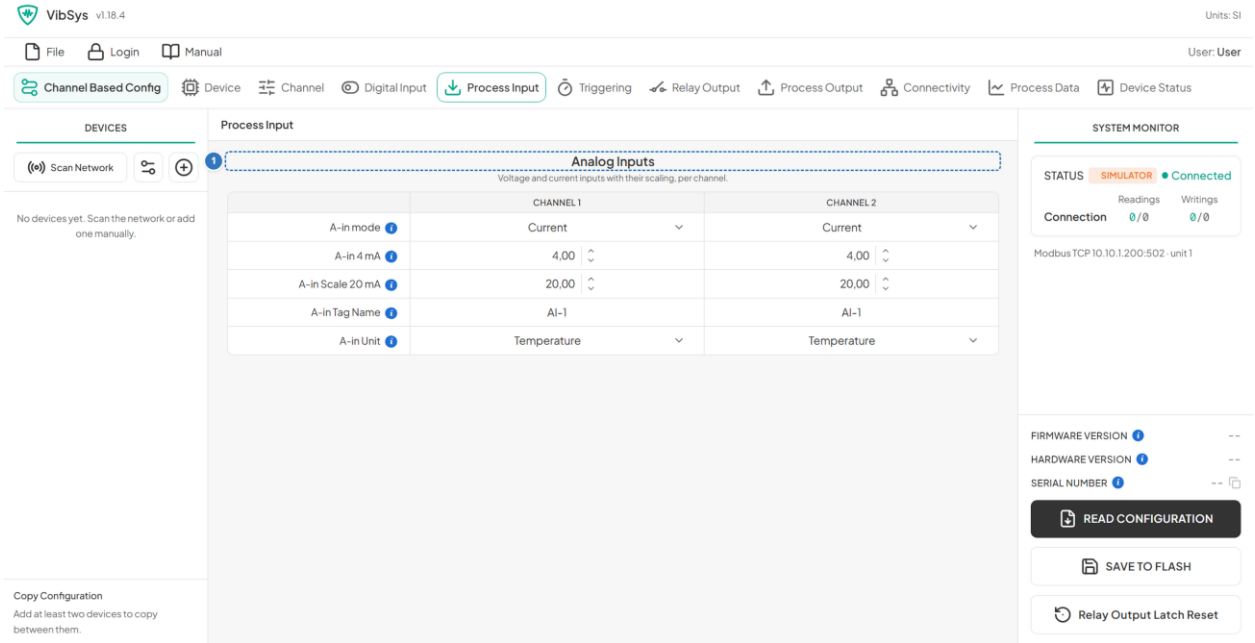
Speed [RPM] = pulse frequency [Hz] × 60 ÷ Din-1 Pulses Rev. The edge does not change the speed; it sets which moment of the pulse is the time reference. Interactive in the HTML version of this manual.

Try it: harmonic extraction and its speed reference

The harmonic extractions (1×, 2×, 3× and "not 1×") take the vibration at whole multiples of the running speed. Extraction Harmonic Mode chooses where that speed comes from: a fixed value, or the speed measured on digital input 1. If the reference does not match the machine, the extractions look at the wrong frequencies.



3.4 Process Input



Process Input tab. The numbers refer to the list below.

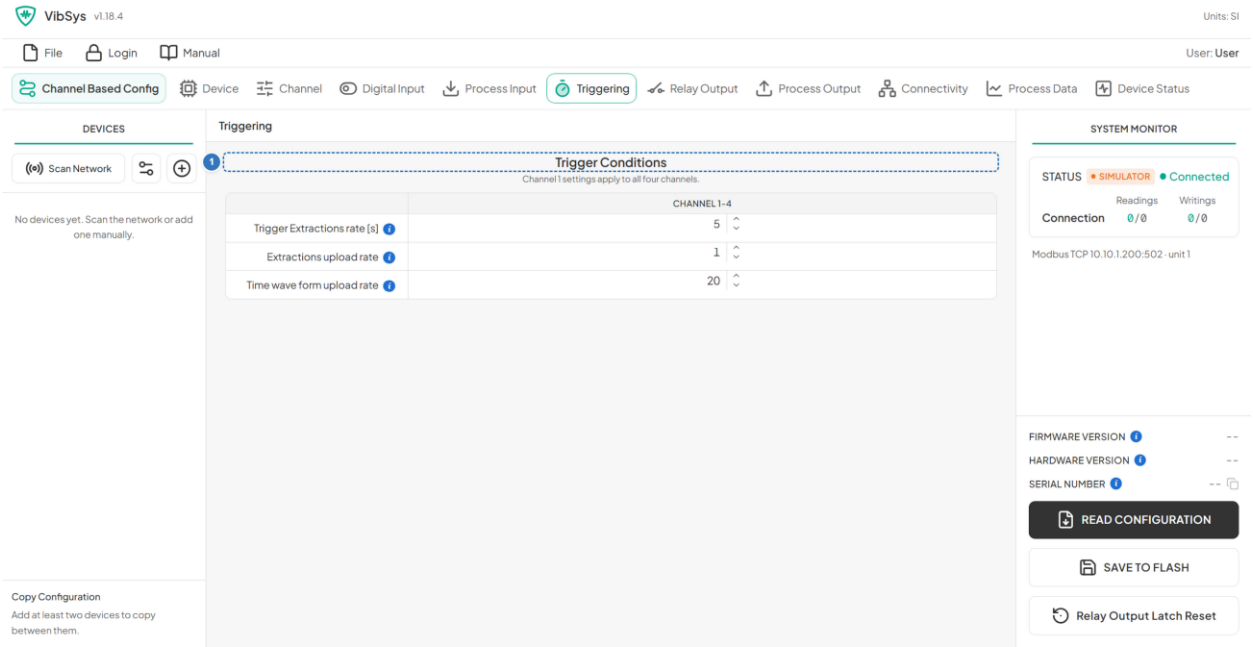
1	**Analog Inputs** — Voltage and current inputs with their scaling, per channel.

Analog Inputs

Voltage and current inputs with their scaling, per channel.

Field	Function	Range / options
A-in mode `processInput.analogInputs.ain1Mode`	Signal type of the analog process input.	Options: Disabled, Voltage, Current
A-in 4 mA `processInput.analogInputs.ain1Scale4ma`	Process value that corresponds to the low end of the input signal (4 mA).	Range: 0 – 100000 Decimals: 2
A-in Scale 20 mA `processInput.analogInputs.ain1Scale20ma`	Process value that corresponds to the high end of the input signal (20 mA).	Range: 0 – 100000 Decimals: 2
A-in Tag Name `processInput.analogInputs.ain1TagName`	Free text name for the analog input.	Maximum 16 characters
A-in Unit `processInput.analogInputs.ain1Unit`	The physical quantity the analog input represents.	Options: Temperature, Pressure, Speed

3.5 Triggering



Triggering tab. The numbers refer to the list below.

1	**Trigger Conditions** — Channel 1 settings apply to all four channels.

Trigger Conditions

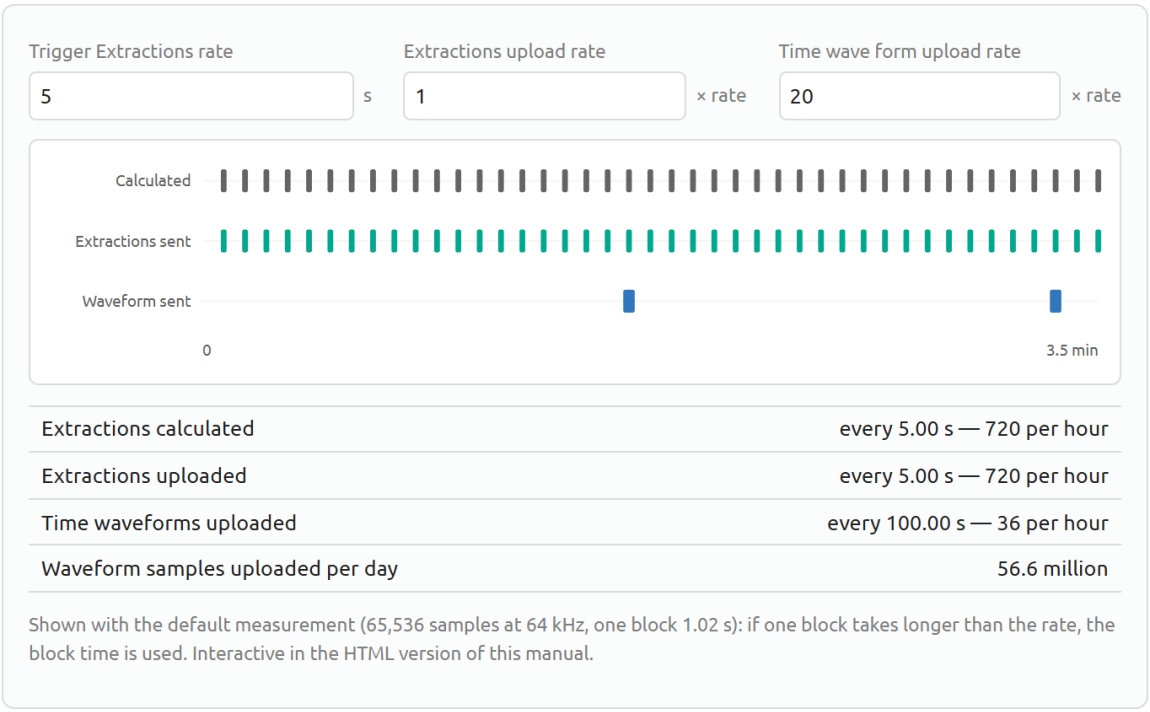
Channel 1 settings apply to all four channels.

Field	Function	Range / options
Trigger Extractions rate [s] `triggering.triggering.triggerExtractionsRate`	How often the unit calculates the extractions, in seconds. Applies to all four channels. If the measurement takes longer than this, the measurement time is used instead.	Range: 1 s – 86400 s
Extractions upload rate `triggering.triggering.extractionsUploadRate`	How often the extractions are uploaded, as a multiple of the extractions rate. Applies to all four channels.	Range: 0 – 65536

Field	Function	Range / options
Time wave form upload rate `triggering.triggering.timeWaveFormUploadRate`	How often the time waveform is uploaded, as a multiple of the extractions rate. Applies to all four channels.	Range: 0 – 65536

Try it: what triggering sends to the cloud

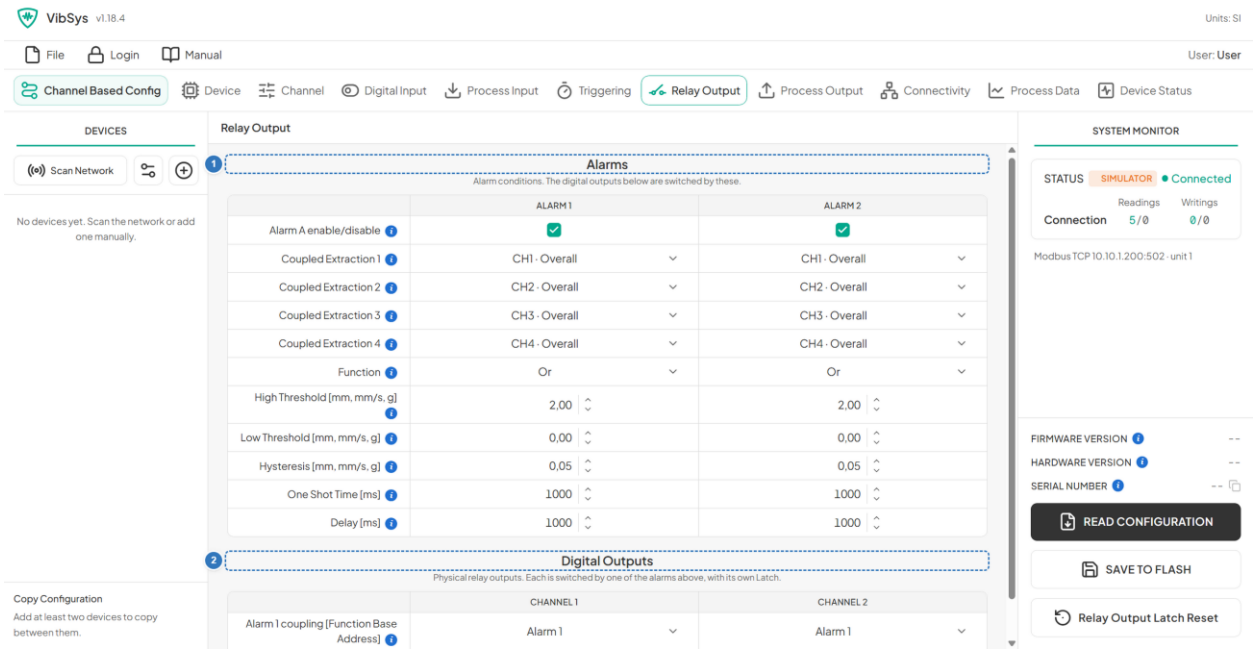
The unit calculates its extractions every Trigger Extractions rate. The two upload rates count in those intervals: an Extractions upload rate of 1 sends every result, 5 every fifth. The Time wave form upload rate does the same for the raw time waveform — far more data. 0 sends nothing.



Extractions calculated	every 5.00 s — 720 per hour
Extractions uploaded	every 5.00 s — 720 per hour
Time waveforms uploaded	every 100.00 s — 36 per hour
Waveform samples uploaded per day	56.6 million

Shown with the default measurement (65,536 samples at 64 kHz, one block 1.02 s): if one block takes longer than the rate, the block time is used. Interactive in the HTML version of this manual.

3.6 Relay Output



Relay Output tab. The numbers refer to the list below.

1	**Alarms** — Alarm conditions. The digital outputs below are switched by these.
2	**Digital Outputs** — Physical relay outputs. Each is switched by one of the alarms above, with its own Latch.

Alarms

Alarm conditions. The digital outputs below are switched by these.

Field	Function	Range / options
Alarm A enable/disable `relayOutput.alarms.alarmAEnableDisable`	Switches the alarm on or off.	On/Off
Coupled Extraction 1 `relayOutput.alarms.coupledExtraction1`	First measurement (extraction) the alarm watches.	108 options, e.g. CH1 · Actual averages; CH1 · DC; CH1 · Overall
Coupled Extraction 2 `relayOutput.alarms.coupledExtraction2`	Second measurement (extraction) the alarm watches.	108 options, e.g. CH1 · Actual averages; CH1 · DC; CH1 · Overall
Coupled Extraction 3 `relayOutput.alarms.coupledExtraction3`	Third measurement (extraction) the alarm watches.	108 options, e.g. CH1 · Actual averages; CH1 · DC; CH1 · Overall
Coupled Extraction 4 `relayOutput.alarms.coupledExtraction4`	Fourth measurement (extraction) the alarm watches.	108 options, e.g. CH1 · Actual averages; CH1 · DC; CH1 · Overall
Function `relayOutput.alarms.function`	How the coupled measurements are combined: Or (any one over its threshold trips the alarm) or And (all of them must be).	Options: Or/And
High Threshold [mm, mm/s, g] `relayOutput.alarms.highThreshold`	The alarm trips when a coupled measurement rises above this value.	Decimals: 2
Low Threshold [mm, mm/s, g] `relayOutput.alarms.lowThreshold`	The alarm trips when a coupled measurement falls below this value.	Decimals: 2
Hysteresis [mm, mm/s, g] `relayOutput.alarms.hysteresis`	How far a measurement must move back past the threshold before the alarm clears. Prevents the relay from chattering.	Decimals: 2
One Shot Time [ms] `relayOutput.alarms.oneShotTime`	Minimum time the relay stays closed after the alarm trips, in milliseconds; it stays closed longer while the alarm is still active.	Range: 50 ms – 60000 ms
Delay [ms] `relayOutput.alarms.delay`	How long the condition must last before the alarm trips, in milliseconds.	Range: 50 ms – 60000 ms

Digital Outputs

Physical relay outputs. Each is switched by one of the alarms above, with its own Latch.

Field	Function	Range / options
Alarm 1 coupling [Function Base Address] `relayOutput.digitalOutputs.alarm1Coupling`	Which alarm block (Alarm 1 or Alarm 2) switches this relay output.	Options: Alarm 1/Alarm 2
Latch [bool] `relayOutput.digitalOutputs.latch`	When on, the relay stays switched after the alarm has cleared, until it is reset with Relay Output Latch Reset.	On/Off

Try it: how an alarm switches its relay

An alarm watches up to four measurements (the Coupled Extractions). With Function **Or** it trips when any one of them is above High Threshold; with **And** only when all of them are. Give the four measurements different levels and compare. The signals are simulated; the alarm defaults are the unit's own.

Signal shape: Slow rise and fall

Signal level (all four): 100 %

Function: Or

Coupled Extraction 1: 100 %

Coupled Extraction 2: 80 %

Coupled Extraction 3: 60 %

Coupled Extraction 4: 40 %

High Threshold: 2 g

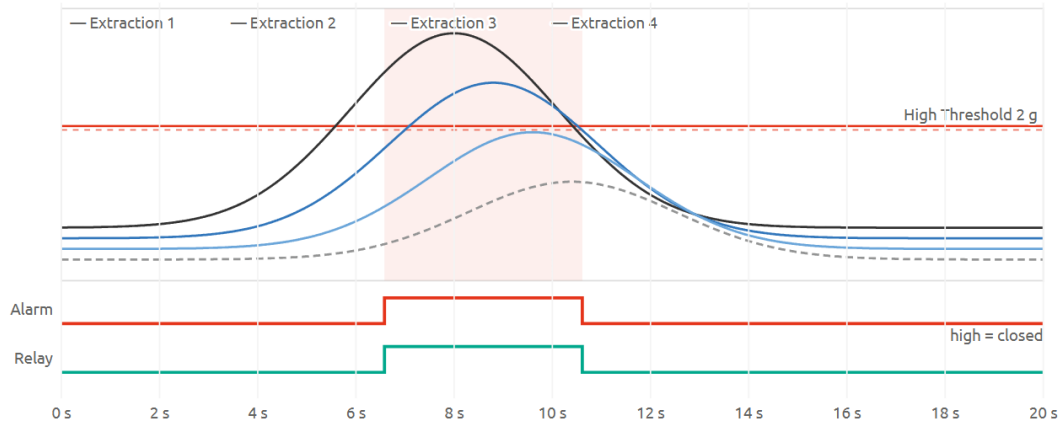
Hysteresis: 0,05 g

Delay: 1000 ms

One Shot Time: 1000 ms

Latch: ☐

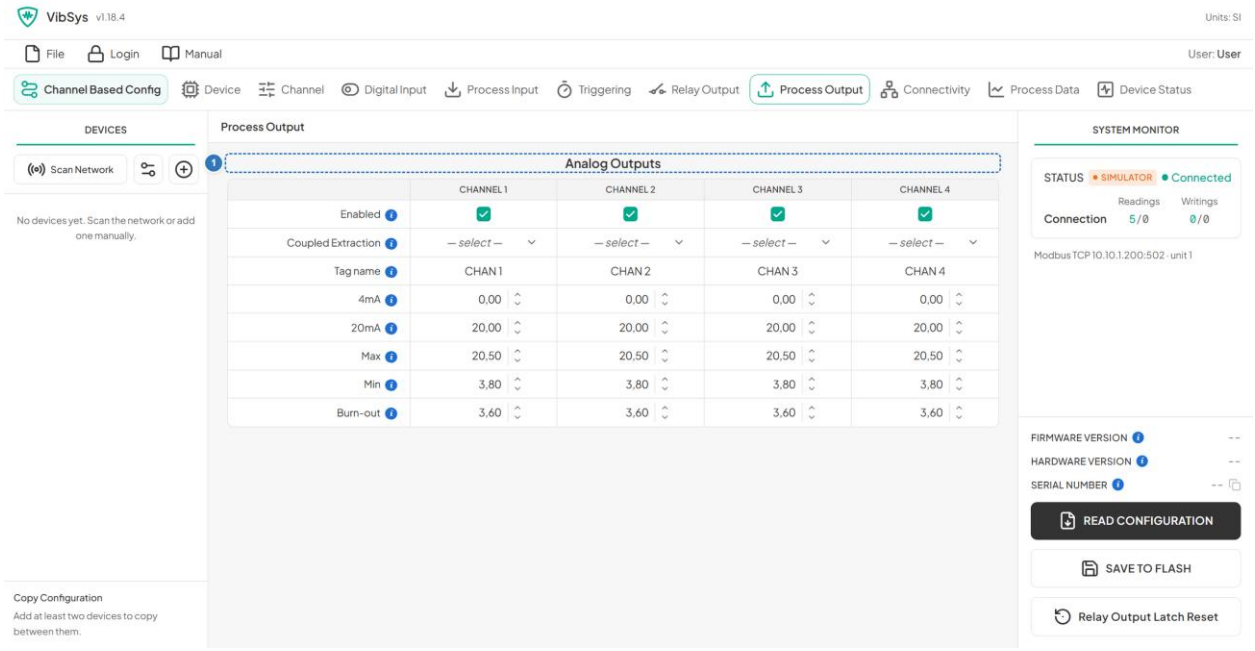
Latch Reset pressed at: 17 s



- 6.58 s — alarm trips (at least one above 2 g for 1000 ms)
- 6.58 s — relay closes
- 10.61 s — alarm clears (below 1.95 g)
- 10.61 s — relay opens

How the unit applies these settings: the condition (Or: any measurement above High Threshold; And: all of them) must last for **Delay** before the alarm trips; the alarm clears when the condition is gone below High Threshold – **Hysteresis**; the relay stays closed at least **One Shot Time** after a trip, and as long as the alarm is active; with **Latch** on it stays closed after the alarm clears, until **Relay Output Latch Reset**. Shown for the High Threshold mode. Interactive in the HTML version of this manual.

3.7 Process Output



Process Output tab. The numbers refer to the list below.

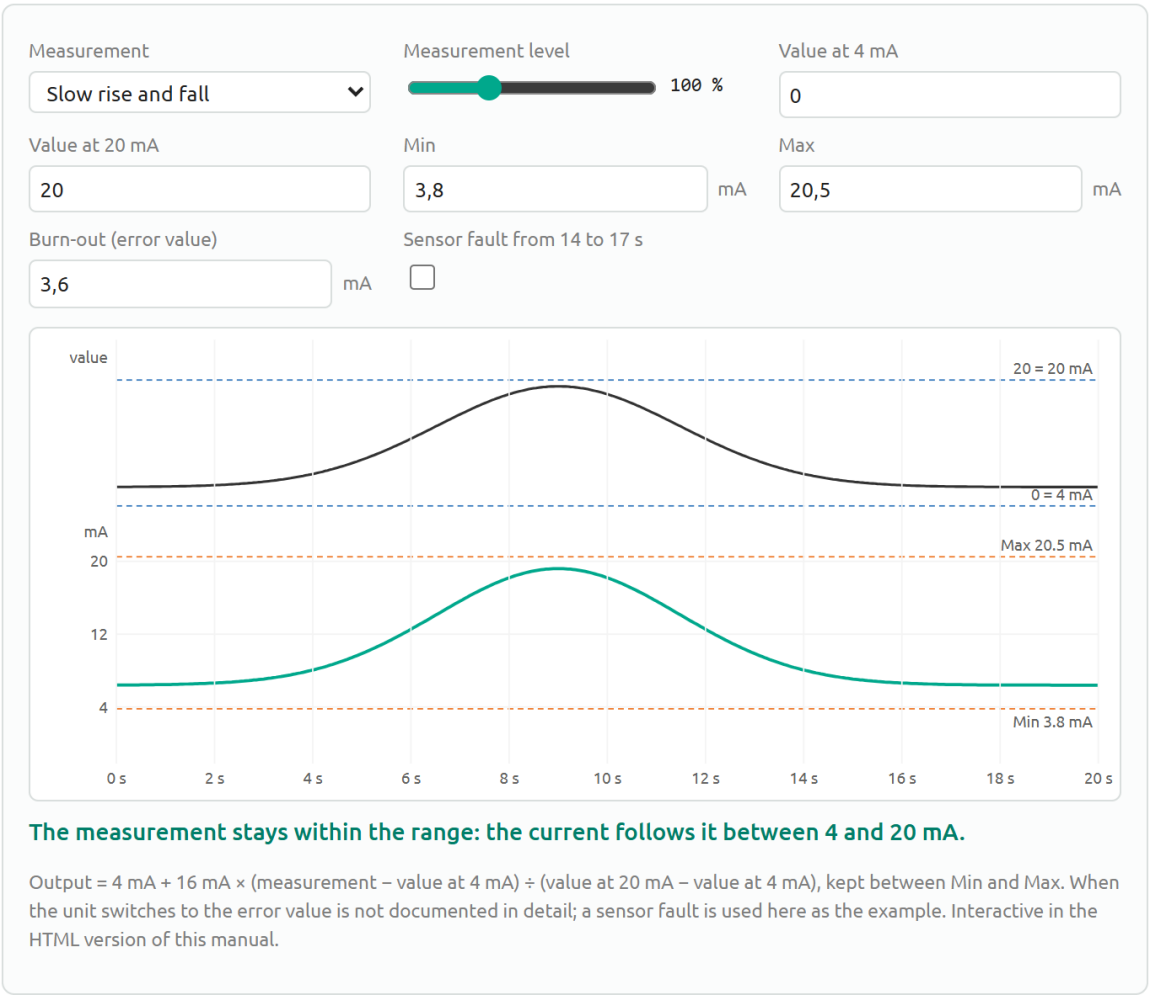
1	**Analog Outputs**

Analog Outputs

Field	Function	Range / options
Enabled `processOutput.analogOutputs.enabled`	Switches the 4–20 mA analog output on or off.	On/Off
Coupled Extraction `processOutput.analogOutputs.coupledExtraction`	The measurement (extraction) the 4–20 mA output represents.	108 options, e.g. CH1 · Actual averages; CH1 · DC; CH1 · Overall
Tag name `processOutput.analogOutputs.unit`	Free text name for the analog output.	Maximum 16 characters
4mA `processOutput.analogOutputs.ma4`	Measurement value at which the output gives 4 mA.	Range: 0 – 30000 Decimals: 2
20mA `processOutput.analogOutputs.ma20`	Measurement value at which the output gives 20 mA.	Range: 0 – 30000 Decimals: 2
Max `processOutput.analogOutputs.max`	Highest current the output may drive, in mA.	Range: 3.6 – 21 Decimals: 2
Min `processOutput.analogOutputs.min`	Lowest current the output may drive, in mA.	Range: 3.6 – 21 Decimals: 2
Burn-out `processOutput.analogOutputs.burnOut`	Current the output goes to when the unit is in a safe (error) state, in mA, so a fault is visible in the control system.	Range: 2.4 – 3.6 Decimals: 2

Try it: from a measurement to 4–20 mA

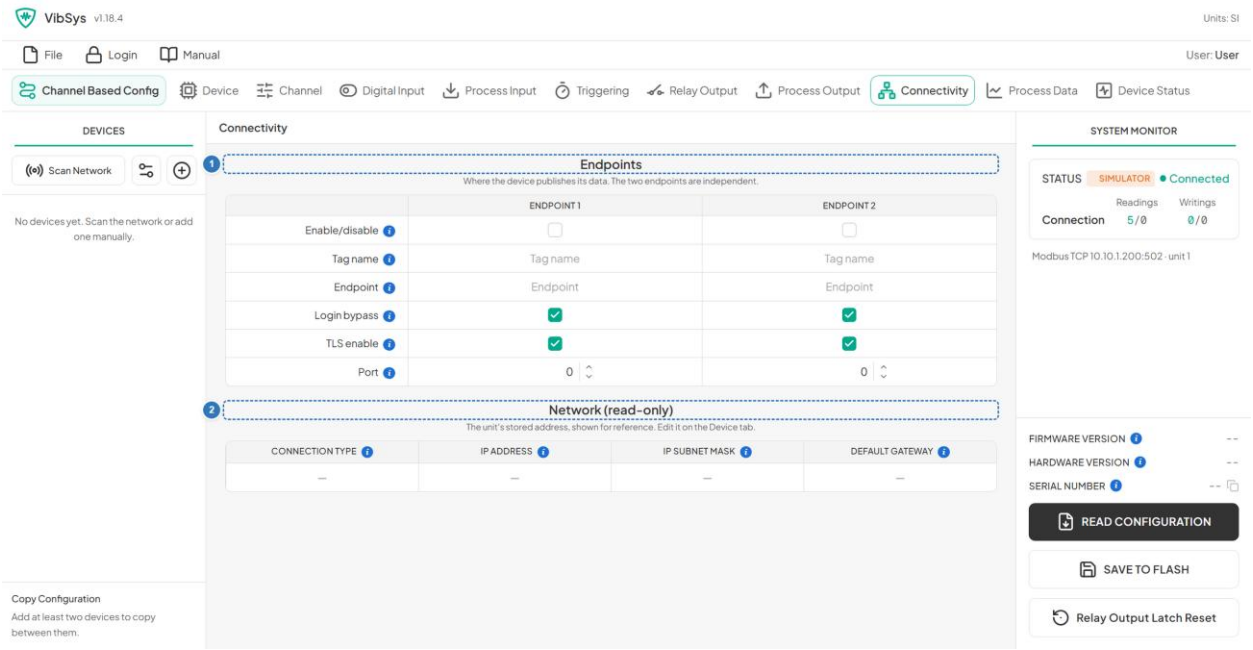
The analog output turns its Coupled Extraction into a current: the value set at 4 mA gives 4 mA, the value set at 20 mA gives 20 mA, and everything in between proportionally. Min and Max limit how far the current may swing; when the measurement is not valid the output goes to its error value (Burn-out).



The measurement stays within the range: the current follows it between 4 and 20 mA.

Output = 4 mA + 16 mA × (measurement − value at 4 mA) ÷ (value at 20 mA − value at 4 mA), kept between Min and Max. When the unit switches to the error value is not documented in detail; a sensor fault is used here as the example. Interactive in the HTML version of this manual.

3.8 Connectivity



Connectivity tab. The numbers refer to the list below.

1	**Endpoints** — Where the device publishes its data. The two endpoints are independent.

2	**Network (read-only)** — The unit's stored address, shown for reference. Edit it on the Device tab.

Endpoints

Where the device publishes its data. The two endpoints are independent.

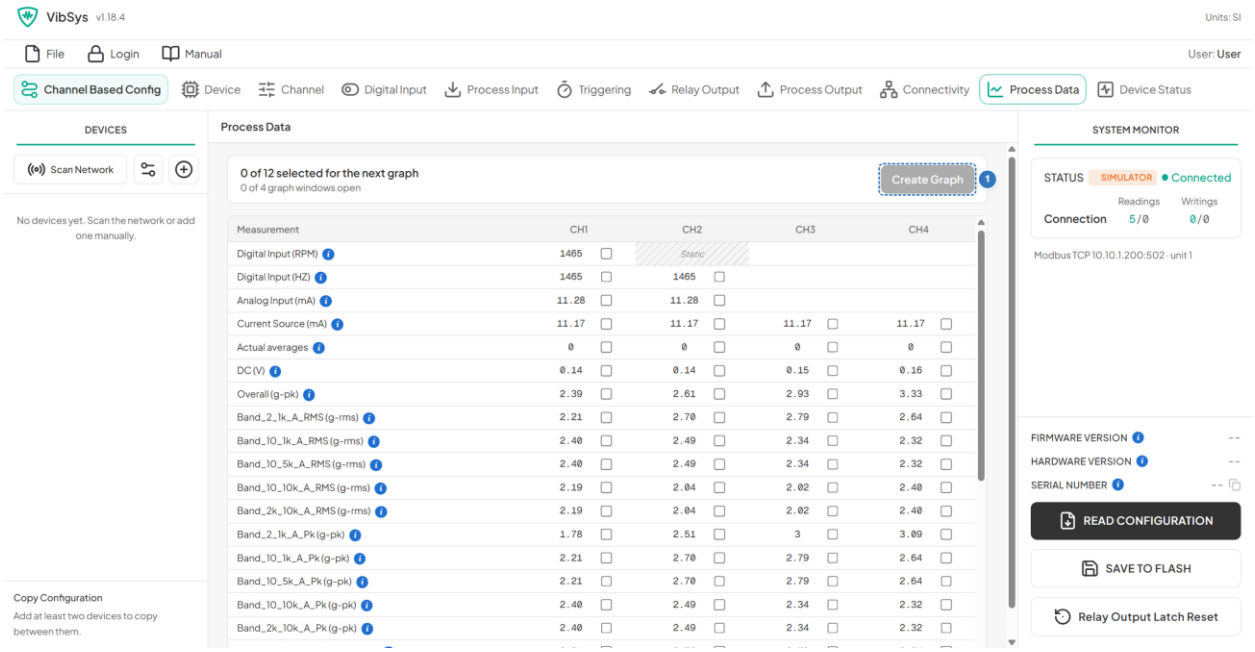
Field	Function	Range / options
Enable/disable `connectivity.endpoints.endpointEnableDisable`	Switches uploads to this endpoint on or off.	On/Off
Tag name `connectivity.endpoints.endpointTagName`	Free text name for the endpoint.	Maximum 32 characters
Endpoint `connectivity.endpoints.endpoint`	Address the unit uploads its data to.	Maximum 512 characters
Login bypass `connectivity.endpoints.loginBypass`	When on, the unit uploads without logging in to the endpoint first.	On/Off
TLS enable `connectivity.endpoints.tlsEnable`	When on, uploads to the endpoint are encrypted (TLS).	On/Off
Port `connectivity.endpoints.port`	Network port of the endpoint. 443 is the standard port for encrypted uploads.	Range: 0 – 65536

Network (read-only)

The unit's stored address, shown for reference. Edit it on the Device tab.

Field	Function	Range / options
CONNECTION TYPE `connectivity.networkReference.network#1`	The unit's network mode, read-only here; change it on the Device tab.	Read-only
IP ADDRESS `connectivity.networkReference.network#2`	The unit's IP address, read-only here; change it on the Device tab.	Read-only
IP SUBNET MASK `connectivity.networkReference.network#3`	The unit's subnet mask, read-only here; change it on the Device tab.	Read-only
DEFAULT GATEWAY `connectivity.networkReference.network#4`	The unit's default gateway, read-only here; change it on the Device tab.	Read-only

3.9 Process Data



Process Data tab. The numbers refer to the list below.

1	**Create Graph** — opens a graph window with the values you ticked.

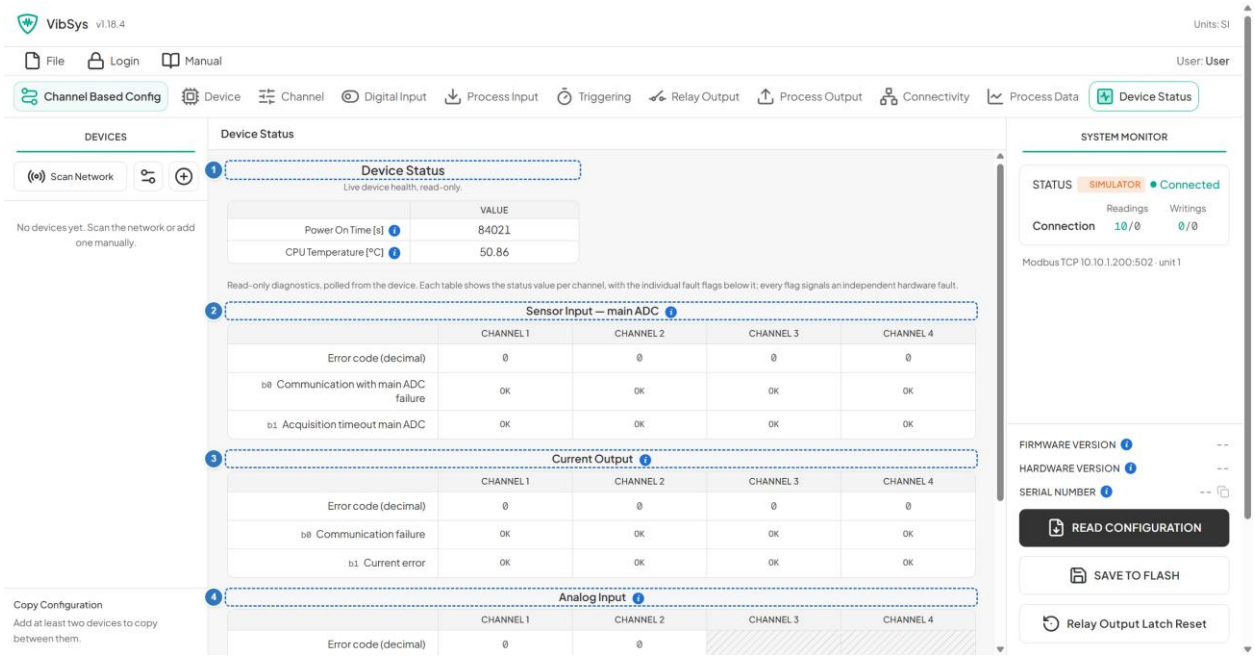
Measurements

Live extraction values, read-only. Units are shown exactly as the vendor sheet states them.

Field	Function	Range / options
Digital Input (RPM) `processData.measurements.digitalInput`	Speed measured on digital input 1, in revolutions per minute.	Read-only
Digital Input (HZ) `processData.measurements.digitalInputHz`	Frequency of the signal on digital input 1, in hertz.	Read-only
Analog Input (mA) `processData.measurements.analogInput`	Present value of the analog process input, in mA.	Read-only
Current Source (mA) `processData.measurements.currentSource`	Present current of the sensor supply (IEPE current source), in mA.	Read-only
Actual averages `processData.measurements.actualAverages`	Number of averages used in the latest acquisition.	Read-only
DC (V) `processData.measurements.dc`	DC voltage at the sensor input. Shows whether the sensor is connected and biased correctly.	Read-only
Overall (g-pk) `processData.measurements.overall`	Overall vibration level of the channel (broadband), in g peak.	Read-only
Band_2_1k_A_RMS (g-rms) `processData.measurements.band21kARms`	RMS value of the vibration acceleration in the 2–1000 Hz band.	Read-only
Band_10_1k_A_RMS (g-rms) `processData.measurements.band101kARms`	RMS value of the vibration acceleration in the 10–1000 Hz band.	Read-only
Band_10_5k_A_RMS (g-rms) `processData.measurements.band105kARms`	RMS value of the vibration acceleration in the 10–5000 Hz band.	Read-only
Band_10_10k_A_RMS (g-rms) `processData.measurements.band1010kARms`	RMS value of the vibration acceleration in the 10–10000 Hz band.	Read-only
Band_2k_10k_A_RMS (g-rms) `processData.measurements.band2k10kARms`	RMS value of the vibration acceleration in the 2000–10000 Hz band.	Read-only

Field	Function	Range / options
Band_2_1k_A_Pk (g-pk) `processData.measurements.band21kAPk`	Peak value of the vibration acceleration in the 2–1000 Hz band.	Read-only
Band_10_1k_A_Pk (g-pk) `processData.measurements.band101kAPk`	Peak value of the vibration acceleration in the 10–1000 Hz band.	Read-only
Band_10_5k_A_Pk (g-pk) `processData.measurements.band105kAPk`	Peak value of the vibration acceleration in the 10–5000 Hz band.	Read-only
Band_10_10k_A_Pk (g-pk) `processData.measurements.band1010kAPk`	Peak value of the vibration acceleration in the 10–10000 Hz band.	Read-only
Band_2k_10k_A_Pk (g-pk) `processData.measurements.band2k10kAPk`	Peak value of the vibration acceleration in the 2000–10000 Hz band.	Read-only
Band_2_1k_V_RMS (mm/s-rms) `processData.measurements.band21kVRms`	RMS value of the vibration velocity in the 2–1000 Hz band.	Read-only
Band_10_1k_V_RMS (mm/s-rms) `processData.measurements.band101kVRms`	RMS value of the vibration velocity in the 10–1000 Hz band.	Read-only
Band_10_5k_V_RMS (mm/s-rms) `processData.measurements.band105kVRms`	RMS value of the vibration velocity in the 10–5000 Hz band.	Read-only
Band_10_10k_V_RMS (mm/s-rms) `processData.measurements.band1010kVRms`	RMS value of the vibration velocity in the 10–10000 Hz band.	Read-only
Band_2_1k_V_Pk (mm/s-pk) `processData.measurements.band21kVPk`	Peak value of the vibration velocity in the 2–1000 Hz band.	Read-only
Band_10_1k_V_Pk (mm/s-pk) `processData.measurements.band101kVPk`	Peak value of the vibration velocity in the 10–1000 Hz band.	Read-only
Band_10_5k_V_Pk (mm/s-pk) `processData.measurements.band105kVPk`	Peak value of the vibration velocity in the 10–5000 Hz band.	Read-only
Band_10_10k_V_Pk (mm/s-pk) `processData.measurements.band1010kVPk`	Peak value of the vibration velocity in the 10–10000 Hz band.	Read-only
1xHarmonic_V (mm/s) `processData.measurements.1xharmonicV`	Vibration velocity at 1× the running speed (the running-speed component).	Read-only
2xHarmonic_V (mm/s) `processData.measurements.2xharmonicV`	Vibration velocity at 2× the running speed (harmonic 2).	Read-only
3xHarmonic_V (mm/s) `processData.measurements.3xharmonicV`	Vibration velocity at 3× the running speed (harmonic 3).	Read-only
Not_1xHarmonic_V (mm/s) `processData.measurements.not1xharmonicV`	Vibration velocity outside the 1× running-speed component (everything except the 1× harmonic).	Read-only
SumHarmonics_1_2_3 (mm/s) `processData.measurements.sumharmonics123`	Combined vibration velocity of the 1×, 2× and 3× harmonics.	Read-only
Custom 1 (x) `processData.measurements.custom1`	Custom extraction 1. Its definition is not configurable in this version.	Read-only

3.10 Device Status



Device Status tab. The numbers refer to the list below.

1	**Device Status** — Live device health, read-only.
2	**Sensor Input — main ADC**
3	**Current Output**
4	**Analog Input**

Device Status

Live device health, read-only.

Field	Function	Range / options
Power On Time [s] `deviceStatus.mainStatus.powerOnTime`	Time since the unit was last powered up.	Read-only
CPU Temperature [°C] `deviceStatus.mainStatus.cpuTemperature`	Present temperature of the unit's processor.	Read-only

Hardware status

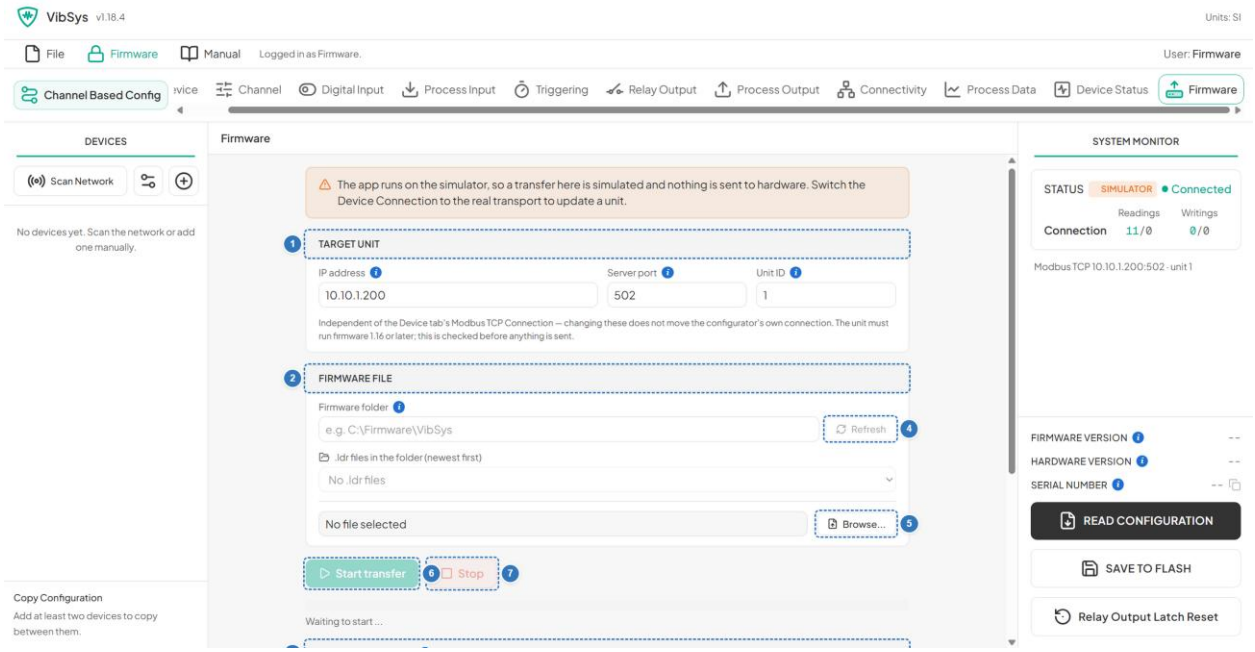
The unit's own self-test results per subsystem. A highlighted flag means the unit reports that fault now.

3.11 Verification

Service only. Verifies a unit against an operator-supplied factory-default Excel file; see chapter 4.

3.12 Firmware

Firmware login only (Login menu → Firmware). See chapter 4.



Firmware tab. The numbers refer to the list below.

1	**TARGET UNIT**
2	**FIRMWARE FILE**
3	**VERSION TRACKING**
4	**Refresh** — re-reads the firmware folder.
5	**Browse...** — chooses a firmware file (.ldr) anywhere on the PC.
6	**Start transfer** — checks the unit's firmware version, then sends the file.
7	**Stop** — stops a running transfer.

3.13 System Monitor

Field	Function
Firmware version	Firmware version the unit is running now. After a firmware update it changes once the unit restarts: by itself on newer firmware, after a power cycle on older firmware.
Hardware version	Hardware revision of the unit.
Serial number	Serial number of the unit, as stored on the device.
READ CONFIGURATION	Reads every configuration value from the unit and shows it on the tabs.
SAVE TO FLASH	Stores the unit's current configuration in its permanent memory, so it survives a power cycle.
Relay Output Latch Reset	Releases relay outputs that are latched after an alarm.

4 Tasks

4.1 Find and add units

1. Click **Scan Network** in the Devices panel. The configurator searches the PC's own network segment; the result says which address range was searched.
2. Units that identify themselves as VibSys are listed with model and serial number. Something that answers but is not confirmed as VibSys is shown as *Unknown device*.
3. To scan a non-standard port or unit ID, click the gear icon next to Scan Network.
4. To add a unit by hand, click **+**, enter its address, port and unit ID, and use **Test Connection** to check it.

Click a unit's name to connect to it. Its dot is green when connected, red when selected but not answering. The trash icon removes a unit from the list only.

4.2 Store and compare a unit's configuration

Expand a unit with the ▸ chevron:

- **Store Loaded** saves the values currently shown as this unit's stored configuration.
- **Read from Device** reads the live values from the unit (connect to it first).
- **Compare** lists every field where the stored configuration and the shown values differ.
- **Edit Offline** lets you prepare a configuration without a connection (see below).

4.3 Prepare a configuration offline

1. Expand the unit and click **Edit Offline**. A banner shows that you are editing offline.
2. Change the fields as usual. Nothing is sent to a unit; the changes go to the stored configuration.
3. Click **Exit offline editing** in the banner when you are done.

Use **Copy Configuration** or connect to the unit later to bring the prepared configuration onto it.

4.4 Copy a configuration to another unit

1. With at least two units in the list, choose **From** and **To** in the Copy Configuration panel, click **Copy Configuration** and confirm.
2. Everything is copied **except** the destination's own network settings (DHCP/Static, IP address, subnet mask, gateway), so two units never end up with the same address.
3. Connect to the destination and click **SAVE TO FLASH**: only then does the destination use the copied settings.

4.5 Watch and graph live values

1. Open the **Process Data** tab. Values update at the Poll Interval set on the Device tab.
2. Tick up to 12 values and click **Create Graph**. The graph opens in its own window and keeps updating; up to 4 graph windows can be open.
3. In a graph window: choose the time base, reset the trend, fix the Y axis, switch to **Historic** to replay what has been recorded, or **Export CSV**.

4.6 Export and import a configuration

- **File → Export configuration…** saves the shown values to a `.json` file. It does not read from or write to the unit.
- **File → Import configuration…** reads such a file and, after you confirm with **Write to device**, writes every recognised value to the unit. Click **SAVE TO FLASH** afterwards.

4.7 Reset latched relay outputs

When a relay output is set to latch, it stays switched after its alarm clears. Click **Relay Output Latch Reset** in the System Monitor to release it.

4.8 Update the unit's firmware

Requires the **Firmware** login. The unit must run firmware **1.16 or later**; the Firmware tab does not work with older firmware and shows a warning for such a unit.

1. Open **Login**, tick **Firmware** and log in. Open the **Firmware** tab.
2. Under **Target unit**, check the unit. The tab follows the unit the configurator is connected to, and shows its serial number and firmware version (for example 1.17.0.0). When the target is another unit, it warns; click **Use connected unit** to go back.
3. Under **Firmware file**, the firmware folder shows the default folder. Pick the `.ldr` file from the list (newest first), or use **Browse…**. In the desktop app, Browse opens in the folder you browsed last; tick **Make the browsed folder the default firmware folder** to make that folder the new default.
4. Click **Start transfer** and confirm. Units below 1.16 are refused and nothing is sent.
5. Wait for **Firmware saved to flash**. Do not switch off the unit or disconnect the network during the transfer.
6. Firmware **1.17 and later restarts the unit by itself** when the flash write is done: the connection drops for a moment, the configurator reconnects and reports the new version. A unit on 1.16 keeps running until you **power-cycle** it. Under **Version tracking** the update then waits for the power cycle; once the unit reports a different version it reads **Firmware updated: 1.16.0.0 → 1.17.0.0**. This happens automatically while the configurator is connected to the unit, or click **Check version now**.

All settings are kept through an update from 1.16 on. A failed or refused transfer is also written to the Event Log.

Stop cancels the transfer while data is being sent; nothing is committed, but power-cycle the unit before trying again. While a transfer runs, configuration changes are refused.

4.9 Verify a unit against its factory defaults

Requires Service.

1. Open the **Verification** tab and click **Load Modbus File**; choose the factory-default Excel file. Each worksheet becomes a sub-tab.
2. Click **Write Defaults** and confirm. Every active, writable setting in the file gets its documented default.
3. Click **SAVE TO FLASH**, then power-cycle the unit.
4. Click **Confirm Power Cycle Performed**: every written setting is read back and reported as match or mismatch. So are the settings of channels 2–4 that follow channel 1 (Active 0 in the file, such as Measurement Config and Trigger Config): they are never written, but must read back at their

documented default. A row whose default differs from its channel-1 row is flagged and left out of the check.

The configurator must be the only tool talking to the unit during verification.

4.10 Hand the unit over to another tool

Requires Service. Click **STOP** in the header to stop all communication from the configurator, for example while the vendor's own tool or Modbus Poll needs the unit. Click **START** to resume.

5 Troubleshooting

Symptom	Cause and solution
System Monitor shows **Offline** or **NO DEVICE**	The configurator cannot reach the unit. Check the address on the Device tab or in the device list, that the unit is powered, and that the PC is on the same network. Use **Test Connection** in the Add Device form to see the exact reason.
Scan Network does not find a unit	The scan only covers the PC's own network segment, and the result shows which range was searched. Add the unit by its address, or scan with its port and unit ID (gear icon).
A field returns to its old value with a **red outline**	The unit refused the value: out of range, or not one of the allowed options. Hover the field for the reason, check its ⓘ for the range, and see the Event Log.
Changes have no effect, or are gone after a power cycle	They were not saved. The unit only uses changed settings after **SAVE TO FLASH**.
A field is grey or hatched	The field is read-only on purpose: not available on this unit, or ambiguous in the unit's documentation. Hover its ⓘ or "why" link.
A message is not detailed enough	Open the **Event Log** at the bottom of the Device Status tab: every read and write error is listed there with its details.
SIMULATOR label in the System Monitor	The configurator runs on its built-in simulator; nothing goes to real units. Switch to the real device in the Device Connection panel (Service) and restart.
Firmware update **refused**	The unit runs firmware older than 1.5, or its version could not be read. Older units cannot be updated from the configurator.
Firmware transfer fails straight away	Check the target unit on the Firmware tab: a unit on DHCP may have a new address. Click **Use connected unit**. A unit below firmware 1.16 is refused.
A unit is no longer found at its address	A unit on DHCP gets a new address with a new lease. Click **Scan Network**: a unit already in the list is recognised by its serial number, its entry moves to the new address and the connection follows.
Firmware update stopped or failed	Nothing was committed and the unit keeps its old firmware. Power-cycle the unit, then start the transfer again.
Firmware version unchanged after an update	A unit on 1.16 starts the new image only after a power cycle (1.17 and later restart by themselves). Version tracking on the Firmware tab keeps the update waiting until the unit reports a new version; if it stays the same after a power cycle, the unit rejected the image.
Device list empty after starting	Another copy of the configurator was already running, or an older configurator version (before 1.10.1) was used. Close other copies and restart.

6 Technical reference

6.1 Specifications

Item	Specification
Channels	4, time-synchronised; scalable by interconnecting units
Mounting	DIN rail
Network	Ethernet with Power over Ethernet (PoE)
Protocol	Modbus TCP (default port 502, unit ID 1)
Process outputs	4–20 mA
Standards	CE; EMC per EN 61000; EN IEC 63000; RoHS

Sensor input ranges, power supply, environmental ratings and dimensions: see the **VibSys A01 datasheet**.

The Modbus communication of the VibSys is described in the hardware manual.

7 Glossary

Term	Meaning
Acceleration (A)	Vibration expressed as acceleration, in g.
Alarm block	A set of alarm settings (Alarm 1 / Alarm 2) that watches up to four extractions and can switch a relay output.
Band	A frequency range over which a vibration value is calculated, e.g. 10–1000 Hz.
DHCP	The unit gets its IP address from the network instead of a fixed (static) address.
Extraction	A value the unit calculates from the vibration signal: overall level, band values, harmonics.
FFT	Fast Fourier Transform: turns a time waveform into a frequency spectrum.
Flash	The unit's permanent memory. SAVE TO FLASH stores the configuration there; only then does the unit use changed settings.
Harmonic (1×, 2×, 3×)	Vibration at once, twice or three times the running speed.
IEPE	Integrated Electronics Piezo-Electric: a sensor type powered by a constant current from the unit.
kS	Kilo-samples: 1 kS = 1024 samples.
Latching	An output that stays switched after its cause has cleared, until it is reset.
Modbus TCP	The industrial network protocol the configurator uses to talk to the unit.
Peak (Pk)	The highest value of the signal in a period.
Power cycle	Switching the unit off and on again.
RMS	Root mean square: the effective value of a signal.
Simulator	The configurator's built-in stand-in for a unit, for training and testing; nothing is sent to hardware.
TWF	Time waveform: the raw vibration signal over time.
Trend break	A configuration change after which new measurement data is no longer comparable with older data.
Unit ID	The Modbus address of the unit (1–247).
Velocity (V)	Vibration expressed as velocity, in mm/s.

8 Release notes

What changed in each configurator version, for operators. Changes to the Modbus communication are listed in the Modbus manual.

What changed between versions, for anyone using the app, not just developers. Starts at 1.18.4; earlier versions aren't documented here.