MQTT TOPICS

for Connect Line Wireless Gateways

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Summary

This document outlines the available MQTT Topics that can be published and subscribed to for interacting with a CTC Gateway through an MQTT Broker.

The structure of the topics within this system follows a pattern that includes an optional custom user root configurable in the gateway UI, the gateway serial number, and the topic type.

The pattern of the topics can be seen here: **"{user-custom-root}/access360/{gateway-serial}/{topic}"**

An example would be: **"customroot/access360/1000001/dyn/get"**

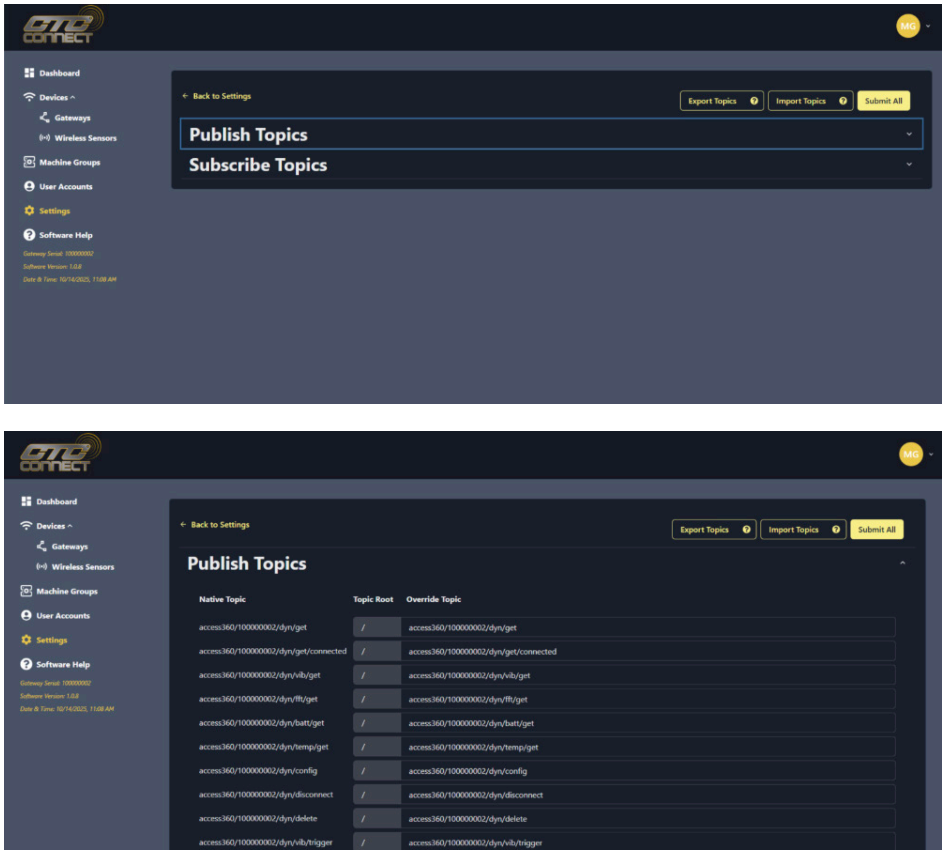
MQTT Topic Editing

MQTT Topics are now fully editable, providing greater flexibility in configuration. The following terminology applies:

1. **Native Topic**: The original, system-defined topic
2. **Topic Root**: Your designated root topic, if applicable
3. **Override Topics**: Customizable topics that replace system-defined topics

Within subscribable topics, you can dynamically insert payload values using curly braces { }. When a placeholder is included in the topic, its value will be derived from the payload and appended accordingly.

Example: dyn/notify{Serial} → **dyn/notify44240331** (where Serial is taken from the payload)



MQTT Topic Editing Screen

Additional Information

MQTT brokers enforce a property called `MaximumPacketSize,' which defines the maximum size allowed for a single packet (including headers and payload). When a gateway connects to the broker, it identifies this limit and stores it for the duration of the connection. Later, when the gateway wants to publish a message to a topic, such as sending sensor readings or responding to historical data requests, it first checks whether the payload exceeds this maximum size. If the payload is too large, the gateway breaks it into up to 10 smaller packets. Each of these sub-packets is assigned a shared MultiPart_ID, which identifies them as belonging to the same original message.

Then, in order, the gateway sends each of these sub-packets with the structure ("MultiPart_ID": int, "Data": str), where Data contains a fragment of the original message. On the receiving end, the client can detect packets with the same `MultiPart_ID` and reconstruct the original full message by appending the `Data` values in the correct order. This multipart behavior can occur on any topic if the message size exceeds the broker's limit, although in practice, it has primarily been observed on reading notifications and historical reading requests.

Publish Topics

Please note: the format of *datetime* is a string with the pattern *"yyyy-mm-dd hh:MM"*

dyn/get

Description	Payload	Response

Gets records for requested sensors. Returns a list of all records with serial numbers provided in the payload.
 	
Payload
Serials – List of sensor serial numbers you want data for
 	
Response
Serial – Serial number of the sensor
Connected – Connection status of Sensor to Gateway
AccessPoint – The Gateway the sensor is connected to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
ReadPeriod - Length of reading in milliseconds
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
Fs – The actual sampling frequency of a reading
Fmax – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000]
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user specified name of the sensor
Favorite – The user specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
	{
	"Serials": [*int*, ...]
	}
		[
		{
		"Serial": *int*,
		"Connected": *bool*,
		"AccessPoint": *str*,
		"PartNum": *str*,
		"ReadRate": *int*,
		"GMode": *str*,
		"FreqMode": *int*,
		"Coupling": *bool*,
		"ReadPeriod": *int*,
		"Samples": *int*,
		"Fs": *int*,
		"Fmax": *float*,
		"HwVer": *str*,
		"FmVer": *str*,
		"Machine": *str*,
		"Early": *float*,
		"Crit": *float*,
		"Nickname": *str*,
		"Favorite": *bool*,
		"EarlyUnit": *str*,
		"CritUnit": *str*,
		"VelocityMode": *bool*
		}, ...
		]

dyn/get/connected

Description	Payload	Response
Gets records for all currently connected sensors. Returns a list of all records that have an active connection. **Response** **Serial** – Serial number of the sensor **Connected** – Connection status of Sensor to Gateway **AccessPoint** – The Gateway the sensor is connected to **PartNum** – Part number of the sensor **ReadRate** – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)] **GMode** – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g] **FreqMode** – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600] **Coupling** – Gravitational acceleration is removed from a reading **ReadPeriod** - Length of reading in milliseconds **Samples** – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600] **Fs** – The actual sampling frequency of a reading **Fmax** – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000] **HwVer** – Sensor hardware version **FmVer** – Sensor firmware version **Machine** – Machine group ID the sensor is organized in **Early** – Value of an early alert **Crit** – Value of a critical alert **Nickname** – The user specified name of the sensor **Favorite** – The user specified favorited status **EarlyUnit** – The unit that an early alert is measured in [RMS, Peak, Peak to Peak] **CritUnit** – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]	{ }	[{ "Serial": *int*, "Connected": *bool*, "AccessPoint": *str*, "PartNum": *str*, "ReadRate": *int*, "GMode": *str*, "FreqMode": *int*, "Coupling": *bool*, "ReadPeriod": *int*, "Samples": *int*, "Fs": *int*, "Fmax": *float*, "HwVer": *str*, "FmVer": *str*, "Machine": *str*, "Early": *float*, "Crit": *float*, "Nickname": *str*, "Favorite": *bool*, "EarlyUnit": *str*, "CritUnit": *str*, "VelocityMode": *bool* }, ...]

dyn/vib/get

Description	Payload	Response

Gets vibration records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
X – A list of the raw values on the x-axis
Y – A list of the raw values on the y-axis
Z – A list of the raw values on the z-axis
Plot – The correlating time of axis data
ReadPeriod – Total elapsed time of the reading
Samples – Total samples in the reading
Fs – The actual sampling frequency of the reading
	{
	"Serials": [*int*, ...],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Serial": *int*,
		"Time": *datetime*,
		"Xpk": *float*,
		"Xpp": *float*,
		"Xrms": *float*,
		"Ypk": *float*,
		"Ypp": *float*,
		"Yrms": *float*,
		"Zpk": *float*,
		"Zpp": *float*,
		"Zrms": *float*,
		"X": [*float*, ...],
		"Y": [*float*, ...],
		"Z": [*float*, ...],
		"Plot": [*float*, ...],
		"ReadPeriod": *int*,
		"Samples": *int*,
		"Fs": *int*
		}, ...
		]

dyn/batt/get

Description	Payload	Response

Gets battery records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Batt – The battery capacity as a percentage
	{
	"Serials": [*int*, ...],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Serial": *int*,
		"Time": *datetime*,
		"Batt": *int*
		}, ...
		]

dyn/temp/get

Description	Payload	Response

Gets temperature records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Temp – The temperature in Celsius
	{
	"Serials": [*int*, ...],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Serial": *int*,
		"Time": *datetime*,
		"Temp": *int*
		}, ...
		]

dyn/config

Description	Payload	Response

Sets the sensor of the given serial with the provided configuration options. Only options that are changing are needed in the payload. Return the new configuration of the sensor.
 	
Payload
Serial – The serial number of the sensor you want to change the configuration of
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
ReadInterval – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
 	
Response
Serial – Serial number of the sensor
Connected – Connection status of Sensor to Gateway
AccessPoint – The Gateway the sensor is connected to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
ReadPeriod - Length of reading in milliseconds
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
Fs – The actual sampling frequency of a reading
Fmax – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000]
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user specified name of the sensor
Favorite – The user specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
	{
	"Serial": *int*,
	"FreqMode": *int*,
	"Coupling": *bool*,
	"Samples": *int*,
	"GMode": *str*,
	"ReadInterval": *int*
	}
		{
		"Serial": *int*,
		"Connected": *bool*,
		"AccessPoint": *str*,
		"PartNumber": *str*,
		"ReadRate": *int*,
		"GMode": *str*,
		"FreqMode": *int*,
		"Coupling": *bool*,
		"ReadPeriod": *int*,
		"Samples": *int*,
		"Fs": *int*,
		"Fmax": *float*,
		"HwVer": *str*,
		"FmVer": *str*,
		"Machine": *str*,
		"Early": *float*,
		"Crit": *float*,
		"Nickname": *str*,
		"Favorite": *bool*,
		"EarlyUnit": *str*,
		"CritUnit": *str*,
		"VelocityMode": *bool*
		}

dyn/disconnect

Description	Payload	Response

Disconnects the given sensor from the gateway. When the sensor disconnects, it should notify the event on dyn/notify topic.
 	
Payload
Serial – The serial number of the sensor you want to disconnect
	{
	"Serial": *int*}
	}
		NA

dyn/vib/trigger

Description	Payload	Response

Triggers a vibration reading on the given sensor. Returns nothing if successful, but returns an error message if not. When the reading starts, a notification will be received on the dyn/reading/notify topic.
 	
Payload
Serial – The serial number of the sensor to trigger a vibration reading on
 	
Response
Attempt – The topic being published to during the error
Error – The error message of the error
	{
	"Serial": *int*}
	}
		{
		"Attempt": *str*,
		"Error": *str*
		}

dyn/delete

Description	Payload	Response

Deletes the stored sensor data on the gateway. Can delete everything or just the readings.
 	
Payload
Serial – The serial number of the sensor you want to delete data of
DataOnly – Toggle for deleting only readings
	{
	"Serial": *int*,
	"DataOnly": *bool*
	}
		NA

dyn/fft/get

Description	Payload	Response

Gets the FFT data of the provided reading ID. Returns data to plot an FFT graph.
 	
Payload
ID – The unique reading ID to calculate the FFT for
 	
Response
ID – The unique reading ID the FFT was calculated from
X – The RMS values of the x-axis
Y – The RMS values of the y-axis
Z – The RMS values of the z-axis
Plot – The correlating frequency of axis data
	{
	"ID": *int*
	}
		[
		{
		"ID": *int*,
		"X": *float*,
		"Y": *float*,
		"Z": *float*,
		"Plot": *float*
		}, ...
		]

reboot/all

Description	Payload	Response
Reboots the gateway.	{ }	NA

reboot/wireless

Description	Payload	Response
Reboots the wireless connectivity layer of the gateway. Useful when experiencing connectivity issues.	{ }	NA

dyn/temp/trigger

Description	Payload	Response

Triggers a temperature reading on the given sensor. Returns nothing if successful, but returns an error message if not. When the reading finishes, a notification will be received on the dyn/temp/notify topic.
 	
Payload
Serial – The serial number of the sensor to trigger a temperature reading on
 	
Response
Attempt – The topic being published to during the error
Error – The error message of the error
	{
	"Serial": *int*}
	}
		{
		"Attempt": *str*,
		"Error": *str*
		}

dyn/batt/trigger

Description	Payload	Response

Triggers a battery reading on the given sensor. Returns nothing if successful, but returns an error message if not. When the reading starts, a notification will be received on the dyn/batt/notify topic.
 	
Payload
Serial – The serial number of the sensor to trigger a battery reading on
 	
Response
Attempt – The topic being published to during the error
Error – The error message of the error
	{
	"Serial": *int*}
	}
		{
		"Attempt": *str*,
		"Error": *str*
		}

proc/get

Description	Payload	Response

Gets records for requested process control sensors. Returns a list of all records with serial numbers provided in the payload.
 	
Payload
Serials – List of sensor serial numbers you want data for
 	
Response
Serial – Serial number of the sensor
AccessPoint – The Gateway the sensor is transmitting to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [0 – 24] (Hour)
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user-specified name of the sensor
Favorite – The user specified favorited status
LastCheckIn – The last time a message was received from this sensor
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
GMode - The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – The sensor frequency range [2Hz – kHz, 2Hz - 2.5kHz, 2Hz - 5kHz, 10Hz - 1kHz, 1kHz - 5kHz]
	{
	"Serials": [*int*, ...]
	}
		[
		{
		"Serial": *int*,
		"OpMode": *str*,
		"AccessPoint": *int*,
		"PartNum": *str*,
		"ReadRate": *int*,
		"HwVer": *str*,
		"FmVer": *str*,
		"Machine": *str*,
		"Early": *float*,
		"Crit": *float*,
		"Nickname": *str*,
		"Favorite": *bool*,
		"LastCheckIn": *datetime*,
		"EarlyUnit": *str*,
		"CritUnit": *str*,
		"GMode": *str*,
		"FreqMode": *str*
		}, ...
		]

proc/info

Description	Payload	Response

Set the configuration of the process control sensor. Only changing settings are required in the payload. Return the new sensor configuration.
 	
Payload
Serial – Serial number of the sensor
Nickname – The user-specified name of the sensor
Favorite – The user specified favorited status
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
Crit – Value of a critical alert
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
 	
Response
Serial – Serial number of the sensor
AccessPoint – The Gateway the sensor is transmitting to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [0 – 24] (Hour)
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user-specified name of the sensor
Favorite – The user specified favorited status
LastCheckIn – The last time a message was received from this sensor
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
GMode - The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – The sensor frequency range [2Hz – kHz, 2Hz - 2.5kHz, 2Hz - 5kHz, 10Hz - 1kHz, 1kHz - 5kHz]
	{
	"Serial": *int*,
	"Nickname": *str*,
	"Favorite": *bool*,
	"Machine": *str*,
	"Early": *float*,
	"EarlyUnit": *str*,
	"Crit": *float*,
	"CritUnit": *str*
	}
		{
		"Serial": *int*,
		"OpMode": *str*,
		"AccessPoint": *int*,
		"PartNum": *str*,
		"ReadRate": *int*,
		"HwVer": *str*,
		"FmVer": *str*,
		"Machine": *str*,
		"Early": *float*,
		"Crit": *float*,
		"Nickname": *str*,
		"Favorite": *bool*,
		"LastCheckIn": *datetime*,
		"EarlyUnit": *str*,
		"CritUnit": *str*,
		"GMode": *str*,
		"FreqMode": *str*
		}

proc/reading/get

Description	Payload	Response

Gets records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
Temp – The temperature of the reading
Batt – The battery level of the sensor at the time of the reading in percentage
	{
	"Serials": [*int*, ...],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"Serial": *int*,
		"Time": *datetime*,
		"Xrms": *float*,
		"Xpk": *float*,
		"Xpp": *float*,
		"Yrms": *float*,
		"Ypk": *float*,
		"Ypp": *float*,
		"Zrms": *float*,
		"Zpk": *float*,
		"Zpp": *float*,
		"Temp": *int*,
		"Batt": *int*,
		}, ...
		]

proc/delete

Description	Payload	Response

Deletes the stored sensor data on the gateway. Can delete everything or just the readings.
 	
Payload
Serial – The serial number of the sensor you want to delete data of
DataOnly – Toggle for deleting only readings
	{
	"Serial": *int*,
	"DataOnly": *bool*
	}
		NA

ap/get

Description	Payload	Response

Gets specified gateway information.
 	
Payload
Serial – The serial number of the gateway
 	
Response
Serial – The serial number of the gateway
Connected – Connection status of gateway to a primary gateway
Firmware – The firmware version of the gateway
Software – The software version of the gateway
Nickname – The user specified nickname of the gateway
Storage –The percentage amount of SD card storage used on the gateway
	{
	"Serial": *int*}
	}
		[
		{
		"Serial": *int*,
		"Connected": *bool*,
		"Firmware": *str*,
		"Hardware": *str*,
		"Software": *str*,
		"Nickname": *str*
		"Storage": *int*
		}
		]

alert/get

Description	Payload	Response

Gets alerts of the given sensor between a date range with a maximum number of returned records.
 	
Payload
Serials – The serial numbers of sensors to look for alerts for
Start – The start of the date range to search in
End – The end of the date range to search in
Max – The maximum returned alert records
 	
Response
ID – The unique ID of the alert
Severity – The severity level of the alert higher is worse ~ [0-2]
Time – The time the alert occurred
Serial – The serial number of the device that caused the alert
Type – The type of device that caused the alert
Text – The message of the alert
	{
	"Serials": [*int*, ...],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Severity": *int*,
		"Time": *datetime*,
		"Serial": *int*,
		"Type": *str*,
		"Text": *str*
		}, ...
		]

dyn/vib_vel/get

Description	Payload	Response

Gets raw velocity vibration records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
VelXpk – The peak velocity of the x-axis (in/s)
VelXpp – The peak-to-peak velocity of the x-axis (in/s)
VelXrms – The RMS velocity of the x-axis (in/s)
VelYpk – The peak velocity of the y-axis (in/s)
VelYpp – The peak-to-peak velocity of the y-axis (in/s)
VelYrms – The RMS velocity of the y-axis (in/s)
VelZpk – The peak velocity of the z-axis (in/s)
VelZpp – The peak-to-peak velocity of the z-axis (in/s)
VelZrms – The RMS velocity of the z-axis (in/s)
VelX – A list of the raw velocity values of the x-axis (in/s)
VelY – A list of the raw velocity values of the y-axis (in/s)
VelZ – A list of the raw velocity values of the z-axis (in/s)
Plot – The correlating time of axis data
	{
	"Serials": [
	int
	],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Serial": *int*,
		"Time": *datetime*,
		"VelXpk": *float*,
		"VelXpp": *float*,
		"VelXrms": *float*,
		"VelYpk": *float*,
		"VelYpp": *float*,
		"VelYrms": *float*,
		"VelZpk": *float*,
		"VelZpp": *float*,
		"VelZrms":*float*,
		"VelX": [
		float
		],
		"VelY": [
		float
		],
		"VelZ": [
		float
		],
		"Plot": [
		float
		]
		}
		]

dyn/vib/lite/get

Description	Payload	Response

Gets vibration overall records of the given serial numbers between a start and end date, capped with a maximum value. Sorted by most recent.
 	
Payload
Serials – List of sensor serial numbers you want data for
Start – The start of the time frame to search in
End – The end of the time frame to search in
Max – The maximum number of records returned
 	
Response
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
VelXpk – The peak velocity of the x-axis (in/s)
VelXpp – The peak-to-peak velocity of the x-axis (in/s)
VelXrms – The RMS velocity of the x-axis (in/s)
VelYpk – The peak velocity of the y-axis (in/s)
VelYpp – The peak-to-peak velocity of the y-axis (in/s)
VelYrms – The RMS velocity of the y-axis (in/s)
VelZpk – The peak velocity of the z-axis (in/s)
VelZpp – The peak-to-peak velocity of the z-axis (in/s)
VelZrms – The RMS velocity of the z-axis (in/s)
	{
	"Serials": [
	int
	],
	"Start": *datetime*,
	"End": *datetime*,
	"Max": *int*
	}
		[
		{
		"ID": *int*,
		"Serial": *int*,
		"Time": *datetime*,
		"Xpk": *float*,
		"Xpp": *float*,
		"Xrms": *float*,
		"Ypk": *float*,
		"Ypp": *float*,
		"Yrms": *float*,
		"Zpk": *float*,
		"Zpp": *float*,
		"Zrms": *float*,
		"VelXpk": *float*,
		"VelXpp": *float*,
		"VelXrms": *float*,
		"VelYpk": *float*,
		"VelYpp": *float*,
		"VelYrms": *float*,
		"VelZpk": *float*,
		"VelZpp": *float*,
		"VelZrms": *float*
		}
		]

dyn/info

Description	Payload	Response

Updates dynamic sensor nickname and returns its updated record.
 	
Payload
Serial – Serial number of sensor
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user-specified name of the sensor
Favorite – The user-specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
VelocityMode – If the sensor is configured into velocity mode (Not available)
 	
Response
Serial – Serial number of the sensor
Connected – Connection status of sensor to gateway
AccessPoint – The gateway the sensor is connected to
PartNum – The part number of the sensor
ReadRate – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
ReadPeriod – Length of time in milliseconds
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
Fs – The actual sampling frequency of the reading
Fmax – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000]
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user-specified name of the sensor
Favorite – The user-specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
VelocityMode – If the sensor is configured into velocity mode (Not available)
	{
	“Serial”: *int*,
	“Machine”: *int*,
	“Early”: *float*,
	“Crit”: *float*,
	“Nickname”: *str*,
	“Favorite”: *bool*,
	“EarlyUnit”: *str*,
	“CritUnit”: *str*,
	“VelocityMode”: *bool*
	}
		[
		{
		“Serial”: *int*,
		“Connected”: *bool*,
		“AccessPoint”: *str*,
		“PartNum”: *str*,
		“ReadRate”: *int*,
		“GMode”: *str*,
		“FreqMode”: *int*,
		“Coupling”: *bool*,
		“ReadPeriod”: *int*,
		“Samples”: *int*,
		“Fs”: *int*,
		“Fmax”: *float*,
		“HwVer”: *str*,
		“FmVer”: *str*,
		“Machine”: *int*,
		“Early”: *float*,
		“Crit”: *float*,
		“Nickname”: *str*,
		“Favorite”: *bool*,
		“EarlyUnit”: *str*,
		“CritUnit”: *str*,
		“VelocityMode”: *bool*
		}
		]

Subscribe Topics

dyn/notify

Description	Payload

Notifies when a dynamic sensor has connected or disconnected from the system. To identify if it's a connection or disconnection event, use the "Connected" value in the payload.
 	
Payload
Serial – Serial number of the sensor
Connected – Connection status of Sensor to Gateway
AccessPoint – The Gateway the sensor is connected to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
ReadPeriod - Length of reading in milliseconds
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
Fs – The actual sampling frequency of a reading
Fmax – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000]
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user specified name of the sensor
Favorite – The user specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
	{
	"Serial": *int*,
	"Connected": *bool*,
	"AccessPoint": *str*,
	"PartNum": *str*,
	"ReadRate": *int*,
	"GMode": *str*,
	"FreqMode": *int*,
	"Coupling": *bool*,
	"ReadPeriod": *int*,
	"Samples": *int*,
	"Fs": *int*,
	"Fmax": *float*,
	"HwVer": *str*,
	"FmVer": *str*,
	"Machine": *str*,
	"Early": *float*,
	"Crit": *float*,
	"Nickname": *str*,
	"Favorite": *bool*,
	"EarlyUnit": *str*,
	"CritUnit": *str*,
	"VelocityMode": *bool*
	}

dyn/reading/notify

Description	Payload

Notifies when a dynamic sensor tries to start a vibration reading.
 	
Payload
Serial – The serial number of the sensor that attempted to start a reading
Success – The success status of the reading starting
	{
	"Serial": *int*,
	"Success": *bool*
	}

dyn/vib/notify

Description	Payload

Notifies when a new dynamic sensor vibration reading has occurred.
 	
Payload
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
X – A list of the raw values on the x-axis
Y – A list of the raw values on the y-axis
Z – A list of the raw values on the z-axis
Plot – The correlating time of axis data
ReadPeriod – Total elapsed time of the reading
Samples – Total samples in the reading
Fs – The actual sampling frequency of the reading
	{
	"ID": *int*,
	"Serial": *int*,
	"Time": *datetime*,
	"Xpk": *float*,
	"Xpp": *float*,
	"Xrms": *float*,
	"Ypk": *float*,
	"Ypp": *float*,
	"Yrms": *float*,
	"Zpk": *float*,
	"Zpp": *float*,
	"Zrms": *float*,
	"X": [*float*, ...],
	"Y": [*float*, ...],
	"Z": [*float*, ...],
	"Plot": [*float*, ...],
	"ReadPoint": *int*,
	"Samples": *int*,
	"Fs": *int*
	}

dyn/temp/notify

Description	Payload

Notifies when a new dynamic sensor vibration reading has occurred.
 	
Payload
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Temp – The temperature capacity as a percentage
	{
	"ID": *int*,
	"Serial": *int*,
	"Time": *datetime*,
	"Temp": *int*
	}

dyn/batt/notify

Description	Payload

Notifies when a new dynamic sensor battery reading has occurred.
 	
Payload
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Batt – The battery capacity as a percentage
	{
	"ID": *int*,
	"Serial": *int*,
	"Time": *datetime*,
	"Batt": *int*
	}

dyn/config/notify

Description	Payload

Notifies when a dynamic sensor's configuration has changed.
 	
Payload
Serial – Serial number of the sensor
Connected – Connection status of Sensor to Gateway
AccessPoint – The Gateway the sensor is connected to
PartNum – Part number of the sensor
ReadRate – Frequency of automatic reading ~ [{-59 to -1} (Minute), 0 (Disabled), {1 to 24} (Hour)]
GMode – The dynamic range of the sensor ~ [+/-8g, +/-16g, +/-32g, +/-64g]
FreqMode – Sampling rate of the sensor ~ [400, 800, 1600, 3200, 6400, 12800, 25600]
Coupling – Gravitational acceleration is removed from a reading
ReadPeriod - Length of reading in milliseconds
Samples – Total number of samples in a reading ~ [1600, 3200, 6400, 12800, 25600]
Fs – The actual sampling frequency of a reading
Fmax – The fmax the reading is measured up to ~ [156.25, 312.5, 625, 1250, 2500, 5000, 10000]
HwVer – Sensor hardware version
FmVer – Sensor firmware version
Machine – Machine group ID the sensor is organized in
Early – Value of an early alert
Crit – Value of a critical alert
Nickname – The user specified name of the sensor
Favorite – The user specified favorited status
EarlyUnit – The unit that an early alert is measured in [RMS, Peak, Peak to Peak]
CritUnit – The unit that a critical alert is measured in [RMS, Peak, Peak to Peak]
	{
	"Serial": *int*,
	"Connected": *bool*,
	"AccessPoint": *str*,
	"PartNum": *str*,
	"ReadRate": *int*,
	"GMode": *str*,
	"FreqMode": *int*,
	"Coupling": *bool*,
	"ReadPeriod": *int*,
	"Samples": *int*,
	"Fs": *int*,
	"Fmax": *float*,
	"HwVer": *str*,
	"FmVer": *str*,
	"Machine": *str*,
	"Early": *float*,
	"Crit": *float*,
	"Nickname": *str*,
	"Favorite": *bool*,
	"EarlyUnit": *str*,
	"CritUnit": *str*,
	"VelocityMode": *bool*
	}

proc/vib/notify/lite

Description	Payload

Notifies when a new dynamic sensor vibration reading has occurred. Contains only overall data.
 	
Payload
ID – The unique ID of the reading
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
	{
	"ID": *int*,
	"Serial": *int*,
	"Time": *datetime*,
	"Xrms": *float*,
	"Xpk": *float*,
	"Xpp": *float*,
	"Yrms": *float*,
	"Ypk": *float*,
	"Ypp": *float*,
	"Zrms": *float*,
	"Zpk": *float*,
	"Zpp": *float*
	}

proc/reading/notify

Description	Payload

Notifies when a new process control sensor reading has occurred.
 	
Payload
Serial – The serial number of the sensor that took the reading
Time – The date and time the reading occurred
Xpk – The peak value of the x-axis
Xpp – The peak-to-peak value of the x-axis
Xrms – The RMS value of the x-axis
Ypk – The peak value of the y-axis
Ypp – The peak-to-peak value of the y-axis
Yrms – The RMS value of the y-axis
Zpk – The peak value of the z-axis
Zpp – The peak-to-peak value of the z-axis
Zrms – The RMS value of the z-axis
Temp – The temperature of the reading
Batt – The battery level of the sensor at the time of the reading in percentage
	{
	"Serial": *int*,
	"Time": *datetime*,
	"Xrms": *float*,
	"Xpk": *float*,
	"Xpp": *float*,
	"Yrms": *float*,
	"Ypk": *float*,
	"Ypp": *float*,
	"Zrms": *float*,
	"Zpk": *float*,
	"Zpp": *float*,
	"Temp": *int*,
	"Batt": *int*
	}

proc/checkin/notify

Description	Payload

Notifies when a process control sensor has sent a transmission to a gateway, but no new reading occurred.
 	
Payload
Serial – The serial number of the sensor that checked in
Time – The date and time the sensor checked in
	{
	"Serial": *int*,
	"Time": *datetime*
	}

ap/notify

Description	Payload

Notifies when a new gateway has been connected or disconnected from the system.
 	
Payload
Serial – The serial number of the gateway that connected/disconnected
Connected – The connection status of the gateway to the system
Firmware – The firmware of the gateway
Software – The software version of the gateway
Nickname – The user-defined nickname of the gateway
	{
	"Serial": *int*,
	"Connected": *bool*,
	"Firmware": *str*,
	"Hardware": *str*,
	"Software": *str*,
	"Nickname": *str*
	}

error/notify

Description	Payload

Notifies when a new error occurs.
 	
Payload
Attempt – The topic or WebSocket command being executed when the error occurred
Error – The error message of the error
	{
	"Attempt": *str*,
	"Error": *str*
	}

status/notify

Description	Payload

Notifies when a new status event occurs.
 	
Payload
Status – The status message of the event
	{
	"Status": *str*
	}

will	
Description	**Payload**

Notifies when the connection to a Gateway is lost.
 	
Payload
Message – The message of the Last Will
	{
	"Message": *"str or JSON"*
	}