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IoT Technologies

Captis Cloud Configuration Guide

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Contents

1 Scope

The purpose of this document is to detail the Captis V1.2 and V1.0 device configuration[1] via the Captis Management Application on Captis Cloud.

2 Configuration Parameters

The following categories and configuration options contained within will be explored in further detail throughout this section.

- Device
- Connectivity
- Sensors
- Logging
- Alarms
- Network
- Server
- Save

2.1 Device

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Equipment Name	Name of device	Limit of 40 characters	Captis
Time-zone (UTC Offset)	The time zone that you would like the device to report in with UTC offset	Drop down menu of all UTC time zones	UTC±00:00
Tamper Switch Action	What occurs when the tamper is tripped **None**: No Action **Send**: Initiate a network connection	None or Send	None
GPS (Available on Captis Recharge 1.2 and Captis Power+ 1.2 **only**)	When a GPS fix is attempted. **Manual**: Only when receiving the GPS Shell Command **On Send**: Every network connection.	Manual or On Send	Manual

[1]

2.2 Connectivity

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Send Interval	How often the device wakes during the day to send all logged data to the platform	Minimum of 5 minutes	Once per day
Time of Day Send	If you want the device to wake up at a specific time in the day	Enable or Disable	Enable
Time of Day	The specific time for the device to wake up in 24-hour time	Complete range for 24-hour time	00:00 UTC
Send Interval	How often the device wakes during the day to send all logged data to the platform	Minimum of 5 minutes	Once per day

2.3 Sensors

The below configurations for sensors will differ depending on the Captis device and are labelled accordingly. For Modbus, the maximum number of configurable registers via the Captis Management application is 10. For further assistance on this, please contact support@kallipr.com

2.3.1 Captis Multi, Captis Power+ & Captis Recharge 1.2

General

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Waketime	Time between sensor power turning on and sensor values being read	Any positive number	100 milliseconds
1 Wire Sensor Enable	Captis device will search for devices on the 1 wire bus and get measurements for them every measurement interval	Enable or Disable	Disable
Digital Output Mode	How the digital output is controlled **Manual Control**: Using the relay operation in Cumulocity **From Alarm**: As an action from process alarm (if configured) **During Log**: Once every log interval **Time of Day**: Once per day at the digital output time configured	Disabled, Manual Control, From Alarm, During Log, and Time of Day	Disabled

Digital In 1

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Digital Input 1 Enable	Captis device will record datapoints from digital input 1 depending on the type selected	Enable or Disable	Disable
Type	As stated in options	1. Pulse Interval and Total Value on Each Interval 2. Switch 3. Pulse Interval and Total Value on Change (both values) 4. Pulse Interval Value Only (No Total Value) 5. Pulse Interval Value on Change (No Total Value) 6. Pulse Total Value Only (No Interval Value) 7. Pulse Total Value on Change (No Interval Value)	Pulse Interval and Total value on each interval
Pulse Scale Factor (1 Pulse = x Litres)	The scaling factor to convert from pulses to the pulse units	Limit of 3 decimal places	1
Pulse Units (Litres)	Units associated with pulse measurements.	Limit of 10 characters	L
Offset (Meter Read)	The value added to the interval totalizer to match the attached meter totalizer.	-2,147,483,648 to 2,147,483,648	0
Flash LED	Status LED will flash upon pulse received or switch change of state.	Enable or Disable	Disable

Digital In 2

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Digital Input 2 Enable	Captis device will record datapoints from digital input 2 depending on the type selected	Enable or Disable	Disable
Type	As stated in options	1. Pulse Interval and Total Value on Each Interval 2. Switch 3. Pulse Interval and Total Value on Change (both values) 4. Pulse Interval Value Only (No Total Value) 5. Pulse Interval Value on Change (No Total Value) 6. Pulse Total Value Only (No Interval Value) 7. Pulse Total Value on Change (No Interval Value)	Pulse Interval and Total value on each interval
Pulse Scale Factor (1 Pulse = x Litres)	The scaling factor to convert from pulses to the pulse units	Limit of 3 decimal places	1
Pulse Units (Litres)	Units associated with pulse measurements	Limit of 10 characters	L
Offset (Meter Read)	The value added to the interval totalizer to match the attached meter totalizer	-2,147,483,648 to 2,147,483,648	0
Flash LED	Status LED will flash upon pulse received or switch change of state	Enable or Disable	Disable

Analog Sensor 1 (0-10V)

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Analog Sensor 1 Enable	Captis will record from Analog channel 1	Enable or Disable	Disable
Offset	The value added to the scaled analog reading	Limit of 3 decimal places	0
Span	The scaling factor to convert from voltage to the defined units	Limit of 3 decimal places	10
Units	Desired units	Limit of 10 characters	m

Analog Sensor 2 (0-20mA)

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Analog Sensor 2 Enable	Captis will record from Analog channel 2	Enable or Disable	Disable
Offset	The value added to the scaled analog reading	Limit of 3 decimal places	0
Span	The scaling factor to convert from mA to the defined units	Limit of 3 decimal places	10
Units	Desired units	Limit of 10 characters	m

Serial

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Serial Enable	Captis will talk to sensors in the serial port and record based on the protocol selected	Enable or Disable	Disabled
Parity	Parity	8N1, 8N2, 8E1, 8O1	Blank
Baud Rate	Baud Rate	9600, 19200, 38400, 57600, or 115200	Blank
Physical Layer	Physical Layer	RS232 or RS485	Blank
Modbus	The serial driver used	Modbus, Maxsonar, or Aanderaa 4319	Blank

Modbus Inputs (Only available if all subcategories under Serial is entered)

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Display Name	The name of the measurement graph that will appear in Captis Cloud for the defined Modbus input number	Limit of 10 characters	Blank
Slave Address	The sensor slave address	1-255	0
Register	The Modbus register for the datapoint	0-65535	0
Register Type	The register type for this Modbus input	Holding or Input	Holding
Data Type	How the Captis device will interpret the register data. UINT32, SINT32, and Float will read 2 sequential registers	UINT16, Float, UINT32, SINT16, or SINT32	UINT16
Data Bytes Order	For UINT32, SINT32, and Float this determines how the register value is mapped to the Captis device value	ABCD, DCBA, CDAB, or BADC	ABCD
Offset	The value added to the scaled measurement	Limit of 3 decimal places	0
Scaling	The scale factor to convert from register value to the defined units	Limit of 3 decimal places	1
Units	The defined units	Limit of 10 characters	Blank

2.3.2 Captis Pulse 1.2, Captis Pulse Lite & Captis Metrum

Digital In 1

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Digital Input 1 Enable	Captis device will record datapoints from digital input 1 depending on the type selected	Enable or Disable	Disable
Type	As stated in options	1. Pulse Interval and Total Value on Each Interval 2. Switch 3. Pulse Interval and Total Value on Change (both values) 4. Pulse Interval Value Only (No Total Value) 5. Pulse Interval Value on Change (No Total Value) 6. Pulse Total Value Only (No Interval Value) 7. Pulse Total Value on Change (No Interval Value)	Pulse Interval and Total value on each interval
Pulse Scale Factor (1 Pulse = x Litres)	The scaling factor to convert from pulses to the pulse units	Limit of 3 decimal places	1
Pulse Units (Litres)	Units associated with pulse measurements	Limit of 10 characters	L
Offset (Meter Read)	The value added to the interval totalizer to match the attached meter totalizer	-2,147,483,648 to 2,147,483,648	0
Flash LED	Status LED will flash upon pulse received or switch change of state	Enable or Disable	Disable

Digital In 2

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Digital Input 2 Enable	Captis device will record datapoints from digital input 2 depending on the type selected	Enable or Disable	Disable
Type	As stated in options	1. Pulse Interval and Total Value on Each Interval 2. Switch 3. Pulse Interval and Total Value on Change (both values) 4. Pulse Interval Value Only (No Total Value) 5. Pulse Interval Value on Change (No Total Value) 6. Pulse Total Value Only (No Interval Value) 7. Pulse Total Value on Change (No Interval Value)	Pulse Interval and Total value on each interval
Pulse Scale Factor (1 Pulse = x Litres)	The scaling factor to convert from pulses to the pulse units	Limit of 3 decimal places	1
Pulse Units (Litres)	Units associated with pulse measurements	Limit of 10 characters	L
Offset (Meter Read)	The value added to the interval totalizer to match the attached meter totalizer	-2,147,483,648 to 2,147,483,648	0
Flash LED	Status LED will flash upon pulse received or switch change of state	Enable or Disable	Disable

2.4 Logging

General

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Log Interval	How often the device will log data	Minimum is 10 seconds, and the maximum is the send interval configured.	15 Minutes
Trigger Event	What causes the measurement to occur **Clock**: Uses the log interval **Switch Input**: Is a change of state on any configured switch input	Clock, Switch Input, or Both	Clock

Fast Logging

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Log Interval	How often the device will log data when it enters fast logging	Minimum is 10 seconds, and the maximum is the fast logging send interval configured	1 Minute
Send Interval	How often the device will send data to the platform when it enters fast logging	Minimum is 5 minutes	1 Hour

2.5 Alarms

The below configurations for alarms will differ depending on the Captis device and are labelled accordingly. In addition, alarming is disabled by default and no action is required unless alarms are to be configured.

2.5.1 Captis Multi, Captis Power+ & Captis Recharge 1.2

Enabled Alarm Configurations

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Sensor type	The type of sensor that will trigger the alarm	None, Analog, 1-Wire Temperature, Pulse, Switch, Modbus, Expansion	None
Sensor Channel	The channel that the alarm is associated with	**Pulse, Switch or Analog**: 1 or 2 **1-Wire Temperature**: 1 or the probe address **Modbus**: 1 to the number of defined registers in the configuration **Expansion**: Select from the dropdown list.	Blank
Setpoint	The point at which the alarm will trigger	Limit of 3 decimal places	10
Hysteresis	The value added and subtracted from the setpoint for the alarm set and clear thresholds	Limit of 3 decimal places	0
Trigger	The comparison type selected from the drop-down menu	Drop down menu	Blank
Action	What occurs when the alarm is triggered	Send Logged, Fast Logging, Digital Out, Digital Set, and Digital Clear	None

1.1.1 Captis Pulse 1.2, Captis Pulse Lite & Captis Metrum

Enabled Alarm Configurations

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Sensor type	The type of sensor that will trigger the alarm	None, Pulse, or Switch	None
Sensor Channel	The channel that the alarm is associated with	**Pulse, Switch or Analog**: 1 or 2	Blank
Setpoint	The point at which the alarm will trigger	Limit of 3 decimal places	10
Hysteresis	The value added and subtracted from the setpoint for the alarm set and clear thresholds	Limit of 3 decimal places	0
Trigger	The comparison type selected from the drop-down menu	Drop down menu	Blank
Action	What occurs when the alarm is triggered	Send Logged or Fast Logging	None

1.2 Network

The below configurations for network will differ depending on the Captis device and are labelled accordingly.

1.2.1 Captis Multi, Captis Pulse, Captis Power+ & Captis Recharge 1.2

Antenna

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Mode	The antenna that the device will select first when it makes a connection. If it is unable to connect on the preferred antenna type, it will switch to the other	Prefer Internal or Prefer External	Prefer Internal

APN

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
APN	APN	Limit of 40 characters	telstra.iot
Protocol	IP Protocol	IPv4, IPv6, or IPv4 and IPv6	IPv4
Radio	Radio Access Type	CATM1, NBIoT, or CATM1 and NBIoT	CAT M1

1.2.2 Captis Pulse Lite and Captis Metrum

APN

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
APN	APN	Limit of 40 characters	telstra.iot
Protocol	IP Protocol	IPv4, IPv6, or IPv4 and IPv6	IPv4
Radio	Radio Access Type	CATM1, NBIoT, or CATM1 and NBIoT	CAT M1

1.3 Server

By default, there will be two servers configured in a device. One server will be for the bootstrap server and the second server will be the one with the measurements, events, information, configuration, operations (FOTA), and shell commands roles enabled.

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Address	The URL address including the protocol and domain	Protocol is max 6 chars, domain is max 100 chars and port can be optionally specified in the format protocol://domain:port	mqtts://apj.cumulocity.com
Roles	The role of the server noting that **only one server can have the configuration and measurement's role**	Measurement, Events, Information, Configuration, Operations (FOTA), Bootstrap, and Shell Commands	One server will have the bootstrap role only and the second server will have all roles except bootstrap.
Variant	The MQTT communication protocol	Cumulocity or Azure	Cumulocity
Client ID	The MQTT client ID	Limit of 100 characters	%CCID%
Username	The MQTT username	Limit of 100 characters	Blank
Password**	The MQTT password	Limit of 200 characters	Blank

DESCRIPTION	DEFINITION	OPTIONS	DEFAULT
Scope Identifier*	The scope ID for the DPS server	Limit of 20 characters	Blank
Device ID*	The Azure device ID	Limit of 100 characters	Blank
Enrolment Key*	The base 64 symmetric key	Limit of 100 characters	Blank

Notes:

- The fields marked with * are only visible if the “Variant” category is selected as “Azure” with the “Bootstrap” role selected. If the “Bootstrap” role is not selected, only “Device ID” and “Enrolment Key” are available.
- The fields marked with ** are only visible if you select set password.

1.4 Save

Saving the updated configuration will queue the configuration, which will be applied to the device at the next connection interval. This can be at the scheduled connection interval (see Connectivity, Time of Day Send)

If you have any further questions regarding any of the configuration parameters, please send your inquiry to support@kallipr.com