Public 24.1 - v2.0.0

New Product Features

Increased storage - I•C4C GO

Starting from this release we included the support for I-C4C devices with an increased flash memory storage of 16 MB.
The original I•C4C PRO and BASIC variants had 8 MB of storage.

Rest API improvements

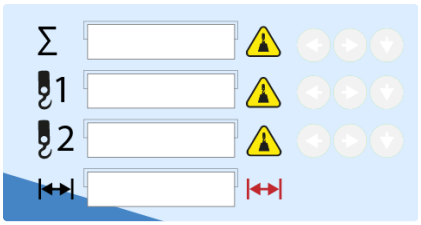
The Rest API is providing the information that is displayed on the web-interface. Data is is presented in a text-based format called JSON.
In the previous version the JSON text was composed without using a software library. All new API calls are implemented using a library, which improves code performance and readability. The rewriting of the REST API reduces the load on the CPU and increases the performance of the web-interface.

v1.0.0 - Old REST API	Waiting	Size
/input_handler	55 ms	384 B
/output_handler	65 ms	266 B
/analogOutput_handler	65 ms	115 B
	185 ms	**765 B**

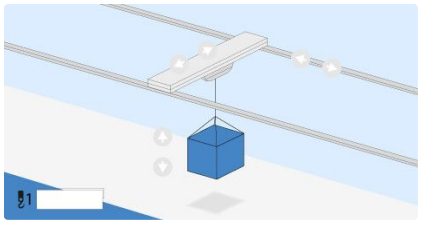
v2.0.0 - New REST API	Waiting	Size
/api/v1/status/IO/	15 ms	1600 B

Ikuflex

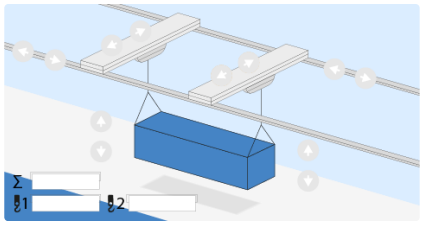
Ikuflex is the name of the protocol that allows the I-C4C GO to present information on the Display of the radio transmitter.
The IC4C-Go sends the information to the radio receiver over CAN and the radio receivers transmits the information to the radio transmitter via a wireless signal.
The current standard for tandem applications is developed for IK3 & IK4 radio transmitter that are equipped with a TM80 radio module and a 4.3” display.
When developing the user screens we applied the “dark cockpit” concept which we borrowed from the aviation industry. This means that when everything is functioning as it should there are no icons or colors that are drawing the attention from the operator.
When certain movements are not allowed their icon is shown on the display so that the operator can see the current status of the system in the blink of an eye.
This Ikuflex integration shows the potential of our product ecosystem.
Custom screens can be created on request, the creation of these screens is a multi-disciplinary effort since it requires designing the graphics and symbols, programming the radio transmitter and the logic in the IC4C-GO.



System Overview



Single Hoist View



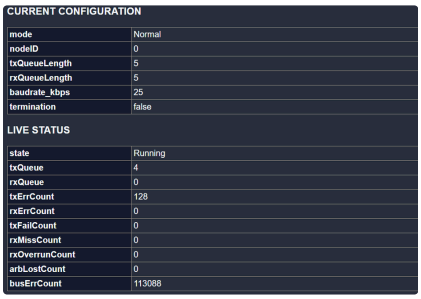
Tandem View

Can bus monitoring

The status and configuration of the CAN bus are now visible for any logged in user.

When the system is configured to communicate over CAN with connected device their status is shown in a Live-view. Devices that are not available are marked as red. Active devices from which data is received are shown in green with two buttons to visualize the mapped data or raw PDO information.

This screen was added to improve the troubleshooting proces of devices connected to the CAN bus without the need of a can bus dongle.



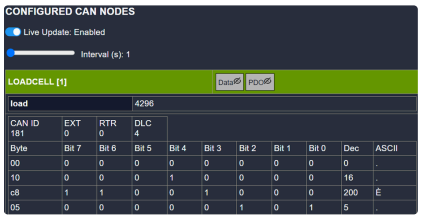
CURRENT CONFIGURATION

mode	Normal
nodeID	0
txQueueLength	5
rxQueueLength	5
baudrate_kbps	25
termination	false

LIVE STATUS

state	Running
txQueue	4
rxQueue	0
txErrCount	128
rxErrCount	0
txFailCount	0
rxMissCount	0
rxOverrunCount	0
arbLostCount	0
busErrCount	113088

CAN Configuration and Status



CONFIGURED CAN NODES

Live Update: Enabled

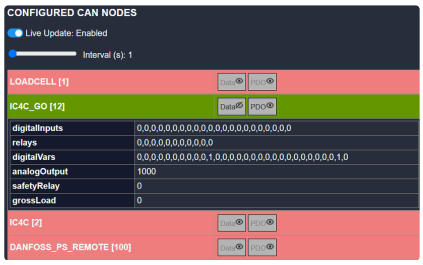
Interval (s): 1

LOADCELL [1] Data PDO

load 4296

CAN ID 181	EXT 0	RTR 0	DLC 4							
Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Dec	ASCII
00	0	0	0	0	0	0	0	0	0	.
10	0	0	0	1	0	0	0	0	16	.
c8	1	1	0	0	1	0	0	0	200	È
05	0	0	0	0	0	1	0	1	5	.

Live info from loadcell



CONFIGURED CAN NODES

Live Update: Enabled

Interval (s): 1

LOADCELL [1] Data PDO

IC4C_GO [12] Data PDO

digitalInputs	0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
relays	0,0,0,0,0,0,0,0,0,0
digitalVars	0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0
analogOutput	1000
safetyRelay	0
grossLoad	0

IC4C [2] Data PDO

DANFOSS_PS_REMOTE [100] Data PDO

Inactive devices shown in red

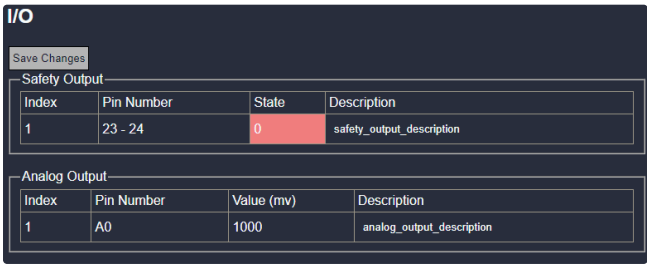
IO Naming

Any user that is connected to the IC4C-Go over Wi-Fi can open the I/O tab which shows a clear overview of the different inputs and outputs. They are shown with their pin number and corresponding state which is updated automatically.

The pin Number matches with the marking on the enclosure to avoid confusion.

When the user is logged-in it's possible to edit the text in the Description field so that the purpose of the Input/Output is clear.

The length of the description is limited to 40 characters.



I/O

Save Changes

Safety Output

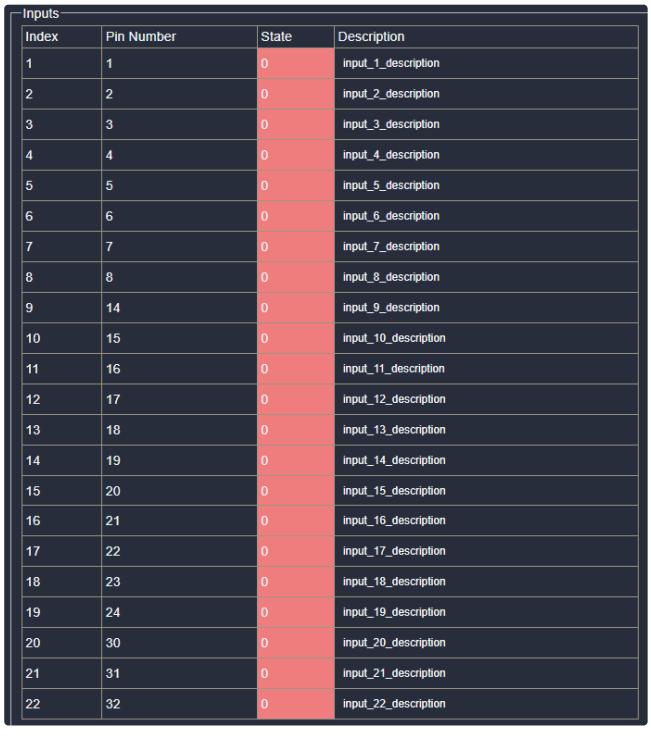
Index	Pin Number	State	Description
1	23 - 24	0	safety_output_description

Analog Output

Index	Pin Number	Value (mv)	Description
1	A0	1000	analog_output_description

Outputs

Index	Pin Number	State	Description
1	1 - 2	0	output_1_description
2	3 - 4	0	output_2_description
3	5 - 6	0	output_3_description
4	7 - 8	0	output_4_description
5	9 - 10	0	output_5_description
6	11 - 12	0	output_6_description
7	13 - 14	0	output_7_description
8	15 - 16	0	output_8_description
9	17 - 18	0	output_9_description
10	19 - 20	0	output_10_description
11	21 - 22	0	output_11_description



Inputs

Index	Pin Number	State	Description
1	1	0	input_1_description
2	2	0	input_2_description
3	3	0	input_3_description
4	4	0	input_4_description
5	5	0	input_5_description
6	6	0	input_6_description
7	7	0	input_7_description
8	8	0	input_8_description
9	14	0	input_9_description
10	15	0	input_10_description
11	16	0	input_11_description
12	17	0	input_12_description
13	18	0	input_13_description
14	19	0	input_14_description
15	20	0	input_15_description
16	21	0	input_16_description
17	22	0	input_17_description
18	23	0	input_18_description
19	24	0	input_19_description
20	30	0	input_20_description
21	31	0	input_21_description
22	32	0	input_22_description