



Software update Version 2

# SpaceLogic KNX DALI gateway Pro MTN6725-0101

Technical Product Presentation  
of the SW V2 update



Life Is On

Schneider  
Electric

# Agenda

## SpaceLogic KNX DALI gateway Pro V2



1. What is new & Update procedure
2. New features for Groups and ECGs
3. New features by ECG commissioning
4. DALI-2 Input devices in general
5. DALI-2 Motion detector input devices
6. DALI-2 Push-button input devices
7. DALI-2 Generic input devices
8. MQTT
9. KNX DALI gateways comparison

# New Software's

## Step 5 – FW update in detail (3/4)

- Download the *Device Firmware Update Tool* from se.com, install and run it

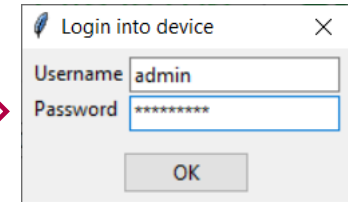
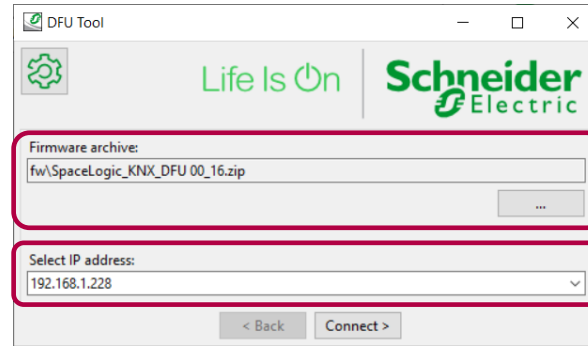
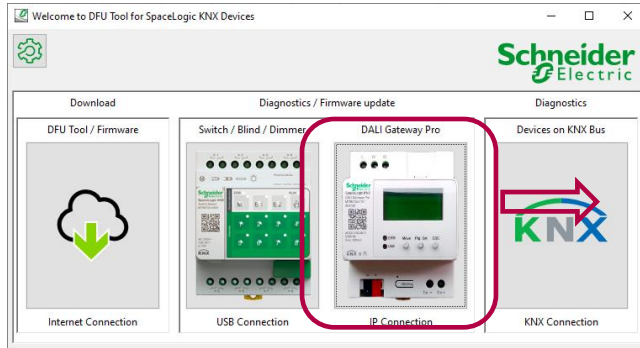
<https://www.se.com/ww/en/product/MTN6725-0101/spacelogic-knx-dali-gateway-pro-1ch-dali2/>

The screenshot shows the Schneider Electric website's 'Software and Firmware' page. The top navigation bar includes the Schneider Electric logo, a search bar, and the IMPACT Company logo. Below the navigation, there are tabs for 'Main information', 'Specifications', 'Sustainability', 'Documents', and 'Software and Firmware'. The 'Software and Firmware' tab is active, displaying a list of results. A filter dropdown for 'Document Category' is set to 'Software & Firmware (6)'. The search results show one item: 'SpaceLogic KNX DFU Tool for Master devices (EN) (00.06.00)', dated '26 June 2021 | Software - Release', with a download link for 'ZIP (36.1 MB)'. The page also features a 'Sort by most popular' dropdown and an 'Add to My Products' button.

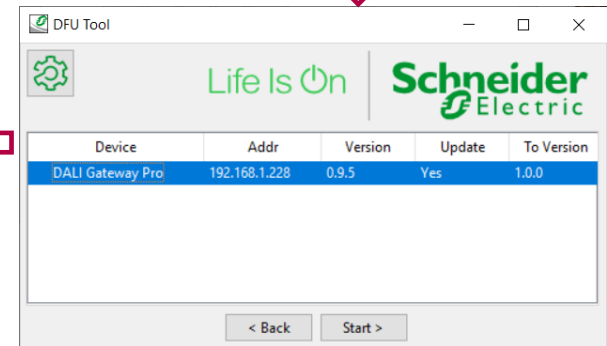
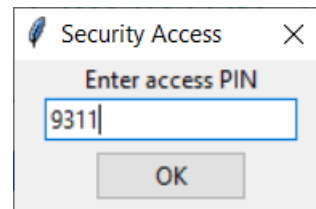
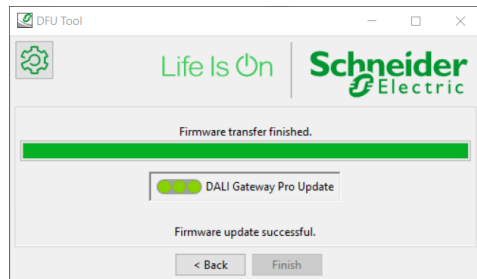
The screenshot shows the 'Welcome to DFU Tool for SpaceLogic KNX Devices' software interface. The window title is 'Welcome to DFU Tool for SpaceLogic KNX Devices'. The interface features the Schneider Electric logo in the top right corner. Below the logo, there are three main sections: 'Download', 'Diagnostics / Firmware update', and 'Diagnostics'. The 'Download' section contains a 'DFU Tool / Firmware' icon with a green arrow pointing down. The 'Diagnostics / Firmware update' section contains two icons: 'Switch / Blind / Dimmer' and 'DALI Gateway Pro'. The 'Diagnostics' section contains an icon for 'Devices on KNX Bus'. Each icon is accompanied by a small image of the respective device or tool.

# New Software's

## Step 5 – FW update in detail (4/4)



Note: You first have to login as admin and change the default password via a web-browser. You may not be logged in via the browser when doing the upgrade (only 1 admin session allowed)



The PIN-code must be entered in the parameters in ETS and the device must be downloaded

# KNX/DALI GW Overview: Software relationships

## FW, ETS application and DCA

### Schneider Electric KNX DALI Gateways - compatible Firmware / ETS / DCA Releases

Dali Gateway:	Firmware:	ETS:	Plugin:	DCA:
<b>MTN6725-0003</b>	0.2.0 - 0.2.8	7308	No	2.1.1.0
<b>MTN6725-0003</b>	0.3.0 - 0.3.5	7312/V1.0	No	1.0.0.1 / 1.0.2.0 / 1.1.0.0 / 4.0.0.0
<b>MTN6725-0003</b>	0.3.0 - 0.3.5	7312/V1.1	No	1.1.2.0-1.1.2.1 / 4.0.0.0
★ <b>MTN6725-0003</b>	1.4.2	7312/V4.0	No	4.0.0.0
<b>MTN6725-0004</b>	0.2.0 - 0.2.8	7309	No	2.1.1.0
<b>MTN6725-0004</b>	0.3.0 - 0.3.5	7313/V1.0	No	1.0.0.1 / 1.0.2.0 / 1.1.0.0 / 4.0.0.0
<b>MTN6725-0004</b>	0.3.0 - 0.3.5	7313/V1.1	No	1.1.2.0-1.1.2.1 / 4.0.0.0
★ <b>MTN6725-0004</b>	1.4.2	7313/V4.0	No	4.0.0.0
<b>MTN6725-0101</b>	1.0.4 - 1.2.4	7311/V1.0	No	1.1.0.0 -1.2.1.0
<b>MTN6725-0101</b>	1.2.0 - 1.2.4	7311/V1.2	No	1.2.1.0 (remains)
★ <b>MTN6725-0101</b>	2.0.0 - 2.0.2	7311/V2.0	No	2.0.1.0 (new)

Nov 2023

Nov 2023

# New features for Groups and ECGs

## Energy/Power reporting – Device Type 51 according to DALI part 252

I can report & aggregate lighting power demand (all GW)

General

Behaviour

**Analysis and Service**

Special Functions

IP Network

+ Groups

+ Single ECG

+ Motion/Brightness

+ Generic DALI Inputs

### Energy Reporting

**i** ECGs Device Type 51 according DALI Part 252 -Energy Reporting- provide Energy information. Required information can be read from ECG and the value is provided as KNX communication object.

Enable Energy Reporting: No

No (checked)

Active Power [W]

Active Energy [Wh]

**i** ECGs provide delayed current consumption after changing the switching value. In addition, the value is queried cyclically every hour.

Delay time to read energy data after value change: 32 Seconds

Example with “Active energy”

?	Numb	Name	Object Fun	Length	Data Type	C	R	W	T	U	I
🔌	29	Total Active Energy	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
🔌	117	G1, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
🔌	627	G16, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
🔌	652	ECG 1, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-
🔌	2164	ECG 64, Active Energy,	Value	4 bytes	active energy (Wh)	C	R	-	T	-	-

- ECGs of type DT-51 provides energy information and the gateway support to read energy or power values and make the information available on KNX group objects
  - Active Energy [Wh]: DPT13.010, 4 byte signed value
  - Power [W]: DPT14.056, 4 byte float value
- Select under *General* -> *Analysis and service* whether active power or active energy should be read
- The value is read from the ECG every hour and also after a status change
  - In the event of a status change, the correct value should be available within 30s in the ECG, according to standard.
  - As it is manufacturer dependent, the delay time can be adjusted (4-60s), or no specific reading by status change
- Automatic calculation per group and per device
  - By enabling the function, a group object for the device and one group object per group is made available
  - It is also possible to enable a group object for each ECG individually (*ECG x* -> *Analysis and Service*)

# New features by ECG commissioning

# New features for Groups and ECGs

## Automatically assign ECGs to a group by New and Post installation

I can directly assign all new found ECGs into a group (i.e. commission by power-group) (all GW)

Group No.	Group Description	Addr	Automatic Blinking
1		0	
1		1	
1		2	
1		3	
1		4	
1		5	
1		6	
1		7	
1		8	

- By selecting “Group assign” and a group number, all found ECGs will automatically end up in the table and being assigned to the group
  - No need to drag the ECGs from the “found ECG” window to the table
  - No need to drag the ECGs to the group
- Available for New and Post installation
  - If the different DALI groups corresponds to the electrical circuits, the groups can be powered one after the other using post installation with automatic group assignment in-between, thus avoiding any drag&drop.

Do you really want to start a new installation?

Take over external configured devices

Group Assign Group01

Cancel OK

Do you really want to start a post installation?  
Please, verify that all ECGs are connected and powered!

Keep already assigned ECGs

Delete externally programmed Short Address

Group Assign Group02

Cancel OK



# New features for Groups and ECGs

## Overtake external configured devices by New installation

I can read-in pre-programmed ECG addresses and group addresses (commissioned by Installer) (DaliPro)

The screenshot shows a software interface with a table of ECGs and a dialog box. The table has columns: Type, Flag, ECG No., Description, Group No., Group Description, Addr, and Automatic Blinking. A red box highlights the first row of the table. The dialog box is titled 'New Installation' and contains the text 'Do you really want to start a new installation?'. It has two checkboxes: 'Take over external configured devices' (checked) and 'Group Assign' (unchecked). There is also a dropdown menu for 'Group Assign' with the text 'Not assigned ECGs'. The dialog box has 'Cancel' and 'OK' buttons.

Type	Flag	ECG No.	Description	Group No.	Group Description	Addr	Automatic Blinking
Group01	OK	1		1		0	
Group02	OK	2		1		1	
Group03	OK					2	
Group04	OK					3	
Group05	OK					4	
Group06	OK					5	
Group07	OK					6	
Group08	OK					7	
	OK					8	

- If a DALI segment has been commissioned by an external tool, it is now possible to take over and read the configuration
- The installer can now handover an addressed installation to the SI. ECG and wiring problems can then be discovered in an earlier phase.
- By New installation, enable the option *Take over external configured devices*
- The short and long addresses and group belonging are read
- Each short address is assigned to the corresponding ETS ECG no., i.e short address 0 is assigned ETS ECG No. 1. Another example: 2 found ECGs with short address 5 and 6 are assigned to ETS ECG No. 6 and 7
- NOTE:
  - The ECGs may not belong to several groups (currently multiple group assignment are kept)
  - Scene data are not read
  - The ETS application must be downloaded afterwards (to set System failure level and Power on level in the ECGs)

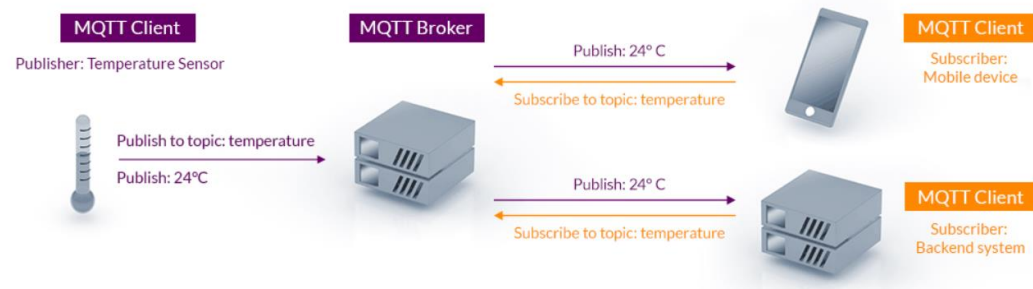
# MQTT protocol (Message Queuing Telemetry Transport)

# MQTT = Message Queuing Telemetry Transport

## IoT protocol on TCP/IP

- MQTT is designed for M2M and IoT
  - Lightweight, open, efficient and event driven
  - Scale to millions of things
  - Bi-directional communications
  - Secure (TLS, authentication by username/password, authorization to access data)
- Publish and subscribe messaging principal
  - Sender publish data on a MQTT server, originally called broker, and receiver(s) subscribe to the data
  - Clients never have direct contact with each other, which makes communication more efficient
  - The data are called Topics and are described with UTF-8 strings. Topics can be organized hierarchically in levels separated by forward slash /, e.g. *daliGW1/group/1/status*
  - A client can subscribe to multiple topics and can at the same time publish own topics
  - The server push the topics to the subscribers, no need to poll data

### MQTT Publish / Subscribe Architecture



[mqtt.org](http://mqtt.org) – information, FAQs and eLearnings

# MQTT in the DALI GW

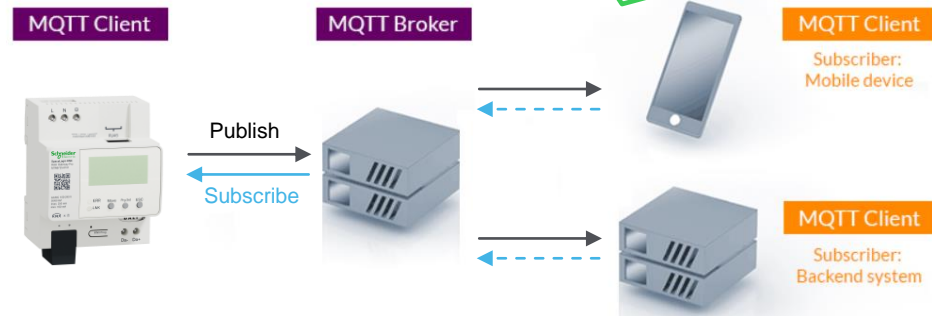
## Topics that are published & topics that are subscribed to

- Provide status to and control lighting from a management system, not necessarily capable to communicate directly with KNX
- Published topics
  - Overall statistics, e.g.
    - Number of ECGs, ECG/lamp/KNX/DALI failures, power/energy
  - Configuration data for ECGs and Groups, e.g.
    - Groups: group. no, group name, no of ECGs, no. of converters
    - ECGs: ECG.no, long and short DALI adr, ECG name, device type
  - Individual data for groups and individually controlled ECGs, e.g.
    - ECGs: alarms, brightness status, colour status, power/energy
    - Groups: statistics, alarms, brightness status, colour, power/energy
  - Emergency lights, e.g.
    - Status, test modes, test results
  - Sensors, e.g.
    - Sensor status/value, error
- Subscription topics for Groups and ECGs (i.e. command reception)
  - On/off, brightness 0-100%, colour temperature, RGB/W colour

As a System Integrator, I can:

- “offload” KNX-TP traffic by reporting lighting status over Ethernet
- Report “unlimited” DaliPro status to a central server, BMS or Cloud backend directly from the edge
- Interact/integrate with other systems
- Control “grouped” lights differently, outside of Dali grouping limits

As a residential end-user, I can control lights from my mobile phone



# MQTT in the DALI GW

## Generic KNX Inputs - additional topics to publish

+ General	Description	R101_CO2
+ Groups	Data Type	2 Byte float
+ Single ECG	Unit Type	ppm (DPT9.008)
+ Motion/Brightness		°C (DPT9.001)
+ Generic DALI Inputs		Pa (DPT9.006)
+ Push Buttons		kW (DPT9.024)
- Generic KNX Inputs		W/m2 (DPT9.022)
		m/s (DPT9.005)
		lux (DPT9.004)
		% Humidity (DPT9.007)
		s (DPT9.010)
		mA (DPT9.021)
		mV (DPT9.020)
		ppm (DPT9.008) ✓
		air flow (m3/h - DPT9.009)
		°F (DPT9.027)

The DALI-gateway works as a MQTT gateway for other KNX devices that like to publish topics (values)

- Up to 16 KNX values can in addition be published

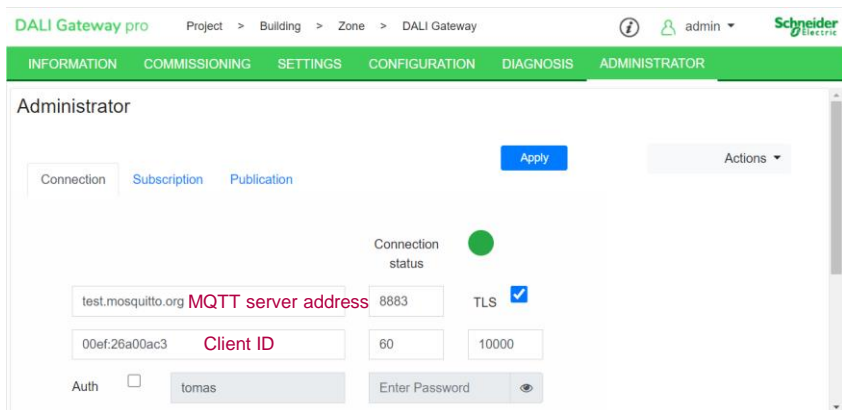
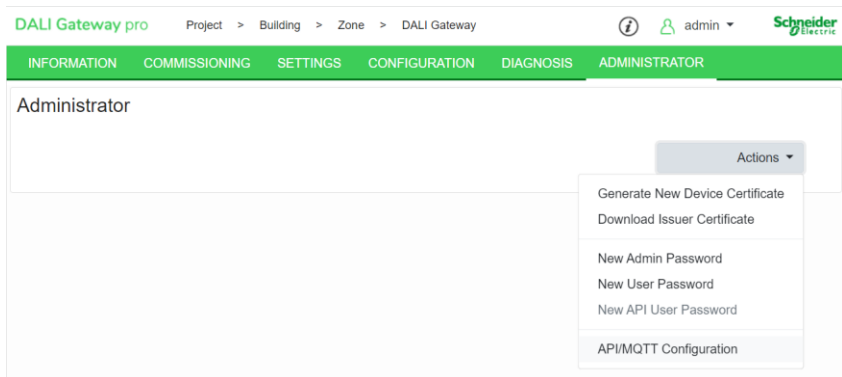
- Data types

2 Byte float
1 bit
1 Byte (0..100%)
1 Byte unsigned
1 Byte signed
2 Byte unsigned
2 Byte signed
2 Byte float ✓
4 Byte unsigned
4 Byte signed
4 Byte float
no object

- Available unit types are depending on selected Data type. Some data types also doesn't have a unit

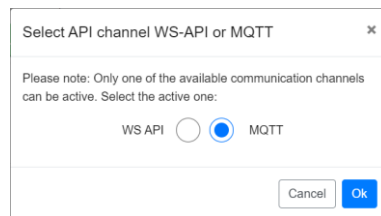
# MQTT configuration

## In webserver



- In the webserver, go to ADMINISTRATOR -> Actions -> API/MQTT Configuration

- Select MQTT in the following dialog



- Enter MQTT URL or IP address
- Enter unique client ID (default dali+serial no.)
- Enter port address and whether TLS shall be used (standard ports: 1883 plain, 8883 TLS)
- Keep alive: 60 s (default)
- Communication timeout: 10000 s (default)
- Auth: Authorization defined by MQTT server
- Click Apply -> Gateway reboots
- Go back and check connection status (green = OK)

# MQTT configuration

## Publication and Subscription

DALI Gateway pro Project > Building > Zone > DALI Gateway

INFORMATION COMMISSIONING SETTINGS CONFIGURATION DIAGNOSIS ADMINISTRATOR

Administrator

Connection Subscription **Publication** Apply

Publish Groups

00ef:26a00ac3/	group	QoS	0	Retain	<input type="checkbox"/>
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Publish Ecgs

Publish Emergency Lights

Publish Sensors

Publish KNX Datapoints

DALI Gateway pro Project > Building > Zone > DALI Gateway

INFORMATION COMMISSIONING SETTINGS CONFIGURATION DIAGNOSIS ADMINISTRATOR

Administrator

Connection **Subscription** Publication Apply

Enable Command Subscription  QoS 0 Allow Retained

cmd	00ef:26a00ac3/
-----	----------------

- The main topic can be only the client ID, but can also contain several location attributes which are set in the ETS parameters [Project-ID]/[Building-ID]/[Zone-ID]/client-ID, e.g. Office/1234/1A/00ef:26a00ac3/

General

Instruction: For configuration and DALI Commissioning you need the ETS DCA App installed. Refer to Manual how to install this App.

Behaviour	Device Name	DALI Gateway
Analysis and Service	Additional Information (optional)	
Special Functions	Project-ID	Office
IP Network	Building-ID	1234
+ Groups	Zone-ID	1A

- The next topic level names can be changed, i.e. group, ecg, emergency, sensor, knx
- Also the functions QoS (0, 1, 2) and Retain flag can be changed.
- By enabling “Subscription” properties of groups and individually controlled ECGs can be changed
  - On/Off, e.g:  
cmd/00ef:26a00ac3/group/1/status, payload on or off
  - Brightness value, e.g:  
cmd/00ef:26a00ac3/group/1/status, payload 0-255 or 0-100%
  - Colour temperature (or Colour), e.g.  
cmd/00ef:26a00ac3/group/1/status, payload 0-10000

# Example: Published topics seen with MQTT Explorer client

MQTT Explorer

Application Edit View

MQTT Explorer Search... DISCONNECT

```
▼ test.mosquitto.org
  ▼ 00ef:26a00ac3
    ▼ config
      ecgs = [{"Number":1,"ShortAddress":0,"LongAddress":1121629,"GroupName":3,"Name":"RED","DeviceType":0,"ColorType":0}, {"Number":2,"ShortAddress":1,"LongAddress":1121630,"GroupName":0,"Name":"GREEN","DeviceType":0,"ColorType":0}, {"Number":3,"Name":"TW","ColorType":4,"CntEcgs":1,"CntConverter":0}, {"Number":2,"Name":"RGBW","ColorType":7,"CntEcgs":1,"CntConverter":0}, {"Number":3,"Name":"RED","ColorType":0,"CntEcgs":1,"CntConverter":0}, {"Number":4,"Name":"RED","ColorType":0,"CntEcgs":1,"CntConverter":0}]
    ▼ ecg
      ▼ 10
        alarm = {"Alarm":1}
        status = {"Mode":0,"Value":100}
        ▶ 8 (2 topics, 8 messages)
        ▶ 9 (2 topics, 8 messages)
        ▶ 2 (1 topic, 3 messages)
        ▶ 3 (1 topic, 3 messages)
      ▼ emergency
        ▼ 6
          emstatus = {"ShortAdr":6,"EtsNumber":7,"State":1,"EmStatus":8,"EmMode":2,"EmFailure":0}
          emtest = {"ShortAdr":6,"EtsNumber":7,"TestResult":254,"TestMode":1,"TestFlags":0,"Hour":2,"Minute":46,"Second":9,"Day":5,"Month":1,"Year":12}
    ▼ group
      ▼ 1
        statistic = {"CntLamps":1,"CntEcgs":1,"CntConverter":0,"LampFailures":0,"EcgFailures":0,"ConverterFailures":0,"FailRate":0,"OperatingHours":0,"Exceeded":0}
        status = {"Mode":0,"Value":75}
        colour = {"Colour":{"tc":4500}}
        ▶ 2 (2 topics, 8 messages)
        ▶ 3 (2 topics, 8 messages)
        ▶ 4 (1 topic, 4 messages)
        ▶ 9 (1 topic, 4 messages)
      info = {"Manufacturer":"Schneider Electric Industries SAS","Type":"0x0308","Name":"DALI Gateway","Version":"2.0.2","Serial":"00ef:26a00ac3","projectId":"","buildingId":"","zoneld":""}
    ▼ sensor
      ▼ 1
        brightness = {"Error":0,"Value":834}
        presence = {"Error":0,"Value":0}
        ▶ 2 (2 topics, 18 messages)
      statistic = {"CntLamps":9,"CntEcgs":8,"CntConverter":1,"LampFailures":3,"EcgFailures":0,"ConverterFailures":0,"LampFailRate":33,"EcgFailRate":0,"ConverterFailRate":0,"TotalFailRate":33,"FailMode":1}
      status = online
    ▼ knx
      ▼ 1
        status = {"Value":22.3,"Unit":"°C"}
      ▼ 2
        status = {"Value":611.8,"Unit":"ppm"}
```

Hint:  
To use the MQTT Explorer client to connect to a cloud MQTT server (e.g. test.mosquitto.org) on a SE PC, GlobalProtect has to be disabled.