

CoolMasterNet KNX

User Manual

ETS Integration Guidelines for KNX Networks



Document Number: 1.2

Contact information: https://coolautomation.com/support

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Revision History

| Version Number | Date | Author/Owner | Description of Change |
|-------------------|------------|--------------------|--|
| 1.0 | 19/01/2021 | Eugene Gekhtman | Preliminary CoolMasterNet KNX User Manual |
| 1.1 | 17/08/2021 | Paul Grebeniuk | Changes of the integration process |
| 1.2 | 24/09/2021 | Nathan Samsonowitz | Review/changes Chapter 4; overall formatting |

Acronyms and Abbreviations

| Acronym | Literal Translation |
|---------|--|
| CMN | CoolMasterNet |
| DPT | DataPoint Types |
| ETS | KNX software (Enterprise Test Software) |
| GO | Group Object |
| HVAC | Heating Ventilation and Air Conditioning |
| VDC | DC Voltage |

1. Overview

CoolMasterNet KNX is connected directly to the KNX network. It uses ETS5 or higher for configuration of all objects, as explained in this document. The CoolMasterNet device is powered by a standard power adapter. The KNX bus should be powered separately from the KNX bus power supply.



2. ETS5 database

2.1 ETS5 parameter dialog

The CoolAutomation device does not provide any additional setup via the ETS5 software beside the Datapoint setup. The final Group Object (GO) is "constructed" based on the following datapoint fields: Indoor CA, Function and Direction. The number of possible GO variations per datapoint is 34.

2.2 Datapoints N - M

| Setup datapoints | Datapoint 1 | Disabled O Enabled | | |
|--------------------|-------------|---|---|---|
| Datapoints 1-10 | Indoor CA | L1.102 | | |
| Datapoints 11-20 | Function | On/Off | • | |
| Datapoints 21-30 | Direction | On/Off | ^ | |
| Datapoints 31-40 | Datapoint 2 | Setpoint Room temperature | | |
| Datapoints 41-50 | Indoor CA | Cool/Heat HVAC Mode | | ſ |
| Datapoints 51-60 | Function | HVAC Controll Mode | | L |
| Datapoints 61-70 | Direction | Fan speed value Fan speed step | | |
| Datapoints 71-80 | | Fan speed count | | |
| Datapoints 81-90 | Datapoint 3 | Fan speed scale % Error code | | |
| Datapoints 91-100 | Indoor CA | Error presence | ų | |
| Datapoints 101-110 | Function | Setpoint | - | |
| Datapoints 111-120 | Direction | In (from bus) Out (to bus) | | |
| Datapoints 121-130 | | | | |
| Datapoints 131-140 | Datapoint 4 | Disabled Enabled | | |

10 datapoints are combined per page.

2.3 Datapoint activation

This parameter activates the KNX interface. The following options are available:

- Disabled
- Enabled

2.4 Indoor CA (Central Address)

Here the address of the HVAC device is configured.

CA format: L<LINE NUMBER>.<INDOOR ADDRESS>

LINE NUMBER range from 1...8

INDOOR ADDRESS range from 0...999

• In the above example the CA value for the tested device is L1.102

2.5 Function

This parameter defines the function of this datapoint. The following options are available:

- On/Off
- Setpoint
- Room temperature
- Cool/Heat
- HVAC Mode

See <u>table</u> for encoding information.

• HVAC Control Mode

Implemented Modes: 0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry

• Fan speed value

See <u>table</u> for encoding information.

• Fan speed step

The function takes current fan speed and increases it by one step (regardless of the value received from KNX telegram). If current fan speed is the maximum supported by the related Indoor Unit, the lowest possible fan speed will be taken. For example, if Indoor Unit supports Low, Medium, and High fan speeds Fstep changes the fan speed from Low to Medium, from Medium to High or from High to Low. This function only has one direction — from the KNX device to the KNX Module. (page 5)

• Fan speed count

The function takes all supported fan speeds of the related indoor unit and gives them numbers starting from 1 (one).

• Fan speed scale %

The function translates the fan speed encoding in % into HVAC fan speed modes and vice versa according to the table below.

| Auto | Low | Medium | High | Тор |
|------|-----|--------|------|------|
| 0% | | 50% | | 100% |
| 0% | 33% | 66% | | 100% |
| 0% | 25% | 50% | 75% | 100% |

Supported Fan Speeds

• Error code

See <u>table</u> for encoding information.

- Error presence
- Inhibit

The function activates or deactivates (according to datapoint value 1 or 0) the inhibit of the indoor unit ON operation. Upon inhibit activation, the current On/Off status of the indoor unit is stored. The indoor unit is turned OFF after an ±8s delay. The indoor unit is forced OFF, until inhibit deactivation. On inhibit deactivation, the indoor unit is turned ON, if the ON status was previously stored, at inhibit activation. This function is designed to work with the window sensor to prevent HVAC operation while the window is open.

• Filter

• Louver mode

This function and the Louver scale function below may have no effect if the requested louver position is not supported by an indoor unit. Not all indoor units support louver position options listed below or have louver position control at all. Louver control is a capability of the specific indoor unit type.

See <u>table</u> for encoding information.

• Louver scale

The value ranges from 0...FF hexadecimal

| Auto | Vertical | 30° | 45° | 60° | Horizontal |
|------|----------|------|------|------|------------|
| 0x0 | 0x33 | 0x66 | 0x99 | 0xCC | 0xFF |

• Cooling On/Off

The value 0x1 turns on Cooling mode. If it gets 0x0, it sets the A/C to Fan Mode at minimal speed.

• Heating On/Off

The value 0x1 turns on Heating mode. If it gets 0x0, it sets the A/C to Fan Mode at minimal speed.

• Fan Auto On/Off

The value 0x1 turns on Fan mode with Fan Auto speed. If it gets 0x0, it sets the A/C to Fan Mode at minimal speed.

2.6 Direction

The KNX specific communication direction is defined here:

• In (from bus)

Datapoints with this direction support 'Communicate' and 'Write' configuration flags only.

• Out (to bus)

Datapoints with this direction support 'Communicate', 'Read' and 'Transmit' configuration flags only.

2.7 Group objects

All available GOs in datapoint1 are represented on the following table:

| Row | Function | Direction | DPT | Size |
|-----|-------------------|---------------|---------------------------------|---------|
| 1 | 0=/05 | In (from bus) | 1.1 Switch | 1 6.4 |
| 2 | On/Off | Out (to bus) | 1.1 Switch | I DIT |
| 3 | Cotraint | In (from bus) | | 0 hutaa |
| 4 | Setpoint | Out (to bus) | 9.1 Temperature C | 2 Dytes |
| 5 | Room | In (from bus) | 0.1 Tomporaturo C | 2 bytes |
| 6 | temperature | Out (to bus) | 9.1 Temperature C | 2 Dytes |
| 7 | Cool/Hoot | In (from bus) | 1 100 Host/cool | 1 bit |
| 8 | Cool/Heat | Out (to bus) | 1.100 Heal/Cool | T DIL |
| 9 | | In (from bus) | HVACOperMode | 1 byte |
| 10 | TIVAC Mode | Out (to bus) | Non-standard DF 1 | |
| 11 | HVAC Control | In (from bus) | 20 105 H\/ACContrlMode | 1 byte |
| 12 | Mode | Out (to bus) | | T byto |
| 13 | Fan speed | In (from bus) | HVACFanMode | 1 byte |
| 14 | value | Out (to bus) | | |
| 15 | Fan speed step | In (from bus) | 1.7 Step | 1 bit |
| 16 | Fan speed | In (from bus) | 5.1 Scaling | 1 byte |
| 17 | count | Out (to bus) | 3.1 Scaling | T Dyte |
| 18 | Fan speed | In (from bus) | 5.1 Scaling | 1 byte |
| 19 | scale % | Out (to bus) | 3.1 Scaling | |
| 20 | Error code | Out (to bus) | ErrorCode (Non-standard DPT) | 2 bytes |
| 21 | Error presence | Out (to bus) | 1.5 Alarm | 1 bit |
| 22 | Inhibit | In (from bus) | 1.11 Step | 1 bit |
| 23 | Filter | In (from bus) | 1.5 Alarm | 1 bit |

| Row | Function | Direction | DPT | Size |
|-----|--------------|---------------|---------------------|--------|
| 24 | | Out (to bus) | | |
| 25 | | In (from bus) | HVACLouversPosition | |
| 26 | Louvermode | Out (to bus) | (Non-standard DPT) | T Dyte |
| 27 | | In (from bus) | 5.1 Seeling | 1 byto |
| 28 | Louver scale | Out (to bus) | 5.1 Scaling | T Dyte |
| 29 | Cooling | In (from bus) | 1.1 Switch | 1 bit |
| 30 | On/Off | Out (to bus) | 1.1 Switch | |
| 31 | Heating | In (from bus) | 1.1 Switch | 4 64 |
| 32 | On/Off | Out (to bus) | 1.1 Switch | T DIL |
| 33 | Fan Auto | In (from bus) | 1.1 Switch | 1 bit |
| 34 | On/Off | Out (to bus) | | 1 bit |

3. Non-standard DPTs

3.1 HVACOperMode

Encoding table:

- 0 = Cool
- 1 = Heat
- 2 = Auto
- 3 = Dry
- 4 = Fan

```
5 = HRV Auto - Heat Reclaim Ventilation automatic mode
```

- 6 = HRV Bypass Heat Reclaim Ventilation bypass mode
- 7 = HRV Heat Exchange Heat Reclaim Ventilation Heat Exchange
- 8 = HRV Normal Mode Heat Reclaim Ventilation normal mode
- 9 = HRV Sleep Mode Heat Reclaim Ventilation sleep mode
- 10-255 = not used, reserved

3.2 HVACFanMode

Encoding table:

- 0 = Low
- 1 = Medium
- 2 = High
- 3 = Auto
- 4 = Top
- 5 = Very Low
- 6 = Super High
- 7 = HRV Low Freshup Heat Reclaim Ventilation low fresh incoming airflow
- 8 = HRV High Freshup Heat Reclaim Ventilation high fresh incoming airflow
- 9 = HRV Super High Heat Reclaim Ventilation super high incoming airflow 10-255 = not used, reserved

3.3 HVACLouversPosition

- **Encoding table:**
- 0=Vertical
- 1=30°

2=45°

- 3=60°
- 4=Horizontal
- 5=Auto/Swing

6=Stop

7-255=Unused, reserved

3.4 ErrorCode

The datapoint value represents an error code as sent by the HVAC system per the manufacturer's description.

4. Integration with KNX and ETS5

4.1 Brief introduction to CoolMasterNet KNX characteristics

The communication characteristics of datapoint as a GO are defined by six Communication flags: Communication, Read, Write, Transmit, Update and Read On Init. CoolMasterNet currently uses, only the first <u>four</u> flags:

Communication is a flag that determines if the GO can communicate with the bus. This is the "enable/disable GO" flag.

Read - the value is available for read requests from the bus. A GO with this flag must send the current value to the group as a response to the GroupValueRead message.

Write - the value is available for write requests from the bus. A GO with this flag must change its value as a response to the GroupWriteValue message.

Transmit - GO sends a GroupWriteValue message to the group with a new value. (Update - GO sends a GroupValueRead and changes its value to the one sent in the response message.)

Currently, the manufacturer's application, which determines the characteristics of the device in the system, only provides the default value of communication flags and DPTs, which the user can change at his discretion. In other words, for a regular KNX datapoint, you can enable all the flags at the same time.

Datapoints in CoolMasterNet are strictly divided into two groups: input (work only with the Write flag) and output (work only with the Read and Transmit flags). Turning on other flags has no effect on them.

4.2 Example of CoolMasterNet Integration

The following example of CoolMasterNet integration (in mode for one HVAC device connected to line L1) with "push button" (pad panel by Schneider Electric) connected to address groups 10/0/0 and 10/0/1.

Before you start

1. Connect CoolMasterNet to the KNX bus connector (connector 1 on Figure 1)



 Open an ETS5 SW. (<u>Note</u>: A KNX USB dongle is required for operation with ETS5.)

4.3 Connect the KNX IP interface

Open a Bus tab => interfaces.

Once the Bus is enabled and the subnet of PC and KNX IP interface is configured properly, the KNX IP interface is discovered automatically and populated on the Discovered Interface tab.

Once the KNX IP interface is the only device in the subnet, it is discovered automatically and populated on the Current Interface tab.

For Gate test, press the Test button. If the test is successful, go to the next step.

If the test is not successful, check if both LEDs (bus power and network settings) on the IP Interface are lit up.

| ⊞ ETSS™ ETS | | | - ¤ × |
|--|---|-------------------|---|
| Overview Bus Catalo | gs Settings | | KNX |
| - Connections | Current Interface | | 🐣 IP Tunneling |
| Interfaces | L1.7 KNX IP Interface Individual Address: 1.1.10 | | Name |
| Options | Configured Interfaces + Add 🕹 Import 🏦 Export | | KNX IP Interface |
| - Monitor | Discovered Interfaces | | Host Individual Address 1.1.7 |
| Group Monitor Bus Monitor | L1.7 KNX IP Interface 192.168.0.101:3671 | 00:24:6D:00:52:C0 | Individual Address 1.1.10 Address free? |
| - Diagnostics | | | IP Address |
| Unload Device | | | Port |
| Device Info | | | 3671 |
| Individual Addresses | | | MAC Address |
| Programming Mode | | | 00:24:6D:00:52:C0 |
| Individual Address Check | | | |
| Line Scan | | | _ |
| | | | |
| | | | Ok Test Select |

4.4 Connect online Catalog

For a new ETS5 or higher installation, connect online KNX Catalog Settings=>Online Catalog.

Mark the check box parameters - Enable Online Catalog and (optional) Automatically download Catalog updates (weekly, etc.).

Select region. Click Update now.

| Verview Bus Eallogs Settings Presentation Catalogs Settings Language Catalog Updates Online Catalog Automatically download catalog updates Data Storage Update now Toubleshooting Content Selection Import / Export Shortus Display only products of the following manufacturers Name - Home JaTEl ABB France ABB France ABB France ABB France ABB France ABB France | ETS5 TM | | - 0 X |
|---|--------------------|---|-------|
| Presentation Enable Online Catalog Language Catalog Updates Online Catalog Automatically download catalog updates Data Storage Update now Troubleshooting Content Selection Import / Export USA Shortcuts Display only products containing the selected product language Label Printer Display only products of the following manufacturers Name 4 1Home 3RB - reserved ABB ABB - reserved ABB - reserved ABB / Installation Materials Company Ltd, Beijing ABB ScrWittZ | Overview Bus | Catalogs Settings | KNX |
| Language Catalog Updates Online Catalog Automatically download catalog updates Data Storage Update now Troubleshooting Content Selection Import / Export USA Shortust Display only products containing the selected product language Display only products of the following manufacturers Name - Home ABB - reserved | Presentation | ✓ Enable Online Catalog | |
| Online Catalog Automaticilly download catalog updates Data Storage Update now Troubleshooting Content Selection Import / Export UsA Shortcuts Display only products containing the selected product language Label Printer Display only products of the following manufacturers Name 4 1Horne 3RTEL ABB ABB ABB ABB ABB Schwitz | Language | Catalog Updates | |
| Data Storage Troubleshooting Import / Export Shortcuts Objepay only products containing the selected product language Label Printer Name 4 1Home ABB ABB ABB ABB ABB ABB / reserved | Online Catalog | ✓ Automatically download catalog updates Weekly ▼ | |
| Troubleshooting Content Selection Import / Export USA Shortuts Display only products containing the selected product language Display only products of the following manufacturers Import / Export Import / Export Display only products of the following manufacturers Import / Export Display only products of the following manufacturers Import / Export Import / Export Display only products of the following manufacturers Import / Export Display only products of the following manufacturers Import / Export Import | Data Storage | Update now | |
| Import / Export Market USA USA Display only products containing the selected product language Display only products containing the selected product language Label Printer Display only products of the following manufacturers Name + Import / Export Import / Export Import / Export ABB - Import / Export ABB - reserved ABB - reserved ABB France BB / Import ABB SchWittZ ABB SchWittZ | Troubleshooting 🛦 | Content Selection | |
| Shortcuts Display only products containing the selected product language Label Printer Display only products of the following manufacturers Name 4 IHome 3ATEL ABB ABB Rame 4 ABB Rame 4 ABB ABB | Import / Export | Market | |
| Label Printer Display only products of the following manufacturers Name • 1 1 Home 3ATEL 3ATEL ABB 4 ABB - reserved 4 4 ABB - race 4 4 ABB Trance 4 4 ABB SchWitz 4 5 CHWitz 5 | Shortcuts | USA Display only products containing the selected product language | |
| Name • 1Home 3ATEL ABB ABB - reserved ABB France ABB LV Installation Materials Company Ltd, Beijing ABB SCHWEIZ | Label Printer | Display only products of the following manufacturers | |
| 1Home 3ATEL ABB ABB - reserved ABB France ABB LV Installation Materials Company Ltd, Beijing ABB SCHWEIZ | | Name • | |
| 3ATEL ABB ABB - reserved ABB France ABB France ABB CHWEIZ | | 1Home | ^ |
| ABB ABB - reserved ABB France ABB IV Installation Materials Company Ltd, Beijing ABB SCHWEIZ | | 3ATEL | |
| ABB - reserved ABB France ABB IV Installation Materials Company Ltd, Beijing ABB SCHWEIZ | | ABB | |
| ABB France ABB Ly Installation Materials Company Ltd, Beijing ABB SCHWEIZ ABB SCHWEIZ | | ABB - reserved | |
| ABB LV Installation Materials Company Ltd, Beijing ABB SCHWEIZ | | ABB France | |
| ABB SCHWEIZ | | ABB LV Installation Materials Company Ltd, Beijing | |
| | | ABB SCHWEIZ | |
| ABB SpA-SACE Division | | ABB SpA-SACE Division | |
| ABB Xiamen Smart Technology Co., Ltd. | | ABB Xiamen Smart Technology Co., Ltd. | |
| ARGO | | ABEGO | ¥ |

4.5 Create a new project

Open Overview=>Projects. Click + button. Fill the Name.

Set the following parameters:

- Backbone: IP
- Topology: Create Line 1.1, mark the checkbox and select TP
- Group Address Style: Select the **Three Level** radio button (Our "push button" test)

Click Create Project.

| ETS5™ | | | | |
|---------------|----------------|------|----------|----------|
| ETS | | | | |
| Overview | Bus | (| Catalogs | Settings |
| Projects A | Archive ETS I | nsid | e | |
| + 🗶 🛓 | | | c | |
| Create New | Project | | Status | |
| Name | 5 | м | Editing | |
| New project | | 4 | Editing | |
| Backbone | | | Editing | |
| IP | • | 4 | Editing | |
| Topology | | 4 | Editing | |
| Create Line 1 | .1 | И | Editing | |
| TP | • | Λ | Editing | |
| Group Address | Style | | 2 | |
| O Free | | | | |
| 🔵 Two Level | | | | |
| O Three Level | | | | |
| Create | Project Cancel | | | |

4.6 Add device to the project

Let's assume you have to add a CoolMasterNet device to the project like this: **Building 1** => **Floor 1** => **Room 1**.

Select **Workplace** => **Open New Panel** => **Buildings** panel. In the **Buildings** panel, click the **Add Buildings** button to add the area you want to place your device. Note that you can place the device only at the endpoint location such as a room, stairways, or corridor.

| Buildings 🔻 | | |
|------------------------------|---------------------------------|------------------|
| 🕂 Add Buildings 🔹 🗙 Delete | ± Download 🔹 🕕 Info 👻 🛃 | Reset 🧳 Unload 🔻 |
| Buildings | Addres Room | Description / |
| Dynamic Folders | | |
| 💥 Trades | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

In the window Add Buildings enter the building name Building 1 and click the OK button.

| Add Build | dings | o X |
|-----------|---------------------|-----------|
| Count: | Name: Building 1 | Rows: |
| | | OK Cancel |

Select **Building 1**. Press the right mouse button. Select **Add** => **Floors**.

| Buildings | | • A | ddres Room | | Description | Application | Program |
|-------------|------------|----------------|-------------|--------|----------------|-------------|---------|
| Dynamic Fol | ders | | | | | | |
| Building 1 | | | | | | | |
| ₹ Trades | • | Download | | • | | | |
| | | Compare Device | | | | | |
| | | Print Labels | | | | | |
| | _ | | | | | | |
| _ | • + | Add | | ۱. | Building Parts | | |
| | × | Delete | Del | → 🖽 | Floors | | |
| | a < | Cut | Ctrl + X | \sim | Stairways | | |
| | E. | Сору | Ctrl + C | | Rooms | = | |
| | | Paste | | | Corridors | | |
| | | Paste Special | Ctrl + V | ι¢, | Functions | + | |
| | | Paste Extended | | | | | |
| | _ | | | | | | |
| | | Split Project | | | | | |
| | | Properties | Alt + Enter | | | | |

In the window Add Floors enter the floor name: Floor 1. Click the OK button.

| Add Floo | ors | |
|--------------|---------|-------|
| to "Building | 1" | |
| Count: | Name: | Rows: |
| 1 ‡ | Floor 1 | - + |

Select **Floor 1**. Press the right mouse button. Select **Add** => **Rooms**. In the window **Add Rooms** enter the room name: **Room 1**. Click the **OK** button.

| Add Rooms | | • × |
|--------------|------|-----------|
| to "Floor 1" | | |
| | | |
| Count: Name: | Use: | Rows: |
| 1 🌻 Room 1 | - | ▼ - + |
| | | |
| | | OK Cancel |

Our location is ready. Press the right mouse button on the '**Room 1**' item. Select **Add** => **Devices**.

| Buildings 🔻 | | | | | | |
|-------------------|-------------------|-----------------|----------|---------------|------------|-----------|
| Add Devices | 🔹 🗙 Delete ± Dov | vnload 💌 🚺 Info | o 🔹 👩 Re | eset 🖗 Unload | * 🚔 Print | |
| Buildings | • | Addres Room | | Description | Applicatio | n Program |
| 🖻 🛅 Dynamic Fol | ders | | | | | |
| 🔺 🏢 Building 1 | | | | | | |
| 4 🚼 Floor 1 | | | | | | |
| Room 1 | 🛨 Download | ۲ | | | | |
| | 🚔 Compare Device | | | | | |
| | Print Labels | | | | | |
| \longrightarrow | 🕂 Add | • | 🖸 Cabi | nets | | |
| | 🗙 Delete | Del | Devi | ces | | |
| | Cut | Ctrl + X | 🗘 Fund | tions | • | |
| | Сору | Ctrl + C | | | | |
| | Paste | | | | | |
| | Paste Special | Ctrl + V | | | | |
| | Paste Extended | | | | | |
| | 🔒 Split Project | | | | | |
| | Properties | Alt + Enter | | | | |
| | | | | | | |

The **Catalog** tab is displayed. Select **CoolAutomation** from the manufacturer list or find the device by typing its order number **CoolAutomation_CMN_KNX_01** in the **Search** field. Push the **Add** button below the catalog panel. Wait until the data import is completed.

| Buildings 🔻 | | | | | | | | ^ | × |
|---------------------------------|-------------|--------------------------------|-------------------|-----------------------|-----|--------------------------|-----------|------------------|--------|
| 🕂 Add Devices 🔹 🗙 Delete ± D | ownload • | 🕕 Info 🔻 灯 R | leset 🧳 Unload | - 🚔 Print | | | Search | n | ρ |
| 🔲 Buildings 🔹 | Addres | Room | Description | Application Program | ı | Adr Prg Par Grp Cfg Ma | nufacture | er | |
| Dynamic Folders | | | | | | | | | |
| 🔺 🋍 Building 1 | | | | | | | | | |
| 4 🚰 Floor 1 | | | | | | | | | |
| Room 1 | | | | | | | | | |
| 💥 Trades | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | Devices | Parameters | Functions | | | | | | |
| Catalog 🔻 🔶 | | | | | | | | ^ | × |
| 📩 Import 🏦 Export 🖄 | Downle | pad 💷 🕨 Cod | olAutomation > Ti | P Interfaces/Gateways | | | CoolAuto | mation | × |
| 🔳 Manufacturers 🔹 ^ | ₽ See | Manufacturer Nan | ne | | | Order Number | Mediu | Application | Versic |
| ▷ 🔚 ABB | 🔿 CoolAu | tomation | | | | | | | |
| Albrecht Jung | | <mark>CoolAutomati</mark> Cool | MasterNet KNX | | C | oolAutomation_CMN_KNX_01 | TP | HVAC Gateway 001 | 0.1 |
| APRICUM | | | | | | | | | |
| ARBONIA | | | | | | | | | |
| Arcus-eds | | | | | | | | | |
| AUTOMATISMI BENINCA S | | | | | | | | | |
| Ave S.p.A. | | | | | | | | | |
| ▷ 🛅 B.E.G. 🗸 | ¢ | | | | + | | | | > |
| Items: 1 🔹 in Building Parts | • | Room 1 | | - | Add | | | | |

Select the added CoolMasterNet device. The CoolMasterNet's default address is 15.15.255. You have to change this address to a unique one to avoid collisions. Set the new individual address in the **Properties** tab. Press the **programming button** on the device (the **programming mode LED** must be on!) (see Sec. 4.9), then press the **Download** button. After the download is complete the CoolMasterNet device is fully operational.

| Buildings 🔻 | | | | | | | |
|--------------------------------|--------------|--------|-------------|----------|-----------------|-------------|-----------------|
| 🕂 Add Buildings 🔹 🗙 Delete 📘 | 🛃 Download 🔹 | 1 Info | 🔹 🕤 Reset 🧳 | Unload 🔹 | 🚔 Print | | |
| 🔝 Buildings | - 1 | Number | Name * | | Object Function | Description | Group Addres Le |
| Dynamic Folders | | | | | | | |
| 🔺 🂼 Building 1 | | | | | | | |
| 🔺 🚰 Floor 1 | | | | | | | |
| 🔺 🌅 Room 1 | | | | | | | |
| 🕨 🕨 15.15.1 CoolMasterNet KN | x | | | | | | |
| 💥 Trades | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Now you can create group objects and link them to group addresses.

4.7 Create a group

On the project window, select the Workplace tab => Open New panel => Group Addresses.

Click Add Main Group.

| - | | | | |
|--|--------------------------------|---------------------------------|-----------|--|
| III ETS5™ - test | | | | – 0 × |
| ETS Edit Workplace Commis | | | | ^ (|
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| Group Addresses | | | ^ | Find and Replace |
| + Add Main Groups • X Delete | 🕂 Download I 🐑 🕕 Info 🔨 📢 Rese | - 🗸 Unload 🕶 🚔 Print | Search | |
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| | | Add Main Groups | | |
| | | to "Group Addresses" | | Clear History |
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| | | 1 🔹 | | 15.15.255 CoolMasterNet KNX |
| | | Generate Addresses | | V Device Info: Finished |
| | | Fill up (use first free) | | General |
| | | Append | | - Mask Version: - Individual Address: |
| | | Start with 10 ⁺ | | - Device Manufacturer: |
| | | | | - Graer Number: |
| | | | OK Cancel | - Hardware Type: - Firmware Version: |
| | | | | - Programming Mode: |
| | | | | Application Program |
| | | | | - Load State: |
| | | | | - Run State: |
| | | | | - Application Program 2 |
| | | | | - Load State: |
| | Details | | | ✓ Undo History |
| 1.1.7 KNX IP Interface (192.168.0.101: | . ^ 1.1 New line | Group Addresses | | Last used workspace |

Our test button is set to Group Address 10/0/0 and 10/0/1, so on the displayed window, select **Start with**, enter **10**. Click the **OK** button. Go to the new Main Group and click **Add Middle Group**.

| Group Addresses 🔻 | | |
|---------------------------|---------|--------------|
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| Group Addresses | • | Address * |
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| 🔺 🔀 10 New main group | | |
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| Group Addresses | | | ^ 🗇 💌 | Find and Replace |
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| Group Addresses | Middle Gr Name | Description Pass Thro | | ⑦ Todo Items |
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| TO New main group | | | | |
| | | Add Middle Groups | | |
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| | | 1 \$ | • | a 15.15.255 CoolMasterNet KNX |
| | | Generate Addresses | | Device Info: Finished |
| | | Fill up (use first free) Append Start with 0 ‡ | | General - Mask Version: - Individual Address: - Device Manufacturer: - Order Number: |
| | | | OK Cancel | - Senai Number: - Hardware Type: - Firmware Version: - Programming Mode: |
| | | | | Application Program - Application program: - Load State: - Run State: |
| | | | | Application Program 2 - Application program: - Load State: - Run State: |
| | Middle Groups | | | 🖌 Undo History |
| 1.1.7 KNX IP Interface (192.168.0.101: | * 1.1 New line | 10 New main group | | Last used workspace |

On the displayed window, select **Start with**, enter **0**. Find Middle Group 0 on the list on the left, select it, click **Add Group Addresses**.

| ⊞ ETS5™ - test | | | | | | – 0 × |
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| 👩 Close Project 🦨 Undo 🔇 | | Workplace + | Catalogs Diagnostics | | | |
| Buildings Catalo | | | | × Diagnostics | | 🗈 Properties > |
| Group Addresses | | | | | ∧ ⊡ × | 🔎 Find and Replace |
| 🕂 Add Group Addresses 👻 🗙 Del | ete \pm Download 🐑 (| 🚺 Info 🔻 🕥 Reset | 🖗 Unload 🐐 🚔 Print | | | Workspaces |
| Group Addresses | Address * | Name | Description | Centra Pass T Data Type Length | No. of Last Value | 🕖 Todo Items |
| Dynamic Folders | | | | | | Pending Operations |
| 4 話 10 New main group 駅 10/0 New middle group | | | | • × | • | |
| | | t | Add Group Addresses o "10/0 New middle group" | | | Clear History |
| | | | Count: Name: | Rows: | | |
| | | | 1 ‡ | - + | | 15.15.255 CoolMasterNet KNX |
| | | | Generate Addresses Fill up (use first free) Append Start with 1 + | OK Cance | | deriver linds inflation deriver linds inflations deriver inderivations deriver Manufacturer: deriver |
| | Group Addresses | | | | | Undo History |
| 1.1.7 KNX IP Interface (192.168.0.101: | * 1.1 New line | | 10/0 New middle group | | | Last used workspace |

Create two addresses at once. On the displayed window, select **Count 2**. Select the radio button **Fill up**. Click the **OK** button.

Now we have created two Group Addresses 10/0/0 and 10/0/1.

| Group Addresses 🔻 | | | | | |
|----------------------------------|-----|------------------|---|-------------------|----------------------------|
| 🕂 Add Group Addresses 🛛 🔹 🗙 Dele | ete | 🛨 Download 🔹 🌘 | 0 | Info 🔹 🕤 Reset | \clubsuit Unload \star |
| Group Addresses | | Address * | | Name | |
| Dynamic Folders | 器 | 10/0/0 | I | New group address | |
| 🔺 🎛 10 New main group | 器 | 10/0/1 | 1 | New group address | |
| 🔺 🔠 10/0 New middle group | | | | | |
| 🞛 10/0/0 New group address | | | | | |
| 🞛 10/0/1 New group address | | | | | |
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4.8 Creating two GOs: for On/Off input and On/Off output

Go to the **Buildings** panel. Find **CoolMasterNet**. On the right panel below, select the **Parameters** tab. Select **Datapoint 1**.

Select **Enabled**. Fill the **Indoor CA** field with **simulated HVAC address L1.100**. Select Function: **On/Off**.

| Close Project | Kedo Field Reports | Vorxplace • Catalogs Diagnos | stics | | |
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| opology 🔻 | | | ^ | Find and Replace | |
| Add Devices * 🗙 Delete 🔮 | Download 🔹 🚱 Help 🥒 Higt | light Changes Default Parameters Grant C | ustomer Access | Workspaces | |
| Topology Backbone • | 15.15.255 CoolMasterNet K | NX > Setup datapoints > Datapoints 1 | I-10 | O Todo Items | |
| Dynamic Folders 1 New area | - Setup datapoints | Datapoint 1 | O Disabled C Enabled | Pending Operations | |
| 15 New area 15.15 New line | Datapoints 1-10 | Indoor CA | | Clear History | |
| 15.15.255 CoolMasterNet K Setup datapoints | Datapoints 11-20 Datapoints 21-30 | Putropint 2 | Onvott | 15.15.255 CoolMasterNet KNX Download(Appl.): Finished | |
| | Datapoints 31-40 | Indoor CA | | 15.15.255 CoolMasterNet KNX v Device Info: Finished | |
| | Datapoints 41-50 Datapoints 51-60 | Function | On/Off · | General - Mask Version: | |
| | Datapoints 61-70 | Datapoint 3 | Disabled Enabled | - Individual Address: - Device Manufacturer: - Order Number: | |
| | Datapoints 71-80 Datapoints 81-90 | Indoor CA Function | On/Off · | - Serial Number: - Hardware Type: - Firmware Version: | |
| | Datapoints 91-100 Data | Datapoint 4 | Disabled Enabled | - Programming Mode: Application Program - Application program: | |
| | Datapoints 111-120 | Indoor CA Function | On/Off | - Load State: - Run State: Application Program 2 | |
| | Datapoints 121-130 | | | - Application program: - Load State: | |

Select Direction: in (from bus). Do the same for Datapoint 2 but select the out (to bus) direction (see image below).

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| 15 New area | Datapoints 1-10 | Indoor CA | L1.100 | | Active Hist | tory | |
| IS.15 New line IS.15 New line IS.15 CoolMasterNet K | Datapoints 11-20 | Function | On/Off | • | Clear History | | |
| Setup datapoints | Datapoints 21-30 | Direction | In (from bus) Out (to bus) | | 15.15.255 CoolMasterNet KNX Download(Appl.): Finished | | |
| | Datapoints 31-40 | Datapoint 2 | Oisabled O Enabled | | 15.15.255 CoolMasterNet KNX Device Info: Finished | se i | |
| | Datapoints 41-50 | Indoor CA | L1.100 | | General | | |
| | Datapoints 51-60 Datapoints 61-70 | Function | On/Off | • | - Mask Version: - Individual Address: | | |
| | | Direction | In (from bus) Out (to bus) | | - Device Manufacturer: - Order Number: | | |
| | Datapoints 71-80 | | | | - Serial Number: - Hardware Type: | | |
| | Datapoints 81-90 | Datapoint 3 | Disabled Enabled | | - Firmware Version: | | |
| | Datapoints 91-100 | Indoor CA | | | Application Program | | |
| | Datapoints 101-110 | Function | On/Off | - | - Application program: - Load State: | | |
| | Datapoints 111-120 | | | _ | - Run State: | | |
| | Datapoints 121-130 | Datapoint 4 | O Disabled C Enabled | | - Application program: | | |
| | Datapoints 131-140 | Indoor CA | | ~ | - Load State: _ Run State: | | |
| | Group Objects Parame | eters | | | 🖍 Undo History | | |
| 1.1.7 KNX IP Interface (192.168.0.101: | ▲ 1.1 New line | Setup datapoints | | | Last used workspace | | |

Go to the left side of the panel. Find CoolMasterNet => Setup Datapoints. Select the first datapoint **On/Off** input. Click the right mouse button => Link with.

| Topology 🔻 | | | | | | | | | |
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| Topology Backbone | 15.15.255 CoolMasterNet KNX > Setup datapoints > Datapoints 1-10 | | | | | | | | |
| Dynamic Folders | | | | | | | | | |
| ▷ 🔡 1 New area | Setup datapoints | Datapoint 1 | Disabled O Enabled | | | | | | |
| ▲ 15 New area ▲ 15.15 New line ▲ 15.15.255 CoolMasterNet K | Datapoints 1-10 | Indoor CA | L1.100 | | | | | | |
| | | Function | On/Off | | | | | | |
| | Datapoints 11-20 | - unction | 010011 | | | | | | |
| Setup datapoints | Datapoints 21-30 | Direction | In (from bus) Out (to | | | | | | |
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| ■2: L1.100 - On/off output | | Datapoint 2 | Disabled O Enabled | | | | | | |
| | Datapoints 41-50 | Indoor CA | L1.100 | | | | | | |
| | Datapoints 51-60 | Function | Op/Off | | | | | | |
| | Datapoints 61-70 | Tunction | 01/011 | | | | | | |
| | Datapoints 71-80 | Direction | 🔵 In (from bus) 🔘 Out (to | | | | | | |
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| 🔺 🔡 15 New area | | | | |
| ▲ 🗄 15.15 New line | Datapoints 1-10 | | | |
| 🔺 ا 15.15.255 CoolMasterNet K | Datapoints 11-20 | | | |
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| ■‡ 2: L1.100 👤 Download | ۰ ⁰ | | | |
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Select the 'Existing' tab on the window below. Click the grey button on the right side. Select group address 10/0/0 on the displayed window.

Click the **OK** button.



Repeat the action for the second datapoint (On/Off output).

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| Тороlоду | | Link With Group Address | | ∧ ⊡ × | ₽ Find and Replace | |
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| Dynamic Folders | 15.15.255 COOMASterret RIVE | | search | | Pending Operations | |
| It New area | Setup datapoints | Sec Group Address Name | Description | ^ | • Fending Operations | |
| 4 15 New area | Datapoints 1-10 | 10/0/0 New group addre | 155 | | | |
| ▲ 15.15 New line | Deterministe 11, 20 | | | v | 🥜 Clear History | |
| Setup datapoints | Datapoints 11-20 | | | | 15.15.255 CoolMasterNet KNX | ^ |
| 1: L1.100 - On/off input | Datapoints 21-30 | | | | Download(Appl.): Finished | |
| ■# 2: L1.100 - On/off output | Datapoints 31-40 | | | | Device Info: Finished | æ |
| | Datapoints 41-50 | | | | General | |
| | Datapoints 51-60 | | | * | - Mask Version: | |
| | Datapoints 61-70 | | | | - Device Manufacturer: | |
| | Datapoints 71-80 | | | | - Order Number: - Serial Number: | |
| | Datapoints 81-90 | | | | - Hardware Type: - Firmware Version: | |
| | Datapoints 01 100 | | | | - Programming Mode: | |
| | Datapoints 91-100 | | | | Application Program - Application program: | |
| | Datapoints 101-110 | | | | - Load State: | |
| | Datapoints 111-120 | | | | Application Program 2 | |
| | Datapoints 121-130 | | | | - Application program: | |
| | Datapoints 131-140 | | OK Cancel | v . | - Run State | v |
| | Associations Parameters | | | | Undo History | |
| 1.1.7 KNX IP Interface (192.168.0.101: | * 1.1 New line | 1: L1.100 - On/off input | | | Last used workspace | |

After the configuration is created, it must be uploaded to the device's memory. Switch the CoolMasterNet device into the **programming mode** <u>(see Sec. 4.9)</u>. Select CoolMasterNet in the **Buildings** panel. Click the right mouse button or find the **Download** button on the menu and press **Download All**.

You can now test the On/Off operation.

Go to the **Group Addresses** panel. Middle Group 10/0. On the right pane, select the address 10/0/0. Click the right mouse button => Write Value => On (or Off).

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| Group Addresses | * | Object | Sending | Device | | Data Typ | e C R W T U | Todo Itams | | | |
| Dynamic Folders | | C: Switch object A - Push-button 1 | S | 1.1.1 Push-but | tton, 2-gang plus, | roomswitch | с - wт - | louo items | | | |
| 🔺 🔠 10 New main group | | 1: L1.100 - On/off input | | 15.15.255 Cod | olMasterNet KNX | switch | C - W | Pending Operations | | | |
| ▲ 器 10/0 New middle gr | roup | | | | | | | Active | History | | |
| 🔀 10/0/0 New group | address | | | | | | | S Cancel all | | | |
| 🔀 10/0/1 New group | address | | | | | | | 15 15 255 CoolMasterNet KNX | | | |
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| | | ¢ Associations | | | | | > | 📀 Undo History | | | |
| 117 KNY IP Interface (102 | 168.0.101 | Associations | | 10/0/0 Now | aroup address | | | 2 | Last used werkensen | | |
| · Kovir Interface (192. | | Linew me | | 10/0/0 New | group address | | | | Last used workspace | | |

The value of 'Last value' must be changed. On the group 10/0/1, the value of 'Last value' must be changed also. Check if the On/Off unit status has changed on the CoolMasterNet touchscreen.

4.9 Programming mode

To switch the CoolMasterNet device to programming mode, press the **programming mode button (2)** on the device's upper left-hand side. The **programming LED (3)** (red) must turn on.



Wait until the LED turns off after downloading operation is complete.

Need more help?

Visit us at: https://coolautomation.com/support