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July 2016

ABB GPG Building Automation Webinar “Processing analogue signals with KNX”

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Power and productivity for a better world™

Webinar “Processing analogue signals with KNX”
Agenda

- New Analogue Actuators AA/X x.1.2
  - Introduction
  - Planning
  - Installing
  - Commissioning (ETS, i-bus® Tool)

- Analogue Inputs AE/A 2.1 and AE/S 4.1.1.3
  - Overview

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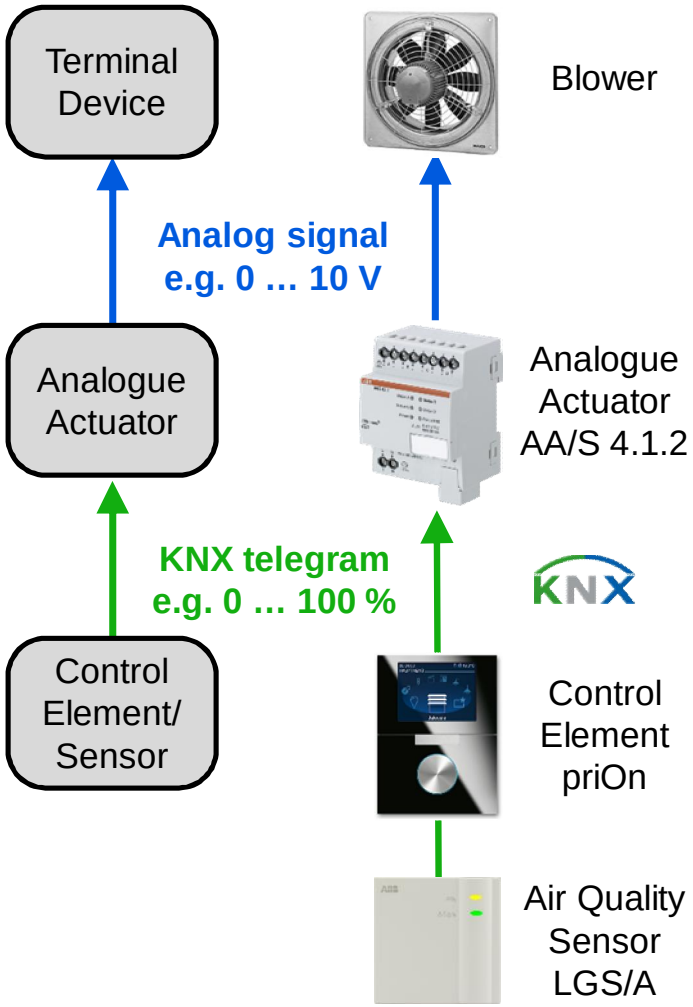
  - Overview

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Overview



What is an Analogue Actuator ???

- An Analogue Actuator converts received values via KNX telegrams into analog output signals (voltage or current)

Why do we need this actuator ???

- These analog signals allow terminal devices in the heating, air-conditioning and ventilation technology or lighting technology to adapt their output variables using bus information and participate in control processes

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
HVAC Applications

- The Analogue Actuator is suitable for controlling ventilation flaps, valves, mixing valves in heating/cooling circuit distributors, frequency converters and control of Fan Coil Units with continues fan in combination with Valve Drive Actuator VAA/S or Electronic Switch Actuator ES/S
- A 0-10 V signal is normally used as a control variable (corresponding to, e.g., 0...100%)
- This control signal can be used to
  - Open or close valves or flaps by activating a motor
  - Control a frequency converter with a motor that runs a fan in variable speed

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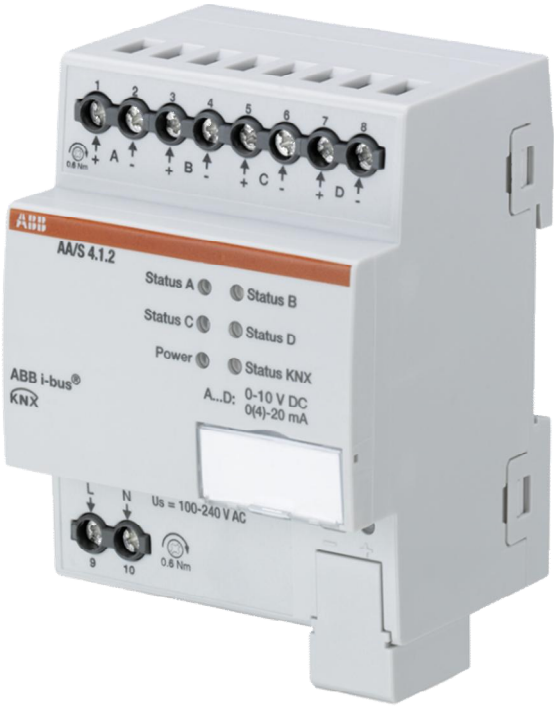
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
HVAC Applications

- The control signal can also be used to specify set points via the 0-10 V output, for example to set the set temperature of a boiler or chiller
  - Example: Possible temperature range 30 °C to 80 °C; here, a 5 V signal would correspond to an output temperature of 55 °C
- The application allows to create a characteristic, which means that the system can also control complex variables such as those for 6-way valves or valves with an operating range of 2-10 V

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Lighting Applications

- An Analogue Actuator, especially the 0…10 V interface, can also be used as a control signal for a lighting circuit to control brightness or LED color
  - High-performance dimmer (kW)
  - LED dimmer
  - RGB driver

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Device technology



Analogue Actuator AA/S 4.1.2

- Modular installation device (MDRC)
- Width: 4 MW
- 4 analogue outputs
  (individual parametrization)
  - Voltage signals
    0…1 / 0…5 / 0…10 / 1…10 V DC
  - Voltage and current signals
    0…20 / 4…20 mA DC
- Indication elements (LEDs)
- Operating voltage 100…240 V AC
- Successor of Analogue Actuator AA/S 4.1

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Device technology

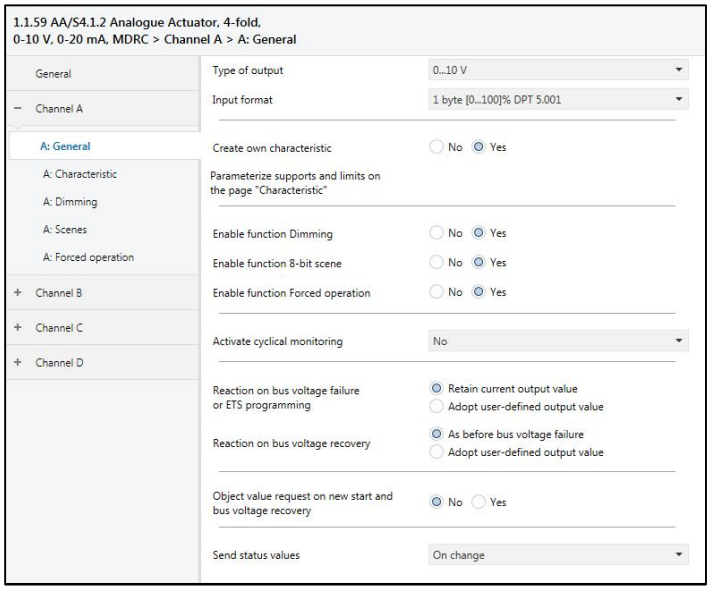
Analogue Actuator AA/A 2.1.2

- Surface mounted (SM) for decentralized installation
- Enclosure IP 54
- 4 cable entries
- 2 analogue outputs (individual parametrization)
  - Voltage signals 0…1 / 0…5 / 0…10 / 1…10 V DC
- Power supply via ABB i-bus® KNX – no additional auxiliary voltage is required

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Device features – Hardware

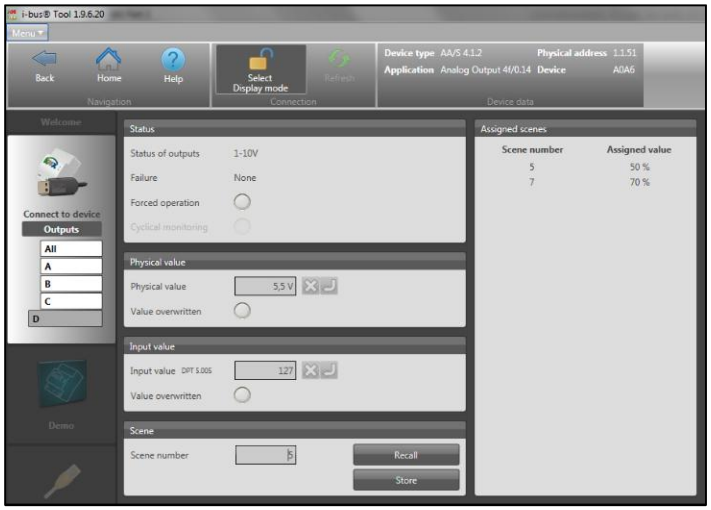
- Galvanic isolation between analog outputs and KNX/operating voltage
- The analogue outputs can be used independently of one another as current or voltage outputs with adjustable output signals
- The required input format (1 byte … 4 bytes) and how the output reacts to a reset, bus voltage recovery, etc., are specified for each output
- Real 0V at analogue outputs (high accuracy)
- Integration in the i-bus® Tool

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Device features – Software



- The Engineering Tool Software ETS4 or ETS5 is used to parameterize the device
- In addition to the standard parameters, there are additional parameters that enable the use of
  - Forced operation for higher priorities
  - Dimming function
  - Scene control
  - Monitoring input objects for a period of time
  - Set up a own output characteristic via value pairs (max. 11 value pairs)

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Product and functional overview



Integration in the i-bus® Tool

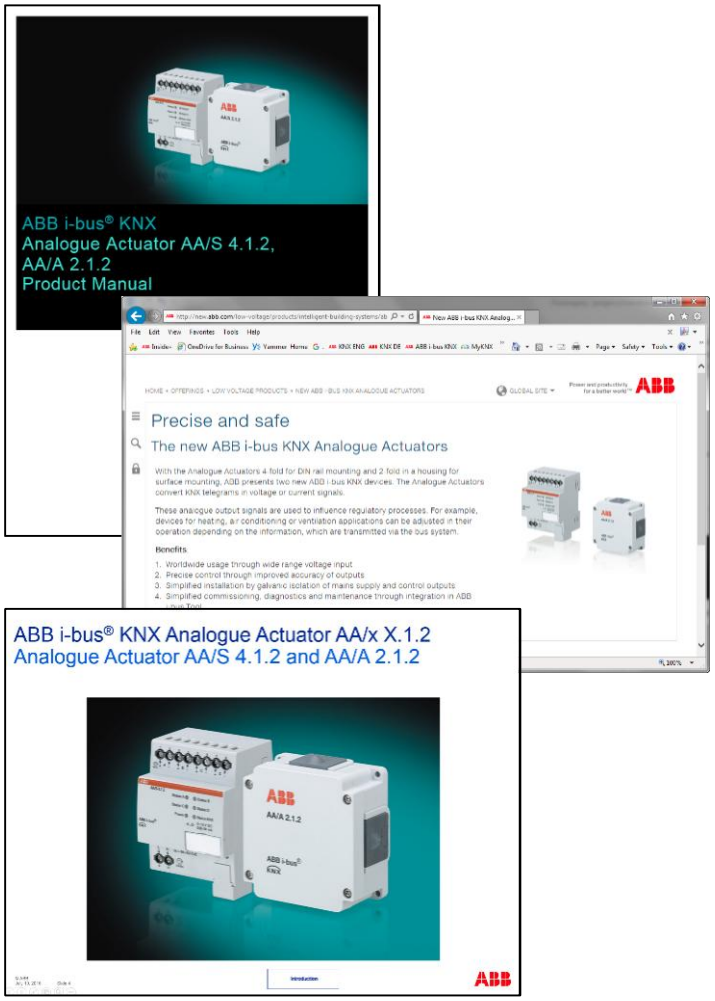
- The device possesses an interface to the i-bus® Tool
- The i-bus® Tool can be used to read out data and test functions on the connected device
- The i-bus® Tool can be downloaded for free from our website: www.abb.com/knx
- A description of the functions can be found in the i-bus® Tool online help

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Comparison

	AA/S 4.1.2	AA/A 2.1.2
Design	Modular installation device (MDRC)	Surface mounted (SM)
Mains voltage	100…240 V AC	-
Outputs	4	2
Voltage signals*	0…1 V DC 0…5 V DC 0…10 V DC 1…10 V DC	0…1 V DC 0…5 V DC 0…10 V DC 1…10 V DC
Current signals*	0…20 mA DC 4…20 mA DC	-
List price	380,- €	275,- €

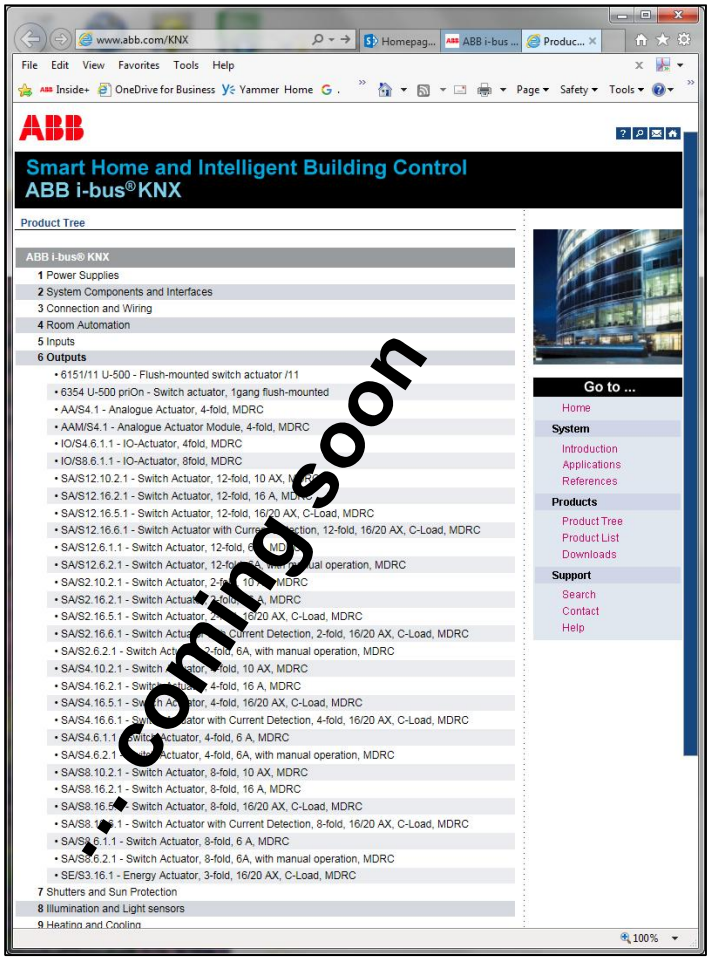
* Depending on parameterization (e.g. 2…6 V DC or 5…15mA)

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Marketing Material



- Product Manuals
- Technical Data
- www.abb.com/knx
  à Website
- PowerPoint-Presentation
- Recording Webinar
  (MP4 file on Youtube)

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Marketing Material



www.abb.com/KNX
à Product categories
à Outputs
à Analogue Actuator AA/x X.1.2

- Application Software ETS4 and ETS5
- Product Manual
- Technical Data
- Installation and Operating Instructions
- Specification Text
- Product Information
- Presentation Slides
- CE Declaration of Conformity
- • • •

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Market Introduction

- Market Launch: Week 31/2016 (first week of August)

Ident No.	Type	Status
2CDG 110 202 R0011	AA/S 4.1.2 Analogue Actuator, MDRC	New
2CDG 110 203 R0011	AA/A 2.1.2 Analogue Actuator, SM	New
2CDG 120 005 R0011	AA/S 4.1 Analogue Actuator, MDRC	To be discontinued
2CDG 120 006 R0011	AAM/S 4.1 Analogue Actuator Module, MDRC	To be discontinued

AA/S 4.1.2

AA/A 2.1.2

AA/S 4.1

AAM/S 4.1

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Features and Value proposition

- Hardware
  - Wide range supply voltage input 100 … 240 V AC
    à worldwide usage
  - Galvanic isolation between analog outputs and KNX/operating voltage
  - Surface mounted variant bus supplied
    à easy installation next to the connected device
  - Outputs with higher accuracy à 0 V is really 0 V
    à precise output values

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Features and Value proposition

- Software
  - Integration in i-bus® Tool
    à easy and unique commissioning and diagnostic tool
  - Creation of characteristic curve
    à adaption to any kind of required output signals
  - Scenes
    à for fast integration into superior functions
  - More input types (**D**ata**P**oint**T**yp)
    à more flexibility and options to integrate

ABB i-bus® KNX Analogue Actuator AA/x X.1.2

Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Planning

- The applicable standards, directives, regulations and specifications of the local country have to be observed when planning and setting up electrical installations
- KNX International Standard
  - ISO/IEC 14543 and EN 50090
- IEC 60381-1 Analogue signals for process control systems
  - Part 1: Direct current signals
- IEC 60381-2: Analogue signals for process control systems
  - Part 2: Direct voltage signals

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ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Technical data

Analogue Actuator AA/S 4.1.2

- Power supply: ABB i-bus KNX
- Operating voltage: 100…240 V AC +10 %/-15 %, 50/60 Hz
- Analog outputs: 4, A…D
  - Voltage signals: 0…1 V DC, 0…5 V DC, 0…10 V DC, 1…10 V DC and depending on parameterization (e.g. 2…6 V DC)
    Signal load ≥ 1 kohm and output current max. 10 mA per channel
  - Current signal: 0…20 mA DC, 4…20 mA DC and depending on parameterization (e.g. 5…15 mA DC)
    Signal load ≤ 500 ohms and output current max. 20 mA per channel
- Mounting: On 35 mm mounting rail
- Dimensions: 90 x 70 x 64.5 mm (H x W x D), 4x 18 mm modules

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Technical data

Analogue Actuator AA/A 2.1.2

- Power supply: ABB i-bus KNX
- Analog outputs: 2, A and B
  - Voltage signals: 0…1 V DC, 0…5 V DC, 0…10 V DC, 1…10 V DC and depending on parameterization (e.g. 2…6 V DC)
  - Signal load ≥ 5 kohm and output current max. 2 mA per channel
- Surface mounted device, screw fixing
- Dimensions: 117 x 117 x 51 mm (H x W x D)
- Degree of protection: IP 54

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Software functions

Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

- Input formats:
  - 1 byte
    [0…100] % DPT 5.001, [0…255] DPT 5.005,
    [-128…127] DPT 6.010
  - 2 bytes
    [0…65,535] DPT 7.001, [-32,768…32,767] DPT 8.001,
    [-1,000…1,000] floating point DPT 9.0XX
  - 4 bytes
    [-1,000.00…1,000.00] IEEE754 floating point DPT 14.0XX
- Create own characteristic to specify a particular output progression based on the input signal by using max. 11 value
- Status byte device

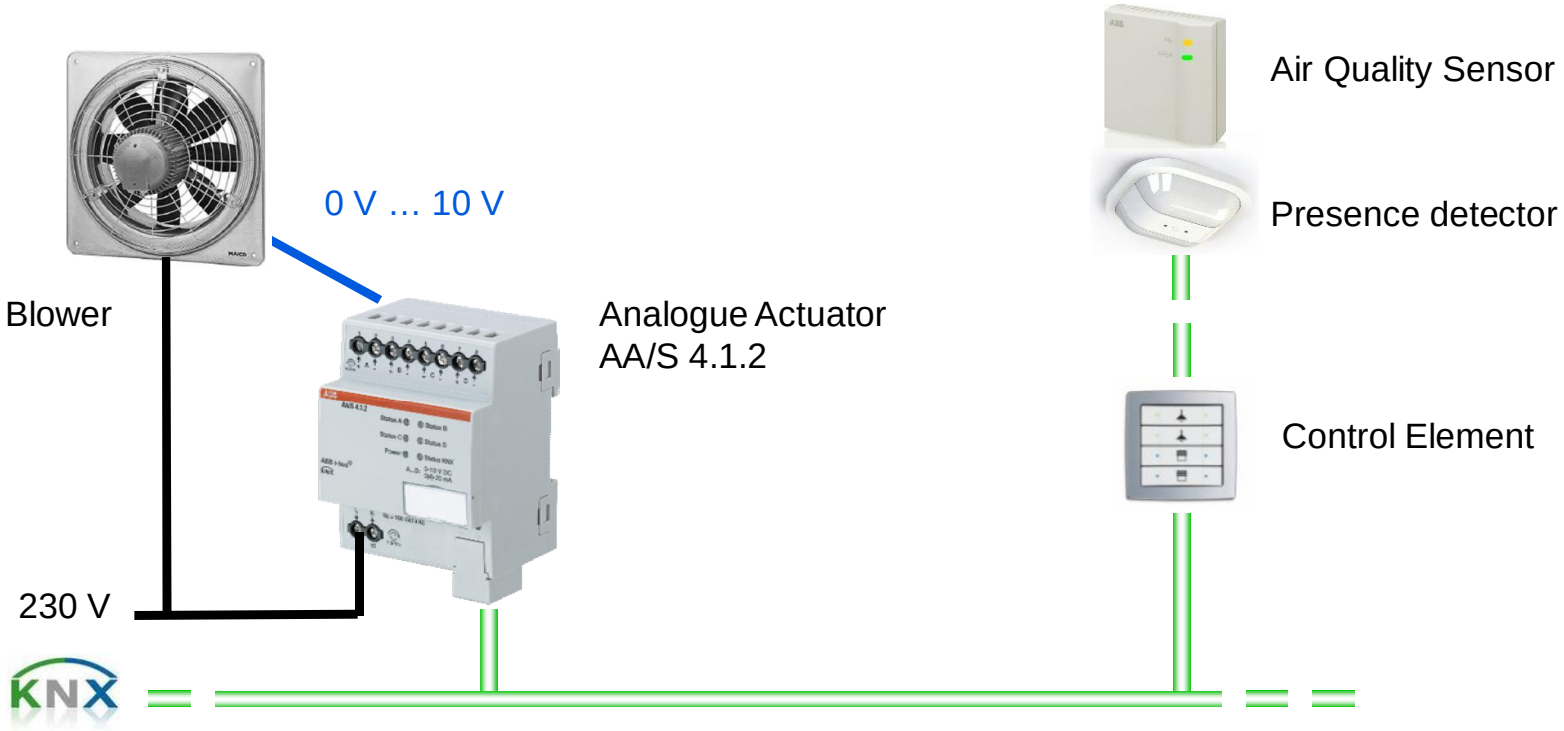
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Software functions

Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

- Dimming (additional options that are used to dim output voltages)
- 8-bit scene control
- Forced operation 1 and 2 for higher priorities
- Cyclical monitoring of “Input value” and/or object “Forced operation”
- Reaction on bus voltage failure / recovery and ETS programming

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Functional description of a continuous fan control

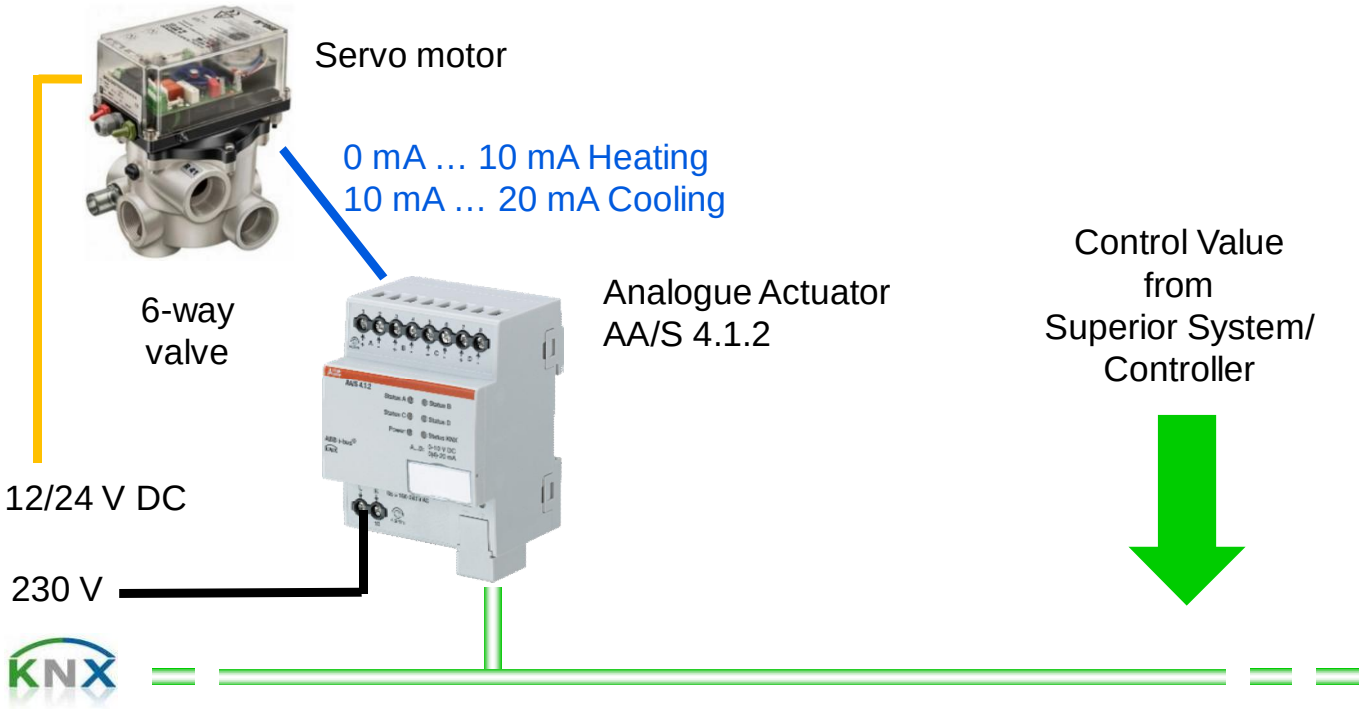
- Rocker 1 left off (0 V), right rocker max. speed (10 V)
- Presence detector: In case of presence 80 % speed, no presence à fan off



Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Functional description of mixing valve control

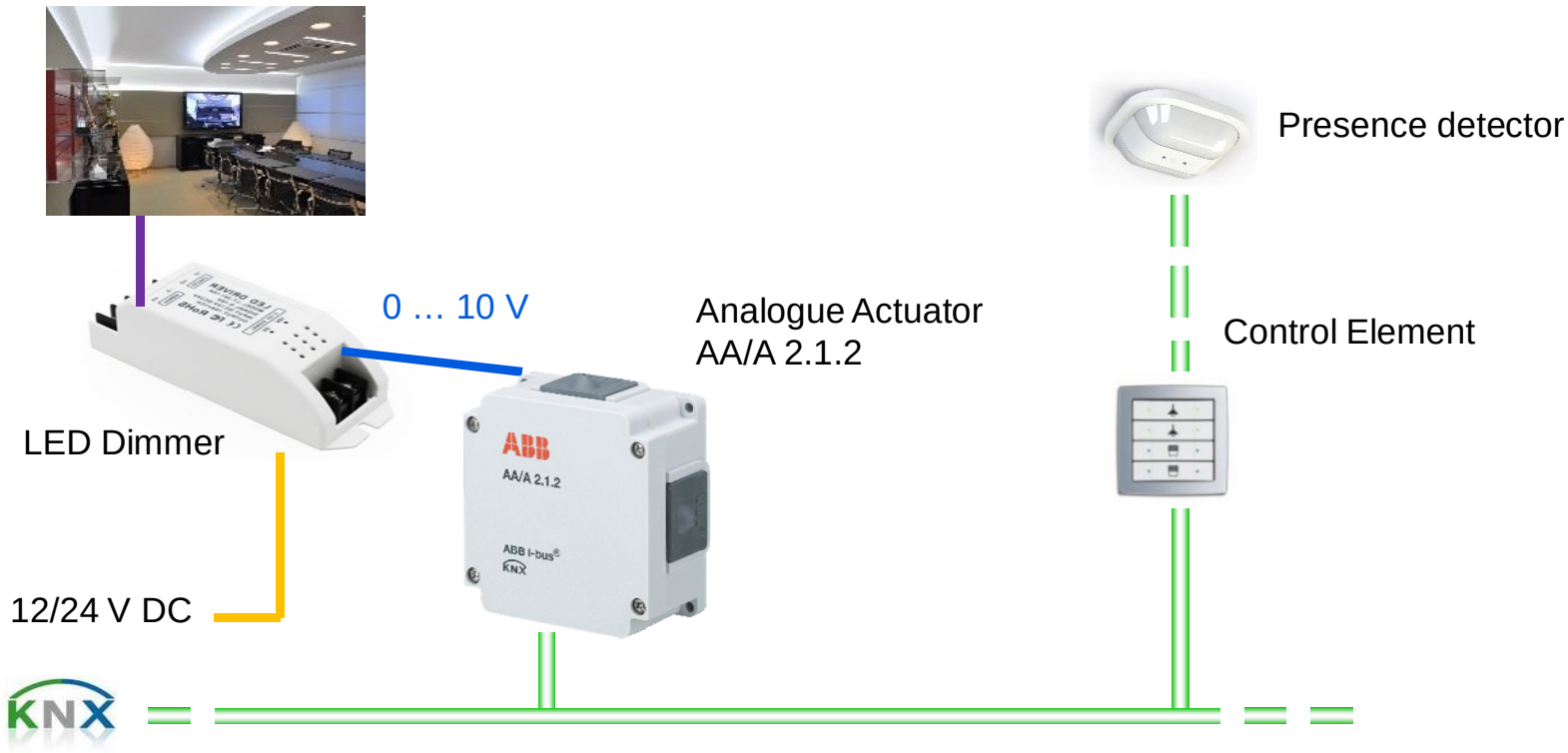
- A control value controls a 6-way valve both for heating and cooling
- Depending on the value either the main heating circuit or main cooling circuit is active



Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Functional description of a light control

- Rocker 1 switches the LED lighting on or off (1 bit)
- Rocker 2 dims up and down (4 bit)
- Presence detector sets a value (8 bit)

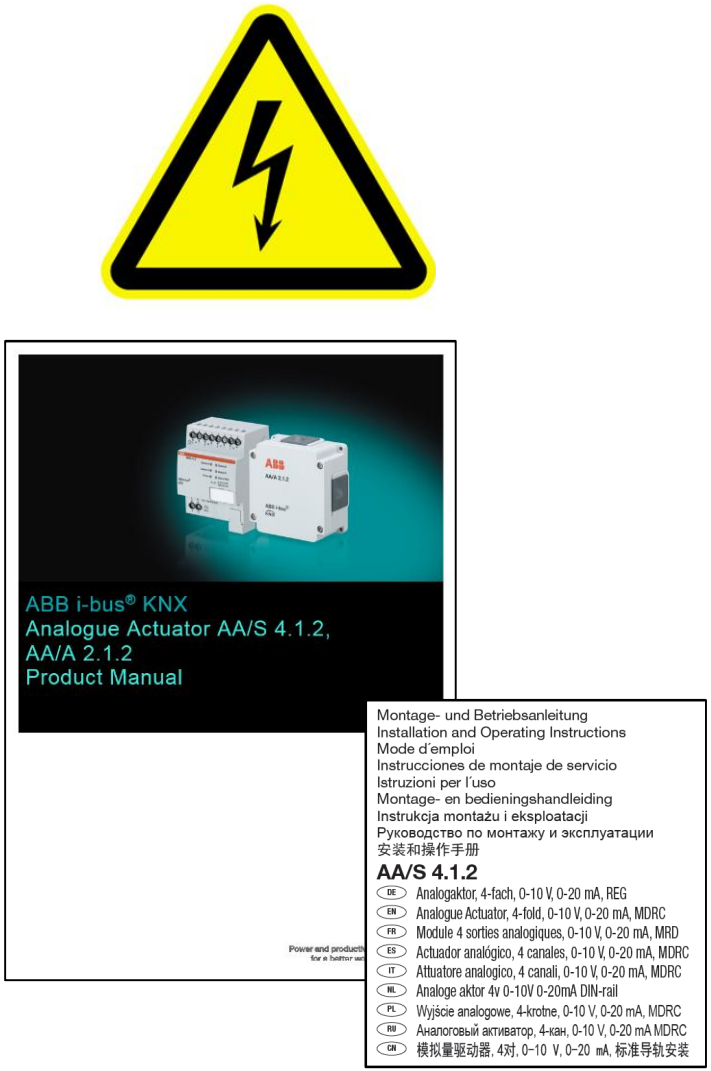


Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

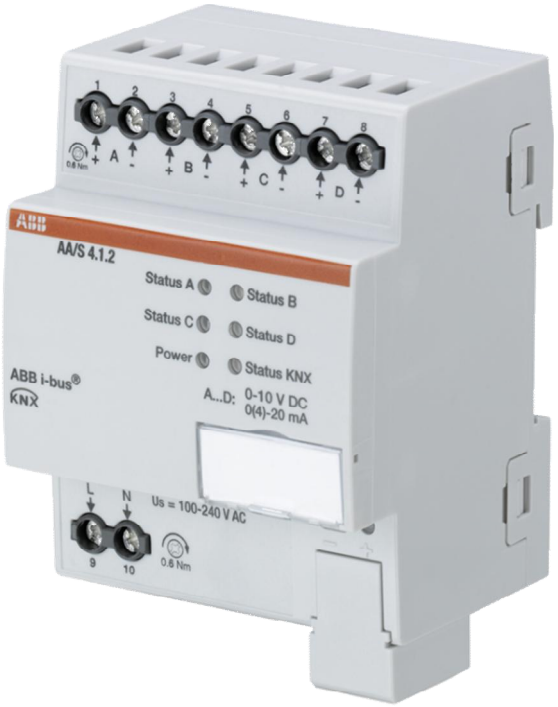
Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation



- Warning! Hazardous voltage! Installation by person with electro technical expertise only
- The appropriate standards, directives, regulations and specifications must be observed when planning and setting up electrical installations
- The device must not be operated outside the specified technical data
- A detailed description of Installation and commissioning can be found in the technical documentation and Installation and Operating Instructions of the device

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/S 4.1.2



- The device is suitable for installation in distribution units or small housings on a 35 mm mounting rail according to EN60715 (any position)
- Accessibility of the device for the purpose of operation, testing, visual inspection, maintenance and repair must be ensured
- Electrical connection is implemented using screw terminals
  - 0.2…2.5 mm^2 fine stranded
  - 0.2…4.0 mm^2 single core
- The connection to the KNX is implemented using the supplied bus connection terminal

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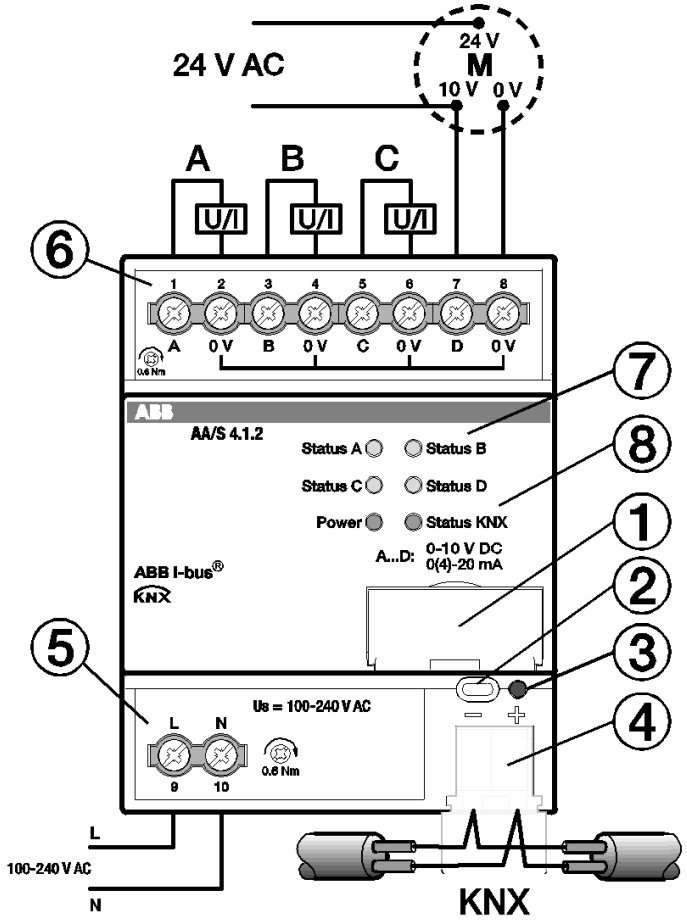
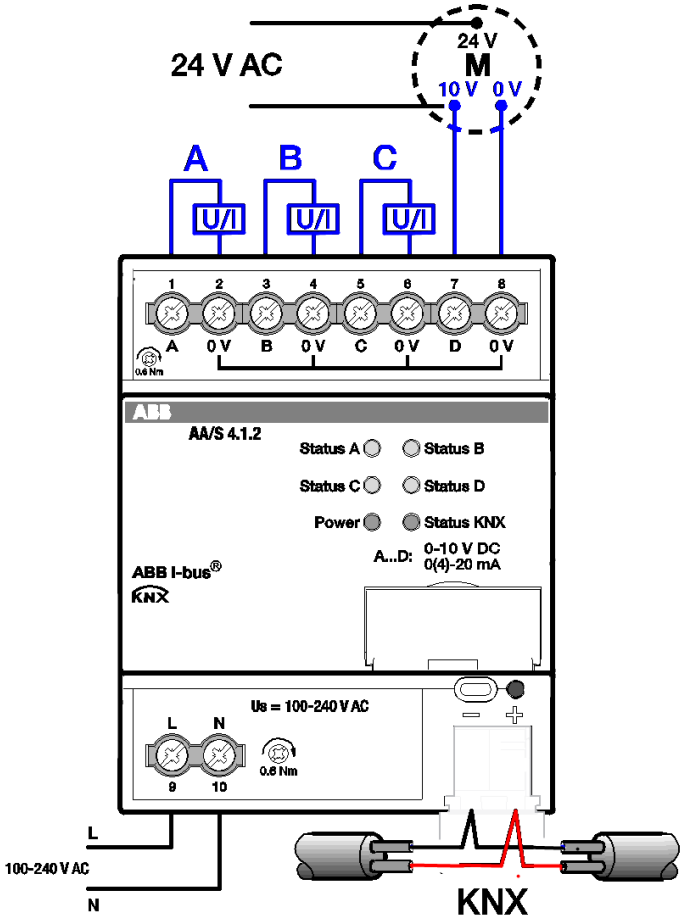
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/S 4.1.2 – Hardware



Connection diagram

No.	
1	Label carrier
2	Programming button
3	Programming LED
4	Bus connection terminal
5	Power supply connection U_S
6	Analog outputs
7	Status Channels A...D LED
8	Status KNX and Power LED

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/S 4.1.2 – Hardware

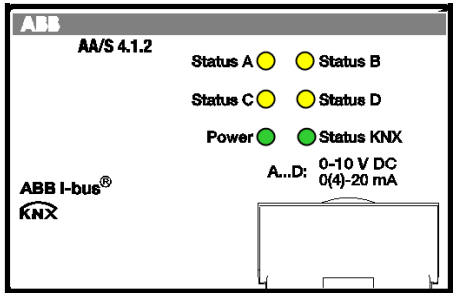


Connection diagram

Terminal	
1	Analog Output A
2	0 V
3	Analog Output B
4	0 V
5	Analog Output C
6	0 V
7	Analog Output D
8	0 V
9	L Operating voltage
10	N Operating voltage
-	KNX “-”
+	KNX “+”

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/S 4.1.2 – Display/Operating elements

LED	Function	Description
Status A…D LED (yellow)	ON OFF Flashing	Channel output signal is not 0 (or not minimum output value) Channel output signal is 0 or output is deactivated (or is minimum output value) Channel output fault: e.g. current mode: load too high
Status KNX LED (green)	ON OFF	KNX voltage on, device ok Bus voltage failure
Power LED (green)	ON OFF	Operating voltage present Operating voltage is not present
Programming button	Press	Assignment of the individual address
Programming LED (red)	ON	The LED comes on when the Programming button is pressed, in order to assign a individual address



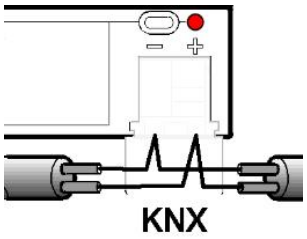
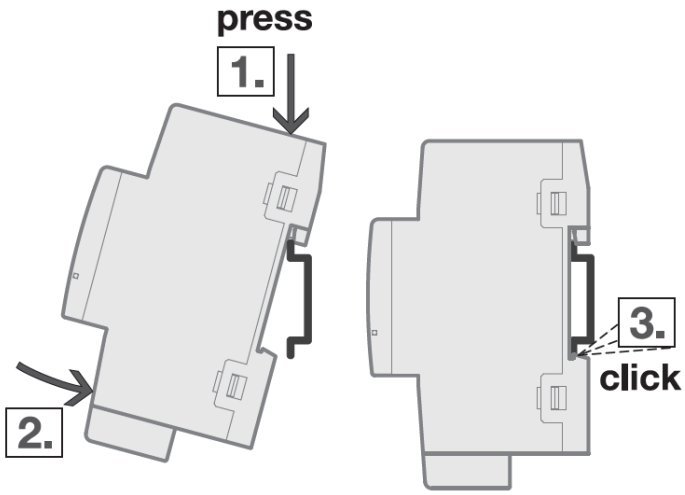
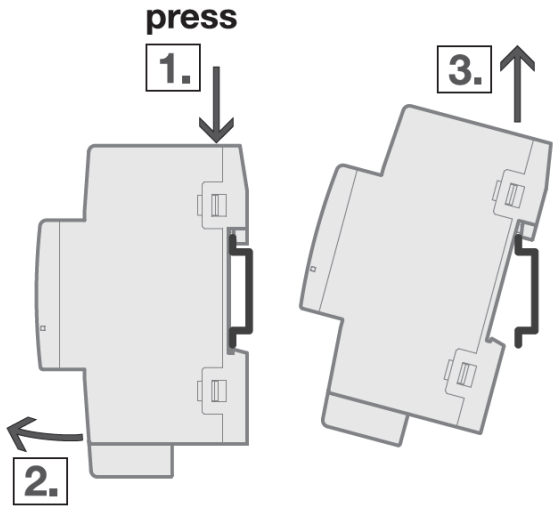


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation steps AA/S 4.1.2



- Snap onto mounting rail



- Remove from mounting rail
- No screwdriver required!

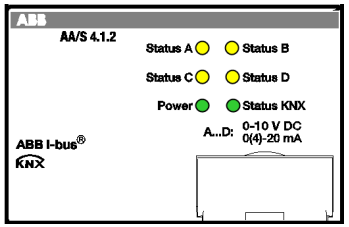
Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation steps AA/S 4.1.2

- De-energize the electrical plant and prevent unintentional reclosing of the electrical plant
- Snap device onto mounting rail
- Connect the cables for
  - Operating voltage
  - KNX
  - Analog control inputs of the related devices
    - Note the output signal load
      Voltage signal: ≥ 1k ohm, ≤ 10 mA
      Current signal: ≤ 500 ohms, ≤ 20 mA
- …

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation steps AA/S 4.1.2

- Switch on operating voltage and KNX
  à Start up of the device
- The “Status KNX” LED lights green
- The “Power” LED lights green
- The “Channel Status A…D” LEDs can be on (yellow) or off. If a LED flashes, the output has a fault (e.g. current mode: load too high)



à Analogue Actuator is ready for operation and commissioning with ETS

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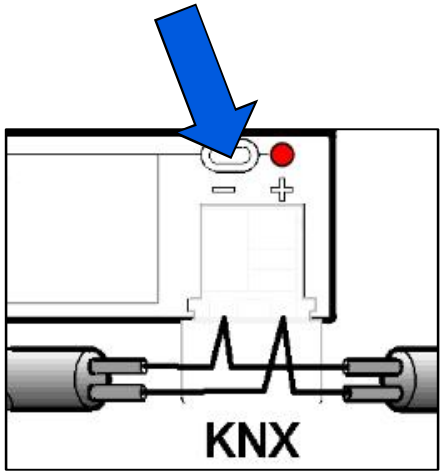
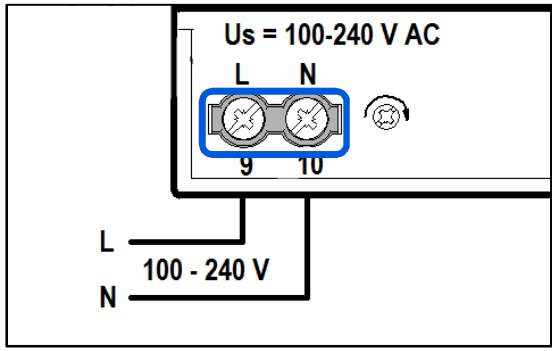
Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting of AA/S 4.1.2





Test KNX

- Press “Programming button”
  à Programming LED lights red
  KNX is OK, press again to switch off the LED
  à Programming LED does not light:
  KNX failure
  Check weather KNX is available (e.g. using a digital meter and measure the bus voltage between the red and black core, 20-29 V DC)

Test operating voltage

- Using a digital meter and measure the mains voltage between the “Power supply connection U_s”

Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/A 2.1.2

- The device is suitable for surface mounting in any position
- Four screws (enclosed) connect the device to a flat surface
- Accessibility of the device for the purpose of operation, testing, visual inspection, maintenance and repair must be ensured
- Electrical connection is implemented using pluggable screw terminals
  - 0.08…1.5 mm^2 fine stranded
  - 0.2…1.0 mm^2 single core
- The connection to the KNX is implemented using the supplied bus connection terminal

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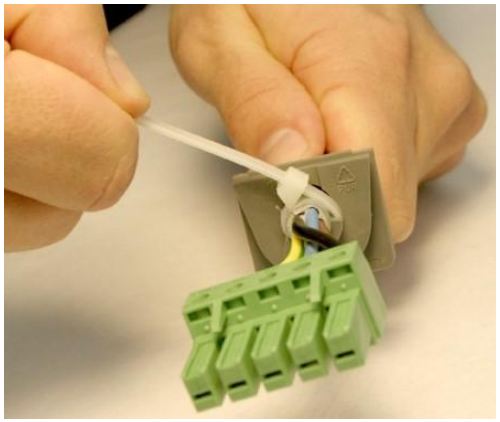
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/A 2.1.2

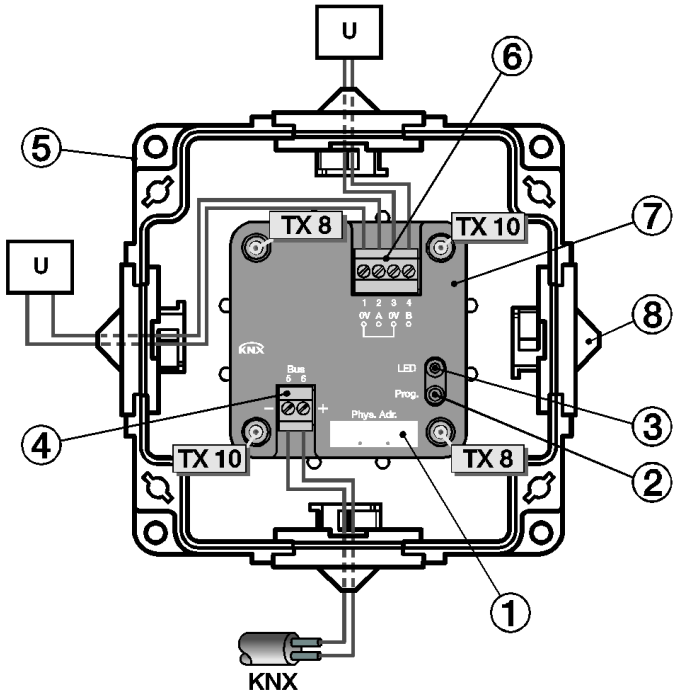


The strain relief is carried out on the cable entry

Scope of delivery

- Analogue Output incl. four cable entries opened and two cable entries closed
- Installation and operating instructions
- Bus pluggable screw terminal
- Pluggable screw terminal for the cables to the analog control inputs of the related devices
- Four cable ties for strain relief
- 4 x screws and 4 x S6 dowels

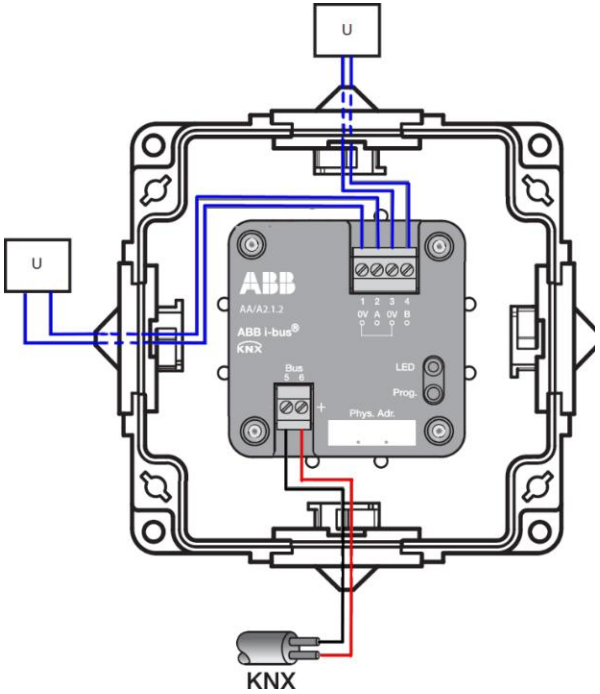
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/A 2.1.2 – Hardware



Connection diagram

No.	
1	Label carrier
2	Programming button
3	Programming LED (red)
4	KNX bus connection
5	Housing
6	Analog outputs
7	Device cover
8	4 x cable entry

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/A 2.1.2 – Hardware



Connection diagram

Terminal	
1	0 V
2	Analog Output A
3	0 V
4	Analog Output B
5	KNX “-”
6	KNX “+”

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation AA/A 2.1.2 – Display/Operating elements

LED	Function	Description
Programming button PROG	Press	Assignment of the individual address
Programming LED (red)	ON	The LED comes on when the Programming button is pressed, in order to assign a individual address

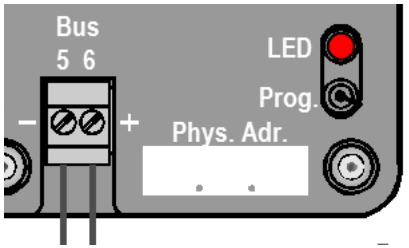


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation steps AA/A 2.1.2

- De-energize the electrical plant and prevent unintentional reclosing of the electrical plant
- Fix the housing with screws (enclosed) on a flat surface
- Cables are routed to the device via cable entries and carried out the strain relief
- Connect the cables for
  - KNX
  - Analog control inputs of the related devices
    - Note the output signal load
      Voltage signal: ≥ 5k ohm, ≤ 2 mA
- …

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Installation steps AA/A 2.1.2

§ Switch on KNX
à Start up of the device

à Analogue Actuator is ready for operation and commissioning with ETS

ABB i-bus® KNX Analogue Actuator AA/x X.1.2

Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning

- Add an Analogue Actuator to the building/topology view
- Set the parameters according to the requirements of the installation
- Create and link group addresses to the group objects of the devices
- Download individual address and application
- Test the
  - Settings of the Analogue Actuator (i-bus® Tool)
  - Functional implementation
    Control element/Sensor – Analogue Actuator – Terminal Device

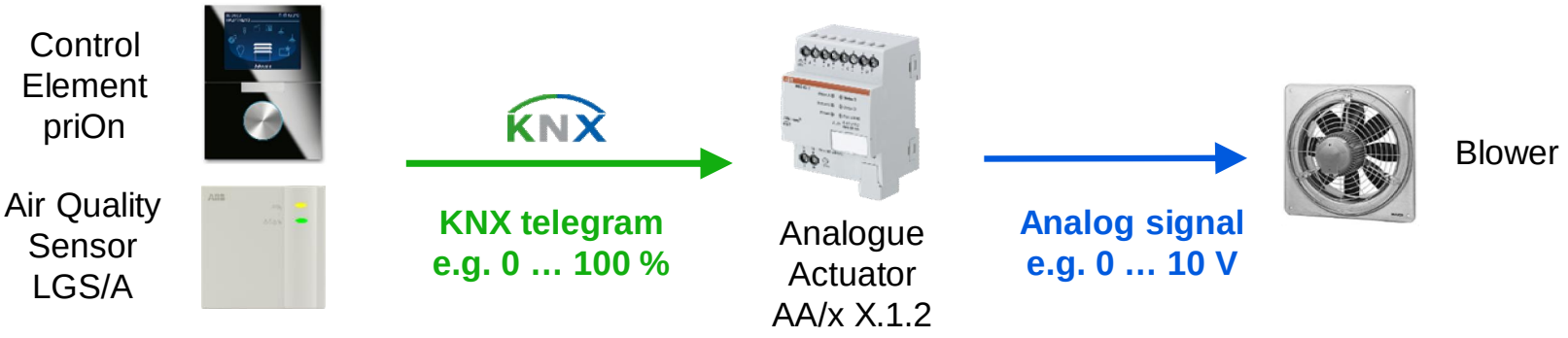
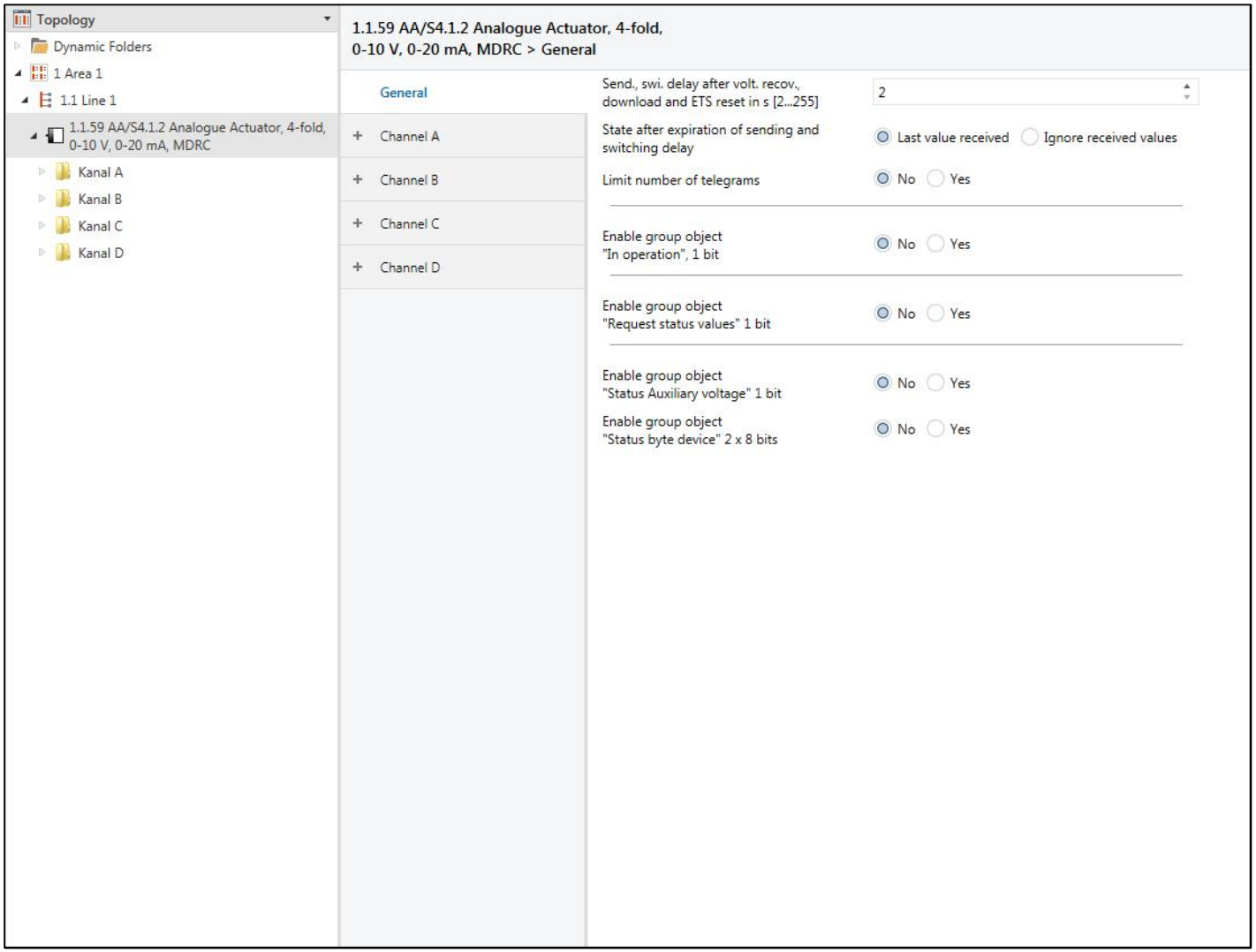


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – General



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Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – General

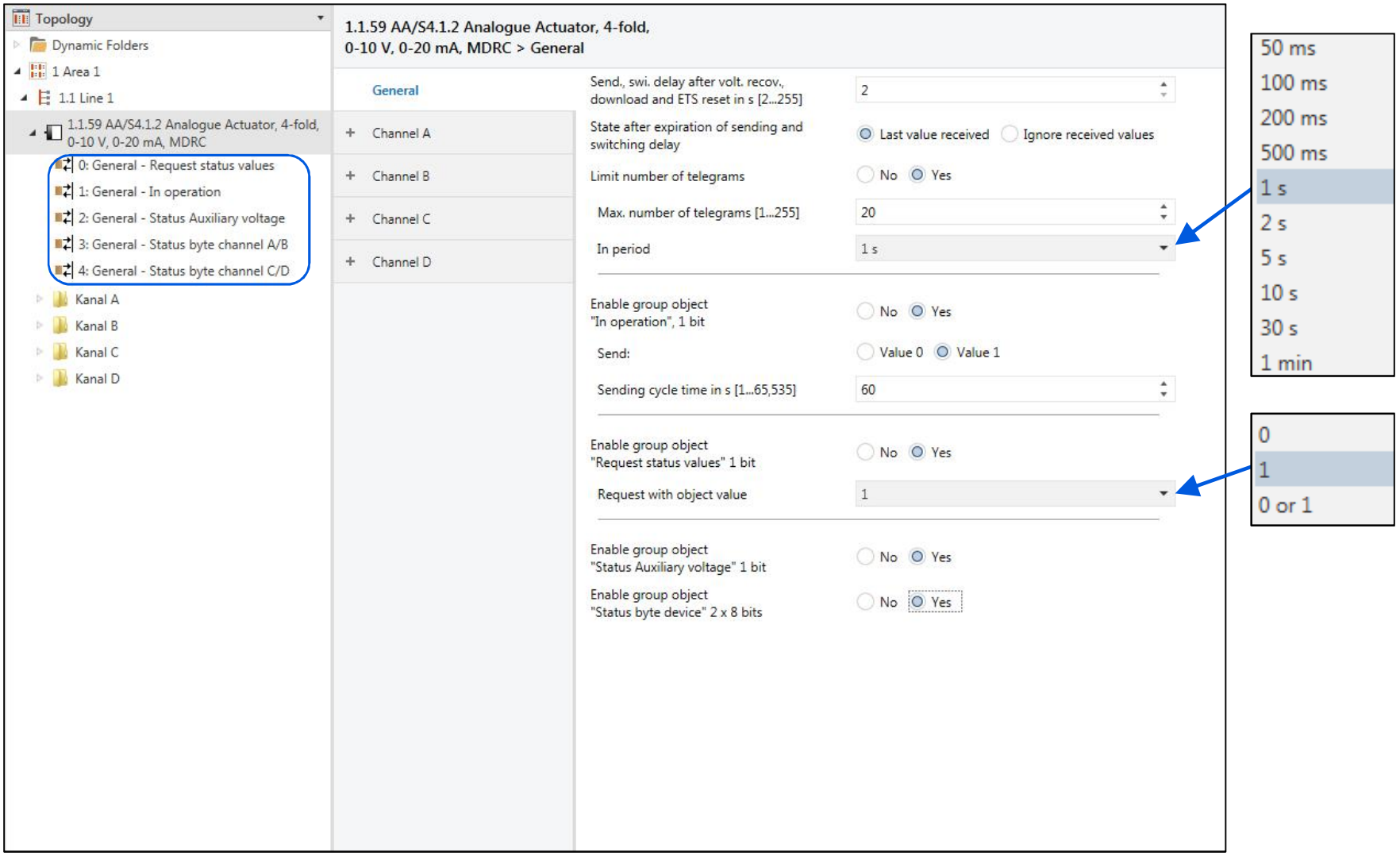


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: General

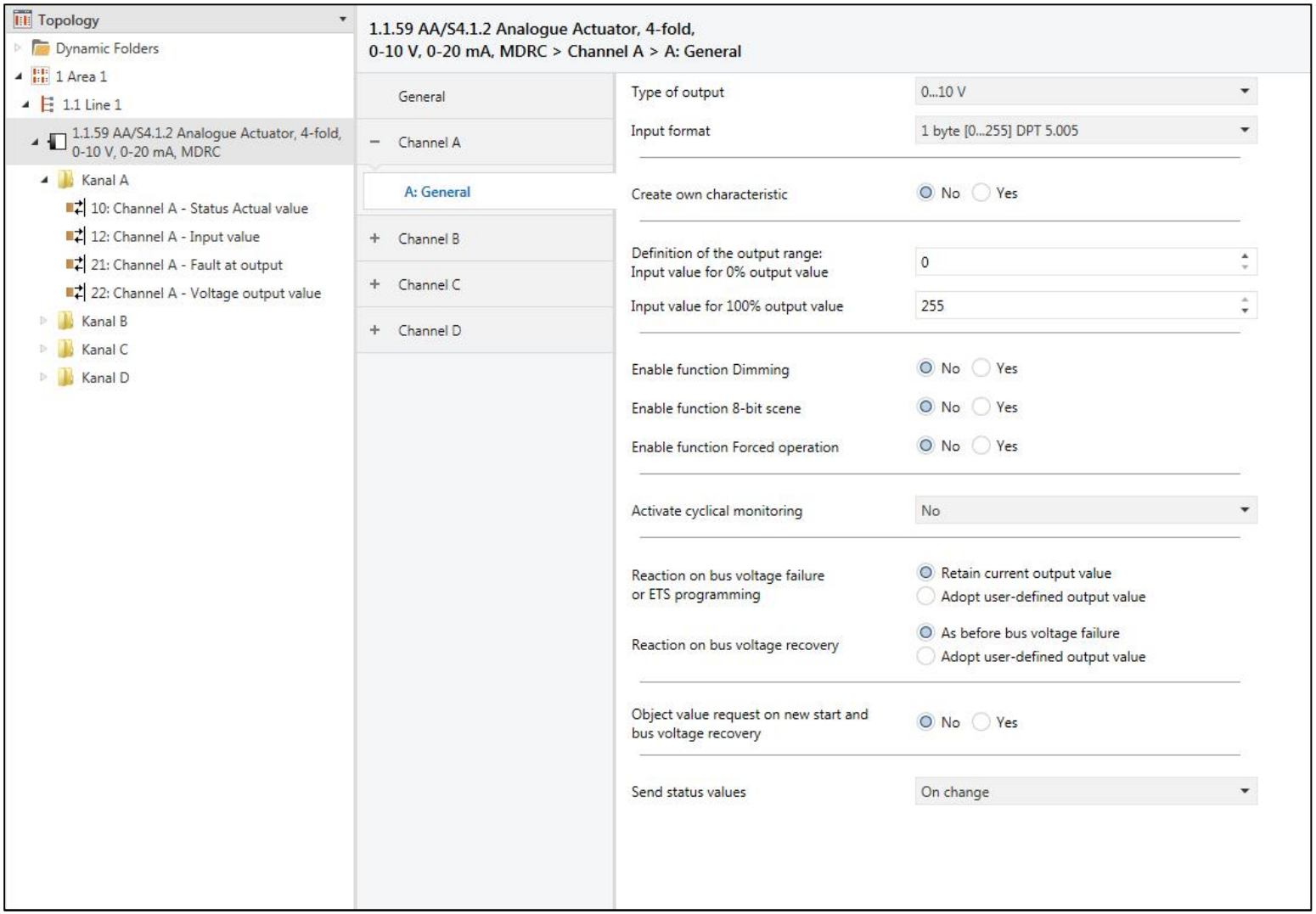


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: General

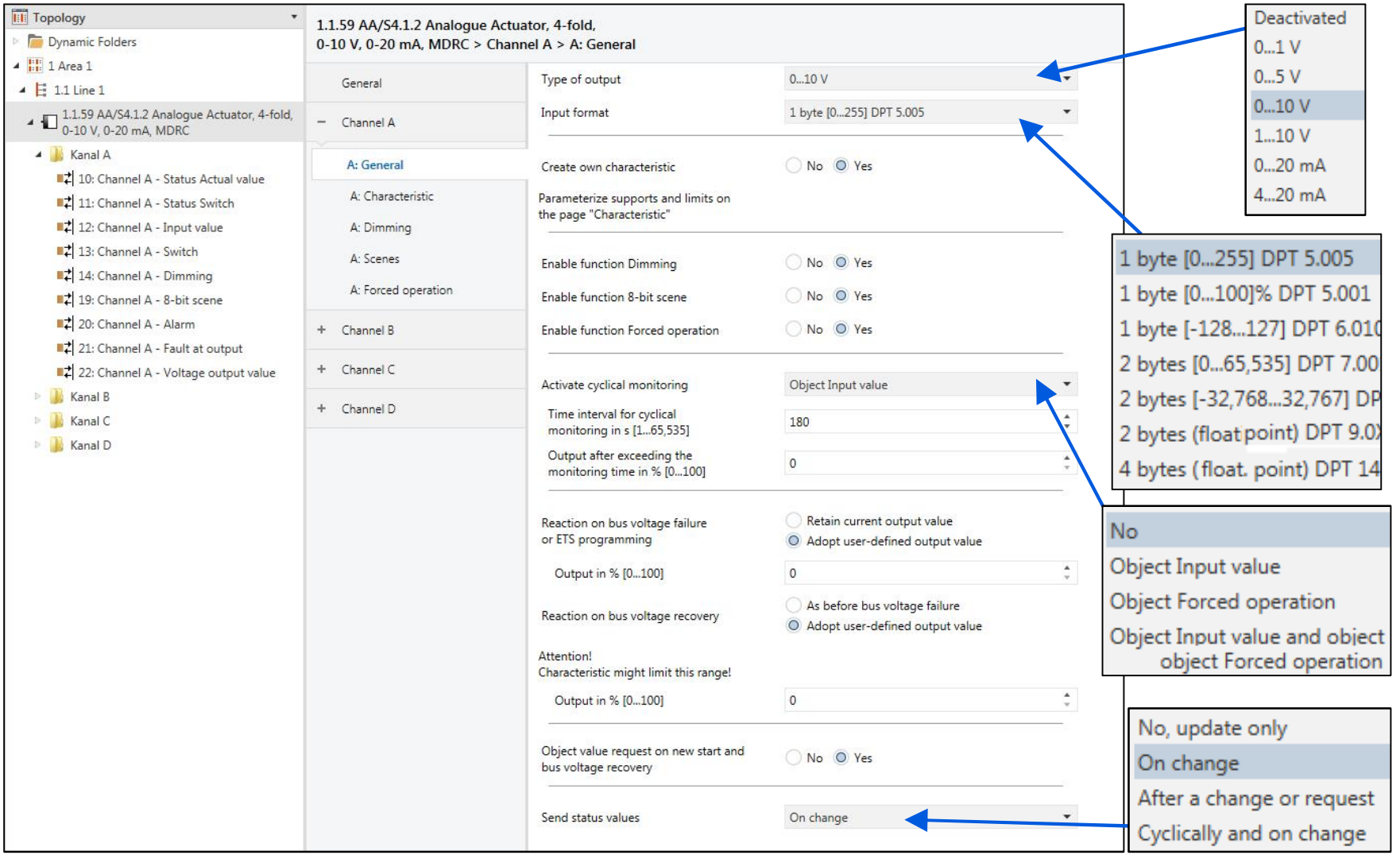
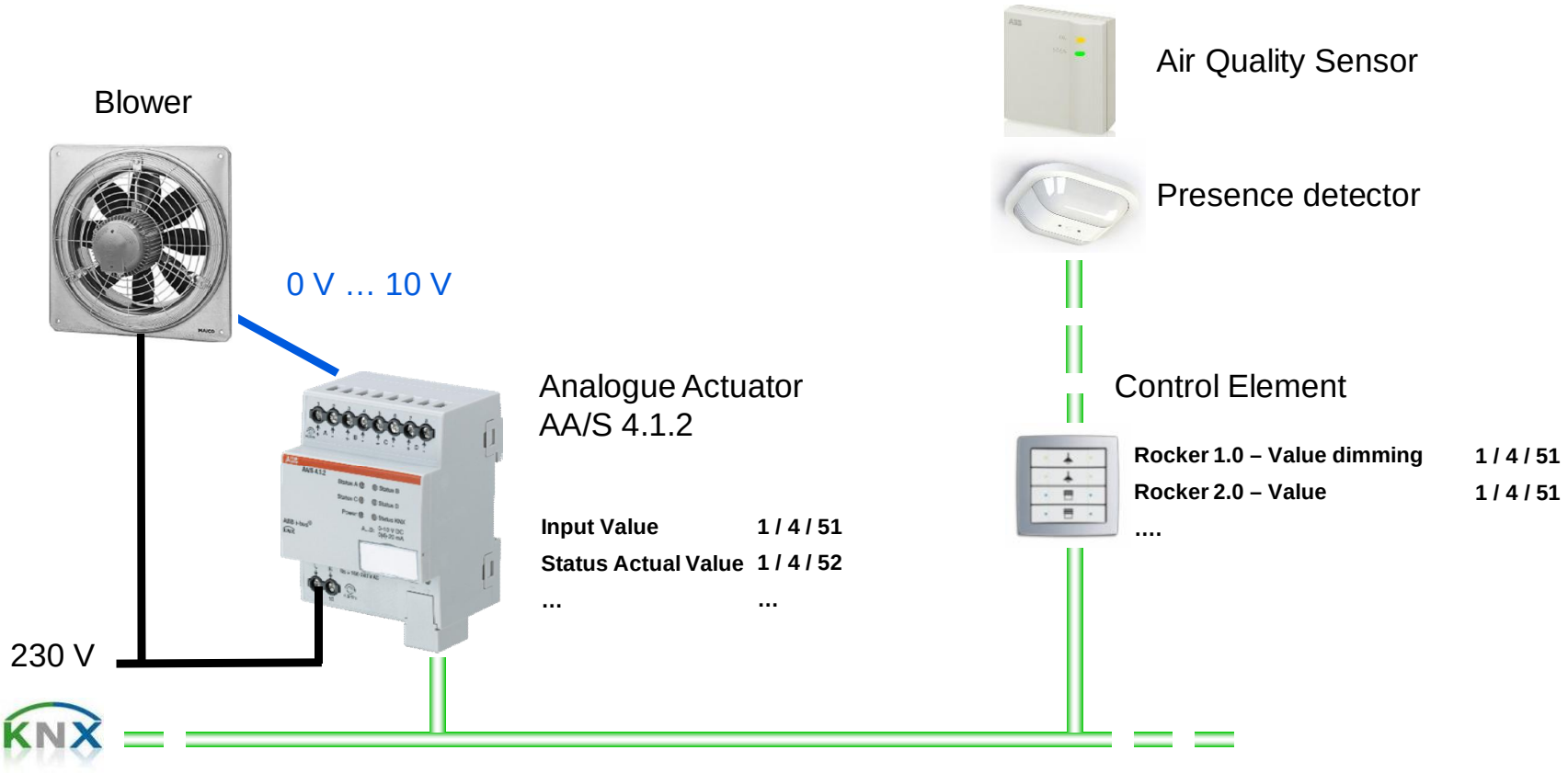


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Blower



30	Channel B	Status Actual value	1/4/52	1 byte
32	Channel B	Input value	1/4/51	1 byte
41	Channel B	Fault at output		1 bit
42	Channel B	Voltage output value		2 bytes

0	Rocker switch 1.0 - Value switching	1/4/51	1 byte
1	Rocker switch 2.0 - Value	1/4/51	1 byte

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Valve control

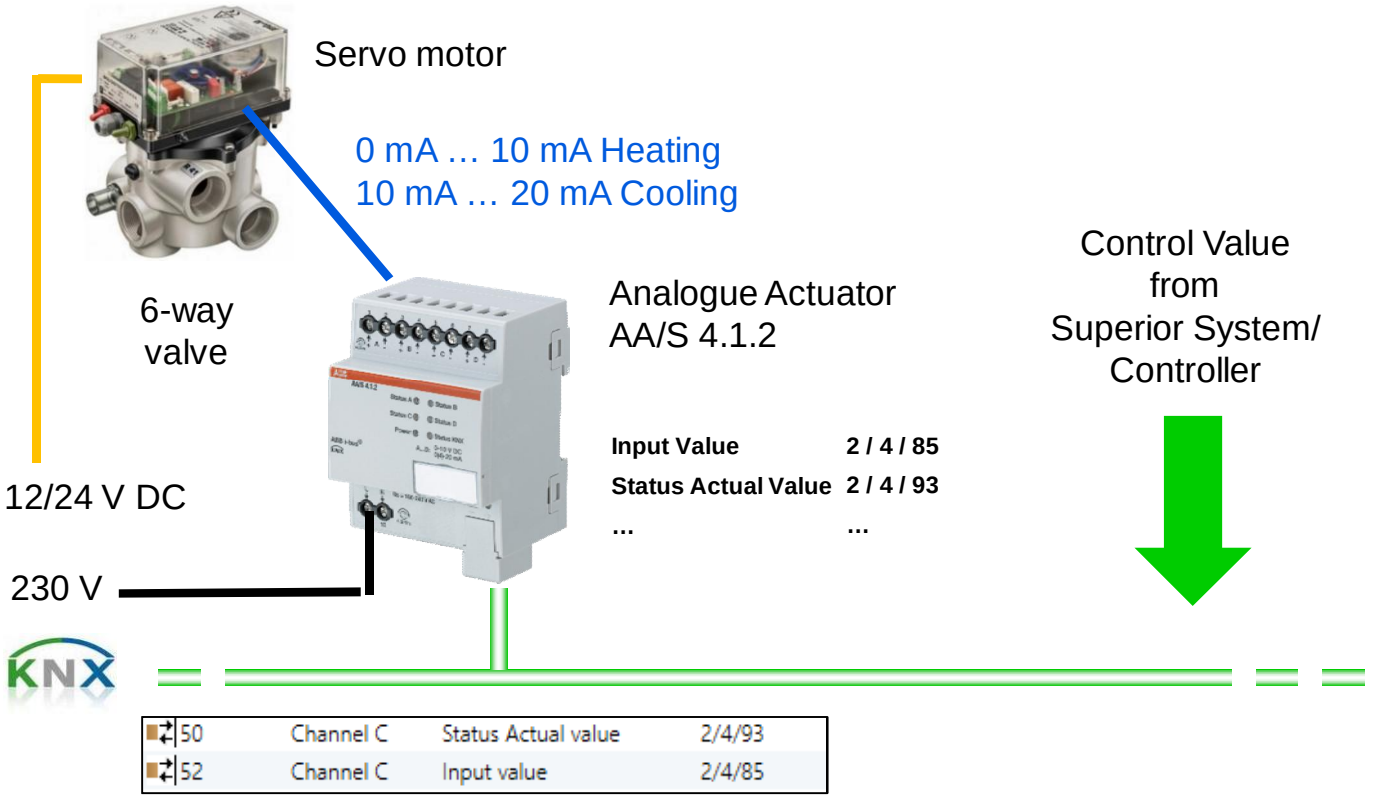


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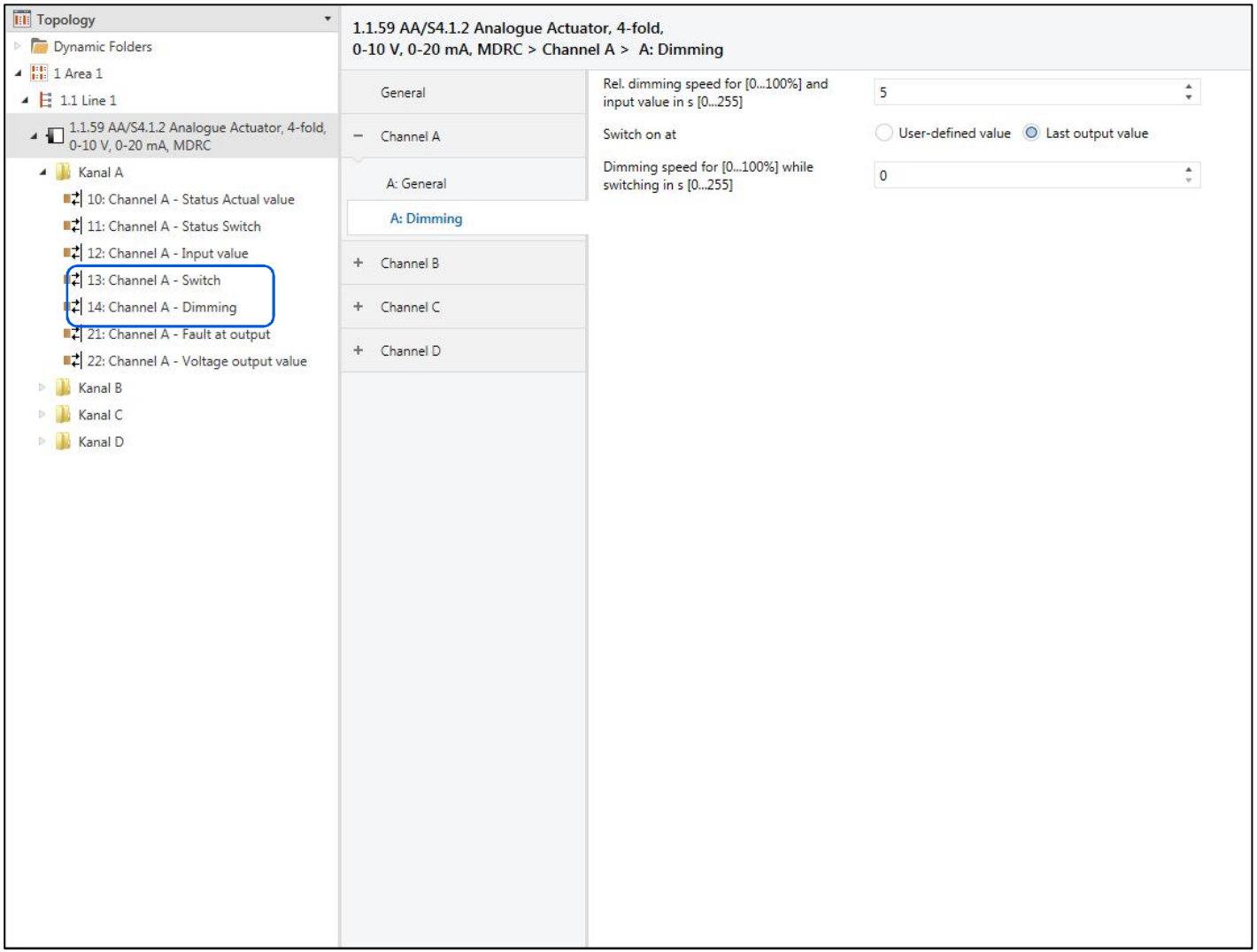
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Dimming



Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Dimming

LED Dimmer

0 … 10 V

12/24 V DC

Analogue Actuator
AA/A 2.1.2

Switch	**1 / 2 / 1**
Dimming	**1 / 2 / 2**
Input Value	**1 / 2 / 3**
Status Switch	**1 / 2 / 4**
Status Actual Value	**1 / 2 / 5**
…	**…**

Presence detector

Control Element

Rocker switch 1.1 – Switching	**1 / 2 / 1**
Rocker switch 1.1 – Relative dim.	**1 / 2 / 2**
Rocker 2.0 – Value switching	**1 / 2 / 3**
….	**…**

Num	Name	Object Function	Group Address	Length
10	Channel A	Status Actual value	1/2/5	1 byte
11	Channel A	Status Switch	1/2/4	1 bit
12	Channel A	Input value	1/2/3	1 byte
13	Channel A	Switch	1/2/1	1 bit
14	Channel A	Dimming	1/2/2	4 bit
21	Channel A	Fault at output	1/2/6	1 bit
22	Channel A	Voltage output value	1/2/7	2 bytes

Num	Name	Obje	Group Address	Length
0	Rocker switch 1.0 - Switching		1/2/1	1 bit
1	Rocker switch 1.1 - relative dimming		1/2/2	4 bit
2	LED rocker 1 left.0 - Status		1/2/4	1 bit
3	LED rocker 1 right.0 - Status		1/2/4	1 bit
4	Rocker switch 2.0 - Value switching		1/2/3	1 byte
5	LED rocker 2 left.0 - Status		1/2/5	1 byte
6	LED rocker 2 right.0 - Status		1/2/5	1 byte

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Scenes

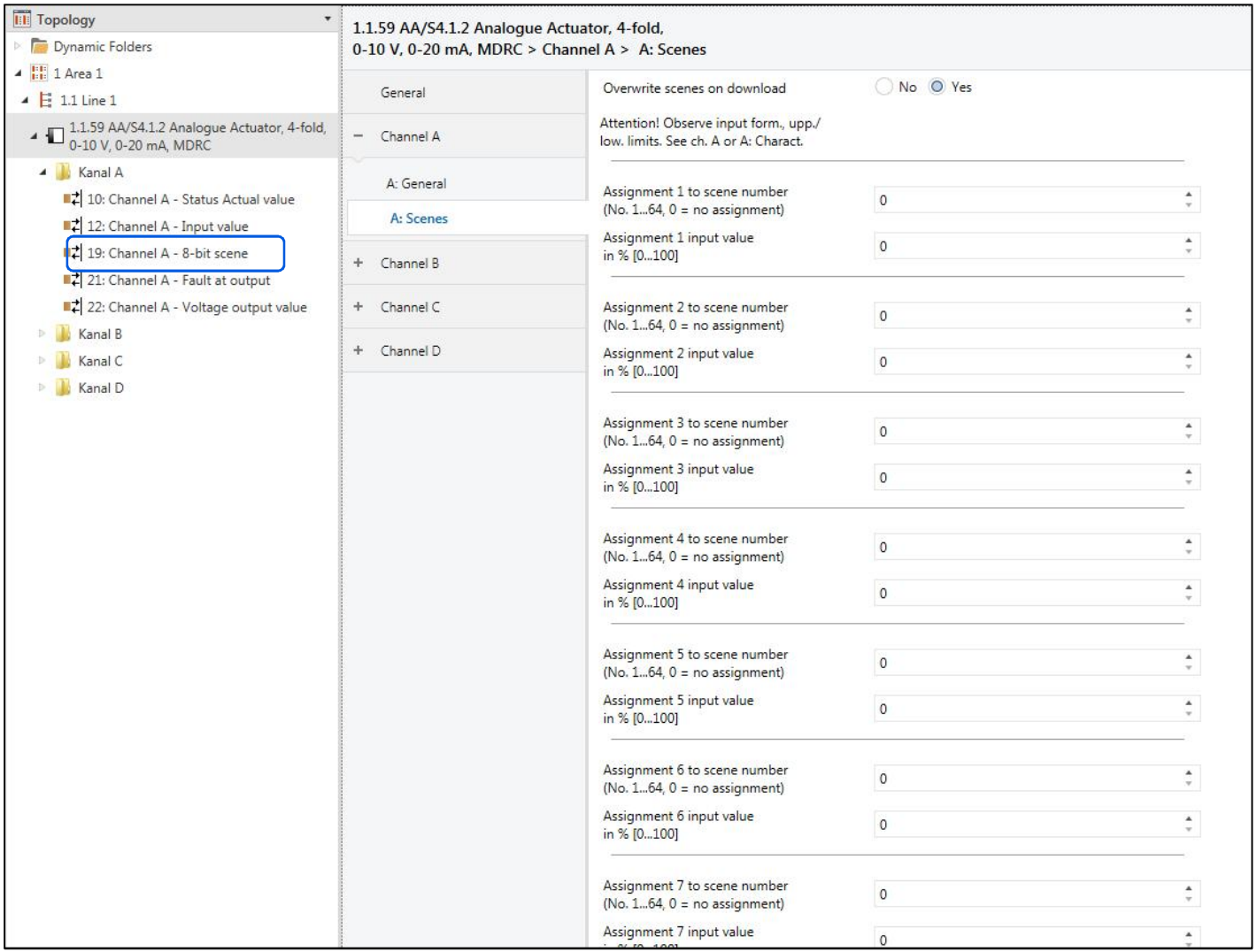


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ABB i-bus® KNX Analogue Actuator AA/x X.1.2
ETS Parameters – Channel X: Forced Operation

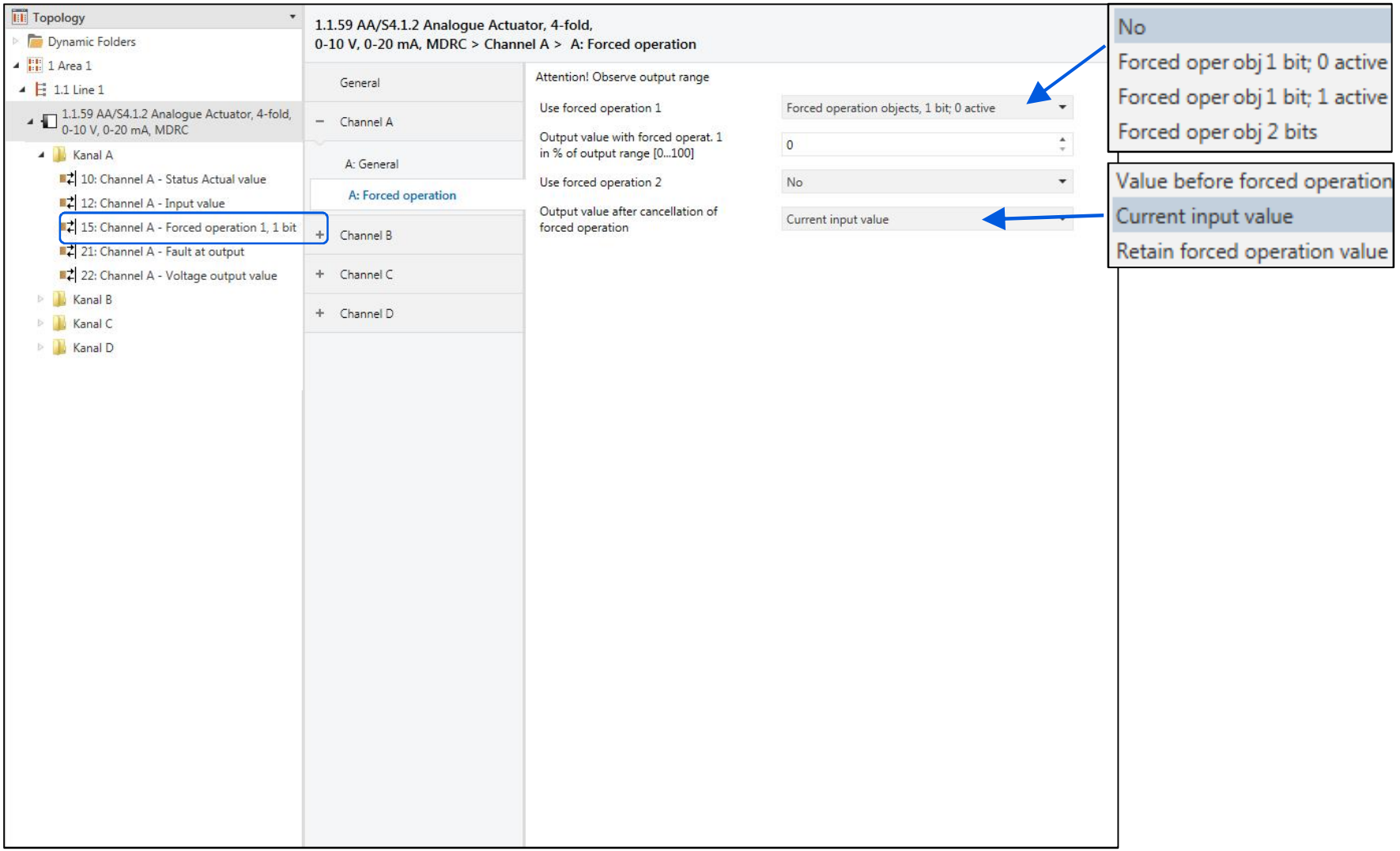
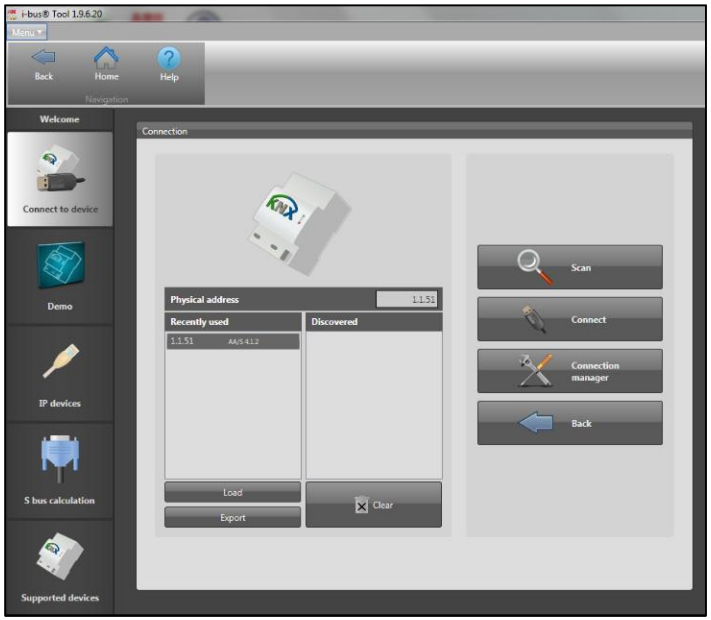
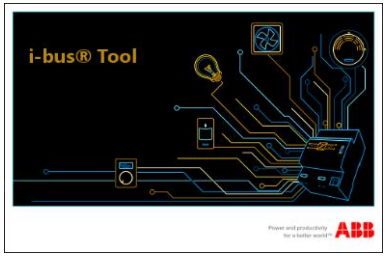


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting





i-bus® Tool – a professional Service Tool

- Internal information and states of the device hardware and software applications are now available in a transparent manner
- The i-bus® Tool is optional, i.e. the KNX devices must still be commissioned using just the ETS
- The i-bus® Tool accesses a KNX device via a standard KNX interface (USB, IP) with the assistance of the individual address
- The system integrator can trigger the desired functions, read values, simulate states and make settings for the connected device (e.g. scenes)

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Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Outputs All”

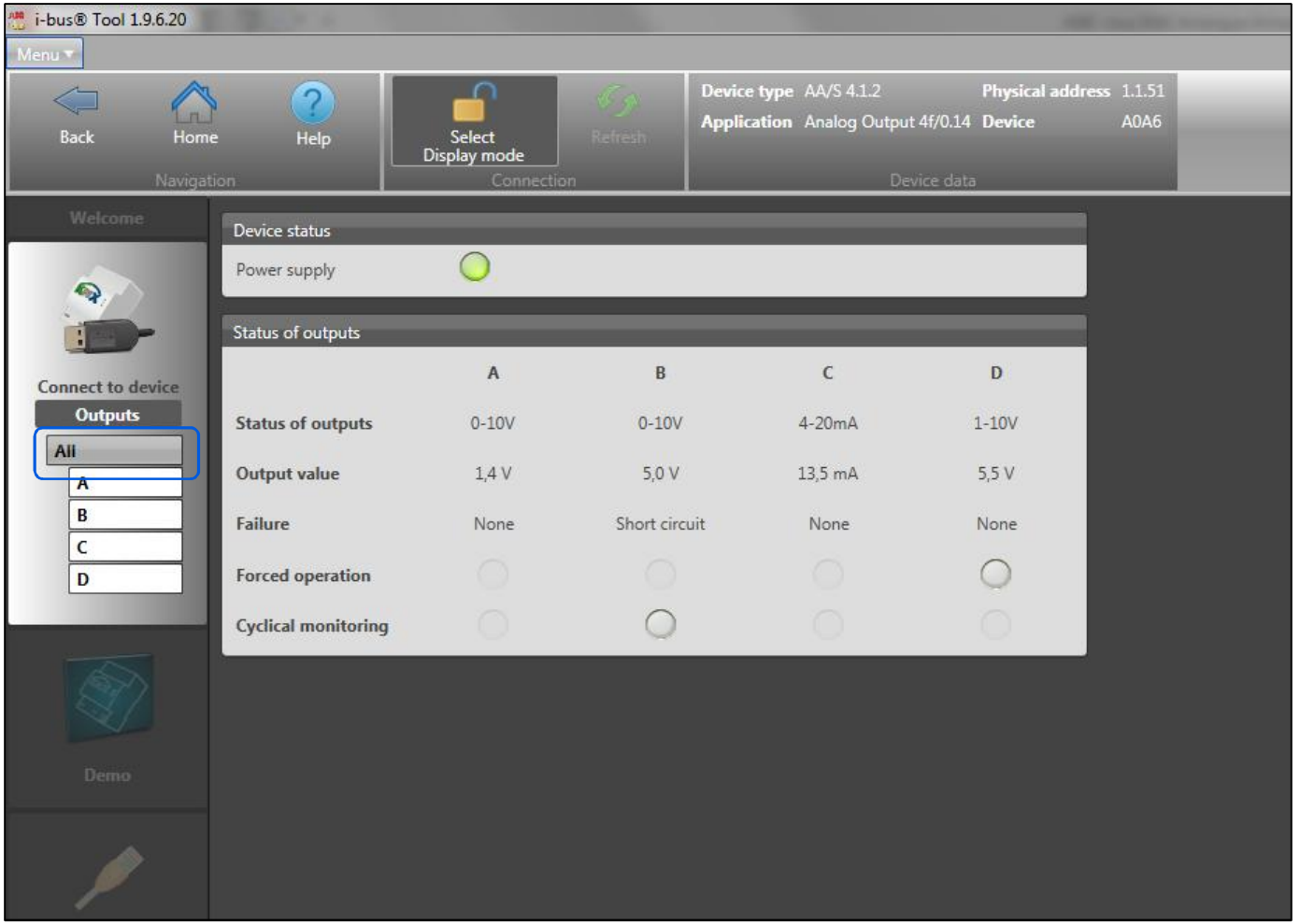


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output A”

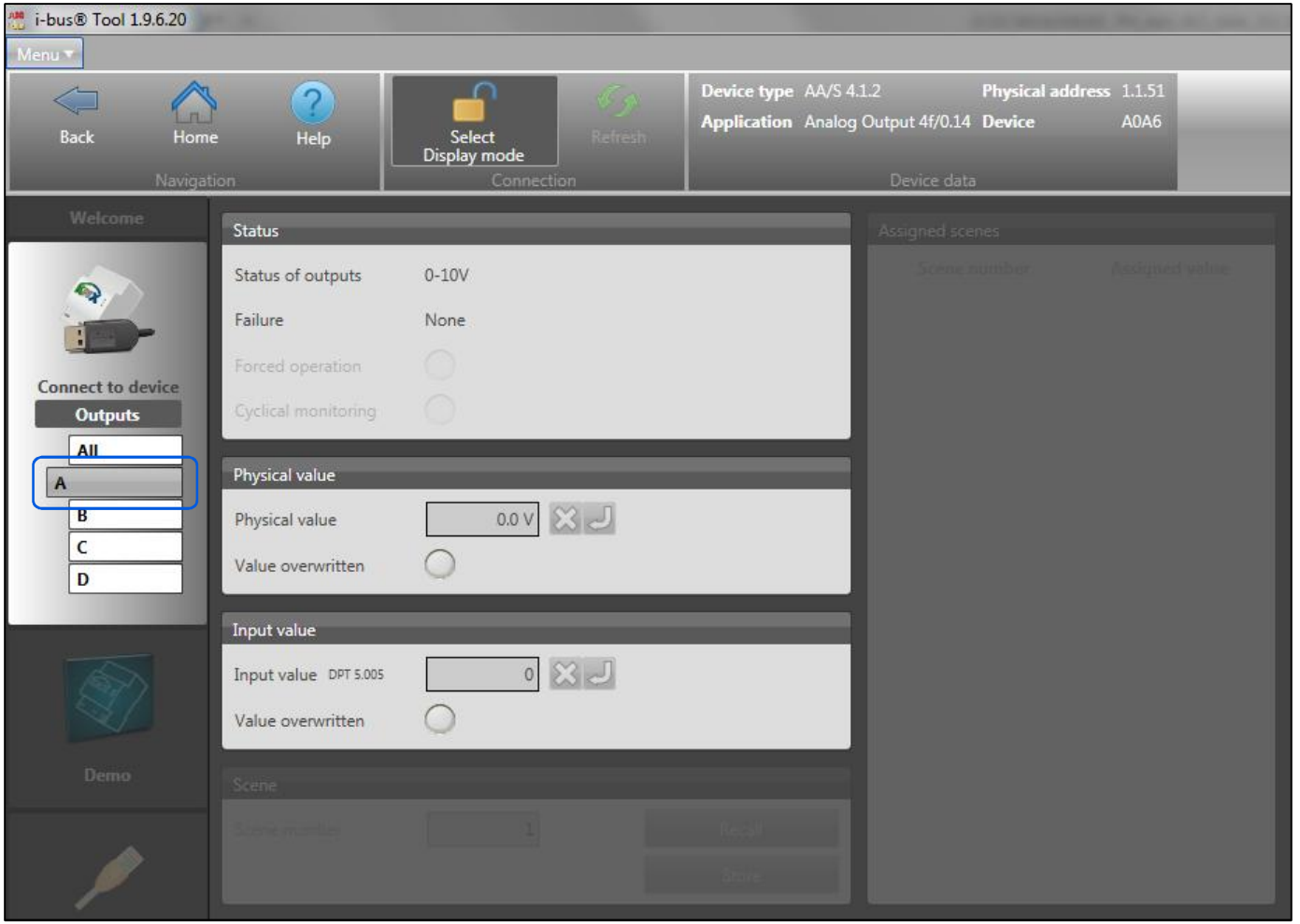


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output B”

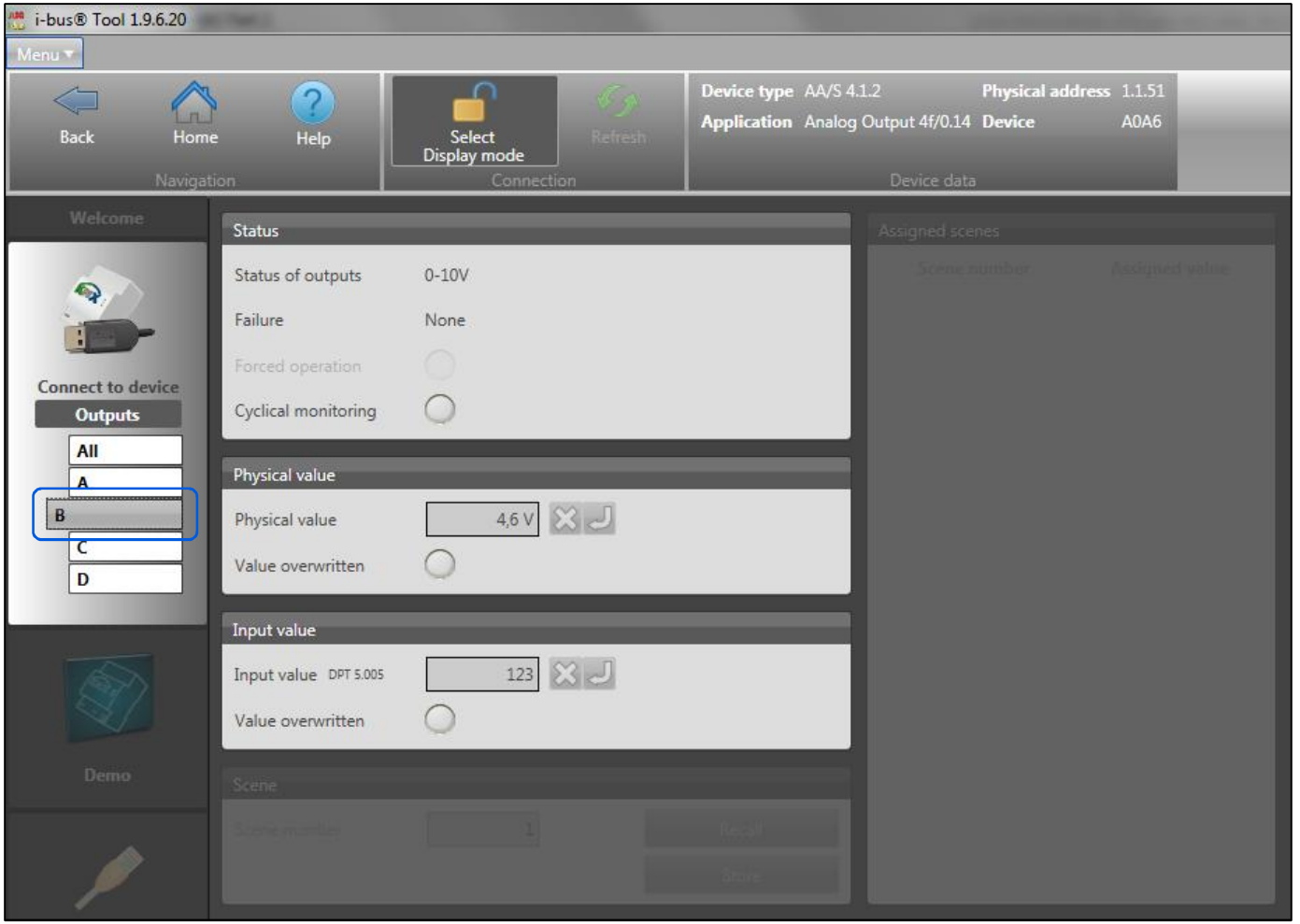


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output C”

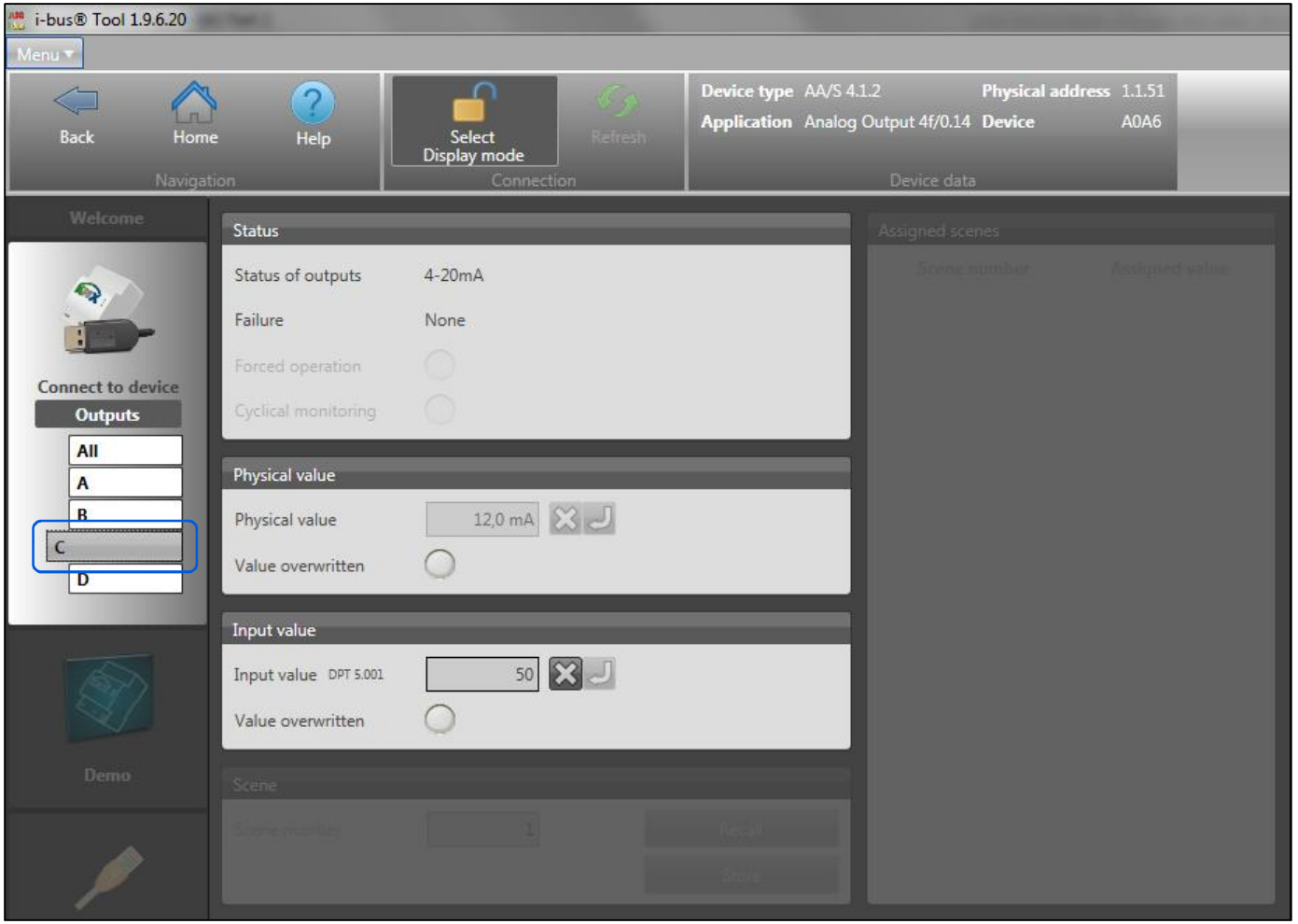
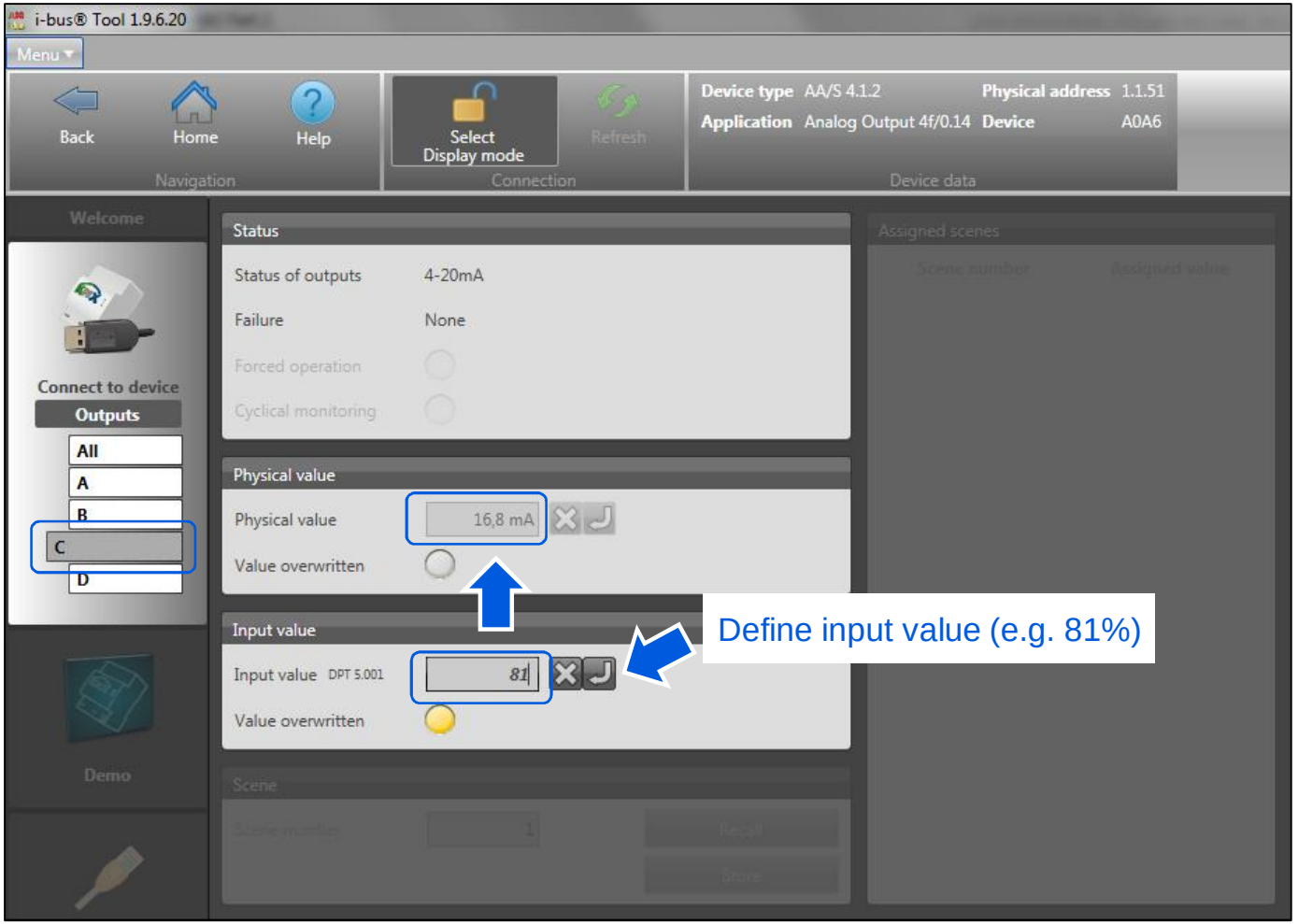


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output C”



Basic | Planning | Installing | Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output C”

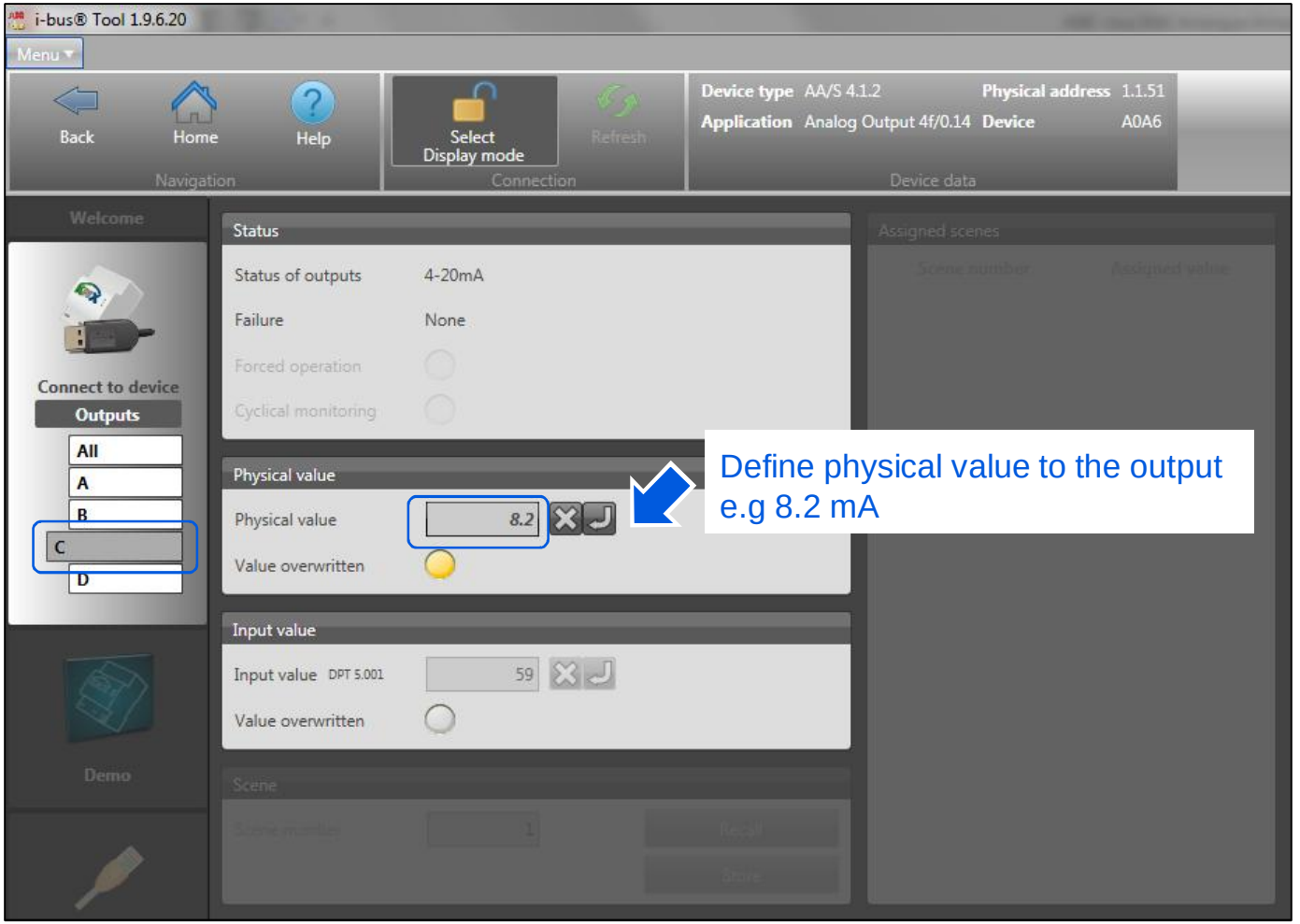


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Testing and troubleshooting

i-bus® Tool – “Output D”

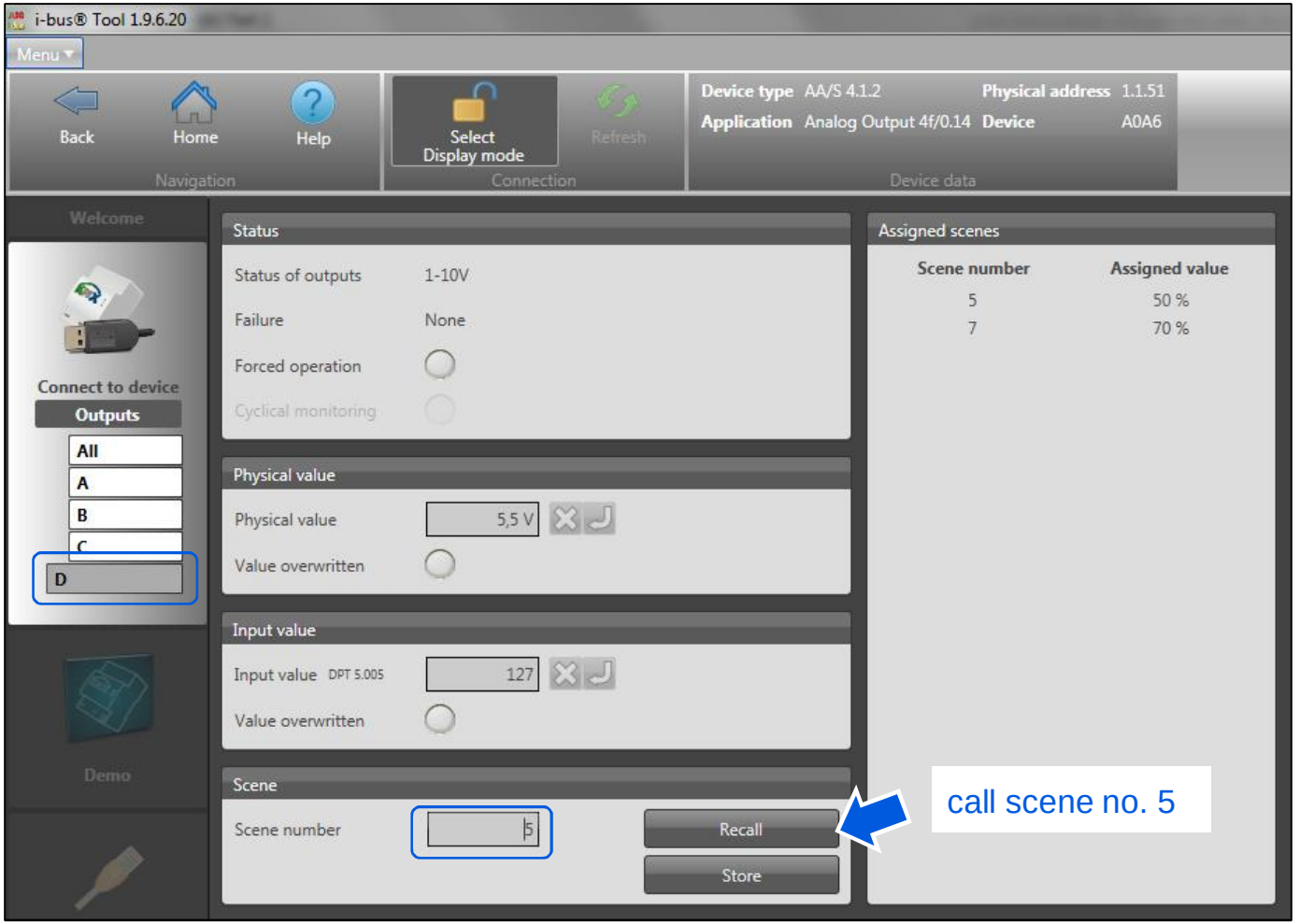
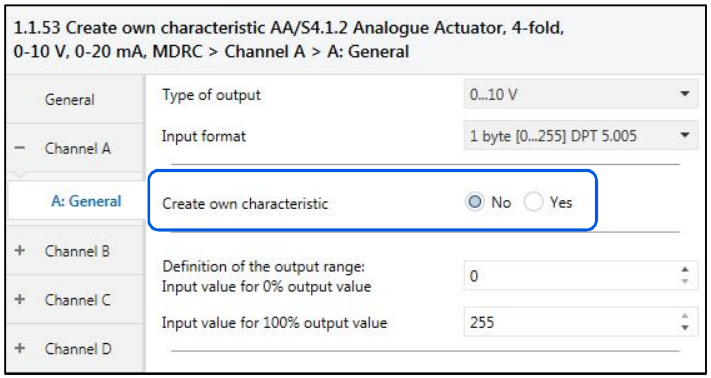


ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Analogue Actuator AA/S 4.1.2 and AA/A 2.1.2

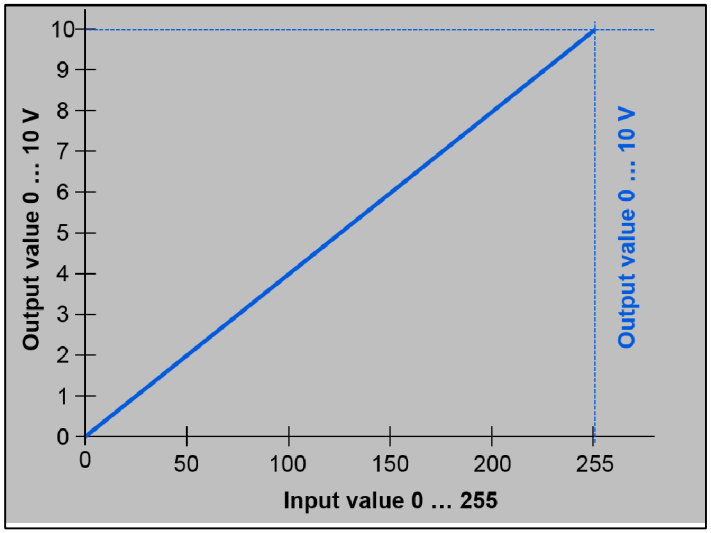
Advanced Planning Installing Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning



Create own characteristic

- No own characteristic specified
- Linear behavior between input value and out value



- Input Format: 1 byte (0 …255)
- Type of output: 0 … 10 V

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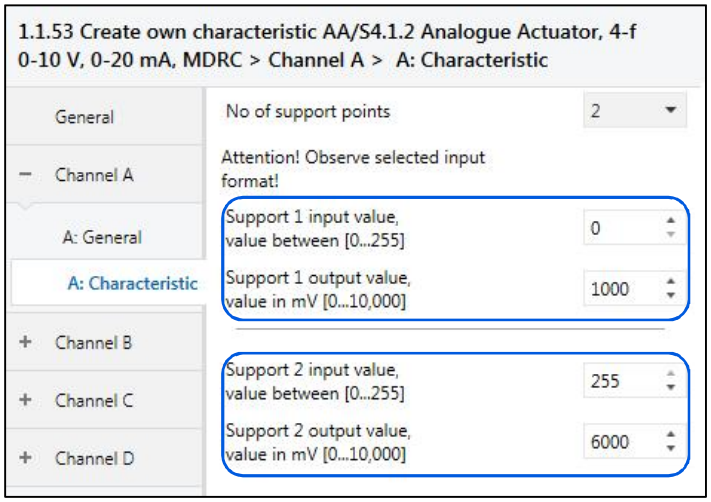
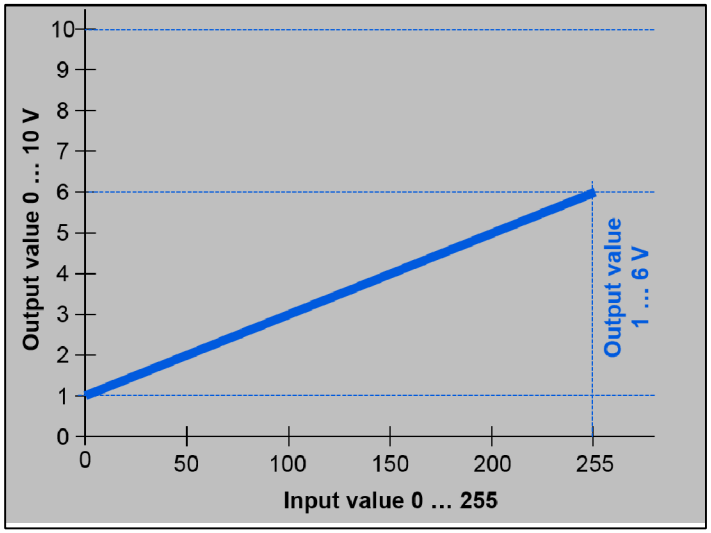
ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning



Create own characteristic

- Create own characteristic to specify a particular output progression based on the input signal by using max. 11 value pairs (support points)

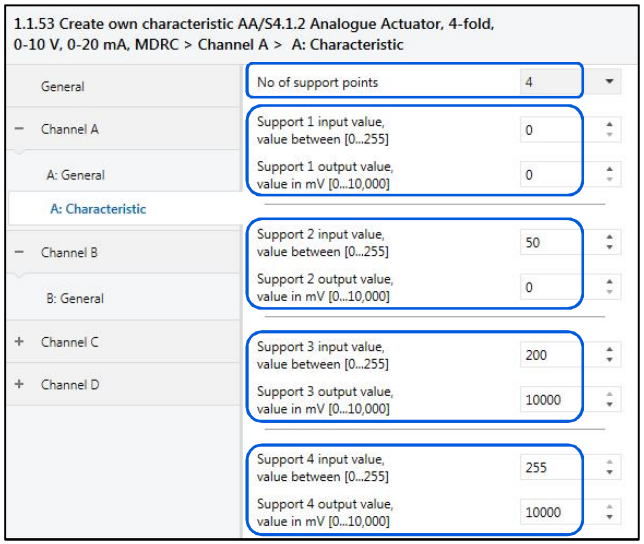


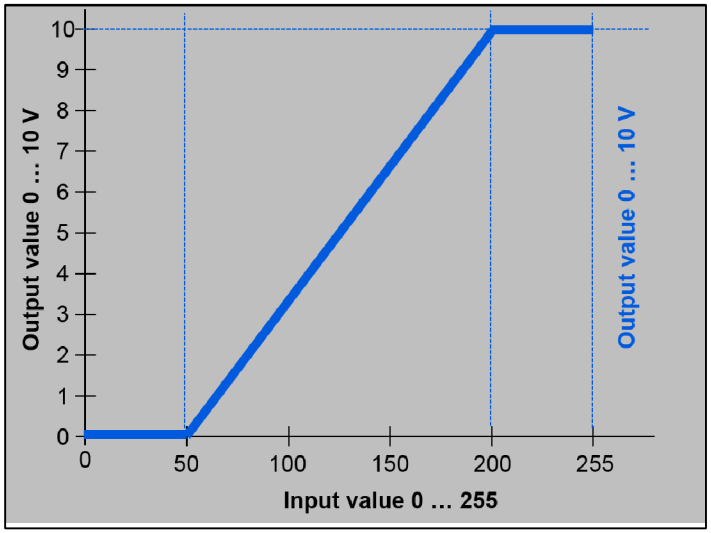
For example:

- 2 value pairs
- Input Format: 1 byte (0 … 255)
- Type of output: 0 … 10 V

Advanced Planning Installing Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning





Create own characteristic

- Create own characteristic to specify a particular output progression based on the input signal by using max. 11 value pairs (support points)

For example:

- 4 value pairs
- Input Format: 1 byte (0 … 255)
- Type of output: 0 … 10 V

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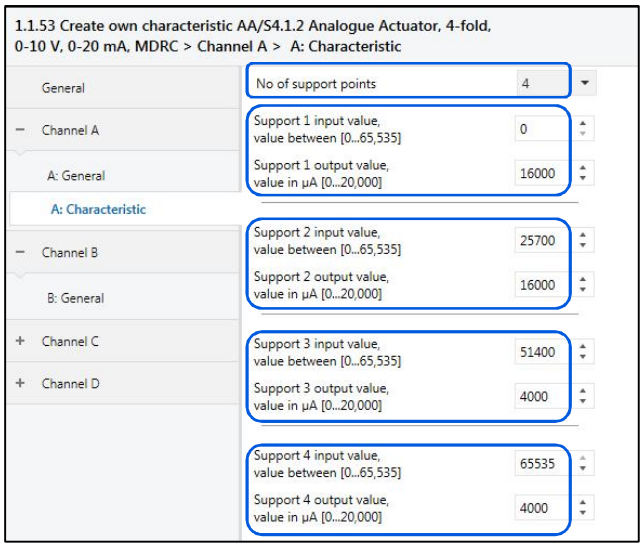
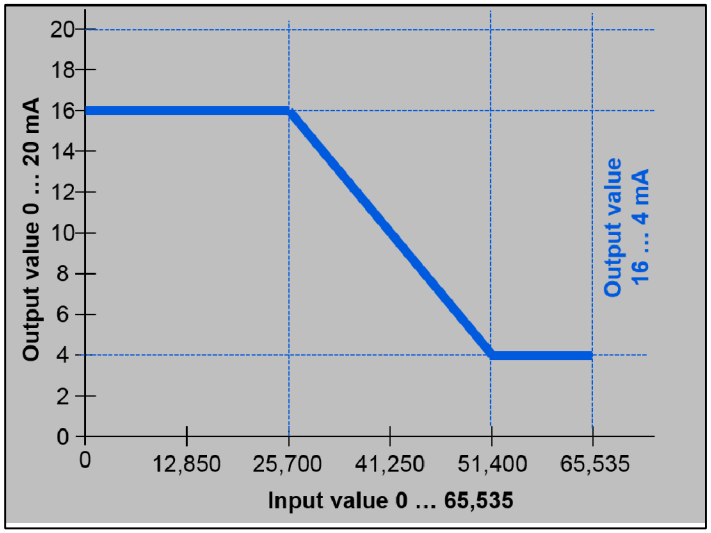
Advanced Planning Installing Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning





Create own characteristic

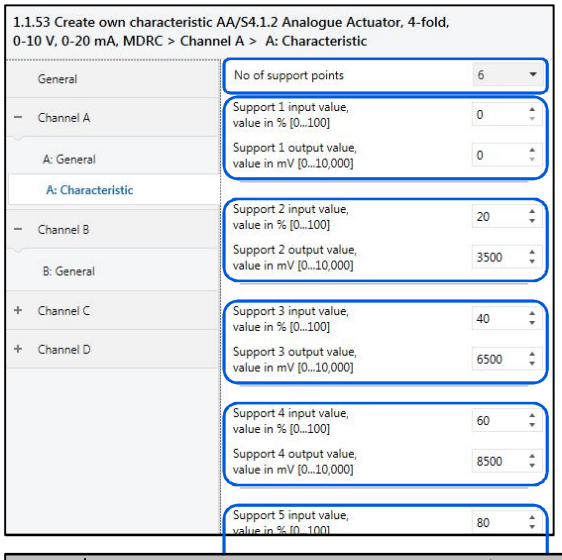
- Create own characteristic to specify a particular output progression based on the input signal by using max. 11 value pairs (support points)

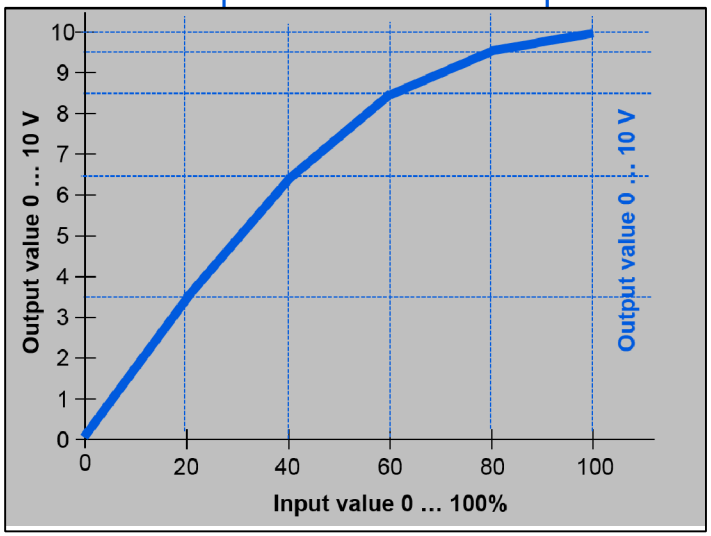
For example:

- 4 value pairs
- Input Format: 2 byte (0 … 65,535)
- Type of output: 0 … 20 mA

Advanced Planning Installing Commissioning

ABB i-bus® KNX Analogue Actuator AA/x X.1.2
Commissioning





Create own characteristic

- Create own characteristic to specify a particular output progression based on the input signal by using max. 11 value pairs (support points)

For example:

- 6 value pairs
- Input Format: 1 byte (0 … 100%)
- Type of output: 0 … 10 V

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Advanced Planning Installing Commissioning

Webinar “Processing analogue signals with KNX”
Agenda

- New Analogue Actuators AA/x x.1.2
  - Introduction and Overview
  - Planning
  - Installing
  - Commissioning (ETS, i-bus® Tool)

- Analogue Inputs AE/A 2.1 and AE/S 4.1.1.3
  - Overview

ABB i-bus® KNX Analogue Inputs AE/A and AE/S
Analogue Input AE/S 4.1.1.3 and AE/A 2.1

ABB i-bus® KNX Analogue Inputs AE/A and AE/S
Overview AE/S 4.1.1.3

- Registration and processing of 4 different analogue input signals
- Integrated power supply to provide the sensors, 24 V DC / max. 300 mA
- Wide Input Voltage Range 85…265 V AC
- Connection of any sensor with 0…1 V, 0…5 V, 0…10 V, 1…10 V, 0…20 mA, 4…20 mA, 0…1000 Ohm, PT100, PT1000 and potential free contact

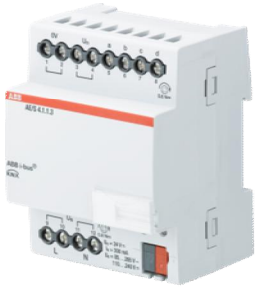

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ABB i-bus® KNX Analogue Inputs AE/A and AE/S
Overview AE/S 4.1.1.3

- Free adjustable signals from sensor
- Measured value visible as 1 bit, 1 byte, 2 byte, 4 byte
- Filtering within 4, 16 or 64 measurements
- Thresholds, 2 for each input with upper and lower limit
- Comparator / arithmetic function / mean value
- Offset temperature +/- 5°C
- Line fault compensation at PT100/PT1000 resistance via cable length or via cable resistance
- Auxiliary voltage for sensor supply
- Integrated in the i-bus® Tool

ABB i-bus® KNX Analogue Inputs AE/A and AE/S
Overview AE/A 2.1

Differences to AE/S 4.1.1.3

- Registration and processing of 2 different analogue input signals
- Decentralized installation, housing with IP54
- PT 100/PT 1000 in 2-wire technology only
- KT and KTY temperature sensors
- Power supply of the device via bus
- Active sensors require an external power supply

Introduction

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Power and productivity
for a better world™