ABB i-bus® KNX
VC/S 4.2.1
# Valve Drive Controller

Description of product

The device is a modular DIN rail component (MDRC) in pro M design. It is intended for installation in distribution boards on 35 mm mounting rails. Physical address assignment and parametrization are carried out with ETS.

The device is powered via the ABB i-bus® KNX and requires no additional auxiliary voltage supply.
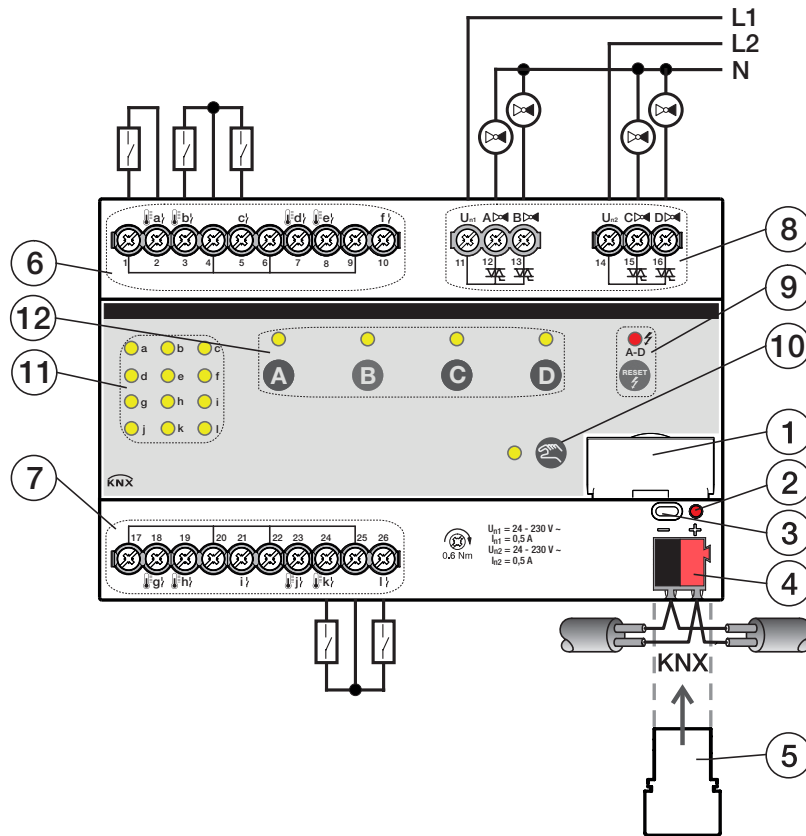
The device is ready for operation after connecting the bus voltage.

Dimension drawing

58

43.5 5.5

140

90

45

10
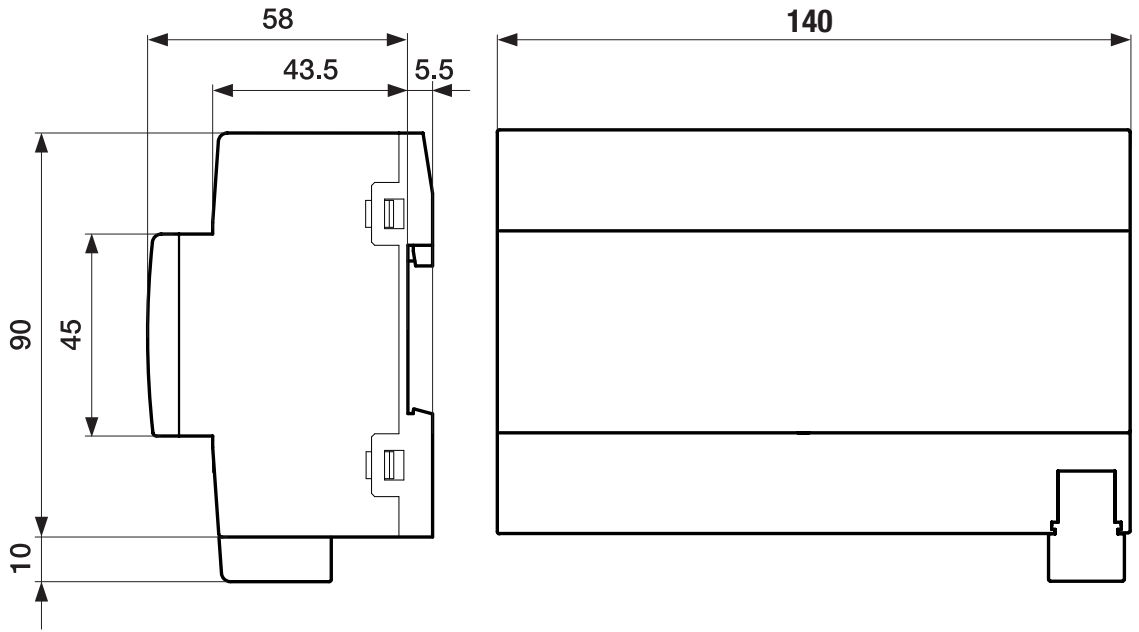
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Connection

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LEGEND

 1 Label carrier
 2 KNX programming LED (red)
 3 KNX programming button
 4 Bus connection terminal
 5 Cover cap
 6 Inputs (a, b, c; d, e, f)
 7 Inputs (g, h, i; j, k, l)
 8 Valve outputs (A, B, C, D)
 9 Valve output (A…D) reset/error button/LED
 10 Activate manual operation button/LED
 11 Inputs status indicator LEDs
    (a, b, c, d, e, f, g, h, i, j, k, l)
 12 Valve outputs switch/status indication
    buttons/LEDs

Operating and display elements		
Button/LED	**Description**	**LED indicator**
⬭ 🔴	Assignment of the physical address	On: Device is in programming mode

Manual operation		
Button/LED	**Description**	**LED indicator**
🟡 **A** Valve output X	Switches the valve output and status indication	On: Valve control value greater than 0 % Off: Valve control value equal to 0 % Flashing: Indicates a fault, e.g. overload/short circuit
🔴⚡ A-D **RESET ⚡** Error message and reset	Resets the outputs: Button must be pressed for at least 5 seconds	On: Indication of an output malfunction on at least one output
🟡 ✋ Manual operation	Activates KNX mode with a short press of the button	On: The device is in Manual Off: The device is in the KNX mode
🟡 a 🟡 b 🟡 c 🟡 d 🟡 e 🟡 f 🟡 g 🟡 h 🟡 i 🟡 j 🟡 k 🟡 l Inputs a...x	Displays the LEDs according to which inputs are in use	Binary sensor: LED on: Contact closed LED off: Contact open Temperature sensor: LED on: Temperature sensor connected LED flashing: Error (cable break/short circuit)

KNX operation		
Button/LED	Description	LED indicator
◯ **A** Valve output X	Button without function	On: Valve control value greater than 0 % Off: Valve control value equal to 0 % Flashing: Indicates a fault, e.g. overload/short circuit
● ⚡ A-D RESET ⚡ Error message and reset	Button without function	On: Indication of an output malfunction on at least one output
◯ ✋ Manual operation	Activates KNX mode with a short press of the button	On: The device is in Manual Off: The device is in the KNX mode
◯ a ◯ b ◯ c ◯ d ◯ e ◯ f ◯ g ◯ h ◯ i ◯ j ◯ k ◯ l Inputs a…x	No button	Binary sensor: LED on: Contact closed LED off: Contact open Temperature sensor: LED on: Temperature sensor connected LED flashing: Error (cable break/short circuit)

Technical data		
Power supply	Bus voltage	21…32 V DC
	Current consumption, bus	< 12 mA
	Power loss, bus	Maximum 250 mW
	Power loss, device	Maximum 3 W
	KNX connection	0.25 W
	Electronic outputs	2.4 W
Connections	KNX	Via bus connection terminal
	Inputs/outputs	Via screw terminals
Connection terminals	Screw terminal	Screw terminal with universal head (PZ1) 0.2…4 mm² stranded, 2 x (0.2…2.5 mm²) 0.2…6 mm² solid, 2 x (0.2…4 mm²)
	Wire end ferrule without plastic sleeve	0.25…2.5 mm²
	Wire end ferrule with plastic sleeve	0.25…4 mm²
	TWIN ferrules	0.5…2.5 mm²
	Wire end ferrule contact pin length	At least 10 mm
	Tightening torque	Maximum 0.6 Nm
	Spacing	6.35
Protection degree	IP 20	According to EN 60529
Protection class	II	According to EN 61140
Isolation category	Overvoltage category	III according to EN 60664-1
	Pollution degree	II according to EN 60664-1
SELV	KNX safety extra low voltage	SELV 24 V DC

Technical data		
Temperature range	Operation	- 5…+45 °C
	Transport	-25…+70 °C
	Storage	-25…+55 °C
Ambient conditions	Maximum atmospheric humidity	93 %, no condensation allowed
	Atmospheric pressure	Atmosphere up to 2,000 m
Design	Modular DIN rail component (MDRC)	Modular installation device
	Design	pro M
	Housing/color	Plastic, gray
Dimensions	Dimensions	90 x 140 x 63.5 mm (H x W x D)
	Mounting width in space units	8x 17.5 mm modules
	Mounting depth	63.5 mm
Installation	35 mm mounting rail	According to EN 60715
Mounting position	Any	
Weight		0.275 kg
Fire classification		Flammability V-0 as per UL94
Approvals	KNX certification	According to EN 50491
	Certification	According to EN 60669
CE marking	In accordance with the EMC and Low Voltage Directives	

Software				
Device type	Application	Maximum number of group objects	Maximum number of group addresses	Maximum number of assignments
VC/S 4.2.1	Valve Drive Controller, manual operation,4-f/…*	300	300	300

* … = Current version number of the application. **Please refer to the software information on our website for this purpose.**

Valve outputs (PWM)		
Rated values	Quantity	4 (per channel 1)
	Non-floating	Yes
	U_n rated voltage	24…230 V AC (50/60 Hz)
	U_n rated voltage (per output pair)	0.5 A
	Continuous current at T_u up to 20 °C	0.25 A resistive load per channel
	Continuous current at T_u up to 45 °C	0.15 A resistive load per channel
	Starting current	Maximum 1.6 A, 10 s at T_u up to 45 °C
		T_u = ambient temperature
	Minimum load	1.2 VA per PWM output

Inputs		
Rated values	Quantity	12
For analog room control unit	Quantity	4 (per channel 1)
Contact scanning	Scanning current	1 mA
	Scanning voltage	12 V
Resistance	Select	User-defined
	PT 1.000	2-conductor technology
	PT 100	2-conductor technology
	KT	1 k
	KTY	2 k
	NI	1 k
	NTC	10 k
	NTC	20 k
Cable length	Between sensor and device input	Maximum 100 m, one-way

Ordering details					
Device type	Product Name	Order No.	bbn 40 16779 EAN	Weight 1 pcs. [kg]	Packaging [pcs.]
VC/S 4.2.1	Valve Drive Controller	2CDG110217R0011	01149 5	0.275	1

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NOTE
Please refer to the VC/S 4.x.1 Valve Drive Controller product manual for a detailed description of the application. It is available free of charge at www.abb.com/knx.
ETS and the current version of the device application are required for programming.
The latest version of the application and corresponding software information is available for download from www.abb.com/knx. After import into ETS, it appears in the Catalogs window under Manufacturers/ABB/Heating, ventilation, air conditioning/ Valve drive controller.
The device does not support the locking function of a KNX device in ETS. Using a BCU code to inhibit access to all the project devices has no effect on this device. Data can still be read and programmed.

ABB