KNX Gateway

For controlling Airflow DV Adroit ventilation with heat recovery units

KNX bus module
Part number: 90000723

1 SAFETY

DANGER DUE TO ELECTRICAL CURRENT

Electrical installations should only be done by a qualified professional and in accordance with local regulations and safety provisions.

The ventilation unit must always be disconnected from the mains before working on the unit.

Technical specifications	
Product part number	90000723
Supply voltage	12 - 24 V DC ± 10%
Dimensions	Housing 90 x 17 x 58
Operating temperature	0 to +40°C
Enclosure protection class	IP 20

2 GENERAL INFORMATION

Intended use

The KNX environment may be connected to the external Modbus of an Adroit ventilation unit with a KNX bus module (”RS-485 Modbus RTU” protocol).

- The Modbus supplies data and the status of the ventilation unit (such as sensor values and fan status).
- The KNX bus module switches the operating mode (off, away, present and boost) and allows monitoring programs to be executed.
- The ventilation unit can also be controlled through the Adroit Control control panel, web interface, weekly program, or the moisture and/or CO_2 sensors (see Figure).

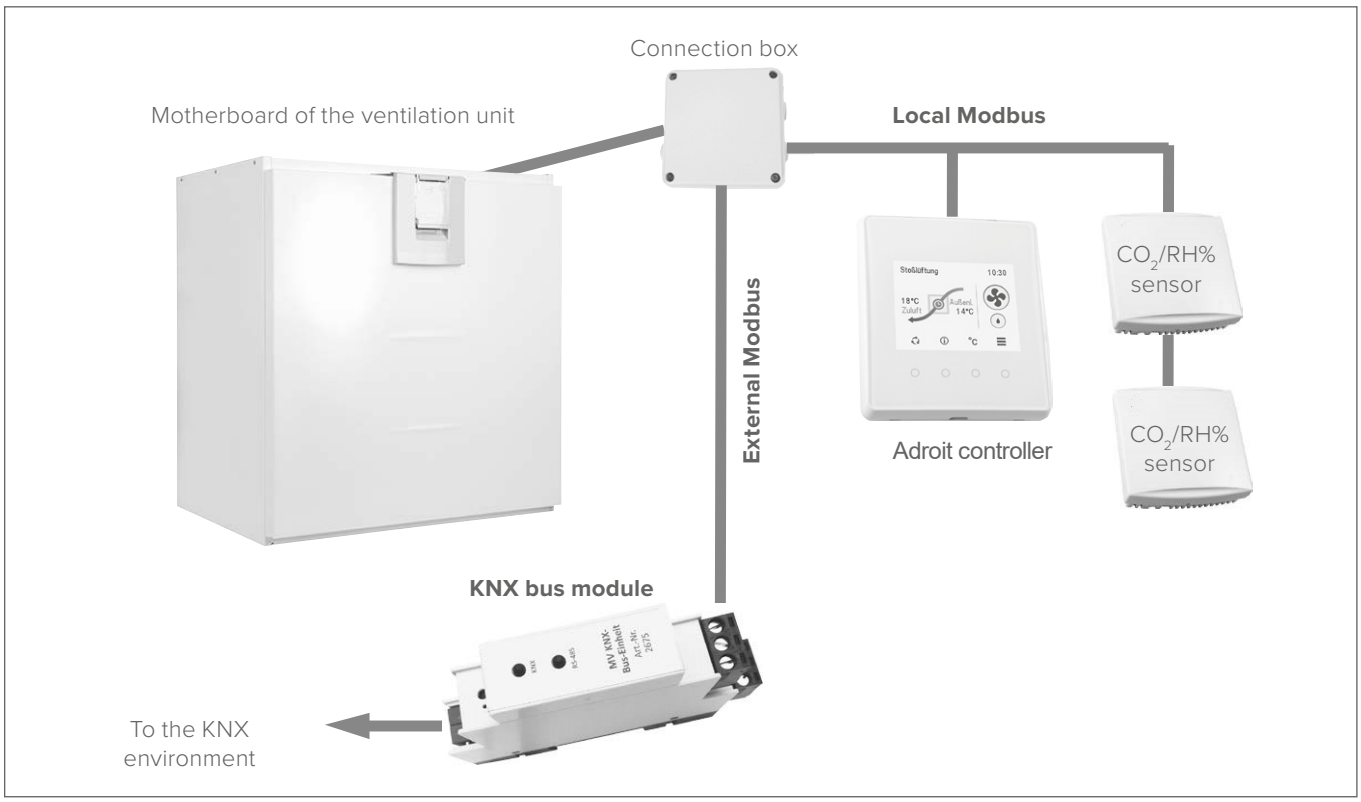
CAUTION

Warranty and liability claims become void if the damage results from improper use, or if the KNX bus module has been installed incorrectly.

For correct installation and intended operation, the unit must meet the applicable regulations and directives in accordance with the CE.

CAUTION

KNX-BUS unit is meant for the following units: Airflow DV50, DV51, DV51CH, DV80, DV96, DV110, DV145, DV245 Adroit.



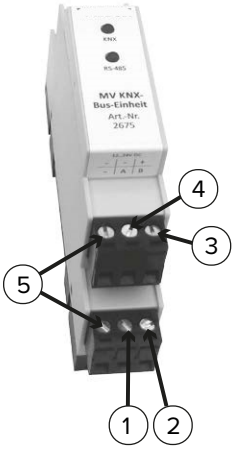
3 INSTALLATION AND CONNECTION

The KNX bus module is intended for installation on a DIN rail located inside the control cabinet.

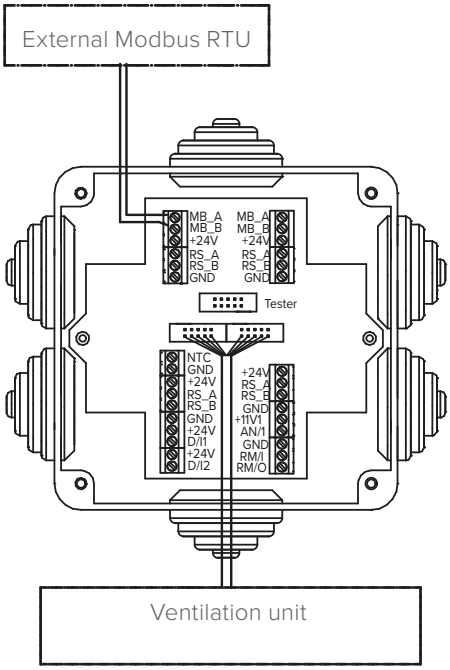
Connection of the box to the ventilation unit can be done using e.g. a JY(ST)Y 2 x 2 x 0.6 mm² + 0.5 mm² cable.

Connection of the KNX bus module to the connection box of the ventilation unit and to the KNX environment by means of a KNX cable

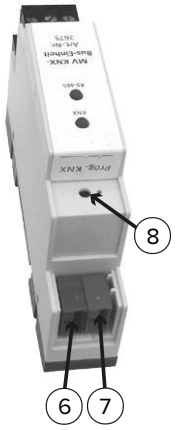
KNX unit connection



Connection box connection



KNX cable connection



1. Terminal A/RTU control line
2. Terminal B/RTU control line
3. Terminal +/power supply
4. Terminal -/power supply
5. GND-/digital and analogue ground potential

MB_A: Connection of the external Modbus/RTU control line

MB_B: Connection of the external Modbus/RTU control line

+24 V: Power supply

GND: Digital and analogue ground potential

6. KNX cable connection (-)
7. KNX cable connection (+)
8. Programming button and LED (For items, see Section 4)

4 LIST OF REGISTERS

4.1 Ventilation unit

No.	Name	Function	DPT	Length	Direction	Description
1	Ventilation unit - On/Off	Turn on/off	DPST-1-1	1 bit	IN	Turn ventilation unit on/off
2	Ventilation unit - On/Off	Status	DPST-1-1	1 bit	OUT	Status information: Ventilation unit on/off
3	At home profile - Select	Start	DPST-1-17	1 bit	IN	Select the At home profile
4	At home profile - On/Off	Status	DPST-1-1	1 bit	OUT	Status information: At home profile is on/off
5	At home profile - Humidity control	Turn on/off	DPST-1-1	1 bit	IN	Turn humidity control for At home profile on/off
6	At home profile - Humidity control	Status	DPST-1-1	1 bit	OUT	Status information: Humidity control for At home profile is on/off
7	At home profile - CO_2 control	Turn on/off	DPST-1-1	1 bit	IN	Turn CO_2 control for At home profile on/off
8	At home profile - CO_2 control	Status	DPST-1-1	1 bit	OUT	Status information: CO_2 control for At home profile is on/off
9	At home profile - Fan speed	Value	DPST-5-1	1 byte	IN	Set fan speed for At home profile
10	At home profile - Fan speed	Status value	DPST-5-1	1 byte	OUT	Fan speed for At home profile
11	At home profile - Supply air temperature setting	Value	DPST-9-1	2 byte	IN	Set supply air temperature setting for At home profile
12	At home profile - Supply air temperature setting	Status value	DPST-9-1	2 byte	OUT	Supply air temperature setting for At home profile
13	Away profile - Select	Start	DPST-1-17	1 bit	IN	Select Away profile
14	Away profile - On/Off	Status	DPST-1-1	1 bit	OUT	Status information: Away profile is on/off
15	Away profile - Humidity control	Turn on/off	DPST-1-1	1 bit	IN	Turn humidity control for Away profileon/off
16	Away profile - Humidity control	Status	DPST-1-1	1 bit	OUT	Status information: Humidity control for Away profile is on/off
17	Away profile - CO_2 control	Turn on/off	DPST-1-1	1 bit	IN	Turn CO_2 control for Away profile on/off
18	Away profile - CO_2 control	Status	DPST-1-1	1 bit	OUT	Status information: CO_2 control for Away profile is on/off
19	Away profile - Fan speed	Value	DPST-5-1	1 byte	IN	Set fan speed for Away profile
20	Away profile - Fan speed	Status value	DPST-5-1	1 byte	OUT	Fan speed for Away profile
21	Away profile - Supply air temperature setting	Value	DPST-9-1	2 byte	IN	Set supply air temperature setting for Away profile
22	Away profile - Supply air temperature setting	Status value	DPST-9-1	2 byte	OUT	Supply air temperature setting for Away profile
23	Boost profile - Select	Start	DPST-1-17	1 bit	IN	Select Boost profile
24	Boost profile - On/Off	Status	DPST-1-1	1 bit	OUT	Status information: Boost profile is on/off
25	Boost profile - Duration	Start	DPST-1-17	1 bit	IN	Select Boost profile for the specified time NOTE: If the specified time is for example 2 minutes, the actual duration is between 2 and 3 minutes.
26	Boost profile - Humidity control	Turn on/off	DPST-1-1	1 bit	IN	Turn humidity control for Boost profile on/off
27	Boost profile - Humidity control	Status	DPST-1-1	1 bit	OUT	Status information: Humidity control for Boost profile is on/off
28	Boost profile - CO_2 control	Turn on/off	DPST-1-1	1 bit	IN	Turn CO_2 control for Boost profile on/off
29	Boost profile - CO_2 control	Status	DPST-1-1	1 bit	OUT	Status information: CO_2 control for Boost profile in on/off
30	Boost profile - Fan speed	Value	DPST-5-1	1 byte	IN	Set fan speed for Boost profile
31	Boost profile - Fan speed	Status value	DPST-5-1	1 byte	OUT	Fan speed for Boost profile

No.	Name	Function	DPT	Length	Direction	Description
32	Boost profile - Supply air temperature setting	Value	DPST-9-1	2 byte	IN	Set supply air temperature setting for Boost profile
33	Boost profile - Supply air temperature setting	Status value	DPST-9-1	2 byte	OUT	Supply air temperature setting for Boost profile
34	Fireplace profile - Select	Start	DPST-1-17	1 bit	IN	Select Fireplace profile
35	Fireplace profile - On/Off	Status	DPST-1-1	1 bit	OUT	Status information: Fireplace profile is on/off
36	Fireplace profile - Period	Start	DPST-1-17	1 bit	IN	Select Fireplace profile for specified time NOTE: If the specified time is for example 2 minutes, the actual duration is between 2 and 3 minutes.
37	Fireplace profile - Extract air	Value	DPST-5-1	1 byte	IN	Set extract air fan speed for Fireplace profile
38	Fireplace profile - Extract air	Status value	DPST-5-1	1 byte	OUT	Extract air fan speed for Fireplace profile
39	Fireplace profile - Supply air	Value	DPST-5-1	1 byte	IN	Set supply air fan speed for Fireplace profile
40	Fireplace profile - Supply air	Status value	DPST-5-1	1 byte	OUT	Supply air fan speed for Fireplace profile
41	Heat recovery cell - Heat recovery	Status	DPST-1-1	1 bit	OUT	Status information: "Heat recovery" is turned on
42	Heat exchanger - Cooling	Status	DPST-1-1	1 bit	OUT	Status information: "Cooling" is turned on
43	Heat exchanger - Bypass	Status	DPST-1-1	1 bit	OUT	Status information: "Bypass" is turned on
44	Heat exchanger - Defrost	Status	DPST-1-1	1 bit	OUT	Status information: "Defrost" is turned on

NOTE

Due to rounding, there may be slight deviations in the values and status values (IN/OUT) for fans speeds.

4.2 Sensors

No.	Name	Function	DPT	Length	Direction	Description
51	Temperature sensor - Extract air	Status value	DPST-9-1	2 byte	OUT	Value: Extract air temperature sensor
52	Temperature sensor - Supply air	Status value	DPST-9-1	2 byte	OUT	Value: Supply air temperature sensor
53	Temperature sensor - Exhaust air	Status value	DPST-9-1	2 byte	OUT	Value: Exhaust air temperature sensor
54	Temperature sensor - Outdoor air	Status value	DPST-9-1	2 byte	OUT	Value: Outdoor air temperature sensor
55	Temperature sensor - Heat recovery cell	Status value	DPST-9-1	2 byte	OUT	Value: Heat recovery cell temperature sensor
56	Humidity sensor - Extract air (indoors)	Status value	DPST-9-7	2 byte	OUT	Value: RH sensor (indoors)
57	Humidity sensor - Highest value	Status value	DPST-9-7	2 byte	OUT	Value: RH sensor
58	CO_2 sensor - Highest value	Status value	DPST-9-8	2 byte	OUT	Value: CO_2 sensor

4.3 Maintenance

No.	Name	Function	DPT	Length	Direction	Description
61	Date - Filter last changed	Value	DPST-11-1	3 byte	IN	Set date of last filter change
62	Date - Filter last changed	Status value	DPST-11-1	3 byte	OUT	Date of last filter change
63	Filter change - Reminder	Status	DPST-1-5	1 bit	OUT	Reminder information: Change filter
64	Emergency - Alarm	Status	DPST-1-5	1 bit	OUT	Reminder information: Emergency function is turned on

5 PARAMETERS

5.1 Ventilation unit

Name	Parameter	Description
Boost - Duration (minutes)	1 to 65533	Duration of the Boost profile when 23 is selected
Fireplace - Time period (minutes)	1 to 65533	Duration of the Fireplace profile when 34 is selected

5.2 Data transmission

Name		Parameter	Description
Delta temperature (K)		**1**	This parameter sets the difference between the last transmitted value and the current value, which is required for re-transmission of the value (items 51 to 55)
		2	
		3	
		4	
		5	
Delta relative humidity of air (%)		**1**	This parameter sets the difference between the last transmitted value and the current value, which is required for re-transmission of the value (items 56 to 57)
		2	
		5	
		7	
		10	
Delta CO_2 concentration (ppm)		**100**	This parameter sets the difference between the last transmitted value and the current value. The latter is essential for re-transmission of the value (item 58)
		200	
		400	
Cyclical transmission		**No**	This parameter activates/deactivates cyclical transmission of the sensor values (items 51 to 59)
		Yes	
Yes	Cycle time (minutes)	1	This parameter sets the time after which a sensor value is re-transmitted (items 51 to 59)
		2	
		5	
		10	
		15	
		30	
Wait after bus reset		**No**	If this parameter is set to Yes, the transmission of all out items is suppressed for a certain waiting time following a bus reset
		Yes	
Yes	Waiting time (s)	**30**	This parameter sets the waiting time after which all out items send their values
		60	

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80000806 Issue 2 05/22

Certificate No. EMS 569454 BS EN ISO 14001 : 2015
Certificate No. FM 00152 BS EN ISO 9001 : 2015