REACT

Siemens – KNX settings

08/12/2023

Parameter settings for integration of KNX bus

Parameters for the integration of KNX bus are checked or set during configuration or commissioning with the ETS software.

Parameter group “Standard”

Parameter	Range	Description
Operating mode	VAV POS Standard: VAV	VAV: Set point = Air flow 0…100%. POS: Set point = Damper position 0...100%.
Adaptive positioning	Off On Standard: Off	Adaptation of the actual (in case of mechanical limits) opening range to the damper’s position feedback signal 0...100%. Off = No adaptation. On = Adaptation enabled.
Altitude above sea level	0…5000 m Standard: 500 m	The altitude level’s correction factor for the differential pressure sensor in steps of 500 m.
Backup-timeout	0...60 min Standard: 30 min	Time interval for detecting interruption in communication. Backup-timeout = 0 min means the function is disabled. When disabled, the actuator regulates in accordance with the most recently received air flow set point.
Backup position	Backup position Maintains the most recent position Standard: Backup position	When the Backup-timeout time has been exceeded (no set point received within the specified time interval), the actuator moves to the defined position. Backup position: The actuator moves to the specified position (Backup value). Maintains the most recent position: The actuator maintains the most recent position without air flow regulation.
Backup value	0...100% Standard: 50%	Damper position that the actuator moves to in the event of an interruption in communication.

Parameter group “Advanced”

Parameter	Range	Description
Hysteresis (COV)[1] Air flow	1...20% Standard: 1%	Threshold for the relative air flow. Changes in value below the threshold are not transmitted via the bus.
Min. repetition time Air flow	10...900 sec. Standard: 10 sec.	Min. waiting time until a change in value over the threshold is transmitted via the bus.
Hysteresis (COV) Damper position	1...20% Standard: 1%	Threshold for damper position. Changes in value below the threshold are not transmitted via the bus.
Min. repetition time Damper position	10...900 sec. Standard: 10 sec.	Min. waiting time until a change in value over the threshold is transmitted via the bus.
Override position 1[2]	0...100% Standard: 0%	Damper position that can be triggered by the corresponding group object.
Override position 2[2]	0...100% Standard: 100%	Damper position that can be triggered by the corresponding group object.
Vnom write	On Off Standard: Off	If active, the group object for Vnom is writable (OEM parameter protection applies), otherwise the value is read-only.
Opening direction write	On Off Standard: Off	If active, the group object for opening direction is writable (OEM parameter protection applies), otherwise the value is read-only.

[1] COV = Change of value.

[2] Override position 1 has priority over Override position 2.

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KNX group objects

Number	Name in ETS	Object function	Flags					Data point type KNX				Range	Description
			C	R	W	T	U	ID	DPT_Name	Format	Unit		
1	Alarm information	Transmit	1	1	0	1	0	219.001	_AlarmInfo	6 Bytes	-	See Description of Group objects	If group object no. 3 (Alarm transmission) = 1 (Enable), alarms from table XX can be transmitted when they occur. In this case, the value is changed for group object no. 2 (Alarm status) = 1 (Alarm).
2	Alarm status	Transmit	1	1	0	1	0	1.005	_Alarm	1 bit	-	0 = No alarm 1 = Alarm	Indicates if the actuator is in alarm state.
3	Alarm transmission	Receive	1	0	1	0	1	1.003	_Enable	1 bit	-	0 = Disable 1 = Enable Standard: 0 (Disable)	Enable/disable the alarm transmission.
4	Set point	Receive	1	1	1	0	1	5.001	_Scaling	1 Byte	%	0…100	Set point for air flow or position, depending on operating mode.
5	Damper position	Transmit	1	1	0	1	0	5.001	_Scaling	1 Byte	%	0…100	Relative damper position. An opening range less than 0…90° can be normalised to 0...100% if adaptive positioning is set to "On".
6	Air flow (relative)[1]	Transmit	1	1	0	1	0	5.001	_Scaling	1 Byte	%	0…100	Air flow relative to the settings for Vnom, Vmin and Vmax.
		Transmit	1	1	0	1	0	8.010	_Percent_V16	2 Bytes	%	-327.68…277.67	
		Transmit	1	1	0	1	0	5.004	_Percent_U8	1 Byte	%	0…255	
7	Air flow (absolute)[1]	Transmit	1	1	0	1	0	9.009	_Value_Air flow	2 Bytes	m^3/h	-670 760…670 760	Air flow in m^3/h or m^3/s depending on the selected data type.
		Transmit	1	1	0	1	0	14.077	_Volume_Flux	4 Bytes	m^3/s	0…(2^{32}-1)	
8	Alarm	Transmit	1	1	0	1	0	1.005	_Alarm	1 bit	-	0 = No alarm 1 = Alarm	Same function as group object no. 2 ((Alarm status) available for compatibility reasons)
9	Override	Transmit	1	1	0	1	0	1.002	_Bool	1 bit	-	0 = False 1 = Alarm	Indicates whether the actuator is in override control either by a programming tool connected to PPS interface or by group object no. 10 (Override position 1) / no. 11 (Override position 2).
10	Override position 1	Receive	1	1	1	0	1	1.003	_Enable	1 bit	-	0 = Disable 1 = Enable	When the object is enabled, the actuator moves to override position 1, which is defined by the respective ETS parameter.
11	Override position 2	Receive	1	1	1	0	1	1.003	_Enable	2 bit	-	0 = Disable 1 = Enable	When the object is enabled, the actuator moves to override position 2, which is defined by the respective ETS parameter.
12	Balancing mode	Receive	1	1	1	0	0	1.003	_Enable	3 bit	-	0 = Disable 1 = Enable	When the object is enabled, the actuator moves to Vmax for balancing of the air handling system.
13	Vmin[1]	Receive	1	1	1	0	1	8.010	_Percent_V16	2 Bytes	%	-327.68…277.67	Min. air flow relative to Vnom.
14	Vmax[1]	Receive	1	1	1	0	1	8.011	_Percent_V17	3 Bytes	%	-327.68…277.67	Max. air flow relative to Vnom.
15	Vnom	Read-only	1	1	0	0	0	9.009	_Value_Air flow	2 Bytes	m^3/h	-670 760…670 760	Nominal air flow (absolute).
16	Opening direction	Read-only	1	1	0	0	0	1.012	_Invert	1 bit	-	0 = Not inverted 1 = Inverted	Opening direction of the damper.
17	Diff. pressure[2]	Read-only	1	1	0	0	0	9.006	_Value_Pres	2 Bytes	Pa	0…670 760	The actual value for the built-in differential pressure sensor.
		Read-only	1	1	0	0	0	14.058	_Value_Pressure	4 Bytes	Pa	0…(2^{32}-1)	
18	Coefficient	Read-only	1	1	0	0	0	14.*	4-Byte Float	4 Bytes	-	0…3.16	Characteristic value for allocating a nominal differential pressure to the corresponding nominal air flow.
19	OEM reset	Receive	1	0	1	0	0	1.017	_Trigger	1 bit	-	0, 1 = Trigger	Resetting of all parameters to the value set by the OEM.

[1] For technical reasons, the values for Vmin / Vmax must be specified with two subsequent "0" in ETS5, i.e. to achieve Vmin = 5%, specify "500%" in ETS5. The same applies for reading back these parameters.

[2] For certain group objects, alternative data point types (DPT) can be selected in ETS. The first entry in the table shows the default setting.

Alarm	Group object no. 1	Description	Resolution
Device blocked	XX 00 0A 03 0C 05	The target position cannot be reached due to mechanical blockage.	Remove the blockage (visual inspection required). Invert the opening direction if it is incorrectly set. Enable adaptive positioning if mechanical limits are required.
Backup mode enabled	XX 01 01 02 0C 05	The actuator is in Backup mode (see respective parameter setting).	The actuator exits Backup mode when receiving a new set point.
Pressure sensor tubes inverted	XX 01 0A 01 0C 05	The pressure sensor measures the lower pressure at the pressure connection marked "+".	Correct the tubes' connection.
Pressure sensor incorrect function	XX 01 0A 01 0C 05	Fault in the internal communication to the pressure sensor (200 ms timeout).	1. Check the tubes' connection. 2. Restart the device. 3. Replace the device.
Notification of operating hours	XX 01 0A 04 0C 05	Displayed after an accumulated motor operation time of 365 days.	Check the status of the device and the sensitivity of the control circuit.