

User Manual

FCHC Actuator(V1.0)

M/FCHC.4.1



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APPLICATION PROGRAM INFORMATION

HDL- FCHC Actuator(V1.0)

Version: V1.0

KNX/EIB-BUS

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- A. General description
- B. Function overview flowchart
- C. Function description
- D. Communication objects



A. General description

The HDL-M/FCHC.4.1 is FCHC Actuator, it is used for control air condition, fan, compressor, and floor heating, It can be work in conjunction with different panel. The channels function is set via ETS software. It supports up to 7 digital temperature sensors. This manual contains the programming information for this module.

<u>Note:</u>

Active control and passive control: Active control

According to the real-time temperature and set temperature deviation, then use PI calculation by itself, get the $0 \sim 100\%$ parameters indicated by $0 \sim 255$, on this basis, drive valve and fan, then change the temperature.

When in active control mode, this module can work with panel without PI algorithm such as HDL-M/DLP04.1.

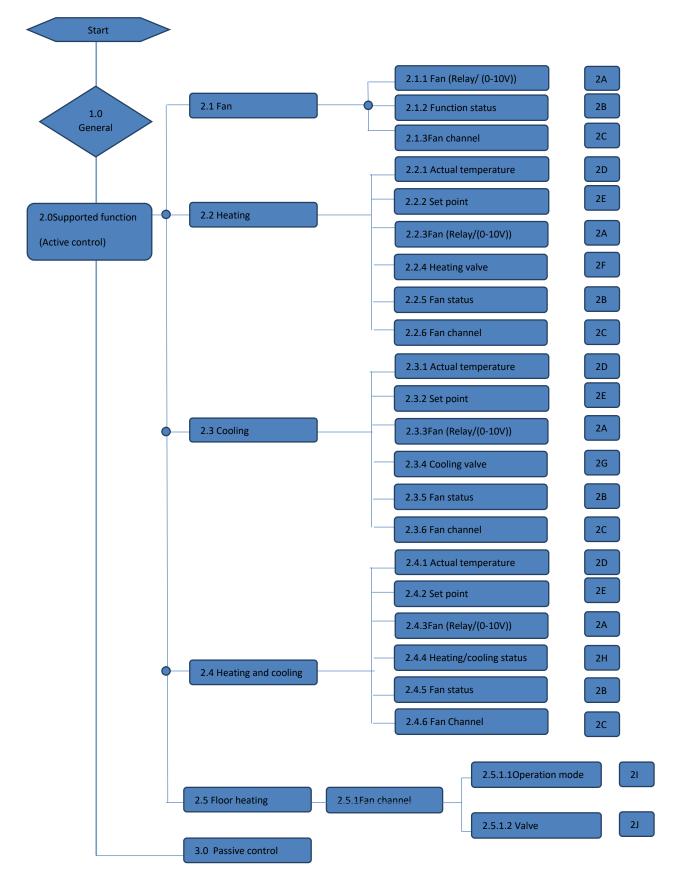
Passive control

FCU receive the $0 \sim 100\%$ parameters indicated by $0 \sim 255$ via Bus, on this basis, drive valve and fan, then change the temperature.

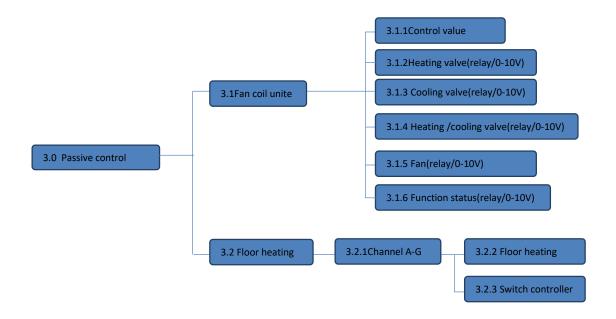
When in passive control mode, this module can work with panel with algorithm such as Siemens 5WG1.



B. Flowchart showing module functionality









C.

1.0_0	General				
1.1.1	M/FCU01.10.1 > General				
G	ieneral		and switching delay after bus recovery (3100s)	5	\$
A	Actual temperature Cycle ser 0-invalid		nd general telegram (165535s ,)	0	÷
s	etpoint	Control r	node :		
F	an (Relay)	Enable p	assive control	O Disable C Enable	
		Support	ed functions	Heating and Cooling	
н	leating/Cooling valve (relay)	HVAC-Sy	ystem	2-pipe system 4-pipe system	
F	unction status	Fan char	nel select	Channel A-C (relay)	•
c	hannel B	Heating	Cooling valve channel select	Channel E (relay) Channel G (0-10v)	
~	hannel C	6.30	r setting for heating/cooling (PI	control):	
, C	nannei C		speed (for PI)	Medium	•
C	hannel D	Cooling	speed (for PI)	Medium	*
		Construction of Construction	an a	procession and definition of the second defini	
No.	ETS-Parameter		Range (default)	Description	
1	Sending and switching after bus voltage recovery(3100s)	delay	3(5)100s	Set the switching and sending dela for when the bus is in voltage reco- mode.	-
2	Cycle send general		-(0-invalid)	Set the telegram sending cycle rate.	
	telegram(165535s, 0 Control mode	-invalid)	-165535s		
3	Enable passive control	[-Disable	Enable/Disable the passive control	
			-Enable	function. Enable: see the 3.0	
4	Supported functions		-Fan	Disable: the parameters as follow. Set the function you wish to implement	
·			-Hearting -Cooling -(Heating and cooling) -Floor hearting		
	-Fan				
5	Fan channel select		-(Channel A-C(relay)) -Channel F(0-10V)	Select the fan channel	
	-Heating				
6	Fan channel select		-No fan -Channel A-C(relay) -Channel F(relay)	Select the fan channel	
6	Heating value channel		-Channel E(relay) -Channel G(0-10V)	Select the heating value channel	
Contr 7	oller setting for heating	-		Coloct the besting interests	
1	Heating speed (For PI)		-Low -Lower -(Medium) -Fast	Select the heating intensity.	
	-Cooling		-Faster	1	



8	Fan channel select	-No fan	Select the fan channel
		-(Channel A-C(relay))	
		-Channel F(relay)	
9	Cooling value channel select	-(Channel D(relay))	Select the cooling value channel
		-Channel G(0-10V)	
	Controller setting for cooling(Pl	control)	
10	Control speed (for PI)	-Low	Select the cooling intensity.
		-Lower	
		-(Medium)	
		-Fast	
		-Faster	
	Heating and Cooling		
11	HVAC-System	-(2-pipe system)	Select the HVAC pipe system.
	invac system	-4-pipe system	sciect the trade pipe system.
		+ pipe system	
12	Fan channel select	-No fan	Select the fan channel.
		-(Channel A-C(relay))	
		-Channel F (0-10V)	
13	Heating/cooling value channel	-(channel E(relay))	Select the heating/cooling channel.
	select	-Channel G(0-10V)	
14	-Heating value channel select	-(Channel E(relay))	Select the heating channel.
		-Channel G(0-10V)	
15	-Cooling value channel select	-(Channel D(relay))	Select the cooling channel.
		-Channel F(0-10V)	
	Controller setting for heating/co	oling (PI control)	
16	Heating speed (for PI)	-Low	Select the heating speed for PI.
		-Lower	
		-(Medium)	
		-Fast	
		-Faster	
17	Cooling speed (for PI)	-Low	Select the cooling speed for PI.
		-Lower	
		-(Medium)	
		-Fast	
		-Faster	
	Floor Heating		
18	Enable slave clock	-(Enable)	Enable or disable the slave clock.
		-Disable	



2.0_Ch	nannel control mode				
2A Fai	n (Relay/0-10V)				
1.1.1 F	CU actuators 0-10V > Factors 0	an (Relay)			
			relay output	1-Speed fan	•
Ge	Ean contr			Step switch O Changeover s	switch
Far	n (Relay)		l encoded mode	Encoded by 1 byte percent value	
Fur	nction status	- 1953 (B ST 1736)	on bus voltage failure	Unchanged OFF	0-100%
Ch	annel B		on bus voltage recovery	Recovery	•
Ch	annel C		-on delay (0255 s)	0	÷
-			G Marine and a second second	0	*
Ch	annel D		-off delay (0255 s)	U	*
Ch	annel E	NOTECHAN	nel A->Speed 1		
lo.	ETS-Parameter		Range (default)	Description	
	Fan speed relay ou	utput	-1-Speed fan	Set the fan sp	peed relay
			-2-Speed fan -3-Speed fan	output.	
				1-Speed fan: fan is connec A.	A single speed ted to channe
				2-Speed fan: fan is connec A and channe A->Speed 1, 0 Speed 2.)	el B. (Channel
				fan is connec	peed 2,
	Fan control type		-Step -Changeover switch	Set the fan co Step: Only th correspond to on, others re	e relay which o channel is
	Fan control encoded mode		-Encoded by 1 byte value 0-100% -Encoded by 1 byte value 0-3 -1 Bit values	mode.	1: speed 1 3: speed 3
ļ	Fan speed on bus failure	voltage	-Unchanged -(OFF)	Set the fan sp event of a bu failure.	



					Unchanged: The fan will remain unchang	-
					OFF: The fan will tur	n off.
5	5 Fan speed on bus voltage recovery		-(Recovery) -OFF -1 -2 -3		Set the fan speed in the event of a bus voltage recovery. Recovery: The fan speed will remain unchanged.	
					OFF: The fan will tur	n off.
					1,2,3: When the fan switched on, the spe be selected from 1,2	eed can
6	Fan switch-on delay((0)255s		Set the fan switch o time.	-
7	Fan speed-off delay(0255s)	(0)255s		Set the fan switch o time.	ff delay
	Fan(0-10V)					
1.1.1 FC	U actuators 0-10V > Fan (0-10v)				
Gene	ral	Fan control en	icoded mode	Encoded by 1 by	te percent value 0-100%	•
Fan (0-10v)	Fan speed 1 v	oltage (0-10V)	3V		*
Funct	tion status	Fan speed 2 voltage (0-10V)		5V		. •
		Fan speed 3 voltage (0-10V)		10V		
Chan	nel A	Fan speed on bus voltage failure		OFF		
Chan	nel B	Fan speed on bus voltage recovery		Recovery		-
Chan	nel C	Fan switch-on delay (0255 s)		0		*
Chan	nel D	Fan switch-off	f delay (0255 s)	0		-
Chan	nel E	Enable start-up behavior		🔵 Disable 🔘 E	nable	
		->Starting characteristic of fan		Switch on at spee	ed 3	-
		->Minimum d (2255 s)	lelay at starting speed	5		\$
		->Changeover (s)	r delay between fan speeds	0.0		*
		 (s) ->Minimum duartion time on fan speei (2255 s) 		5		\$
		NOTE:Channel	F->Output 0-10v			
10 Fan control encoded mode		-Encoded by 1 byte percent value 0-100% -Encoded by 1 byte percent value 0-3		Set the fan control e mode	ncoded	
11	Fan speed 1 voltage		-1 Bit value 0(3V)10V		Set the voltage for f	an
12	For speed 2 voltage		0 (5)() 10)(speed 1.	
12	Fan speed 2 voltage		0(5V)10V		Set the voltage for far speed 2.	an
13	Fan speed 3 voltage		0(10V)		Set the voltage for fa speed 3.	an



14		OFF	Sat the far aread
	Fan speed on bus voltage failure	OFF	Set the fan speed parameters in the event of
	landle		bus voltage failure.
			OFF: The fan will be OFF.
15	Fan speed on bus voltage	-(recovery)	Set the fan speed when the
	recovery	-OFF	bus is in voltage recovery
		-1	mode.
		-2	
		-3	Recovery: The fan speed
			will be unchanged.
			OFF: The fan will be OFF.
			OFF: The fan will be OFF.
			1,2,3: The fan speed can be
			selected from 1,2, or 3.
16	Fan switch-on delay(0255s)	(0)255s	Set the fan switch on delay
			time.
17	Fan speed-off delay(0255s)	(0)255s	Set the fan switch off delay
			time.
18	Enable start-up behavior	-Disable	Disable/Enable the function
		-Enable	of start-up behavior
19	-> Minimum delay at starting	2(5)255s	Set the starting speed delay
20	speed (2255s) ->Changeover delay between	0.0	time. Set the fan speed
20	fan speeds(S)	0.0	changeover delay time.
21	->Minimum duration time on	2(5)255s	Set the fan speed duration
	fan speed(2255s)	(0)000	time.
	,		
2B Fun	iction status		
2B Fun	action status		
2B Fun	1.1.1 FCU actuators 0-10V > Function	ion status	
2B Fun			No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function	Enable 1Bit object "Status fan speed x"	
2B Fun	1.1.1 FCU actuators 0-10V > Functi General	Enable 1Bit object "Status fan speed x"	No 🔿 Yes No 🔵 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v)	Enable 1Bit object "Status fan speed x"	
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status	Enable 1Bit object "Status fan speed x"	No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A	Enable 1Bit object "Status fan speed x"	No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B	Enable 1Bit object "Status fan speed x"	No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C	Enable 1Bit object "Status fan speed x"	No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D	Enable 1Bit object "Status fan speed x"	No 🔿 Yes
2B Fun	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No 🔿 Yes
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x"	No Ves
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No Yes No Yes Enable or disable a 1 bit object.
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No Yes No Yes Enable or disable a 1 bit object. Yes: Fan speed status
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No Yes No Yes Enable or disable a 1 bit object.
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No Yes No Yes Enable or disable a 1 bit object. Yes: Fan speed status x(x=1,2,3) is enabled.
	1.1.1 FCU actuators 0-10V > Function General Fan (0-10v) Function status Channel A Channel B Channel C Channel D Channel E	Enable 1Bit object "Status fan speed x" Enable 1Byte object "Status fan speed" Enable 1Bit object "Status fan On/Off"	No Yes No Yes Enable or disable a 1 bit object. Yes: Fan speed status



		-Required fan speed	Respondto the current fan speed.
			Required fan speed: Respondto the required fan speed.
3	> Send object value	-(No, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
4	>Object sending range	-All status object -Only activated status object	Set object send range
5	>Valid object value	-'0' -'1'	Set the object value
6	Enable 1 byte object "status fan speed"	-Yes -(No)	Enable or disable a 1 bit object.
			Yes: The fan status speed is enabled. No: The fan status speed is
			disabled.
7	>1 Byte value encode mode	-Encoded by 1 byte percent value 0-100% -Encoded by 1 byte percent value 0-3	Select the encode mode.
8	>Meaning	-(Current fan speed) -Required fan speed	Current fan speed: Respond to the current fan speed.
			Required fan speed: Respond to the required fan speed.
9	> Send object value	-(No, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modificationhas been



			[made.
10	1 bit object "status fan On/Off"	-Yes -(No)		Enable or disable a 1 bit object.
				Yes: The fan speed responds to the on/off status.
				No: The fan speed does not respond to the on/off status.
11				
12	> Send object value	-(No, Update only) -Always response -Only after change		Define the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent. Always response: The status will always respond. Only after change: The
2C_Fa	n channel(Here take on	e channel as an examp	le)	object value will be sent only when a modification has been made.
	1.1.1 FCU actuators 0-10V > Char	nnel A		
	General	Enable switch actuator	🔿 Inactive 🔘 Ac	tive
		Response of switch state ON/OFF	No response	-
	Fan (0-10v)	Save statistic for ON switching 'time (hour-2bytes)'	O Disable O Ena	able
	Function status	Switch state on bus voltage fail	Unchanged	•
	Channel A	Switch state after bus voltage recovery	Unchanged	•
	Channel B	Time function	Disable	•
	Channel C			
	Channel D			
	Channel E			
1	Enable switch actuator	-(Inactive) -Active		Enable or disable the switch actuator.
2	Response of switch state ON/OFF	-(No response) -Always response -Only after response		Set the parameters for the switch state response. No response: The switch state will not respond. Always response: The
				switch state will always respond.



			Only often shares. The
			Only after change: The
			switch state will respond only after a modification
			has been made.
3	Save statistic for ON switching	-Enable	Enable or disable the
	'time(hour-2bytes)'	-(Disable)	switch on time statistics.
4	Switch state on bus voltage	-(Unchanged)	Set the switch state in the
	fail	-On	event of a bus voltage
		-Off	failure.
			Unchanged: The switch
			state will remain
			unchanged after a bus
			voltage failure.
			ON: The switch state will
			be 'on' after a bus voltage
			failure.
			OFF: The switch state will
			be 'off' after a bus voltage
			failure.
5	Switch state after bus voltage	-(Unchanged)	Set the switch state in the
5	recovery	-On	event of a bus voltage
		-Off	recovery.
		-recovery	
			Unchanged: The switch
			state will remain
			unchanged after a bus
			voltage recovery.
			ON: The switch state will
			be 'on' after a bus voltage
			recovery.
			,
			OFF: The switch state will
			be 'off' after a bus voltage
			recovery.
6	Time function	-(Disable)	Set the staircase lighting
		-Staircase lighting -On/OFF delay	timing parameters.
	Staircase lighting		
7	Control staircase lighting	-Start with '1', stop with '0'	Set the staircase lighting
		-Start with '1', Invalid with '0'	activation and
		-(start with '1'/ '0', can't stop)	
			deactivation
			parameters.
			Start with'1', Stop
			with'0'-The stair case
			lighting will activate
			when telegram '1' is



			received and deactivate when telegram '0' is received.
			Start with'0', Stop with'1'- The stair case lighting will activate when telegram '0' is received and deactivate when telegram '1' is received.
			Start with'1/0', Can't stop- The stair case lighting will activate when telegram '1' or '0' is received and continue operating.
8	Change staircase lighting time via bus	-No -(Yes)	Enable or disable the staircase lighting time to be modified via the bus.
			No- Disabled Yes- Enabled
9	Alarm staircase lighting to bus	-No -(Yes)	Enable or disable the staircase lighting to be alarmed.
			No- Disabled Yes- Enabled
10	>Time for off: (0255Min)	(0)255Min	Set the time for the OFF status to be activated in minutes.
11	>Time for off: (059Sec)	(0)59Sec	Set the time for the OFF status to be activated in seconds.
12	Warning staircase lighting(ON->OFF->ON	-Yes -(No)	Enable or disable the staircase warning lighting. Yes: Warning lighting is enabled. No: Warning lighting is disabled.
13	-Warning before the end of time(3255Sec)	(3)255	Define how much time



					will elapse before a	
					warning is triggered.	
14	Duration time for		(1)200Sec		Define how long the	
	warning(1200Sec)				warning state will last.	
	ON/OFF delay					
15	>Delay for switching ON:		(0)255Min		Set the switch on delay	
	(0255Min)				status in minutes.	
16	>Delay for switchin	g ON:	(0)59Sec		Set the switch on delay	
	(059Sec)				status in seconds.	
17	>Delay for switchin	g OFF:	(0)255Min		Set the switch off delay	
10	(0255Min)	_	(0) 506		status in minutes.	
18	>Delay for switchin	g	(0)59Sec		Set the switch off delay status in seconds.	
	OFF:(059Sec)				status in seconds.	
20 40	tual tomporaturo	(Ean mad	le has not this func	tion)		
		(Fall III00				
1.1.1 FC	U actuators 0-10V > Actu	al temperatu	re			
		Sensor for m	easuring the actual			
Gene	eral	temperature	(AverageValue=Sum/Count)	Local sensor (0	< Count <= 7)	
Actu	al temperature	Temperature	1 correction value (-55 'C)	0.0	•	
		Temperature	e measure interval(3100 s)	10	\$	
Setpo	oint	12. 		10	*	
Fan (Relay)	Sending of t	ne actual temperature :			
		Cyclical sending		O No Ves		
Heat	ing valve (relay)	Differential value for sending ('C)		1.0 -		
Func	tion status	Monitoring of actual temperature :				
-		Monitoring period of actual temperature (2255 min) Sending of error signal cycles (1255,0- Unlimited)		2		
Chan	inel D			2		
				0 2		
					T	
			// / / / · · ·			
19	Sensor for measuring actual temperature(A		-(Local sensor (0 <cour -One sensor via EIB (C</cour 		Set the temperature for the FCU module.	
	Value=Sum/Count	werage	-Two sensor via EIB (C	,	rco module.	
	value-sull/could			.ount-2)	Local sensor(0 <count<=7):< td=""></count<=7):<>	
					The temperature is	
					determined by the local	
					temperature sensor status.	
					Up to 7 temperature	
					sensors can be connected	
					to generate an average	
					temperature value.	
					(Average	
					value=Sum/Count)	
					One economic	
					One sensor via EIB(Count=1): The	
					temperature is received via	
					the KNX/EIB.	
					Two sensor via	
					EIB(Count=2): The	
					temperature is received via	
					the KNX/EIB	



20	Temperature 1 correction		-5.0(0.0)(5.0)		Sat the temperature	
20		value (-5.5'C)		-5.0(0.0)(5.0)		Set the temperature correction value
21		Temperature 1 corr	rection	-3(10)100		If have the mistake of the
		value (3100s)				temperature, you can set
						this value.
	ling	of the actual temper	rature			
22		Cyclical sending		-Yes		Enable or disable cyclical
				-(No)		sending.
23		-> Period for cyclica	al	1(10)255s		Set the time interval for
		sending(1255S)				when information is sent
24		Different selection		05 (10) 20		cyclically.
24 25		Different value for Monitoring of actua		0.5(1.0)3.0		Set the difference value.
25				(2)255Min		Set the temperature
		temperature(225	Siviiri)			monitoring period. (Local temperature sensor
						or via the KNX/EIB.)
26		Sending of error sig	l	-(0-Unlimited)		Set the time interval for
20		cycles(1255, 0-Ur		-(0-0111111120) -1255		when the error signal is
		cyclc3(1255, 0 01	linniceay	1255		sent cyclically.
2F	Set	point				
1.1						
1.1.	I FCI	J actuators 0-10V > Setp	oint			
	Gene	ral	Base setpoint te	mperature (1035 'C)	25	* *
	Actua	l temperature	Controller status at power on		Comfort mode	•
	Setpo	bint	Extended comfort mode time (2255 min) 2		2	▲ ▼
			Heating :	•		
	Fan (F	Relay)	Reduced heating 'C)	Reduced heating in standby mode (010 'C)		۵. ۲
	Heati	ng/Cooling valve (relay)	Reduced heating (010 'C)	g during the night mode	4	▲ ▼
	Funct	ion status	Actual temperature threshold in frost		7	۸. ۲
	Chani	nel D	protection mode (210 'C) Limit value for maximum setpoint			
			heating (545 'C)		35	* *
			Cooling :			
			Increased coolin 'C)	g in standby mode (010	2	* *
			Increased coolin (010 'C)	g during the night mode	4	۸. ۲
			Actual temperat	Actual temperature threshold in heat protection mode (3540 'C)		* *
				ninimum setpoint cooling		
			(545 'C)	initial setpoint cooling	15	* *
1		Daga act resist		10 (25) 25		Cat the terms and the term
1 Base set point temperature(1035'C)			10(25)35		Set the temperature base	
		50)			level.	
						(Temperature is in
					centigrade.)	
						centigrade.
2		Controller status at	power on	-Unchanged		Set the controller status
				-(Comfort mode)		parameters. The ON
				-Standby mode		commands are as follows:
				-Night mode		
			-Frost/heat protection		Comfort mode: 31	



					Chandley made: 22
					Standby mode: 32
					Night mode: 33
_					Frost protection: 34
3	Extended comfor		(2)255min		Set the time period for the
	time(2255min)				extended comfort mode.
Heating:					
4	Reduced heating	; in standby	0(2)10		Set the temperature for
	mode(010'c)				when the reduced heating
					mode (standby mode) is
					active.
5	Reduced heating	-	0(4)10		Set the temperature for
	night mode(01	0'C)			when the reduced heating
					mode (night mode) is
					active.
6	Actual temperate		2(7)10		Set the temperature at
	in frost protectio	n			which the frost protection
	mode(210'C)				mode will be activated.
7	Limit value for m		5(35)45		Set the maximum
	point heating(5.				temperature value.
2F_Hea	ating valve(rela	ay)			
1.1.1 FCU	actuators 0-10V > Heat	ting valve (relay)			
Genera				Two-step (ON/OFF) contro	la
Genera		Types of control		O PWM control	
Actual	temperature	Valve type		 Inverted(de-energized opened) Normal(de-energized closed) 	
Setpoir	nt	Reaction on bus voltage failure		Contact unchanged	
Fan (Re	elay)	Enable valve purge		No O Yes	
Heatin	g valve (relay)	>Time of valve purge	ge (1255 min) 5		÷
Functio	on status	>Automatic valve purge		No	•
Channe	- D	NOTE: No use PI cont	trol		
1	Types of control		-(Two-step(C	N/OFF) control)	Set the control type.
			-PWM contro	l	
					Two-step(ON/OFF) control:
					A temperature value will be
					activated when the room
					temperature falls below a
					pre-set level. PI control is
					not used.
					Upper limit value=Set point
					temp. +1°C; Lower limit
					value=Set point temp1°C
					PWM control: The control
					value is fixed and converted
					into the value used during
					initiation.
2	Valve type		-Inverted(de	-energized opened)	Set the valve type.
				-energized closed)	
3	Reaction on bus	voltage failure	-Contact Und	-	Set the bus voltage failure
			-Contact opened		reaction.



			-(Contact closed)	
				Contact unchanged: The contact position is unchanged.
				Contact opened: The
				contact position is opened.
				Contact closed: The contact position is closed.
4	-PWM Cycle time		1(3)30min	Set the PWM cycle time.
5	Minimum heating		(0%)20%	Set the value for the minimum heating
6	Enable valve purg	e	-Yes -(No)	Enable or disable the purge valve.
7	>Time of valve purge(1255min))	1(5)255min	Set the purge valve time.
8	Automatic valve p		-(No)	Set the parameters for the
			-One time per day	automatic purge valve.
			-One time per week -One time per month	One time per day: The
			-one time per month	purge valve will operate
				once a day.
				One time per week: The
				purge valve will operate once a week.
				once a week.
				One time per month: The
				purge valve will operate once a month.
	Heating value(0-10)V)		
1.1.1 FCU	actuators 0-10V > Hea	ting valve (0-10v)		
Genera	temperature	Types of control	ON(10v)/OFF(0V) con	ntrol
		Valve type	 Inverted(de-energized Normal(de-energized 	•
Setpoi		Valve adjustment	O Disable 🔵 Enable	
Fan (R	elay)	Enable valve purge	ge 💿 No 🔾 Yes	
Heatin	ig valve (0-10v)	NOTE: Use PI contro	ol	
Functio	on status			
Channel D				
Channel E				
9	Types of control		-(Continuous-action control)	Set the control type.
			-On(10V)/OFF(0V) control	
				Continuous-action control:
				A continuous action controller has a control
				value which is continually
				changing. The output
	1			voltage is between 0v and



			10v and can be used to activate proportional valve drives. The valve can thereby be fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via PI control.
10	Value type	-(Normal(de-energized closed))	-On(10V)/OFF(0V) control: Set the value type parameters.
11	Value adjustment	-Inverted(de-energized opened -Enable -(Disable)	Enableor disable the value adjustment.
12	-> Lower limit for active value opening range(0100%)	(0)100%	Set the lower value opening limit.
13	->Upper limit for active value opening range	0(100%)	Set the upper value opening limit.
14	Enable value purge	-Yes -(No)	Enable or disable the purge value.
15	-> Time of value purge(1255min)	1(5)255min	Set the purge value time.
16	-> Automatic value purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month.

2G_ Cooling valve(relay)



1.1.1 F	CU actuators 0-10V > Co	oling valve (re	lay)			
Ger	neral	Types of co	ntrol	Two-step (ON/OFF) control rol	
Act	tual temperature	Valve type		Inverted(de-energized opened)		
Set	point	13/62	75 737 216		e-energized closed)	
Far	n (Relay)	0.0000000000000000000000000000000000000	i bus voltage failure	Contact open		•
Co	oling valve (relay)		time (130 min)	3		÷
		Minimum c		0%		*
Fur	nction status	Enable valv	e purge		s	
Cha	annel E	>Time of	valve purge (1255 min)	5		÷
		>Automa	tic valve purge	No		•
		NOTE: Use F	PI control			
1	Types of control		-(Two-step(ON/OFF) -PWM control		Set the control type. Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below pre-set level. PI control not used. Upper limit value=Set point temp. +1°C; Low limit value=Set point temp1°C PWM control: The conv value is fixed and converted into the value used during initiation	d ow a ol is : ver ntrol lue
2	Valve type		-Inverted(de-energiz -(Normal(de-energiz		Set the valve type.	
3	Reaction on bus vo failure	Itage	-Contact Unchanged -Contact opened -(Contact closed)	-	Set the bus voltage fareaction. Contact unchanged: To contact position is unchanged. Contact opened: The contact position is opened. Contact closed: The contact close	
					contact closed: The	sed.



4	PWM Cycle time(13	30min)	1(3)30min		Set the PWM cycle time.	
5	Minimum cooling	Minimum cooling			Set the minimum cooling percentage.	
6	Enable value purge		-Yes -(No)		Enable or disable the purge valve.	
7	-> Time of valve purge(1255min)				Set the purge valve time.	
8	purge(1255min) Automatic valve purge		-(No) -One time per day -One time per week -One time per month		 Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month. 	
	Cooling valve(0-10V)					
1.1.1 F	CU actuators 0-10V > Co	oling valve (0-10v)			
General		Types of	lypes of control		0v)/OFF(0V) control nuous-action control	
	tual temperature	Valve typ	Valve type		ted(de-energized opened) al(de-energized closed)	
Set	tpoint	Valve adj			le 🔵 Enable	
Far	n (Relay)	Enable valve purge O No		O No	Yes	
Co	oling valve (0-10v)	NOTE: Use	e PI control			
Fu	nction status					
Ch	annel D					
Ch	annel E					
9	Types of control		-(Continuous-action cont -On(10V)/OFF(0V) contro		Set the control type.	
					Continuous-action control: A continuous action controller has a control value which is continually changing. The output voltage is between 0v and 10v and can be used to activate proportional valve drives. The valve can thereby be	



			fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via PI control.
10	Value tune	-(Normal(de-energized closed))	-On(10V)/OFF(0V) control:
10	Valve type	-Inverted(de-energized opened	Set the value type parameters.
11	Valve adjustment	-Enable -(Disable)	Enableor disable the value adjustment.
12	-> Lower limit for active valve opening range(0100%)	(0)100%	Set the lower value opening limit.
13	->Upper limit for active valve opening range	0(100%)	Set the upper value opening limit.
14	Enable valve purge	-Yes -(No)	Enable or disable the valve purge.
15	-> Time of valve purge(1255min)	1(5)255min	Set the purge value time.
16	-> Automatic valve purge	-(No) -One time per day -One time per week	Set the parameters for the automatic purge valve.
		-One time per month	One time per day: The purge valve will operate once a day.
			One time per week: The purge valve will operate once a week.
			One time per month: The purge valve will operate once a month.

1 FCU actuators 0-10V > Hea	ating/Cooling valve (relay)		
General	Types of control	 Two-step (ON/OFF) control PWM control 	
Actual temperature	Valve type	Inverted(de-energized opened)	
Setpoint	Reaction on bus voltage failure	 Normal(de-energized closed) Contact closed 	
Fan (Relay)	Enable valve purge	No Yes	
Heating/Cooling valve (relay)	NOTE: No use PI control		
Function status			
Channel D			



	1		
1	Types of control	-(Two-step(ON/OFF) control) -PWM control	Set the control type. Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below a pre-set level. PI control is not used. Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C PWM control: The control value is fixed and converted into the value used during initiation.
2	Valve type	-Inverted(de-energized opened) -(Normal(de-energized closed)	Set the valve type.
3	Reaction on bus voltage failure	-Contact Unchanged -Contact opened -(Contact closed)	Set the bus voltage failure reaction. Contact unchanged: The contact position is unchanged. Contact opened: The contact position is opened. Contact closed: The contact position is closed.
4	PWM Cycle time(130min)	1(3)30min	Set the PWM cycle time.
5	Minimum heating/cooling	(0%)20%	Set the minimum heating/cooling parameter.
6	Enable valve purge	-Yes -(No)	Enable or disable the purge valve.
7	-> Time of valve purge(1255min)	1(5)255min	Set the purge valve time.
8	->Automatic valve purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate



			once a week.
			One time per month: The purge valve will operate once a month.
	Heating value(relay)		
9	Types of control	-(Two-step(ON/OFF) control) -PWM control	Set the control type. Two-step(ON/OFF) control: A temperature value will be activated
			when the room temperature falls below a pre-set level. PI control is not used.
			Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C
10	Valve type	-Inverted(de-energized opened)	PWM control: The control value is fixed and converted into the value used during initiation. Set the valve type.
		-(Normal(de-energized closed)	
11	Reaction on bus voltage failure	-Contact Unchanged -Contact opened -(Contact closed)	Set the bus voltage failure reaction. Contact unchanged: The contact position is unchanged.
			Contact opened: The contact position is opened. Contact closed: The contact position is closed.
12	PWM Cycle time(130min)	1(3)30	Set the PWM cycle time.
13	Minimum heating	(0%)20%	Set the minimum heating value.
14	Enable valve purge	-Yes -(No)	Enable or disable the purge valve.



	>Time of valve	1(5)255min	Set the purge valve time.
16	purge(1255min) Automatic valve purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The
			once a week. One time per month: The purge valve will operate once a month.
	Cooling value(relay)		
17	Types of control	-(Two-step(ON/OFF) control) -PWM control	Set the control type. Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below a pre-set level. PI control is not used. Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C PWM control: The control value is fixed and converted into the value used during initiation.
18	Valve type	 -Inverted(de-energized opened) -(Normal(de-energized closed) 	Set the valve type.
19	Reaction on bus voltage failure	-(Normal(de-energized closed) -Contact Unchanged -Contact opened -(Contact closed)	Set the bus voltage failure reaction. Contact unchanged: The contact position is unchanged.
20	PWM Cycle time(130min)	1(3)30min	Contact opened: The contact position is opened. Contact closed: The contact position is closed. Set the PWM cycle time.



21	Minimum cooling		(0%)20%		Set the minimum cooling percentage.
22	Enable valve purge	2	-Yes -(No)		Enable or disable the purge valve.
23	-> Time of valve		1(5)255min		Set the purge valve time.
24	purge(1255min) Automatic valve purge		-(No) -One time per day -One time per wee -One time per mon		Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month.
	Heating/Cooling value(0-10V)				
1.1.1 FCU	J actuators 0-10V > Hea	ting/Cooling va	lve (0-10v)		
Gener	al	Types of control ON(10v)/OFF(0 O Continuous-act			
Actua	temperature	Valve type		 Inverted(de-ene Normal(de-ener 	
Setpo	int	Valve adjustment			
Fan (R	lelay)	Enable valve purge No Yes		O No Ves	
Heati	ng/Cooling valve (0-10v)	NOTE: Use PI c	ontrol		
Functi	on status				
Chanr	nel D				
Chanr	nel E				
25	Types of control		-(Continuous-actio -On(10V)/OFF(0V)		Set the control type.
					Continuous-action control:
					A continuous action controller has a control value which is continually changing. The output voltage is between 0v and 10v and can be used to activate proportional



			valve drives.
			The valve can thereby be fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via PI control.
26	Valve type	-(Normal(de-energized closed))	-On(10V)/OFF(0V) control: Set the value type
20		-Inverted(de-energized opened	parameters.
27	Valve adjustment	-Enable -(Disable)	Enableor disable the value adjustment.
28	-> Lower limit for active valve opening range(0100%)	(0)100%	Set the lower value opening limit.
29	->Upper limit for active valve opening range	0(100%)	Set the upper value opening limit.
30	Enable valve purge	-Yes -(No)	Enable or disable the valve purge.
31	-> Time of valve purge(1255min)	1(5)255min	Set the purge value time.
32	-> Automatic valve purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve.
			One time per day: The purge valve will operate once a day.
			One time per week: The purge valve will operate once a week.
			One time per month: The purge valve will operate once a month.

2I_ Operation mode



1.1.1 FC	U actuators 0-10V > ->O	peration mode			
Gene	eral	The operation m recovery	ode after bus voltage	Recovery	•
Char	nnel A	Floor heating spe	eed (for PI)	Medium	*
->0	peration mode	Setpoint tempera	iture :		
->Va		Normal mode setpoint temperature (535 'C)		25	\$
	ave	Day mode setpo	int temperature (535 'C)	23	\$
Char	nnel B		oint temperature (535	20	¢
Char	nnel C	'C) Away mode seto	oint temperature (535		*
Char	nnel D	'C)		15	•
Char	nnel E	Enable send ope	rating status	O Disable Enable	e
Char	iner L	Timer mode (Pres	set 1Preset 3):		
Char	nnel F	>Preset 1 temp	perature (535 'C)	25	*
Char	nnel G	Start/Stop the	floor heating	🔵 Stop 🔘 Start	
		Start time for	hour (023 h)	00	•
		Start time for	minute (059 min)	00	
		>Preset 2 temp	perature (535 'C)	23	\$
		Start/Stop the	floor heating	🔵 Stop 🔘 Start	
		Start time for	hour (023 h)	06	*
		Start time for	minute (059 min)	00	•
		>Preset 3 temperature (535 'C)		20	
		Start/Stop the	floor heating	🔵 Stop 🔘 Start	
		Start time for	hour (023 h)	17	
		Start time for	minute (059 min)	00	•
No.	ETS-Parameter		Range (default)		Description
	ration mode		Γ		1
1	The operation mo	de after bus	-(Recovery)		Set the operation mode after
	voltage recovery		-Normal		bus voltage recovery.
			-Day		
			-Night		
			-Away		
			-Timer		
2	Floor heating spee	ed (for PI)	-Lower		Set the floor heating intensity
			-Low		level.
			-(Medium)		
			-Fast		
			-Faster		
Setnoin	it temperature:				1
3	Normal mode se	thoint	5(25)35		Set the temperature for the
5	temperature(53		5(25)55		normal mode.
4	Day mode setpo		5(23)35		
4	temperature(53		5(23)33		Set the temperature for the day mode.
5	Night mode setp		5(20)35		Set the temperature for the
J	temperature(53		5(20)55		night mode.
6	Away mode setp		5(15)35		Set the temperature for the
-	temperature(53		5(_0)00		away mode.
	temperature(55	,	l		



7	Enable send operation status		-Disable		Enable or disable send	
0	>Object sending range		-Enable		operation status. Set the object sending range.	
8			-All status object -Only activated status object		Set the object sending range.	
Timer mo	ode(Preset 1Preset	3)				
9	> Preset 1		5(25)35'C		Set the temperature for pre-	
	temperature(535				set 1.	
10	Start/Stop the floor	r heating	-(Start)		Set the floor heating status.	
			-Stop			
11	Start time for hour	(023h)	(0)23		Set the floor heating start time in hours.	
12	Start time for		(0)59		Set the floor heating start	
	minute(059min)		(0)		time in minutes.	
13	> Preset 2		5(23)35′C		Set the temperature for pre-	
-	temperature(535	′C)	- (-)		set 2.	
14	Start/Stop the floor		-(Start)		Set the floor heating status.	
		0	-Stop			
15	Start time for hour	(023h)	0(6)23		Set the floor heating start	
		. ,			time in hours.	
16	Start time for		(0)59		Set the floor heating start	
	minute(059min)				time in minutes.	
17	> Preset 3		5(20)35'C		Set the temperature for pre-	
	temperature(535	'C)			set 3.	
18	Start/Stop the floor	r heating	-(Start)		Set the floor heating status.	
			-Stop			
19	Start time for hour	r(023h) 0(17)23			Set the floor heating start	
					time in hours.	
20	Start time for		(0)59		Set the floor heating start	
	minute(059min)				time in minutes.	
2J_Valv	/e					
1.1.1 FCU	J actuators 0-10V > ->Va	lve				
Gener	r	202		 Inverted(de-energized opened) 		
Gener	al.	Valve type		Normal(de-energized closed)		
Chanr	nel A	Reaction on bus voltage failure		Contact closed	•	
->Op	eration mode	PWM Cycle time (130 min)		3	*	
, op						
->Val	lve	Minimum heating		0%		
Chanr	nel B	Enable report Heating valve status		O No Ves		
Channel C		Enable valve pu	irge	O No 🦳 Yes		
		Enable pipe pre of floor heating	essure protection when all OFF	🔘 No 🔵 Yes		
Channel D		 Contractor Regional Research in Street Contractor 	 Constant 			
Channel E						
Channel F						
Channel G						
	ſ				1	
1 Valve type			-Inverted (de-ener	- ·	Set the valve parameters.	
				gized		
			opened))			
2	2 Reaction on bus voltage failure		-Contact unchanged -Contact open		Set the bus voltage failure	



		-(Contact closed)	reaction.
			Contact unchanged: The contact position is unchanged.
			Contact opened: The contact position is opened.
			Contact closed: The contact position is closed.
3	PWM Cycle time(130min)	1(10)30	Set the time PWM cycle.
4	Minimum heating	(0)20%	Set the minimum heating value.
5	Enable 1bit object 'Value position status'	-Yes -(No)	Enable or disable the value position status.
6	>Send object value	-(No, update only) -Only after change	Set when the object value parameters are sent.
			No, Update only: The status is always updated, but never sent.
			Only after change: The object value will be sent only when a modificationhas been made.
7	>Type of status report	-Report movement PWM>0/PWM=0 -Report position, ON/OFF	Set the type of status report
8	>Object value with valve position>0	-0 -(1)	Set the value parameters when the valve position is >0.
9	Enable valve purge	-Yes -(No)	Enable or disable the valve purge.
10	> Time of valve purge(1255min)	1(5)255min	Set the purge valve time.
11	>Automatic value purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day.
			One time per week: The purge valve will operate once a week.
			One time per month: The purge valve will operate



			once a month.
12	Enable pipe pressure protection when all of floor heating OFF	-Yes -(No)	Enable or disable pipe pressure protection when the floor heating is off.
13	>Valve open value	5%30%	Set the valve open parameters.
14	>Protection time(1255min,0-Unlimited)	-0-Unlimited -1(60)255	Set the protection time.
Chann	el function Switch controller		1
15	Response of switch state ON/OFF	-(No response) -Always response -Only after change	Set the parameters for the switch state response. No response: The switch state will not respond. Always response: The switch state will always
			respond. Only after change: The switch state will respond only after a modification has been made.
16	Save statistic for ON switching 'time(hour-2bytes)	-Enable -(Disable)	Enable or disable the ON time statistics.
17	>Alarm when time out(165535h,0-invalid)	-0-invalid -13000065535	Set the alarm time.
18	>Transmit telegram interval when alarm	1(10)255	Set the telegram transmission interval when triggered by an alarm.
19	Switch state on bus voltage	-(Unchanged) -ON -OFF	Set the switch state in the event of a bus voltage failure. Unchanged: The switch state will remain unchanged after a bus voltage failure. ON: The switch state will be 'on' after a bus voltage failure. OFF: The switch state will be 'off' after a bus voltage failure.
20	Switch state after bus voltage recovery	-(Unchanged) -Recovery -ON -OFF	Set the switch state in the event of a bus voltage recovery. Unchanged: The switch



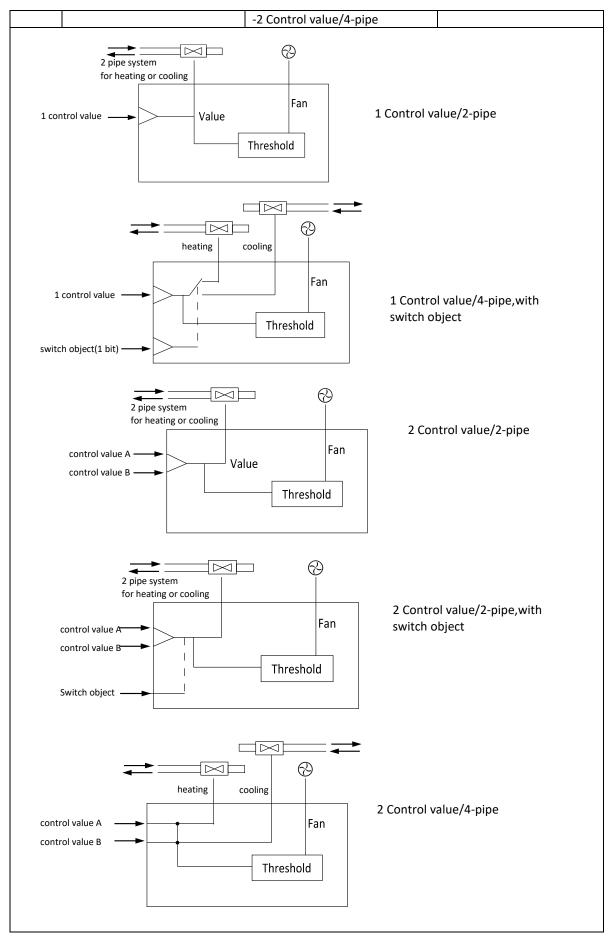
21	Time function	-(Disable) - staircase lighting -ON/OFF delay	state will remain unchanged after a bus voltage recovery. ON: The switch state will be 'on' after a bus voltage recovery. OFF: The switch state will be 'off' after a bus voltage recovery. Set the staircase lighting timing parameters.
	I function _ Staircase lighting	• • • •	
22	>Control staircase lighting	-Start with '1', stop with '0' -Start with '1', Invalid with '0' -(start with '1'/ '0', can't stop)	Set the staircase lighting activation and deactivation parameters.
			Start with'1', Stop with'0'- The stair case lighting will activate when telegram '1' is received and deactivate when telegram '0' is received.
			Start with'0', Stop with'1'- The stair case lighting will activate when telegram '0' is received and deactivate when telegram '1' is received.
			Start with'1/0', Can't stop- The stair case lighting will activate when telegram '1' or '0' is received and continue operating.
23	>Change staircase lighting time via bus	-(Yes) -No	Enable or disable the staircase lighting time to be modified via the bus.
			No- Disabled Yes- Enabled
24	>Alarm staircase lighting to bus	-(Yes) -No	Enable or disable the staircase lighting to be alarmed. No- Disabled



			Yes- Enabled
25	>Time for off: (0255Min)	(0)255Min	Set the time for the OFF
			status to be activated in
			minutes.
26	-> Time for off: (059Sec)	0559Sec	Set the time for the OFF
			status to be activated in
			seconds.
27	Warning staircase	-Yes	Enable or disable the
	lighting(ON->OFF->ON)	-(No)	staircase warning lighting.
			Yes: Warning lighting is
			enabled.
			No: Warning lighting is
			disabled.
28	-Warning before the end of	(3)255	Define how much time will
	time(3255Sec)		elapse before a warning is
			triggered.
29	Duration time for	(1)200Sec	Define how long the
	warning(1200Sec)		warning state will last.

3.0_ Pas	sive control					
3.1Fan C	Coil unite					
1.1.1 M	/FCU01.10.1 > General					
Gen	eneral Sending and voltage reco		switching delay after bus ery (3100s)	5		\$
Cont	trol value(0.,100%)	Cycle send ge 0-invalid)	eneral telegram (165535s ,	0		*
Heat	ting/Cooling valve (0-10v)	Control mode				
Fan	(0-10v)	Enable passiv	e control 🛛 Disable 🤇		Enable	
		Supported fu	nction	O Fan coil unite	e OFloor heating	
Func	tion status	HVAC passive	e control system 1 Control value/2		2-pipe	•
		Heating/Cooling valve channel select		Channel E (relay) O Channel G (0-10v)		
		Fan channel s	elect	Channel F (0-10v	nnel F (0-10v) 👻	
		Enable set default control value after system restart working >Default control value(0100%)		🔿 Disable 🔘 Enable		
				0		÷
NOTE:Heating val		valve is used for heating/c	ooling			
۱o.	ETS-Parameter		Range (default)		Description	
1	HVAC passive control system		-1 Control value/2-pipe -1 Control value/4-pipe,with switch object -2 Control value/2-pipe -2 Control value/2-pipe,with		For different control syster will be appear different parameters, all settings see 3.1.1 to 3.1.6	
			switch object			







2	Heating/Cooling valve channel		-Channel E (relay)		It's used for select the	
	select		-Channel G (0-10V)		channel function (heating	
3	Fan channel select		-No fan		or cooling) and the fan	
			-Channel A-C (relay)	1	channel	
			-Channel F (0-10V)			
4	Enable set default control		-Disable		Enable/Disable set default	
	value after system r	estart	-Enable		control value after system	
	working				restart working	
3.1.1 Co	ntrol value(0100%))				
1.1.1 M/F	CU01.10.1 > Control va	lue(0100%)				
Contra	-1	Enable monito	oring control value	O Disable O E	nable	
Gener	ai			Tu:	510000028487-1	
Contro	ol value(0100%)	->Monitoring	interval[2255min]	2	*	
			value'Control value error	Only after chang	e 👻	
Heatin	ng/Cooling valve (0-10v)	signal'				
Fan (0	-10v)	->Set control	->Set control value during fault		nable	
		->Control value default[0,.100%]		10	\$	
Functi	on status					
1	Enchla manitaring	ontrol	-Disable		Enable or disable	
1	Enable monitoring over the second sec	Control	-Disable -Enable			
	value				monitoring control value	
2	-> Monitoring interv	val	-2255		Set the time of monitoring	
	(2255min)				interval	
3	->Send object value	control	-No, update only		Define the parameters	
	value error signal		-Always response		for when the object value	
			-Only after change		should be sent.	
					No, Update only: The status	
					is always updated, but	
					never sent.	
					Always response: The	
					status will always respond.	
					Only after change: The	
					object value will be sent	
					only when a modification	
			Disable		has been made.	
4	->Set control value during fault		-Disable		Whether can be set control	
			-Enable		value during fault	
5	 -> Control value default(0100%) 		-0(10)100		Set the default velue.	
2121						
5.1.Z_I	Heating valve(rela	ay)				



1.1.1 M/	FCU01.10.1 > Heating va	alve (relay)			
Gene	ral	Types of cont	trol	Two-step (C PWM control	DN/OFF) control
Contr	rol value(0100%)	Valve type			-energized opened)
Heati	ing valve (relay)	S ANNAL S AN REAL S			energized closed)
Cooli	Cooling valve (relay) Fan (Relay)		bus voltage failure	Contact closed	•
coon			Enable valve purge >Time of valve purge (1255 min)		
Fan (I					\$
Funct	tion status	>Automatio	c valve purge	No	
		Enable contro	ol heating valve directly	🔵 No 🔘 Yes	
6	Types of control		-(Two-step(ON/OFF -PWM control	⁻) control)	Set the control type. Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below a pre-set level. PI control is not used. Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C PWM control: The control value is fixed and converted into the value used during initiation.
7	Valve type		-Inverted(de-energized opened) -(Normal(de-energized closed)		Set the valve type.
8	Reaction on bus vol	tage failure	-Contact Unchange -Contact opened -(Contact closed)		Set the bus voltage failure reaction. Contact unchanged: The contact position is unchanged. Contact opened: The contact position is opened. Contact closed: The contact position is closed.
Enable v	valve purge		I		
9	>Time of valve purge(1255min)		1(5)255min		Set the purge valve time.
10	Automatic valve pu	rge	-(No) -One time per day -One time per weel -One time per mon		Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day.



						One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month.
11		Enable control heatin	g valve	-No		Whether control heating
		directly	8 14.10	-Yes		directly.
He	eating	value(0-10V)				·
1.	1.1 M/	FCU01.10.1 > Heating val	ve (0-10v)			
	Gene	ral	Types of con	trol		F(0V) control -action control
	Cont	rol value(0100%)			Inverted(de	-energized opened)
	Heat	ing valve (0-10v)	Valve type			energized closed)
		ng valve (relay)	Valve adjustr		🔵 Disable 🧕	Enable
	-	B-1-3	>Lower lim range (0100	it for active valve opening %)	0	*
	Fan (Relay)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	nit for active valve opening	100	
	Funct	tion status	range (0100			
			Enable valve	purge	O No O Yes	e ⊽
			Enable contr	ol heating valve directly	O No O Yes	
12		Types of control		-(Continuous-action -On(10V)/OFF(0V) co	ontrol	Set the control type. Continuous-action control: A continuous action controller has a control value which is continually changing. The output voltage is between 0v and 10v and can be used to activate proportional valve drives. The valve can thereby be fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via Pl control. -On(10V)/OFF(0V) control:
13		Value type		-(Normal(de-energize -Inverted(de-energize		Set the value type parameters.
14		Value adjustment		-Enable	es openes	Enableor disable the value
				-(Disable)		adjustment.
15		 -> Lower limit for act opening range(010 		(0)100%		Set the lower value opening limit.
16		->Upper limit for act		0(100%)		Set the upper value opening
		opening range		(/		limit.
17		Enable value purge		-Yes		Enable or disable the purge
18		-> Time of value		-(No) 1(5)255min		value. Set the purge value time.

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	purge(1255min)		
19	-> Automatic value purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month.
20	Enable control heating valve directly	-No -Yes	Whether control heating directly.

3.1.3_	Cooling valve(re	lay)			
1.1.1 M/F	FCU01.10.1 > Cooling v	alve (relay)			
Gener	al	Types of control		Two-step (ON/OFF) control PWM control	
Contro	ol value(0100%)	Valve type			energized opened) energized closed)
Heatir	ng valve (0-10v)	Reaction on b	ous voltage failure	Contact closed	•
Coolir	ng valve (relay)	_ Enable valve		No Ves	
Fan (R	(elay)	890	ol cooling valve directly	No O Yes	
Functi	ion status				
1	Types of control		-(Two-step(ON/OFF) control)	Set the control type.
			-PWM control		Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below a pre-set level. PI control is not used. Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C PWM control: The control
					PWM control: The control value is fixed and converted into the value used during initiation.



8	Types of control	-(Continuous-action co -On(10V)/OFF(0V) con	
Fi	unction status		
Fa	an (Relay) En	able control cooling valve directly	O No Ves
C	ooling Valve (0-10v) En	able valve purge	O No 🔿 Yes
н	eating valve (0-10v) Va	ve adjustment	Disable Enable
		ve type	 Inverted(de-energized opened) Normal(de-energized closed)
		pes of control	ON(10v)/OFF(0V) control Continuous-action control
1.1.1	M/FCU01.10.1 > Cooling Valve (0-10v)	
Cooling	; valve(0-10V)		
Cooling	directly	-Yes	directly.
7	Enable control cooling valv	e -No	One time per month: The purge valve will operate once a month. Whether control cooling
			One time per week: The purge valve will operate once a week.
			purge valve will operate once a day.
			One time per day: The
		-One time per week -One time per month	valve.
6	Automatic valve purge	-(No) -One time per day	Set the parameters for the automatic purge
5	-> Time of valve purge(1255min)	1(5)255min	Set the purge valve time.
		-(No)	valve.
4	Enable value purge	-Yes	Contact closed: The contact position is closed. Enable or disable the purge
			Contact opened: The contact position is opened.
			contact position is unchanged.
	failure	-Contact opened -(Contact closed)	reaction. Contact unchanged: The
3	Reaction on bus voltage	-(Normal(de-energized -Contact Unchanged	Set the bus voltage failure
2	Valve type	-Inverted(de-energized	



			Continuous-action control: A continuous action controller has a control value which is continually changing. The output voltage is between 0v and 10v and can be used to activate proportional valve drives. The valve can thereby be fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via PI control. -On(10V)/OFF(0V) control:
9	Valve type	-(Normal(de-energized closed)) -Inverted(de-energized opened	Set the value type parameters.
10	Valve adjustment	-Enable -(Disable)	Enableor disable the value adjustment.
11	-> Lower limit for active valve opening range(0100%)	(0)100%	Set the lower value opening limit.
12	->Upper limit for active valve opening range	0(100%)	Set the upper value opening limit.
13	Enable valve purge	-Yes -(No)	Enable or disable the valve purge.
14	-> Time of valve purge(1255min)	1(5)255min	Set the purge value time.
15	-> Automatic valve purge	-(No) -One time per day -One time per week -One time per month	Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day.
			One time per week: The purge valve will operate once a week.
			One time per month: The purge valve will operate once a month.
16	Enable control cooling valve directly	-No -Yes	Whether control cooling directly.

3.1.4_ Heating /Cooling valve(relay)



1.1.1 M	/FCU01.10.1 > Heating/(Cooling valve	(relay)		
Gen	eral	Types of co	ntrol	O Two-step (ON/OFF) control
Con	Control value(0100%) Valve type			Inverted(de-energized opened)	
Hea	ting/Cooling valve (relay)	Reaction on bus voltage failure			-energized closed)
Fan	(0-10v)			Contact close	d 👻
Fun	ction status	PWM Cycle time (130 min) Minimum heating		3 0%	•
		Enable valv		0 No () Ye	
			rol heating/cooling valve	© No ⊖ Ye	
1	Types of control		-(Two-step(ON/OFF) -PWM control	control)	Set the control type. Two-step(ON/OFF) control: A temperature value will be activated when the room temperature falls below a pre-set level. PI control is not used. Upper limit value=Set point temp. +1°C; Lower limit value=Set point temp1°C PWM control: The control value is fixed and converted into the value used during initiation.
2	Valve type		-Inverted(de-energiz -(Normal(de-energiz		Set the valve type.
3	Reaction on bus vol failure	ltage	-Contact Unchanged -Contact opened -(Contact closed)		Set the bus voltage failure reaction. Contact unchanged: The contact position is unchanged.
					Contact opened: The contact position is opened. Contact closed: The
4	Enable value purge		-Yes		contact position is closed. Enable or disable the purge
C			-(No)		valve.
5	-> Time of valve		1(5)255min		Set the purge valve time.



6	Automatic valve purge		-(No) -One time per day -One time per week -One time per month		Set the parameters for the automatic purge valve. One time per day: The purge valve will operate once a day. One time per week: The purge valve will operate once a week. One time per month: The purge valve will operate once a month.
7	Enable control cooling va	lve	-No		Whether control cooling
	directly		-Yes		directly.
Heating/	Cooling valve(0-10V)				
1.1.1 M	/FCU01.10.1 > Heating/Co	oling v	alve (0-10v)		
Gen	eral	Types	e type		DN(10v)/OFF(0V) control Continuous-action control
Con	trol value(0100%)	Valve			nverted(de-energized opened) Normal(de-energized closed)
Hea	ting/Cooling valve (0-10v)	Value			Disable O Enable
Fan	(0-10v)				
Fund	tion status		e control heating/cooling valve		No 🔿 Yes
8	Types of control		-(Continuous-action control) -On(10V)/OFF(0V) control		Set the control type. Continuous-action control: A continuous action controller has a control value which is continually changing. The output voltage is between 0v and 10v and can be used to activate proportional valve drives. The valve can thereby be fully opened, or fully closed, and moved to any intermediate position. This type of control is enabled via PI control. -On(10V)/OFF(0V) control:
9	Valve type		-(Normal(de-energized closed -Inverted(de-energized opene	-	Set the value type parameters.
10	Valve adjustment		-Enable		Enable or disable the value



		-(Disable)	adjustment.
11	-> Lower limit for active valve	(0)100%	Set the lower value opening
	opening range(0100%)		limit.
12	->Upper limit for active valve	0(100%)	Set the upper value opening
	opening range		limit.
13	Enable valve purge	-Yes	Enable or disable the valve
		-(No)	purge.
14	-> Time of valve	1(5)255min	Set the purge value time.
	purge(1255min)		
15	-> Automatic valve purge	-(No)	Set the parameters for the
		-One time per day	automatic purge valve.
		-One time per week	
		-One time per month	One time per day: The purge
			valve will operate once a
			day.
			One time per week: The
			purge valve will operate
			once a week.
			One time per month: The
			purge valve will operate
			once a month.
16	Enable control cooling valve	-No	Whether control cooling
	directly	-Yes	directly.

3.1.5_ Fan (Relay)



1.1.1 M	M/FCU01.10.1 > Fan (Relay	y)				
Ge	neral	Fan speed re	elay output	3-Speed fan	•	
Co	ntrol value(0100%)	Fan control	type	Step switch	O Changeover switch	
		Fan control	encoded mode	Encoded by 1	byte percent value 0-100% 🔹 🔹	
He	ating/Cooling valve (0-10v)	Fan speed o	Fan speed on bus voltage failure Unchanged Fan speed on bus voltage recovery Recovery		d OFF	
Fai	n (Relay)	Fan speed o				
Fu	nction status	Fan switch-c	on delay (0255 s)	0	* *	
		Fan switch-c	off delay (0255 s)	0	÷	
		Enable start	-up behavior	O Disable 🤇) Enable	
		Fan automa value	tic control is actived by obj	ect 🔿 '0' 🔘 '1'		
		Enable limita	ations	O Disable	Enable	
		Automatic fa	in control threshold			
		Threshold fo	or fan speed 1 (1100 %)	30	÷	
		Threshold fo	or fan speed 2 (1100 %)	60	÷	
		Threshold fo	or fan speed 3 (1100 %)	90	\$	
		Hysteresis fo	or fan speed (010 %)	5	\$	
		NOTE:Chann	el A->Speed 1,Channel B->	Speed 2,Channel	C->Speed 3	
No.	ETS-Parameter					
1			Range (default)		Description	
1	Fan speed relay out	put	-1-Speed fan		Set the fan speed relay	
L	Fan speed relay out	put	-1-Speed fan -2-Speed fan			
L	Fan speed relay out	put	-1-Speed fan		Set the fan speed relay	
•	Fan speed relay out	put	-1-Speed fan -2-Speed fan		Set the fan speed relay output. 1-Speed fan: A single speed fan is connected to channe	
•	Fan speed relay out	put	-1-Speed fan -2-Speed fan		Set the fan speed relay output. 1-Speed fan: A single speed fan is connected to channe A. 2-Speed fan: A dual speed fan is connected to channe A and channel B. (Channel A->Speed 1, Channel B->	
2	Fan speed relay out	put	-1-Speed fan -2-Speed fan		 Set the fan speed relay output. 1-Speed fan: A single speed fan is connected to channe A. 2-Speed fan: A dual speed fan is connected to channe A and channel B. (Channel A->Speed 1, Channel B-> Speed 2.) 3-Speed fan: A triple speed fan is connected to channe A, channel B, and channel C. (Channel A-> Speed 1, channel B->Speed 2, 	
			-1-Speed fan -2-Speed fan -3-Speed fan	percent	 Set the fan speed relay output. 1-Speed fan: A single speed fan is connected to channe A. 2-Speed fan: A dual speed fan is connected to channe A and channel B. (Channel A->Speed 1, Channel B-> Speed 2.) 3-Speed fan: A triple speed fan is connected to channe A, channel B, and channel C. (Channel A-> Speed 1, channel B->Speed 2, channel C-> Speed 3.) 	



4	Fan speed on bus voltage failure	-Unchanged -(OFF)	Set the fan speed in the event of a bus voltage failure.
			Unchanged: The fan speed will remain unchanged.
			OFF: The fan will turn off.
5	Fan speed on bus voltage recovery	-(Recovery) -OFF -1 -2 -3	Set the fan speed in the event of a bus voltage recovery. Recovery: The fan speed will remain unchanged.
			OFF: The fan will turn off.
			1,2,3: When the fan is switched on, the speed can be selected from 1,2, or 3.
6	Fan switch-on delay(0255s)	(0)255s	Set the fan switch on delay time.
7	Fan speed-off delay(0255s)	(0)255s	Set the fan switch off delay time.
8	Enable start-up behavior	-Disable -Enable	Enable or disable start-up.
9	Fan automatic control is actived by object value	-0 -1	Receive the 0 or 1 will automatic control.
10	Enable limitations	-Disable -Enable	Enable or disable limitations.
Automa	tic fan control threshold		
11	Threshold for fan speed1100%	1(30)100	Set each speed threshold for fan.
12	Threshold for fan speed1100%	1(60)100	
13	Threshold for fan speed1100%	1(90)100	
14	Hysteresis for fan speed (010%)	(5)10	
Fan (0-	, ,		·



1.1.1 N	1/FCU01.10.1 > Fan (0-10v)				
Ger	neral	Fan control e	encoded mode	Encoded by 1	byte percent value 0-100%	•
Cor	ntrol value(0100%)	Fan speed 1	voltage (0-10V)	3V		•
		Fan speed 2 voltage (0-10V) Fan speed 3 voltage (0-10V)		5V		•
Hea	ating/Cooling valve (0-10v)			10V		•
Fan	n (0-10v)	Fan speed o	n bus voltage failure	OFF		. W
Fun	nction status	Fan speed o	n bus voltage recovery	Recovery		•
		Fan switch-o	n delay (0255 s)	0		
			ff delay (0255 s)	0		^
			up behavior	O Disable O	Enable	
			naracteristic of fan	Switch on at s		
		-	delay at starting speed		beed 3	
		(2255 s)	delay at starting speed	5		÷
		->Changeov (s)	er delay between fan speeds	0.0		v
			duartion time on fan speed	5		\$
		Fan automat	ic control is actived by objec	town		
		value		· () '0' () '1'		
		Enable limita	ations	O Disable	Enable	
15	Fan control encoded	Fan control encoded mode		-Encoded by 1 byte percent value 0-100% -Encoded by 1 byte constant value 0-3		coded
16	Fan speed 1 voltage	(0-10V)	-1 bit values -0(3)10V		Set the voltage of each fan	
17	Fan speed 2 voltage		-0(5)10V		speed.	
18	Fan speed 3 voltage		-0(10)10V			
19	Fan speed on bus vo failure	ltage	OFF		The fan state when th voltage failure.	e bus
20	Fan speed on bus vo recovery	ltage	-Recovery -OFF -1 -2 -3 -Auto		Set fan speed on bus voltage recovery.	
21	Fan switch-on delay	(0255s)	-0255		Set the delay time.	
22	Fan switch-off delay	(0255s)			-	
23	Enable start-up beha		-Disable -Enable		Disable/Enable start-u behavior. If enable it, will be app below parameters.	pear
24	-> Starting character	istic of fan	-Switch on at speed1 -Switch on at speed2 -Switch on at speed3		Set the speed of fan w starting.	/hen
25	-> Minimum delay at speed (2255s)	t starting	-2255s		Set the delay time.	



26 ->changeover delay between for fan speeds. -0 27 ->Minimum duartion time on fan speed (2255): -0 28 Fan automatic control is -0 -0 29 Enable limitation 1 -1 31 ->Speed with limitation 2						1
27 ->Minimum duartion time on fan speed (2255) Receive the 0 or 1 will automatic control is -0 28 Fan automatic control is -0 -0 29 Enable limitations -Disable 21 ->Speed with limitation 1 -Enable 23 ->Speed with limitation 2 ->Speed with limitation 3 24 ->Speed with limitation 4 ->Speed with limitation 4 25 ->Speed with limitation 4 ->Speed with limitation 4 24 ->Speed with limitation 4 ->Speed with limitation 4 33 ->Speed with limitation 4 ->Speed with limitation 4 34 ->Speed with limitation 4 ->Speed with limitation 4 35 ->Speed with limitation 5 ->Speed with limitation 4 ->Speed with limitation 4 ->Speed with limitation 4 ->Speed with limitation 4 ->Speed with limitation 5 ->Speed with limitation 5 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limitation 6 ->Speed with limi	26		etween	-0		
fan speed (2.255s) Auge of the speed value Auge of the speed value 28 Fan automatic control is -0 29 Enable limitations -Disable 31 >Speed with limitation 1 222 of the speed value 32 >Speed with limitation 4 2 33 >Speed with limitation 4 2 34 >Speed with limitation 4 2 33 >Speed with limitation 4 2 34 >Speed with limitation 4 2 35 >Speed with limitation 4 2 36 >Speed with limitation 4 2 31 >Speed with limitation 4 2 32 ->>Speed with limitation 4 2 33 >Speed with limitation 4 2 33 >Speed with limitation 4 2 33 >Speed with limitation 4 2 >Speed with limitation 5		· · ·		0.055		_
28 Fan automatic control is actived by object value -0 Receive the 0 or 1 will automatic control. 29 Enable limitations -Disable -Disable When enabled limitation function, set the speed with ach limitation 1 31 >Speed with limitation 3 1 >Speed with limitation 4 1 32 >Speed with limitation 4 1 > 33 >Speed with limitation 4 1 > 34 >Speed with limitation 4 1 > 33 >Speed with limitation 4 1 > 34 >Speed with limitation 4 1 > 35 > > > > 34 > -> > -> -> 34 > -> -> -> -> -> 34 > ->	27		time on	-2255s		
actived by object value -1 automatic control. 29 Enable limitations -Disable When enabled limitation 1 31 >Speed with limitation 1 32.54 32 >Speed with limitation 3	20		Lic	0		Pocoivo the 0 or 1 will
29 Enable limitations -Disable -Enable When enabled limitation -Enable 31 >Speed with limitation 1 Interviewed and the speed with limitation 3 Interviewed and the speed with limitation 4 Interviewed and the speed with limitation 3 33 >Speed with limitation 3 Interviewed and the speed with limitation 4 Interviewed and the speed with limitation 4 Interviewed and the speed with limitation 4 34 >Speed with limitation 4 Interviewed and the speed with limitation 4 Interviewed and the speed with limitation 4 Interviewed and the speed with limitation 4 31.60 Function status Interviewed and speed with limitation 4 Interviewed and speed with limitation 4 Interviewed and speed with limitation 4 10 Enable 1 Bit object "Status fan speed w" Interviewed and speed with limitation 4 Yes -(No) Enable or disable a 1 bit object. 2 >Meaning -(Current fan speed) -(Current fan speed) No: There is no response. Current fan speed. Required fan speed. Respond to the current fan speed. Respond to the current fan speed. 3 > Send object value -(No, Update only) -(No, Update only) Define the parameters for when the object value -Only after change 3 > Send object value -(No, Update only) -(No, Update only) Define the parameters for when the object	20			-		
Image: Speed with limitation 1 12.4.4 function, set the speed with each limitation 2 33 >Speed with limitation 3 14 34 >Speed with limitation 4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 2.1 1.4 14 1 Enable 1.8 18 14 14 14 1 Enable 1.9 18 14 14 14 14 1 Enable 1.9 18 18 14 14 14 14 1 Enable 1.9 18 18 14 14 14 14 1 Enable 1.9 18 18	20		le	_		
31 >Speed with limitation 1 32.14 each limitation 32 >Speed with limitation 3 1 is an any speed with limitation 3 is any speed with limitation 4 is any speed with 1	29					
32 ->Speed with limitation 2 33 ->Speed with limitation 3 34 ->Speed with limitation 4 34 ->Speed with limitation 4 34 ->Speed with limitation 4 31 ->Speed with limitation 4 34 ->Speed with limitation 4 35	31	>Speed with limitati	on 1			
32 >Speed with limitation 2 1 and 2 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2						
34 >Speed with limitation 4 1.01 3.1.6_ Function status State finance in speed * 0 Function status State finance in speed * 0 Conset state gradue finance 0 Conset state gradue finance 1 Enable 1 Bit object "Status fan speed x" -Yes -(No) 1 Enable 1 Bit object "Status fan speed x" -Yes -(No) 2 ->Meaning -(Current fan speed) Current fan speed) 2 ->Meaning -(Current fan speed) Current fan speed. 3 -> Send object value -(No, Update only) -(Current fan speed) 3 -> Send object value -(No, Update only) -(Define the only) -Nu speed status -(No, Update only) -(Define the only) -(Define the parameters 3 -> Send object value -(No, Update only) -(Define the parameters -(No, Update only) -Nu speed. -(No, Update only) -(No, Update only) -(No, Update only) -(No, Update only) 3 -> Send object value -(No, Update only) -(No, Update only) -(No, Update only) -Nu v		-		off		
21 21 3.1.6_ Function status Image: Status Stat		· · ·				
21.0ff 3.2 2.1 2.1 3.1.6_ S2 Function status Still MyCOULD1.5 function status Second colspan="2">Second col	54		0114			
3.1.6_ Function status 3.1.1 My/CU01.0.1 - function status Section status status status status status status status status status Section status Section status Section status status status status Section status status status status status Section status Sectin status status						
32.3 3.1.1 M/FCU01.0.1 > Function status Construint filt diger "Status for speed ** No ® Vis ***Meaning Construint filt diger "Status for speed ** No ® Vis ***********************************						
3.1.6 Function status 111 M/CO01.01.1 > Function status General Enable 1810 object "Status fin speed ** No. © Yx: Meaning Seed object value						
111.M/CU01.01.01 > Function status General Enable 181 biglet "Status fan speed * No ® Yes **-Send object sweling ************************************	210	Function status		3,2,1		
Image: Status for speed ** No ® Ves	3.1.6	Function status				
Image: Status for speed ** No ® Ves						
1 Enable 1 Bit object "Status fan Ou/Off © No Ves 1 Enable 1 Bit object "Status fan Ou/Off © No Ves 1 Enable 1 Bit object "Status fan Ou/Off © No Ves 1 Enable 1 Bit object "Status fan Ou/Off © No Ves 2 >Meaning (Current fan speed) 2 >Meaning -(Current fan speed) 2 >Meaning -(Current fan speed) 2 >Meaning -(Current fan speed) 3 > Send object value -(No, Update only) -Always response -(No, Update only) -ONJ after change -(No, Update only) -Always response -ONJ after change ->> Send object value -(No, Update only) ->>> Send object value -(No, Update onl		1.1.1 M/FCU01.10.1 > Function	status			
1 Enable 1 Bit object "Status fan speed" No Yes 1 Enable 1 Bit object "Status fan speed" No Yes 1 Enable 1 Bit object "Status fan speed" No Yes 1 Enable 1 Bit object "Status fan speed" No Yes 2 >Meaning >Meaning -(No) Yes 2 >Meaning -(Current fan speed) No Yes 3 > Send object value -(No, Update only) -Always response Define the parameters for when the object value 3 > Send object value -(No, Update only) -Always response Define the parameters is always updated, but never sent.		General	Enable 1Bit obj	ect "Status fan speed x"	🔿 No 🔘 Yes	
Pedrop/Cooling value (0-100) >Object standing range I status object Forection status >Valid object value 'V @ 1' Forection status Enable Silk object "Status fan opeed" No Ves Enable 1Bit object "Status fan opeed" No Ves Enable 1Bit object "Status fan opeed" No Ves 1 Enable 1 Bit object "Status fan opeed" No Ves Enable or disable a 1 bit object. 2 >Meaning -Yes -(No) No Ves 2 >Meaning -(Current fan speed) Current fan speed: Respond to the required fan speed. No: There is no response. 3 > Send object value -(No, Update only) -Always response Define the parameters for when the object value shudy be sent. 0 No: There is noly converter sent. -(No, Update only) Always response: The sent. Always response: The sent.		Control value(0100%)	>Meaning		O Current fan speed 🔘 Require	d fan speed
Image: Control in the conte control in the control in the control in the control		Vertice (Ception value (0.10.)	>Send object	value	No,update only	
Perfection >Valid object value Tr Tr Praction status >Valid object value Tr Tr Enable 1Bit object Enable 1Bit object 'Status fan on/Off No Yes Enable 1Bit object Enable 1Bit object 'Status fan on/Off No Yes Enable 1Bit object Status fan on/Off No Yes Enable 1Bit object -Yes Enable on disable a 1 bit object. Speed x" -Yes -(No) Yes Presentation -(No) No Yes Presentation -(No) No Yes Presentation -(No) No Yes Presentation -(No) No Yes Presentation -(No) -(No) Yes Presentation -(No, Operation on the presentation on the present on the presentation on the present on the presentat		Heating/Cooling valve (U-10v)	>Object send	ing range		
Image: Status fan speed Image: Status fan speed <td></td> <td>Fan (0-10v)</td> <td></td> <td></td> <td></td> <td></td>		Fan (0-10v)				
Image: Sense 18it object "Status fan Op/Off: No Yes Image: Sense 18it object "Status fan opered externatio" No Yes Image: Speed x" -Yes Enable or disable a 1 bit object. Image: Speed x" -Yes Fanable or disable a 1 bit object. Yes: Fan speed status x(x=1,2,3) is enabled. No: There is no response. Image: Speed x" -(Current fan speed) Current fan speed. Required fan speed -Required fan speed. Respond to the required fan speed. Image: Speed x > Send object value -(No, Update only) Define the parameters for when the object value should be sent. Image: Speed x > Send object value -(No, Update only) Always response - Only after change Image: Speed x > Send object value -(No, Update only) Always response - Only after change		Function status	>Valid object	value	0' 0' 1'	
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Imable 1 Bit object "Status fan speed Inderson Hatting/Cooling value Inderson Hatting/Cooling			e 11 465 11			
automatic* Enable 1 Bit object "Status fan speed x" -Yes Enable or disable a 1 bit object. 1 Enable 1 Bit object "Status fan speed x" -Yes -(No) Enable or disable a 1 bit object. 2 >Meaning -(Current fan speed) No: There is no response. 2 >Meaning -(Current fan speed) Current fan speed: Respond to the required fan speed. 3 > Send object value -(No, Update only) -Always response -Only after change -(No, Update only) Define the parameters for when the object value should be sent. No, Update only: -Always response -Only after change Always response: The			Enable 1Bit obj	ect "Status fan Un/Uff"	Vio Ves	
automatic* Enable 1 Bit object "Status fan speed x" -Yes Enable or disable a 1 bit object. 1 Enable 1 Bit object "Status fan speed x" -Yes -(No) Enable or disable a 1 bit object. 2 >Meaning -(Current fan speed) No: There is no response. 2 >Meaning -(Current fan speed) Current fan speed: Respond to the required fan speed. 3 > Send object value -(No, Update only) -Always response -Only after change -(No, Update only) Define the parameters for when the object value should be sent. No, Update only: -Always response -Only after change Always response: The			Enable 1Bit obi	ect "Status fan speed		
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2 >Meaning -(Current fan speed) Current fan speed: Respond to the current fan speed. 2 >Meaning -(Current fan speed) Current fan speed: Respond to the current fan speed. 3 > Send object value -(No, Update only) Always response -Only after change -(No, Update only) Define the parameters for when the object value should be sent. No, Update only: -Always response No, Update only: The status is always updated, but never sent. Always response: -Only after change Always response: The		-				
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-Required fan speedto the current fan speed.Required fan speed: Respond to the required fan speed.Required fan speed: Respond to the required fan speed> Send object value-(No, Update only) -Always response -Only after changeDefine the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent> Send object value-(No, Update only) -Always response -Only after changeDefine the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent.	2	>Meaning		-(Current fai	n speed)	
3 > Send object value -(No, Update only) Define the parameters -Always response -Only after change for when the object value ·Only after change should be sent. No, Update only: The status is always updated, but never sent. Always response: The Always response: The						
3 > Send object value -(No, Update only) Define the parameters -Always response -Only after change for when the object value -Only after change should be sent. No, Update only: The status is always updated, but never sent. -Always response -Always response: The					-	
3 > Send object value -(No, Update only) Define the parameters -Always response -Only after change for when the object value -Only after change should be sent. No, Update only: The status is always updated, but never sent. -Always response -Always response: The						Required fan speed:
3 > Send object value -(No, Update only) Define the parameters -Always response -for when the object value -Only after change -Only after change Should be sent. No, Update only: The status is always updated, but never sent. -Always response -Always response -Always response -Only after change -Always updated, but never sent. -Always response: The -Always response: The						
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-Always response -Only after change	3	> Send object value		-(No, Update	e only)	
-Only after change should be sent. No, Update only: The status is always updated, but never sent. Always response: The						-
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is always updated, but never sent. Always response: The					0	
never sent. Always response: The						
Always response: The						
						Always response: The
	Guana	I zhou Hodong Electric	Co 1+4 /	ייי (וטח)	www.hdlautomation	



			status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
4	>Object sending range	-All status object -Only activated status object	Set object send range
5	>Valid object value	-'0' -'1'	Set the object value
6	Enable 1 byte object "status fan speed"	-Yes -(No)	Enable or disable a 1 bit object.
			Yes: The fan status speed is enabled.
			No: The fan status speed is disabled.
7	>1 Byte value encode mode	-Encoded by 1 byte percent value 0-100% -Encoded by 1 byte percent value 0-3	Select the encode mode.
8	>Meaning	-(Current fan speed) -Required fan speed	Current fan speed: Respond to the current fan speed.
			Required fan speed: Respond to the required fan speed.
9	> Send object value	-(No, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
10	1 bit object "status fan On/Off"	-Yes -(No)	Enable or disable a 1 bit object.
			Yes: The fan speed responds to the on/off status.
			No: The fan speed does not respond to the on/off status.
11	> Send object value	-(No, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent.



			No, Update only: The status is always updated, but never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
12	Enable 1 Bit object "status fan speed automatic"	-Yes -(No)	Enable or disable a 1 bit object of status fan speed automatic.
13	> Send object value	-(No, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent. No, Update only: The status is always updated, but never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
14	Enable report heating valve	-Yes	Enable or disable report
15	status > Send object value	-(No) -(No, Update only) -Always response -Only after change	heating valve status.Define the parametersfor when the object valueshould be sent.No, Update only: The statusis always updated, butnever sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent only when a modification has been made.
16	>Type of status report	-Report movement, PWM>0/PWM=0 -Report position, ON/OFF	Set the type of status report
17	>Object value with PWM>0	-0 -1	When PWM>0,it will report 0 or 1.
18	Enable report Coolting valve status	-Yes -(No)	Enable or disable report heating valve status.
19	> Send object value	-(NO) -(NO, Update only) -Always response -Only after change	Define the parameters for when the object value should be sent. No, Update only: The status



			is always updated, but
			never sent.
			Always response: The status will always respond.
			Only after change: The object value will be sent
			only when a modification
			has been made.
20	>Type of status report	-Report movement,	Set the type of status
		PWM>0/PWM=0	report
		-Report position, ON/OFF	
21	>Object value with PWM>0	-0	When PWM>0,it will report
		-1	0 or 1.

3.2_F	3.2_ Floor Heating					
3.2.1	ChannelA					
3.2.2	Floor heating					
	- V					
	1.1.1 M/FCU01.10.1 > Channel A					
	General	Channel A v	vork mode	Floor heating	•	
	Channel A	Valve type		 Inverted(de-energize Normal(de-energize 		
	>Control value A	Reaction on	bus voltage failure	Contact unchanged	•	
	Channel B	PWM Cycle	time (130 min)	3	+	
	Channel C	Minimum h	eating	0%		
	Channel D	1000 AND 100	rt Heating valve status	No Yes		
	Channel E	Enable valve	e purge pressure protection when all	O Disable O Enable		
	Channel F	of floor hea	ting OFF	O Disable O Enable		
	Channel G					
1	Channel A work mode		-Inactive -Floor heating -Switch controller		Set channel A's work mode	
2	Valve type		-Inverted(de-energ -(Normal(de-energ	gized opened)	Set the valve type.	
3	Reaction on bus voltag	ge	-Contact Unchange		The reaction when bus	
	failure		-Contact opened		voltage failure.	
			-(Contact closed)			
4	PWM Cycle time(130)min)	-130		Set the PWM Cycle time.	
5	Minimum heating		-0%,5%,15%,20%		Set the purge valve time.	
6	Enable report heating	valve	-No		Enable/Disable report	
_	status		-Yes		heating valve status.	
7	>Send object value		-No, update only		When send object value.	
			-Only after change			
8	>Type of status report	rt	-Report movement	t <i>,</i>		
			PWM>0/MWM=0			
			-Report position, C	DN/OFF		
9	>Object value with P	WM>0	-0			



			-1			
10	Enable valve purge	Enable valve purge		-Disable -Enable		urge
11	Enable pipe pressure protection when all c		-Disable -Enable		once a month. Whether control cooling directly.	
Contro	heating OFF					
	reference 3.1.1					
	Switch controller					
1111	M/FCU01.10.1 > Channel A					
1.1.1 /	W/TCOOLID.I > Channel A					
Ge	neral	Channel A	work mode	Switch contro	ller	•
Ch	A leans	Response of	of switch state ON/OFF	No response		•
12			Save statistic for ON switching 'time (hour-2bytes)'		O Disable () Enable	
Ch	annel C	>Alarm when time out (165535h,0- invalid)		30000		\$
Ch	annel D	>Transmit telegram interval when alarm(1255s)		10		\$
Ch	annel E	Switch state on bus voltage fail		Unchanged		•
Ch	annel F	Time function Stairca >Control staircase lighting Start v >Change staircase lighting time via bus No		Unchanged		•
100.00				Staircase light	ing	•
Ch	annel G			Start with '1'/'	'0',Can't Stop	•
				s 🔿 No 🔘 Ye	s	
				🔿 No 🔘 Yes		
				0		-
				5	5 ‡	
		>Warning >ON)	g staircase lighting (ON->OFF	O No 🔿 Ye	s	
12	Response of switch state ON/OFF Save statistic for ON switch 'time (hour-2bytes)'		 No response Always response Only after change 		Set the response of swite state.	ch
13			-Enable -(Disable)		Enable/disable the value adjustment.	
14	>Alarm when time ((165535h, 0-invalid)		-0-65535		When time out will alarn	n.
15	-> transmit telegram when alarm(1255s)	interval	-1255s		Set the lower value open limit.	ing
16	Switch state after bus		-Unchanged -ON		Set the upper value oper	ning
<u> </u>	zhou Hedong Electric					52 /



17	Switch state after bus voltage recovery	-OFF	limit.
18	Time function	-Disable -Staircase lighting -ON/OFF delay	Set the time function.
19	> Control staircase lighting	-Start with '1', Stop with '0' -Start with '1', Invalid with '0' -Start with '1/0', Can't Stop	How to control the staircase lighting.
20	> Change staircase lighting time via bus	-No -Yes	Whether change staircase lighting time via bus.
21	>Alarm staircase lighting to bus	-No -Yes	Whether alarm staircase lighting to bus.
22	>Time for off:(0255Min)	-0255	
23	>Time for off:(059 Sec)	-059	
24	> Warning staircase lighting (ON->OFF->ON)	-No -Yes	If you select yes, after the set time the lighting will flash.

2	1		P	1
٦	H	i.	1	
::`	١U	s	e	r

D. Communication Objects (you can query from this file: Administrator\Des)

D.0 General

Objects "G	eneral"			
<mark>∎⊉</mark> 0 Gene	ral Send cycles		1 5	it CR - T -
NO.	Object name	Function	Flags	Data type
0	General	Send cycles	CRT	DPT1.003
				1bit
This comm	unication object is always va	alid. If telegram '1' is se	nt, the next telegram v	alue to be sent will be
'0'.				

D.1 Fan

교려 40	Fan	Fan speed au	tomatic		1 bit C - W - U	Low
⊒‡]40	Fan	Fan speed au			1 bit C - W - U	Low
NO.	Object	name	Function	Flags	Data type	
40	Fan		Fan speed	CWU	DPT1.003	
			automatic		1bit	
		-	ct is used to control the fo switch on. If telegram wit	-		
₽41	Fan	Fan speed with		-	1 Byte C - W - U	Low
【41	Fan	Fan speed with	% value		1 Byte C - W - U	Low
NO		name	Function	Flags	Data type	



41	Fan	Fan speed with %	CWU	DPT5.001		
		value		1 byte		
This comm	This communication object is used to set the fan speed when the automatic mode is active.					

⊒‡ 42	Fan	Fan speed 1			1 bit C - W - U
⊒‡ 42	Fan	Fan speed 1			1 bit C - W - U
⊒2 42	Fan	Fan speed 1			1 bit C - W - U
⊒2 42	Fan	Fan speed 1			1 bit C - W - U
⊒2 43	Fan	Fan speed 2			1 bit C - W - U
⊒2 43	Fan	Fan speed 2			1 bit C - W - U
⊒‡43	Fan	Fan speed 2			1 bit C - W - U
⊒‡44	Fan	Fan speed 3			1 bit C - W - U
⊒2 44	Fan	Fan speed 3			1 bit C - W - U
NO.	Object name		Function	Flags	Data type
42	Fan		Fan speed 1	CWU	DPT1.001
					1 bit
43	Fan		Fan speed 2	CWU	DPT1.001
					1 bit
44	Fan		Fan speed 3	CWU	DPT1.001
					1 bit
These c	ommunicati	on objects are us	ed for the FCU actu	ator, a speed value of .	X (X=1,2,3) can be received.
		-	-		' is received, the fan will be C
		•	ceived, the fan will b		

⊒⊉45	Fan	Status fan speed 1		1 bit CR - T -
⊒⊉45	Fan	Status fan speed 1		1 bit CR - T -
⊒⊉46	Fan	Status fan speed 2		1 bit CR - T -
⊒ ‡46	Fan	Status fan speed 2		1 bit CR - T -
⊒2 47	Fan	Status fan speed 3		1 bit C R - T -
⊒ ‡ 47	Fan	Status fan speed 3		1 bit C R - T -
⊒ ‡48	Fan	Status fan speed		1 Byte C R - T -
⊒2 48	Fan	Status fan speed		1 Byte C R - T -
NO.	Object n	ame Functio	n Flags	Data type
	Ган	Status fa	n speed 1 CRT	DPT 1.001
45	Fan	Status la		
45	Fan			1 bit
-	Fan		n speed 2 C R T	1 bit DPT 1.001
-				
45 46 47		Status fa		DPT 1.001

These communication objects are used to control the fan status and speed. If 1bit object "Status fan speed X" is enabled, telegrams will always be sent via KNX or EIB, but only after a modification has been made. If a telegram value of '0' is received, the fan will deactivate. If a telegram value of '1' is received, the fan will activate.

48	Fan	Status fan speed	CRT	DPT5.010
				1 byte

This communication object is used to control fan status and fan speed. If 1bit object "Status fan speed X" is



enabled, telegrams will always be sent via KNX or EIB, but only after a modification has been made. If a telegram value of '0' is received, the fan will deactivate. If a telegram value of '1' is received, the fan will activate. ■2 49 Fan Status fan On/Off 1 bit C R - T -⊒‡|49 Status fan On/Off 1 bit CR - T -Fan Status fan On/Off 49 D P T 1.001 Fan CRT 1 bit This communication object is used for status fan On/Off, if enable 1 bit object "Status status fan On/Off", it will always send on the KNX/EIB or only send after a change if receives telegram value '0', the fan speed will be OFF, if receives telegram value'1', the fan speed will be OFF ⊒‡150 Fan Status fan speed automatic 1 bit C R - T 50 Fan Status fan speed CRT D P T 1.003 automatic 1 bit This communication object is used for status fan speed automatic, if enable 1 bit object "Status fan speed automatic", it will always send on the KNX/EIB or only send after a change if receive telegram value '0', the fan will be inactive, if receives telegram value '1', the fan speed will be activated

⊒ ‡ 51	Fan	Limitation 1			1 bit CRWTU
	Fan	Limitation 2			1 bit CRWTU
⊒⊉ 53	Fan	Limitation 3			1 bit CRWTU
⊒⊉ 54	Fan	Limitation 4			1 bit CRWTU
k					
NO.	Object nam	е	Function	Flags	Data type
51	Fan		Limitation 1	CRWTU	DPT 1.003
					1 bit
52	Fan		Limitation 2	CRWTU	DPT 1.003
52	1 di i			CRWTO	
					1 bit
53	Fan		Limitation 3	CRWTU	DPT 1.003
					1 bit
54	Fan		Limitation 4	CRWTU	DPT 1.003
					1 bit

telegram '1' is received. Limitation X will be deactivated if telegram '0' is received.

'0'= All limitations disabled; '1'= Limitation X enabled

D2 Heating and cooling

Objects	"value heating"			
■컦60 ■컦61 ■컦62	Valve Heating Trig	us valve position iger valve purge us valve purge		1 bit C R - T - 1 bit C - W - U 1 bit C R - T -
NO.	Object name	Function	Flags	Data type
60	Valve Heating	Status valve	CRT	DPT 1.001



		position		1 bit				
value wit	This communication object is used for the status value position, if value '1' is set in the parameter then 'Object value with value position>0", '0'=valve position is equal to zero; '1'=valve position is not equal to zero.							
If value '	0' is set in the parameter t	hen"Object value po	sition>0", '0'=Valve po	osition is note equal to zero, '1'=				
Valve pos	sition is equal to zero.							
61	Valve Heating	Trigger valve	CWU	DPT 1.017				
		purge		1 bit				
This com	munication object is used t	to trigger the valve p	urge. The purge cycle	will automatically restart, if				
telegram	'0' is received however the	e valve purge will end	d, and the valve will b	e closed.				
If telegra	m '1' is received, the purge	e valve will initiate, a	nd the purge valve wil	ll be opened.				
62	Value Heating	Status valve	СКТ	DPT 1.003				
		purge		1 bit				
This com	This communication object is used for valve status purge. If telegram '0' is received the purge valve will be							
inactive,	if telegram '1' is received t	he purge valve will be	e active.					

Objects	"Valve Cooling""				
≣≹63 ~~	Valve Cooling Status valve positio	on		1 bit C R - T -	Low
No	Object name	Function	Flags	Data type	
63	Valve cooling	Status valve	CRT	DPT1.001	
		position		1 bit	
	mmunication object is used t eter, then "Object value with			•	
-	'O' is set in the parameter " =Valve position is equal to z	•	alve position>0",'0'	=Valve position is not equal to	

D3 Floor heating

Objects "S	lave clock	"				
⊒‡2	Slave clock Slave clock Slave clock	Network datetime Network date Network time of day		3 By	nte C - W T U nte C - W T U nte C - W T U	Low Low Low
NO.	Ob	ject name	Function	Flags	Data type	
1	SI	lave clock	Network date time	CWTU	DPT19.001	
					8 byte	
			r the inputting of time an	d date information, o	and to synchronise all o	of the
	he system.		1		1	
2	SI	ave clock	Network date time	СWТU	DPT11.001	
					3 byte	
This comn	nunication	object is used to	synchronise all of the clo	ck input data across	the system.	
3	Slave clo	ock	Network time of day	CWTU	DPT10.001	
					3 byte	
This comn	nunication	object is used to	synchronise all of the clo	ck input data across	the system.	

Objects "Pipe pressure protection"



	or heating Pipe pressure protection		1 bit	CR-T- Low		
NO.	Object name	Function	Flags	Data type		
4	Floor heating	Pipe pressure	CRT	DPT 1.001		
		protection		1 bit		
This commu	unication object is used for	pipe pressure protectior	n. If all of the floor he	ating channels are turned		
off, the object status is set as ON, and will respond a telegram value '1'.						
If the object	t status is set as OFF, it will	respond to a telegram v	ale of '0'.			

D 5 Floor heating N(N=A,B,C,D,E,F,G)

This com	 munication obje	ct is used fo	or setting the normal mod	e temperature	, th	e te	mpe	rati		
7,32		5 1 1	setpoint temp.		5			U	2 byte	
	ut of the error si Floor heating	-	cur 1255 or cyclically. '0 Normal-mode	:'No error '1': C R W T		r			PT9.00	11
			send the KNX/EIB with th	=	_					
			signal						1 bit	
,31	1 Floor heating N		Actual temp. error	CRT			DPT 1.005			05
	mmunication obje					ine	acti		.emper	
his com	munication obje	ct is used to	operate the temperature	sensor TS/C 1	0.	The	acti	ıal t	2byte	
,30	Floor heating	g N	Actual temperature	C R W T U				D	PT 9.0	
0.	Object name		Function	Flags			Data type			
		and a set of			69 7 80		2796		10	
29	Floor heating A		ous setpoint temp.	2 Byte	c	R	20 20	Ť	30 16	Low
<u>⊒</u> #27	Floor heating A	Status valv		1 bit	c	R	-	T	2	Low
<u>⊐</u> #120 □2127	Floor heating A	Trigger valv		1 bit	c	-	w	35	Ū	Low
<u>⊐</u> 425 <u>⊒</u> 426	Floor heating A	Status valv		1 bit	c	R	-	T	8	Low
<u>⊸</u> 427 <u></u> ↓ ↓ 25	Floor heating A		Timer-mode	1 bit	c	R	Ŵ	T	Ŭ	Low
<u>⊐</u> स23 ⊡द्म24	Floor heating A		Away-mode	1 bit	c	R	Ŵ	T	U	Low
<u>□</u> €23	Floor heating A		Night-mode	1 bit	c	R	W	a T	U	LOW
<u>⊐</u> स्21 ⊡स्22	Floor heating A	ON CMD for ON CMD for		1 bit	C	R	W	a T	U	LOW
<u>ज</u> स् 20 जिस् 21	Floor heating A		Normal-mode	1 bit	c	R	W	Ť	Ŭ	Low
<u>⊐</u> 419 ⊒220	Floor heating A	104 20 11994	ig(1-ON,0-OFF)	1 bit	c	R	w	T	U	Low
<u>ज</u> स10 ⊡द्मी19	Floor heating A		ror preset 3 heating for preset3	3 Byte 1 bit	c	R	w W	T	U	Low Low
	Floor heating A Floor heating A		mp. for timer mode for preset 3	2 Byte 2 Byte	C C	R R	W W	T T	U U	Low
■式16 ■式17	Floor heating A		heating for preset2	1 bit	C	R	W	T	8	Low
	Floor heating A	영화학 관계 관리는 것도 같은	for preset 2	3 Byte	C	R	W	T	U	Low
	Floor heating A		mp. for timer mode	2 Byte	C	R	W	T	U	Low
	Floor heating A	250 - 350	heating for preset1	1 bit	C	R	W	T	U	Low
	Floor heating A	54 9980300 (M	for preset 1	3 Byte	C	R	W	T	0	Low
	Floor heating A		mp. for timer mode	2 Byte	C	R	W	T	U	Low
□ ‡10	Floor heating A		setpoint Temp.	2 Byte	C	R	W	T	U	Low
□ ⊉9	Floor heating A	영양 집법 것, 지원은 감독이 집	setpoint Temp.	2 Byte	C	R	₩	T	U	Low
8	Floor heating A	성장 관계 가장 영화 문화 관계	etpoint Temp.	2 Byte	C	R	W	T	U	Low
□ ‡7	Floor heating A		le setpoint Temp.	2 Byte	C	R	W	T	U	Low
□ ‡6	Floor heating A	Actual temp. error signal		1 bit	С	R	×.	Ŧ	×.	Low
- All	Floor heating A		erature	8928	C			Т	U	Low



segment.				
8,33	Floor heating N	Day-mode setpoint Temp.	CRWTU	DPT9.001 2 byte
This comm	nunication object is used	to set the day mode temper	<i>ature,</i> the temperat	ure value an also be
		on object. The temperature s		
segment.	0	, ,	U	
9.34	Floor heating N	Night-mode setpoint	CRWTU	DPT9.001
	_	Temp.		2 byte
This comn	unication obiect is used	to set the night mode temp	erature, the tempera	
	=	on object. The temperature s	-	
segment.	0	, ,	U	,
10,35	Floor heating N	Away-mode set point	CRWTU	DPT9.001
,		Temp.		2 Byte
This comn	unication obiect is used	to set the away mode temp	erature, the tempera	-
		on object. The temperature s		
segment.		·····		,
11,36	Floor heating N	Preset 1 Temp. for	CRWTU	DPT9.001
/		timer mode		2 byte
This comn	unication object is used	to set the timer mode of ter	nperature pre-set 1.	1
		unication object. The tempe		
memory s	•			
12,37	Floor heating N	Time of day for	C R W T U	DPT10.001
,		preset 1	••••••	3 byte
This comm	L nunication object is used	to configure the pre-set 1 ti	me the time value a	
		settings are stored in a non-		
13,38	Floor heating N	Start/Stop heating		DPT1.010
10,00		for preset 1	CRWTO	1 bit
This comm	unication object is user	to activate or deactivate the	e heating for pre-set	
	also be used modify the		e neuting for pre set	1. 1115 communication
-	••	ngs are stored in a non-volati	le memory segment	
14,39	Floor heating N	Preset 2 Temp. for	C R W T U	DPT9.001
14,55		timer mode	enwro	2 byte
This comm	unication object is used	d configure the time mode in	temperature pre-se	
	· · · · · · · · · · · · · · · · · · ·	ation object. The time settin		,
15,40	Floor heating N	Time of day for		DPT 10.001
15,40		preset 2	CRWTO	3 byte
		preset 2		5 byte
This comm	nunication object is use	ed to set the time of day fo	r pre-set 2, the tim	e value an also be modified
		The time settings are stored		
	T			
16,41	Floor heating N	Start/Stop heating	C R W T U	DPT 1.010
		for preset2		1 bit
This comp	unication object is used	d to activate or deactivate th	e heating for pre-set	t 2. the heating status can
		unication object. The heatin		
segment.				2 yeare memory
17,42	Floor heating N	Preset 3 Temp. for	CRWTU	DPT9.001
_,,+		timer mode		2 byte
				2 0 y t c
		tivate or deactivate the time ation object. The timer settin		

18,43	Elear beating N	Time of day for	CRWTU	DPT10.001
10,45	Floor heating N	preset 3	CRWIU	3 byte
This comm	unication object is used to	•	3 this command can	also be used to modify the
time for pr	e-set 3. The time settings	are stored in a non-volat	tile memory segment.	<u> </u>
19,44	Floor heating N	Start/ Stop heating	CRWTU	DPT1.010
		for preset 3		1 bit
	nunication object is used to			_
also be mo segment.	dified using this communi	ication object. The heati	ng settings are stored	l in a non-volatile memory
20,45	Floor heating N	Floor heating(1-	CRWTU	DPT 1.001
		ON,0-OFF)		1 bit
This comm	unication object is used to	o activate or deactivate t	he floor heating. Whe	en a telegram value of '1' is
	he floor heating will be ac		-	red, the floor heating will be
21,46	Floor heating N	ON CMD for Normal-	CRWTU	DPT 1.001
, -		mode		1 bit
	.		1	1
This comm	nunication object is used to	o trigger switching in the	normal mode.	
Tologram	values "O". No function			
Telegram	value: "0": No function "1": Normal mode			
22,47	Floor heating N	ON CMD for Day-	CRWTU	DPT 1.001
22,47	FIOUL HEALING N	mode		1 bit
This comm	l nunication object is used to		day modo	T DIC
	value: "0": No function	o trigger switching in the	day mode.	
relegiant	"1": Day mode			
23,48	Floor heating N	ON CMD for Night-	CRWTU	DPT 1.001
,		mode		1 bit
This comm	unication object is used to	trigger switching in the	night mode.	
	value: "0": No function		U	
-	"1": Night mode			
24,49	Floor heating N	ON CMD for Away-	CRWTU	DPT 1.001
		mode		1 bit
This comm	nunication object is used to	o trigger switching in the	away mode.	
Telegram v	value: "0": No function			
	"1": Away mode			
25,50	Floor heating N	ON CMD for Timer-	CRWTU	DPT 1.001
		mode		1 bit
This comm	nunication object is used to	o trigger switching in the	timer mode.	
Telegram v	value: "0": No function			
	"1": Timer mode			-
26,51	Floor heating N	Status valve position	CRWTU	DPT 1.001
				1 bit
	=	or the valve status position	on. Ifvalue '1' is set in	the parameter, then"Object
	valve position>0":			
-	value: '0' = Valve position	-		
'1' = Valve	position not equal to zero)		
If value '0'	is set in the parameter, th	en "Object value with va	alve position>0":	
	value: '0' = Valve position		-	
-	position equal to zero	-		



27,52	Floor heating N	Trigger valve purge	CWU	DPT 1.017			
				1 bit			
This comm	This communication object is used to triggera valve purge, the purge cycle can be automatically restarted.						
Telegram	value: '0' = end valve purge	e, valve will be closed					
	'1' = start valve pur	ge, valve will be opened					
28,53	Floor heating N	Status valve purge	CRT	DPT 1.003			
				1 bit			
This comm	nunication object is used for	r the purge valve status.	·				
Telegram	value: '0' = valve purge not	active					
	'1' = valve purge a	ctive					
29,54	Floor heating N	Instantaneous set	CRT	DPT 9.001			
		point temp.		2 byte			
This communication object is used to create aninstantaneous temperature set point.							

D6 HVAC

Objects "	HVAC control mode"				
1225 HVAC cc 1225 HVAC cc 1235 HVAC cc 1247 HVAC cc 127 HVAC cc 128 HVAC cc 129 HVAC cc 1229 HVAC cc 1229 HVAC cc 1229 HVAC cc	ontrol mode HVAC control mode ontrol mode HVAC control mode ontrol mode Activation of heati ontrol mode Activation of heati ontrol mode Activation of coolin ontrol mode Activation of coolin ontrol mode Activation of coolin ontrol mode Activation of fan o ontrol mode Activation of fan o	e (byte) e (byte) ig mode ig mode ig mode ig mode nly	1 Byte 1 Byte 1 bit 1 bit 1 bit 1 bit 1 bit 1 bit	C R W T U C R W T U	Low Low Low Low Low Low Low Low Low
NO.	Object name	Function	Flags	Data type	
25	HVAC control	HVAC control mode (byte)	CRWTU	DPT 20.105	
	mode			1 byte	
	"1": Heat "3": Cool "6": Off "9": Fan only				
26	HVAC control mode	Automatic heating/cooling mode	C R W T U	DPT 1.003 1 bit	
temperat Telegram	ure will automatically value: "0": No functic "1": Automatic	heating/cooling mode			
27	HVAC control mode	Activation of heating mode	CRWTU DPT 1.003 1 bit		
	munication object is u value: "0": No functic "1": Heating me		heating mode.		
28	HVAC control mode	Activation of cooling mode	C R W T U	DPT 1.003 1 bit	
	munication object is u value: "0": No functic	sed to activate or deactivate the on	cooling mode.		



	"1": Cooling mode					
29	HVAC control mode	Activation of fan only	CRWTU	DPT 1.003		
				1 bit		
This com	This communication object is used to activate or deactivate the fan.					
Telegram	Telegram value: "0": No function					
	"1": Fan only mode					

Objects "H	VAC mode"				
武30 HVAC mc	de HVAC mode (byte)			1 Byte C R W T U	
III 30 HVAC mo			1 Byte C R W T U		
III 30 HVAC mo	de HVAC mode (byte)	1 Byte C R W T U			
III HVAC mo	ode ON CMD for comfort	ON CMD for comfort mode			
■231 HVAC mo	ode ON CMD for comfort	1 bit C R W T U			
III HVAC mo	de ON CMD for comfort mode			1 bit C R W T U	
III 32 HVAC mo		le ON CMD for standby mode			
32 HVAC mc				1 bit C R W T U	
III 32 HVAC mo	····,			1 bit C R W T U	
III 33 HVAC mc				1 bit C R W T U	
■ 33 HVAC mo				1bit CRWTU 1bit CRWTU	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII				1bit CRWTU 1bit CRWTU	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	*			1 bit C R W T U	
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII				1 bit C R W T U	
NO.	Object name	Function	Flags	Data type	
	HVAC mode			DPT 20.102	
30	HVAC mode	HVAC mode (byte)	CRWIU	1 byte	
Those com	munication objects are us	adfar tha HV/AC Mada			
	munication objects are us	edior the HVAC Mode.			
Telegram v	alue: "1": Comfort mode				
	"2": Standby mode				
	"3": Night mode				
	-	_			
	"4": building protect	ion			
31	HVAC mode	ON CMD for comfort	CRWTU	DPT 1.001	
		mode		1 bit	
		mode		1 510	
This comm	unication object is used for	or the ON command for t	he comfort mode.		
Telegram v	alue: "0": No function				
	"1": Comfort mode/	comfort extension			
32	HVAC mode	ON CMD for standby	CRWTU	DPT 1.001	
52	invite mode		c k w r o		
		mode		1 bit	
This comm	unication object is for the	standby mode ON comn	nand.		
Telegram v	alue: "0": No function				
	"1": Standby mode	-			
33	HVAC mode	ON CMD for night	CRWTU	DPT 1. 001	
		mode		1 bit	
This comm	unication object is used to		I		
	unication object is used to	Sona Civid for highl mod	E C		
Telegram v	alue: "0": No function				
	"1": Night mode				
34	HVAC mode	ON CMD for building	CRWTU	DPT 1. 001	
		protection		1 bit	
This comm	unication object is used to		otection		
		of civilo for building pr			
i elegram v	value: "0": No function				
	"1": building protect	ion mode			



Objects "Actual temperature"						
-	· · · · · · · · · · · · · · · · · · ·					
III Actual te				2 Byte C R W T U		
III Actual te IIII Actual te				2 Byte C R W T U 2 Byte C R W T U		
	11 Actual temperature Actual temperature 2 2 Byte C R W T U					
	12 Actual temperature Actual temp. 1 error signal 1 bit C R - T -					
	1 bit C R - 1 bit C R - 1					
■ 12 Actual te	1 bit C R - T					
III Actual te	Image: Actual temperature Actual temp. 2 error signal 1					
14 Actual te				1 bit C R - T -		
14 Actual te				1 bit CR - T -		
I4 Actual te		-		1 bit CR - T -		
NO.	Object name	Function	Flags	Data type		
10	Actual temperature	Actual temperature 1	CRWTU	DPT 9.001		
				2 byte		
This comm	unication object is used for	r (actual tomporaturo 1'				
	unication object is used it					
If the Fan (Coil Unit Controller is used	in conjunction with the t	emperature sensor (TS/C = 1.0 the actual		
	re will be sent to this com					
If the Fan (Coil Unit Controller is oper	ated without the temper	ature sensor,it will re	eceive the actual		
temperatu	re via KNX/EIB.					
11	Actual temperature	Actual temperature 2	CRWTU	DPT 9.001		
11	Actual temperature	Actual temperature 2				
				2 byte		
This comm	unication object is used for	or 'actual temperature 2'.	If "Two sensor via El	B (Count=2)" is selected, the		
	perature will be received			- (
12	Actual temperature	Actual temp. 1 error	CRT	DPT 1.005		
		signal		1bit		
This comm	unication object is used to	send the actual tempera	ature 1 error signal. A	An error signal can be sent to		
	B,and can be sent after an					
			onus, or cyclically.			
l elegram v	alue: "0": No error					
	"1": Error					
13	Actual temperature	Actual temp. 2 error	CRT	DPT 1.005		
10			e n i			
		signal		1bit		
This communication object is used to send the actual temperature 2 error signal. An error signal can be sent to						
the KNX/EIB,and can be sent after an elapsed time (1-255 seconds), or cyclically.						
Telegram value: "0": No error						
"1": Error						
14	Actual temperature	Frost/heat alarm	CRT	DPT 1.005		
		error signal		1bit		
This comm	unication object is used fo	=	ure alarm signal	1		
i elegram v	value: "0": No frost/heat p					
"1": Frost/heat protection						

D8 Set point

Objects "Se	Objects "Set point"						
⊒20 Setpoint	Base setpoint temp	Base setpoint temperature 2 Byte C R W T U					
⊒20 Setpoint	Base setpoint temp	Base setpoint temperature 2 Byte C R W T U					
⊒2120 Setpoint	Base setpoint temp	Base setpoint temperature 2 Byte C R W T U					
21 Setpoint	Instantaneous setpo	Instantaneous setpoint temp. 2 Byte C R - T -					
21 Setpoint	Instantaneous setpoint temp. 2 Byte C R - T -						
⊒21 Setpoint	Instantaneous setpoint temp. 2 Byte C R - T -						
NO.	Object name	Function	Flags	Data type			



20	Set point	Base set point	C R W T U	DPT 9.001	
		temperature		2 byte	
	munication object is used for using this input.	or the initial temperature	level, the temperatur	e level can also be	
	al temperature level is store	d in non-volatile memory	segment.		
21	Set point	Instantaneous set	C R T	DPT 9.001	
		point temp.		2 byte	
T h:					
	•	•	•	vel (set point temperature).	
The current initial temperature level includes the reduction/increase in standby mode or during night mode.					

D 9 Switch actuator

Objects "C	hannel N"				
⊒ ‡180 (Dutput A	Channel output			1 bit C - W - U
	Output A Always response switch state			1 bit CR - T -	
				2 Byte C R W T U	
	Dutput A	Alarm statistic fo	or time out		1 bit CR - T -
	Dutput A Dutput A	Staircase light Change staircas	o lighting time		1 bit C - W - U 2 Byte C - W - U
	Dutput A	Alarm staircase			1 bit CR - T -
	Relay A	R/W statistic for			4 Byte C R W T U
NO.	Object name		Function	Flags	Data type
180,190	Output N		Channel output	CWU	DPT 1.001
					1 bit
This comm	nunication obje	ect is used fo	or channel output, and to	turn on or off a chan	nel.
The switch	n output will be	ON when t	he value '1' is received, w	hen value '0' is recei	ved the switch output will
be OFF.					
181,191	Output N		Always response	CRT	DPT 1.001
			switch stateor		1 bit
			Response state after		
			change		
This comm	nunication obje	ect is used to	respond the channel N s	tatus. If channel stat	us isON,then the response
status valu	ie is "1", if the	channel is C)FF the response status is	"0".	
182,192	Output N		Read/Write statistic	CRWTU	DPT 7.007
			for time		2 byte
This comm	nunication obje	ect is used to	read and write the time	statistics.	
183,193	Output N		Alarm statistic for	CR T	DPT 1.005
			time out		1 bit
This comm	nunication obje	ect is used to	trigger a statistic alarm	when the ON period	times out.
184,194	Output N		Staircase light	CWU	DPT 1.001
					1 bit
This comm	nunication obje	ect is used to	activate or deactivate th	ne staircase lighting.	
185,195	Output N		Change staircase	CWU	DPT 7.005
			lighting time		2 byte
This comm	nunication obje	ect is used to	o modify the running time	e of the staircase light	ting.
186,196	Output A		Alarm staircase	C R T	DPT 1.005
			lighting		1 bit
			activate or deactivate th		larm. If telegram '1' is
		e ON, if tele	gram '0' is received the a		
187,197	Relay N		R/W statistic for	CRWTU	DPT 12.001

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		counter		4 byte
This comm	unication object is used fo	r the ON time statistics f	or channel "N", it can	be read and written to via
the bus.				

--- End of Document ---