FCU

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Part 01
Introduction

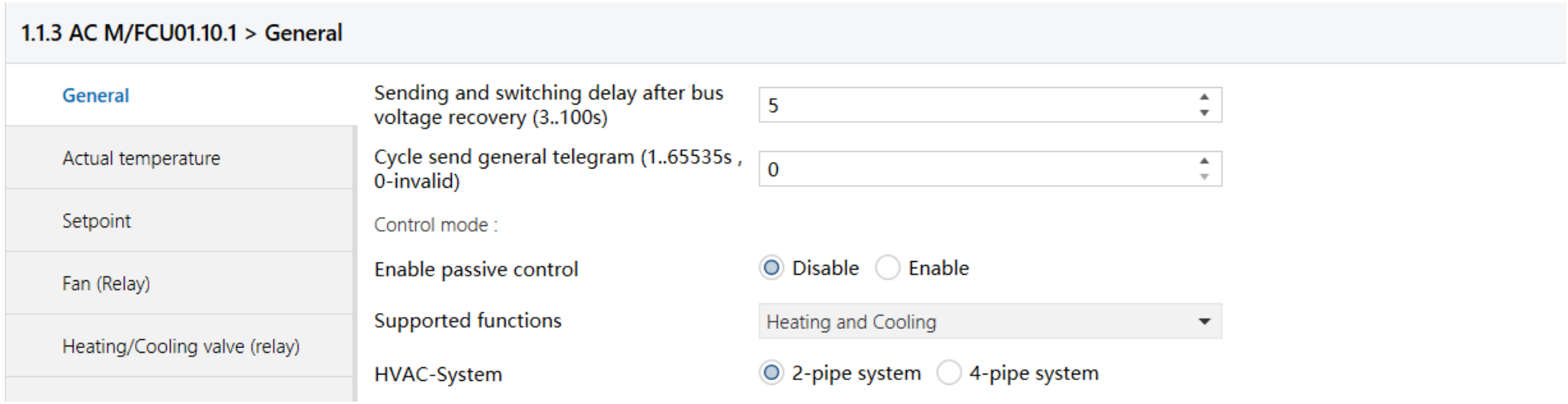
FCU Introduction

M/FCU01.10.1

Functions:

- can be used as one FCU controller or 7 channels floor heating controller
- for FCU, high-medium-low fan speeds and heating/ cooling modes are available
- for floor heating, norml, day, night, away modes are available
- support 7 digital temperature sensors.
- 5 channels relay output and 2 channels DC0-10V.
- 2 channels DC 0-10V for fan speed or 0-10V valves

HVAC system

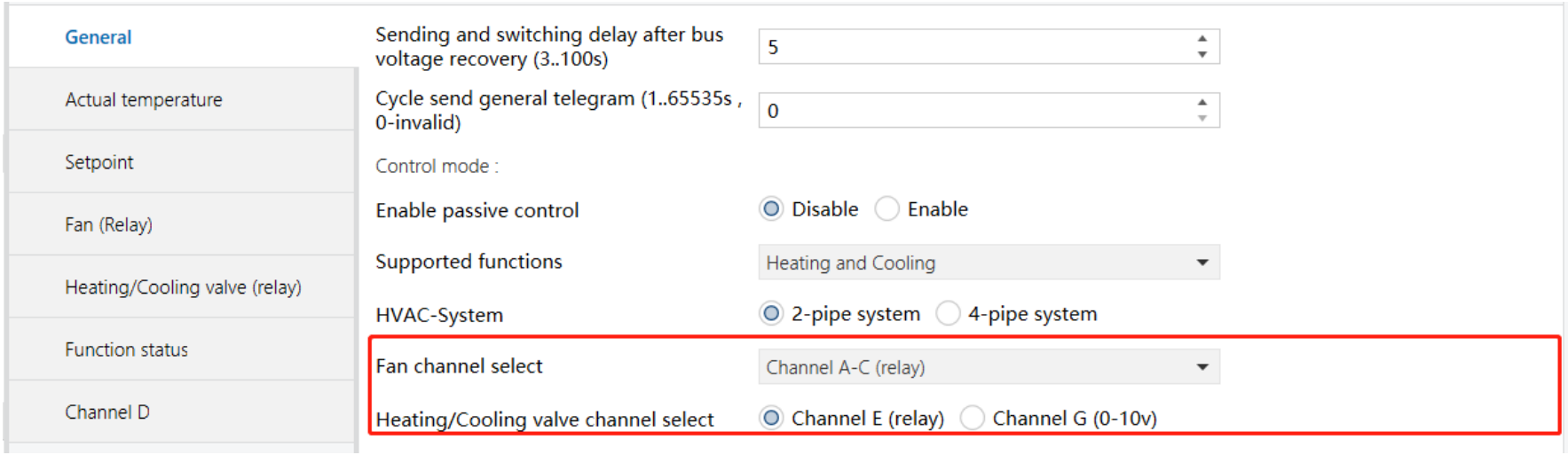


control mode: for HVAC, select heating and cooling function

HVAC system:
2 pipe system- there is one single water circuit that is filled with cooling or heating medium according to the season, use one channel to control the same valve

4 pipe system- the system consists of two separated water circuits for heating and cooling, use two channels to control two different valves

Channel select



fan channel select:

select channel A-C if the fan is controlled by relay, select channel F if it's controlled by 0-10V

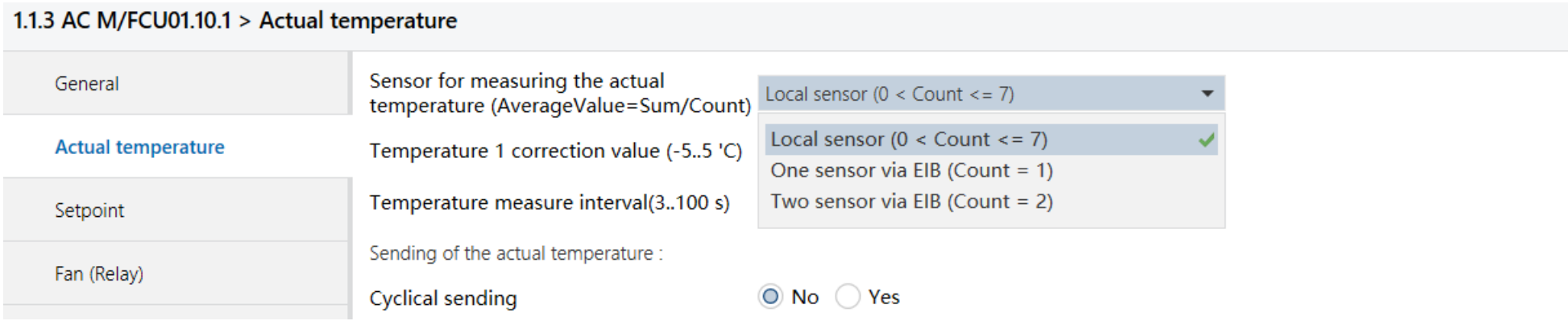
heating valve channel select:

select channel E if the valve is controlled by relay, select channel G if it's controlled by 0-10V

cooling valve channel select:

select channel D if the valve is controlled by relay, select channel F if it's controlled by 0-10V

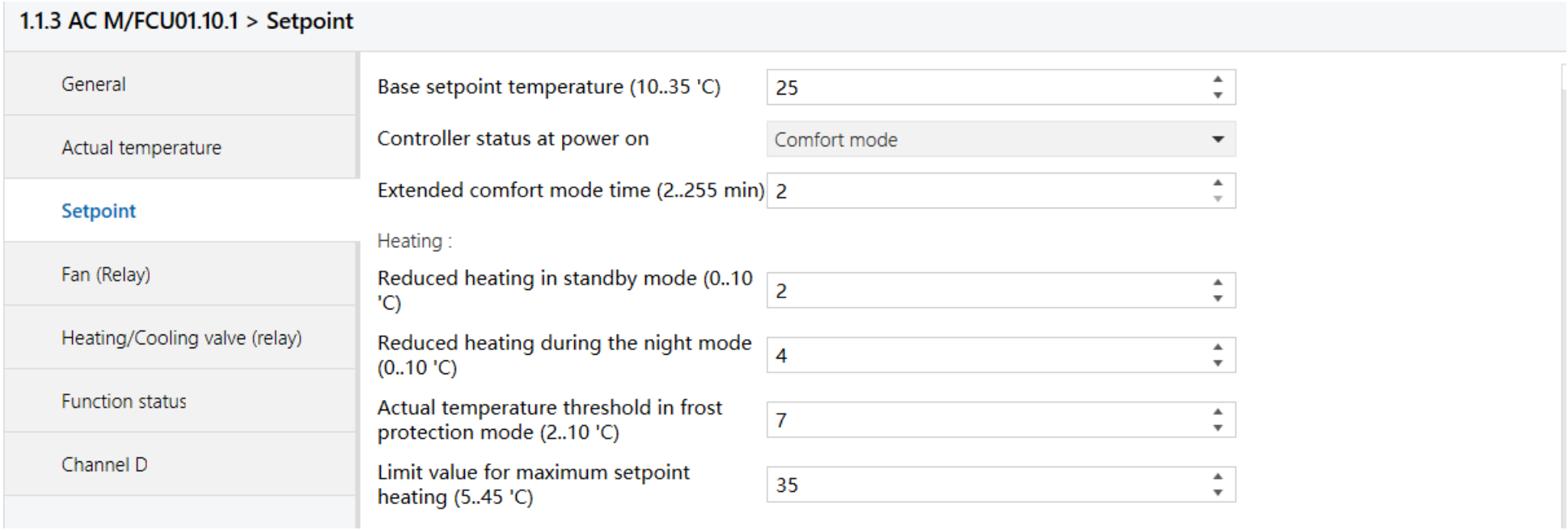
Temperature sensor



local sensor:
read the temp from the connected temp sensor TS/C 1.0, up to 7 sensors can be connected

sensor via EIB:
read the temp from EIB bus

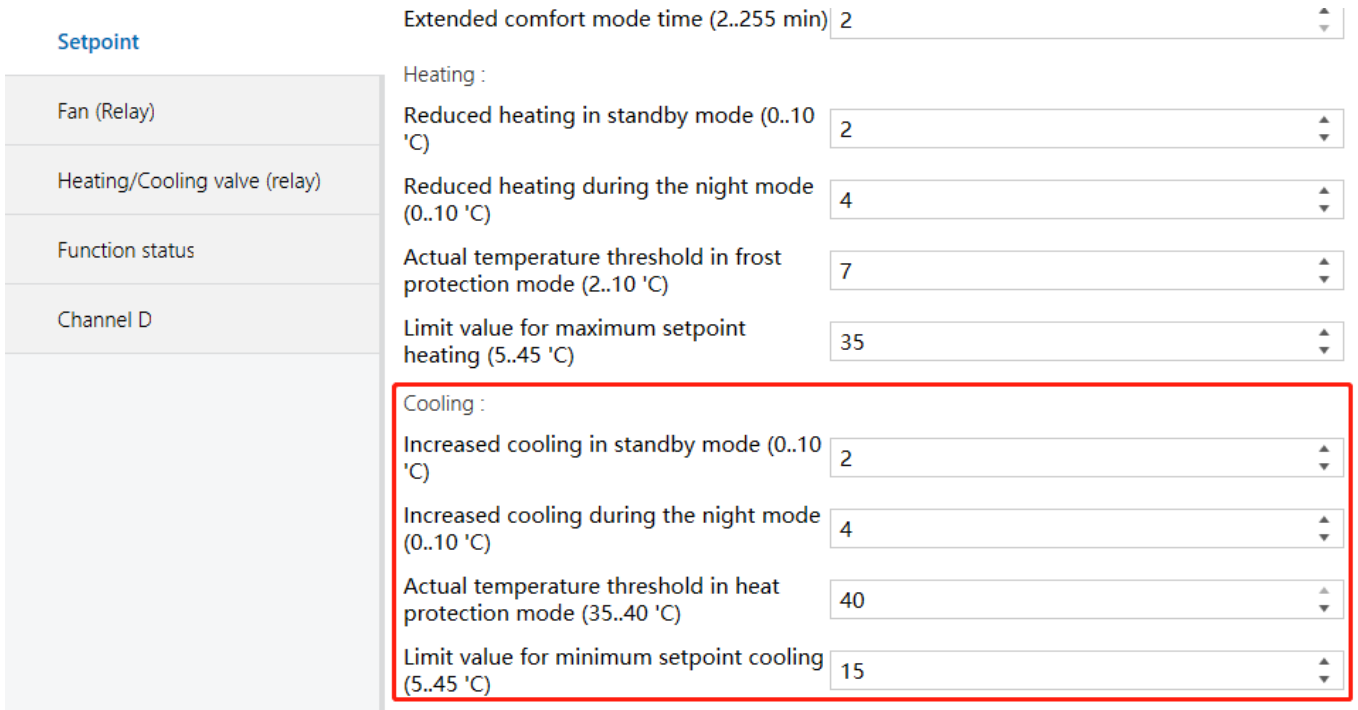
Setpoint temp



base setpoint temp: the setpoint temp for comfort mode

heating: the standby/night mode setpoint temp is reduced base on the base setpoint temp

protection mode temp: set the protection temp, when room temp is lower than it, HVAC will start heating, when room temp is higher than it, will stop working

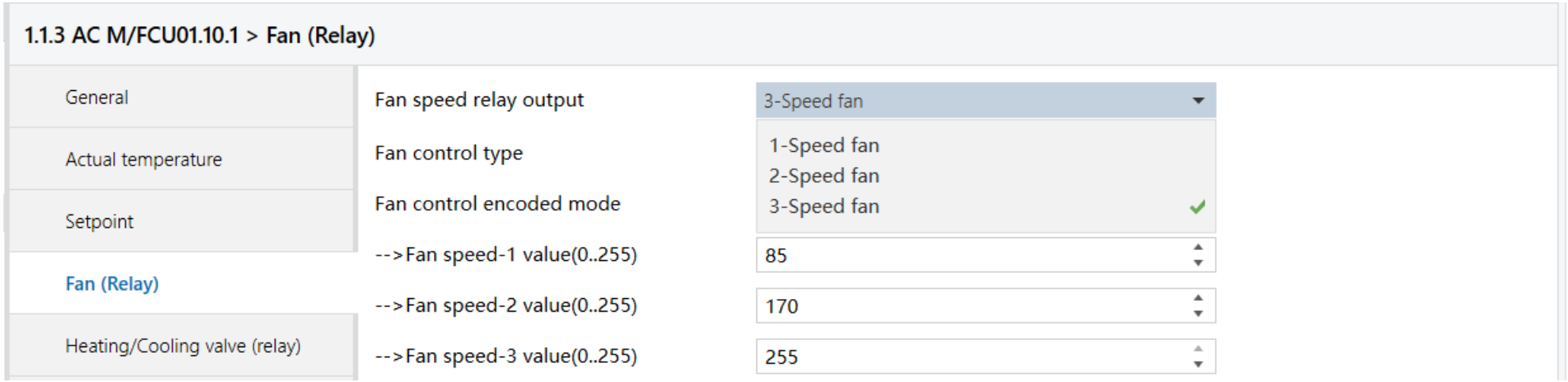


Cooling:

the standby/night mode setpoint temp is increased base on the base setpoint temp

protection mode temp: set the protection temp, when room temp is higher than it, HVAC will start cooling; when room temp is lower than it, will stop working

Fan speed

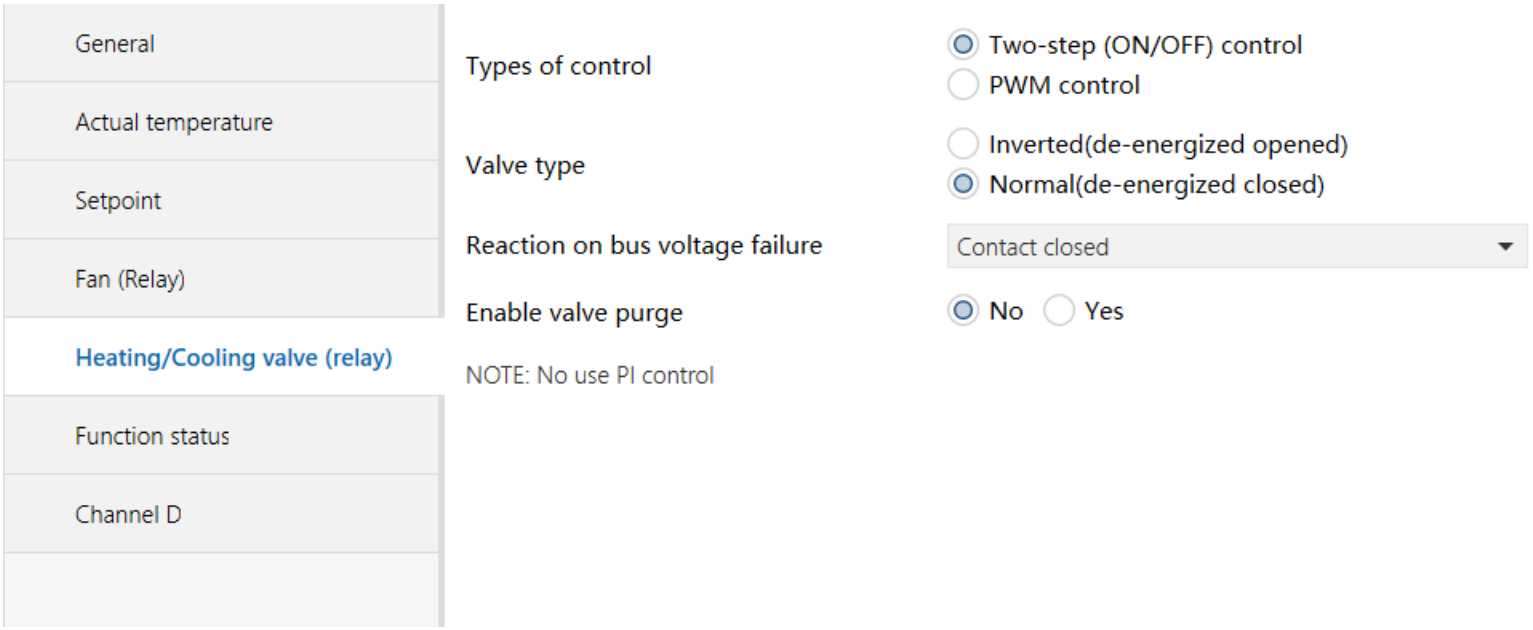


1-Speed fan: The fan only has 1 speed (Channel A -> Speed 1).

2-Speed fan: The fan has 2 speeds (Channel A -> Speed 1, Channel B -> Speed 2).

3-Speed fan: The fan has 3 speeds (Channel A -> Speed 1, Channel B -> Speed 2, Channel C -> Speed 3).

Heating valve

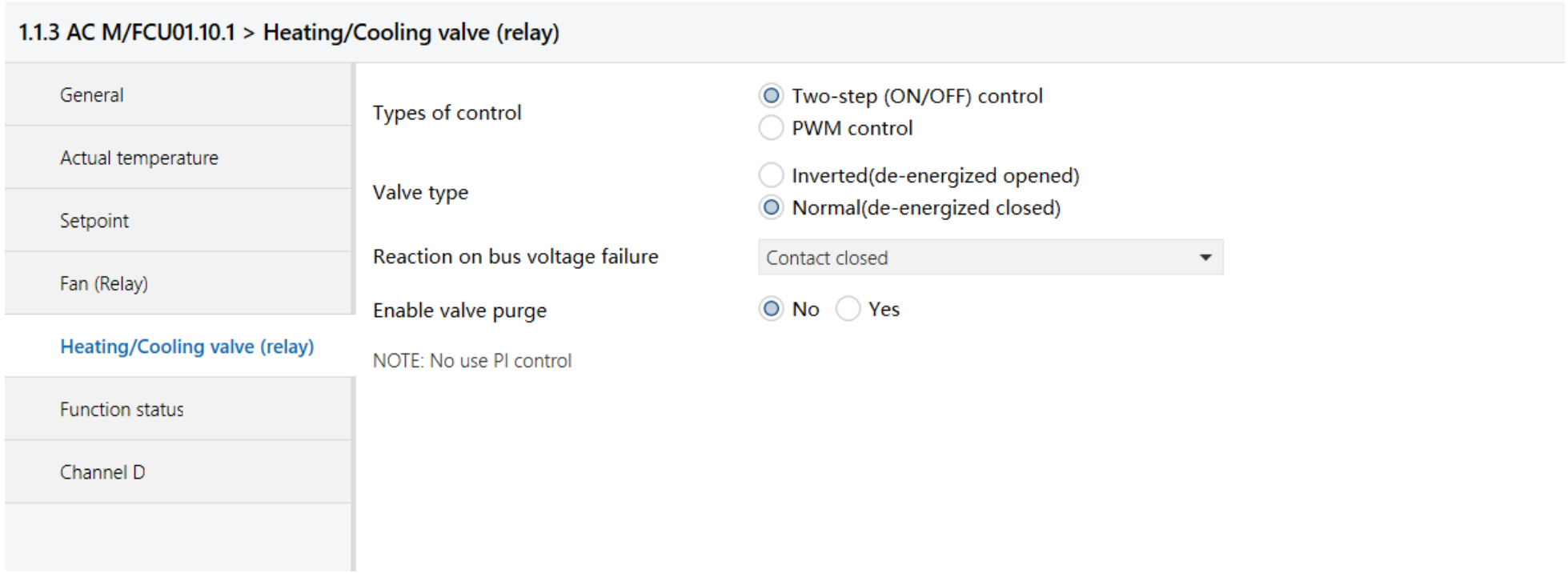


control type-

two step control: will control the valve working all the time until reaching the desired temp

PWM control: use PI algorithm, will control the valve working and stopping in a cycle, maintain the room temp fluctuating around the desired temp. recommend to tick this option.

Cooling valve

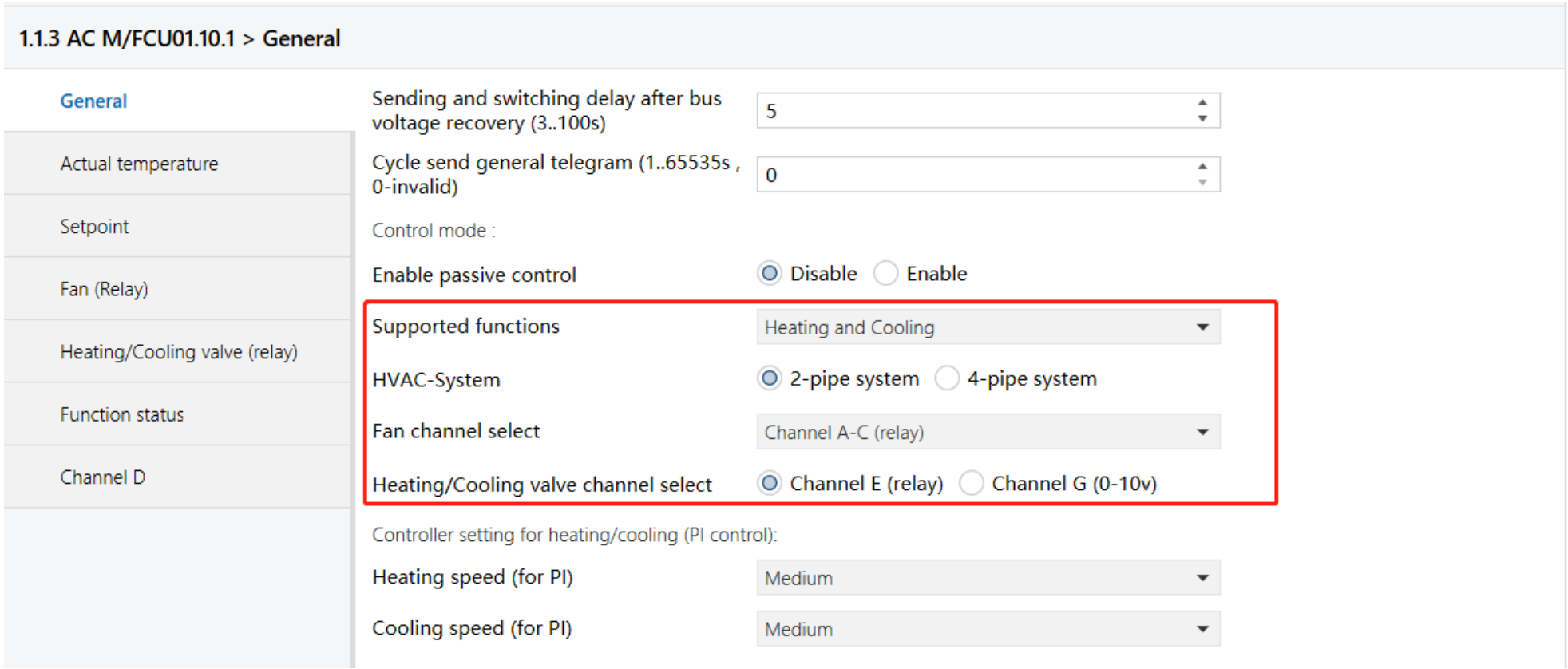


control type-

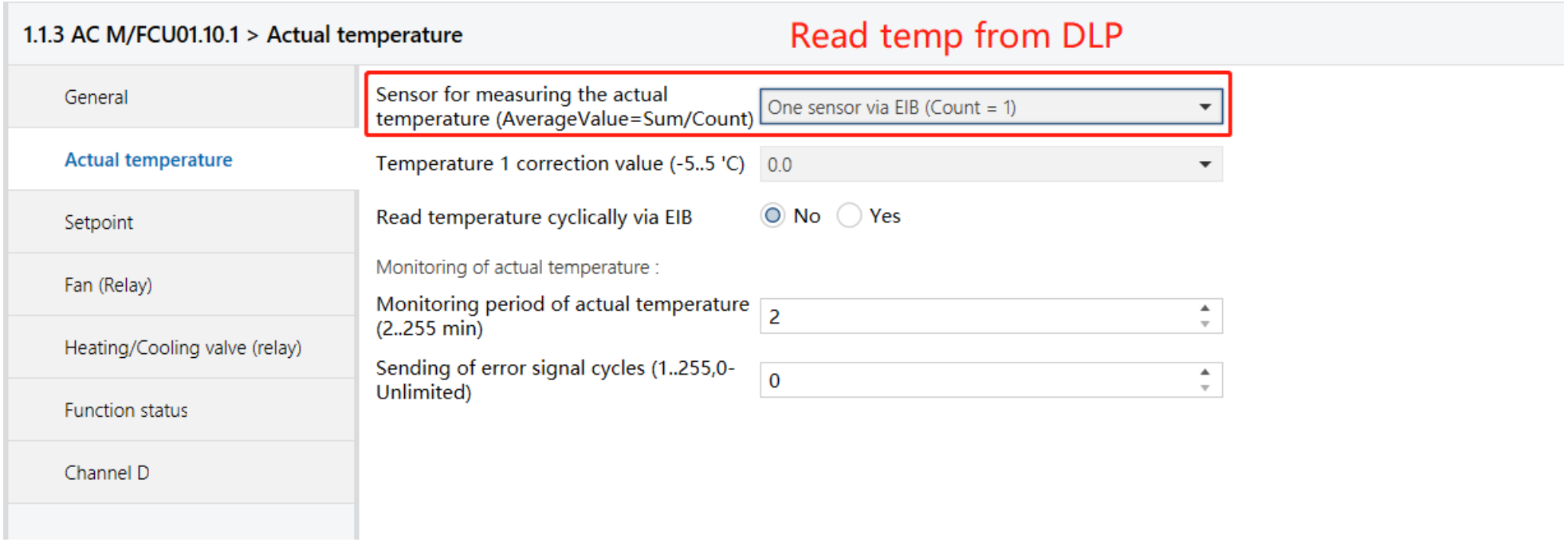
two step control: will control the valve working all the time until reaching the desired temp

PWM control: use PI algorithm, will control the valve working and stopping in a cycle, maintain the room temp fluctuating around the desired temp. recommend to tick this option.

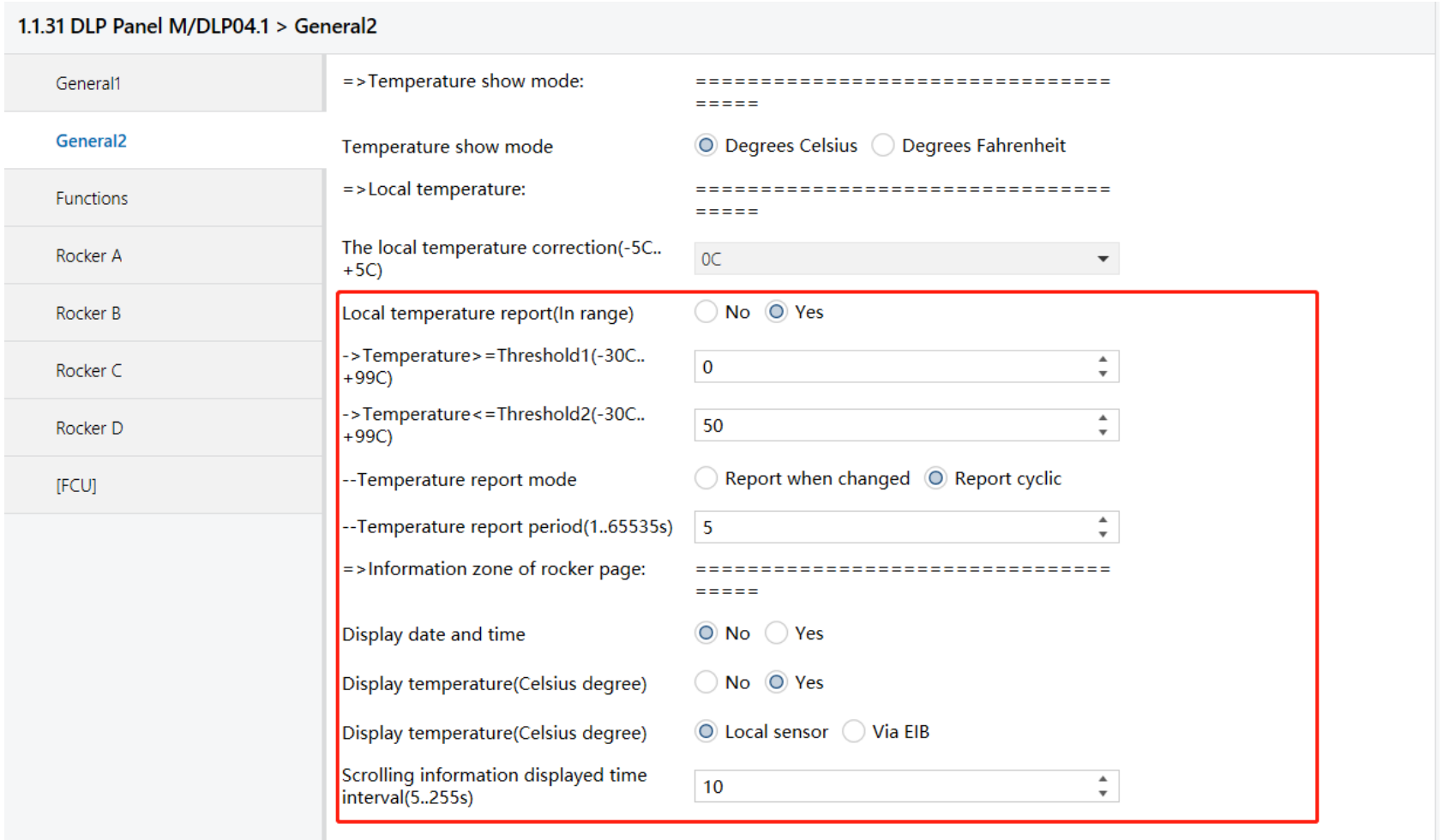
Application/FCU setting



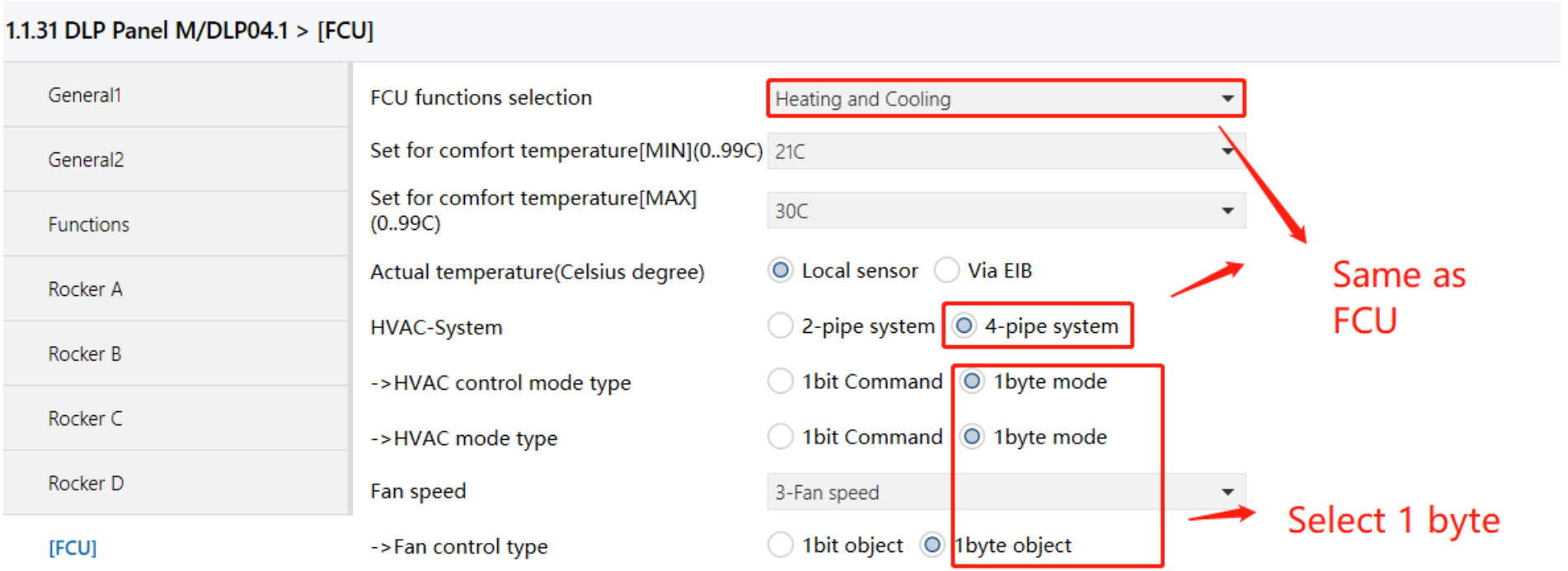
FCU Setting


1.1.3 AC M/FCU01.10.1 > Actual temperature
Read temp from DLP
General
Actual temperature
Setpoint
Fan (Relay)
Heating/Cooling valve (relay)
Function status
Channel D
Sensor for measuring the actual temperature (AverageValue=Sum/Count)
One sensor via EIB (Count = 1)
Temperature 1 correction value (-5..5 'C)
0.0
Read temperature cyclically via EIB
No
Yes
Monitoring of actual temperature :
Monitoring period of actual temperature (2..255 min)
2
Sending of error signal cycles (1..255,0-Unlimited)
0

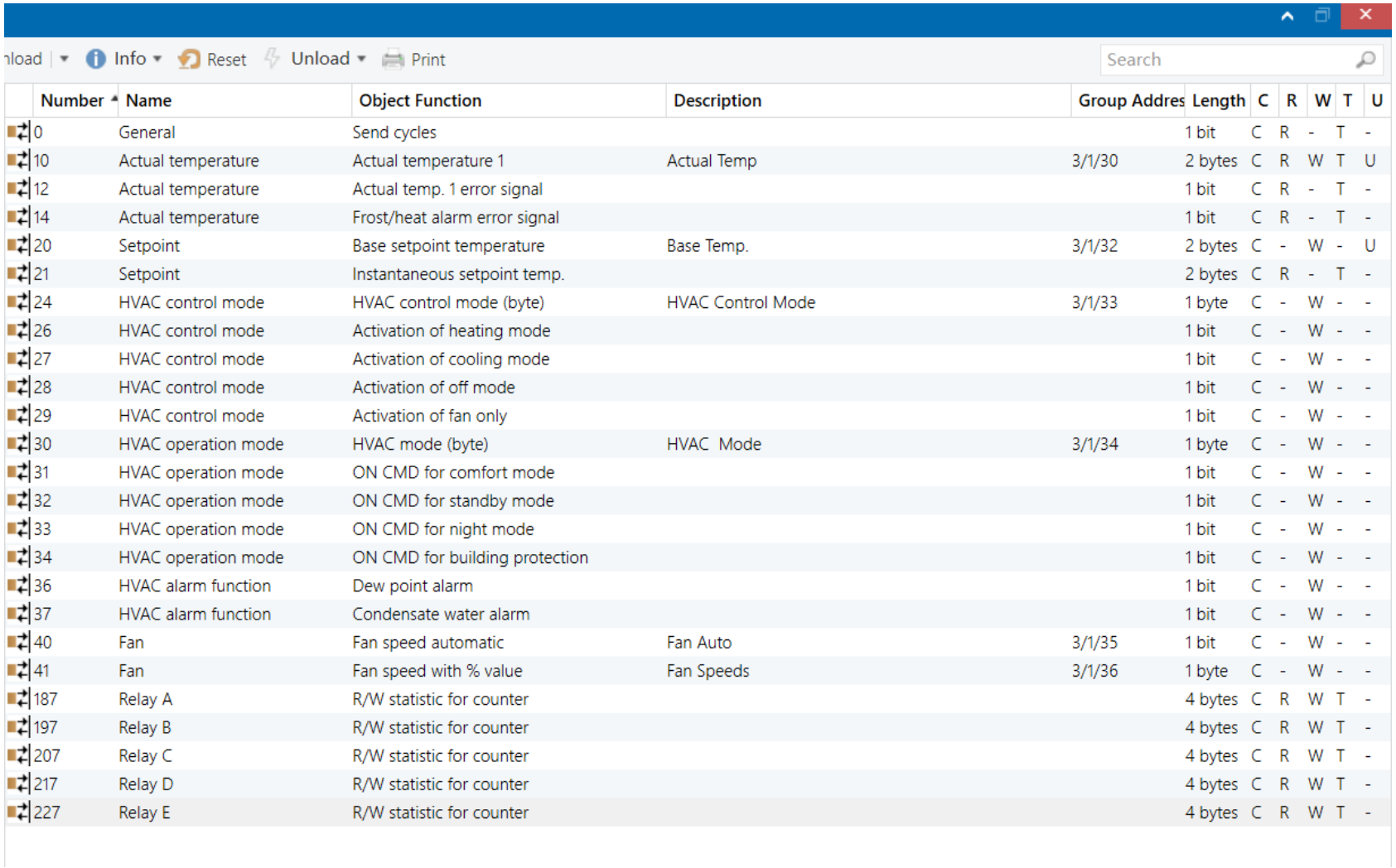
DLP setting



enable the temp report function, so that the FCU can refer to its temp


1.1.31 DLP Panel M/DLP04.1 > [FCU]
General1
General2
Functions
Rocker A
Rocker B
Rocker C
Rocker D
[FCU]
FCU functions selection
Heating and Cooling
Set for comfort temperature[MIN](0..99C)
21C
Set for comfort temperature[MAX] (0..99C)
30C
Actual temperature(Celsius degree)
Local sensor
Via EIB
HVAC-System
2-pipe system
4-pipe system
->HVAC control mode type
1bit Command
1byte mode
->HVAC mode type
1bit Command
1byte mode
Fan speed
3-Fan speed
->Fan control type
1bit object
1byte object
Same as FCU
Select 1 byte

Control setting



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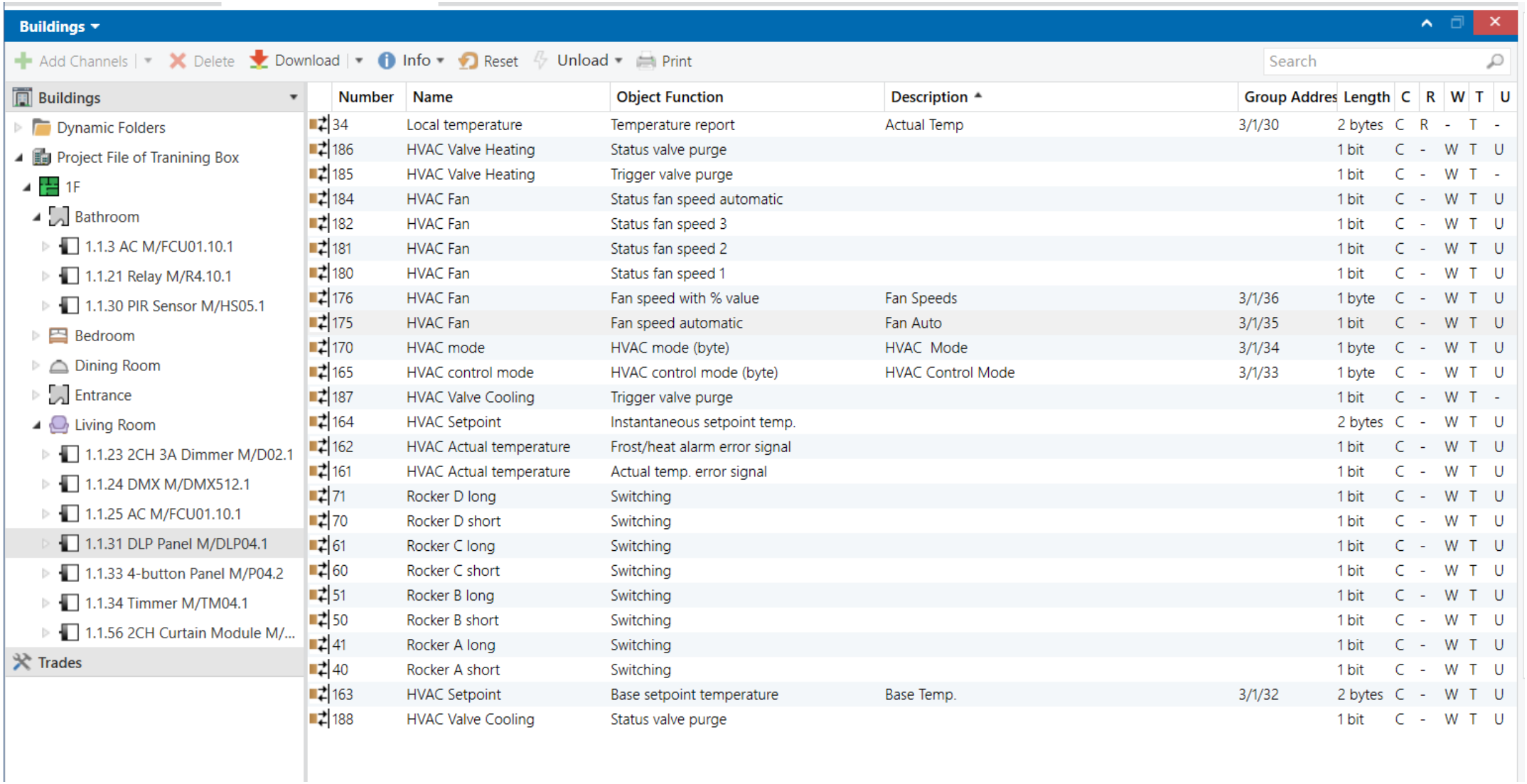
Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U
0	General	Send cycles			1 bit	C	R	-	T	-
10	Actual temperature	Actual temperature 1	Actual Temp	3/1/30	2 bytes	C	R	W	T	U
12	Actual temperature	Actual temp. 1 error signal			1 bit	C	R	-	T	-
14	Actual temperature	Frost/heat alarm error signal			1 bit	C	R	-	T	-
20	Setpoint	Base setpoint temperature	Base Temp.	3/1/32	2 bytes	C	-	W	-	U
21	Setpoint	Instantaneous setpoint temp.			2 bytes	C	R	-	T	-
24	HVAC control mode	HVAC control mode (byte)	HVAC Control Mode	3/1/33	1 byte	C	-	W	-	-
26	HVAC control mode	Activation of heating mode			1 bit	C	-	W	-	-
27	HVAC control mode	Activation of cooling mode			1 bit	C	-	W	-	-
28	HVAC control mode	Activation of off mode			1 bit	C	-	W	-	-
29	HVAC control mode	Activation of fan only			1 bit	C	-	W	-	-
30	HVAC operation mode	HVAC mode (byte)	HVAC Mode	3/1/34	1 byte	C	-	W	-	-
31	HVAC operation mode	ON CMD for comfort mode			1 bit	C	-	W	-	-
32	HVAC operation mode	ON CMD for standby mode			1 bit	C	-	W	-	-
33	HVAC operation mode	ON CMD for night mode			1 bit	C	-	W	-	-
34	HVAC operation mode	ON CMD for building protection			1 bit	C	-	W	-	-
36	HVAC alarm function	Dew point alarm			1 bit	C	-	W	-	-
37	HVAC alarm function	Condensate water alarm			1 bit	C	-	W	-	-
40	Fan	Fan speed automatic	Fan Auto	3/1/35	1 bit	C	-	W	-	-
41	Fan	Fan speed with % value	Fan Speeds	3/1/36	1 byte	C	-	W	-	-
187	Relay A	R/W statistic for counter			4 bytes	C	R	W	T	-
197	Relay B	R/W statistic for counter			4 bytes	C	R	W	T	-
207	Relay C	R/W statistic for counter			4 bytes	C	R	W	T	-
217	Relay D	R/W statistic for counter			4 bytes	C	R	W	T	-
227	Relay E	R/W statistic for counter			4 bytes	C	R	W	T	-

link the above objects between FCU and DLP



Number	Name	Object Function	Description	Group Addres	Length	C	R	W	T	U
34	Local temperature	Temperature report	Actual Temp	3/1/30	2 bytes	C	R	-	T	-
186	HVAC Valve Heating	Status valve purge			1 bit	C	-	W	T	U
185	HVAC Valve Heating	Trigger valve purge			1 bit	C	-	W	T	-
184	HVAC Fan	Status fan speed automatic			1 bit	C	-	W	T	U
182	HVAC Fan	Status fan speed 3			1 bit	C	-	W	T	U
181	HVAC Fan	Status fan speed 2			1 bit	C	-	W	T	U
180	HVAC Fan	Status fan speed 1			1 bit	C	-	W	T	U
176	HVAC Fan	Fan speed with % value	Fan Speeds	3/1/36	1 byte	C	-	W	T	U
175	HVAC Fan	Fan speed automatic	Fan Auto	3/1/35	1 bit	C	-	W	T	U
170	HVAC mode	HVAC mode (byte)	HVAC Mode	3/1/34	1 byte	C	-	W	T	U
165	HVAC control mode	HVAC control mode (byte)	HVAC Control Mode	3/1/33	1 byte	C	-	W	T	U
187	HVAC Valve Cooling	Trigger valve purge			1 bit	C	-	W	T	-
164	HVAC Setpoint	Instantaneous setpoint temp.			2 bytes	C	-	W	T	U
162	HVAC Actual temperature	Frost/heat alarm error signal			1 bit	C	-	W	T	U
161	HVAC Actual temperature	Actual temp. error signal			1 bit	C	-	W	T	U
71	Rocker D long	Switching			1 bit	C	-	W	T	U
70	Rocker D short	Switching			1 bit	C	-	W	T	U
61	Rocker C long	Switching			1 bit	C	-	W	T	U
60	Rocker C short	Switching			1 bit	C	-	W	T	U
51	Rocker B long	Switching			1 bit	C	-	W	T	U
50	Rocker B short	Switching			1 bit	C	-	W	T	U
41	Rocker A long	Switching			1 bit	C	-	W	T	U
40	Rocker A short	Switching			1 bit	C	-	W	T	U
163	HVAC Setpoint	Base setpoint temperature	Base Temp.	3/1/32	2 bytes	C	-	W	T	U
188	HVAC Valve Cooling	Status valve purge			1 bit	C	-	W	T	U

link the above objects between FCU and DLP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