

--- KNX CO2 sensor,55mm > Air Quality Level > Relative humidity Level > Output

KNX Secure	Control type	1bit
+ General	Cyclically send output value [0..255,0=inactive]	0 min
+ Internal sensor measurem...	Hysteresis threshold value in +/- [1..10]	5 %
+ Input	Threshold value 1 for level 1	20 %
+ Room temperature contro...	If humidity value < threshold value 1, send	OFF
- Air Quality Level	If humidity value >= threshold value 1, send	ON
- Relative humidity Level	If sensor failure, send	Nothing
Output	Threshold value 2 for level 2	40 %
+ CO2 Level	If humidity value < threshold value 2, send	OFF
+ Air Quality controller	If humidity value >= threshold value 2, send	ON

1bit

KNX Secure	Control type	1byte
+ General	Object datatype	1byte percentage value
+ Internal sensor measurem...	Cyclically send output value [0..255,0=inactive]	0 min
+ Input	Hysteresis threshold value in +/- [1..10]	5 %
+ Room temperature contro...	Send additional alarm message	☒
- Air Quality Level	Threshold value 1 (Level 1<->Level 2)	20 %
	If humidity value < threshold value 1, send	OFF
	If humidity value >= threshold value 1, send	ON
	Threshold value 2 (Level 2<->Level 3)	40 %
	If humidity value < threshold value 2, send	OFF
	If humidity value >= threshold value 2, send	ON

1byte

KNX Secure

+ General

+ Internal sensor measurem...

+ Input

+ Room temperature contro...

- Air Quality Level

- Relative humidity Level

Output

+ CO2 Level

- Air Quality controller

Control type3byte(RGB)

Cyclically send output value [0..255,0=inactive]0min

Hysteresis threshold value in +/- [1..10]5%

Send additional alarm message☒

Threshold value 1 (Level 1<->Level 2)20%

If humidity value < threshold value 1, send☐ Nothing ☒ Send value

Value#00FF00

Alarm messageAlarm 1

If humidity value < threshold value 1, send☐ Nothing ☒ Send value

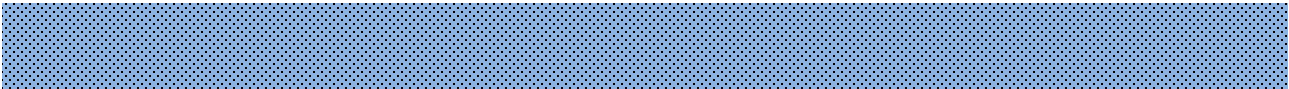
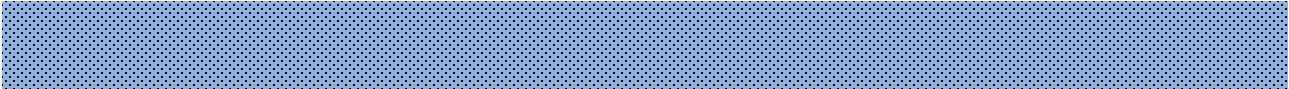
Value#FF0000

Alarm messageAlarm 2

If sensor failure, send☐ Nothing ☒ Send value

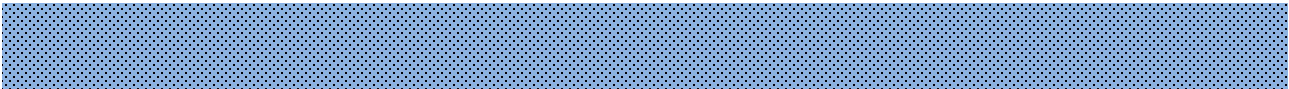
3byte(RGB)

5.6.1.1 "Output"

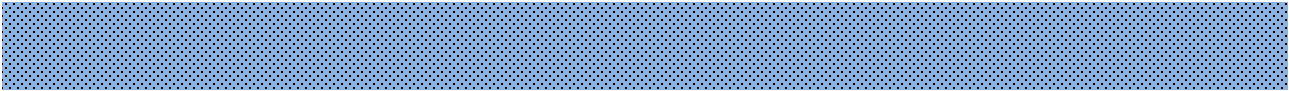


"1byte"

1byte



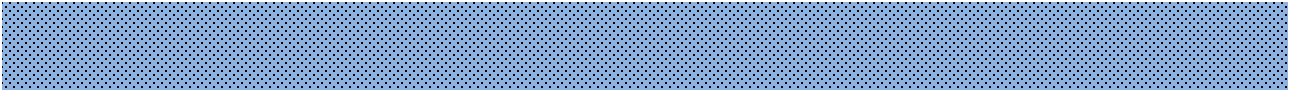
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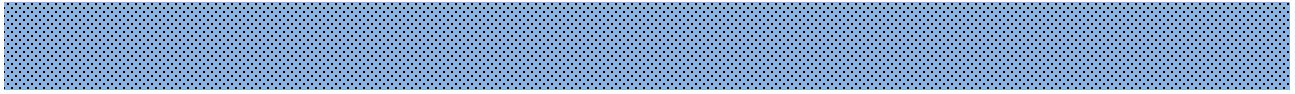
5% 20% 25% + 15%

- 15%~25%

15% ()25%



1byte 3byte



x

x

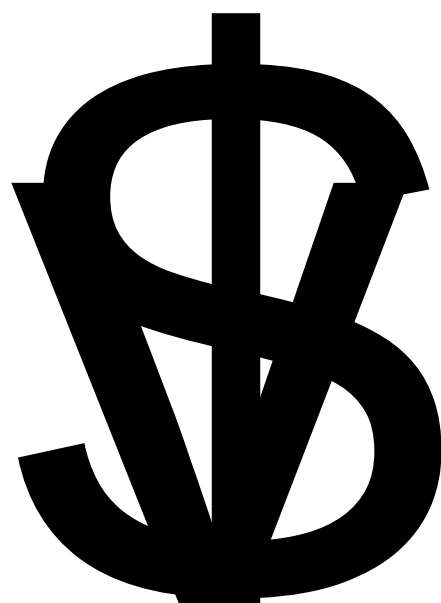
4

1bit

4

x

x

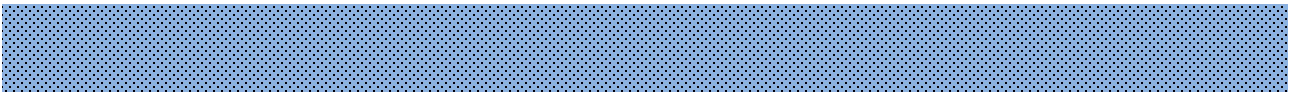


"Send value"

1byte

3byte

14



"Send value"

1byte

3byte

--- KNX CO2 sensor,55mm > Air Quality Level > CO2 Level

KNX Secure

CO2 level function

2 levels

General

Reference internal sensor

Number of reference external sensor

Internal sensor measurement

Calculation type

Weighting of internal sensor

Weighting of external sensor 1

Time period for request external sensor [0...255,0=inactive]

Send value when the result change by

Cyclically send value [0..255,0=inactive]

Weight average

50

20

10

50

0

%

%

min

ppm

min

Included

Room

Air Quality

Relative

CO2 Level

Output

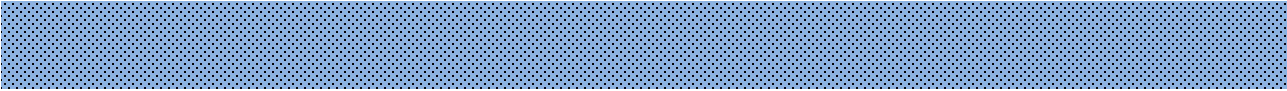
5.6.2 "CO2 Level"

CO2

CO2

CO2

/



2

2

CO2

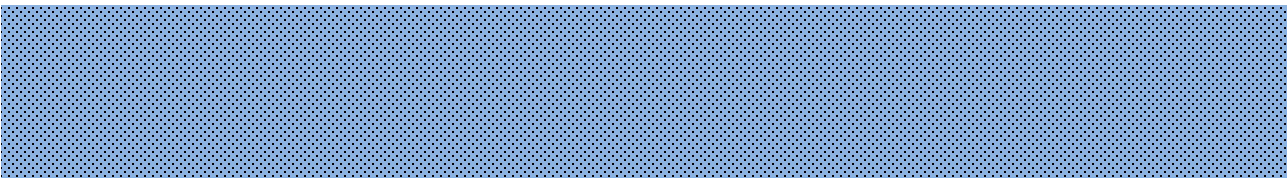
Average

Weight average

CO2

Minimum value

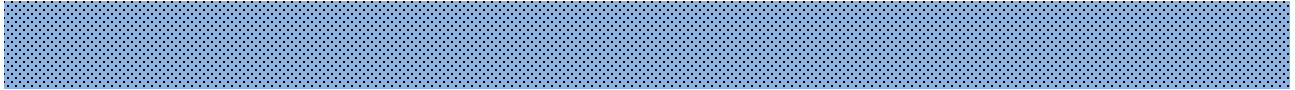
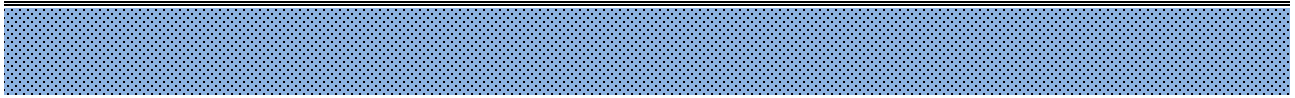
Maximum value



"Weight average"

CO2

CO2



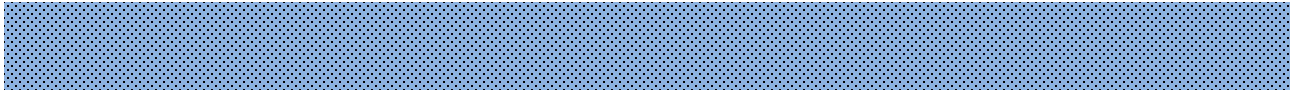
2

2

CO2

CO2

Disable



2

2

CO2

0

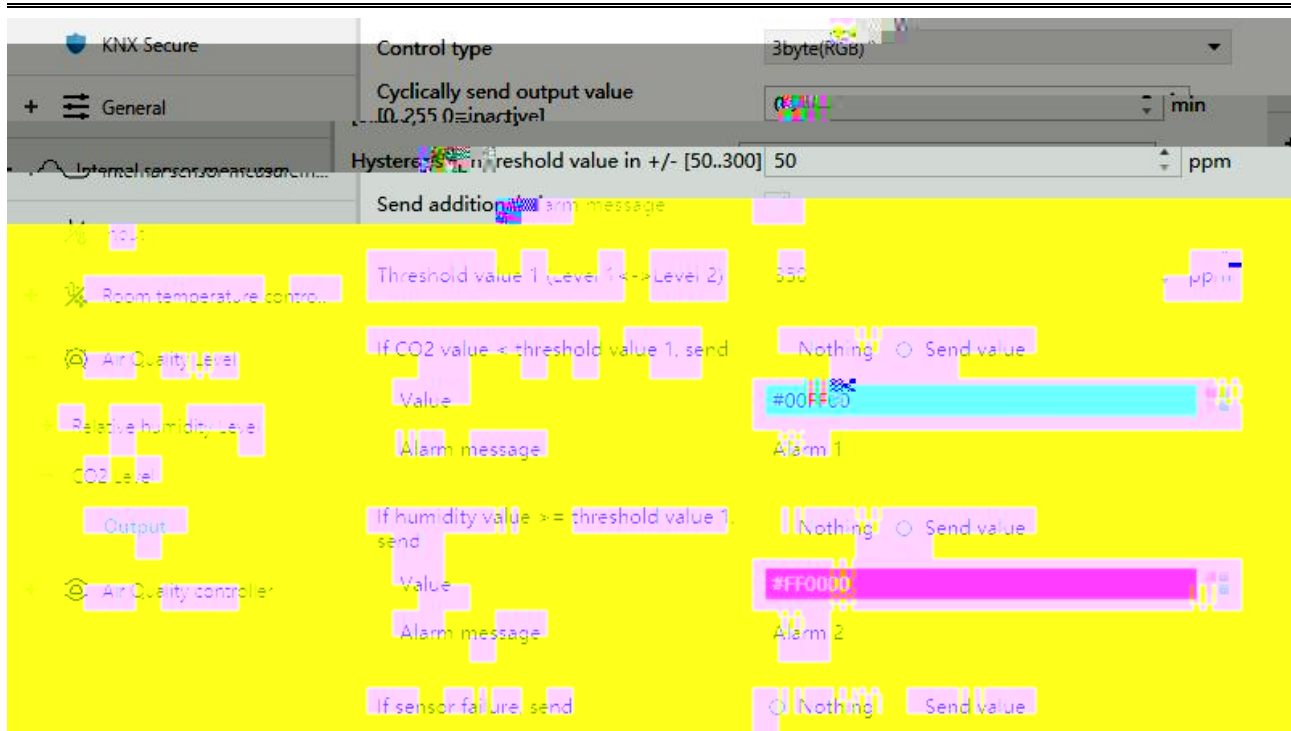
--- KNX CO2 sensor,55mm > Air Quality Level > CO2 Level > Output

KNX Secure	Control type	1bit
General	Cyclically send output value [0..255,0=inactive]	0 min
Internal sensor measurem...	Hysteresis threshold value in +/- [50..300]	50 ppm
Input	Threshold value 1 for level 1	350 ppm
Room temperature contro...	If CO2 value < threshold value 1, send	OFF
Air Quality Level	If CO2 value >= threshold value 1, send	ON
Relative humidity Level	If humidity value < threshold value 1, send	Nothing
CO2 Level	Threshold value 2 for level 2	450 ppm
Output	If CO2 value < threshold value 2, send	OFF
Air Quality controller	If CO2 value >= threshold value 2, send	ON
	If sensor failure, send	Nothing

1bit

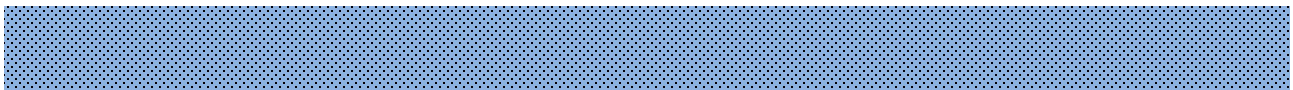
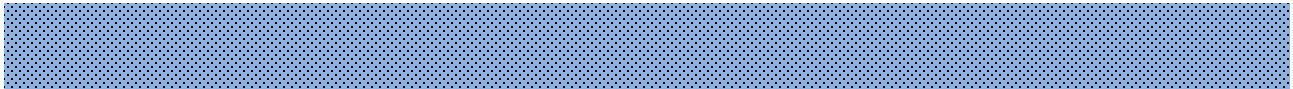
KNX Secure	Control type	1byte
General	Object data	1byte percentage value
Internal sensor measurem...	Cyclically send output value [0..255,0=inactive]	0 min
Input	Hysteresis threshold value in +/- [50..300]	50 ppm
Room temperature contro...	Send additional alarm message	☒
Air Quality Level	Threshold value 1 for level 1	350 ppm
Relative humidity Level	If CO2 value < threshold value 1, send	☐ Nothing ☐ Send value
CO2 Level	Value	0
Output	Alarm message	Alarm 1
Air Quality controller	If humidity value >= threshold value 1, send	☐ Nothing ☐ Send value
	Value	33
	Alarm message	Alarm 2
	If sensor failure	

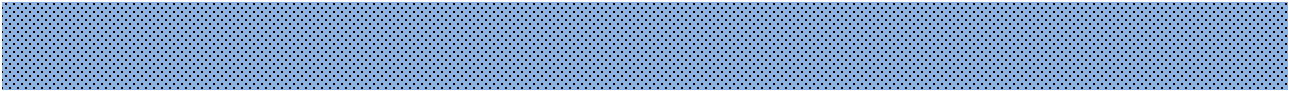
1byte



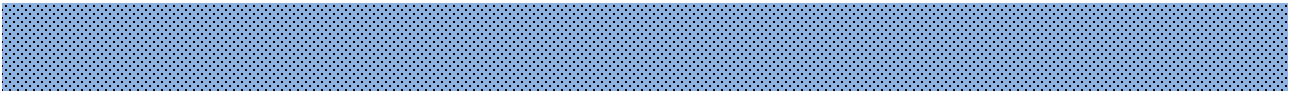
3byte

5.6.2.1 "Output"

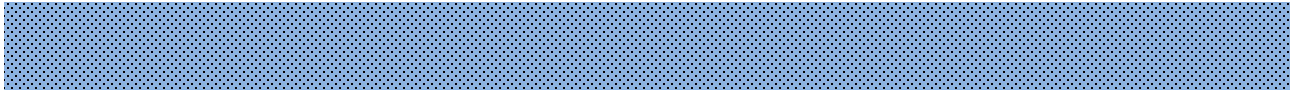


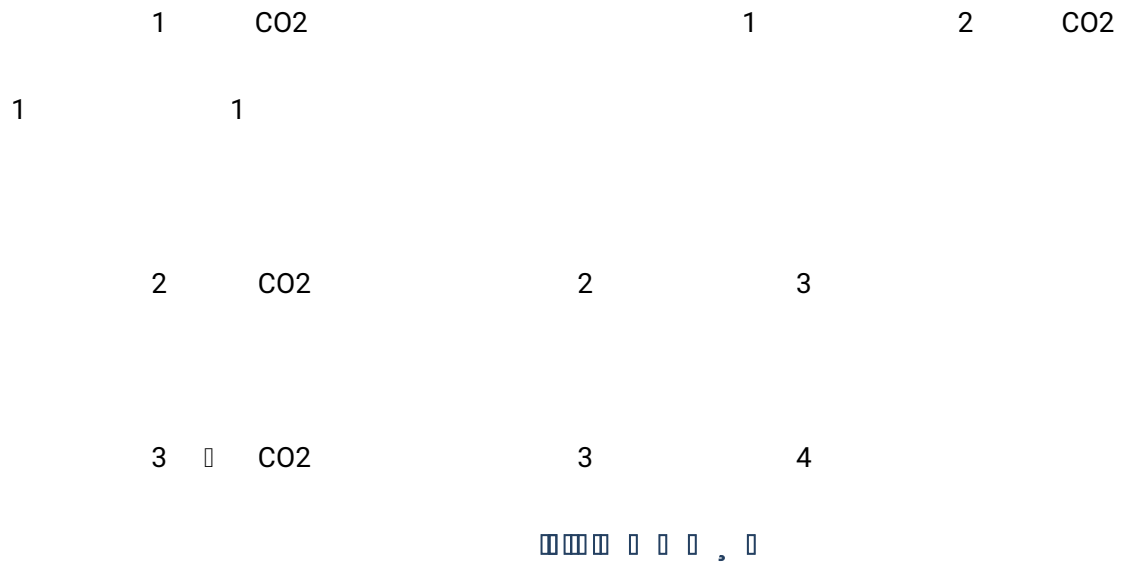
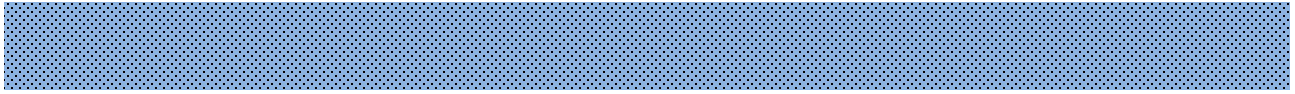


	50ppm	350ppm	400ppm	+
300ppm	-	CO2	300~400ppm	
	300ppm	(	)400ppm	



1byte 3byte



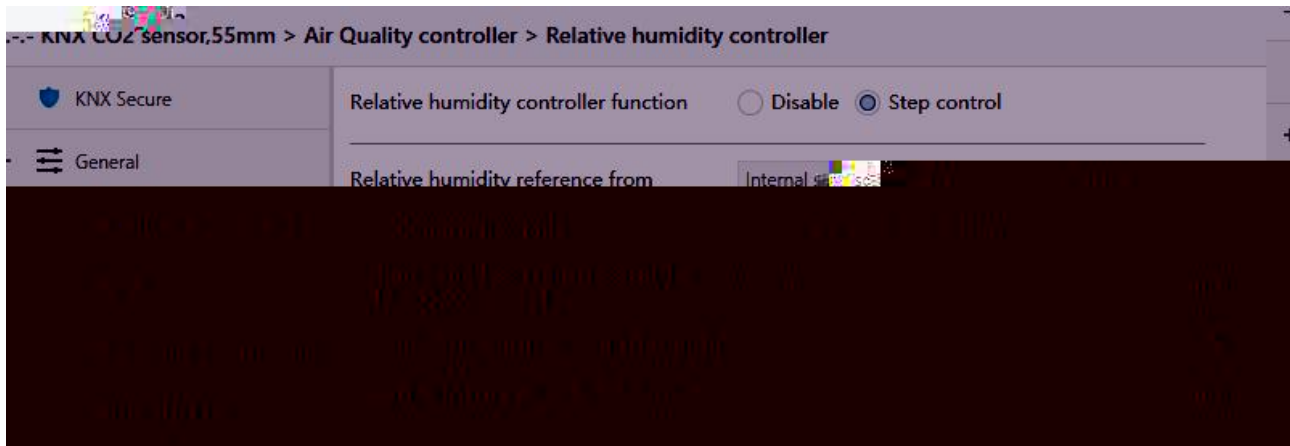


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"Send value"

CO2

CO2



5.7.1 "Relative humidity controller"

Disable

Step control

"Internal sensor measurement"

5.3

"...External sensor"

"40% Internal to 60% External"

40%

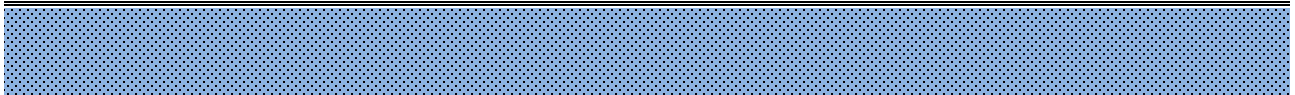
60%

=

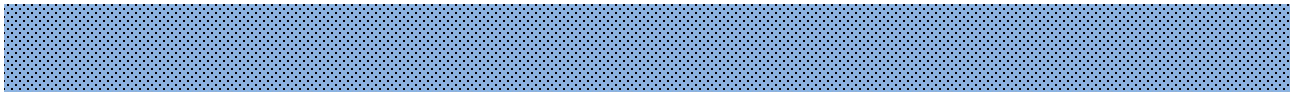
×40% +

×60%

Disable

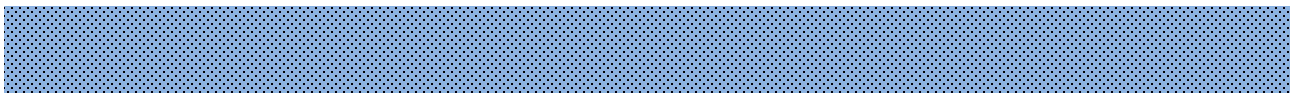


1byte



7g 9t

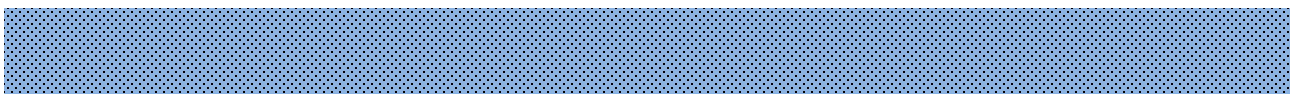
0



1byte

1byte percentage value

1byte unsigned value

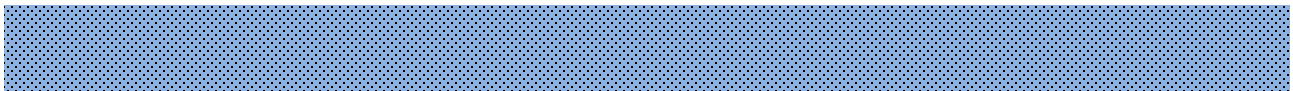


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i 1



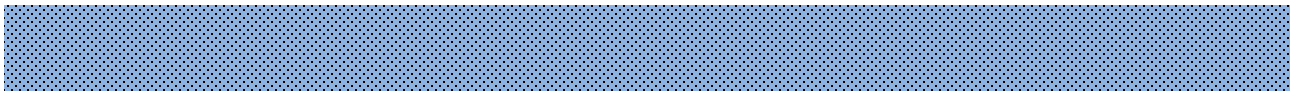
Threshold value 1 (step 0<->step 1)	50	%
Threshold value 2 (step 1<->step 2)	40	%
Threshold value 3 (step 2<->step 3)	50	%



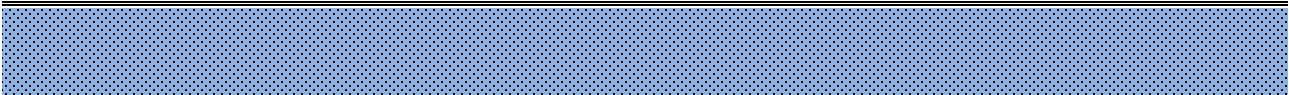
5% 20% 25% + 15%

- 15%~25%

15% ()25%



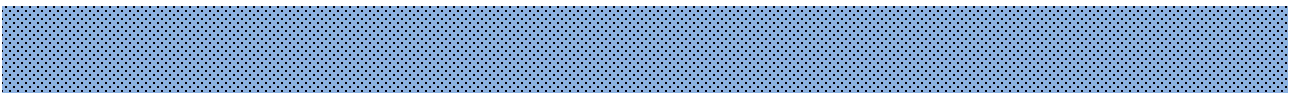
0



1byte

1byte percentage value

1byte unsigned value



1byte

0



off

Nothing

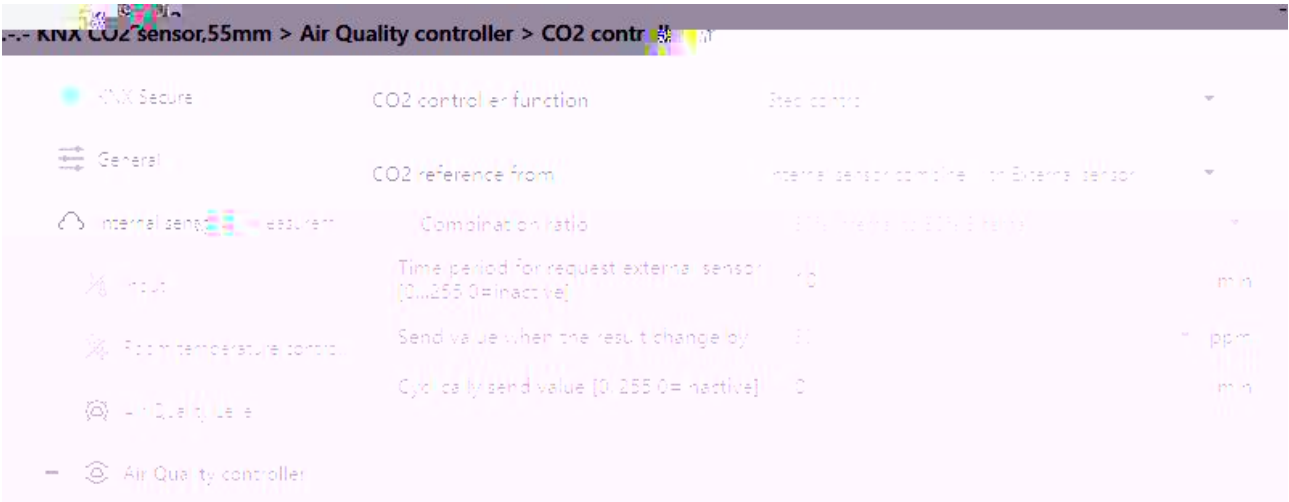
Send value

Send value

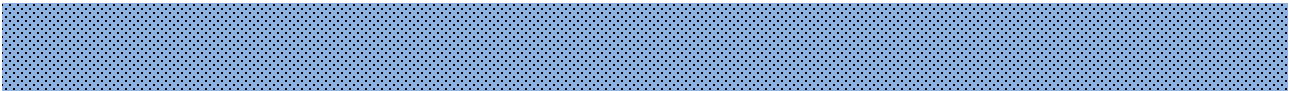
1byte

1byte percentage value

1byte unsigned value



5.7.2 "CO2 controller"

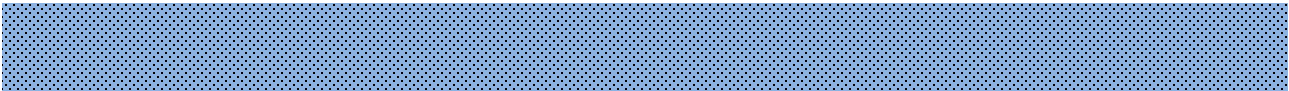


CO2

Disable CO2

Step control

PI control PI



CO2

"...External sensor"

CO2

CO2

"40% Internal to 60% External"

40%

60%

CO2 = CO2×40% + CO2×60%

CO2

CO2

CO2

CO2

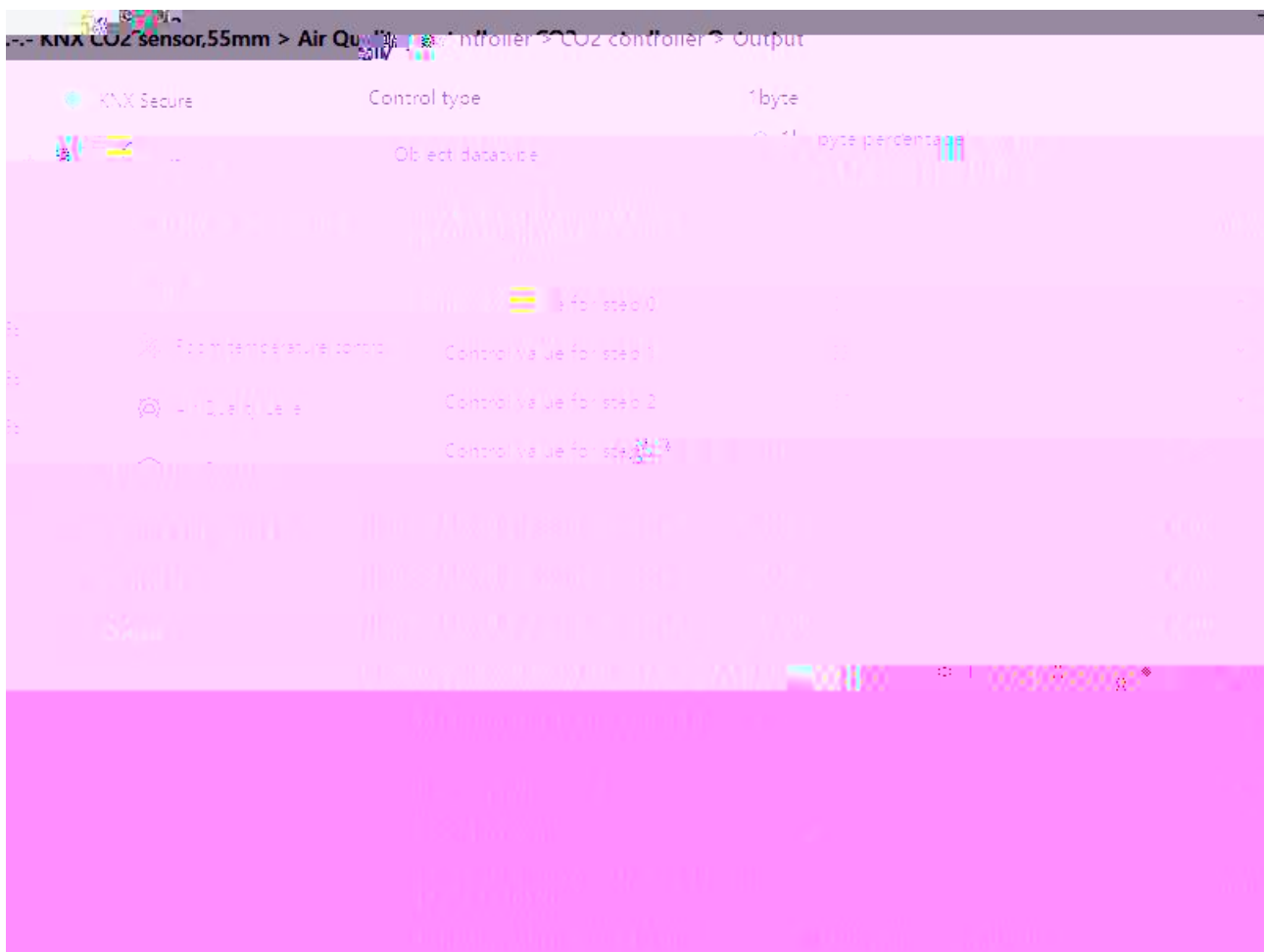
Disable

CO2

0

CO2

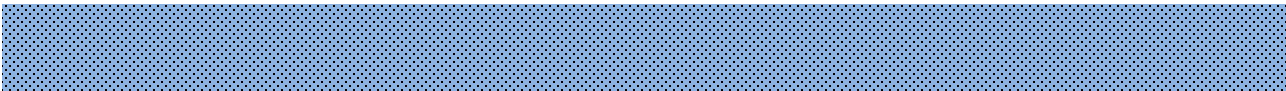
PI



5.7.2.1(1) "Output"-Step control

--- KNX CO2 sensor,55mm > Air Quality controller > CO2 controller > Output

KNX Secure + General + Internal sensor measurem... + Input + Room temperature contro... + Air Quality Level - Air Quality controller + Relative humidity controller - CO2 controller Output	Control type 1byte 1byte per 1byte unsig Object datatype Send value when the control value change by [0..100,0=inactive] 5 Cyclically send control value [0..255,0=inactive] 0 Setpoint CO2 value 500 Setpoint value can be changed via bus ☐ Proportional range 100 Reset time [15..240] 15 Minimum 0 Maximum 255 Minimum value 0 Maximum value 255
--	---



1byte

1byte percentage value

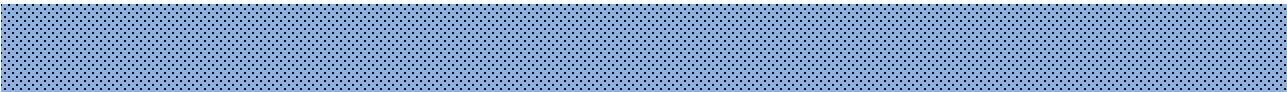
1byte unsigned value

1	CO2	1	1
1	0		
2	CO2	2	2
3	CO2	3	3

Threshold value 1 (step 0<->step 1)	600	ppm
Threshold value 2 (step 1<->step 2)	450	ppm
Threshold value 3 (step 2<->step 3)	1000	ppm

	50ppm	350ppm	400ppm	+
300ppm	-	300~400ppm		
	300ppm	(	)400ppm	

0



CO2

400~1500 ppm

PI

PI

/

1byte

1byte percentage value

1byte unsigned value

1byte

1byte percentage value

0%=0%, otherwise=Minimum value 0%

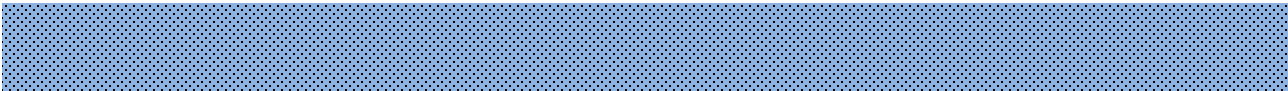
0

To be the minimum value

0%

To be 0%

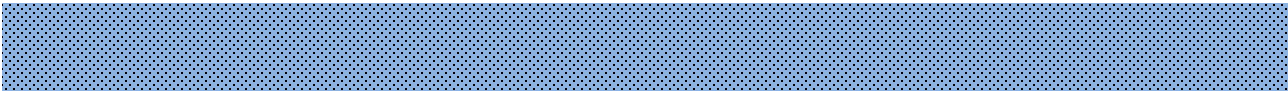
0



1byte

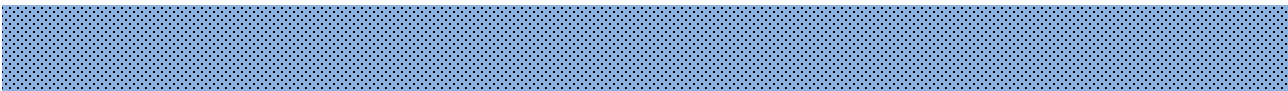
1byte percentage value

1byte unsigned value



1byte

0



off

Nothing

Send value

Send value

1byte

1byte percentage value

1byte unsigned value

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	Data Type
Priority	1	General	In operation		1 bit	C	R	-	T	switch
SW	2	General	Alarm input		1 bit	C	-	W	-	alarm
LOW	3	General	Alarm acknowledge		1 bit	C	-	W	-	acknowledge

6.1 "General"

					DPT
"1"					
1 0					

6.1 "General"

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
15	Internal sensor	Temperature value			2 bytes	C	R	-	-	-	temperature (°C)	Low
16	Internal sensor	Low temperature alarm			1 bit	C	R	-	-	-	alarm	Low
17	Internal sensor	High temperature alarm			1 bit	C	R	-	-	-	alarm	Low
18	Internal sensor	Humidity value			2 bytes	C	R	-	-	-	humidity (%)	Low
19	Internal sensor	Low humidity alarm			1 bit	C	R	-	-	-	alarm	Low
20	Internal sensor	High humidity alarm			1 bit	C	R	-	-	-	alarm	Low
21	Internal sensor	CO2 value			2 bytes	C	R	-	-	-	CO2 (ppm)	Low
22	CO2 alarm	CO2 alarm			1 bit	C	R	-	-	-	alarm	Low
23	CO2 alarm	CO2 alarm			1 bit	C	R	-	-	-	alarm	Low
24	CO2 alarm	CO2 alarm			1 bit	C	R	-	-	-	alarm	Low

6.2 "Internal sensor measurement"

					DPT
-50~99.8℃					
0~100%					
CO2CO21..2000 ppm					

CO2					
1					
0					
CO2			CO2		
CO2			CO2		

6.2 "Internal sensor measurement"

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
23	Input 1 - Temperature probe	Actual temperature, Sensor			2 bytes	C	R	-	T	-	temperature (°C)	Low
24	Input 1 - Temperature probe	Temperature										

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
23	Input 1 - Switch sensor	Switch			1 bit	C	R	W	T	U	switch	Low
23	Input 1 - Switch sensor	Close, Switch			1 bit	C	R	W	T	U	switch	Low
24	Input 1 - Switch sensor	Close, Switch			1 bit	C	R	W	T	U	switch	Low

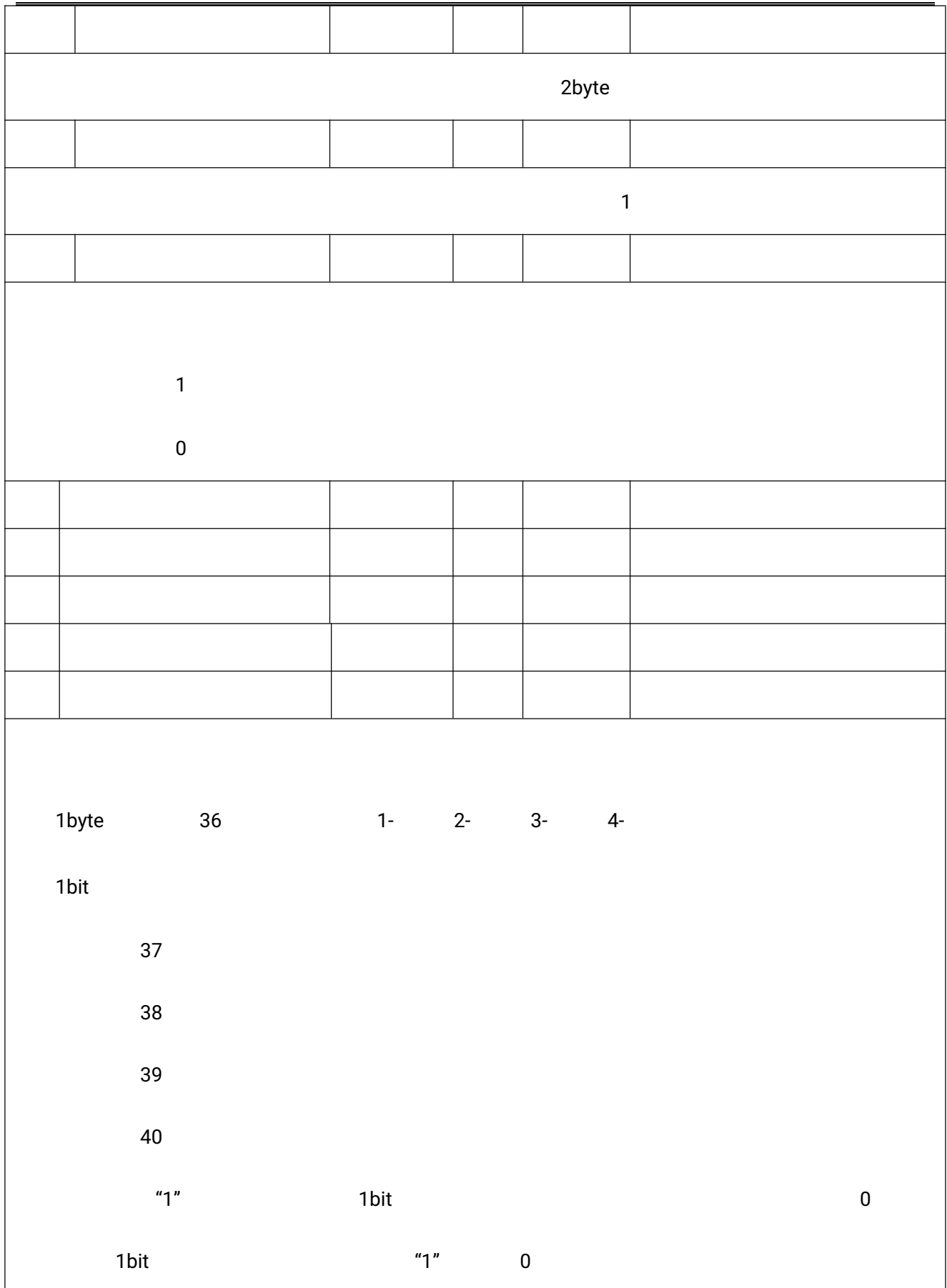
					DPT
-50~99.8°C "Description (max 30char.)" "Input 1 - ..."					
/ 12 1"Switch"2 "Close/Open" "Short/Long" 0 1					
8bit / 1 2 1"Scene"2 "Close/Open" "Short/Long" 8bit					

8bit () FXNNNNNN
F '0' '1'
X 0
NNNNNN 0...63

0	1
1	2
2	3
...	...
63	64
128	1
129	2
130	3
...	...
191	64

1~64 0~63 1
0

					DPT
1-- 0-- Description (max 30char.) RTC 1 - ...					
-50~99.8°C					
Current setpoint adjustment Base setpoint adjustment					
1 0					



1 0 11 /					
1 0					
1 0					
1 0					

1byte461-2-3-4-1bit47484950"1" 1bit0 1bit1					

= 31 +

"1" 1bit-off

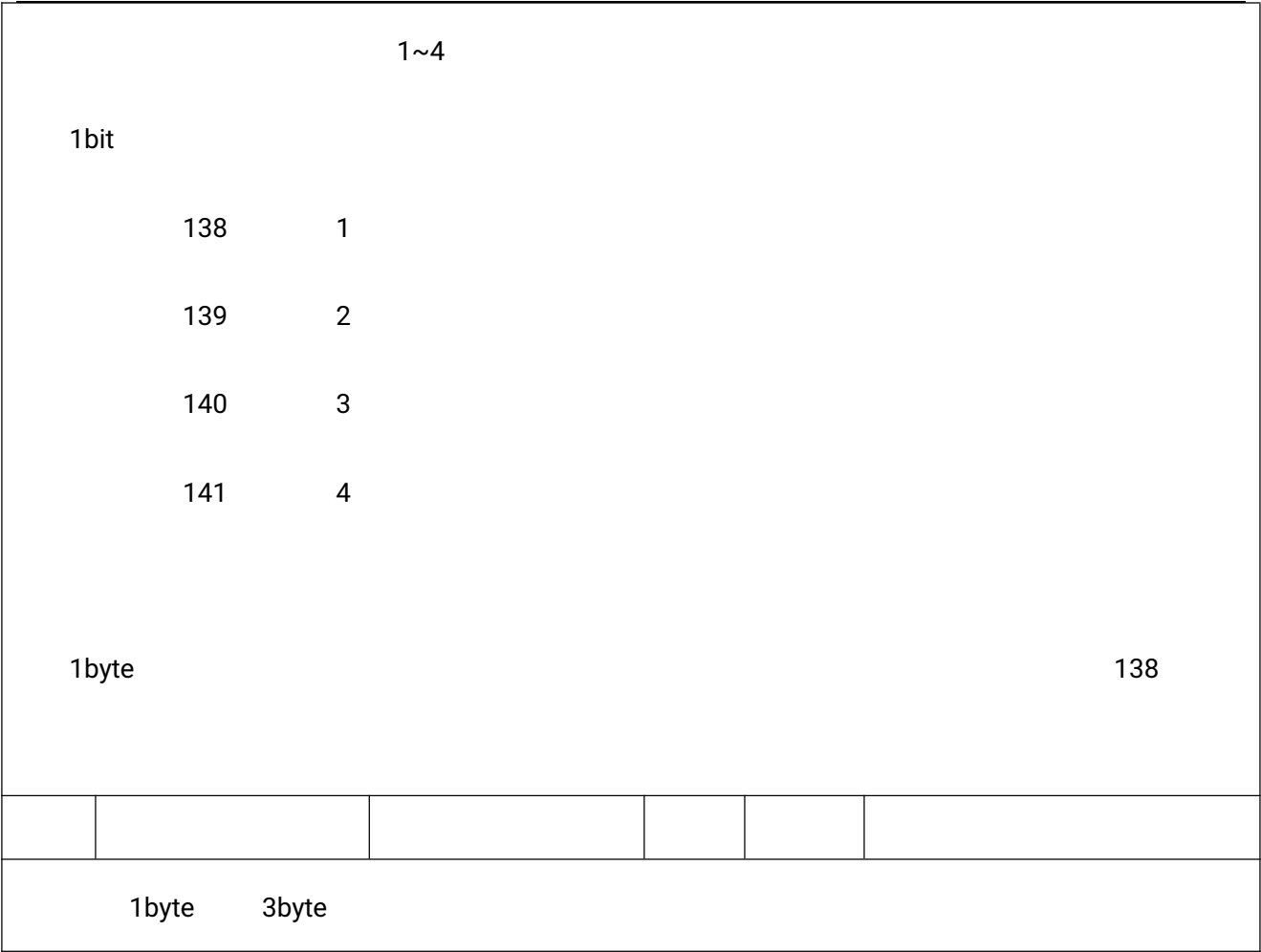
"0" GVS

1bit-off "1"

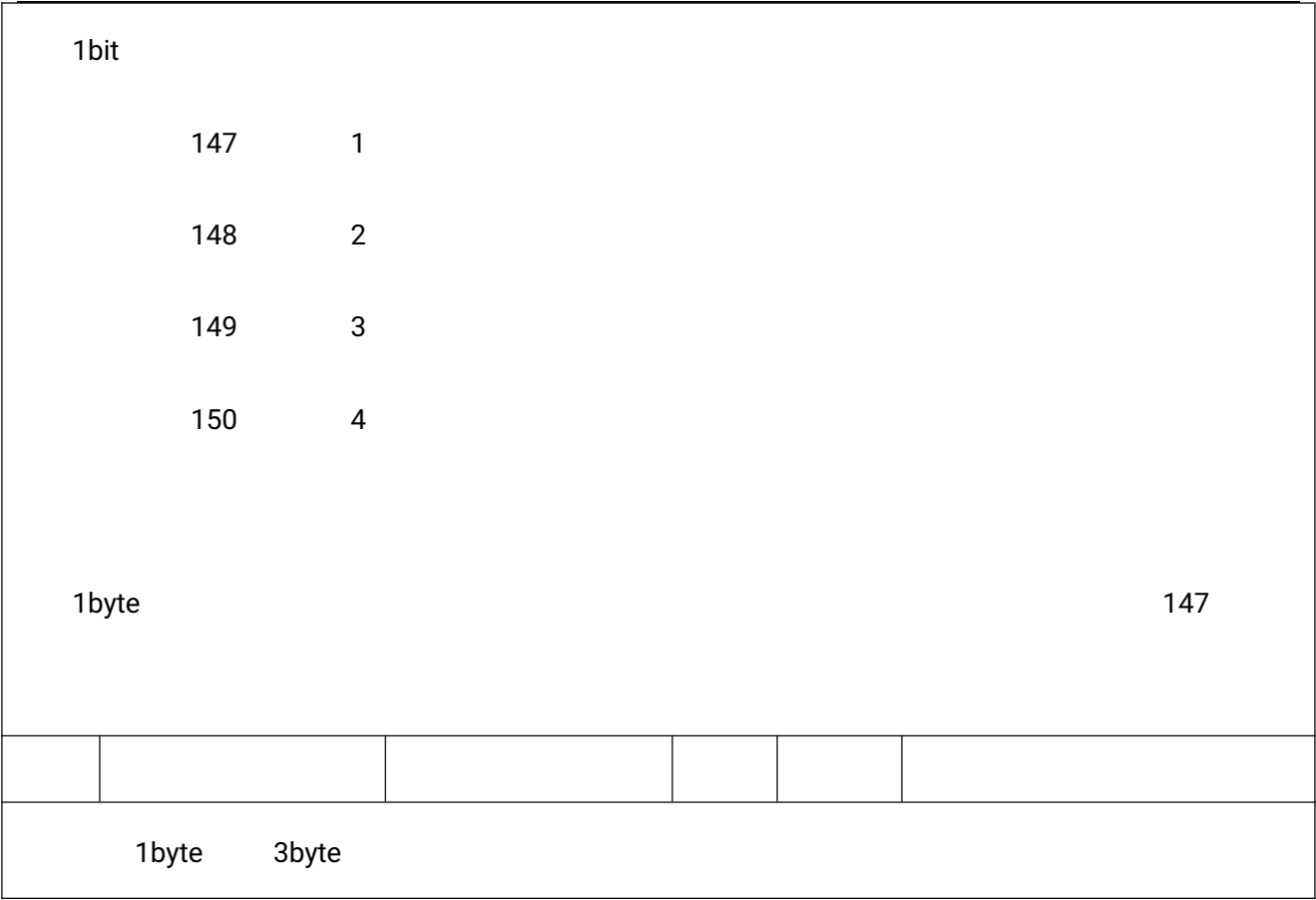
1byte 57

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6.5 "Relative humidity Level"

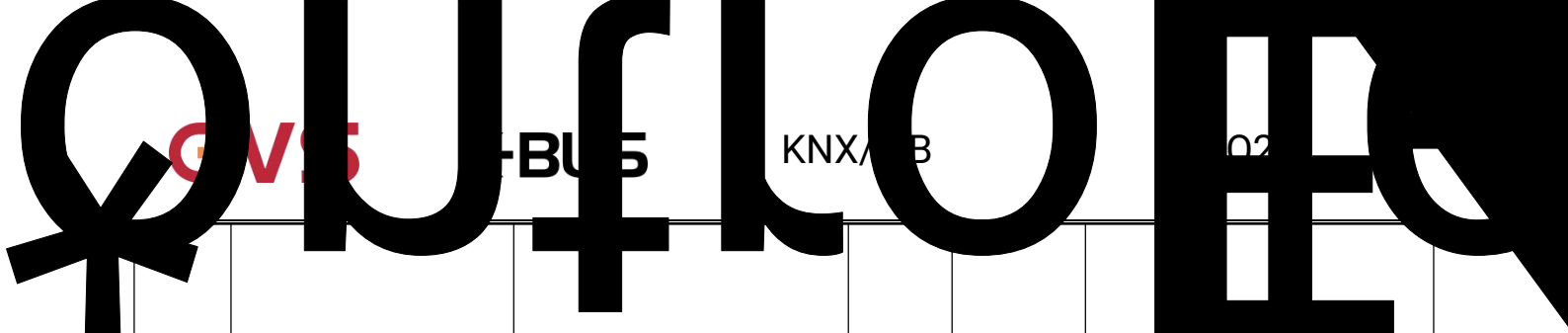


6.6 "CO2 Level"

Number	Name	Object Function	Description	Group Address	Length	C	R	W	T	U	Data Type	Priority
170	Relative humidity controller	Controller on/off			1 bit	C	-	W	-	-	switch	Low
172	Relative humidity controller	External sensor value			2 bytes	C	-	W	T	U	humidity (%)	Low
173	Relative humidity controller	Controller status			1 bit	C	R	-	T	-	switch	Low
174	Relative humidity controller	Actual sensor value			2 bytes	C	R	-	T	-	humidity (%)	Low
175	Relative humidity controller	Control value			1 byte	C	R	-	T	-	percentage (0..100%)	Low
176	Relative humidity controller	Control stop			1 byte	C	-	W	-	-	percentage (0..100%)	Low

6.7 "Relative humidity controller"

					DPT
1-- 0--					
0					
1-- 0--					



OFF						

6.7 "Relative humidity controller"

CO2					
0					
1--					
0--					
CO2					
PI					
OFF					

6.8 "CO2 controller"