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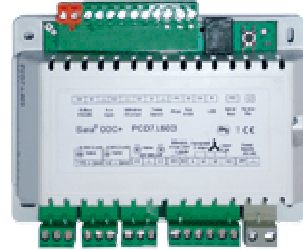T +41 (0)26 672 71 11 I F +41 (0)26 672 74 99 I www.saia-pcd.com

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Enhancements of room automation system PCD7.L60x

Murten, 10.03.2010

Dear Ladies and Gentlemen

We like to inform you about enhancements of the existing products of the S-Bus room controller family PCD7.L60x.

The controller firmware and FBox library has been updated and respects a lot of your wishes and feedbacks we collected since the last months.

These new features will help you to place the product line in a wider range of applications.
- Card reader applications
- 6-way regulation bullet-valve
- Preheating or precooling of the fan-air
- Faster valve reaction times
- Additional temperature measuring

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1. **New firmware version**

The new features are supported from

- hardware version V1.2 and
- firmware version SV1.12 of the room controller
- FBox library version 2.5.100 for PG5 1.4.300
- FBox library version 2.6.100 for PG5 2.0.110

New Features:

+ 6-way regulation bullet-valve
+ K1/K2 drive in function of E2
+ Delayed activation of fan-speed
+ Adjustable minimum valve output control
+ Security function: Stopping of Outputs after a defined time when unplug a .L644 operation unit
+ Implementation of the function "E2 as a temperature sensor input"

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2. Description of the new features

Compatibility of the new firmware

All the new features are supported by the new Config-FBox. The parameters with information about the required controller software version are placed as topic over the new functions at the bottom of the adjust window.

All changes are compatible with the previous controller versions therefore it's possible to use the new FBoxes for existing and new controllers.

In previous versions the new registers were simply ignored. Of course existing controllers can't be loaded with the new firmware but the Setup FBox provides information about type and firmware version.

An upgrade of controllers with older firmware will not be provided.

Check of firmware version in the Setup FBox
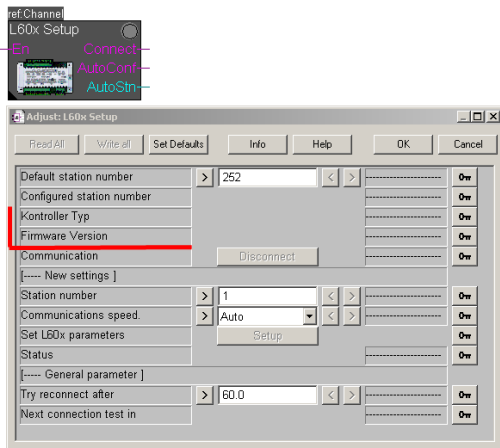
When a communication to a room controller is established, the controller type and firmware version are displayed in the adjust window. There it is also possible to see if the controller supports the new features (besides of the number on the case-sticker).

Configuration FBox Features

The new functions are selectable in the actual Configuration FBox as described below:

6-way regulation bullet-valve

It is now possible to drive on the Output Y3 a 6-way regulation bullet-valve.
The advantage of this valve is that it requires only one valve for cooling **and** heating.
For example it can be used now the new 6-way regulation bullet-valve from Belimo.

The valve can be used for example in heating/cooling-applications.
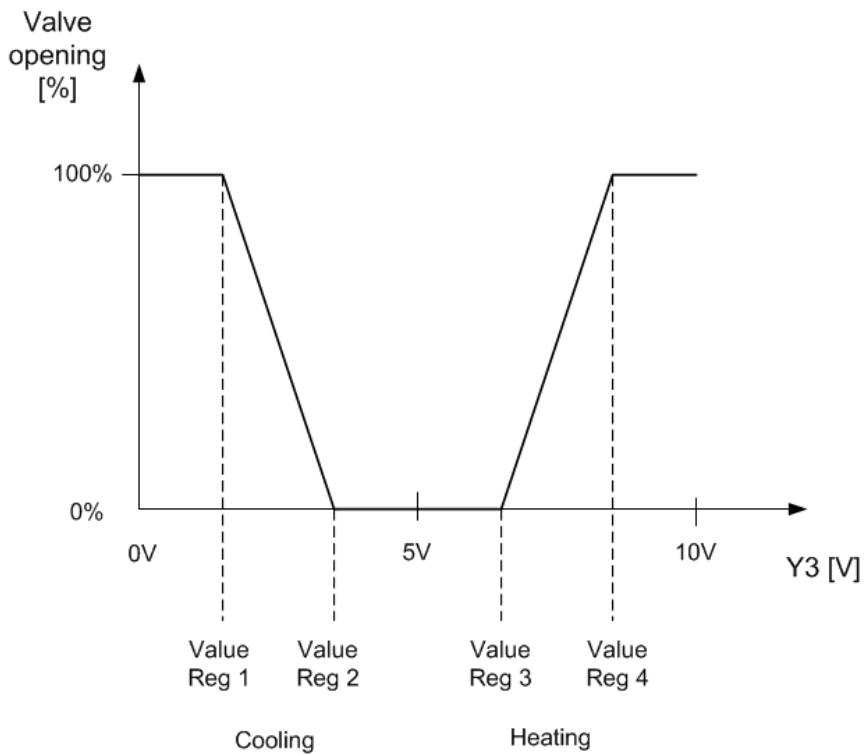

It is possible to adjust over 4 register values the voltage-level of the cooling and heating curve. 2 register are used to define the cooling curve 0-100% and 2 register are used to define the heating curve 0-100%.

[--- FW V1.12 ---]			
Inverting Y1..Y4	>	None	< >
Delay fan heating (*20 sec.)	>	0	< >
Delay fan cooling (*20 sec.)	>	0	< >
Delay E2 to K1/K2 on (*20 sec)	>	0	< >
Delay E2 to K1/K2 off (*20sec)	>	0	< >
6-ways valve 100% cooling	>	5	< >
6-ways valve 0% cooling	>	37	< >
6-ways valve 0% heating	>	68	< >
6-ways valve 100% heating	>	100	< >
Minimum valve cooling %	>	0	< >
Minimum valve heating %	>	0	< >
Set point minimum	>	16.0	< >
Set point maximum	>	28.0	< >

With this 4 adjustable registers it is possible to using a lot of different 6-way valve-types with the PCD7.L60x controllers.

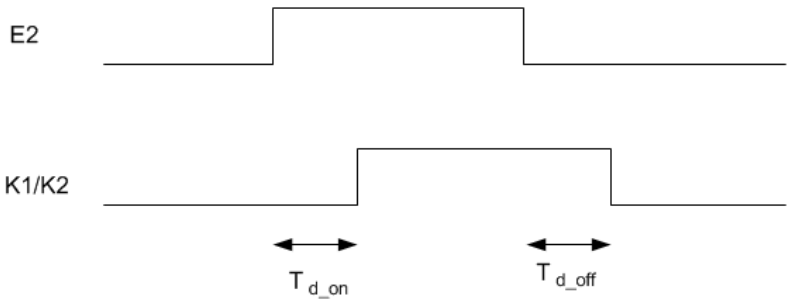This function can be activated in the section "Hardware":
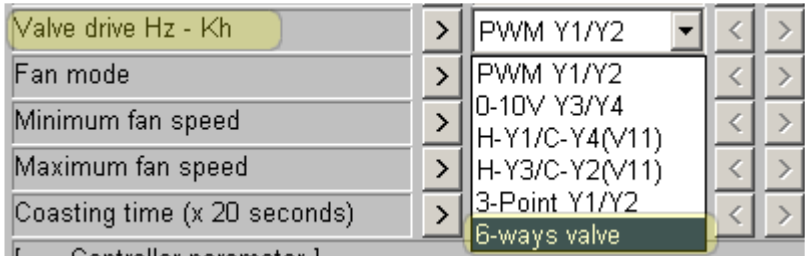
The 6-way regulation bullet-valve can be used for example in heating/cooling- or filter-system applications.

K1/K2 drive in function of E2

With the new SW version it is also possible to drive the K1/K2 relay in function of the E2 input with a variable delayed switch-on and delayed switch-off time.
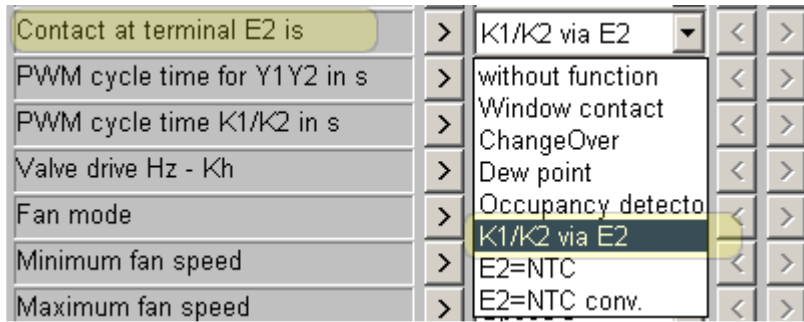
This function is for example particular interesting for "card reader" application in a Hotel.

There are 2 registers available for parameterize this delay-times in 20 seconds steps. The maximum value is 250 (83 minutes).
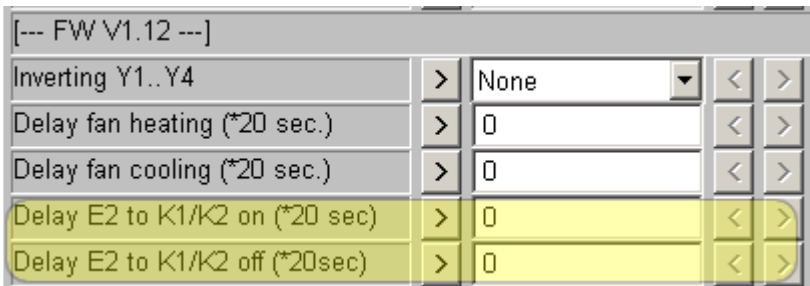
This function can be activated in the section "Hardware":

This function can be used for example as Card reader applications in Hotels.

Delayed activation of fan-speed

Now it is also possible to delay the activation of the fan and therefore are 2 separate parameters for heating and cooling usable.

This can increase the comfort feeling when the heating circuit is starting by avoiding unwanted cold air blow.

With that you can delay the starting of the fan for heating and cooling independent from each other and they are adjustable in 20 seconds steps.
The maximum value is 250 (83 minutes).
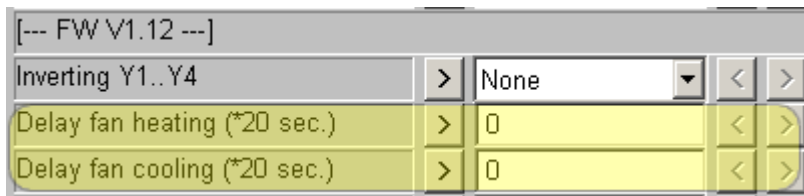
It gave one Exception: If you select in the config. FBox the "Application" to a mode with "El. H" (electrical battery) the parameter for heating will be forced to 0.

This function can be used to get preheated or precooled air from the fan.

Adjustable minimum valve output control

From this SW Version it is also possible to adjust the minimum value for the cooling- and the heating-output.

In some application this allows to have a significant quicker reaction time in the control loop.

There are 2 registers available in the "configuration FBox" to parameterize the minimum valve opening in % at start-up condition.

[--- FW V1.12 ---]				
Inverting Y1..Y4	>	None ▼	<	>
Delay fan heating (*20 sec.)	>	0	<	>
Delay fan cooling (*20 sec.)	>	0	<	>
Delay E2 to K1/K2 on (*20 sec)	>	0	<	>
Delay E2 to K1/K2 off (*20sec)	>	0	<	>
6-ways valve 100% cooling	>	5	<	>
6-ways valve 0% cooling	>	37	<	>
6-ways valve 0% heating	>	68	<	>
6-ways valve 100% heating	>	100	<	>
Minimum valve cooling %	>	0	<	>
Minimum valve heating %	>	0	<	>

In the "Room FBox" it is possible to parameterize the minimum valve opening in % in running condition.

| [--- FW V1.12 ---]				
Temperatur at terminal E (NTC)				
Minimum cooling %	>	0	<	>
Minimum heating %	>	0	<	>

This function can be used to get better reaction time for valves which open not until a defined value is passed.

Security function PCD7.L644

If the connection cable of the room operation unit is damaged or will be unplugged, there is now implemented a security function which prevent a regulation with undefined value.

When the PCD7.L644 operation unit is unplugged the regulation will continue normally with the last valid data for one hour. After this time it will be stopped.

The regulation restarts when the connection cable will be plugged in correct again.
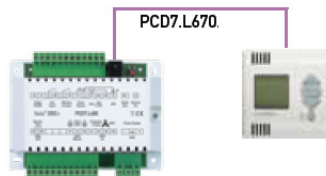
E2 configured as a temperature sensor input

With this new temperature input it is now possible to measure up to 3 different temperature values with on PCD7.L60x controller.

This can be very useful to measure and displaying additional (outside) temperature which is not used for the control loop.

The accuracy of this temperature measurement is not same high as with the Room operation unit (RJ9) or over the clamp "S".

Therefore for temperature regulation should be primarily used the Room operation unit (RJ9) or over the clamp "S".
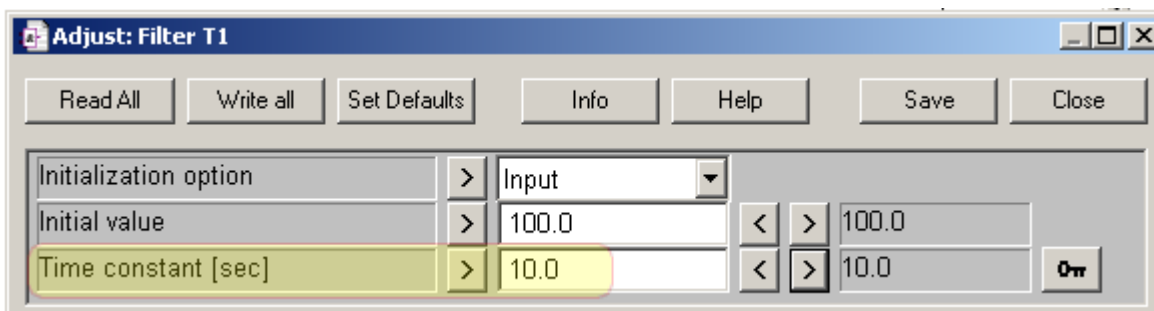
The Input E2 can only be used in the range from a NTC 5kOhm to a NTC 10kOhm temperature sensor.

To get a more stable value at lower temperatures (higher resistances) it should be used a filter-FBox (Filter T1)
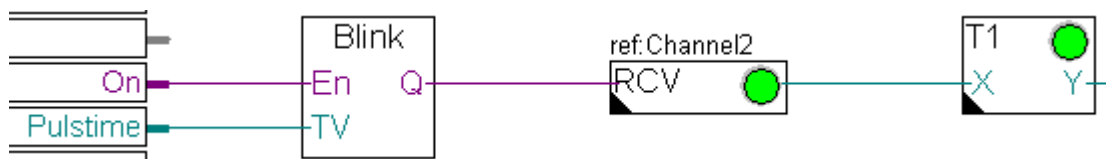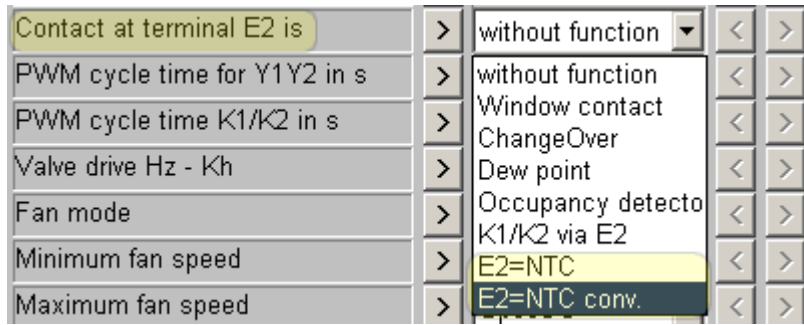
With the "receive integer" FBox it is possible to send the value from Register 69 to the "Filter T1" FBox.

The Filter "Time constant" should be set to 10 seconds to get a good result.

This function can be activated in the section "Hardware":

Contact at terminal E2 is	>	without function ▼
PWM cycle time for Y1Y2 in s	>	without function
PWM cycle time K1/K2 in s	>	Window contact
Valve drive Hz - Kh	>	ChangeOver
Fan mode	>	Dew point
Minimum fan speed	>	Occupancy detecto
Maximum fan speed	>	K1/K2 via E2
		E2=NTC
		E2=NTC conv.

The temperature value will be displayed in the RoomFBox in the section "FW V1.12" or it can be read out from register 69.

[--- FW V1.12 ---]					
Temperatur at terminal E (NTC)					0.0
Minimum cooling %	>	0	<	>	0
Minimum heating %	>	0	<	>	0