



# Tutorial for variable fan speed function

Bernhard Portner



**sbc**   
SAIA BURGESS CONTROLS

# New function in PCD7.L60x-1 Room Controller

## New PCD7.L60x-1 FW SV3.00 with variable fan speed function

PCD7.L60x-1 controllers to drive 0-10V controlled fan drives (electronically commutated motors controlled via Frequency Converter) in combination with a heating and cooling circuit

### Will be implemented in

PCD7.L601-1

PCD7.L603-1

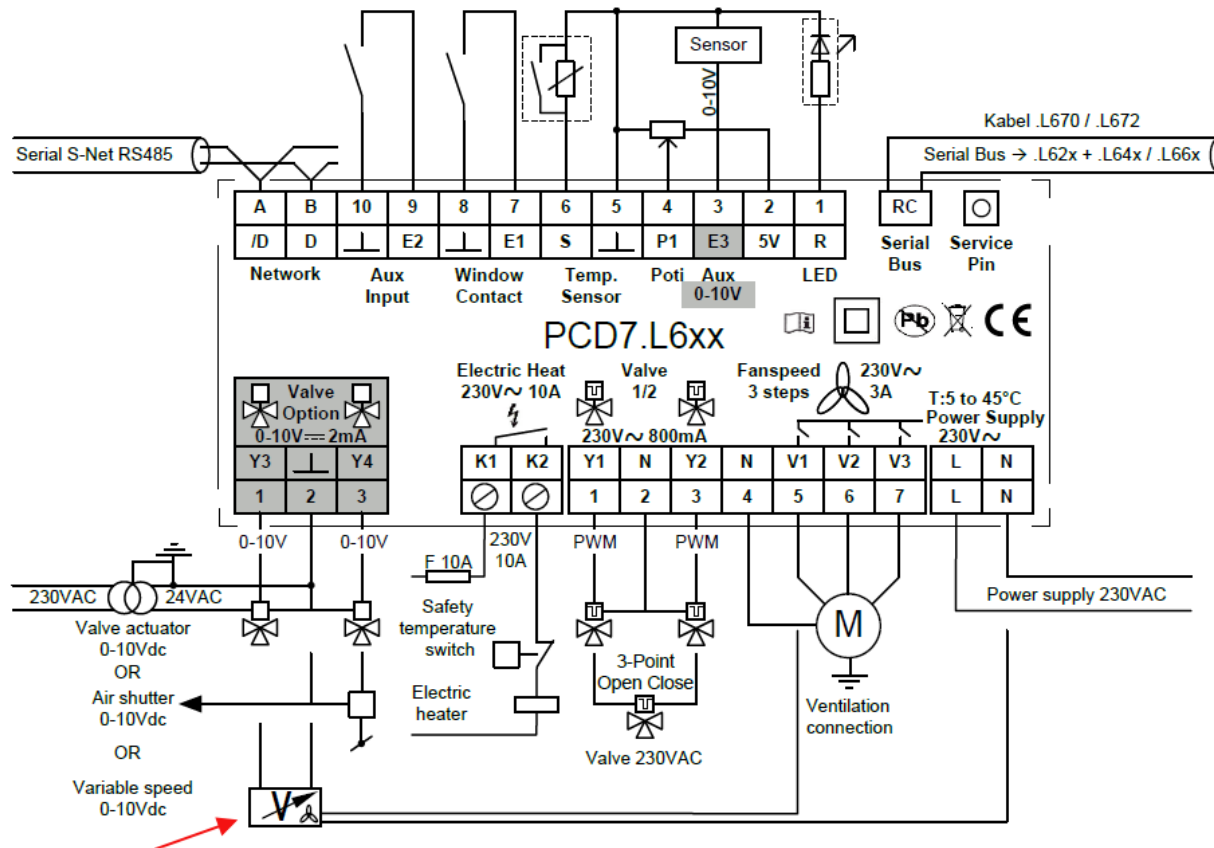
PCD7.L604-1



PCD7.L60x-1 now also for control of fan coils with variable fan speed

# Variable fan speed

## Wiring example for PCD7.L601-1:



This 230V output is activated and remains active (including during post ventilation delay) as the variable fan speed output is not zero.

# FBoxes

## New FBox

- [-] Room controller
  - [-] PCD7\_L60x
  - [-] PCD7\_L60x-1 from SV2\_11
  - [-] PCD7\_L60x-1 from SV2\_13
    - [-] Airquality
    - [-] Fan
      - [-] Fan Configuration
      - [-] Fan Room 3
      - [-] Fan Room Y
    - [-] HVC
    - [-] Init
    - [-] Light and SB
    - [-] Manual mode

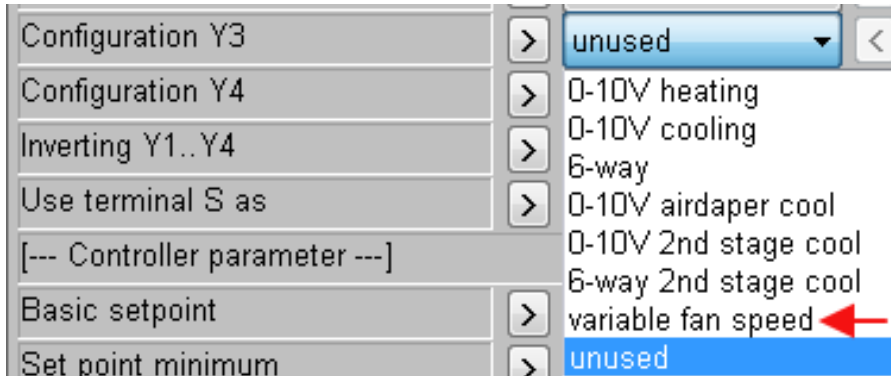
## Adapted FBoxes

- [-] Room controller
  - [-] PCD7\_L60x
  - [-] PCD7\_L60x-1 from SV2\_11
  - [-] PCD7\_L60x-1 from SV2\_13
    - [-] Airquality
    - [-] Fan
      - [-] Fan Configuration
      - [-] Fan Room 3
      - [-] Fan Room Y
    - [-] HVC
      - [-] HVC Config
      - [-] HVC Configuration +
      - [-] HVC Room
      - [-] HVC Room +
    - [-] Init
    - [-] Light and SB
    - [-] Manual mode

# Parameterization

## Activation of variable fan speed

### HVC config Fbox:



The power supply for the variable fan speed motor on the clamp V1 will be activated over the configuration of the OutputY3/Y4 as variable Fan Speed output.

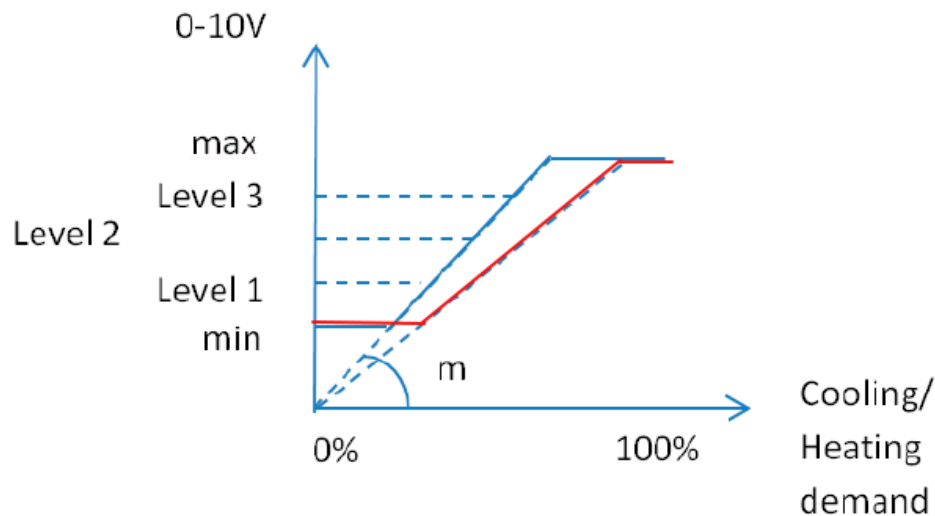
# Parameterization

## Proportionalband m

### Fan config Fbox:

[--- Variable fan speed ---]		
Proportionalband	> 1,0	< >
Minimum speed %	> 0	< >
Maximum speed %	> 100	< >

Variable Fan Speed output signal =  
proportional band  $m$  \* Heating or Cooling Regulation Loop output demand



# Parameterization

## Override by room control unit

Over the Fan config FBox it is possible to define the output value for the 3 steps:

### Fan config Fbox:

--- User override (%) ---				
Speed 1	>	33	<	>
Speed 2	>	66	<	>
Speed 3	>	100	<	>

# Parameterization

## Energy saving and noise reduction management

### Fan config Fbox:

User override is ▾ < > ----- On

User override is always active

Return to auto-mode when unoccupied

Remains in auto-mode but user override limits maximum speed

Mix of the previous 2

If a user fan speed level is selected, depending of this parameter, the effective fan speed will:

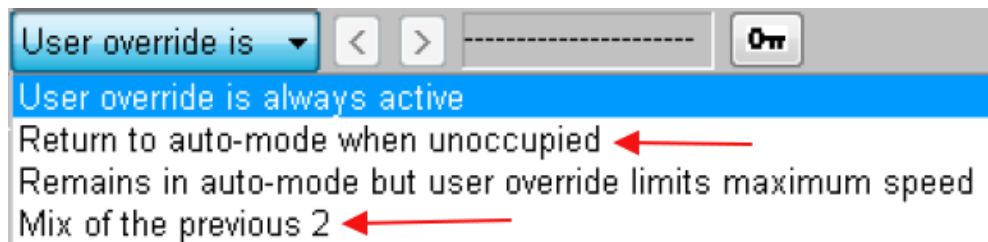
FBox entry	Value	Description
«User override is always active»	0	Stay always at the user selected fan speed level → full user control
«Return to auto-mode when unoccupied»	1	Go back to the Auto mode when the room occupancy switch to unoccupied → Energy saving
«Remains in auto-mode but user override limits maximum speed»	2	Stay in Auto mode but use user selected fan speed level as a maximum value → Noise reduction
«Mix of the previous 2»	3	Combined effects of values 1 & 2 → mix of energy saving and noise reduction.



# Parameterization

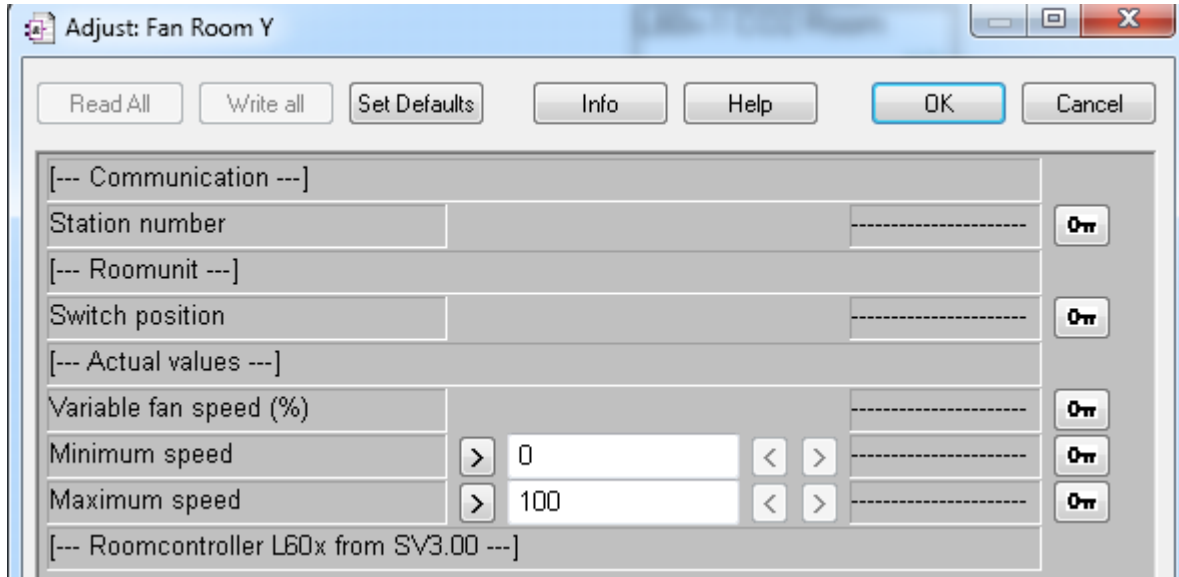
## Restriction to Energy saving and noise reduction management

Mode 1 and 3 should not be used for PCD7.L642 (with mechanical fan speed selector), because it can not display the changed mode (-> auto)



# Actual values

## Fan Room Y Fbox:



To display the actual fan-speed values and set the min. and max. fan-speed level

# Compatibility

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## Compatibility to previous PCD7.L60x-1 FW version

- The controllers with FW version SV3.00 are compatible with the current PCD7.L60x-1 controllers as of FW version SV2.11.
- When replacing a defective unit for which the new controller functions are not needed, the existing FBoxes may still be used.

## FBox Library

- When using the PCD7.L60x-1 room controller with FW SV3.00, for which the variable fan speed function is to be used, the new FBox-Library (version 2.6.610 or higher) is needed, which is available on the Support page.