sbc
SAIA BURGESS CONTROLS

Saia® PCD7L system
Rumsregulatorer

saia-burgess

🌱 22.2°C

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A3

Dedicated room controller

Room controllers with a preconfigured regulation and control program which can be comprehensively parameterised via network communication and tailored to meet individual needs. Fully independent functionality is still guaranteed even without a bus connection.

1 Automation stations

2 HMI Visualization and operating

3 Dedicated room controller

4 Consumption data acquisition

5 Cabinet components

3.1 **Project planning and engineering**

In addition to the freely programmable controllers, the range of products for room-specific applications also includes dedicated Saia® room controllers.

Key features

▸ **Application software included on delivery**
The room controllers can be parameterised via network communication and fully independent functionality is still guaranteed without a bus connection.

▸ **Efficient integration for suitable applications**
Use of HVAC applications in zones and room automation systems which adjust the I/O mix and integrated applications precisely to the specific application. As the room controllers are not freely programmable, unsuitable applications should be realized with a solution which includes the «PCD1.Room».

▸ **S-Bus room controllers are integrated in the Saia® world**
The Saia® FUPLA (FBoxes) allow engineering in the standard Saia® environment and make use of the benefits of the Saia® PG5 Controls Suite.
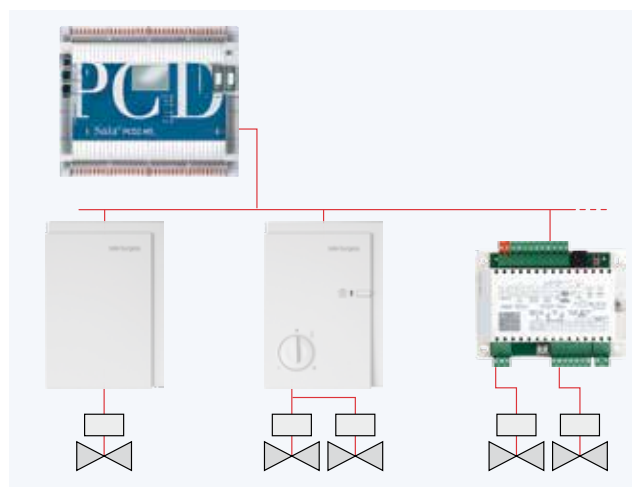
Parameterised via bus with Saia® PG5 Controls Suite

Engineering information

Commissioning the Saia® S-Bus and Lᴏɴ room controller

If the room controller is used as part of a Saia® S-Bus network, addressing and configuration is carried out by the Saia® PCS/PCD-Master using the Saia® PG5 Controls Suite. Practical FBoxes simplify commissioning.

The FBox setup and room controller service pin are used for the addressing process. It is recommended pre-addressing the room controller in the office.

If the room controller is used in an Lᴏɴ network, the configuration is performed using an LᴏɴWᴏʀᴋs® tool such as the NL220 or LᴏɴMᴀᴋᴇʀ®.

Integrating the Saia® S-Bus room control system with S-Engineering using function modules (FBoxes)

▸ Programming and debugging environment are combined in the same tool.

▸ Complex user programs are created by simply placing and linking FBoxes without the need for in-depth programming knowledge.

▸ Online visualisation of the process variables and online settings of the parameters direct in the FBoxes simplifies the commissioning process.
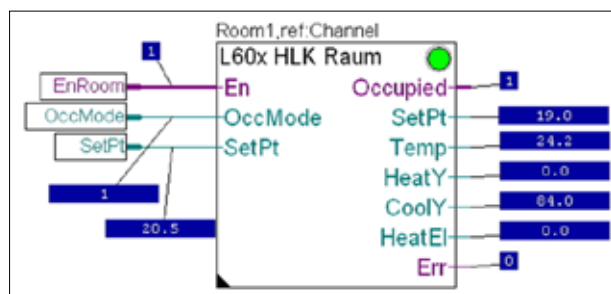
Online visualisation of the HVAC room FBox.

▸ The parameter windows of each of the FBoxes can be used to display online and directly adjust all setpoint values, actual values and statuses of the controller.

▸ Detailed, context-sensitive FBox information, clear descriptions and graphical representations in the function chart editor (FUPLA) give clear, easy to read programs.

▸ It is possible to switch all control parameters to a control system using the PCD controller, and thus reduce running costs.

Efficiency in project realisation

The FBoxes shorten the «Engineering duration» and simplify the commissioning process since the configuration data can be sent via the communication interface to up to 250 controllers in just one single step.
The automatic detection of the communication speed also simplifies the commissioning process.

Multiple application possibilities

Application programs for various types of systems are already preprogrammed in the controller and can be activated using the parameterisation.

Parametrisable application programs

If the delivered application does not meet the project requirements, the PG5 FBoxes or S-Web can be used to activate and parameterise the application program for various types of system. The application software already contains several user programs for systems such as combined radiators/cooling ceiling systems.

Configurable using the PG5 Controls Suite

The control parameters (PI) for the specific applications can be adjusted and optimised.

Fully independent functionality guaranteed even without bus connection

Once the application programs in the controller have been parameterised, it is possible to run a fully independent operation without a PCD. This means that the controller will continue to operate uninterrupted even if communication with the Saia® PCD automation station is disrupted. All of the set configuration parameters are written to the EEPROM and remain stored there even without operating voltage.
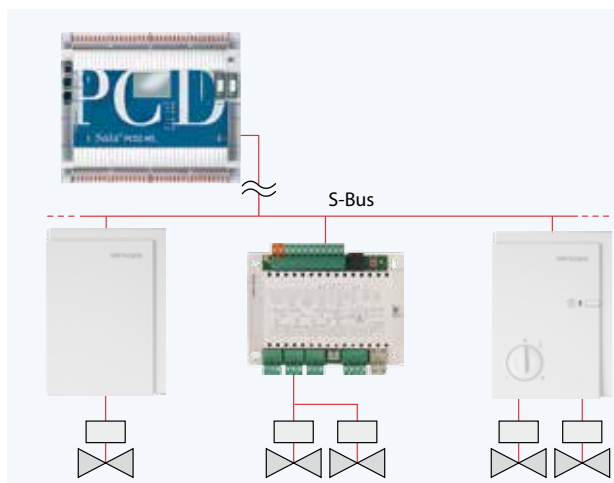
Functionality is also guaranteed in the event of a bus fault.

Saia® S-Web

WebEditor macros simplify the efficient setup process of web-based commissioning, operation and service operating concepts.
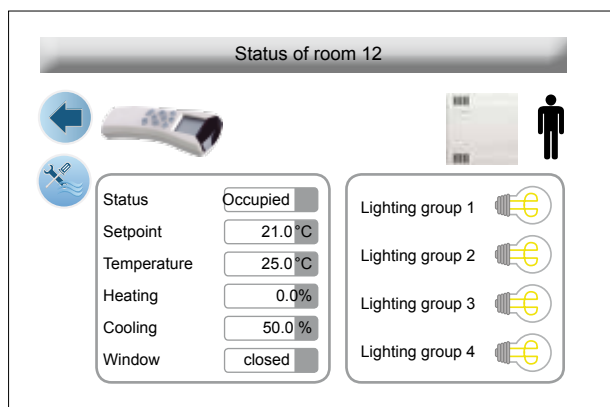
Visualisation and operation of the room parameters using the web server

This makes local operation using a PC workstation possible. The password protected control screens are loaded directly from the web server integrated in the automation station and displayed.
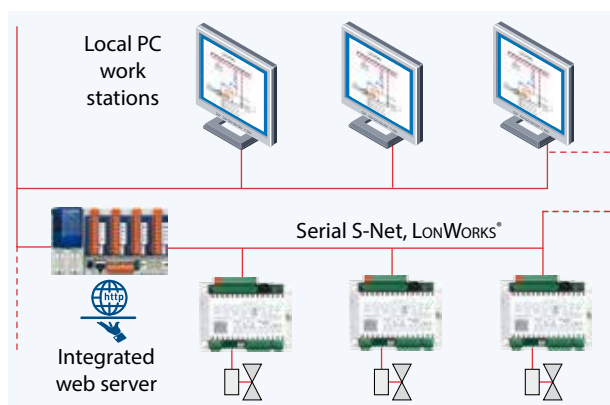
Local user prompts from PC workstation.

1 Automation stations
2 HMI Visualization and operating
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Project planning information

Bus terminating resistor and bus cable for serial S-Net (S-Bus/RS-485)

S-Bus cables must be installed as a line. Stub lines are not permitted and both ends of the cable must be terminated with a resistor (approx. 120 Ω) between the D and /D cables. The best signal quality is achieved using an active bus connection with a resistor to +5V and ground.

Schematic illustration of an S-Bus/RS-485 bus

> **!** With S-Bus controllers, the 111 configuration register can be used to activate the integrated active bus termination resistor or an external PCD7.T161/2 termination box can be used.
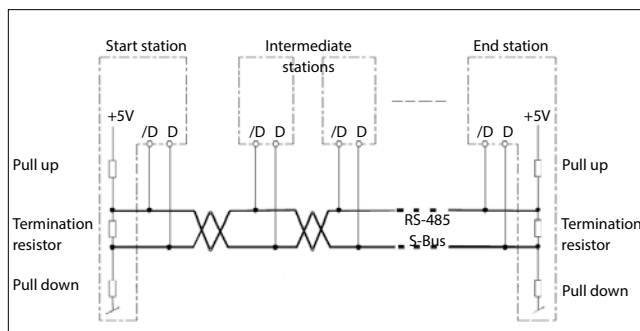> Bus cable: a 2-strand twisted and shielded bus cable with cable strands of at least 0.5 mm² must be used. For additional information please refer to the S-Bus manual 26/739 (available on www.saia-support.com).

Maximum number of room controllers

The maximum number of room controllers which can be managed by a PCS/PCD system depends on the maximum electrical load of the serial S-Net, the bus system cycle time and the resources used by the functional objects.

PCD7.L79xN
Resources: max. 600 program lines per FBox, max. 40 registers per FBox, max. 16 flags per FBox. 1 DB
Bus cycle timer per controller: approx. 15 ms

PCD7.L60x-1 (with all FBoxes maximum removable)
Resources: max. 55 registers, max. 60 flags
Bus cycle timer per controller: approx. 24 ms

At a communication speed of 38 400 baud, the communication time for a controller is approx. 15 ms, or 24 ms. If the PCD program requires longer than 15 ms or 24 ms per PCD cycle, this value must be used as the basis of the calculation used to estimate the communication cycle. For additional information please refer to chapter 1.1.
Communication cycle = «15 ms or 24 ms per controller» × «Number of controllers».

> **Recommendation:** max. 4 S-Bus interfaces with up to 50 room controllers per interface so that in the majority of cases the resources are sufficient and the communication cycle time remains at < 2 seconds.

Types of use and modes of operation

The function of the room controller is based on various types of use or modes of operation.
Each of the selectable modes of operation can be assigned different control parameters.

Safety mode/Frost protection
No heating or cooling energy is fed into the room. This state is desirable if a window is open. The room controller keeps the room temperature above the preset frost line of 8° C.

Non-use/reduced
Reduced operation mode which is used when the the room is not occupied for a long period. In this operation mode, the specified setpoint value offset is not active.

Standby
The room is prepared for use but no presence has yet been registered in the room. As long as the room is not classified as occupied by the presence function, the room controller keeps the room temperature within the specified limits at the standby temperature.

Use/Comfort
The room is used and should be brought to the comfort temperature. This state can be reached by pressing the presence button, reacting to an external presence detector or a parameter on the network side.
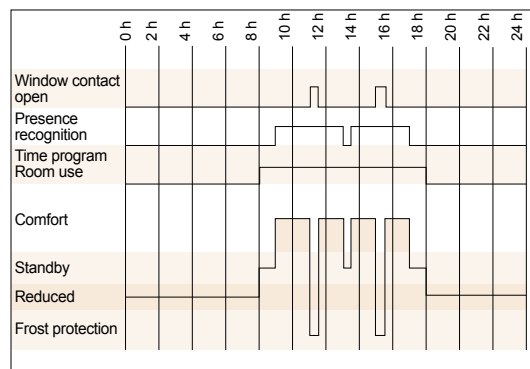
Example: Operating mode switchover

Control parameters

The adjacent illustration depicts a selection of the most important adjustable control parameters of a PCD7.L60x-1 controller. Other parameters such as the reset times, threshold values, etc. can also be adjusted.

Example of a selection of PCD7.L60x-1 control parameters.

Control devices and compact room controller installation information
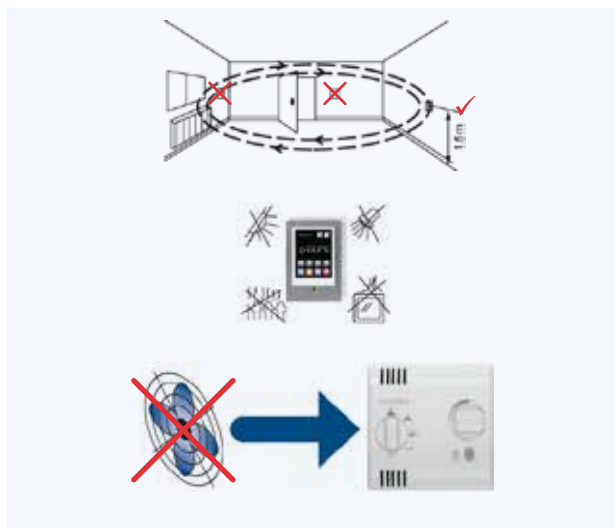
▸ Do not install the control device/compact room controller near windows or doors due to potential draughts. The recommended position is on an opposite wall at a height of approx. 1.5 m.

▸ Do not install it near to heat sources such as heating systems, fridges, lights, etc. Avoid direct sun light or direct light from strong lamps.
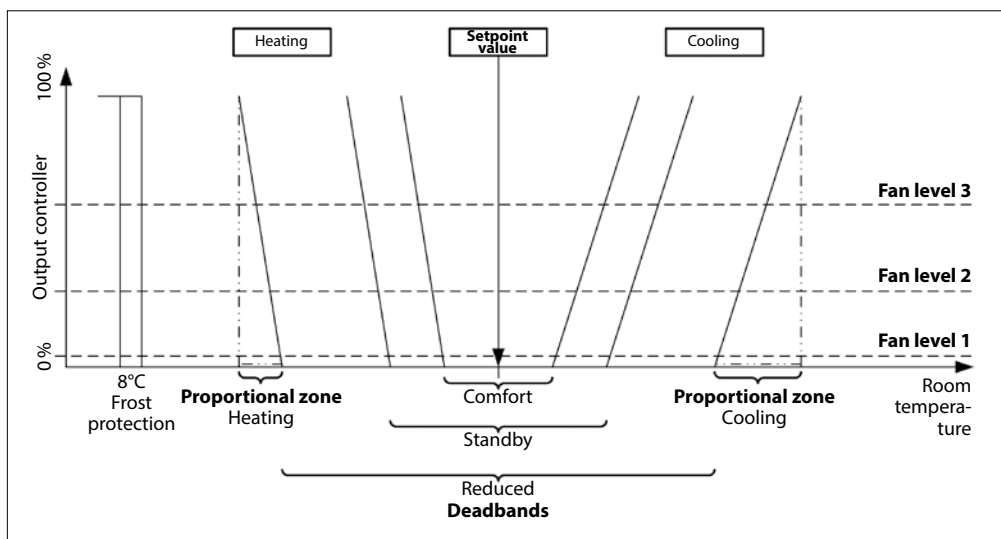
▸ Do not located the control device/compact room controller in the path of draughts from climate control or ventilation systems.

Planning reserves

If the predefined application is insufficient, free outputs can be also be controlled for fully independent function directly via the Saia® PCD program using the S-Bus.

The room controller can also be configured as a single RIO unit (Remote Input Output) by completely switching off the fully independent function. The Saia® PCD station assumes control of al the inputs and outputs.

The resulting dependency of the availability of the S-Bus communication and the increase in the S-Bus cycle time should be taken into account during the planning stage.
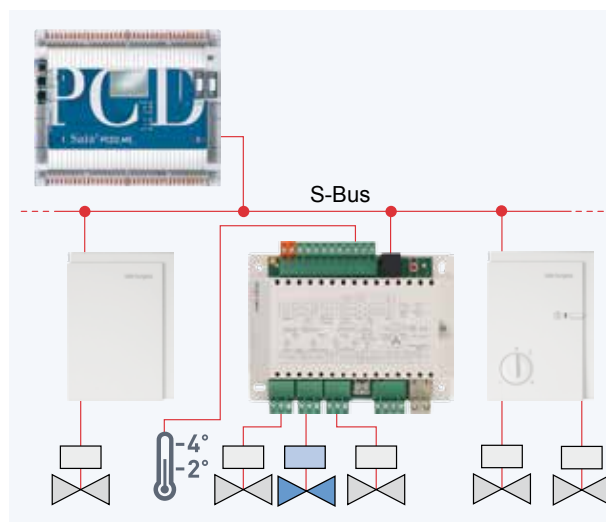
Control of free outputs via Saia® PCD

3.2 **PCD7.L79xN compact room controller**

The series of compact room controllers is particularly suitable for simple systems which involve heating and/or cooling.
The PCD7.L79xN series room controllers include the control of presence and setpoint values, the room temperature sensor and the valve or flap control in a single housing. The preconfigured regulation and control program is part of the basic software and can be parameterised via the network communication and adjusted to the individual requirements.

Saia®**S** Bus
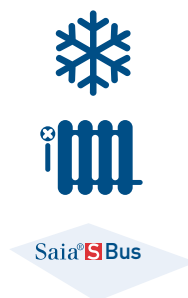
Parameterised via bus with S-Engineering tools

Efficient installation

The compact room controller can be installed directly on a wall or in a flush-mounted box. A junction box is not required, which also simplifies the installation process.
Thanks to the plug-in housing (electronics) on the mounting plate with the terminals, it is easy to exchange the device without complex and fault-prone rewiring.

84 mm
117 mm

Cable entry

Connection terminals
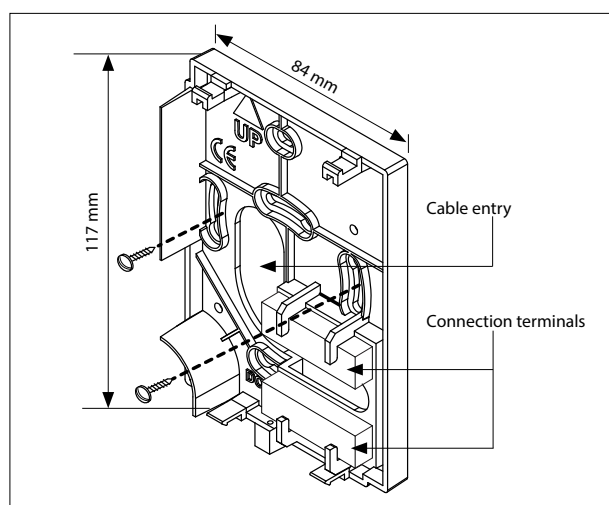
Mounting plate

Terminal configuration (example of a PCD7.L793N)

Supply voltage
24 VAC

2× TRIAC outputs 24 VAC

PCD7.L793N

2× analogue outputs
0…10 VDC

Button for configuring the S-Bus addresses

2× digital inputs for isolated contacts
– E1 window contact
– E2 parameterisable function

Serial S-Net

1× analogue input
0…10 VDC

A	1	2	3	4	5	6	7	8
	Y2	⊥	Y1		24V	Y3	⊥	Y4

PWM PWM 24VAC 0-10V 0-10V

24V 800 mA   Power Supply 24VAC   0-10V 2mA

B	S-Bus RS485		Aux. 0-10V		Window Contact		Aux Input	
	/D	D	⊥	E3	⊥	E1	⊥	E2
	8	7	6	5	4	3	2	1

Service Pin

Serial S-Net RS485

Sensor 0-10V

Product overview of the PCD7.L79xN series

I/O	PCD7.L790N	PCD7. L791N	PCD7. L792N	PCD7. L793N
Digital inputs	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional
Digital outputs (PWM)	1 × Triac 24 VAC	2 × Triac 24 VAC	2 × Triac 24 VAC	2 × Triac 24 VAC
Analogue inputs	---	---	---	1 × 0…10 VDC
Analogue outputs	---	---	---	2 × 0…10 VDC
Integrated hardware				
Internal temperature sensor	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ	NTC 10 kΩ
Setpoint value setting	---	---	Yes	Yes
Presence button with LED	---	---	Yes	Yes
Actuated valve types and drives (Count of independent)				
Digital output 24 VAC	1 × thermal valve	2 × thermal valve or 1 × 3-point valve	2 × thermal valve or 1 × 3-point valve	2 × thermal valve or 1 × 3-point valve
Analogue output 0...10 VDC	---	---	---	2 × 0…10 VDC valves or 1 × 6-way valve or 1 × VAV controller
Applications				
2 pipes for heating, cooling or changeover	Yes	Yes	Yes	Yes
2 × 2 pipes for heating, cooling or changeover	---	Yes	Yes	Yes
4 pipes for heating and cooling	---	Yes	Yes	Yes
RIO	Yes	Yes	Yes	Yes

Application examples:

Radiator/cooling ceiling, underfloor heating/cooling ceiling combination (or as individual units), changeover operation (e.g. for cooling/heating ceiling)

General data

|	
Supply voltage	24 VAC / requires an external electrical series fuse
Temperature detection internal sensor	NTC 10 kΩ / 0…40 °C
Type of control	P or PI control
Communications interfaces	Saia® S-Bus / RS-485 interface / data mode / 4 800, 9 600, 19 200, 38 400, 115 200 bit/s with automatic detection on restart. Bus termination resistors are installed by the customer - integrated in the PCD7.L79xN and activated by the software.
Power consumption:	1.5 W without actuators
TRIAC output specification	24 VAC /800 mA maximum total current for both TRIAC
TRIAC direction of operation	Invertible direction of operation / default settings: Normally open
Output specification 0…10 VDC	0…10 VDC / max. load 2 mA
Housing	Plastic, white, surface installation, protection class IP20
Dimensions	84 × 117 × 31 mm (W × H × D)
Temperature range	5…45 °C, 80% r.H.

Manual and FBox library

Web code
scen13107

3.3 Saia® PCD7.L6xx combinable room control system with S-Bus and LᴏɴWᴏʀᴋs®

For multi-section room automation including air quality control and light/shade.

PCD7.L644

PCD7.L645
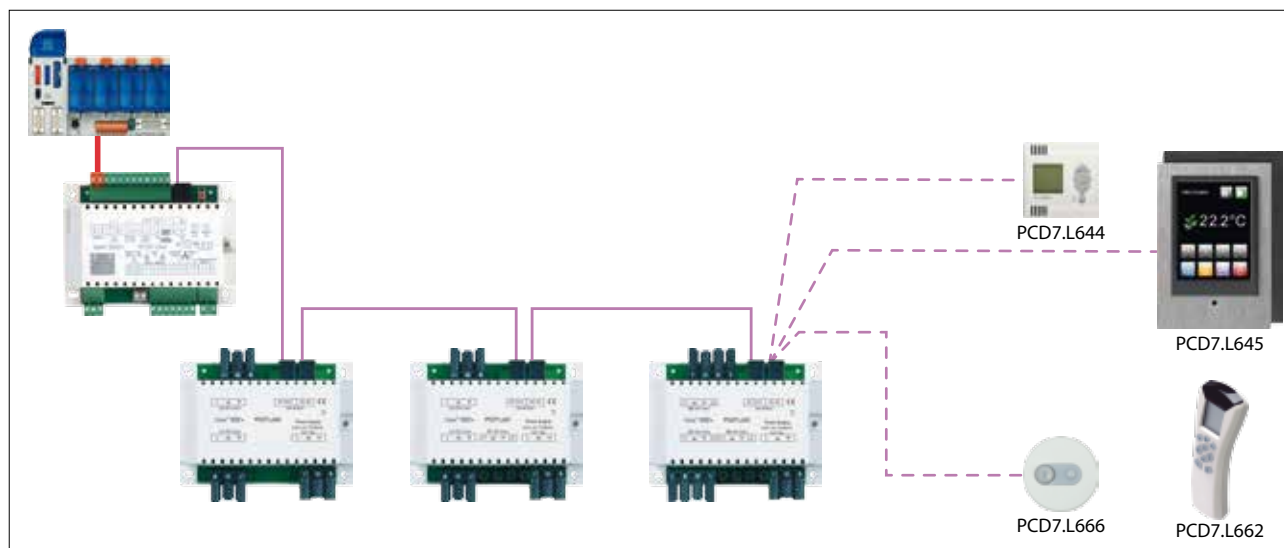
PCD7.L666

PCD7.L662

The PCD7.L6xx combinable room control system based on serial S-Net or LᴏɴWᴏʀᴋs® networks is used for HVAC applications primarily in fan coil devices, radiator/cooing ceiling combinations or variable air volume systems (VAV). The extension module for light and shade allows the electrical system to be conveniently integrated in the room automation solution. The various room control unit options make it possible to generate individual operating concepts.

Features
‣ Comprehensive range of applications possible using parameterisable application program
‣ Room controller for communication via serial S-Net or LᴏɴWᴏʀᴋs®
‣ Extension module for the electrical system
‣ Can be combined with various room control unit options
‣ The Lᴏɴ room controllers fulfil the "Fan Coil Unit Object (8020)" application profile of LᴏɴMᴀʀᴋ®.

Control accuracy eu.bac certified

This "european building automation controls association" certificate certifies that the PCD7.L616 room controller saves more energy than required by the European standards.
This certification has been issued for a 2- and 4-pipe fan coil application and certifies the controller has a temperature control accuracy (CA) of at least 0.2 K, which is a very accurate value compared to the room controllers of other manufacturers.

Certificate on eu.bac homepage

Webcode scen13108

eu.bac **Cert** european building automation controls association

Product overview: S-Bus and LONWORKS® room controller

System catalogue PCD7 product line	S-Bus				LonWorks				eu.bac Cert
Inputs	**L600-1***	**L601-1***	**L603-1***	**L604-1***	**L610**	**L611**	**L614***	**L615***	**L616***
Digital inputs	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional	1× window contact and 1× multi-functional	4× multi-functional	4× multi-functional	4× multi-functional	4× multi-functional	4× multi-functional
Operating state response	Yes	Yes	Yes	Yes	Yes	Yes	Yes	---	Yes
Analogue inputs 0…10 VDC	---	1× 0…10 VDC	1× 0…10 VDC	1× 0…10 VDC	---	1× 0…10 VDC	1× 0…10 VDC	2× 0…10 VDC	1× 0…10 VDC
Temperature sensor	1× NTC 10 kOhm	1× NTC 10 kOhm	1× NTC 10 kOhm	1× NTC 10 kOhm	1× NTC 10 kOhm	1× NTC 10 kOhm	1× NTC 10 kOhm	2× NTC 10 kOhm	1× NTC 10 kOhm
Setpoint value adjuster (10 kOhm potentiometer)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	---	Yes
Outputs	**L600-1***	**L601-1***	**L603-1***	**L604-1***	**L610**	**L611**	**L614***	**L615***	**L616***
Digital outputs TRIAC (total max. 800 mA)	2× 230 VAC	2× 230 VAC	2× 24 VAC	2× 24 VAC	2× 230 VAC	2× 230 VAC	2× 24 VAC	4× 230 VAC	2× 230 VAC
Relay outputs 3-level	1× 230 VAC (3 A)	1× 230 VAC (3 A)	1× 230 VAC (3 A)	1× 230 VAC (3 A)	1× 230 VAC (3 A)	1× 230 VAC (3 A)	1× 230 VAC (3 A)	---	1× 230 VAC (3 A)
Relay outputs 1-level	1× 230 VAC (10 A)	1× 230 VAC (10 A)	1× 230 VAC (10 A)	1× 230 VAC (10 A)	1× 230 VAC (10 A)	1× 230 VAC (10 A)	1× 230 VAC (10 A)	2× 230 VAC (10 A)	1× 230 VAC (10 A)
Analogue outputs (total max. 2 mA)	---	2× 0…10 VDC	2× 0…10 VDC	2× 0…10 VDC	---	2× 0…10 VDC	2× 0…10 VDC	2× 0…10 VDC	2× 0…10 VDC
Analogue outputs with additional 24 VAC power supply[1]	---	---	Yes	Yes	---	---	Yes	---	—
Extension modules	**L600-1***	**L601-1***	**L603-1***	**L604-1***	**L610**	**L611**	**L614***	**L615***	**L616***
Light modules	Yes	Yes	Yes	Yes	---	Yes	---	Yes	---
Shade modules	Yes	Yes	Yes	Yes	---	Yes	---	---	---
Possible applications	**L600-1***	**L601-1***	**L603-1***	**L604-1***	**L610**	**L611**	**L614***	**L615***	**L616***
Electrical heating only	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2 pipes for heating or «Change over»	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2 pipes for cooling or «Change over» with electrical heating	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4 pipes for heating and cooling	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4 pipes for heating and cooling and electrical heating (secondary)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4 pipes for heating and cooling and electrical heating (primary)	---	---	---	---	Yes	Yes	Yes	Yes	Yes
2 × 2 pipes for heating, cooling or changeover	Yes	Yes	Yes	Yes	---	---	---	---	---
RIO	Yes	Yes	Yes	Yes	---	---	---	---	---
Direct control of outputs	---	---	---	---	Yes	---	Yes	---	Yes
Special functions	**L600-1***	**L601-1***	**L603-1***	**L604-1***	**L610**	**L611**	**L614***	**L615***	**L616***
Air quality control (CO_2)	Yes	Yes	Yes	Yes	---	---	Yes	---	Yes
Master / Slave	Yes	---	---	Yes	---	---	---	---	---

Controlled valves and required I/O

Thermal valve:	1 digital output (Triac PWM)
0…10 V valve:	1 analogue output (0…10 VDC)
3-point valve:	2 digital outputs (Triac PWM)
6-way valve:	1 analogue output (0…10 VDC) ➡ can only be connected to one 6-way valve

Controlled motors and required I/O

VAV controller:	1 analogue output (0…10 VDC)
3-level fan:	1 relay output 3-level
Fan with variable rpm:	1 analogue output (0…10 VDC) ➡ with PCD7.L614…L616 devices only
Electric heating:	1 relay output 1-level

Application examples: Fan coil, chilled beam, air quality control (combined with heating and second level cooling (radiator/cooling ceiling-, underfloor heating/cooling ceiling combination, changeover operation (e.g. for cooing/heating ceiling), VAV

Supply voltage: 230 VAC except PCD7.L603-1 ➡ 24 VAC

[1] PCD7.L6x4-1: The total power consumption of the valve must be max. 7 W.   *In preparation, see chapter C2 «Product status»

Side tabs:
1 Automation stations
2 HMI Visualization and operating
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Terminal configuration (example of a PCD7.L601-1)

2× digital inputs for isolated contacts
– E1 window contact
– E2 parameterisable function

Analogue room control unit or additional temperature sensor NTC 10 kOhm

1× analogue input 0…10 VDC

Internal data bus to connect digital room control devices or extension modules

Serial S-Net

Button for configuring the S-Bus addresses

Supply voltage 230 VAC

2× analogue outputs 0…10 VDC

1× relay output

2× TRIAC outputs 230 VAC

Outputs for 3-level fan 230 VAC

Technical data

TRIAC output specification	10 mA…800 mA, maximum total current of both TRIAC
Current consumption	Without actuator approx. 100 mA / requires an external electrical series fuse
Protection degree	IP 20
Dimensions W x H x D	132 × 95 × 45 mm
Temperature range	5…45 °C, 80 % r. H.

Communication with S-Bus

Interface	RS-485, max. cable length of bus cable depends on baud rate, under ideal conditions up to max. 1200 m
Transmission rate	4800, 9600, 19 200, 38 400, 115 200 bit/s with automatic detection on restart
Log	Saia® S-Bus data mode (slave) Bus termination resistors have to be installed by the customer - in case of the L60x-1 the are integrated and can be activated by software.

Communication with LonWorks®

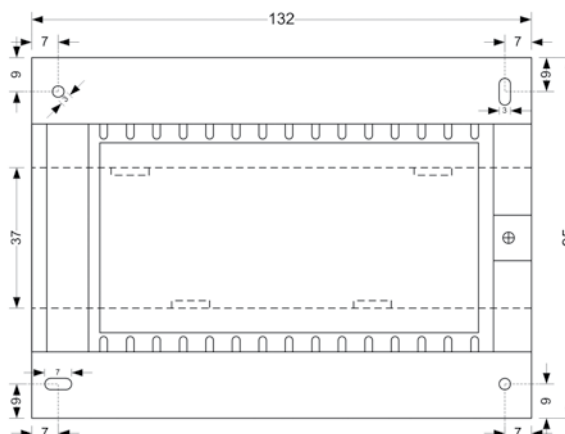| Interface	FTT 10a
Transmission rate	78 kBit/s
Topology	Free topology max. 500 m, bus topology max. 2700 m
Number of Lon nodes	max. 64 per segment, over 32 000 in a domain / as per LonMark® 8020 profile

Dimensions for:

▸ PCD7.L60x
▸ PCD7.L61x
▸ PCD7.L62x

Installation:

▸ On 35 mm cap rail
▸ Or with min. 2 × Ø 3 mm screws on an even surface

Manuals and FBox library Webcode scen13110

Light and shade module for extending the room controller

Where there are several extension modules of the same type, for each room controller the same outputs can be controlled in similar groups.

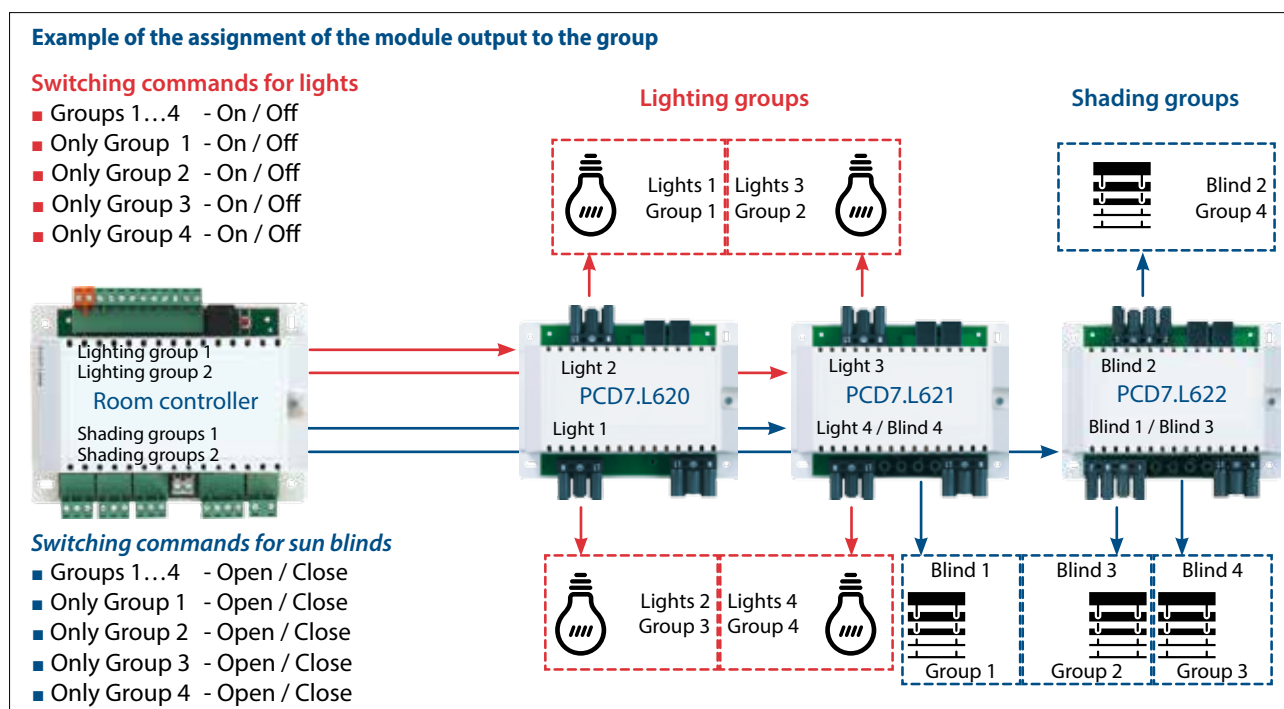|	PCD7. **L620**	PCD7. **L621**	PCD7. **L622**	PCD7. **L623**	PCD7. **L650**
Light outputs, 1 relay per output	2×230 VAC, 5 A*				---
Motor outputs, 2 relays per output		1× 230 VAC, 5 A*	3× 230 VAC, 5 A*	2× 24 VAC, 650 mA	---
Supply voltage	230 VAC				via RC-Bus
Max. current consumption via supply terminal	10 A			650 mA	---
Isolated contact inputs	---	---	---	---	8
RC-Bus activation	•	•	•	•	•
Protection degree	IP 20				
Dimensions	132 × 95 × 45 mm				
Temperature range	5…45 °C, 80 % r. H.				

* 5 A on AC1 | 3 A on AC3.
 Start current < 60 A for max. 2 ms.
 Supplied without connector. Informations about the numbers of Wieland are available on www.saia-support.com.

Light and shade in groups

The light and shade extension modules are controlled using group commands. Four* independent groups for light and shade are available per controller. Each output can be assigned to one or more groups. The light groups can be switched on/off together or separately. The blinds of the shade groups can likewise be raised or lowered independently of one another.

* with PCD7.L644, PCD7.L660 and PCD7.L662 / with PCD7.L650 only two controllable groups

Example of the assignment of the module output to the group

Switching commands for lights
- Groups 1…4   - On / Off
- Only Group 1 - On / Off
- Only Group 2 - On / Off
- Only Group 3 - On / Off
- Only Group 4 - On / Off

Switching commands for sun blinds
- Groups 1…4   - Open / Close
- Only Group 1 - Open / Close
- Only Group 2 - Open / Close
- Only Group 3 - Open / Close
- Only Group 4 - Open / Close

Shading information

The shade outputs of the PCD7.L62x module are suitable for controlling sunblinds, however, the blind slats can only be rotated within a very limited range of accuracy.
The rotation stages of the blind slats can only be parameterised by using the PCD7.L62xN modules in combination with new controller firmware. These modules are under development, see chapter C2 "Product status"

Accessories

| PCD7.**L672**	Room controller connection cable / extension module RJ-11 / RJ 9, 0.3 m
PCD7.**L672-10**	Room controller connection cable / extension module RJ-11 / RJ 9, 10 m
PCD7.**L672-50**	Room controller connection cable / extension module RJ-11 / RJ 9, 50 m

3.4 Operation systems for combinable room control system PCD7.L6xx

**Individual operating concepts can be implemented using the combination room control system:**

▸ Single connection via the internal RC-Bus to the RJ9 connector
▸ LᴏɴWᴏʀᴋs® room control unit of external manufacturers via Lᴏɴ-Bus
▸ Web-based room control unit via HTTP
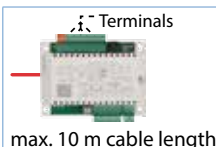
	PCD7. **L630**	PCD7. **L631**	PCD7. **L632**
Analogue room control unit — max. 10 m cable length			
Temperature sensor	NTC 10 kΩ		
Setpoint value adjuster	---	Poti 10 kΩ	linear	
Presence button	---	---	Contact to ground
Response	---	---	LED

i̅ Terminals
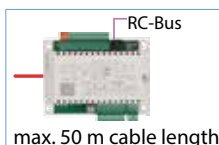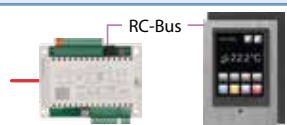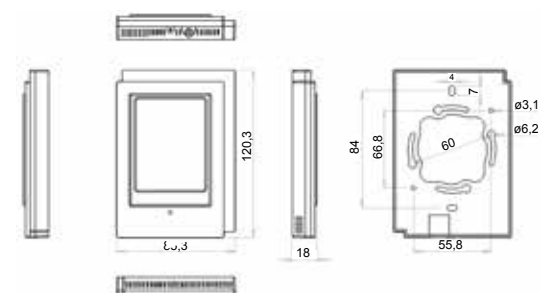
	PCD7. **L640**	PCD7. **L641**	PCD7. **L642**	PCD7. **L644**
Digital room control units — max. 50 m cable length				
Temperature sensor	•	•	•	•
Setpoint value adjuster	•	•	•	•
Presence button	---	•	•	•
Response	---	•	•	•
Fan control	---	---	•	•
Display menu for: HVAC functions	---	---	---	Parametrisable
Light and shade	---	---	---	Parametrisable

RC-Bus

Dimensions and installation options:
PCD7.L63x, PCD7.L64x, PCD7.L651, PCD7.L663
Housing colour: RAL 9016

Mounting plate
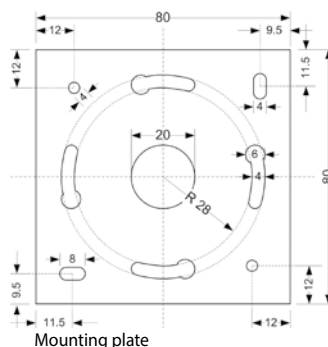
	PCD7.L645W/B*	Dimensions and installation options
3.2" touchscreen room control unit PCD7.L645W/B	RC-Bus — max. 10 m cable length	

Control for: setpoint value, fan, light, shade and presence

If, for example, a function is no longer to be displayed, access to specific menus can be prohibited with a password and hidden.

▸ Automatic adjustment of the dimmable backlight depending on the actual brightness in the room ensures optimum reading comfort

▸ Screen standby timer for setting the time after which the screen will dim following the last action

▸ Scenario buttons for defining user settings and opening them as required with a keystroke (up to 4 pre-defined scenarios can be saved)

*Under development, see chapter C2 "Product status"

PCD7.L645W: white housing (Pantone Q 716-3-5), 1 white and 1 aluminium front panel
PCD7.L645B: black housing, 1 black (RAL 9011) and 1 aluminium front panel

Some projects require an individual design in terms of shape and colour.
The PCD7.L645W/B offers the option of replacing the front panel.
The scale drawing for production on page 8-1 of manual 27-605 is provided for manufacturing individual front panels.

Portable room control units with display and function keys

Control devices	PCD7. L660	PCD7. L662		
Receivers	PCD7. **L661**	PCD7. **L663**	PCD7. **L665***	PCD7. **L666***
Wall mounted control device	Including for fixed installation		---	---
Communication / IR (infrared)	Unidirectional		---	•
Communication / radio		Bidirectional	---	•
Temperature sensor	•	•	---	---
Setpoint value adjustment	•	•	•	•
Presence control	•	•	Motion sensor [1]	
Fan control	•	•	•	•
Light and shade	•	•	•	•
Brightness sensor	---		•[1]	•[1]
Supply voltage control device	2 × AAA 1.5 V Micro		---	---
Temperature range	+5…45 °C, 80 % r.H.			

RC-Bus

max. 50 m cable length

[1] only on Lon controller

PCD7.L662-CT*	Configuration tool to connect PCD7.L666 to PCD7.L662

EnOcean radio receiver PCD7.L651* for connecting Thermokon room control devices and EnOcean wireless switches

RC-Bus

Example of EnOcean wireless switch for controlling lights and Venetian blinds (compatible with various control programs of various manufacturers)

Example of EnOcean room control devices for controlling HVAC
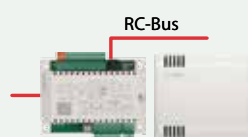
max. 50 m cable length

More detailed information on the compatibility of the EnOcean receivers is contained in the PCD7.L651 manual

Communicative room control units

Individual solutions using web-based room control units

System requirements:
▸ Room controller with communication to PCD via S-Net, LonWorks®.
▸ PCD with corresponding interface and interface for connecting to the desired control device, e.g. web-panel, PC, iPhone, etc.

Status of room 12

Status	Occupied	Lighting group 1
Setpoint	21.0 °C	Lighting group 2
Temperature	25.0 °C	Lighting group 3
Heating	0.0 %	Lighting group 1
Cooling	50.0 %	
Window	closed	

Room

HTTP direct

SERIAL S-Net
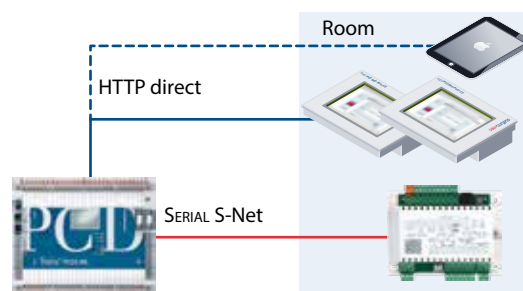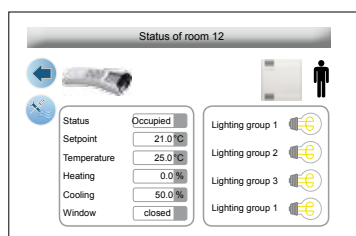
Direct connection of the room control units from the external supplier via LonWorks®

System requirements:
▸ Room controller with LonWorks® interface.
▸ For making additional connections to the automation station, the – PCD3.M– PCD2.M5– PCD1.M2 can be connected via the Lon over IP or via an external FTT10/IP router.

Room

LonWorks®

IP   FTT10

Router

*Under development, see chapter C2 "Product status"

1 Automation stations

2 HMI Visualization and operating

3 Dedicated room controller

4 Consumption data acquisition
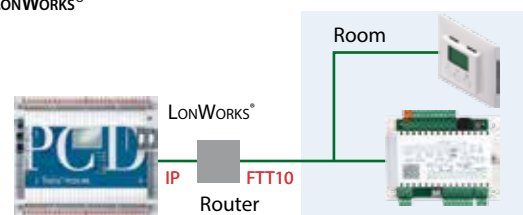
5 Cabinet components

Example of system structure for touch panel and extension module

▸ Room controller: Basic types PCD7.L600-1, PCD7.L601-1, PCD7.L603-1, PCD7.L604-1 and PCD7.L611

▸ The room control units and extension modules are connected to the room controller as required (The extension modules can only be operated in connection with a room controller)

▸ A maximum of 4 groups each of light and shade functions can be configured

3 different options for controlling extension modules:

Room controller with extension module, input module and portable room control unit PCD7.L66x

Max 50 m
PCD7.L672-xx

Max 50 m
PCD7.L672-xx

PCD7.L661 / PCD7.L663
or

PCD7.L660 / PCD7.L662

PCD7.L665
PCD7.L666

Room control +

2 × light	PCD7.L620
2 × light 1 × sun blind motor	PCD7.L621
3 × sun blind motors	PCD7.L622
2 × sun blind motors 24 VDC	PCD7.L623

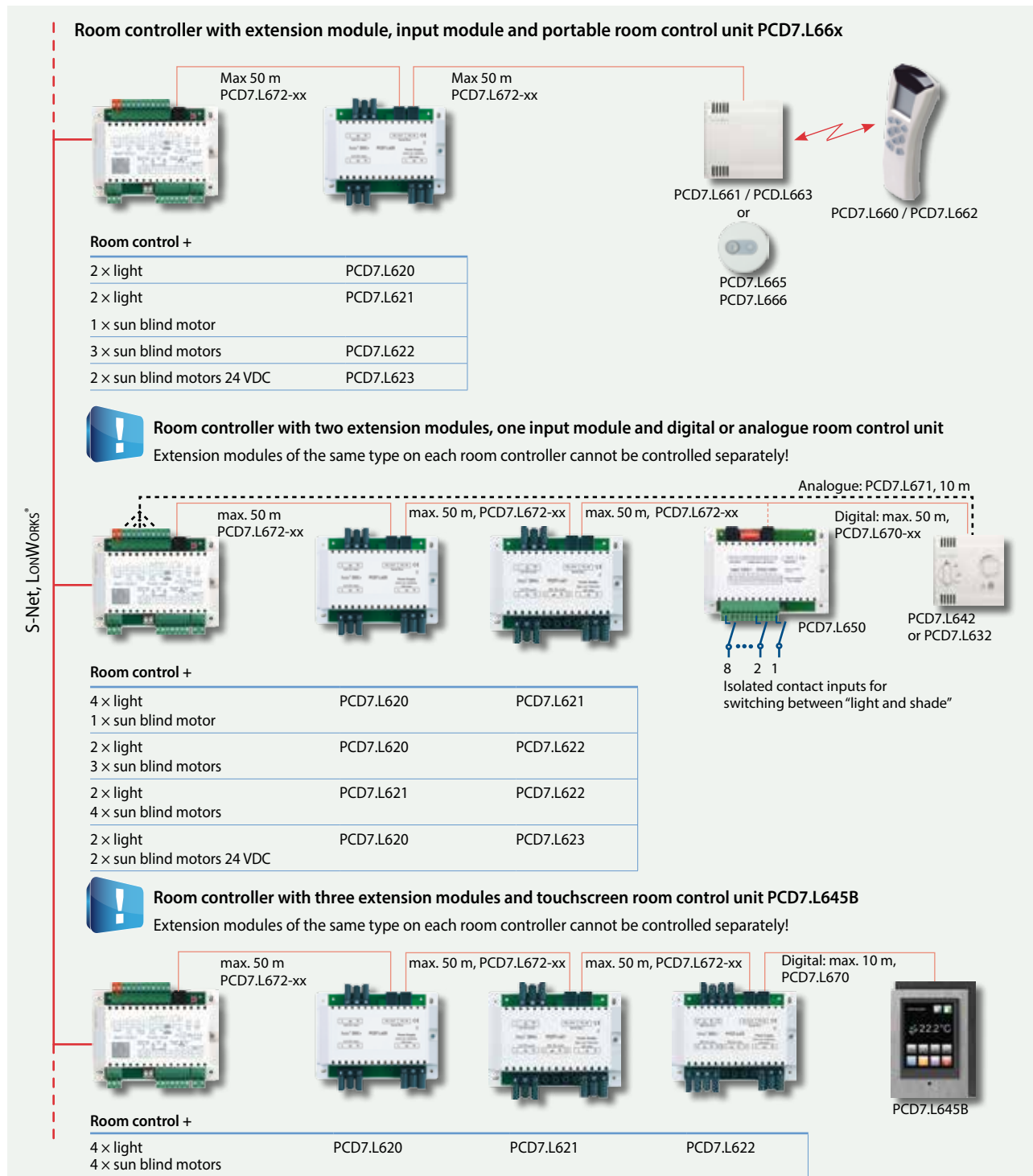**!** **Room controller with two extension modules, one input module and digital or analogue room control unit**
Extension modules of the same type on each room controller cannot be controlled separately!

S-Net, LonWorks®

max. 50 m
PCD7.L672-xx

max. 50 m, PCD7.L672-xx

max. 50 m, PCD7.L672-xx

Analogue: PCD7.L671, 10 m

Digital: max. 50 m,
PCD7.L670-xx

PCD7.L650

PCD7.L642
or PCD7.L632

8 2 1
Isolated contact inputs for
switching between "light and shade"

Room control +

4 × light 1 × sun blind motor	PCD7.L620	PCD7.L621
2 × light 3 × sun blind motors	PCD7.L620	PCD7.L622
2 × light 4 × sun blind motors	PCD7.L621	PCD7.L622
2 × light 2 × sun blind motors 24 VDC	PCD7.L620	PCD7.L623

! **Room controller with three extension modules and touchscreen room control unit PCD7.L645B**
Extension modules of the same type on each room controller cannot be controlled separately!

max. 50 m
PCD7.L672-xx

max. 50 m, PCD7.L672-xx

max. 50 m, PCD7.L672-xx

Digital: max. 10 m,
PCD7.L670

PCD7.L645B

Room control +

4 × light 4 × sun blind motors	PCD7.L620	PCD7.L621	PCD7.L622

Accessories

PCD7.L670	Connection cable for digital room control units RJ9 / RJ9, 10 m
PCD7.L670-30	Connection cable for digital room control units RJ9 / RJ9, 30 m
PCD7.L670-50	Connection cable for digital room control units RJ9 / RJ9, 50 m
PCD7.L671	Connection cable for analogue room control units RJ11 / open cable strand, 10 m
PCD7.L673	Connecting cable set for digital room control units, 3x RJ9 and 1 x RJ11, length 11 m

High energy efficient room automation

The combinable room control system can be used for multi-section room automation whereby with the demand-based control and communication to the primary system can reach the highest energy efficiency classes of DIN EN 15232 for the entire GA system.

Energy efficiency of building energy efficiency classes in accordance with EN 15232

Class A:
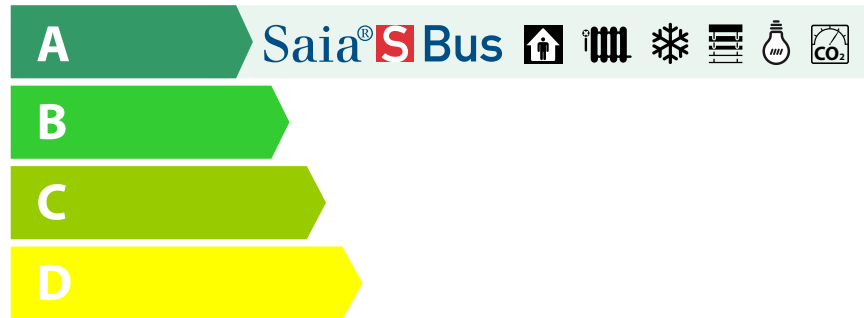– High energy efficiency room automation and cross linked trades (application segment)

Class B:
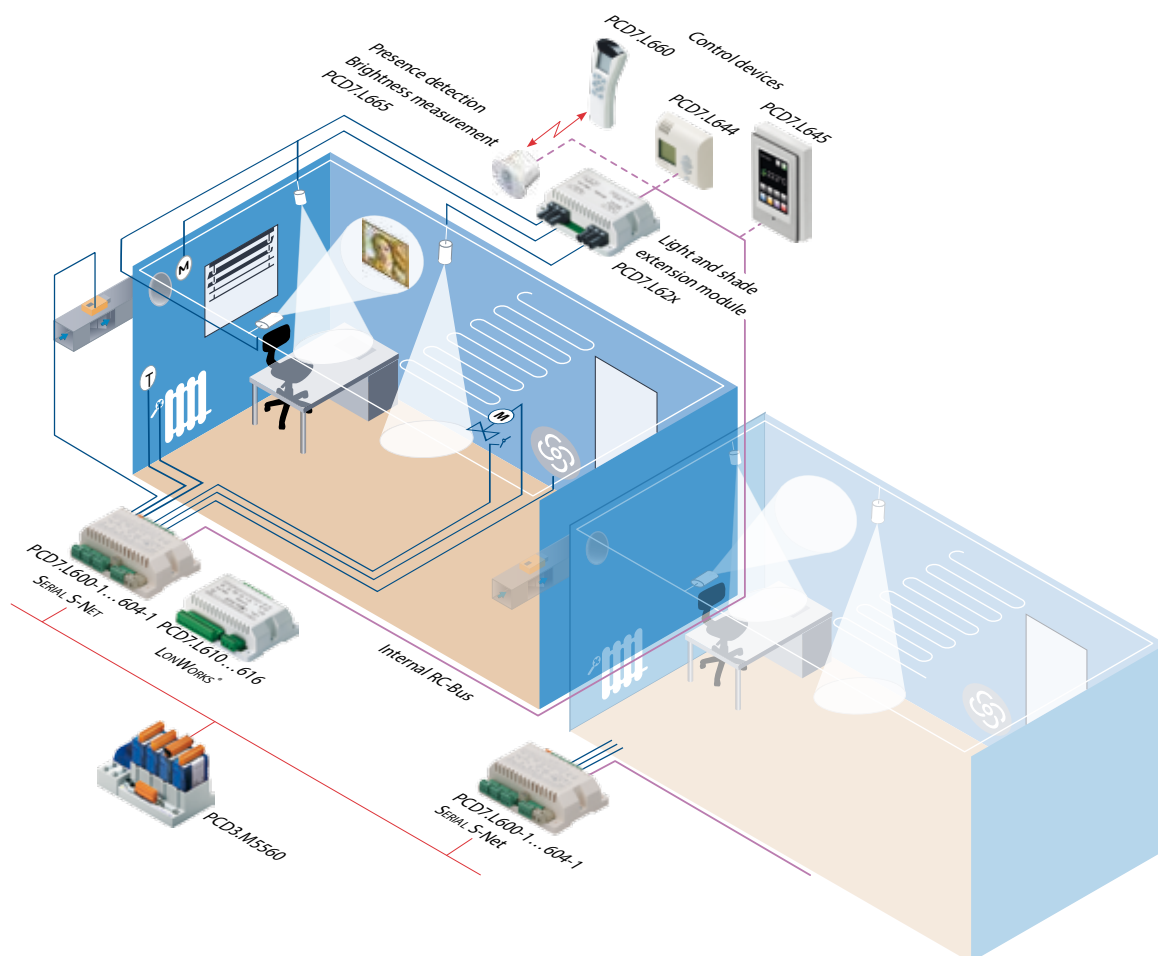– Optimised solutions for each trade, partially cross linked

Class C:
– Standard room automation

Class D:
– No room automation, not energy efficient

Saia® S Bus

▸ Networked room automation for an optimum synergy between the sections
▸ Temperature control based on demand control
▸ Combined air quality and temperature control

Presence detection
Brightness measurement
PCD7L665

Control devices
PCD7L660
PCD7L644
PCD7L645

Light and shade extension module
PCD7L62x

PCD7L600-1…604-1
SERIAL S-NET

PCD7L610…616
LonWorks®

PCD3.M5560

Internal RC-Bus

PCD7L600-1…604-1
SERIAL S-Net

1 Automation stations
2 HMI Visualization and operating
3 Dedicated room controller
4 Consumption data acquisition
5 Cabinet components