



DESIGO™

Room unit with PPS2 interface

QAX34.2

for use with

- DESIGO RX controllers
- Devices with a PPS2 interface

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- **Rocker switch for adjustment of the room temperature setpoint**
 - **Rocker switch for operating mode selection (⏻ / Auto) and manual control of the fan in fan-coil systems (up to 3 speeds)**
 - **LCD with room temperature and operating mode display**
 - **PPS2 interface to controller**

Use

The room unit is used in rooms controlled by an individual room control system, for operation of the room controller. The functions of the LCD display are determined by the controller.

If manual fan-speed control is enabled, the room unit is suitable for control of a fan-coil system.

Ordering

When ordering, please specify the quantity, product name and type code.

Example: **30 Room units QAX34.2/ALG**

Equipment combinations

The room unit is suitable for use in conjunction with all room controllers (e.g. DESIGO RX) which incorporate a PPS2 room unit interface.

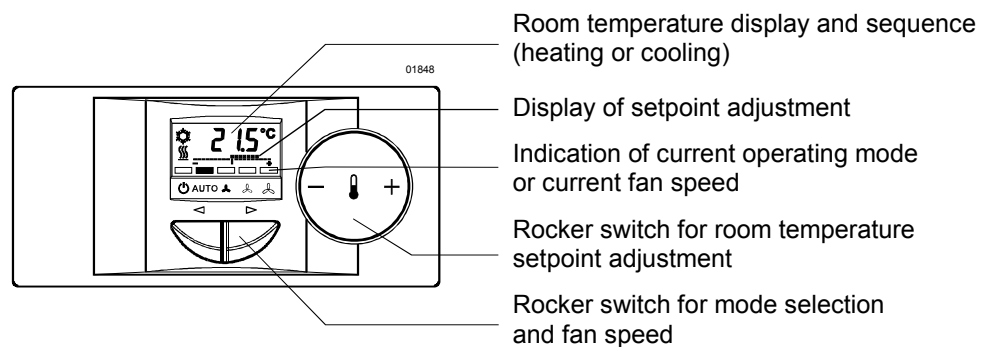
Mechanical design

The room unit is designed for inbuilt mounting.

The housing accommodates a printed circuit board, a rocker switch for setpoint adjustment, a rocker switch for operating mode and fan-speed selection, LCD, and plug-in connectors.

The housing is made of plastic.

Operator controls and indication



Note The actual functions of the operator controls and indicators are determined by the controller (based on the selected application and associated parameters). The description below covers all possibilities for these items.

Rocker switch for mode selection and fan speed

The controller operating mode can be selected on the basis of occupancy, using the rocker switch on the room unit. The same switch can also be used for manual selection of up to three fan speeds.

Pressing once in the direction of the left arrow switches one stage to the left, and pressing once in the direction of the right arrow switches one stage to the right. The current operating mode or the manually selected fan speed is indicated in the display panel by a horizontal bar above the associated symbol.

Position	Fan speed control ¹⁾	Operating mode ¹⁾
	Fan controlled automatically by controller	The controller operates at the setback setpoints (at night, or when room is unoccupied or occupied intermittently) Comfort mode (room occupied)
Auto	Fan controlled automatically by controller	
	Manual, fan speed 1	
	Manual, fan speed 2	
	Manual, fan speed 3	






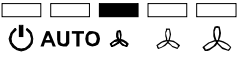


1) For details of these functions, refer to the application description for the relevant controller range

Rocker switch for room temperature setpoint adjustment

Press the switch once to switch from a display of the current room temperature to a display of the setpoint. Each further operation of the + or – switch raises or lowers the setpoint by 0.5 K or 1.0 °F. The unit of measurement is determined by the controller. The controller also determines the maximum adjustment range allowed.

LCD display

In normal operation, the following may be displayed (depending on the controller configuration):

Display element (examples)	Description
	Room temperature in °C (resolution 0.5 °C)
	Room temperature in °F (resolution 1.0 °F)
	Digital display of setpoint adjustment (displayed only while adjustment is in progress).
	Control sequence: Cooling
	Control sequence: Heating
	Room units with mode and fan-speed selection enabled: Fan speed 1: ON
	Room units allowing mode selection only: Auto: ON
	If "absolute setpoint adjustment" is selected in the controller, a scale is shown while entering the adjustment

Disposal



The controller includes electrical and electronic components and must not be disposed of as domestic waste.

Current local legislation must be observed.

Engineering notes

The room unit receives its power (low voltage) from the connected controller via the PPS2 interface. Only one room unit may be connected to each controller. A twisted-pair cable is required for the connection to the controller (see also document CA110334, "DESIGO RX Installation guide"). Screening is not required.

Mounting

- The room unit is suitable for inbuilt mounting.
- The specified ambient conditions must be complied with.

Installation note



Caution

Local installation regulations must be observed.

The room unit is not protected against connection to AC 230 V.

Response on start-up

When the supply voltage is connected (via PPS2 interface) or when the controller initiates a reset, the room unit initially responds as follows:

Step	Function	Description
1	LCD test	All segments of the display activated for approx. 5 s.
2	Identification by controller	The display reads E 15 until the controller identifies the room unit as a PPS2 component.
3	Room unit ready for operation	1 second after identification by the controller, the room unit is ready for operation.

Wink function display with LON-devices

If the room unit is connected to a LONMARK-compatible controller (DESIGO RX), the display can be used as an aid to commissioning. If the RXT10 commissioning and service tool initiates a wink command, the type of controller connected will be displayed on the room unit. For example:

Controller type	Display
RXC21.1	r. 21
RXC30.1	r. 30

Operating notes

During operation and commissioning, the LCD display also indicates errors, as follows

Display	Description	Error type
[03]	C: No communication with controller for more than 64 s 03: Firmware version (e.g. Version 3.0)	D
E 15	Room unit not yet in list of PPS2 components (during controller start-up phase)	D
E 17	Controller does not recognize room unit type	D
0.0	Initial value after start-up, before the controller transmits a signal	S
99.5	Controller transmits no valid T-value	S

- S Static error: The error code remains in the display until the cause of the error has been dealt with.
- D Dynamic error: The error code will be displayed instead of the room temperature for 5 s after occurrence of the error. The display will then revert to normal.
While the error persists, the error code will be re-displayed each time the + or – key is operated. The setpoint can be adjusted by pressing the key again.

After an interrupt of the PPS2 communication between the room unit and the room controller it takes approx. 10 seconds before a new signal will be received from an RXA controller. In the case of an RXC controller this takes approx. 3 minutes.

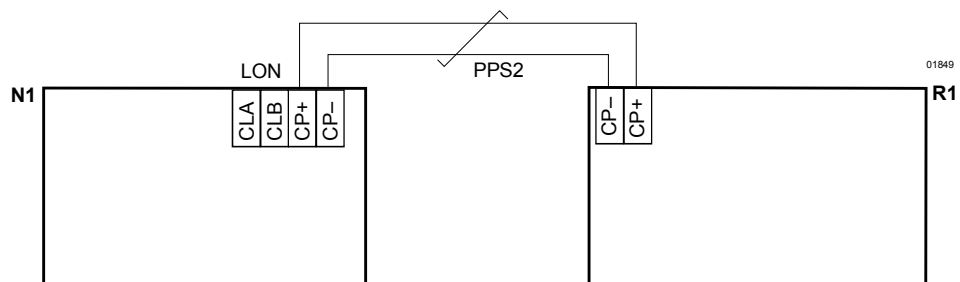
All other error codes indicate hardware faults.

Technical data

Supply voltage	Operating voltage (SELV to HD 384)	DC 12 ... 15 V	
	The room unit receives its power from the connected controller, via the PPS2 interface		
	Power consumption (from controller)	Max. 0.10 VA	
Function data	Setpoint correction	Correction range (determined by controller) Max. ± 12 K (default ± 3 K)	
	Resolution	0.5 K or 1.0 °F	
	Display	Type LCD	
	Functions displayed	<ul style="list-style-type: none"> – Room temperature – Setpoint adjustment – Operating mode – Manually selected fan-speed – Control sequence – Error code 	
Interfaces	Type of interface between controller and room unit	PPS2 (point-to-point interface, Version 2)	
	Baud rate	4.8 kbit/s	
Cable connections	Connection terminals	Plug-in connectors	
	Single cable length controller – Room unit	See Installation guidelines (for DESIGO RX see document CA110334)	
	Cable type	2-core, unshielded twisted pair	
Housing protection standard	Protection standard to EN 60529	IP 30	
Protection class	Insulation protection class	III	
Ambient conditions	IEC 721	Operation	Transport
	Ambient air conditions	Class 3K5	Class 2K3
	Temperature	0 ... 50 °C	– 25 ... 70 °C
	Humidity	< 85 %rh	< 95 %rh
	Mechanical conditions	Class 3M2	Class 2M2
Standards	Electromagnetic compatibility		
	Interference immunity	EN 50082-2	
	Interference emission	EN 50081-1	
	CE compliance	Meets the requirements for CE marking as defined in EMC directive 89/336/EEC	
Dimensions	See “Dimensions”		
Color	Housing	NCS S 0502-G, \approx RAL 9003 signal white	
Weight	Excluding packaging	0.13 kg	

Connection diagram

The following example shows the room unit connected to a DESIGO RX controller:



✓ Twisted pair

- R1 Room unit QAX34.2
- N1 Room controller (e.g. DESIGO RX...)
- CP+ Device supply, Data PPS2 (pos.)
- CP- Device supply, Data PPS2 (neg.)

Dimensions

All dimensions in mm

