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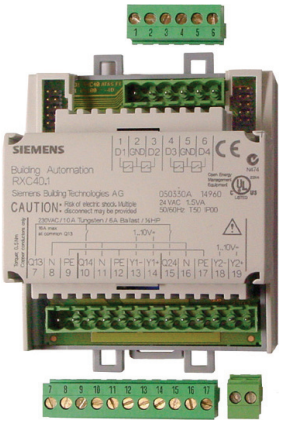


DESIGO™ RXC

Extension module for lighting control

RXC40.1 RXC40.5

Extension to the RXC30 / RXC31 / RXC38 room controller

The RXC40 extension module is used in conjunction with an RXC30, RXC31 or RXC38 room controller for the control of lighting in individual rooms.

- **Switching and dimming control of two lighting zones**
- **Application software downloadable into RXC30 / RXC31 / RXC38 basic module**
- **Plug-in connection to RXC30 / RXC31 / RXC38 basic module for power supply and data**
- **Volt-free relay contacts for lighting control (12 A)**
- **Control outputs for dimming control of lights (DC 1...10 V external)**

Application

The RXC40 module acts as an I/O extension to the basic RXC30 or RXC31 / RXC38 room controller. The input/output configuration is optimized for the control of two zones of dimmable lights.

The RXC30 / RXC31 / RXC38 basic controllers and the RXC40 extension module are connected electrically and (when the terminal covers are fitted) mechanically to form a single unit. If required, this can be supplemented with an RXC41 extension module for the control of blinds.

For operation, either conventional momentary-contact switches, or integrated operating units with a bus connection, may be used.

The application software for the complete unit, comprising the basic module and the extension module(s) is downloaded into the basic module, the RXC30 or RXC31 room controller. If the RXC30 / RXC31 / RXC38 controller is downloaded with basic application 00030 / 00031, test functions for the RXC40 extension module are also available.

Functions

The functioning of the RXC40 extension module is defined by the application software downloaded into the RXC30 or RXC31 / RXC38 room controller.

For a detailed description of functions, refer to the DESIGO RXC applications library (V1: CA2A3810, V2:CA110300).

Types

Product No.	Stock number	Designation
RXC40.5	S55373-C119	Extension module for lighting control
RXZ40.1		Accessories: Terminal covers

Ordering

When ordering, please specify the quantity, product name and type code.
The RXZ40.1 terminal covers are supplied in packs of 10 pairs and must be ordered separately.

Example:

30	**Extension module for lighting control**	**RXC40.5**
30	**Pairs of terminal covers**	**RXZ40.1**

Compatibility

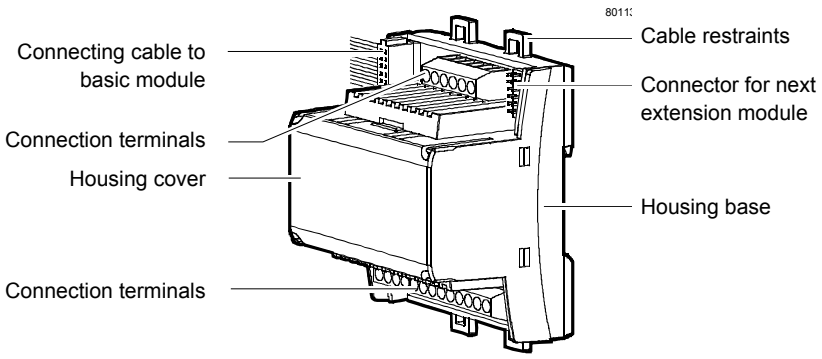
The RXC40 extension module is always used in conjunction with an RXC30 or RXC31 / RXC38 room controller (data sheet 3840 / 3844 / 3841). If required, an RXC41 extension module (data sheet 3843) can be added, for the control of blinds. Possible combinations and the associated applications are described in the DESIGO RXC applications library (V1: CA2A3810, V2:CA110300).

For operation, either conventional momentary-contact switches or the flexible room units, QAX50 or QAX51 may be used.

Note

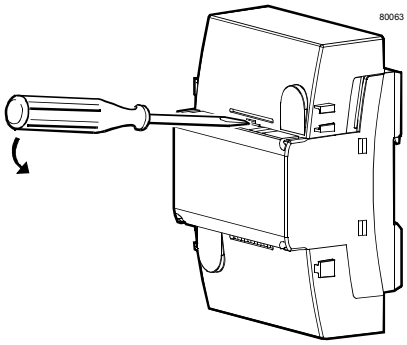
If different types of extension module are used, they must be arranged in the following order: RXC30 → RXC40 → RXC41, RXC31 → RXC40 → RXC41, or RXC38 → RXC40 → RXC41

The RXC40 extension module consists of a housing base, a housing cover and the printed circuit board with connection terminals. The module also has a ribbon cable and connector for connection to the RXC30 / RXC31 / RXC38 basic controller, and a connector base into which a further extension module may be plugged.



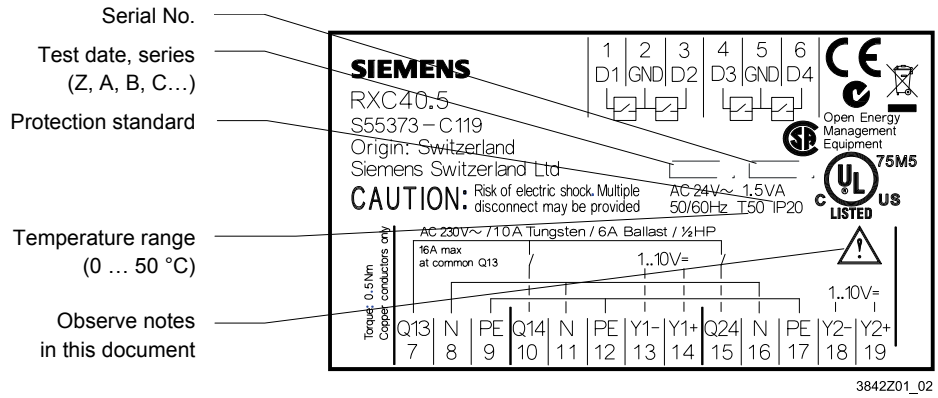
Terminal covers

Terminal covers (RXZ40.1) are available as an option, to protect the connection terminals from physical contact and dirt. These covers also provide strain relief for the cable connecting the extension module to the RXC30 / RXC31 / RXC38 controller.
The terminal covers must be used on equipment mounted outside the control panel or distributor box. When fitting the terminal covers, make sure that they snap into position correctly.



Removing the terminal cover

Label



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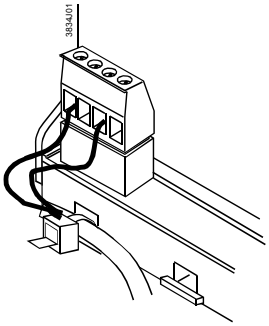
Connection terminals

All connection terminals are detachable plug-in terminals.
They are arranged so that in normal circumstances, all incoming and outgoing cables can be connected without crossing.

Note!

Cable restraints on the housing base must be used for the wires to terminals 7 … 12 and 15 … 17 (AC 230 V). The conductors must be secured with cable ties (see diagram).



Warning!

Ensure that the power is off before inserting or removing plug-in terminals connected to a mains voltage.

Communication

The RXC40 extension module communicates via a serial bus connection (the PE bus) with the basic controller RXC30 / RXC31 / RXC38. The PE bus connections are looped through the module to the connection socket for the next extension module.
There is no direct connection to the LONWORKS® bus.

Disposal

The devices are classified as waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed of as unsorted municipal waste.
The relevant national legal rules are to be adhered to.
Regarding disposal, use the systems setup for collecting electronic waste.
Observe all local and applicable laws.

Engineering notes

The RXC40 can be used only in conjunction with an RXC30 / RXC31 / RXC38 basic module (and possible additional extension modules). The plug-in connection between the basic module and the extension modules incorporates both the communications and the power supply. The power supply is limited to a maximum of two extension modules.

Signal inputs

The cables for signal inputs D1 … D4 (SELV / PELV) must be routed separately from the AC230 V cables and must comply with SELV / PELV requirements. The low voltage and mains voltage must not be routed in the same cable.

Important

Only volt-free pulsed momentary-contact switches may be connected to the signal inputs.

AC 250 V volt-free relay outputs

The volt-free relay outputs may be used to switch filament lamps up to 2.5 kW or fluorescent lamps up to 1.5 kVA. The cable dimensions depend on the connected load and the local installation regulations. Neutral and protective conductors are looped on the controller so that there is no need for external terminals. The circuits must be protected with external fuses (max. 16 A, Q13) as there are no internal fuses. The cables must be secured with a strain relief clamp.

DC 1...10 V control outputs

The control outputs are designed for control of dimmable electronic ballast units or dimmable transformers. The current is supplied by the ballast unit or transformer.

The outputs are not suitable for controlled devices such as valve actuators with a DC 0 … 10 V input.

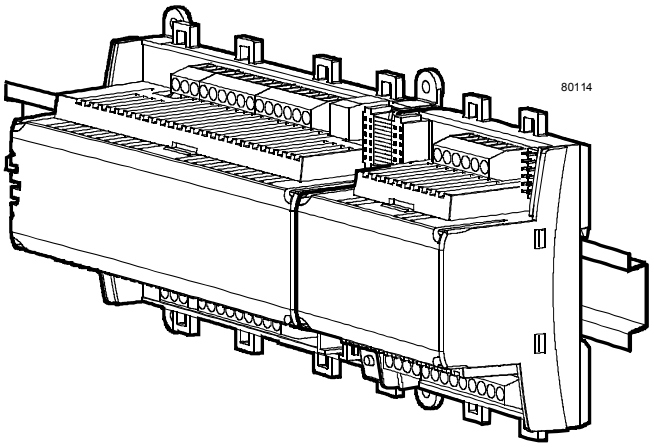
The analogue output circuits are electrically isolated with 4 kV from the other module electronics. It is therefore permissible to route the associated conductors in the same cable as those for the switched AC 230 V connection.

Note!

If the control outputs are used, the AC 230 V must be connected to terminals Q13 (7) and N (8). The ballast unit must be connected and switched on when the 1...10 V voltage is to be controlled. The 1...10 V control outputs are deemed to be mains circuits and must be segregated from the SELV / PELV in the same way as AC 230 V cables.

Mounting

The RXC40 extension module is mounted together with the RXC30 / RXC31 / RXC38 basic module and any additional extension modules on a DIN rail (type EN50022-35x7.5).



When mounting, note the following:

- The controller should not be freely accessible after mounting
- Ensure adequate air circulation to dissipate heat generated during operation.
- Easy access is required for service personnel
- Local installation regulations must be observed.

The mounting instructions are printed on the controller packaging.

Commissioning

The notes in the technical documentation for the RXC30 / RXC31 / RXC38 controller (data sheet 3840 / 3844 / 3841) apply equally to a combination comprising the RXC30 / RXC31 / RXC38 and the RXC40 extension module.

Note!

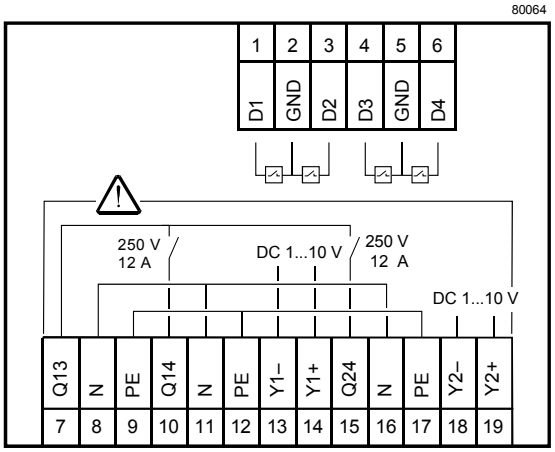
- **The module is not protected against accidental connection to AC 230 V on the SELV / PELV side.**
- **Mains AC 230 V for the relays must be disconnected before plugging and un-plugging the terminal blocks (danger of electric shock!)**

Technical data

Power supply	The module receives its power from the RXC30 / RXC31 / RXC38 basic controller	SELV / PELV AC 24 V
	Power consumption (from basic controller)	Max. 1.5 VA
	The dimming control is electrically isolated and is powered via terminals Q13 and N	Max. AC 250 V
Inputs		
Signal inputs D1 … D4 (for volt-free momentary contact switches)	Quantity	4
	Contact voltage	DC 33 V
	Contact current	DC 8 mA
	Contact transfer resistance	Max. 100 Ω
	Contact insulation resistance	Min. 50 kΩ
Outputs		
⚠ Relay outputs Q14, Q24	Quantity	2
	Relay type	Single pole
	Contact rating	
	External fuse (Q13)	16 A
	Switching voltage	Max. AC 250 V
	Nominal current, resistive / inductive	Max. AC 12 A / 12 A (cosφ = 0.6)[1)]
	Filament lamps	Max. 2.5 kW
	Fluorescent lamps	Max. 1.5 kVA (compensation: max. 60 µF)
Control outputs Y1+, Y1–, Y2+, Y2–	Quantity	2 x 2
	Type	With sink capacity, external DC voltage
	Voltage range	DC 1...10 V
	Sink current	Max. 30 mA
		1) VDE approved for 16A
Interface to RXC30 / RXC31 / RXC38 basic module and other extension modules	Interface type	PE bus, serial (for power supply and data)
Cable connections	Plug-in terminal blocks	Rising cage terminals
	Solid conductors	1 x 0.2 ... 2.5mm2 or 2 x 0.2 ... 1.0 mm2
	Stranded conductors without connector sleeves	1 x 0.2 ... 2.5mm2 or 2 x 0.2 ... 1.5 mm2
	Stranded conductors with connector sleeves (DIN 46228/1)	1 x 0.25 ... 2.5mm2 or 2 x 0.25 ... 1.0 mm2
	Max. tightening torque	0.6 Nm
	Connecting cable to basic module	10-core ribbon cable
	Single cable lengths	See also installation guide, CA110334
	Signal inputs D1…. D4	Max. 100 m with diameters ≥ 0.6 mm
	Analogue outputs Y1+, Y1–, Y2+, Y2–	Max. 100 m with diameters ≥ 0.6 mm
	Relay outputs Q14, Q24	Depends on load and local regulations
Housing protection standard	Protection standard to EN 60529	IP30 with terminal cover fitted and wall mounted without DIN rail All other mounting arrangements: IP20
Protection class	Suitable for use in systems with protection class I or II	
Ambient conditions	Operation	Class 3K5 to IEC 60721-3-3
	Temperature	0 ... 50 °C
	Humidity	< 85 %rh
	Transport	Class 2K3 to IEC 60721-3-2
	Temperature	– 25 ... 65 °C
Standards and directives	Product safety	
	Automatic electronic controls for household and similar use	EN 60730-1
	Electromagnetic compatibility	
	Immunity (industrial & residential)	EN 60730-1
	Emissions (residential)	EN 60730-1
	CE compliance	
	Meets requirements of EMC Directive	2004/108/EC
	Low Voltage Directive	2006/95/EC
	UL compliance	UL916
	C-Tick conformity (EMC)	AS/NZS 61000-6-3

Environmental compatibility	The product environmental declaration CA2E3842 contains data on RoHS compliance, materials composition, packaging, environmental benefit, disposal	ISO 14001 (Environment) ISO 9001 (Quality) 2002/95/EC (RoHS)
Dimensions	See dimension diagrams Width in DIN modular spacing units	 4.5
Weight	Excluding packaging	0.25 kg

Connection terminals



Signal input for volt-free momentary-contact switches

D1	1	Signal input
GND	2	Signal ground
D2	3	Signal input
D3	4	Signal input
GND	5	Signal ground
D4	6	Signal input

Relay outputs

Q13	7	Common contact for Q14 and Q24
N	8	Neutral conductor, max. AC 250 V
PE	9	Protective earth conductor
Q14	10	N/O contact AC max. 250 V, 12 A
N	11	AC 250 V neutral conductor
PE	12	Protective earth conductor
Q24	15	N/O contact AC max. 250 V, 12 A
N	16	Neutral conductor, max. AC 250 V
PE	17	Protective earth conductor

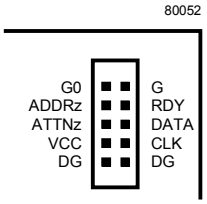
Control outputs

Y1–	13	Control output ground
Y1+	14	Control output DC 1...10 V external
Y2–	18	Control output ground
Y2+	19	Control output DC 1...10 V external

Note!

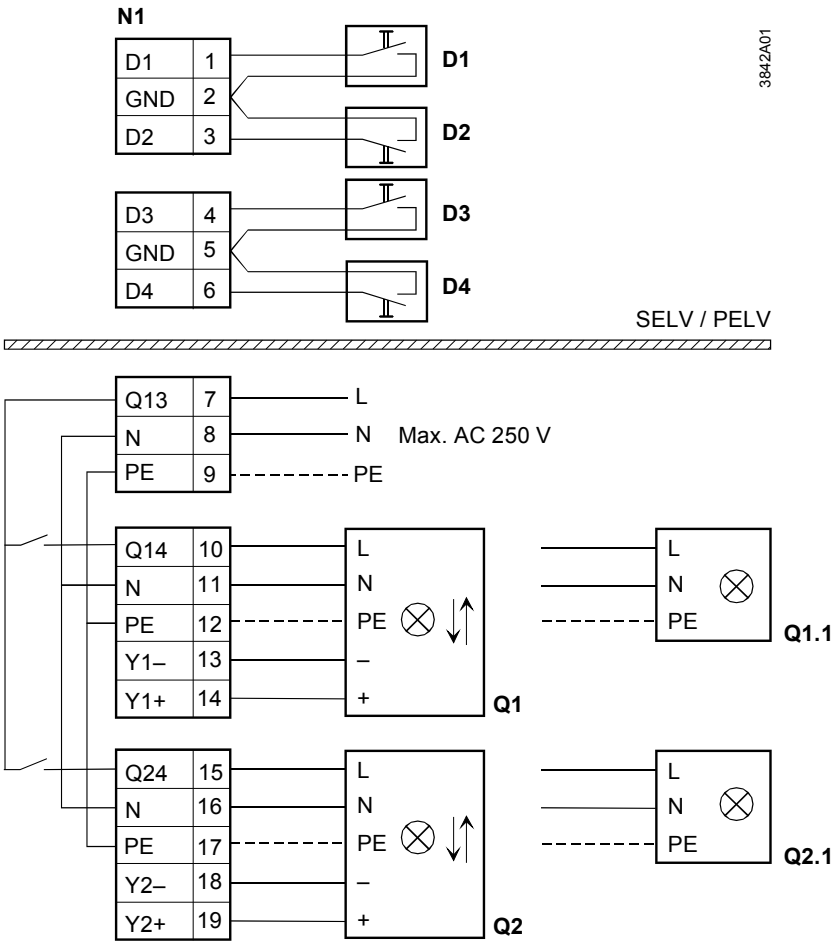
- **Observe the technical data for the relay outputs: max. AC 250 V, 12 A**
- **Local installation regulations must be observed.**

Connector for extension modules



G0	Ground	G	AC 24 V
ADDRz	Module address	RDY	Handshake
ATTNz	Handshake	DATA	Data
VCC	DC 5 V	CLK	Clock
DG	Electronics ground	DG	Electronics ground

Connection diagrams



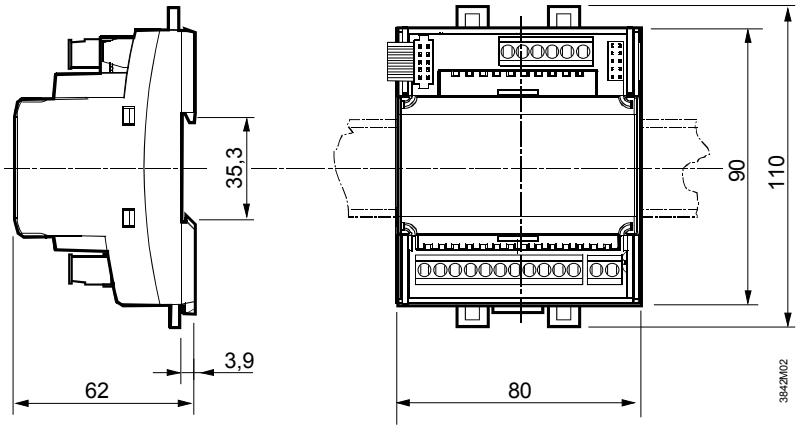
N1	RXC40
D1 ... D4	Volt-free momentary contact switches
Q1, Q2	Dimmed light or group of dimmed lights
Q1.1, Q2.1	Lamp or group of lamps connected in parallel

Electrical isolation

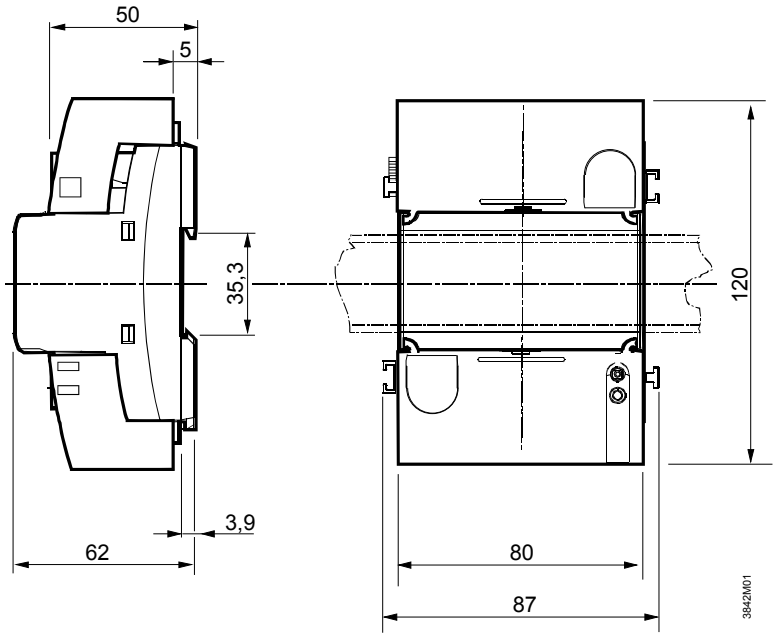
Dimensions

All dimensions in mm

Without terminal covers



With terminal covers



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