



The Room Master Premium is a modular installation device (MDRC) in ProM design. It is intended for installation in the distribution board on 35 mm mounting rails. The assignment of the physical address as well as the parameter settings is carried out with ETS 2 from version V1.3a or higher.

The device is powered via the ABB i-bus® and does not require an additional auxiliary voltage supply.

The RM/S 2.1 is operational after connection of the bus voltage.

Technical data

Supply	Bus voltage	21...32 V DC
	Current consumption, bus	< 24 mA (Fan-In 2)
	Leakage loss, bus	Maximum 500 mW
	Leakage loss, device	Maximum 7.65 W*
	KNX bus connection	0.25 W
	Relay 20 A	3.0 W
	Relay 16 A	1.0 W
	Relay 6 A	2.4 W
	Electronic outputs 0.5 A	1.0 W
Connections	KNX	Via bus connection terminals 0.8 mm Ø, solid
	Load circuits	Screw terminals with universal head (PZ 1) 0.2...4 mm² stranded, 2 x (0.2...2.5 mm²) 0.2...6 mm² single core, 2 x (0.2...4 mm²)
	Ferrules without/with plastic sleeves	without: 0.25...2.5 mm² with: 0.25...4 mm²
	TWIN ferruleless	0.5...2.5 mm² Contact pin length at least 10 mm
	Tightening torque	maximum 0.8 Nm
	Fans/valves/inputs	Screw terminal, slot head 0.2...2.5 mm² stranded 0.2...4 mm² solid core
	Tightening torque	maximum 0.6 Nm
	Operating and display elements	Programming button/LED for assignment of the physical address
	Enclosure	IP 20 to DIN EN 60 529
Safety class	II	to DIN EN 61 140
	Isolation category	Overvoltage category III to DIN EN 60 664-1 Pollution degree 2 to DIN EN 60 664-1
	KNX safety extra low voltage	SELV 24 V DC
Temperature range	Operation	-5 °C...+45 °C
	Transport	-25 °C...+70 °C
	Storage	-25 °C...+55 °C
Ambient conditions	Maximum air humidity	93 %, no condensation allowed

Design	Modular installation device (MDRC)	Modular installation device, ProM
	Dimensions	90 x 216 x 64.5 mm (H x W x D)
	Mounting width in space units	12 modules at 18 mm
	Mounting depth	64.5 mm
Installation	On 35 mm mounting rail	to DIN EN 60 715
Mounting position	as required	
Weight	0.7 kg	
Housing/colour	Plastic housing, grey	
Approvals	KNX to EN 50 090-1, -2	Certification
CE mark	in accordance with the EMC guideline and low voltage guideline	

Electronic outputs

Rated values	Number	4, non-isolated, short-circuit proofed
	U _n rated voltage	24...230 V AC (50/60 Hz)
	I _n rated current (per output pair)	0.5 A
	Continuous current	0.5 A resistive load at T _A up to 20 °C 0.3 A resistive load at T _A up to 60 °C
	Inrush current	Maximum 1.6 A, 10 s at T _A bis 60 °C
		T _A = ambient temperature

Binary inputs

Rated values	Number	18 ¹⁾
	U _n scanning voltage	32 V, pulsed
	I _n scanning current	0.1 mA
	Scanning current I _n at switch on	maximum 355 mA
	Permissible cable length	≤ 100 m one-way, at cross-section 1.5 mm²
	¹⁾ All binary inputs are internally connected to the same potential.	

Rated current output 6 A

Rated values	Number	13 contacts
	U _n rated voltage	250/440 V AC (50/60 Hz)
	I _n rated current (per output)	6 A
Switching currents	AC3* operation (cos φ = 0.45) DIN EN 60 947-4-1	6 A/230 V
	AC1* operation (cos φ = 0.8) DIN EN 60 947-4-1	6 A/230 V
	Fluorescent lighting load to DIN EN 60 669-1	6 A/250 V (35 μF) ²⁾
	Minimum switching performance	20 mA/5 V 10 mA/12 V 7 mA/24 V
	DC current switching capacity (resistive load)	6 A/24 V=
Service life	Mechanical endurance	> 10 ⁷
	Electronic endurance to DIN IEC 60 947-4-1	
	AC1* (240 V/cos φ = 0.8)	> 10 ⁵
	AC3* (240 V/cos φ = 0.45)	> 1.5 x 10 ⁴
	AC5a* (240 V/cos φ = 0.45)	> 1.5 x 10 ⁴
Switching times ¹⁾	Maximum relay position change per output and minute if only one relay is switched.	2.683

¹⁾ The specifications apply only after the bus voltage has been applied to the device for at least 10 seconds.
Typical delay of the relay is approx. 20 ms.

²⁾ The maximum inrush-current peak may not be exceeded.

*** What do the terms AC1, AC3 and AC5a mean?**

In Intelligent Installation Systems different switching capacity and performance specifications which are dependent on the special application have become established in industrial and residential systems. These performance specifications are rooted in the respective national and international standards. The tests are defined so that typical applications, e.g. motor loads (industrial) or fluorescent lamps (residential) are simulated.

The specifications AC1 and AC3 are switching performance specifications which have become established in the industrial field.

Typical application:

AC1 – Non-inductive or slightly inductive loads, resistive furnaces
(relates to switching of ohmic/resistive loads)

AC3 – Squirrel-cage motors: Stating, switching off motors during running
(relates to (inductive) motor load)

AC5a – Switching of electric discharge lamps

These switching performances are defined in the standard DIN EN 60947-4-1 *Contactors and motor-starters - Electromechanical contactors and motor-starters*. The standard describes starter and/or contactors which previously preferably used in industrial applications.

Rated current output 16 A

Rated values	Number	1
	U _n rated voltage	250/440 V AC (50/60 Hz)
	I _n rated current	16 A
Switching currents	AC3* operation (cos φ = 0.45) DIN EN 60 947-4-1	8 A/230 V
	AC1* operation (cos φ = 0.8) DIN EN 60 947-4-1	16 A/230 V
	Fluorescent lighting load AX to DIN EN 60 669-1	16 A/250 V (70 μF) ²⁾
	Minimum switching performance	100 mA/12 V 100 mA/24 V
	DC current switching capacity (resistive load)	16 A/24 V=
Service life	Mechanical service life	> 3 x 10 ⁶
	Electronic endurance to DIN IEC 60 947-4-1	
	AC1* (240 V/cos φ = 0.8)	> 10 ⁵
Switching times ¹⁾	Maximum relay position change per output and minute if only one relay is switched.	313

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Lamp load output

Lamps	Incandescent lamp load	2300 W
Fluorescent lamp T5 / T8	Uncorrected	2300 W
	Parallel compensated	1500 W
	DUO circuit	1500 W
Low-voltage halogen lamps	Inductive transformer	1200 W
	Electronic transformer	1500 W
	Halogen lamp 230 V	2300 W
Dulux lamp	Uncorrected	1100 W
	Parallel compensated	1100 W
Mercury-vapour lamp	Uncorrected	2000 W
	Parallel compensated	2000 W
Switching performance (switching contact)	Max. peak inrush-current I_p (150 μ s)	400 A
	Max. peak inrush-current I_p (250 μ s)	320 A
	Max. peak inrush-current I_p (600 μ s)	200 A
Number of electronic ballasts (T5/T8, single element)¹⁾	18 W (ABB EVG 1 x 58 CF)	23
	24 W (ABB EVG-T5 1 x 24 CY)	23
	36 W (ABB EVG 1 x 36 CF)	14
	58 W (ABB EVG 1 x 58 CF)	11
	80 W (Helvar EL 1 x 80 SC)	10

¹⁾ For multiple element lamps or other types the number of electronic ballasts must be determined using the peak inrush current of the electronic ballasts.

Rated current output 20 A

Rated values	Number	3
	U _n rated voltage	250/440 V AC (50/60 Hz)
	I _n rated current	20 A
Switching currents	AC3* operation (cos φ = 0.45) DIN EN 60 947-4-1	16 A/230 V
	AC1* operation (cos φ = 0.8) DIN EN 60 947-4-1	20 A/230 V
	Fluorescent lighting load AX to DIN EN 60 669-1	20 A/250 V (140 μF) ²⁾
	Minimum switching performance	100 mA/12 V 100 mA/24 V
	DC current switching capacity (resistive load)	20 A/24 V=
Service life	Mechanical service life	> 10 ⁶
	Electronic endurance to DIN IEC 60 947-4-1	
	AC1* (240 V/cos φ = 0.8)	> 10 ⁵
	AC3* (240 V/cos φ = 0.45)	> 3 x 10 ⁴
	AC5a* (240 V/cos φ = 0.45)	> 3 x 10 ⁴
Switching times¹⁾	Maximum relay position change per output and minute if only one relay is switched.	93

¹⁾ The specifications apply only after the bus voltage has been applied to the device for at least 10 seconds.

Typical delay of the relay is approx. 20 ms.

²⁾ The maximum inrush-current peak may not be exceeded.

***What do the terms AC1, AC3 and AC5a mean?**

In Intelligent Installation Systems different switching capacity and performance specifications which are dependent on the special application have become established in industrial and residential systems. These performance specifications are rooted in the respective national and international standards. The tests are defined so that typical applications, e.g. motor loads (industrial) or fluorescent lamps (residential) are simulated.

The specifications AC1 and AC3 are switching performance specifications which have become established in the industrial field.

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(relates to switching of ohmic/resistive loads)

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(relates to (inductive) motor load)

AC5a – Switching of electric discharge lamps

These switching performances are defined in the standard DIN EN 60947-4-1 *Contactors and motor-starters - Electromechanical contactors and motor-starters*. The standard describes starter and/or contactors which previously preferably used in industrial applications.

Lamp load output

Lamps	Incandescent lamp load	3680 W
Fluorescent lamp T5 / T8	Uncorrected	3680 W
	Parallel compensated	2500 W
	DUO circuit	3680 W
Low-voltage halogen lamps	Inductive transformer	2000 W
	Electronic transformer	2500 W
	Halogen lamp 230 V	3680 W
Dulux lamp	Uncorrected	3680 W
	Parallel compensated	3000 W
Mercury-vapour lamp	Uncorrected	3680 W
	Parallel compensated	3680 W
Switching performance (switching contact)	Max. peak inrush-current I_p (150 μ s)	600 A
	Max. peak inrush-current I_p (250 μ s)	480 A
	Max. peak inrush-current I_p (600 μ s)	300 A
Number of electronic ballasts (T5/T8, single element)¹⁾	18 W (ABB EVG 1 x 58 CF)	26 ²⁾
	24 W (ABB EVG-T5 1 x 24 CY)	26 ²⁾
	36 W (ABB EVG 1 x 36 CF)	22
	58 W (ABB EVG 1 x 58 CF)	12 ²⁾
	80 W (Helvar EL 1 x 80 SC)	10 ²⁾

¹⁾ For multiple element lamps or other types the number of electronic ballasts must be determined using the peak inrush current of the electronic ballasts.

²⁾ Limited by protection with B16 automatic circuit-breakers.

Application program	Max. number of communication objects	Max. number of group addresses	Max. number of associations
Room Master, Premium/1	255	255	255

Note

For a detailed description of the application program see "Room Master Premium RM/S 2.1" product manual. It is available free-of-charge at www.ABB.de/KNX.

The programming requires EIB Software Tool ETS2 V1.3a or higher.

If ETS3 is used a *.VD3 or higher type file must be imported. The application program is available in the ETS2 / ETS3 at ABB/Room automation, Room Master, Premium.

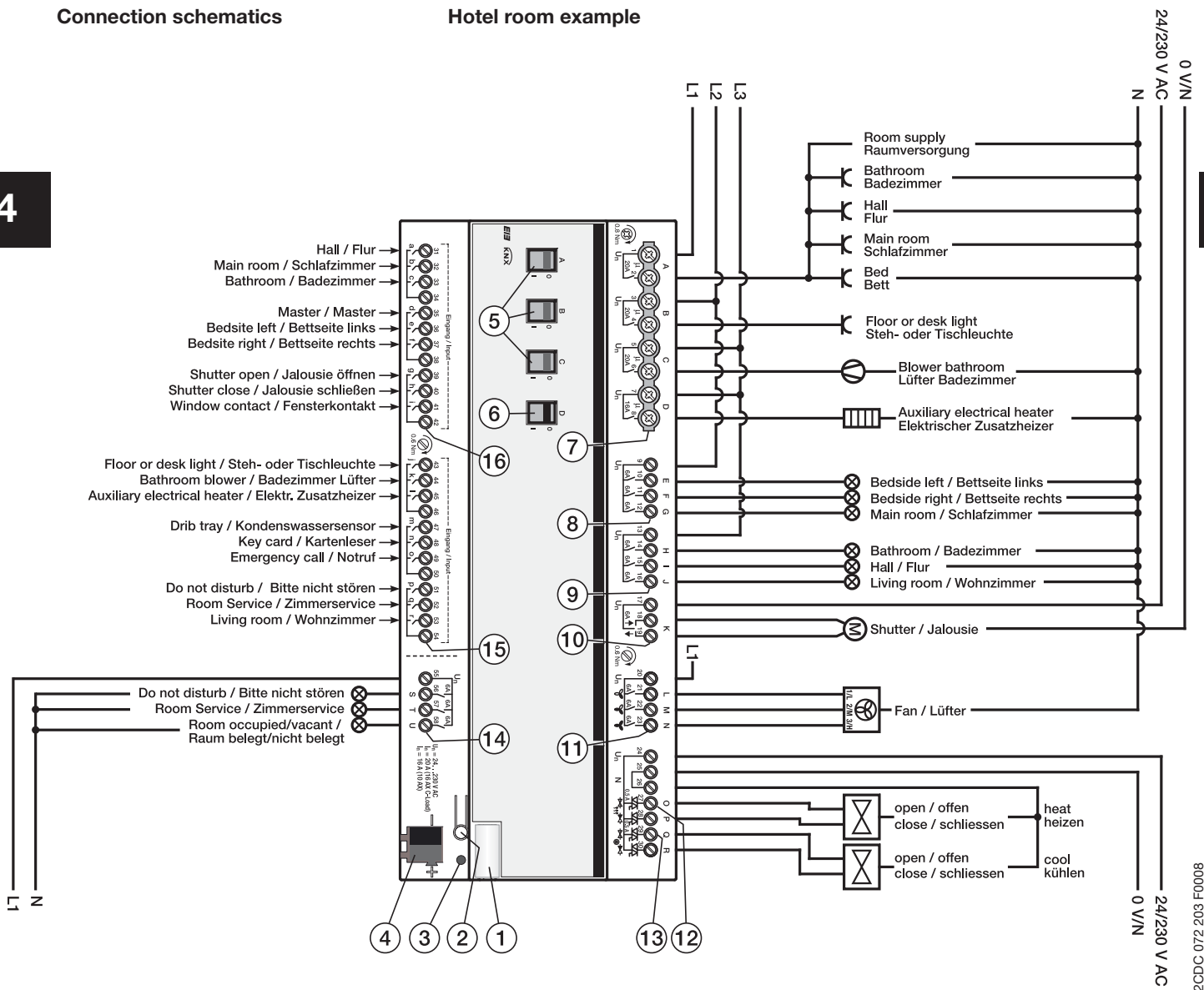
The device does not support the closing function of a project or the KNX device in the ETS. If you inhibit access to all devices of the project with a *BCU code* (ETS3), it has no effect on this device. Data can still be read and programmed.

Connection schematics

Hotel room example

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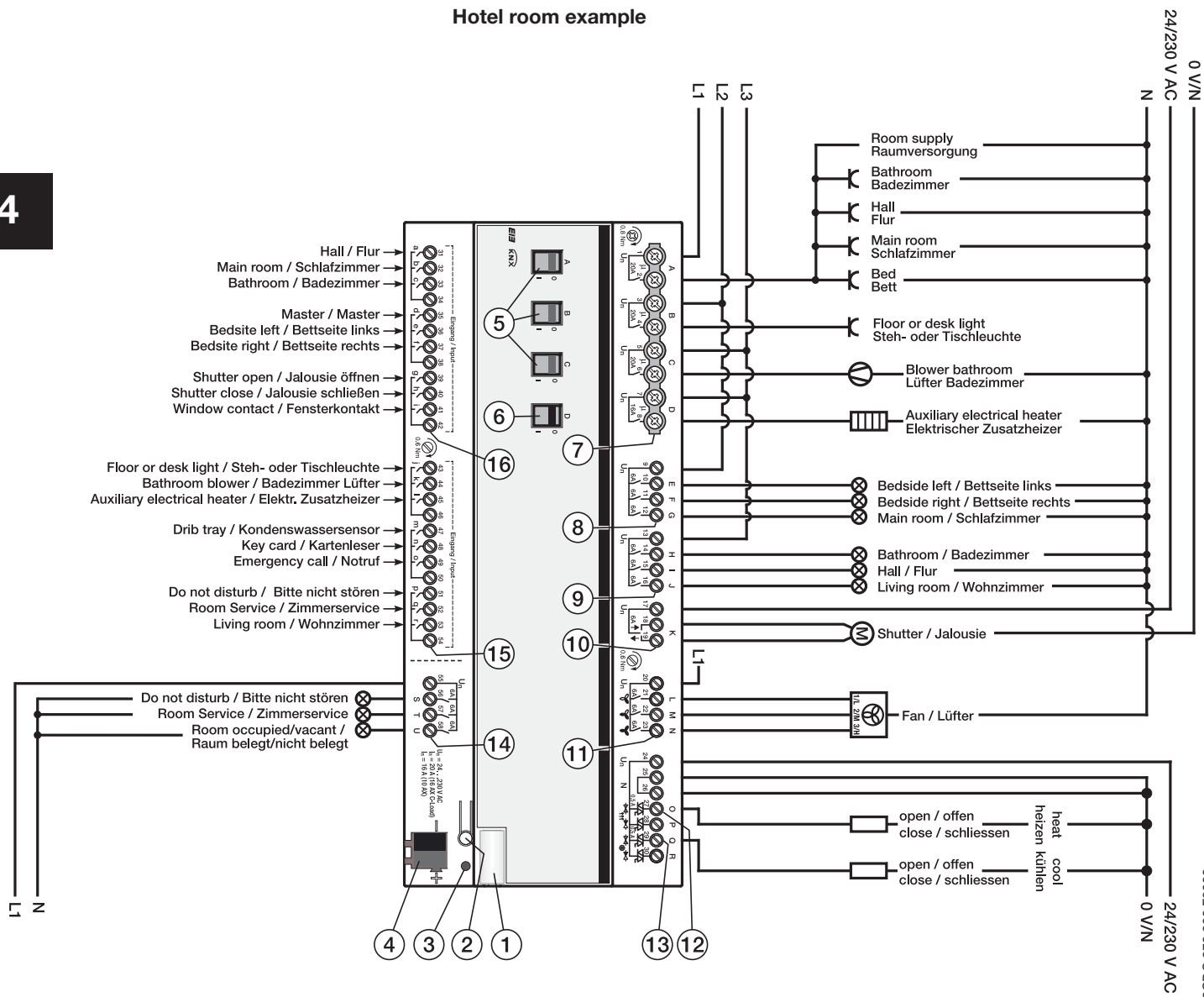
4



RM/S 2.1 with electromotor valve drives

- 1 Label carrier
- 2 Programming button
- 3 Programming LED
- 4 Bus terminal connection
- 5 Switch position display and manual operation, output (A, B, C) 20 A (16 AX)
- 6 Switch position display and manual operation, output (D) 16 A (10 AX)
- 7 Load circuits, with 2 terminals each
- 8 Outputs, 3 contacts, 1 screw terminal for phase connection (E, F, G)
- 9 Outputs, 3 contacts, 1 screw terminal for phase connection (H, I, J)
- 10 Shutter (K)
- 11 Fan (L, M, N)
- 12 Valve HEATING (O, P)
- 13 Valve COOLING (Q, R)
- 14 Outputs, 3 contacts, 1 screw terminal for phase connection (S, T, U)
- 15 Binary inputs (j, k, l, m, n, o, p, q, r)
- 16 Binary inputs (a, b, c, d, e, f, g, h, i)

Hotel room example



RM/S 2.1 with electro-thermal valve drives

- 1 Label carrier
- 2 Programming button
- 3 Programming LED
- 4 Bus terminal connection
- 5 Switch position display and manual operation, output (A, B, C) 20 A (16 AX)
- 6 Switch position display and manual operation, output (D) 16 A (10 AX)
- 7 Load circuits, with 2 terminals each
- 8 Outputs, 3 contacts, 1 screw terminal for phase connection (E, F, G)
- 9 Outputs, 3 contacts, 1 screw terminal for phase connection (H, I, J)
- 10 Shutter (K)
- 11 Fan (L, M, N)
- 12 Valve HEATING (O, P)
- 13 Valve COOLING (Q, R)
- 14 Outputs, 3 contacts, 1 screw terminal for phase connection (S, T, U)
- 15 Binary inputs (j, k, l, m, n, o, p, q, r)
- 16 Binary inputs (a, b, c, d, e, f, g, h, i)

Dimension drawing

