ROOM4D - Room automation solutions

The DIGICONTROL room automation concept is called ROOM4D. „4D" represents the four dimensions of modern room automation: efficiency, intelligence, comfort and design.

Enhanced comfort and efficiency in room automation

ROOM4D comprises unique solutions to network the rooms and trades of building automation. It provides ideal settings for heating, ventilation, air conditioning, lighting and shading, optimising comfort and increasing efficiency in every room. All areas are covered, from individual trades to fully integrated buildings. Furthermore, ROOM4D uses sophisticated algorithms to support you if you wish to combine optimum comfort with energy efficiency while ensuring minimum operating costs.

ROOM4D meets the requirements of VDI 3814. The sensors and sensor elements comply with VDI / VDE 3512 (quality class A or tolerance class A-TGA), one of the essential basic requirements for energy-efficient room automation. ROOM4D meets the demands of DIN EN 15232 up to the highest efficiency class.

Integrated room automation solutions

ROOM4D contains all components for implementing holistic room automation solutions and provides various integration modules for all areas of application. As an integral part of building automation and the system engineering - WEBPROJECT - ROOM4D is consistent from the sensor terminal to the management and control equipment ¬ WEBVISION 5, starting with the planning, through the construction to the long-term building operation.

www.digicontrol.info/room4d

You can find more information on the room automation system ROOM4D on our homepage at **www.digicontrol.info/room4d**.

The room operating units and multifunctional displays of the R4D.RC05 | RC06 series impress with their brilliant design with high-quality glass surface, dimmable multifunctional display and dimmable function keys as well as a touch rotary pulse generator embedded in the glass front (see page 106).

Innovative services for daily use

iCONTROL

iCONTROL is a user interface for mobile devices such as smartphones and tablet PCs and allows the operation of all room automation components such as blinds, lighting, room temperature, etc. and, if required, further components of the building services..

The touch panel R4D.RT7 is used in all areas of modern building and room automation for the operation of light, blinds, heating, ventilation and air conditioning, multimedia systems, timer catalogues and the setting of individual scenarios (see page 108).

comfort2go and mobile handling for users and operators

comfort2go is capable of transferring building and room automation functions to mobile means of communication like smart phones and tablet-PCs conveniently by using QR-codes.

ROOM4D Room operating device/controller with integrated CAN bus interface

DIGICONTROL R4D.RC01 | R4D.RC02 | R4D. RC03 | R4D.RC04
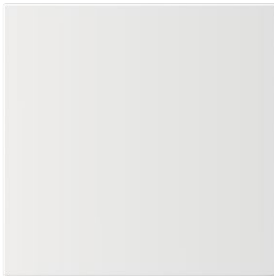
Abb. R4D.RC01 / R4D.RC02

Abb. R4D.RC03 / R4D.RC04

R4D.RC01 / RC02 / RC03 / RC04 are room operating devices/controllers with an embedded CAN bus interface for integration into the room automation network.

R4D.RC01 and RC02 have operating elements on the front of the device. R4D.RC03 and RC04 are not equipped with operating elements.

For the purpose of room temperature control, the R4D.RC01 and RC03 are equipped with two digital outputs (0 V / 24 V DC) which can be controlled either switching or pulse-width modulating (PWM). The R4D.RC02 and RC04 are equipped with two analogue outputs (0...10 V DC). The superordinate controller or the integrated PI controllers for the heating or cooling mode take over the control of the actuators. The room temperature is detected via the integrated temperature sensor. All information is sent to the superordinate controller via the connected bus system.

Additionally, the devices have four digital inputs which can be assigned special functions (for example, a window contact).

There are 4 operating modes provided for energy-efficient operation (comfort, absence, night and extension of utilisation time). The current mode of operation is displayed via the 3 green status LEDs. A unique set point temperature for each operating mode is defined for internal control. The user can set the temperature for the Comfort mode using the set point value switch by maximum four steps up or down. Shifting the set point value is indicated with the help of 5 LEDs placed around the set point switch. The user can set his presence or absence by using the presence button.

TECHNICAL DATA

Voltage	24 V DC
Inputs	4 digital inputs over 0 V output signal for internal control (window contact, dew-point monitor, motion detector, ...)
Power consumption	0.5 W (without load)
Sensor	NTC 10 kΩ
Electrical connection	Via screw terminals for wires up to 1.5 mm²
Operating elements	■ Set-point switches (max. ± 4 steps)
	■ Presence button
	■ 3 status LEDs for displaying the mode (present, absent, night, extension of utilisation time)
	■ 1 ECO LED (red/orange/green) controlled by the AS
	■ 5 LEDs for indicating the set-point shifting (2x blue, 1x orange, 2x red)
Mounting	In a flush-mounted Ø 55mm connection box
Interfaces	CAN bus
Housing	ABS Polyman HH3, reflector white + 4 % UV
Dimensions	82 x 82 x 34 (with terminal clamp) mm
Protection class	IP20
Storage temperature	-10...+50 °C
Operating temperature	+5...+40 °C
Ambient humidity	Up to 85 % rh. without condensation acc. to VDE 0160, EN 50178, Class 3K3

TYPE LIST

TYPE	DATA SHEET	OUTPUTS	FRONT PANEL	COLOUR
R4D.RC01	17200	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	with operating elements	white
R4D.RC01-ALU	17200	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	with operating elements	aluminum (on request)
R4D.RC01-ANT	17200	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	with operating elements	anthracite (on request)
R4D.RC02	17201	nominal current max. 4 mA per output	with operating elements	white
R4D.RC02-ALU	17201	nominal current max. 4 mA per output	with operating elements	aluminum (on request)
R4D.RC02-ANT	17201	nominal current max. 4 mA per output	with operating elements	anthracite (on request)
R4D.RC03	17202	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	without operating elements	white
R4D.RC03-ALU	17202	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	without operating elements	aluminum (on request)
R4D.RC03-ANT	17202	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	without operating elements	anthracite (on request)
R4D.RC04	17203	nominal current max. 4 mA per output	without operating elements	white
R4D.RC04-ALU	17203	nominal current max. 4 mA per output	without operating elements	aluminum (on request)
R4D.RC04-ANT	17203	nominal current max. 4 mA per output	without operating elements	anthracite (on request)

ACCESSORY

TYPE	DESCRIPTION
R4D.RC01-02-HwD	For R4D.RC01/02 - Device socket for cavity wall installation in airtight design with sealing membranes

ROOM4D Room operating device/controller with integrated data bus interface and multi-function display

DIGICONTROL R4D.RC05... | R4D.RC06...

R4D.RC05 and RC06 are room operating devices/controllers that control two valve outputs for room temperature regulation. The R4D.RC05 has two digital outputs for this purpose (0 V / 24 V) to open and close the valves. The R4D. RC06 is provided with two analogue outputs, 0...10 V for continuous control. The valves are controlled via a supervisory automation station (AS) or by an integrated heating and cooling PI controllers. The R4D.RC05/RC06 measures the room temperature using an integrated temperature sensor for room temperature control. The R4D.RC05/RC06 has two digital inputs apart from the 2 outputs. These can be assigned optionally to switches, buttons or special functions (for example, a window contact). There are six freely configurable buttons and a universal rotary encoder available for operation. Moreover, commands for switching on lights can be configured with the help of the integrated proximity sensor. The integrated multi-function display is freely configurable and can be adapted to suit the respective application.

TECHNICAL DATA

Voltage	24 V DC
Inputs	2 digital inputs over 0 V output signal
Power consumption	1.08 W (no load with activated backlight)
Sensor	NTC 10 kΩ
Electrical connection	Via screw terminals for wires up to 1.5 mm²
Operating elements	■ Multi function display
	■ Rotary encode
	■ 6 Buttons
	■ 1 Proximity sensor
Mounting	Cavity wall installation in air-tight electronics tunnel twin-chamber box
Weight	270 g
Dimensions	88 x 173 x 30 (with terminal clamp) mm
Protection class	IP20
Storage temperature	-10...+50 °C
Operating temperature	+5...+40 °C
Ambient humidity	Up to 85 % rh. without condensation acc. to VDE 0160, EN 50178, Class 3K3

TYPE LIST

TYPE	DATA SHEET	OUTPUTS	INTERFACES	COLOUR
R4D.RC05	17210	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	CAN bus	black
R4D.RC05-W	17210	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	CAN bus	white
R4D.RC05-MO	17212	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	RS485-Modbus-RTU (Slave)	black
R4D.RC05-MO-W	17212	nominal current max. 0.4 A per output; max. short-circuit current 1.2 A	RS485-Modbus-RTU (Slave)	white
R4D.RC06	17211	nominal current max. 4 mA per output	CAN bus	black
R4D.RC06-W	17211	nominal current max. 4 mA per output	CAN bus	white

TYPE LIST

TYPE	DATA SHEET	OUTPUTS	INTERFACES	COLOUR
R4D.RC06-MO	17213	nominal current max. 4 mA per output	RS485-Modbus-RTU (Slave)	black
R4D.RC06-MO-W	17213	nominal current max. 4 mA per output	RS485-Modbus-RTU (Slave)	white

ACCESSORY

TYPE	DESCRIPTION	
R4D.RC05-06-HwD	for R4D.RC05/06 - Air-tight electronics tunnel twin-chamber box for cavity wall installation with additional sealing lip and with separator wall and cover that can be wallpapared	

ROOM4D Room operating unit / touch panel with integrated ethernet/BACnet interface

DIGICONTROL R4D.RT7

Data sheet number 55010

The R4D.RT7 is a multi-function touch-screen terminal, which can be programmed and configured as desired - based on the feature required. As a result of the facility of saving a large number of user interface applications in the touch-screen terminal, it is possible to have applications ranging from individual room control right up to complex applications covering the entire building automation. Ethernet is used as the basis for communication. The communication partners can be either BACnet controllers or even proprietary makes of controllers. The touch-screen terminals are fed power over the Ethernet (PoE). The R4D.RT7 can be issued with a varity of frames with different colours: Aluminium, high-grade steel, RALcolours. The configuration of the touchpanel is based the HMI configurator.

TECHNICAL DATA

Voltage	PoE (Power over Ethernet) 48 V DC (Class [2])
Power consumption	In operation approx. 5 W, in standby approx. 0.5 W, in sleep approx. 0.1 W
Operating elements	■ Technology: TFT with LED backlight ■ Diagonal: 4.3" ■ Ratio: 16:9 ■ Resolution: 480x272 pixel ■ Colours: 16 bit (65.536 colours) ■ Brightness: 350 cd max. brightness control ■ Contrast: 300:1 ■ Viewing angle: 75/75/75/45° ■ Touch panel: 4-wire resistive, non-reflective 3H hard coat surface
Mounting	Cavity wall installation or on wall surface
Dimensions	87.5 x 158.6 x 62.3 mm
Protection class	IP20
Protection class	III
Storage temperature	-20...+85 °C
Operating temperature	0...+50 °C
Ambient humidity	5...90 % rh. (non-condensing)
Standards/rules/guidelines/ approvals	EN55022, EN55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6

TYPE

R4D.RT7

ACCESSORY

TYPE	DESCRIPTION	
R4D.RT7-E22	E22 flush-type box - The E22 cavity wall connector socket (included in the scope of delivery of the R4D.RT7 touch panel) is inserted into an E22 flush-type box and embedded in the wall for the purpose of flush-mounted installations in masonry.	
R4D.RT7-Folie	Frame-Aluminium front plate with dust-tight and liquid-tight surface	

ACCESSORY

TYPE	DESCRIPTION	
R4D.RT7-Alu	Frame-Aluminium anodized, natural coloured	
R4D.RT7-V2A	Frame-High-grade steel	
R4D.RT7-Lack	Frame-Aluminium trilaminate varnishing basecoat as RAL-colours clear vanish 2K-plus, high gloss finished	
R4D.RT7-Eloxal	Frame-Aluminium anodized, Eloxal standard colours	

Industrial PoE Ethernet Switch

DIGICONTROL IE-SW-BL06-2TX-4POE

Data sheet number 56030

The switch offers a solution for the use of Power over Ethernet. 4 x IEEE 802.3af / at compliant PoE ports, with integrated DC / DC converter for Supply of 48 V PoE devices over the entire input voltage range of 24 to 48 VDC, intelligent power consumption detection and classification.

TECHNICAL DATA

Number of ports	2xRJ45 10/100 BaseT(X), 4xRJ45 10/100 BaseT(X) PoE+
Power output	Max. (PoE) 120 W at 24/48 V DC (18 to 57 V DC)
Technology	IEEE 802.3af for Power-over-Ethernet, IEEE 802.3at for Power-over-Ethernet, IEEE 802.3 for 10BaseT, IEEE 802.3u for 100BaseT(X), IEEE 802.3x for flow control
Voltage	12 / 24 / 48 V DC, 2 redundant inputs
Current consumption	5.55 A at 24 V DC
Input voltage	24/48 V DC
Power consumption	Max. 13.2 W
Mounting	Mounting rail
Housing	Aluminium
Weight	375 g
Dimensions	50 x 114 x 70 mm
Protection class	IP30
Storage temperature	-40...+85 °C
Operating temperature	-10...+60 °C
Ambient humidity	5...95 % rh. (non-condensing)
Standards/rules/guidelines/ approvals	FCC Part 15 Subpart B Class A, EN 55032, EN 55024, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 GHz: 20 V/m, IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV, IEC 61000-4-5 Surge: Power: 2 kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 V, EN 61000-4-8

TYPE
IE-SW-BL06-2TX-4POE

BACnet router

DIGICONTROL R4D.IP-MS/TP

Data sheet number 56025

The BACnet router R4D.IP-MS/TP allows the networking of the BACnet topology ISO8802-2 (well known as BACnet/Ethernet), BACnet/IP and MS/TP (serial BACnet networks based on RS485). R4D.IP-MS/TP is a hardware solution, capable for the installation in a control cabinet.

TECHNICAL DATA

Voltage	15...36 V DC / 24 V AC
Current consumption	200 mA max.
Mounting	Mounting rail
Dimensions	94 x 30 x 75 mm
Protection class	IP30
Operating temperature	0...+45 °C

TYPE
BACnet Router

Communication interface for the integration of EnOcean

DIGICONTROL ems4.ENO1B

Data sheet number 21000

The ems4.ENO1B bi-directional gateway module acts as an interface with EnOcean-compatible sensor and actuator modules. This module can be used to process data from wireless sensors in the ems4 / ems2 / ems5 systems. The bi-directional functions of this gateway also enable superordinate control of wireless receivers via the ems4 / ems2 / ems5 system. The gateway only uses those wireless sensors that the user has defined using the configuration tool (webCADpro / iBASUite.builder) to evaluate and forward the data. In learning mode, the user can assign the gateway module to the desired switching actuators. This enables the user to control the switching of these actuators via the user program of the automation station and therefore via the management lever. Thanks to the transparent data interface that the gateway offers between automation stations and EnOcean transmitters, it is possible to use wireless modules from various manufacturers of the EnOcean Alliance without having to make any adjustments to the gateway.

GENERAL SPECIFICATIONS

Voltage	24 V DC +/- 10 %
Power consumption	1 W
Electrical connection	Via screw terminals for wires up to 1.5 mm²
Weight	Approx. 175 g
Housing	Installation housing
Dimensions	82 x 80 x 55 mm
Protection class	IP42
Storage temperature	-10...+70 °C
Operating temperature	+5...+45 °C
Ambient humidity	Up to 85 % rh. without condensation acc. to VDE 0160, EN 50178, Class 3K3
Standards/rules/guidelines/ approvals	EN 300220-2: 2018-09, EN 301489-3: 2019-03, EN 61326-1: 2013-07, DIN EN 61010-1:2020-03, EN 63000: 2019-05

TECHNICAL SPECIFICATIONS

System bus	CAN bus
Interfaces	■ CAN bus (MultiLink), EnOcean
	■ Wireless system 868 MHz
	■ Number of EnOcean-devices: 128 sensors and actuators

TYPE
ems4.ENO1B

EnOcean Radio Room Temperature Sensor

DIGICONTROL R4D.RTF...

Data sheet number 60220 ▶

Battery- and wireless radio room sensor for temperature and ventilation control. Dependent on events, the radio room temperature sensor transfers the present values to the EnOcean communication interface ems4.ENO1B in cyclical intervals. Transmission by means of radio telegrams according to EnOcean standard. Depending on the device with integrated temperature sensor, rotary knob for set point adjustment, rotary knob for fan speed adjustment and presence key. With integrated solar energy storage for maintenance-free operation.

TECHNICAL DATA

Frequency band	EnOcean, standard frequency 868.3 MHz
Sending/reception interval	Immediately by keystroke, by actuating the rotary switch after 10 sec., every 100 sec. at change >0,8 K or >5°angle of rotation (Set Point), otherwise every 1000 sec.
Function	Set point adjuster (P) for set point adjustment Rotary switch (S) for fan stage adjustment, 5-stages (auto, 0, I, II, III) Button (T) for occupancy signal
Measuring value detection	Every 100 seconds
Measured variable	Temperature
Power generation	Solar cell, internal super cap, maintenance - free
Weight	50 g
Housing	Material ASA, colour pure white
Dimensions	84.5 x 84.5 x 25 mm
Protection class	IP30 according to EN60529
Operating temperature	0...+40 °C
Ambient humidity	Max. 85 % rh. (non-condensing)
Standards/rules/guidelines/ approvals	CE-Conformity: 2004/108/EC Electromagnetic Compatibility Directive R and TTE 1999/5/EC Radio and Telecommunications Terminal Equipment Directive Product safety: 2001/95/EC Standards: ETSI EN 301 489-1: 2001-09 ETSI EN 301 489-3: 2001-11 ETSI EN 61000-6-2: 2002-08 ETSI EN 300 220-3: 2000-09 Product safety: EN 60730-1: 2002 The general registration for the radio operation is valid for all EU countries as well as for Switzerland. FCC ID: S3N-SRXX This device complies with Part 15 of the FCC Rules.

TYPE LIST

TYPE	DESIGN
R4D.RTF	Room temperature sensor
R4D.RTF-P	Room temperature sensor with set point adjustment
R4D.RTF-PT	Room temperature sensor with set point adjustment, presence key

TYPE LIST

TYPE	DESIGN
R4D.RTF-PS	Room temperature sensor with set point adjustment, fan speed switch
R4D.RTF-PST	Room temperature sensor with set point adjustment, fan speed switch, presence key
R4D.RTF-T	Room temperature sensor with presence key

EnOcean Radio Room Sensor CO2/Temperature

DIGICONTROL R4D.RTF-CO2

Data sheet number 60230

The sensor R4D.RTF-CO2 is designed for the detection of carbon dioxide (CO2) and temperature in living spaces. Wherever people are staying in rooms, the CO2 concentration is an evident indicator for the indoor air quality. A higher CO2 content is an indicator for a worse indoor air quality. For the CO2 measurement the Non Dispersive InfraRed (NDIR) Technology with automatic self-calibration is used. Transmission to receiver by means of radio telegrams according to EnOcean standard. The radio room CO2 sensor transmits the present values to the EnOcean communication interface ems4. ENO1B.

TECHNICAL DATA

Voltage	15...24 V DC (+/- 10 %) or 24 V AC (+/- 10 %)
Measuring range	CO2: 0...2550 ppm Temperature: 0...51 °C
Power consumption	Max. 1.5 W/24 V DC; max. 3 W/24 V AC
Sensor	CO2: NDIR (non dispersive infrared)
Frequency band	EnOcean, Dolphin, standard frequency 868.3 MHz
Cable entry	Predetermined breaking points top/bottom, rear entry
Electrical connection	Screw terminals max. 1.5 mm²
Technology	EnOcean, Dolphin
Repeatability CO2	< 1 % of full scale
Sending/reception interval	Every 100 sec. at changes >1 K, >2.5 % rh. or 50 ppm, otherwise every 1000 sec.
Accuracy	@21 °C CO2: +/- 75 ppm, >750 ppm: +/- 10 %; Temperature: +/- 1 % of measuring range
Measured variable	Temperature, CO2
Weight	90 g
Housing	Material ASA, colour pure white
Dimensions	84.5 x 84.5 x 25 mm
Protection class	IP30 according to EN60529
Operating temperature	0...+50 °C
Ambient humidity	Max. 85 % rh. (non-condensing)
Standards/rules/guidelines/ approvals	CE-Conformity: 2004/108/EC Electromagnetic compatibility Product safety: 2001/95/EC EMC: EN 60730-1:2002 Product safety: EN 60730-1:2002
Other remarks	Optionally with sensor for rel. humidity Optionally with LCD display to show CO2 concentration, temperature and rel. humidity Optionally with 3 LEDs to show the CO2 concentration

TYPE
R4D.RTF-CO2

EnOcean Radio Outdoor Temperature Sensor

DIGICONTROL R4D.ATF

Data sheet number 60170

Battery- and wireless radio outdoor sensor for temperature and ventilation control. The radio outdoor sensor transfers the current temperature to the EnOcean communication interface ems4.ENO1B in cyclical intervals. With integrated temperature sensor and solar energy storage for maintenance-free operation.

TECHNICAL DATA

Measuring range	Temperature: -20...+60 °C, configured via airConfig
Frequency band	EnOcean, standard frequency 868.3 MHz
Sending/reception interval	Configured via airConfig, Default: WakeUp time = 100 sec., Heartbeat cycle = 10x
Accuracy	@21 °C Temperature: +/- 1 % from measuring range
Measured variable	Temperature
Power generation	Solar cell, internal super cap, maintenance - free
Weight	110 g
Housing	PA6, pure white, cover PC, transparent with quick - release screws
Dimensions	78 x 58 x 45.5 mm
Protection class	IP65 according to EN60529
Ambient humidity	Max. 85 % rh., short term condensation
Standards/rules/guidelines/ approvals	CE-Conformity: 2004/108/EC Electromagnetic compatibility R and TTE 1999/5/EC Radio and Telecommunications Terminal Equipment Directive Product safety: 2001/95/EG Standards: ETSI EN 301 489-1: 2001-09 ETSI EN 301 489-3: 2001-11 ETSI EN 61000-6-2: 2002-08 ETSI EN 300 220-3: 2000-09 Product safety: EN 60730-1: 2002 The general registration for the radio operation is valid for all EU countries as well as for Switzerland. FCC ID: S3N-SRXX This device complies with Part 15 of the FCC Rules. The operation is subject to the following conditions: (1) The device may not cause interferences and (2) The device must be insusceptible against disturbances, especially ones which cause a malfunction of the device. Attention: Changes or modifications of the device which have not been explicitly permitted lead to suspension of the FCC admission to operation.

TYPE
R4D.ATF

EnOcean Radio Ceiling Multi Sensor 360°

DIGICONTROL R4D.BW-LS

Data sheet number 60190

The radio ceiling multi sensor R4D.BW-LS is designed for motion detection and brightness measurement in living and office spaces.
Transmission to the EnOcean communication interface ems4.ENO1B is carried out by means of radio telegrams according to the EnOcean standard.

TECHNICAL DATA

Voltage	3x battery LS14250 (1.1 Ah / 3.6 V / 1/2 AA)
Measuring range	Range of Illumination: 0...510 Lux Action: 360°
Frequency band	EnOcean, STM, Standard frequenzy 868,3 MHz
Sensor	Sensor action PIR "passive infrared"
Technology	EnOcean, STM
Transmission range	Approx. 300 m free field, approx. 30 m within buildings
Sending/reception interval	Every 100 seconds if brightness changes >10 Lux and no motion is detected Every 1000 seconds if brightness changes <10 Lux and no motion is detected Every 100 seconds if brightness changes <10 Lux and motion is detected Every 10 seconds if brightness changes >10 Lux and motion is detected Immediately upon status change from no motion to motion
Accuracy	typ. +/- 30 Lux
Measuring value detection	Every 100 seconds (factory setting and no motion)
Lifespan	Battery min. 6 years (with factory setting, 1000 telegrams per day and original battery)
Weight	75 g
Housing	Materil ABS, colour pure white, similar to RAL 9010
Protection class	IP20 according to EN60529
Storage temperature	-10...+60 °C
Operating temperature	0...+50 °C
Ambient humidity	Max. 70 % rh. (non-condensing)
Standards/rules/guidelines/ approvals	CE-Conformity: 2004/108/EC Electromagnetic compatibility R and TTE 1999/5/EC Radio and Telecommunications Terminal Equipment Directive Product safety: 2001/95/EC Standards: ETSI EN 301 489-1: 2001-09 ETSI EN 301 489-3: 2001-11 ETSI EN 61000-6-2: 2002-08 ETSI EN 300 220-3: 2000-09 The general registration for the radio operation is valid for all EU countries as well as for Switzerland.

TYPE

R4D.BW-LS

EnOcean Radio Outdoor Light Sensor

DIGICONTROL R4D.AHKF

Data sheet number 60160

Wireless light sensor for blind systems. Can also be used to control light at sunset. Designed for integration into an EnOcean network.

TECHNICAL DATA

Measuring range	0...510 Lux, 0...1000 Lux (10 Bit), 0...1020 Lux, 300...30.000 Lux (Standard), 600...60.000 Lux
Frequency band	EnOcean, Standard frequenzy 868,3 MHz
Technology	EnOcean (IEC 14543-3-10)
Sending/reception interval	Configurable via airConfig, Default: Wake-up time = 100 sec., Heartbeat cycle = 10x
Measured variable	Light
Power generation	Solar cell, internal super cap, maintenance - free
Weight	120 g
Housing	PA6, pure white, cover PC, transparent with quick - release screws
Protection class	IP65 according to EN60529
Operating temperature	-20...+70 °C
Ambient humidity	Max. 85 % rh., short term condensation

TYPE
R4D.AHKF

EnOcean Wireless Window Handle

DIGICONTROL R4D.FG1-...

Data sheet number 60101

Batteryless window handle for status monitoring of windows (optionally lockable) with EnOcean technology. When actuated, the handle transmits a radio signal with the handle position to an actuator or centrel control unit in order, for example, to activate an energy lock. This can be used to optimize energy consumption in the building, since the heating or ventilation is deactivated when the windows are open.

TECHNICAL DATA

Frequency band	EnOcean, Standard frequenzy 868,3 MHz
power supply	Maintenance-free, electrodynamic energy generator
Sending/reception interval	When turning the window handle
Antenna	Internal sending antenna
Mounting	Square spindle, variable lengths (for tread depth 32...42 mm)
Power generation	Electrodynamic energy generator, maintenance-free
Operating temperature	-5...+40 °C
Ambient humidity	Max. 80 % rh. (non-condensing)

TYPE LIST

TYPE	HOUSING
R4D.FG1-AL-ST	Aluminium steel grey painted
R4D.FG1-AL-RW	Aluminium pure white painted
R4D.FG1-ES	Stainless steel

EnOcean Radio Window Contact

DIGICONTROL R4D.FK1

Data sheet number 60111

Battery-less radio window contact for status monitoring of windows and doors. Provides a reduction in energy consumption through demand-driven heating and cooling.

TECHNICAL DATA

Sensor	Reed contact and magnet
Frequency band	EnOcean, Standard frequenzy 868,3 MHz
Sending/reception interval	If the state changes, otherwise every 1000 seconds
Antenna	Internal sending and receiving antenna
Mounting	Flat on Surface glue (with enclosed foil) or screw
Measuring value detection	Change of internal reed contact
Power generation	Solar cell, internal super cap, maintenance - free
Housing	PC/ABS, pure white
Protection class	IP40 according to EN60529
Operating temperature	-20...+60 °C
Ambient humidity	Max. 85 % rh. (non-condensing)

TYPE

R4D.FK1

EnOcean Radio Switch (BJ), compatible with switch programmes of Busch-Jaeger

DIGICONTROL R4D.2L/2J/4L/4J-BJ-...

Data sheet number 60140 ▶

The EnOcean radio switch (BJ) is an universal radio switch insert with a
maintenance-free, self powered radio transmitter. The central plate can be
glued or screwed in place and can be easily mounted on glass and plaster.
The integration is done by a special intermediate frame.
Compatible with the following Busch-Jaeger programs:

- SOLO
- FUTURE
- FUTURE Linear
- CARAT
- AXCENT

After being operated, the radio switch transmits its current position to the
EnOcean communication interface ems4.ENO1B. A radio signal is generated
each time the buttons are pressed or released. Dimmer and blind controls
can be realized by evaluating the switching status of the receivers.

TECHNICAL DATA

Frequency band	EnOcean PTM 200, Standarf frequenzy 868,3 MHz
Mounting	Flat on Surface glue (with enclosed foil) or screw
Power generation	Electrodynamic energy generator, maintenance-free
Operating Travel/Operating Force:	Approx. 2 mm / 7 N; at room temperature
Total Installation Height	15 mm (frame lies directly against the wall)
Switching cycles	> 50000 operations according to EN 60669 / VDE 0632
Dimensions	▪ Cutout 63 x 63 mm ▪ Base plate 71 x 71 mm
Operating temperature	-25...+65 °C
Ambient humidity	Max. 85 % rh., non-condensing (for dry rooms only)

**Standards/rules/guidelines/
approvals**

- CE-Conformity:
89/336/EEC Electromagnetic compatibility
R and TTE 1999/5/EC Radio and
Telecommunications Terminal Equipment
Directive

  Standards:
  ETSI EN 301 489-1: 2001-09
  ETSI EN 301 489-3: 2001-11
  ETSI EN 61000-6-2: 2002-08
  ETSI EN 300 220-3: 2000-09

  The general approval for the radio operation
  is valid for all EU-countries as well as for
  Switzerland.

  FCCID: SZV-PTM200
  This device complies with Part 15 of the FCC
  Rules and RSS210 of Industry Canada.
  The operation is subject to the following
  conditions:
  (1) The device may not cause serious
  interferences and
  (2) The device must be insusceptible against
  disturbances, especially ones which cause a
  malfunction of the device.
  Attention: Changes or modifications of the device
  which have not been explicitly permitted lead to
  suspension of the FCC admission to operation.

- CE-Conformity:
89/336/EEC Electromagnetic compatibility
R and TTE 1999/5/EC Radio and
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Directive

  Standards:
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  malfunction of the device.
  Attention: Changes or modifications of the
  device which have not been explicitly permitted
  by Bosch Building Automation GmbH lead to
  suspension of the FCC admission to operation.

TYPE LIST

TYPE	LABELLING	COLOUR	ROCKER VARIANT
R4D.2L-BJ-AN	Light (0/1)	Anthracite	2 channel (1 rocker with medial position)
R4D.2L-BJ-AS	Light (0/1)	Aluminium silver	2 channel (1 rocker with medial position)
R4D.2L-BJ-EW	Light (0/1)	Ivory white	2 channel (1 rocker with medial position)
R4D.2L-BJ-SW	Light (0/1)	Studio white	2 channel (1 rocker with medial position)

TYPE LIST

TYPE	LABELLING	COLOUR	ROCKER VARIANT
R4D.4L-BJ-AN	Light (0/1)	Anthracite	4 channel (2 rockers)
R4D.4L-BJ-AS	Light (0/1)	Aluminium silver	4 channel (2 rockers)
R4D.4L-BJ-EW	Light (0/1)	Ivory white	4 channel (2 rockers)
R4D.4L-BJ-SW	Light (0/1)	Studio white	4 channel (2 rockers)
R4D.2J-BJ-AN	Blind (>/<)	Anthracite	2 channel (1 rocker with medial position)
R4D.2J-BJ-AS	Blind (>/<)	Aluminium silver	2 channel (1 rocker with medial position)
R4D.2J-BJ-EW	Blind (>/<)	Ivory white	2 channel (1 rocker with medial position)
R4D.2J-BJ-SW	Blind (>/<)	Studio white	2 channel (1 rocker with medial position)
R4D.4J-BJ-AN	Blind (>/<)	Anthracite	4 channel (2 rockers)
R4D.4J-BJ-AS	Blind (>/<)	Aluminium silver	4 channel (2 rockers)
R4D.4J-BJ-EW	Blind (>/<)	Ivory white	4 channel (2 rockers)
R4D.4J-BJ-SW	Blind (>/<)	Studio white	4 channel (2 rockers)

EnOcean Radio Switch (55x55mm), compatible with switch programmes of several manufacturers

DIGICONTROL R4D.2L/2J/4L/4J-55-...

Data sheet number 60150

The EnOcean radio switch (55x55mm) is an universal and extremely flat radio switch insert with a maintenance-free, self powered radio transmitter. The universal switch insert can be integrated into numerous control programmes by different manufacturers. The central plate can be glued or screwed in place and and can be easily mounted on glass and plaster.
Compatible with the following switch programs *):

- BERKER: S1, B1, B3, B7 Glas
- GIRA: Standard55, E2, Event, Esprit
- JUNG: A500, Aplus
- MERTEN: M-Smart, M-Arc, M-Plan
- PEHA: Aura
- FELLER: Edizio Due
- SIEMENS: Delta
- ELSO: Fashion, Riva, Scala
- *) partly equipped with an intermediate frame

After being operated, the radio switch transfers its current position to the EnOcean communication interface ems4.ENO1B. A radio signal is generated when pressing and releasing a button. Dimmer and blind controls can be realized by evaluating the switchting status of the receivers.

TECHNICAL DATA

Frequency band	EnOcean PTM 200, Standarf frequenzy 868,3 MHz
Mounting	Flat on Surface glue (with enclosed foil) or screw
Power generation	Electrodynamic energy generator, maintenance-free
Operating Travel/Operating Force:	Approx. 2 mm / 7 N; at room temperature
Total Installation Height	14 mm (frame lies directly against the wall)
Switching cycles	> 50000 operations according to EN 60669 / VDE 0632
Dimensions	▪ Base plate 71 x 71 mm ▪ Cutout 55 x 55 mm ▪ Rocker 50 x 50 mm
Operating temperature	-25...+65 °C
Ambient humidity	Max. 85 % rh., non-condensing (for dry rooms only)

| **Standards/rules/guidelines/ approvals** | ■ CE-Conformity:
89/336/EEC Electromagnetic compatibility
R and TTE 1999/5/EC Radio and Telecommunications Terminal Equipment Directive |

CE-Conformity:
89/336/EEC Electromagnetic compatibility
R and TTE 1999/5/EC Radio and
Telecommunications Terminal Equipment
Directive

Standards:
ETSI EN 301 489-1: 2001-09
ETSI EN 301 489-3: 2001-11
ETSI EN 61000-6-2: 2002-08
ETSI EN 300 220-3: 2000-09

The general approval for the radio operation
is valid for all EU-countries as well as for
Switzerland.

FCCID: SZV-PTM200
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Rules and RSS210 of Industry Canada.
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malfunction of the device.
Attention: Changes or modifications of the device
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■ CE-Conformity:
89/336/EEC Electromagnetic compatibility
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Standards:
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malfunction of the device.
Attention: Changes or modifications of the
device which have not been explicitly permitted
by Bosch Building Automation GmbH lead to
suspension of the FCC admission to operation.

TYPE LIST

TYPE	LABELLING	COLOUR	ROCKER VARIANT
R4D.2L-55-AL	Light (0/1)	Aluminum	2 channel (1 rocker with medial position)
R4D.2L-55-AN	Light (0/1)	Anthracite	2 channel (1 rocker with medial position)
R4D.2L-55-RW	Light (0/1)	Pure white	2 channel (1 rocker with medial position)
R4D.2L-55-RWG	Light (0/1)	Pure white glossy	2 channel (1 rocker with medial position)

TYPE LIST

TYPE	LABELLING	COLOUR	ROCKER VARIANT
R4D.4L-55-AL	Light (0/1)	Aluminum	4 channel (2 rockers)
R4D.4L-55-AN	Light (0/1)	Anthracite	4 channel (2 rockers)
R4D.4L-55-RW	Light (0/1)	Pure white	4 channel (2 rockers)
R4D.4L-55-RWG	Light (0/1)	Pure white glossy	4 channel (2 rockers)
R4D.2J-55-AL	Blind (>/<)	Aluminum	2 channel (1 rocker with medial position)
R4D.2J-55-AN	Blind (>/<)	Anthracite	2 channel (1 rocker with medial position)
R4D.2J-55-RW	Blind (>/<)	Pure white	2 channel (1 rocker with medial position)
R4D.2J-55-RWG	Blind (>/<)	Pure white glossy	2 channel (1 rocker with medial position)
R4D.4J-55-AL	Blind (>/<)	Aluminum	4 channel (2 rockers)
R4D.4J-55-AN	Blind (>/<)	Anthracite	4 channel (2 rockers)
R4D.4J-55-RW	Blind (>/<)	Pure white	4 channel (2 rockers)
R4D.4J-55-RWG	Blind (>/<)	Pure white glossy	4 channel (2 rockers)

EnOcean Radio switch for access cards

DIGICONTROL R4D.KCS1

Data sheet number 60121

The R4D.KCS1 is a battery-free radio switch for room access cards. Occupancy-dependent control of lighting or air-conditioning in rooms. The radio technology allows free installation on glass or plaster by means of adhesive pads or screws.

TECHNICAL DATA

Frequency band	EnOcean, Standard frequenzy 868,3 MHz
Sending/reception interval	If the state changes
Mounting	Flat on Surface glue (with enclosed foil) or screw
Power generation	Electrodynamic energy generator, maintenance-free
Housing	Material PC, colour pure white
Dimensions	80 x 80 x 20 mm
Protection class	IP20 according to EN60529
Operating temperature	0...+40 °C
Ambient humidity	Max. 85 % rh. (non-condensing)

TYPE
R4D.KCS1

EnOcean wireless radiator valve actuator for room temperature control

DIGICONTROL R4D.VSA1

Data sheet number 60241

Battery-free wireless valve actuator for single room control. The new electronic small valve actuator utilizes the temperature difference between the warm radiator and the cooler room to gain electrical energy by means of a thermoelectric generator.

TECHNICAL DATA

Measuring range	Temperature: 0...+40 °C
Frequency band	EnOcean, Standard frequenzy 868,3 MHz
Sending/reception interval	Every 2...20 min., configured (in 1 min. steps)
Accuracy	Temperatur +/- 0.5 °C (typ. at 25 °C)
Antenna	Internal sending and receiving antenna
Data transmission	Bidirectional
Function	Radio interface, heating-actuator operation, self-control mode, automatic closing point control, frost protection function
Mounting	Screw mounting, M30 x 1.5
Display	Status-LED, red
LED display	Status LED, red
Power generation	maintenance-free, thermal Energy Harvesting
Housing	PC, pure white, aluminium
Protection class	IP40 according to EN60529
Operating temperature	0...+50 °C
Ambient humidity	Max. 85 % rh. (non-condensing)
Other remarks	With integrated, digital temperature transmitter > 3.8 mm nominal stroke 0.24 mm / s max. speed 100 N min. force

TYPE

R4D.VSA1

EnOcean Radio Receiver with 1 or 2 analogue outputs

DIGICONTROL R4D.AO-...

Data sheet number 60180

The EnOcean radio receiver R4D.AO-... has one or two analogue 0...10 V outputs. The height of the output values depends on the data transmitted from the EnOcean sensors.
The R4D.AO-... works as dimmer. The relevant control signal can either come directly from the radio switches of series R4D.2L/2J/4L/4J.. or from the EnOcean communication interface ems4.ENO1B.

TECHNICAL DATA

Voltage	15...24 V DC (+/- 10 %) or 24 V AC (+/- 10 %)
Power consumption	Typical 1 W / 1.5 VA
Frequency band	EnOcean, Standard frequenzy 868.3 MHz
Electrical connection	Screw terminals max. 1.5 mm²
Antenna	Internal receiving antenna
Housing	Material ABS, colour red
Dimensions	70 x 48 x 35 mm
Protection class	IP20 according to EN60529
Storage temperature	-20...+70 °C
Ambient humidity	0...75 % rh., non-condensing
Standards/rules/guidelines/ approvals	CE-Conformity: 2004/108/EC Electromagnetic compatibility R and TTE 1999/5/EC Radio and Telecommunications Terminal Equipment Directive Product safety: 2001/95/EC Product safety
	EMC: EN 61000-6-2:2005 EN 61000-6-3:2007 ETSI EN 301 489-3:2001 EN 61000-3-2:2006 EN 61000-3-3:1995+A1+A2 Product safety: EN 60730-1:2002
	The general registration for the radio operation is valid for all EU countries as well as for Switzerland.

TYPE LIST

TYPE	OUTPUTS
R4D.AO-1	1x 0...10 V / max. 20 mA
R4D.AO-2	2x 0...10 V / max. 20 mA

EnOcean radio switch receiver lighting 230V for radio pushbutton

DIGICONTROL R4D.DO-B

Data sheet number 60200

The EnOcean radio actuator R4D.DO-B is equipped with a digital output for the control of light bulbs, HV halogen lamps, electronic ballasts and inductive loads.
The respective control signal can either come directly from the radio switches of series R4D.2L/2J/4L/4J or the EnOcean communication interface ems4.ENO1B.

TECHNICAL DATA

Voltage	230 V AC 50/60 Hz
Frequency band	EnOcean, Standard frequenzy 868.3 MHz
Power line protection	Circuit breaker rated for 16 A, maximum
Load types	Incandescent lamps: 2500 W HV-halogen lamps: 1200 W Inductive: 600 VA Electronic ballast: 3 units
Dimensions	70 x 48 x 35 mm
Protection class	IP20 according to EN60529
Storage temperature	-40...+85 °C
Operating temperature	-20...+40 °C
Standards/rules/guidelines/ approvals	CE-Conformity: R and TTE Directive 1999/5/EC Test specifications: EN 60669-2-1 Identification: CE; KEMA/KEUR
Operating temperature	-20 ... +40 °C

TYPE

R4D.DO-B

EnOcean radio - switch receiver blind 230V for radio pushbutton

DIGICONTROL R4D.DO-J

Data sheet number 60210

The EnOcean radio receiver R4D.DO-J is equipped with two digital outputs
for the control of blinds, roller shutters or other 3-point actuators.
The respective control signal can either come directly from the radio
switches of series R4D.2L/2J/4L/4J or from the EnOcean communication in-
terface ems4.ENO1B.

TECHNICAL DATA

Voltage	230 V AC 50/60 Hz
Frequency band	EnOcean, Standard frequenzy 868.3 MHz
Power line protection	Circuit breaker or fuse for 10 A, maximum
Dimensions	70 x 48 x 35 mm
Protection class	IP20 according to EN60529
Storage temperature	-40...+85 °C
Operating temperature	-20...+40 °C
Standards/rules/guidelines/ approvals	Test specifications: EN 60669-2-1 Identification: CE

TYPE

R4D.DO-J

EnOcean Radio Repeater

DIGICONTROL R4D.REP-3

The repeater serves for signal amplification between EnOcean sensors and receivers. It is typically used if the sensor is placed outside the reception range or if there are range problems between sender and receiver for existing installations (due to e.g. the building of walls, moving of furniture/cupboards). Level 1, level 2 and Smart Repeating can be set. An external transmitting/receiving antenna 2.5m with magnetic base is included in the scope of delivery.

TECHNICAL DATA

Voltage	flex. 15...240 V
Power consumption	typ. 1 VA (15...240 V)
Frequency band	EnOcean, Standard frequenzy 868.3 MHz
Electrical connection	Screw terminals max. 1.5 mm²
Antenna	External sending and receiving antenna
Data transmission	Bidirectional
Function	Level-1, Level-2, Smart-mode, rule-based, max. 10 rules
Weight	110 g
Housing	Material PA6, colour white
Dimensions	58 x 78 x 45.5 mm
Protection class	IP65 according to EN60529
Operating temperature	-20...+60 °C
Ambient humidity	Max. 70 % rh. (non-condensing)

TYPE

R4D.REP-3

EnOcean Field Strength Measuring Device USB Transceiver and Software

DIGICONTROL R4D.FSM-USB

Data sheet number 60270

R4D.FSM-USB consists of an EasySens USB transceiver and a software, that converts your notebook or Windows tablet into a field strength measuring device. It helps integrators to measure frequency ranges and/or to find the right location for wireless EnOcean receivers. R4D.FSM-USB is designed to give a quick overview of received EnOcean telegrams and to read status, ID, field strength and manufacturer of integrated products. All EnOcean telegrams received will be shown in the tool/USB, which should be mounted in the location of the existing or intended EnOcean receiver's antenna. The optional 3 m USB extension cable is recommended for this purpose. R4D.FSM-USB is available for devices with operating system Microsoft® Windows XP or newer.

TYPE
R4D.FSM-USB