BUILDING AUTOMATION

| Control of lighting and shading | Occupancy and light regulators | RF sensors | Access systems | Control systems and peripherals | Programmable controllers | Measurement and visualization of energy consumption | Motion switches |

www.buildingautomation.cz

enika®

AMiT automation

Building automation
Utilise your possibilities

AMiT - leading Czech manufacturer of control systems and electronics for industrial and building automation.

ENIKA.CZ - significant Czech manufacturer of wireless sensors and lighting and shading control systems for the building automation.

The business cooperation of the two companies began more than 20 years ago. In 2012, an idea arose to extend the partnership to cover the area of technology too, and to link wireless sensors, lighting and shading control system with control systems and programmable controllers. The outcome of the cooperation in development - a comprehensive solution for building automation – provides a high-quality tool for system integrators and building administrators to ensure comfortable and energy-efficient operation of modern buildings with regard to the rapidly changing requirements of users. High requirements for the quality of production and end products supported by more than twenty years of practical experience of both companies guarantee successful implementation for even the most demanding customers and investors. Important merits of both companies are modern production plants, technically efficient development departments and, very importantly for customers, experienced technical support teams.

Building automation
Comfort, safety, savings

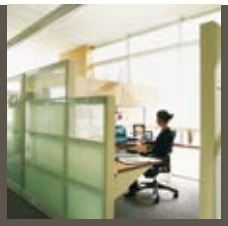
Building management system (BMS)

consist of interconnected mechanical and electronic parts, which can be divided into sensors, actuators and control units.

The information for control units is transmitted from sensors that monitor the temperature, humidity, CO_2 concentration, presence, air quality, but also the current position of the outdoor louvers, windows, or doors. The control units evaluate the obtained information and, based on created algorithms, send commands to the relevant actuators that activate individual subsystems - heating, air-conditioning, ventilation, lighting, shading, access to the building or fire security. Safe, efficient and comfortable operation of the subsystems of building automation is ensured by a higher-level control system with customised visualisation as its important feature.

The user is not even aware of the high-quality system of a properly functioning building because everything works not only automatically, but also from the perspective of the user, comfortably and safely. Automation systems allow management and control of up to 80 % of all energy consumed for the operation of the building. The attention of system integrators, owners and buildings administrators focuses on the most energy demanding processes, such as heating or air-conditioning and on energy demanding parts of the production process in production plants. The control of lighting and shading is an important part of the building automation system which significantly affects the working comfort and safety in the workplace.

lighting | shading | heating | air-conditioning | ventilation | energy monitoring and control

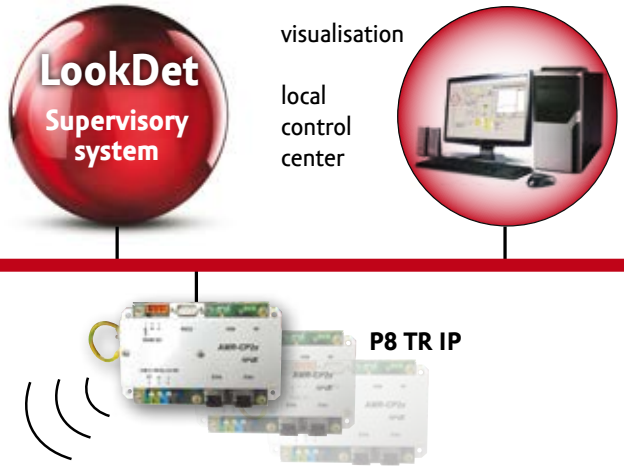




For new building projects, the building automation system is included in the design documentation and contributes significantly to the gaining of certificates for sustainable buildings such as LEED or BREEAM. Great potential is also represented by the reduction of energy performance of already existing buildings. When implementing new projects as well as restoration projects, it is important to consider not only the operational savings resulting from the building automation but also the costs for placing the individual systems into operation including requirements for the flexibility in the deployment of sensors and controls. In these cases, it is appropriate to use a combination of traditional control bus systems with sensors and systems which use radio frequency, i.e. wireless technology.

Nowadays building automation systems are used in virtually all areas of human activity and play a particularly important role in the premises of:

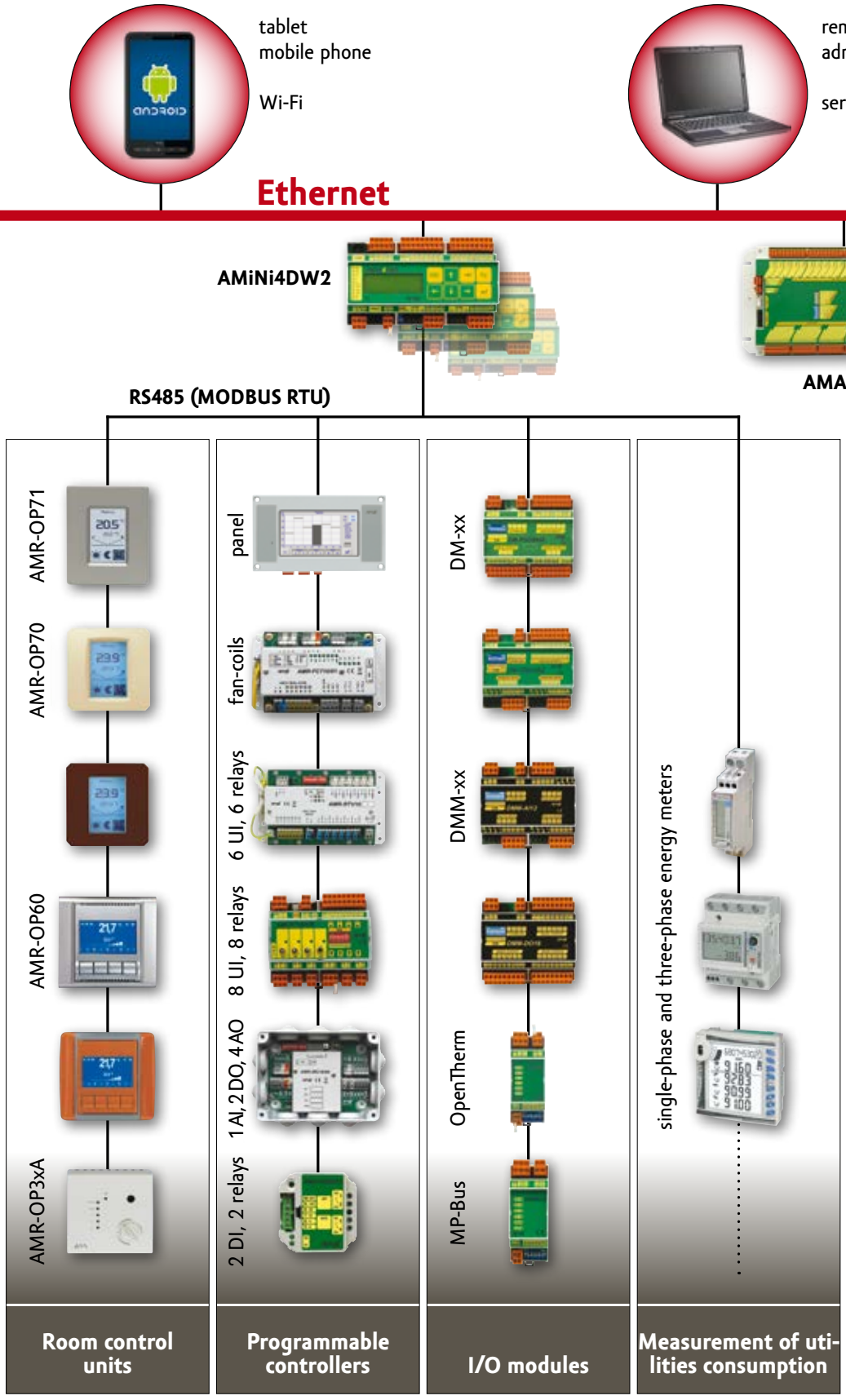
- Office buildings
- Airports
- Hospitals
- Logistics centers and warehouse facilities
- Manufacturing plants
- Schools, universities and research institutes
- Administration buildings
- Shopping and entertainment
- Museums, libraries, theatres and galleries

Building automation
Diagram of comprehensive solution



- LIGHTING
- ROLLER SHUTTERS /JALOUSIES
- HEATING
- VENTILATION SYSTEMS
- AIR -CONDITIONING
- MEASUREMENT OF UTILITIES

Poseidon® 868 MHz



MODBUS TCP/IP
MODBUS RTU
DB-Net
DB-Net/IP
M-Bus
MP-Bus
GENIBus
S-Bus
DALI
ARION
CANopen
OpenTherm
SNMP
IEC60870-5-104
OPC

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- basic
- general-purpose
- exclusive

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Single-phase energy meters

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- general-purpose
- exclusive

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Motion PIR switches

- ceiling mounted
- surface mounted
- built in MR 16 frame

Poseidon® 868 MHz

Wireless sensors, lighting and shading control systems for the building automation

Control the world around you in a modern and effective way. Accept the solution for the building automation that is focused on comfort and safety of the user, flexibility of control, and energy costs savings. Operate the lighting, air-conditioning, heating or jalousies in the office, warehouse or manufacturing areas comfortably.
Use Poseidon® wireless sensors and control system for your building automation.

Control the world around you in a modern and effective way.

Poseidon® is a user-friendly and energy-saving solution for wireless lighting control within building automation systems. It is designed so as to be compatible and integrable into the higher-level systems of building automation as much as possible.

Poseidon® can be operated with lighting systems composed of all common types of light fittings such as fluorescent, LED, halogen, incandescent, and discharge lamps.

Poseidon® is easy to extend, and can be used to control the lighting, for example, in one office, of a particular floor or even of the entire building. It brings energy costs savings which may, in certain cases, even exceed 70 %.

Poseidon® is environmentally friendly and offers investors an interesting solution for the certification of sustainable buildings acc. to LEED and BREEAM. The Poseidon® Asistent software allows comfortable configuration, remote administration and changes in lighting control depending on the requirements of users and owners of buildings.

Poseidon® 868 MHz
Wireless lighting and shading control system

Lighting control

TRANSMITTER – RECEIVER – SENSOR

Integration of the lighting control into the building automation system

TRANSMITTER – RECEIVER – SENSOR - INTERFACE

TRANSMITTERS

allow the user to control electronic systems. Pressing the respective pushbutton generates a command to be sent to the connected receiver that will subsequently perform the desired operation, e.g. it will turn on the light or close the louver. Commands from the transmitter are sent using proprietary wireless protocol Poseidon®.

- Easy to install
  using double-sided adhesive tape
- Range 150 m in open area
- Battery life 10 years
- Smart design
- Signalisation of the command received
- Easy to integrate into other systems

RECEIVERS

are connected to the power circuit of electronic systems and used for their direct on/off switching, dimming or controlling. The receivers receive commands from transmitters or sensors via the Poseidon® proprietary wireless protocol.

- Extended functionality
  using Poseidon® Asistent software
- Suitable for switching of all kinds of load
- It can be used as a signal repeater
- Easy to set
- Possibility of external antenna connection
- Compact dimensions

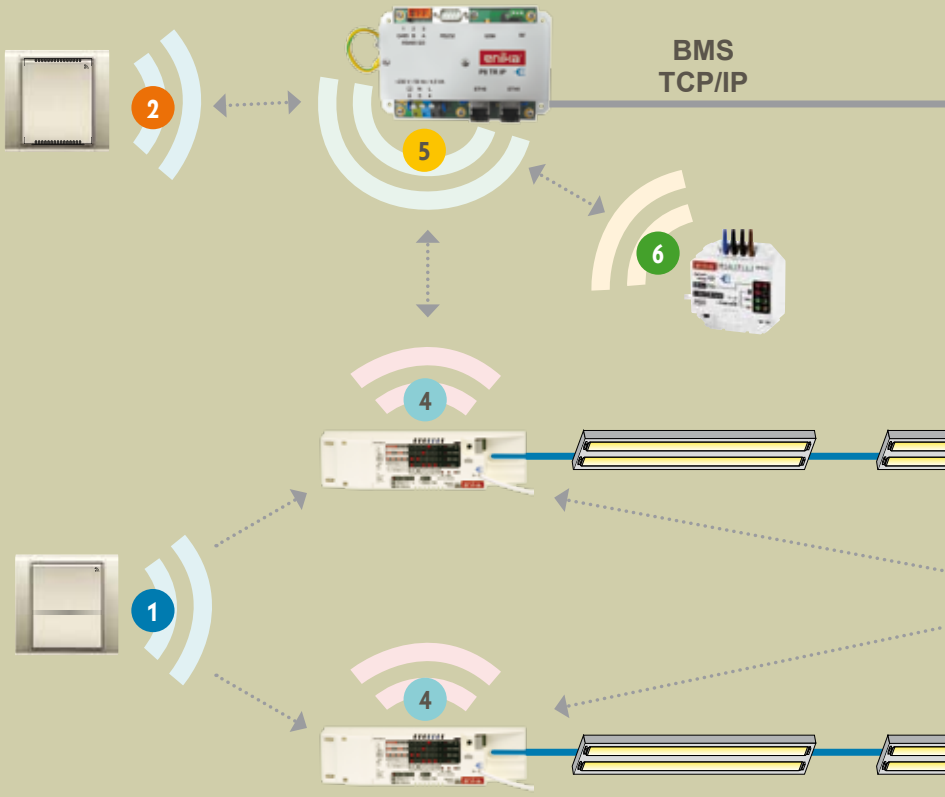
SENSORS

send the current information on the temperature, humidity, CO_2 concetration, lighting and presence of persons using proprietary wireless protocol Poseidon® to the higher-level system for further processing.

INTERFACE

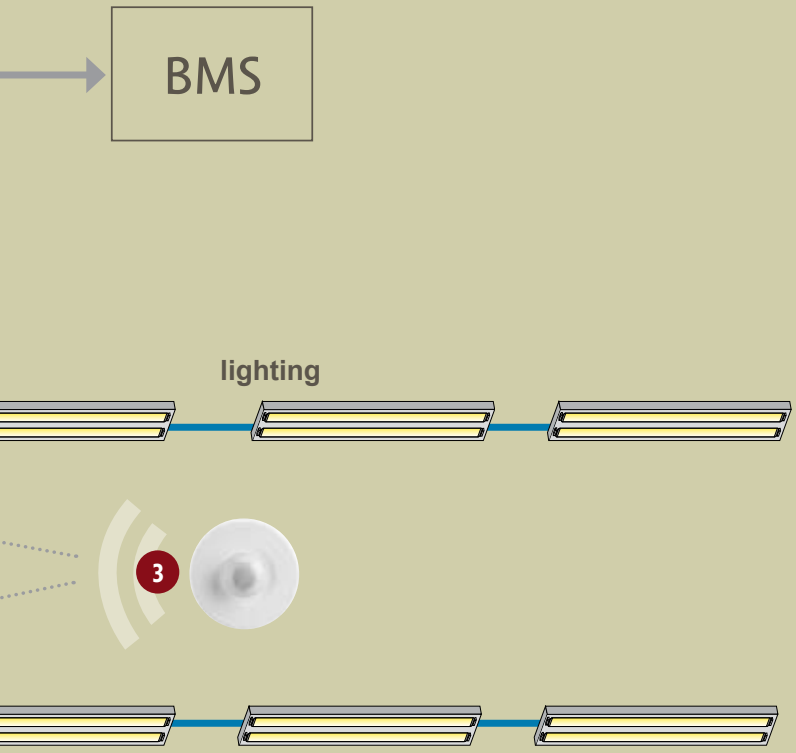
is used for the communication between Poseidon® components and a building management system.

Lighting control at a constant level, shading control, integration into a building management system (BMS)



How does the system work?

A Poseidon® Office case study



List of Poseidon® components

1	Wall-mount transmitter / Mobile transmitter	P8 T Time / P8 T Uni
2	Temperature transmitter	P8 T Temp
3	Wireless lighting controller with a presence detector	P8 TR PS W
4	Receiver with DALI output	P8 R PUT
5	Ethernet interface Poseidon® (MODBUS TCP/IP)	P8 TR IP
6	Roller shutter receiver	P8 R R I

The office is equipped with a lighting control consisting of a presence detector, a wall-mounted transmitter and receivers with DALI outputs. Each light fitting is controlled separately because of the requirement for subsequent simple changes in the interior layout.

A person entering the room switches the light on using either wall-mounted or mobile transmitters. The occupancy and light regulator will maintain the level of artificial lighting at a set level depending on the intensity of natural light. If nobody is present in the monitored area, the device will automatically switch off the lighting. This is to ensure that no light fitting is turned on unnecessarily.

Temperature transmitters provide the information on current temperatures in the office via Ethernet interface for measurement and control systems.

The roller shutter receiver can be controlled using a wall-mounted transmitter (either locally or centrally) or via Ethernet interface as required by the measurement and control system.

The control of interior lighting depending on the daylight intensity is the most advanced way of lighting control. In this way up to 70 % of energy needed for the operation of light fittings can be saved.

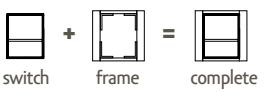
SYSTEM CONFIGURATION AND ADMINISTRATION

For convenient settings and making any changes, you can use the Poseidon® Asistent configuration software which communicates with all system components via Ethernet interface or universal USB transmitter.

Poseidon® transmitters

wall-mounted | mobile | I/O | analogue values

Wireless controllers are designed so as to meet the needs of users. Great emphasis is placed on ergonomics, mutual compatibility and ability to combine both shapes and colours of transmitters and frames. Building administrators, system integrators and electrical fitters will appreciate the ease of installation, flexible deployment in the interior and traditionally excellent technical parameters – long battery life and long signal range. In ABB designs, the Poseidon® transmitters present a reliable assistant to control the lighting, louvers and roller shutters, air-conditioning, heating, or access to the buildings.



The wireless transmitters shown in figures consist of two parts, i.e. the proper transmitter functional part and the frame. These parts can be arbitrarily combined; when ordering, it is necessary to indicate the code of the switch + the code of the frame you desire.

P8 T 2 Time, P8 T 2 Time Arbo, P8 T 2 Element

2-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

The main advantage of Time, Time Arbo transmitters is their design. The colour designs and possible combinations with wood-effect frames give them an exclusive appearance, so they will became a luxurious complement to any office. They are designed to control two appliances. The design of the Element transmitter brings an elegant look to any interior. Thanks to the frame design with rounded edges, a high level of user friendliness is ensured – you will find the transmitter easily, just "by touch".

Power supply	3 V CR2430
Number of channels	2
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Weight	60 g
Operating frequency	868 MHz
Range	up to 150 m (open area)

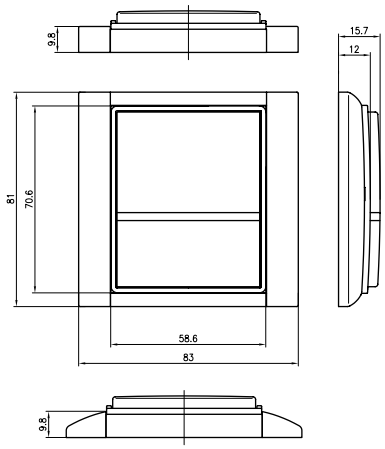
switch + frame = complete transmitter

Time

03	01	08	32	33	34
white – white	white – ice white	titanium	old-silver	champagne	anthracite
P8 T2 Time 03 3901F-A00110 03	P8 T2 Time 01 3901F-A00110 01	P8 T2 Time 08 3901F-A00110 08	P8 T2 Time 32 3901F-A00110 32	P8 T2 Time 33 3901F-A00110 33	P8 T2 Time 34 3901F-A00110 34

ARBO

50	51	52	08	53
old-silver – beech	old-silver – alder	old-silver – cherry	titanium – cherry	anthracite – mahog-any
P8 T2 Time 32 3901F-A50110 50	P8 T2 Time 32 3901F-A50110 51	P8 T2 Time 32 3901F-A50110 52	P8 T2 Time 08 3901F-A50110 52	P8 T2 Time 34 3901F-A50110 53



Element

03	01	04	21	22	07	24	25
white – white	white – ice white	white-ice gray	ivory – ice white	agave-ice white	caramel-ice gray	carmine-ice gray	coffee-ice opal
P8 T2 Time 03 3901E-A00110 03	P8 T2 Time 01 3901E-A00110 01	P8 T2 Time 04 3901E-A00110 04	P8 T2 Time 21 3901E-A00110 21	P8 T2 Time 22 3901E-A00110 22	P8 T2 Time 07 3901E-A00110 07	P8 T2 Time 24 3901E-A00110 24	P8 T2 Time 25 3901E-A00110 25

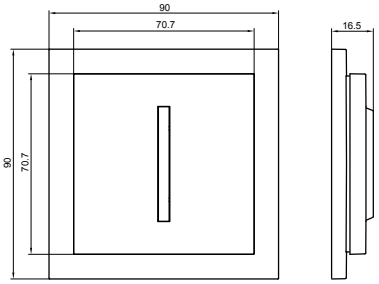
P8 T 2 Neo

2-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

The unusual appearance of Neo transmitter combines retro design elements with emphasis placed on its function in a modern interior where the accent is kept on originality and non-traditional solutions. Suitable for control of two appliances.

Power supply	3 V CR2430
Number of channels	2
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	50 g
Operating frequency	868 MHz
Range	up to 150 m (open area)



switch + frame = complete transmitter

01 white – ice white

P8 T2 Neo 01
3901M-A00110 01

44 white/ice gray

P8 T2 Neo 44
3901M-A00110 44

61 graphite/ice white

P8 T2 Neo 61
3901M-A00110 01

43 white/ice orange

P8 T2 Neo 43
3901M-A00110 43

41 white/ice blue

P8 T2 Neo 41
3901M-A00110 41

42 white/ice green

P8 T2 Neo 42
3901M-A00110 42

71 steel/teracotta

P8 T2 Neo 71
3901M-A00110 35

72 titanium/onyx

P8 T2 Neo 72
3901M-A00110 08

73 steel/titanium

P8 T2 Neo 73
3901M-A00110 36

74 onyx/titanium

P8 T2 Neo 74
3901M-A00110 37

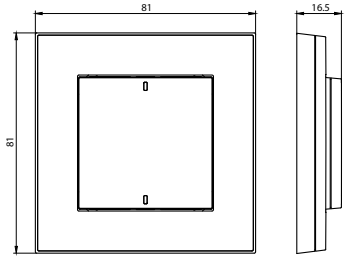
P8 T 2 Levit

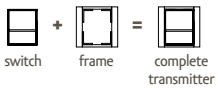
2-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

A completely new design range that features an interesting appearance and is available in many colour hues. It can be used separately or in multiple frames and in any colour combinations. It is designed to control up to two appliances.

Power supply	3 V CR2430
Number of channels	2
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Weight	60 g
Operating frequency	868 MHz
Range	up to 150 m (open area)





01 white / ice white

P8 T4 Levit 01
3901H-A05010 01

03 white/white

P8 T4 Levit 03
3901H-A05010 03

16 gray/white

P8 T4 Levit 16
3901H-A05010 16

17 ivory/white

P8 T4 Levit 17
3901H-A05010 17

18 macchiato/white

P8 T4 Levit 18
3901H-A05010 18

62 white/smoke-black

P8 T4 Levit 62
3901H-A05010 62

63 onyx/smoke-black

P8 T4 Levit 63
3901H-A05010 63

64 yellow/smoke-black

P8 T4 Levit 64
3901H-A05010 64

65 red/smoke-black

P8 T4 Levit 65
3901H-A05010 65

66 orange/smoke-black

P8 T4 Levit 66
3901H-A05010 66

67 green/smoke-black

P8 T4 Levit 67
3901H-A05010 67

P8 T 4 Time, P8 T 4 Time Arbo, P8 T 4 Element

4-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

The main advantage of Time, Time Arbo transmitters is their design. The colour designs and possible combinations with wood-effect frames give them an exclusive appearance, so they will became a luxurious complement to any office. It is designed to control up to four appliances. The design of the Element transmitter brings an elegant look to any interior. Thanks to the frame design with rounded edges, a high level of user friendliness is ensured – you will find the transmitter easily, just "by touch".

Power supply	3 V CR2430
Number of channels	4
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	60 g
Operating frequency	868 MHz
Range	up to 150 m (open area)

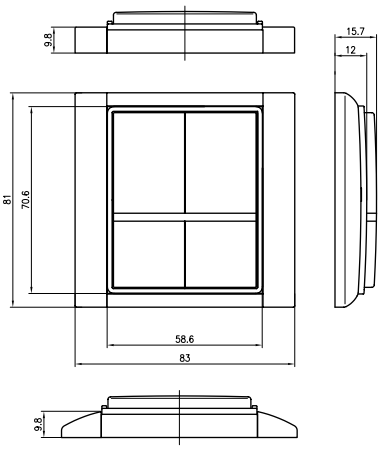
switch + frame = complete transmitter

Time

03 white / white	01 graphite / ice white	08 titanium	32 old-silver	33 champagne	34 anthracite
P8 T4 Time 03 3901F-A00110 03	P8 T4 Time 01 3901F-A00110 01	P8 T4 Time 08 3901F-A00110 08	P8 T4 Time 32 3901F-A00110 32	P8 T4 Time 33 3901F-A00110 33	P8 T4 Time 34 3901F-A00110 34

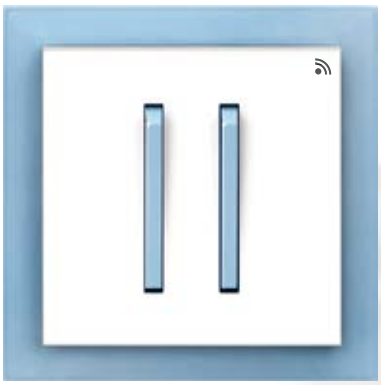
ARBO

50 old silver / beech	51 old silver / alder	52 old silver / cherry	08 titanium / cherry	53 anthracite / mahogany
P8 T4 Time 32 3901F-A50110 50	P8 T4 Time 32 3901F-A50110 51	P8 T4 Time 32 3901F-A50110 52	P8 T4 Time 08 3901F-A50110 52	P8 T4 Time 34 3901F-A50110 53



Element

03 white / white	01 graphite / ice white	04 white/ice gray	21 ivory / ice white	22 agave/ice white	07 caramel / ice gray	24 carmine / ice gray	25 coffee / ice opal
P8 T4 Time 03 3901E-A00110 03	P8 T4 Time 01 3901E-A00110 01	P8 T4 Time 04 3901E-A00110 04	P8 T4 Time 21 3901E-A00110 21	P8 T4 Time 22 3901E-A00110 22	P8 T4 Time 07 3901E-A00110 07	P8 T4 Time 24 3901E-A00110 24	P8 T4 Time 25 3901E-A00110 25



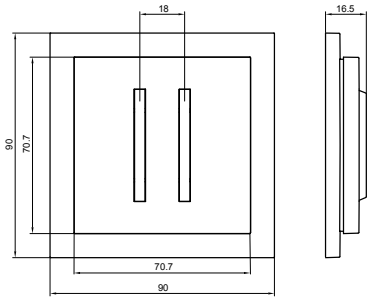
P8 T 4 Neo

4-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

The unusual appearance of the Neo transmitter combines retro design elements with emphasis placed on its function in a modern interior where the accent is kept on originality and non-traditional solutions. Suitable to control up to four appliances.

Power supply	3 V CR2430
Number of channels	4
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	50 g
Operating frequency	868 MHz
Range	up to 150 m (open area)



01 white / ice white

P8 T4 Neo 01
3901M-A00110 01

44 white/ice gray

P8 T4 Neo 44
3901M-A00110 44

61 graphite/ice white

P8 T4 Neo 61
3901M-A00110 01

43 white/ice orange

P8 T4 Neo 43
3901M-A00110 43

41 white/ice blue

P8 T4 Neo 41
3901M-A00110 41

42 white/ice green

P8 T4 Neo 42
3901M-A00110 42

71 steel/teracotta

P8 T4 Neo 71
3901M-A00110 35

72 titanium/onyx

P8 T4 Neo 72
3901M-A00110 08

73 steel/titanium

P8 T4 Neo 73
3901M-A00110 36

74 onyx/titanium

P8 T4 Neo 74
3901M-A00110 37

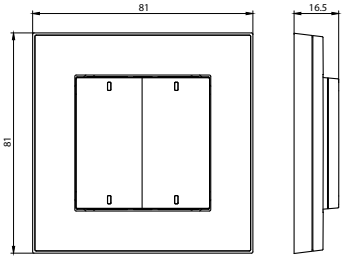
P8 T 4 Levit

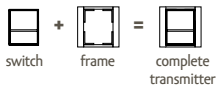
4-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

A completely new design range that features an interesting appearance and is available in many colour hues. It can be used separately or in multiple frames and in any colour combinations. It is designed to control up to four appliances.

Power supply	3 V CR2430
Number of channels	4
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	60 g
Operating frequency	868 MHz
Range	up to 150 m (open area)





01 white / ice white

P8 T4 Levit 01
3901H-A05010 01

03 white/white

P8 T4 Levit 03
3901H-A05010 03

16 gray/white

P8 T4 Levit 16
3901H-A05010 16

17 ivory/white

P8 T4 Levit 17
3901H-A05010 17

18 macchiato/white

P8 T4 Levit 18
3901H-A05010 18

62 white/smoke-black

P8 T4 Levit 62
3901H-A05010 62

63 onyx/smoke-black

P8 T4 Levit 63
3901H-A05010 63

64 yellow/smoke-black

P8 T4 Levit 64
3901H-A05010 64

65 red/smoke-black

P8 T4 Levit 65
3901H-A05010 65

66 orange/smoke-black

P8 T4 Levit 66
3901H-A05010 66

67 green/smoke-black

P8 T4 Levit 67
3901H-A05010 67

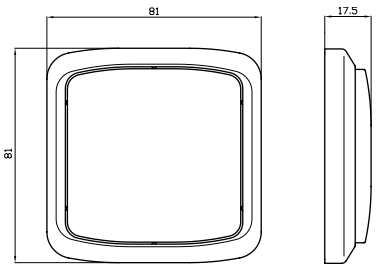
P8 T 4 Tango

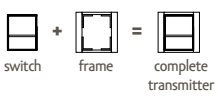
4-channel wall-mounted transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

A classic design. Tango combines the very best features, i.e. design tried and tested by generations, excellent ergonomics, and a variety of features. Thanks to these characteristics and classic colours, it will easily become an integral part of any interior. Suitable for control of up to four appliances.

Power supply	3 V CR2450
Number of channels	4
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Weight	60 g
Operating frequency	868 MHz
Range	up to 150 m (open area)





B	C	D	S	R2	H	S2	N
white	ivory	beige	gray	heather red	brown	smoke-gray	black
P8 T4 Tango B 3901A-B10 B	P8 T4 Tango C 3901A-B10 C	P8 T4 Tango D 3901A-B10 D	P8 T4 Tango 3901A-B10 S	P8 T4 Tango R2 3901A-B10 R2	P8 T4 Tango H 3901A-B10 H	P8 T4 Tango S2 3901A-B10 S2	P8 T4 Tango N 3901A-B10 N

P8 T 1 Disc, P8 T 1 Uni

1-channel mobile transmitter Poseidon®

range up to 150 m | compatible with Poseidon® | battery life 10 years

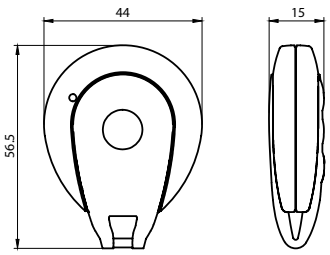
P8 T 1 Disc

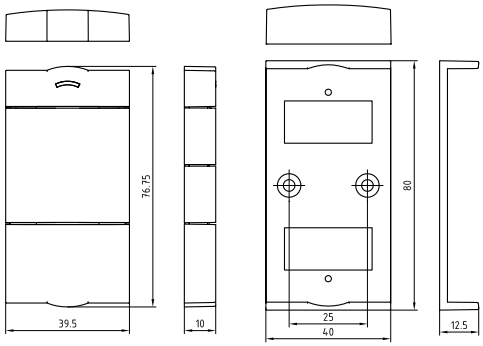
The Disc transmitter is well suited for use under demanding conditions; it is equipped with an IP65 case. The transmitter is protected from dust, spraying water and mechanical damage. So it will become a useful device during movement outdoors or wherever a higher resilience is required.

P8 T 1 Uni

As dynamic as your world. Thanks to its wall-mounted holder, the UNI transmitter has its firm place in interiors; but you can remove it at any time and start using it as a mobile controller. By doing so you get a versatile device with smart appearance that combines the very best of wall-mounted and portable controllers.

	P8 T 1 Disc	P8 T 1 Uni
Power supply	3 V CR1632	3 V CR2430
Number of channels	1	
Ingress protection	IP65	IP20
Operating temperature	–20 to +55 °C	
Weight	16 g	24 g
Operating frequency	868 MHz	
Range	up to 150 m (open area)	





P8 T 1 Disc

P8 T 1 UNI

P8 T 2 Alien, P8 T 2 Disc, P8 T 2 Uni

2-channel mobile transmitter Poseidon®

range up to 150 m | compatible with Poseidon® | battery life 10 years

P8 T 2 Alien

A stylish transmitter with an unusual appearance for those who go their own way. The case featuring an ergonomic design without sharp edges does not obstruct at all, e.g. in your pocket, and is specifically adapted so as to be put on a keyring.

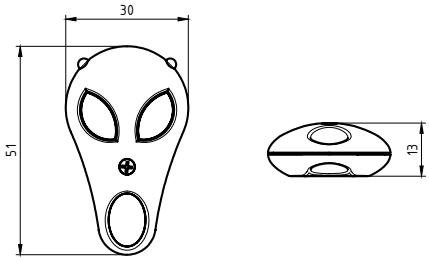
P8 T 2 Disc

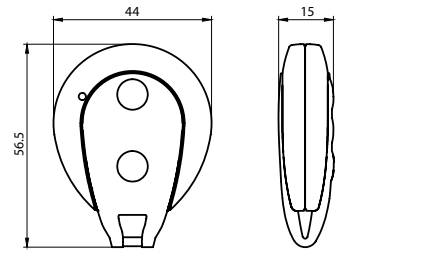
The Disc transmitter is well suited for use under demanding conditions; it is equipped with an IP65 case. The transmitter is protected from dust, spraying water and mechanical damage. So, it will become a useful device during the movement outdoors or wherever a higher resistance is required.

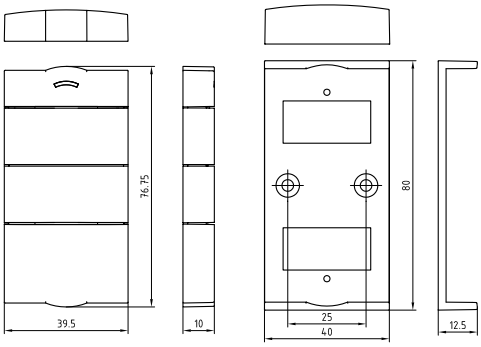
P8 T 2 Uni

As dynamic as your world. Thanks to its wall-mounted holder, the UNI transmitter has its firm place in interiors; but you can remove it any time and start using it as a mobile controller. By doing so, you get a versatile device with smart appearance that combines the very best of wall-mounted and portable controllers.

	P8 T2 Alien	P8 T2 Disc	P8 T 2 Uni
Power supply	3 V CR1632		3 V CR2430
Number of channels	2		
Ingress protection	IP20	IP65	IP20
Operating temperature	-20 to +55 °C		
Weight	10 g	16 g	24 g
Operating frequency	868 MHz		
Range	up to 150 m (open area)		







P8 T 2 Disc

P8 T 2 Disc

P8 T 2 UNI

P8 T 3 Disc, P8 T 3 Uni

3-channel mobile transmitter Poseidon®

range up to 150 m | compatible with Poseidon® | battery life 10 years

P8 T 3 Disc

The Disc transmitter is well suited for use under demanding conditions; it is equipped with an IP65 case. The transmitter is protected from dust, spraying water and mechanical damage. So it will become a useful device during movement outdoors or wherever a higher resilience is required.

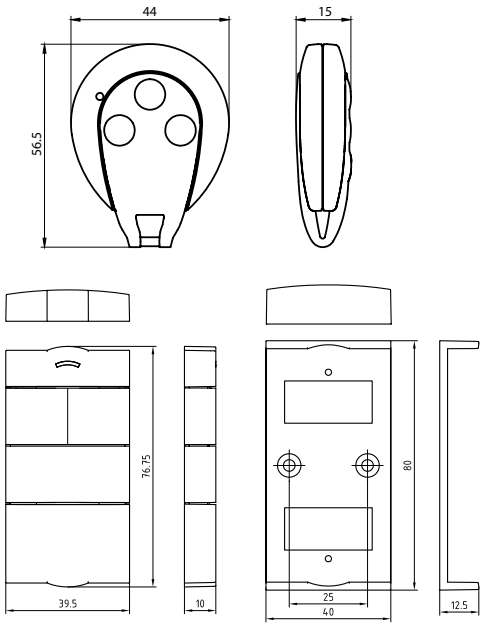
P8 T 3 Uni

As dynamic as your world. Thanks to its wall-mounted holder, the UNI transmitter has its firm place in interiors; but you can remove it at any time and start using it as a mobile controller. By doing so you get a versatile device with smart appearance that combines the very best of wall-mounted and portable controllers.

	P8 T 3 Disc	P8 T 3 Uni
Power supply	3 V CR1632	3 V CR2430
Number of channels	3	
Ingress protection	IP65	IP20
Operating temperature	–20 to +55 °C	
Weight	16 g	24 g
Operating frequency	868 MHz	
Range	up to 150 m (open area)	

P8 T 3 Disc

P8 T 3 UNI



P8 T 4 Cross, P8 T 4a Cobra, P8 T 4 Disc, P8 T 4 Uni

Mobile 4-channel transmitter Poseidon®

range up to 150 m | compatible with Poseidon® | battery life 10 years

P8 T 4 Cross

Minimum size for maximum number of functions. Control 4 separate circuits intuitively, with one finger using the cross button. You will appreciate in particular the compact dimensions, possibility of having it hung on the keyring, and rounded edges. Ideally suited for carrying in a pocket and controlling of garage doors, gates and other access systems.

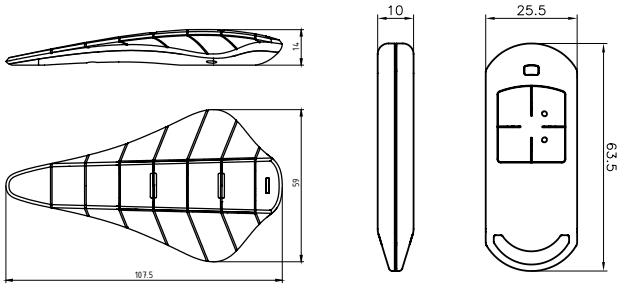
P8 T 4a Cobra

Be enchanted by its unique design. Cobra will ensure control of up to 4 different circuits. Control the outdoor or indoor lighting or louvers. Control the world around you in a stylish and confident way. The mobile transmitter Cobra is equipped with a visual confirmation of the receipt of the command sent.

P8 T 4 Disc

P8 T 4 Uni

	P8 T4 Cross	P8 T4 Disc	P8 T 4 Uni	P8 T 4 Cobra
Power supply	3 V CR1632		3 V CR2430	3 V CR2450
Number of channels	4			
Ingress protection	IP20	IP65	IP20	
Operating temperature	-20 to +55 °C			
Weight	10 g	16 g	24 g	
Operating frequency	868 MHz			
Range	up to 150 m (open area)			



75 onyx / steel

76 steel / onyx

77 copper / champagne

P8 T 4 Cross | P8 T4a Cobra 75 | P8 T4a Cobra 76 | P8 T4a Cobra 77 | P8 T 4 Disc | P8 T 4 UNI

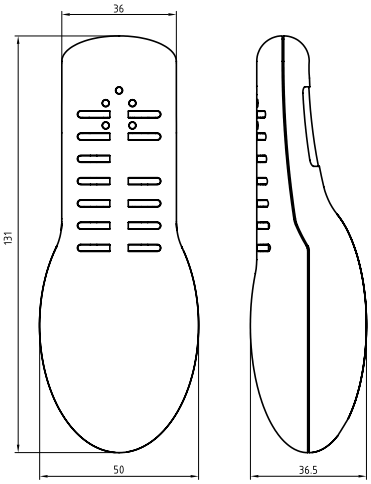
P8 T 4 × 8a

Multiple channel mobile transmitter Poseidon®

signalisation of commands received | range up to 150 m | compatible with Poseidon® | battery life 10 years

The greatest number of functions in one controller. Thanks to the controller divided into eight control channels in four groups, you can keep control over a larger number of electrical appliances. Thanks to the ergonomic design, it fits perfectly in your hand.

Power supply	3V CR2450 lithium
Number of channels	16 (ON-OFF + CENTRAL OFF)
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	50 g
Operating frequency	868 MHz
Range	up to 150 m (open area)



c ivory

P8 T 4x8a C

33 champagne

P8 T 4x8a 33

35 terracotta

P8 T 4x8a 35

S dark gray

P8 T 4x8a S

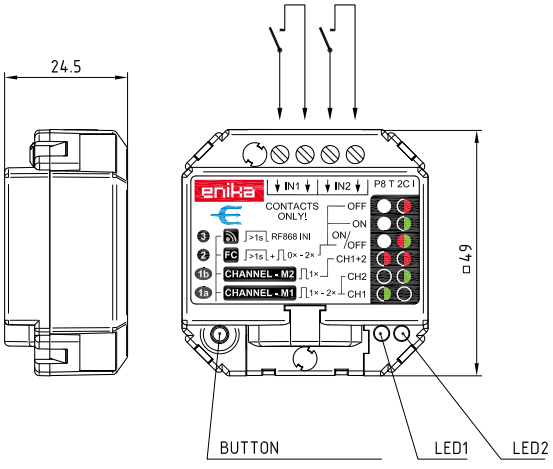
P8 T 2C I

Universal built-in transmitter Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | battery life 10 years

The battery powered universal built-in transmitter is designed for installation in a junction box. It is available in a dual-channel design. You can change your existing switch to a wireless one very easily. Alternatively, it can be used to transmit the information on the state of a sensor, pushbutton, etc. without an external power supply.

Power supply	3 V CR2032 lithium
Number of channels	2
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	50 g including battery
Operating frequency	868 MHz
Range	up to 150 m (open area)



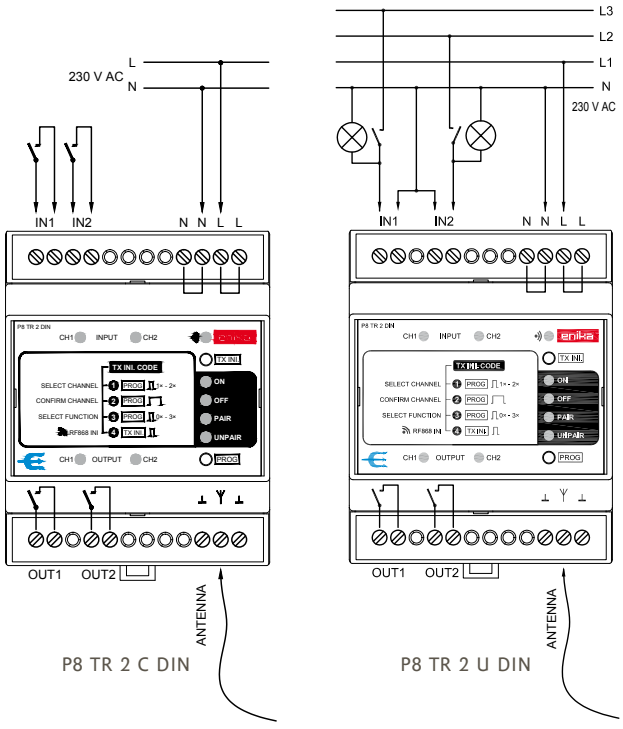
P8 TR 2C DIN, P8 TR 2U DIN

2-channel transmitter of input information Poseidon®

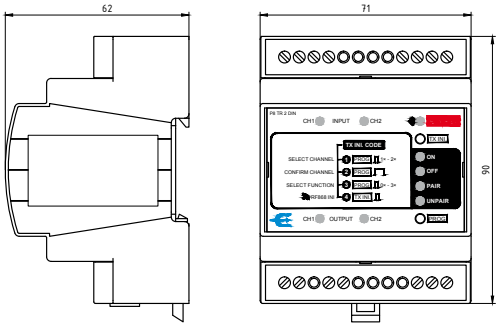
easy to install | range up to 150 m | DIN rail | signal receipt confirmation | external antennas

It offers a completely unique solution for transmitting the input information (e.g. ripple control signal). In practical terms it is a receiver and transmitter all-in-one. If an input is closed on the transmitting side, this information will be sent, and the other device on the receiving side will evaluate it and close the respective output. Two-way communication between both the devices is ensured, which provides a maximum transmission reliability. This feature allows, among other things, a feedback signalling of the state of the equipment being controlled.

When the transmitter signal is lost, it is possible to define the output state on the receiving side. This will ensure the maximum reliability of connection, e.g. in the applications such as monitoring the maximum value, control of pumps in waterworks, etc.



Power supply	230 V ±10 % 50 Hz
Inputs: P8 TR 2C DIN	
Loop current	max. 5 mA
Open loop voltage	12 V
Circuit impedance for - "NC" state - "NO" state	 max. 1 kΩ min. 5 kΩ
P8 TR 2U DIN	
Input voltage range for - "NC" state - "NO" state	 180 to 250 V, 50 Hz 0 to 30 V, 50 Hz
Input impedance:	48 kΩ
Maximum switching power	250 V 50 Hz 750 W for conventional bulbs 500 VA for halogen bulbs with transformer 350 VA for uncorrected fluo-rescent lamps
Switching elements	relay
insulation distance between terminals	
N+L<>ANT<>IN1+IN2 <>OUT1+OUT2	min. 6.5 mm (P8 TR 2C DIN)
N+L<>ANT<>IN1<>IN2 <>OUT1+OUT2	min. 6.5 mm (P8 TR 2U DIN)
OUT1<>OUT2	min. 3 mm
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Dimensions	4 M
Weight	100 g
Connection terminals	screw-type, max. 2.5 mm^2
Receiver operating frequency	868 MHz
Range	up to 150 m (open area)



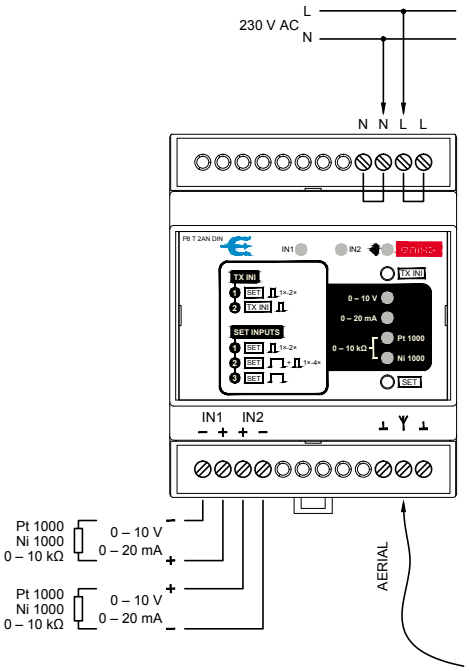
P8 T 2AN DIN

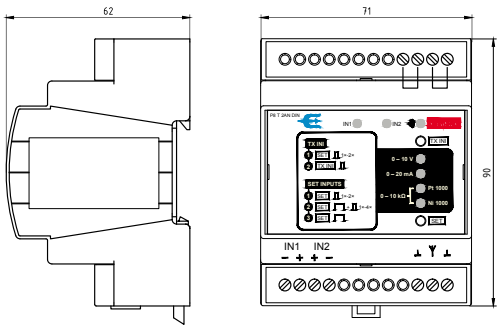
2-channel transmitter of analogue values Poseidon®

easy to set up | DIN rail mounted | possibility to connect external antenna

It is designed for a DIN rail mounting. When connected with a suitable receiver it is used for a wireless transmission of information on the size of the analogue values of the connected voltage or current source or resistance temperature detectors (RTD). The analogue values can be also transmitted in conversion to the 0 - 100 % range, or as the output of the comparator in the ON/OFF format.

Power supply	230 V ±10 % 50 Hz
Preset input range	0 – 10 V
input resistance	20 kΩ
Preset input range	0 – 20 mA
input resistance	100 Ω
Preset input range	0 – 10 kΩ
measuring current	max. 1 mA
Preset input ranges	Pt 1000 (Tk 3850)
range of measurement	–50 to +250 °C
User-defined ranges	Nt 1000 (Tk 6180)
range of measurement	-50 to +150 °C
Insulation distances between terminals N+L<> IN1+IN2	min. 6.5 mm
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
External dimensions	90 × 71 × 58 mm
Weight	100 g
Connection terminals	screw-type, max. 2.5 mm²
Operating frequency	868 MHz
Signal range with the supplied antenna	150 m (open area)





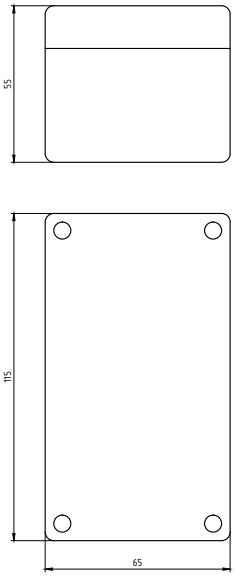
P8 T 2C IP65

2-channel mobile transmitter Poseidon®

large buttons | charging of batteries | compatible with Poseidon® | range up to 150 m

The transmitter is designed to provide comfortable and reliable control in demanding, especially industrial environments. The large buttons can be easily operated even while wearing protective gloves. The IP65 box provides excellent mechanical protection against dust, water and dirt.

Power supply	3 V CR2032 lithium
Number of channels	2
Transmitting interval	60 s
Ingress protection	IP65 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	200 g
Operating frequency	868 MHz
Range	150 m (open area)



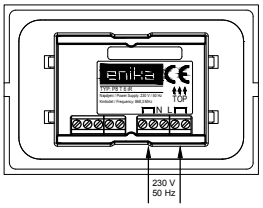
P8 T 1 iR, P8 T 3 iR, P8 T 6 iR

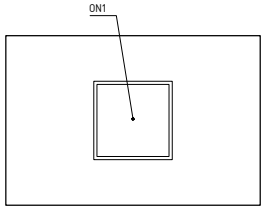
Wall mounted 1, 3, 6-channel transmitter Poseidon®

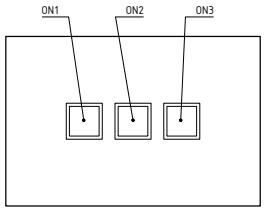
modern, minimalistic design | 230 V supply voltage | compatible with Poseidon® | range up to 150 m

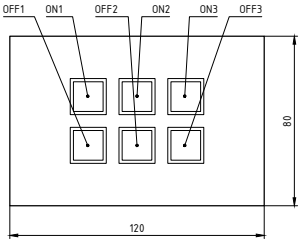
A unique all-glass touch panel transmitter with illuminated buttons. It is an easy-to-use design transmitter with a modern, minimalistic and fresh look. It is designed for mounting into electrical installation box. I-glass transmitter is suitable for control of up to six appliances.

Power supply	230 V 50 Hz
Number of channels	1, 3 or 6
Transmitting interval	60 s
Number of codes (combinations)	2^{24}
Operating temperature	–20 to +55 °C
Weight	180 g
Dimensions	120 × 80 × 46 mm
Electrical power	max. 1.5 W
Operating frequency	868 MHz
Range	up to 150 m (open area)









P8 T 1 iR

P8 T 3 iR

P8 T 6 iR

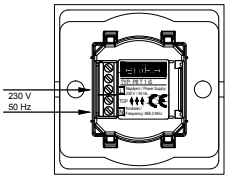
P8 T 1 iS, P8 T 2 iS, P8 T 4 iS

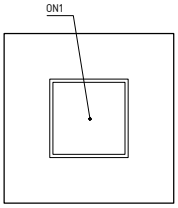
Wall mounted 1, 2, 4-channel transmitter Poseidon®

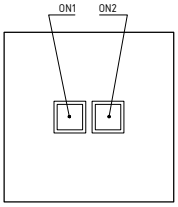
modern, minimalistic design | 230 V supply voltage | compatible with Poseidon® | range up to 150 m

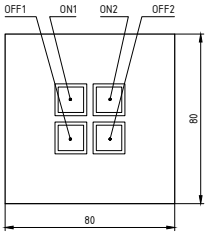
A unique all-glass touch panel transmitter with illuminated buttons. It is an easy-to-use design transmitter with a modern, minimalistic and fresh look. It is designed for mounting into electrical installation box. I-glass transmitter is suitable for control of up to four appliances.

Power supply	230 V 50 Hz
Number of channels	1, 2 or 4
Transmitting interval	60 s
Number of codes (combinations)	2^{24}
Operating temperature	-20 to +55 °C
Weight	120 g
Dimensions	80 × 80 × 46 mm
Electrical power	max. 1.5 W
Operating frequency	868 MHz
Range	up to 150 m (open area)





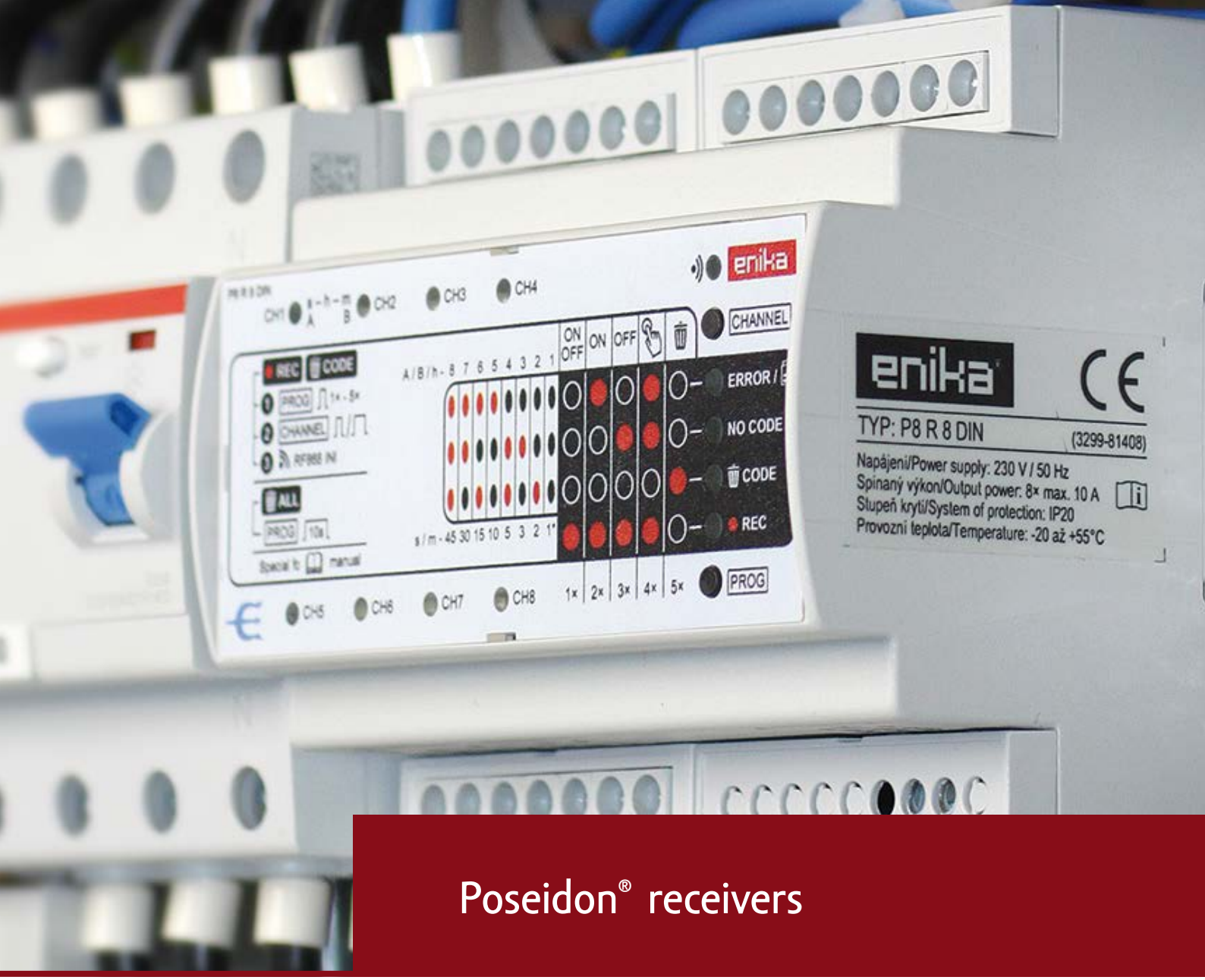




P8 T 1 iS

P8 T 2 iS

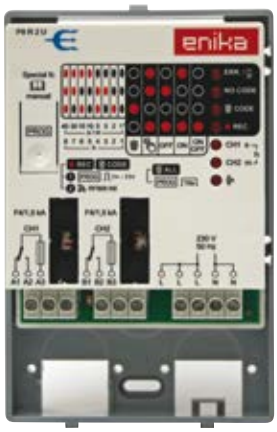
P8 T 4 iS



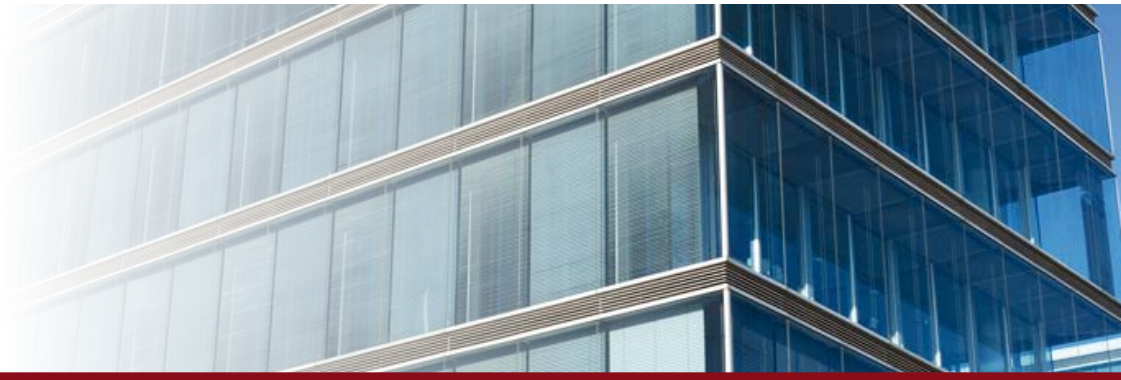
Poseidon® receivers

relay | jalousie | analogue | DALI | accessories

Poseidon® receivers represent actuating units (actuators) of the wiring system that are connected to the power circuit and directly control the connected light fitting, louver motor or other electrical systems. The receivers are controlled by transmitters and sensors. In order to communicate one to another, they use the proprietary communication protocol at a frequency of 868 MHz which is characterised by high speed of message transmission and high level of security. The Poseidon® receivers offer standard functions, i.e. ON, OFF, ON/OFF, dimming 1-10 V/0-10 V and DALI, control using timers and time tags, and fine positioning of louver slats, as well.



ON | OFF | ON/OFF | | | /OFF | RETR |



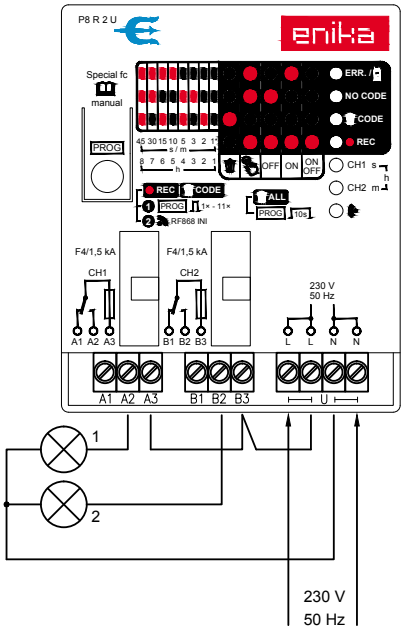
P8 R 2 U

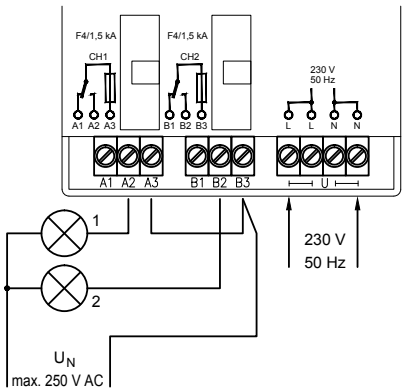
2-channel universal surface mounted receiver Poseidon®

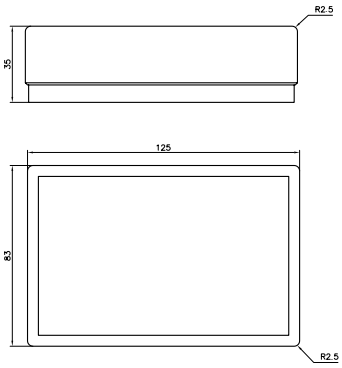
easy to set | suitable for switching of all kinds of load | easy to set | RF signal repeater

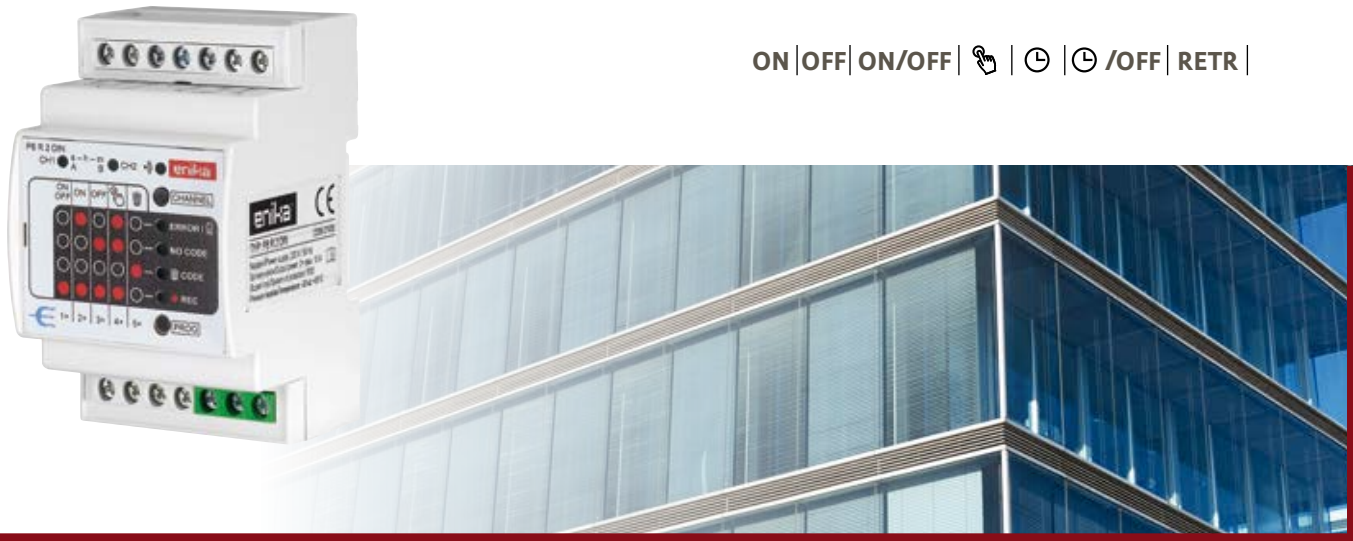
It is designed for mounting on the wall onto a standard junction box (KU68). It is used to control of two independent circuits using a relay with changeover contacts. In addition to normal functions (ON, OFF, Timer, Push), it can also be used as a signal repeater.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2× 750 VA conventional bulbs 2× 350 VA uncorrected fluorescent lamps
Switching elements	relay with changeover contacts
Number of channels	2
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	F 4/1500 A 250 V
Connection terminals	screw-type, max. 2.5 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 150 m (open area)
Maximum number of codes stored in the memory	32









P8 R 2 DIN

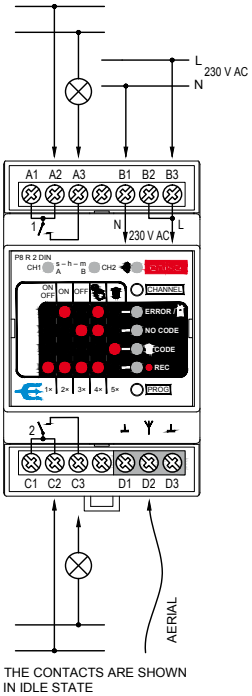
2-channel universal receiver Poseidon®

easy to setup | control by a large number of transmitters | external antenna connection | RF signal repeater

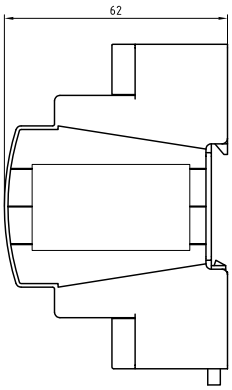
P8 R 2 DIN

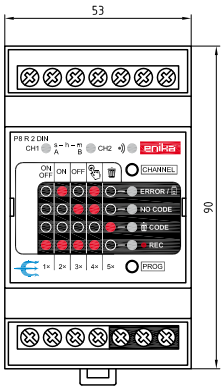
A module-type receiver for easy installation in switchboards with two output channels. In addition to conventional functions, it can also be used as a signal repeater. So, it is well suited when a request to extend the number of control circuits occurs or wherever the propagation of RF signals is a problem. For more complicated installations, it can be configured using the configuration software the Poseidon® Asistent.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs
	1 750 VA electronic multipliers, halogen bulbs with transformer
	500 VA/64 µF fluorescent light fittings
Number of channels	2
Power dissipation	max. 2.5 W
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	external (max. 16 A)
Dimensions	3 M
Weight	100 g
Terminal blocks	screw-type, max. 4 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 300 m (open area)
Maximum number of codes stored in the memory	32



THE CONTACTS ARE SHOWN IN IDLE STATE





ON | OFF | ON/OFF | | | /OFF | RETR |

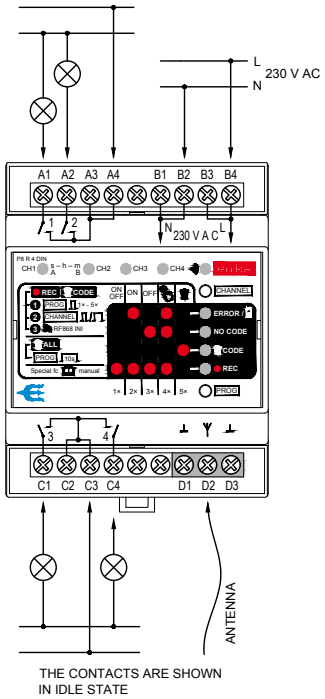
P8 R 4 DIN

4-channel universal receiver Poseidon®

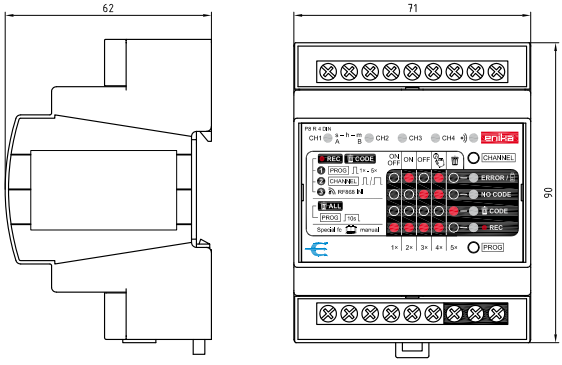
easy to setup | suitable for switching of all kinds of load | external antenna connection | RF signal repeater

A module-type receiver for easy installation in switchboards with four output channels. In addition to conventional functions, it can also be used as a signal repeater. So it is well suited when a request to extend the number of control circuits occurs or wherever the propagation of RF signals is a problem.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs 1 750 VA electronic multipliers, halogen bulbs with transformer 500 VA/64 µF fluorescent light fittings
Number of channels	4
Power dissipation	max. 3.5 W
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	external (max. 16 A)
Dimensions	4 M
Weight	270 g
Terminal blocks	screw-type, max. 4 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 300 m (open area)
Maximum number of codes stored in the memory	32



THE CONTACTS ARE SHOWN IN IDLE STATE



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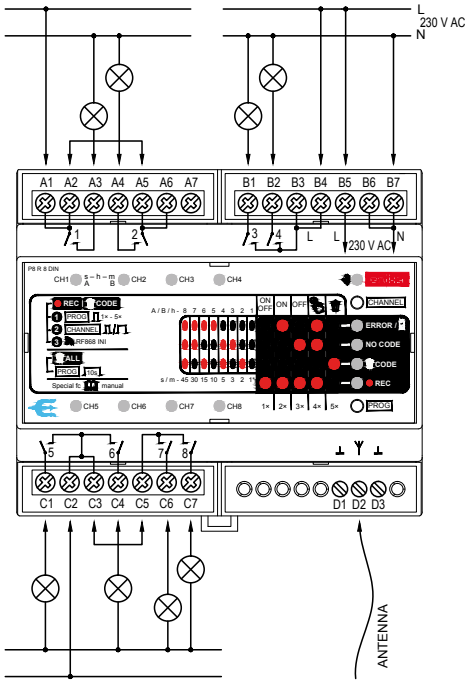
P8 8 DIN

8-channel universal receiver Poseidon®

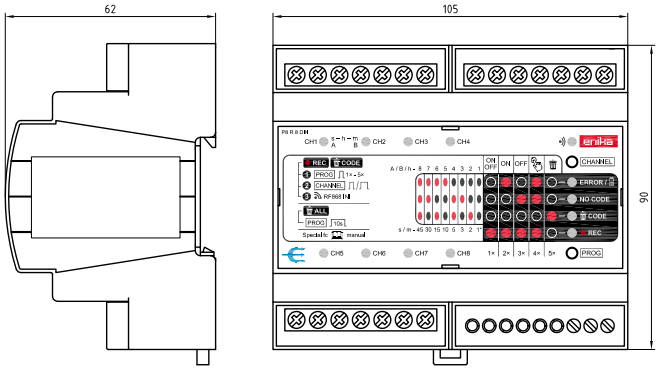
easy to setup | suitable for switching of all kinds of load | external antenna connection | RF signal repeater

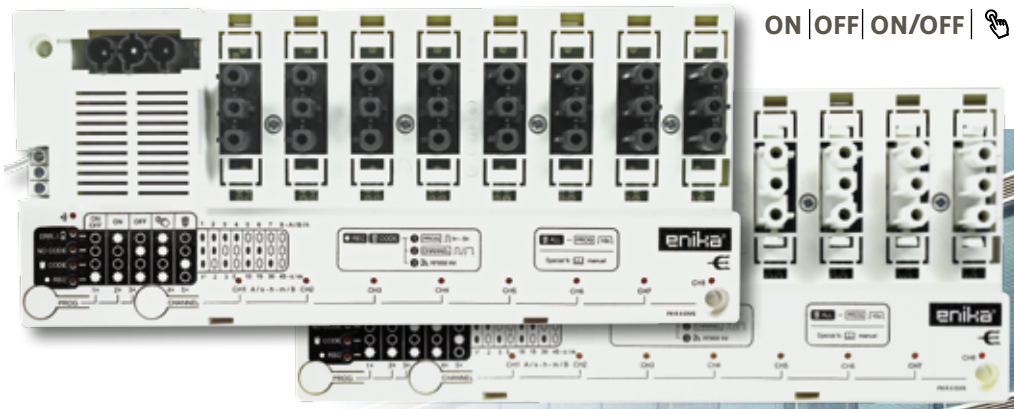
A module-type receiver for easy mounting on a DIN rail enables to control eight channels and is available in a compact size. In addition to conventional functions, it can also be used as a signal repeater. It is well suited when a request to extend the number of control circuits occurs or wherever the propagation of RF signals is a problem.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs
	1 750 VA electronic multipliers, halogen bulbs with transformer
	500 VA/64 µF fluorescent light fittings
Number of channels	8
Power dissipation	max. 5.5 W
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	external (max. 16 A)
Dimensions	6 M
Weight	430 g
Terminal blocks	screw-type, max. 4 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 300 m (open area)
Maximum number of codes stored in the memory	32



THE CONTACTS ARE SHOWN IN IDLE STATE





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P8 R 8 E3, P8 R 8 W3

8-channel receiver Poseidon® to install in a suspended ceiling

easy to setup | suitable for switching of all kinds of load | external antenna connection | RF signal repeater

P8 R 8 E3

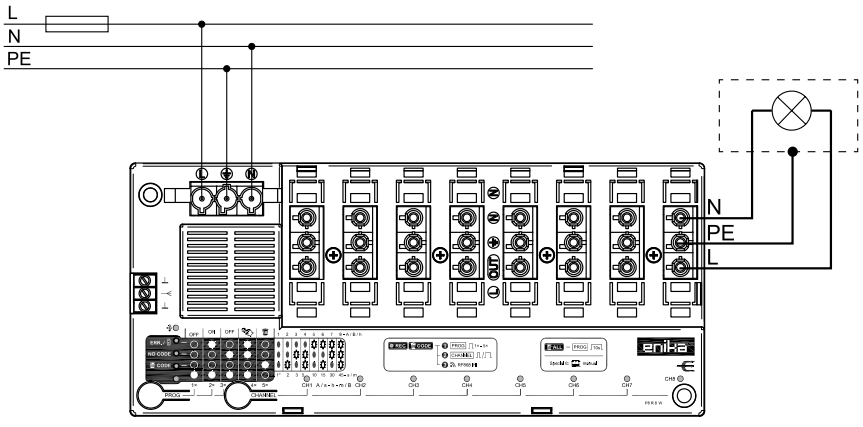
The receiver is primarily intended for applications in commercial buildings where emphasis is placed on the compatibility with Ensto-net connector system. It enables control of eight channels. It can also be used as a signal repeater or wherever the propagation of RF signal is a problem.

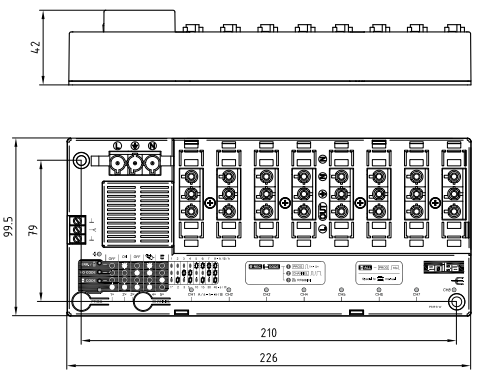
P8 R 8 W3

The main advantages of this receiver are reliability and compatibility with Wieland connector system. It is primarily intended for applications in commercial buildings. You can also use it as a signal repeater or wherever the propagation of RF signal is a problem.

	P8 R 8 E3	P8 R 8 W3
Power source	GST18i3LS1VSW	NAC31. W
Power supply	230 V ±10 % 50 Hz	
Output	GST18I3LB1VSW	NAE32V. W
Max. switching power	2 300 W conventional bulbs	
	1 750 VA electronic multipliers, halogen bulbs with transformer	
	500 VA/64 µF fluorescent light fittings	
Number of channels	8	
Ingress protection	IP20 acc. to EN 60529	
Operating temperature	-20 to +55 °C	
Output protection	external (max. 16 A)	
Weight	490 g	
Operating frequency	868 MHz	
Range with the supplied antenna	up to 300 m (open area)	
Maximum number of codes stored in the memory	32	

The maximum current for all channels shall not exceed 16 A!





ON | OFF | ON/OFF | | | /OFF | RETR |

P8 R 8 S3

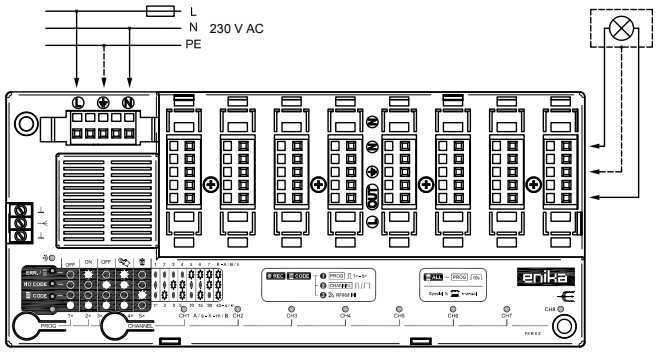
8-channel receiver Poseidon® to install in a suspended ceiling

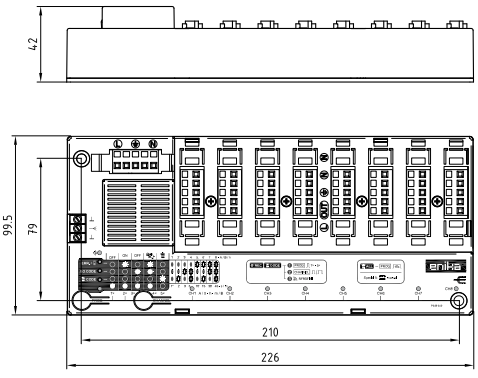
easy to setup | suitable for switching of all kinds of load | external antenna connection | RF signal repeater

The main advantages of this receiver are reliability and simple connection using screwless terminals. It is primarily intended for applications in commercial buildings. You can also use it as a signal repeater or wherever the propagation of RF signal is a problem.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs
	1 750 VA electronic multipliers, halogen bulbs with transformer
	500 VA/64 µF fluorescent light fittings
Number of channels	8
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Output protection	external (max. 16 A)
Weight	490 g
Screwles terminal blocks	0.5 mm^2 to 1.5 mm^2
Operating frequency	868 MHz
Range with the supplied antenna	up to 300 m (open area)
Maximum number of codes stored in the memory	32

The total maximum current for all channels must not exceed 16 A!





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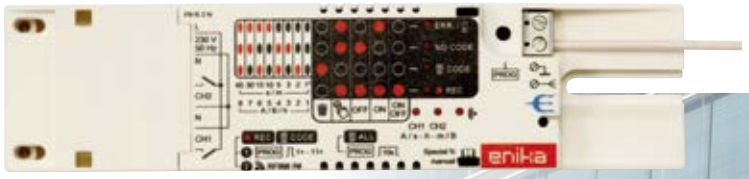
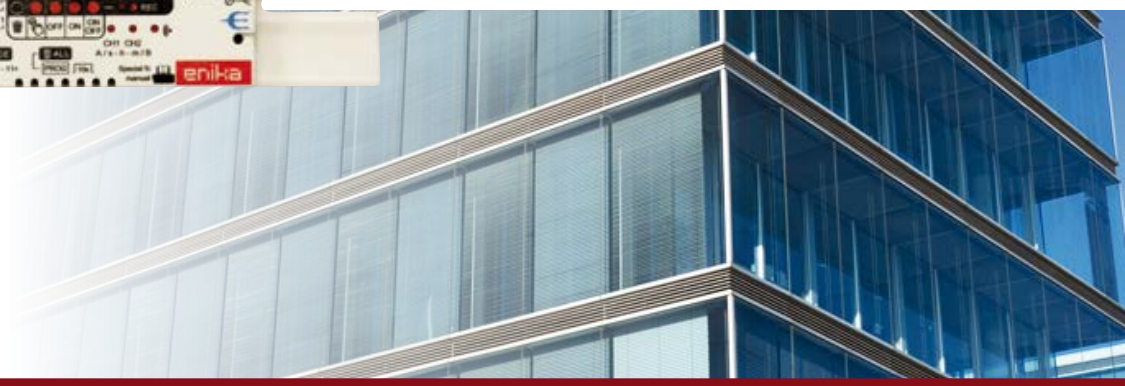




P8 R 2 N, P8 R 2 N/K

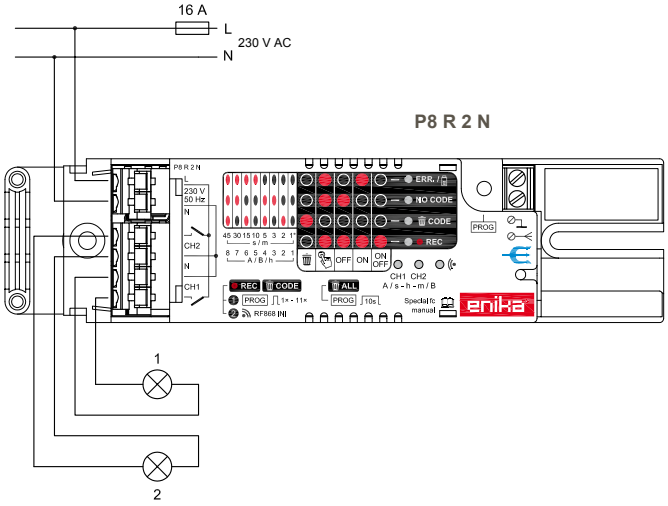
2-channel built-in receiver Poseidon®

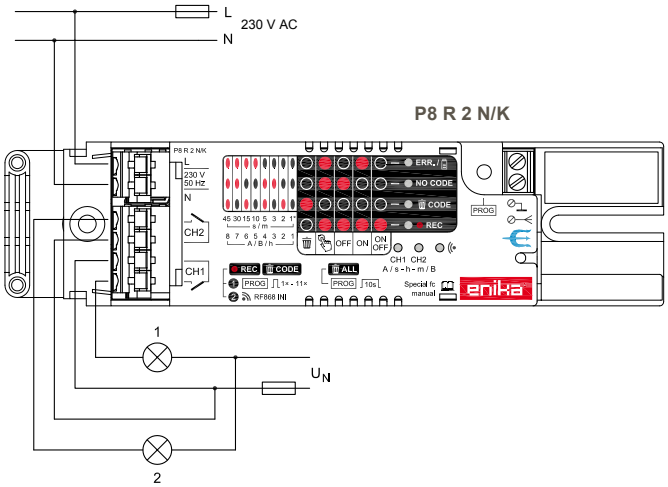
easy to setup | suitable for switching of all kinds of load | possibility of connecting an external antenna | RF signal repeater

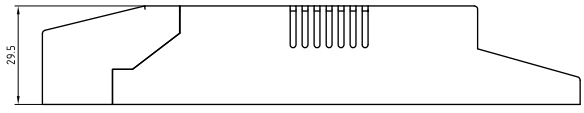
A specifically designed receiver that is suitable for installation in light fittings, suspended ceilings and whenever a confined space exists. It controls two independent circuits; thanks to applied relay types, it is suitable for switching of all kinds of load. Its advantage also rests in the possibility of having the connecting leads fixed.

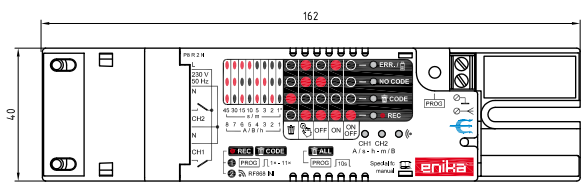
	P8 R 2 N	P8 R 2 N/K
Power supply	230 V ±10 % 50 Hz	
Max. switching power	2 300 W conventional bulbs	potential-free contact
	1 750 VA electronic multipliers, halogen bulbs with transformer	
	500 VA/64 µF fluorescent light fittings	
Number of channels	2	
Ingress protection	IP20 acc. to EN 60529	
Operating temperature	–20 to +55 °C	
Output protection	external (max. 16 A)	
Weight	120 g	
Screwles terminal blocks	max. 2.5 mm²	
Operating frequency	868 MHz	
Range with the supplied antenna	up to 150 m (open area)	
Maximum number of codes stored in the memory	32	

The total maximum current for all channels must not exceed 16 A!









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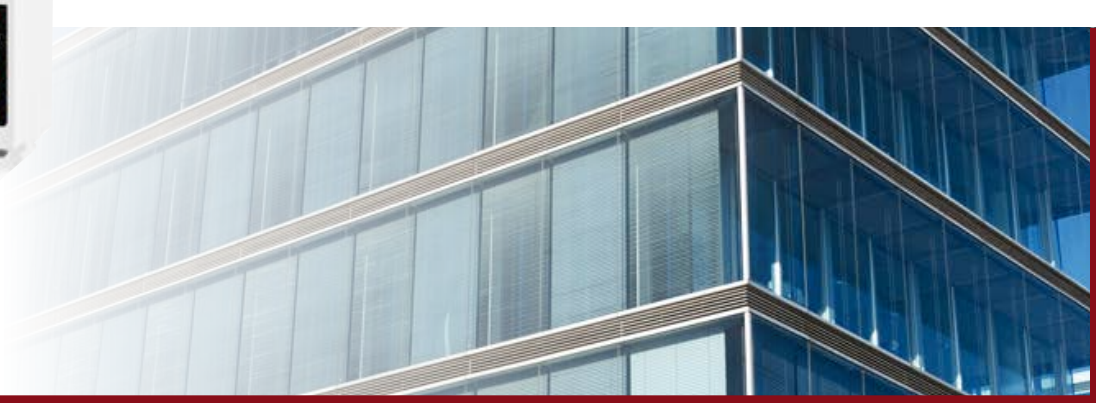


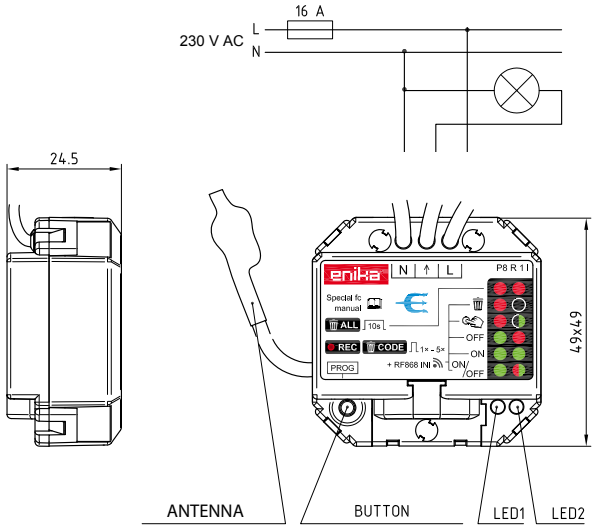
P8 R 1 I

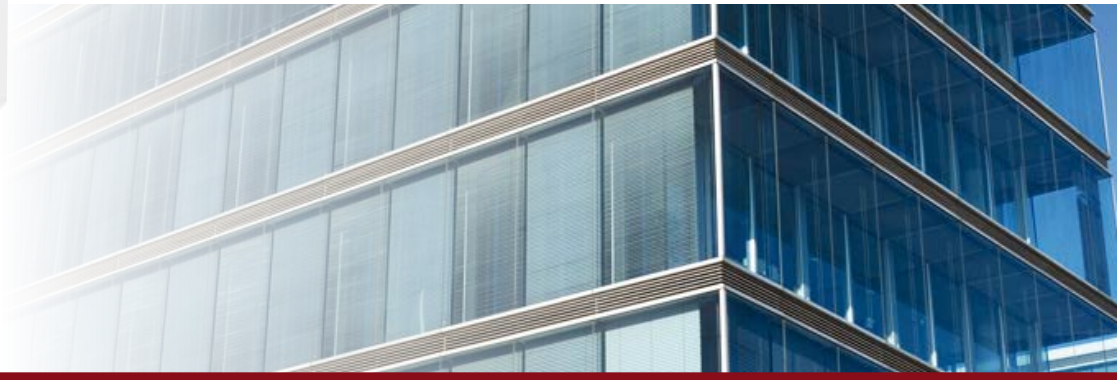
1-channel built-in receiver Poseidon®

compact sizes | suitable for switching of all kinds of load | easy to setup | RF signal repeater

Thanks to its compact size, it is designed for installation in a standard junction box (e.g. KU68). In addition to conventional functions, it can be used as a signal repeater in places with limited access where the propagation of RF signal is a problem.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs
	1 750 VA electronic multipliers, halogen bulbs with transformer
	500 VA/64 µF fluorescent light fittings
Number of channels	1
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Output protection	external (max. 16 A)
Weight	60 g
Connecting wires	1.5 mm² / 80 mm
Operating frequency	868 MHz
Range with the supplied antenna	up to 150 m (open area)
Maximum number of codes stored in the memory	32





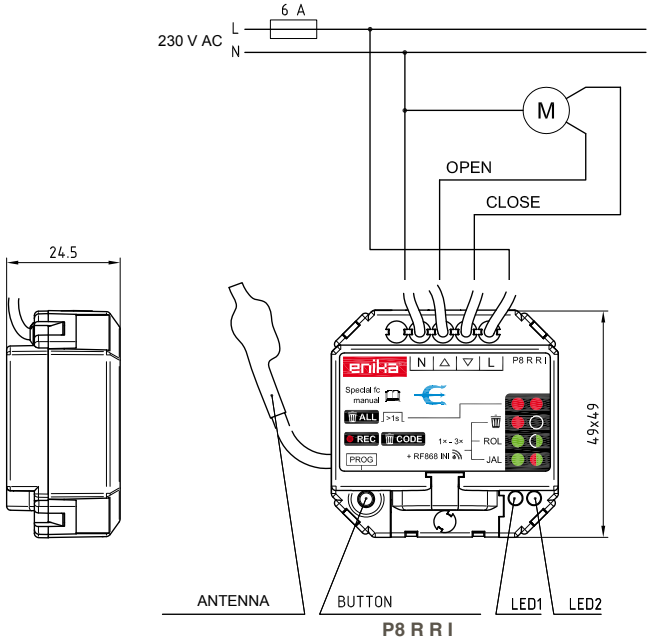
P8 R R I, P8 R R I 24 V

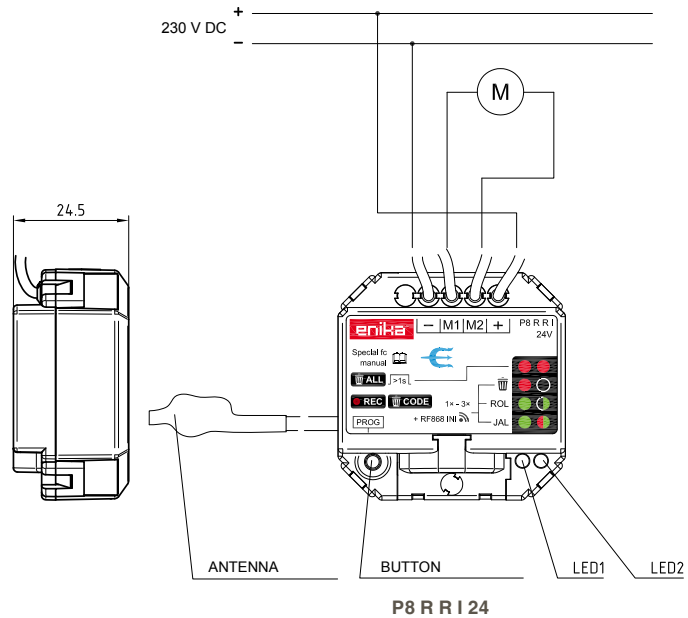
Jalousie built-in receiver Poseidon®

compact size | fine positioning of jalousie slats | easy to setup | RF signal repeater

A universal control unit specifically designed for roller shutters or louvers. Thanks to its compact size, it is suitable for installation in a standard junction box (e.g. KU68) both for roller shutters and jalousies.

	P8 R R I	P8 R R I 24
Power supply	230 V ±10 % 50 Hz	24 V DC
Maximum switching power	230 V/3 A, cosφ>0.8	24 V DC/1 A (1 mF)
Number of channels	1 motor	
Ingress protection	IP20 acc. to EN 60529	
Operating temperature	–20 to +55 °C	
Output protection	external (max. 6 A)	
Weight	60 g	
Connecting wires	0.5 mm² / 80 mm	
Operating frequency	868 MHz	
Range with the supplied antenna	up to 150 m (open area)	
Maximum number of codes stored in the memory	32	





P8 R 4R S, P8 R 4R E, P8 R 4R W

4-channel jalousie receiver Poseidon®

easy to setup | control of jalousies, shutters and window blinds | external antenna connection | RF signal repeater

The jalousie receiver is used for remote control of up to four devices, external window blinds and jalousies. Outputs of receiver are four pairs of relays. The jalousie receiver is designed especially for suspended ceiling or built-in mounting in commercial and office buildings.

P8 R 4R S

Connection to the power supply as well as to the receiver outputs is done by screw less terminals.

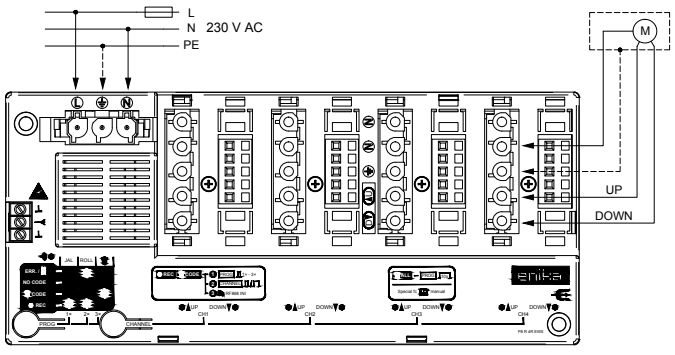
P8 R 4R E

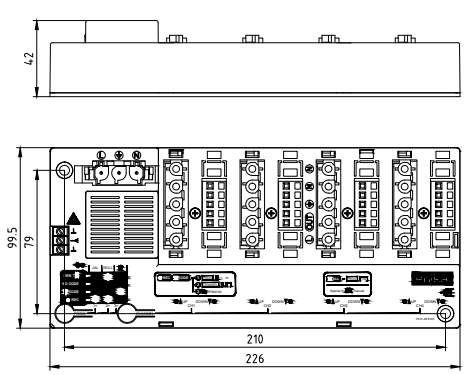
Connection to the power supply as well as to the receiver outputs is made via Ensto-net connectors.

P8 R 4R W

Connection to the power supply as well as to the receiver outputs is made via Wieland connectors.

Power supply	230 V ±10 % 50 Hz
Max. switching power	3 A cos φ > 0,8
Number of channels	4× motors
Switching elements	relay
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Weight	490 g
Connecting terminals (P8 R 4R S)	screwless 0.5 mm^2 to 1.5 mm^2
Operating frequency	868 MHz
Range	up to 150 m (open area)
Number of codes (combinations)	2^{24}
Maximum number of codes stored in the memory	32





ON | OFF | ON/OFF | | | /OFF | RETR | DIMM |

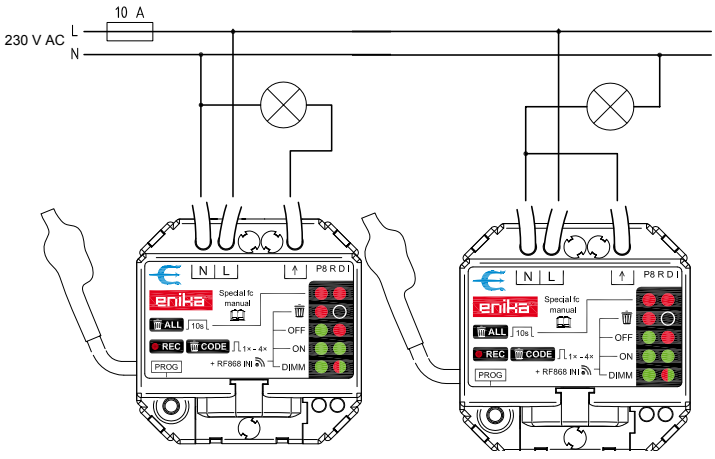
P8 R D I, P8 R D I/LED

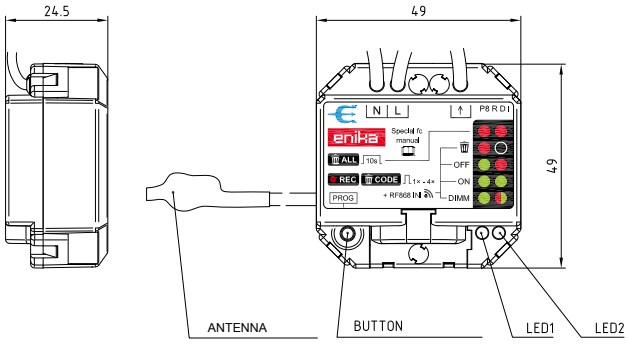
Universal receiver Poseidon® for control of lighting

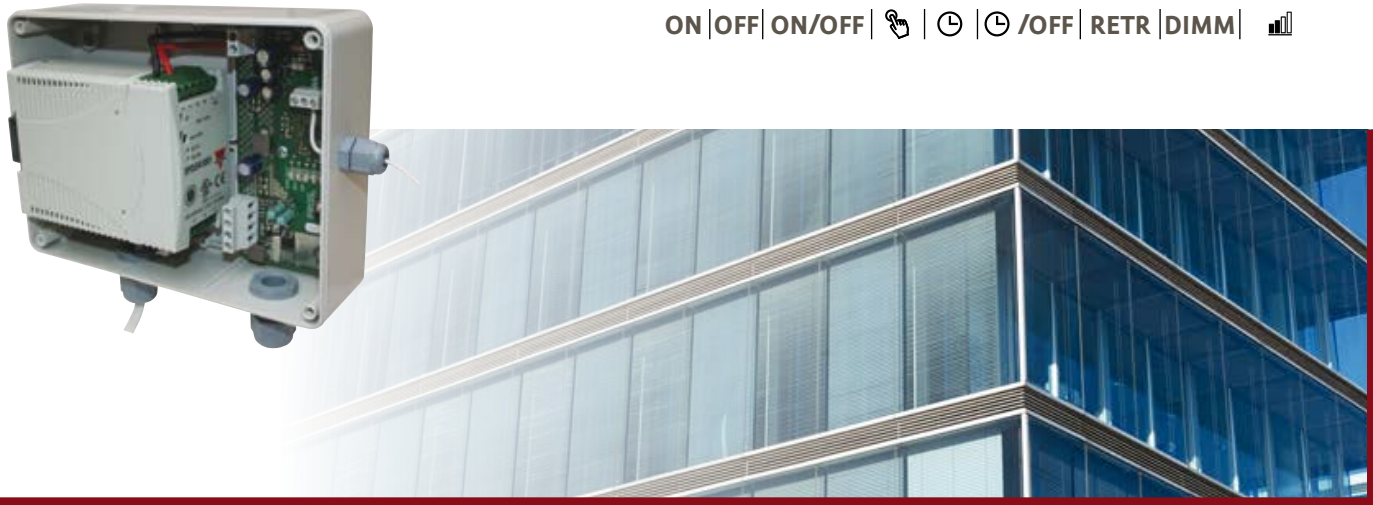
easy to setup | RF signal repeater | advanced functions using configuration software Posedion® Asistent | compatible with Poseidon®

It is possible to connect dimmable light sources including LED using two or three wires. These are the main advantages of this compact receiver that is suitable for installation directly into a standard junction box or whenever a lack of space exists.

Power supply	230 V ±10 % 50 Hz
Switching power range (3-wire)	20 to 200 W resistive load, conventional bulbs, mains halogen bulbs
	20 to 175 VA electronic multipliers
Switching power range (2-wire)	35 to 200 W resistive load, conventional bulbs, mains halogen bulbs
	60 to 175 VA electronic multipliers
Type of control	falling edge (R,C)
Ambient temperature range	-20 to +40 °C at installation in the junction box
	-20 to +55 °C at installation inside the switchboard
Short-circuit fuse	electronic, reversible
Thermal fuse	electronic, 2-step reversible, (reduction of output power, output off)
	drop out, non-reversible 117 °C
Connecting wires	0.5 mm² / 80 mm







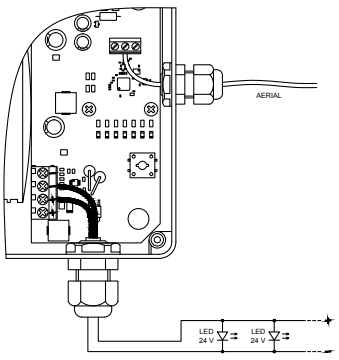
P8 R D LU

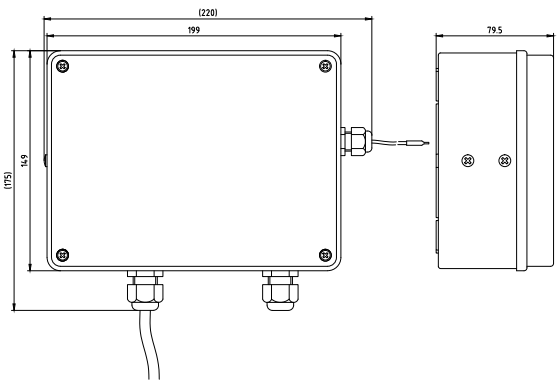
1-channel LED dimming receiver Poseidon®

possibility of connecting an external antenna | RF signal repeater | power source function

It is designed for wireless control of 24 V LEDs by pulse width modulation (PWM). It also serves as a power source for these LED lights. It allows a smooth adjustment of the light intensity. It is designed for installation in suspended ceilings and other confined spaces.

Power supply	90 to 264 V 50 Hz, 1.65 / 1.4 A
Output voltage	19.5 to 24 V DC / 1 A
Maximum output current	3.3 A
Internal protection	T 3.15 A 250 V
Ingress protection	IP56 acc. to EN 60529
Operating temperature	–20 to +55 °C
Weight	1 000 g
Connecting terminals	screw max. 4 mm^2
Cord length	2 m
Operating frequency	868 MHz
Signal range with the supplied antenna	150 m (open area)
Maximum number of codes in the memory	32
Dimming characteristics	exponential, 200 levels
Range of output level control	8 % to 100 %





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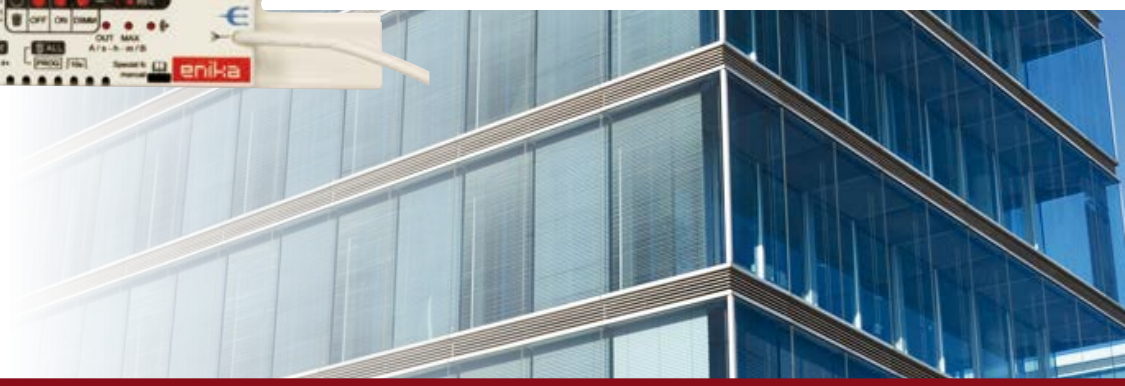


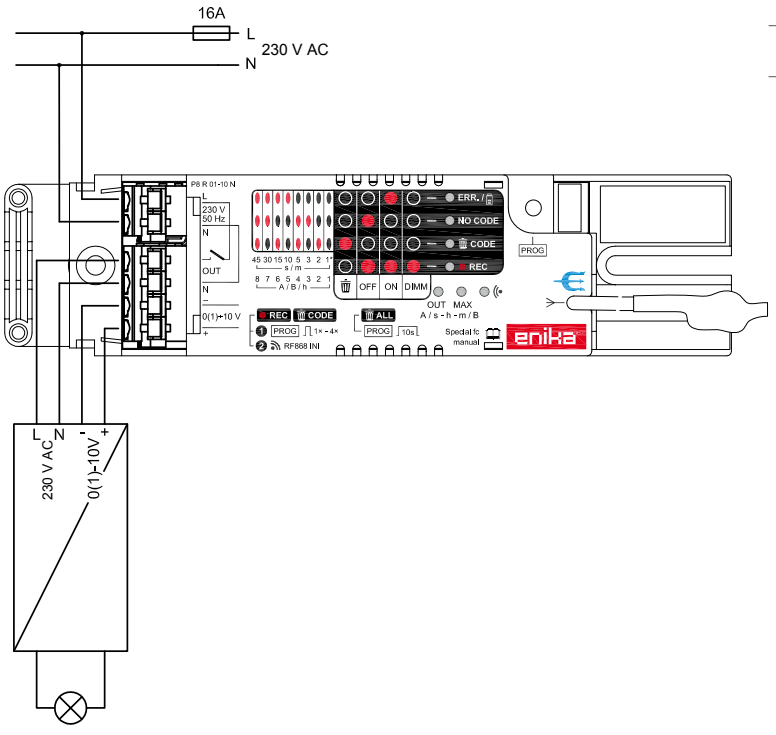
P8 R 01-10 N

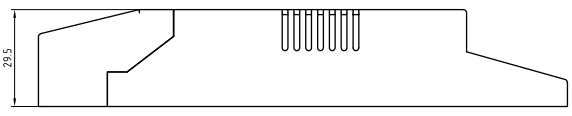
1-channel receiver with relay and analogue output

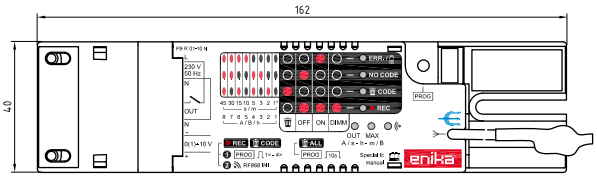
compatible with Poseidon® | suitable for switching of all kinds of load | easy to setup | RF signal repeater

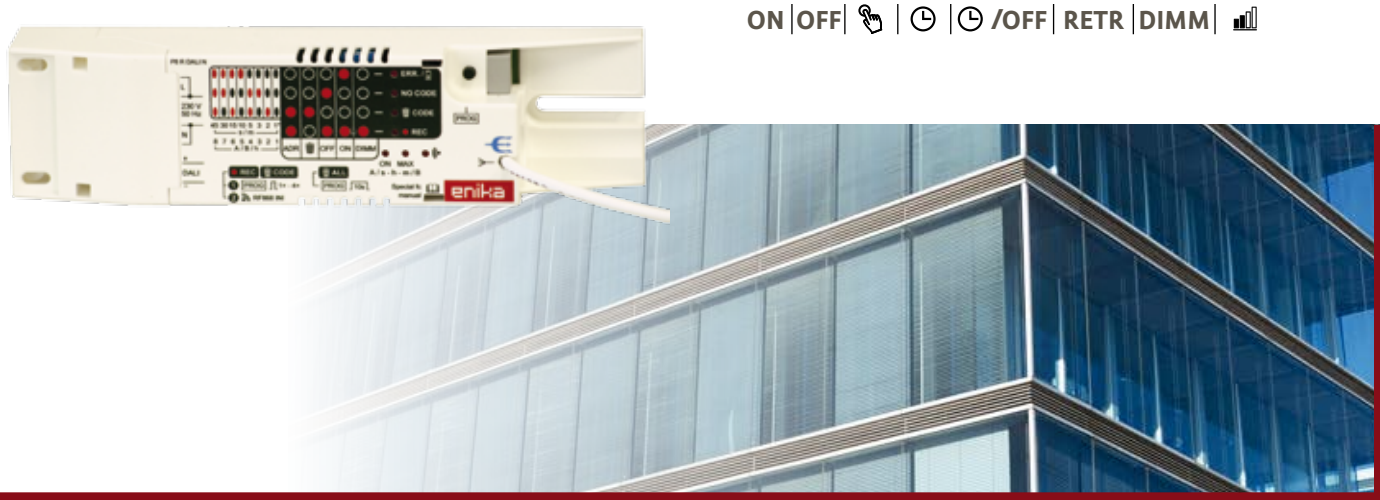
It is designed to control dimmable ballasts by means of analogue signals 1 - 10 V, or instruments that use analogue control 0 - 10 V. It is adapted for installation in light fittings, suspended ceilings and other confined spaces.

Power supply	230 V ± 10 % 50 Hz
Max. switching power	1 600 VA electronic multipliers 1 - 10 ±0.25 V DC, max. -100 mA 0 - 10 ±0.25 V DC, max. 2.5 mA
Number of channels	1
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	external (max. 16 A)
Weight	120 g
Screwless connection terminals	max. 2.5 mm^2
Operating frequency	868 MHz
Range with the supplied antenna	up to 150 m (open area)
Maximum number of codes stored in the memory	32









P8 R DALI N, P8 R DALI N WP

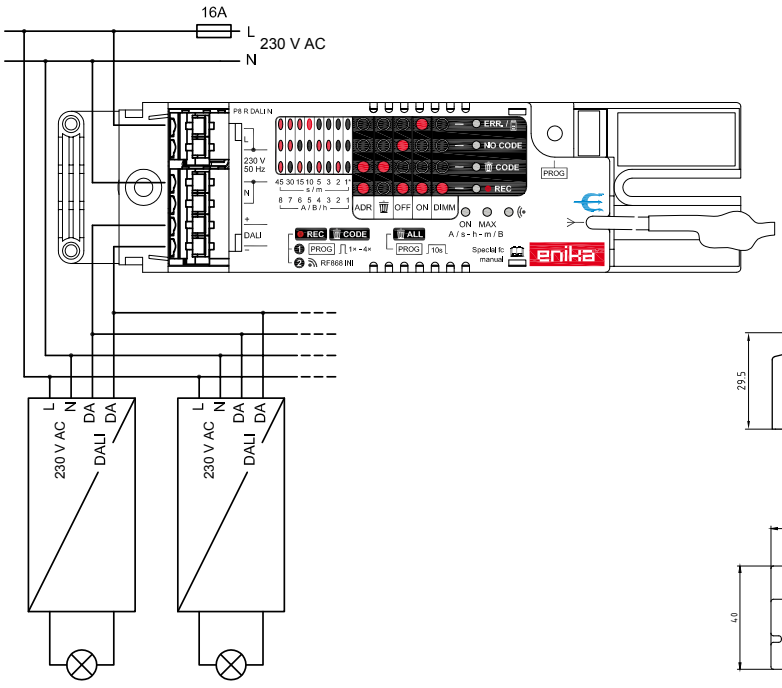
Built-in receiver Poseidon® with DALI output

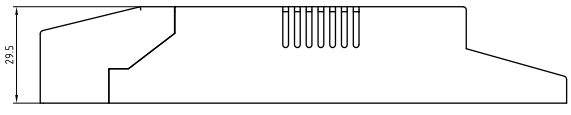
easy to setup | integrated power supply for DALI bus | RF signal repeater | compatible with Poseidon®

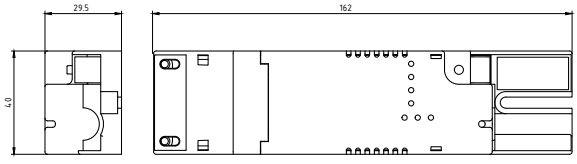
The **P8 R DALI N** is designed to control the light fittings equipped with DALI ballasts. In basic mode, it enables control of one group of light fittings. If the Poseidon® Asistent software and P8 TR USB configuration transmitter are used, it is possible to take advantage of the DALI bus and set up to 4 separate groups of light fittings. It is adapted for installation in light fittings, suspended ceilings and other confined spaces.

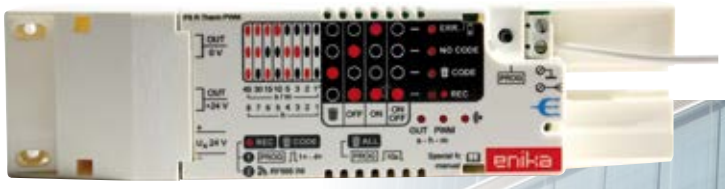
The **P8 R DALI N WP** has no power source to supply the DALI bus. You can easily extend the number of controlled groups within one "branch".

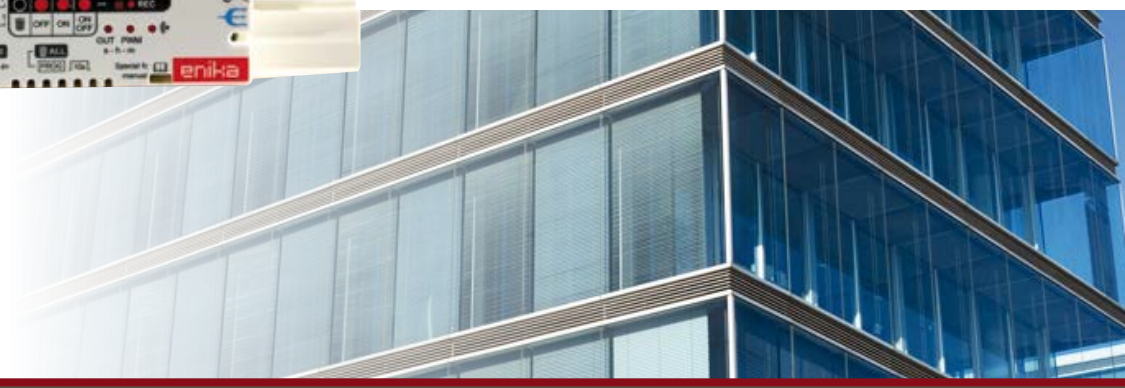
Power supply	230 V ±10 % 50 Hz
Max. number of multipliers	64 in four groups
Bus power supply, max.	18 V / 200 mA
Ingress protection	IP20 acc. to EN 60529
Operating temperature	–20 to +55 °C
Output protection	external (max. 16 A)
Weight	120 g
Screwless connection terminals	max. 2.5 mm²
Operating frequency	868 MHz
Range	up to 150 m (open area)
Maximum number of codes stored in the memory	32











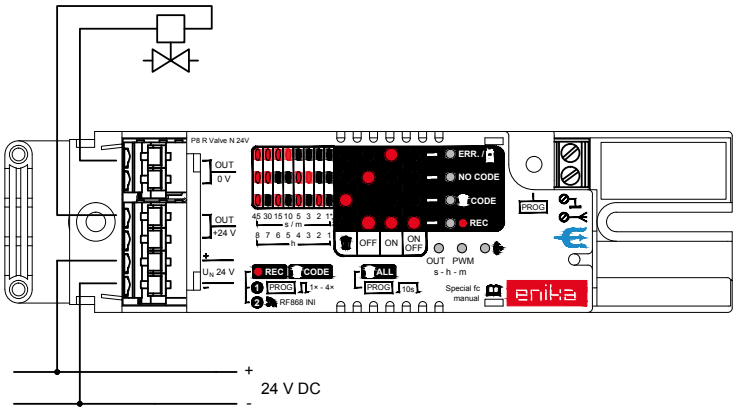
P8 R VALVE N 24 V

Built-in receiver Poseidon® with PWM output

compatible with Poseidon® | to control heaters | easy to setup

It is used to control the output power of heating units. Control is performed through PWM signal of the receiver connected to the thermostatic valves.

Power supply	24 V DC ±10 %
Output	24 V DC, max. 2 A resistive load
PWM period setting range	10 sec to 2 hrs
Preset value of PWM period	10 minutes
Preset value of PWM	100 %
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Weight	80 g
Connection terminals	screwless type, max. 2.5 mm^2
Operating frequency	868 MHz
Range with the supplied antenna	150 m (open area)
Maximum number of codes stored in the memory	32



Poseidon® occupancy and light regulators

ceiling mounted | surface mounted | high bay | built-in

The regulation of indoor lighting depending on the amount of lighting coming into the room from outside is one of the modern ways of lighting control. The integrated movement sensor prevents unnecessary lighting in empty offices, corridors or aisles between warehouse racks. One controller allows you to simultaneously maintain two different lighting levels of two groups of light fittings. In some cases the use of controllers can save more than 70 % of the energy consumed by lighting. The advantages of Poseidon® occupancy and light regulators include: easy installation, precise system of integration into building automation systems, comfortable setting and making changes using Poseidon® Asistent software. The regulators are connected to 230 V standard mains voltage.

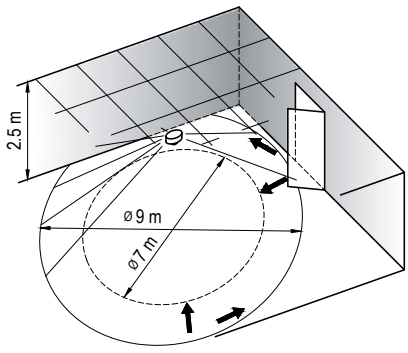
P8 TR PS BIC

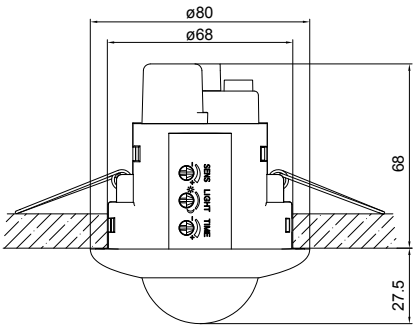
Ceiling-mounted occupancy and light regulator Poseidon®

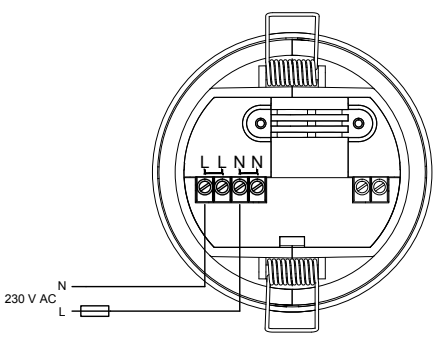
easy to install | savings up to 70 % | movement and light sensors | flexible configuration with Poseidon® Asistent software

It is primarily designed to control P8 R DALI N and P8 R 01-10 N receivers, i.e. to continuously control the level of their outputs depending on the level of daylight. Using one controller, it is possible to control up to two groups of receivers at different levels and optimise the light output of light fittings that are located closer to or further away from windows. It contributes to the user comfort and monitors proper working conditions, especially in office premises.

Power supply	230 V ±10 % 50 Hz
Delay setting range	about 5 sec to 105 min
Range of ambient light influence	0.5 to 12 288 lx (measured using the lighting sensor)
Connection terminals	max. 2.5 mm²
Operating frequency	868 MHz
Range	up to 150 m (open area)
Max. number of codes stored in the memory	32
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C
Transmitted information	presence
	curent illumination value (lx)
	2× value of the required light output of light fittings (%)







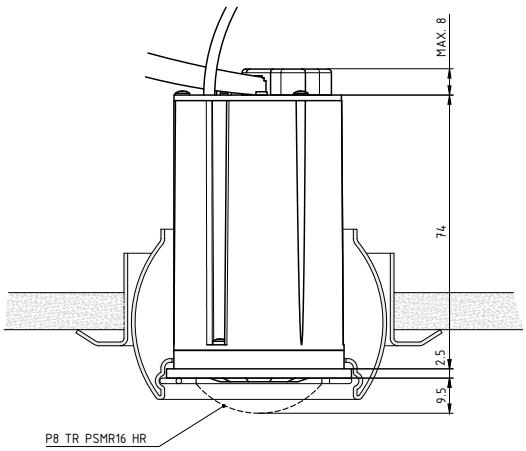
P8 TR PSMR16, P8 TR PSMR16 HR

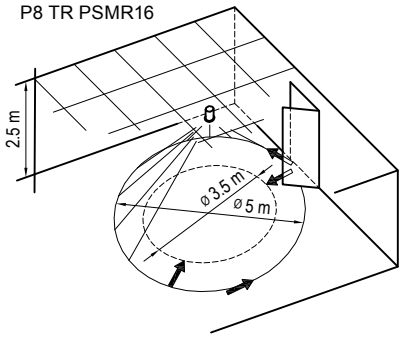
Built-in occupancy and light regulator Poseidon®

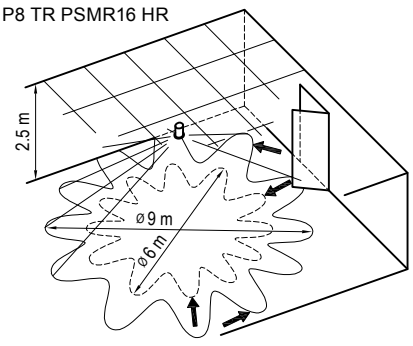
easy to install | compatible with Poseidon® | flexible configuration with Poseidon® Asistent | movement and light sensors

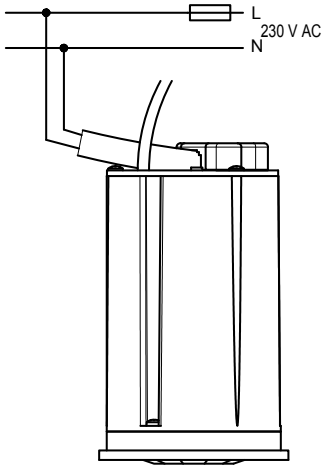
It is primarily designed to control P8 R DALI N and P8 R 01-10 N receivers, i.e. to continuously control the level of their outputs depending on the level of daylight. Thanks to its mounting in frames of conventional spotlights MR16, it perfectly blends with the design of the entire space. Using a tilting frame, it is also possible to easily cover any blind spots of the other sensors such as corners, niches, large halls, etc. In addition, two variants of lenses with different characteristics are available. Using one controller, it is possible to control two groups of receivers at different levels and optimise the light output of light fittings that are located closer to or further away from windows.

Power supply	230 V ±10 % 50 Hz
Delay setting range	about 5 sec to 105 min
Range of ambient light influence	0.5 to 12 288 lx (measured using the lighting sensor)
Number of channels	2^{24}
Operating frequency	868 MHz
Range	up to 150 m (open area)
Max. number of codes stored in the memory	32
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C
Transmitted information	presence
	actual illumination value (lx)
	2× value of the required light output of light fittings (%)









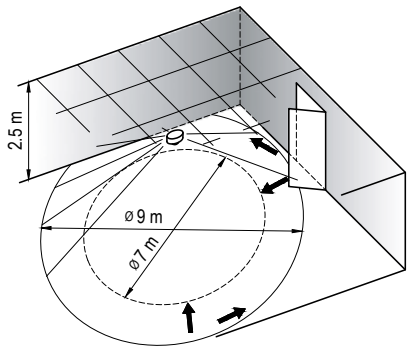
P8 TR PS W

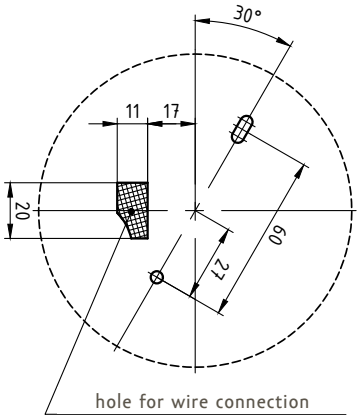
Surface mounted occupancy and light regulator Poseidon®

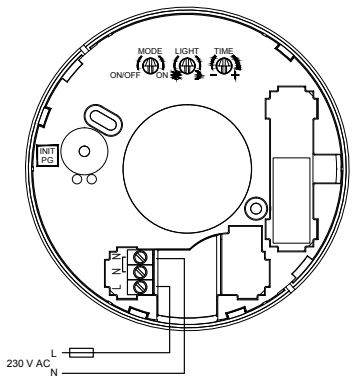
easy to install | savings up to 70 % | movement and light sensors | flexible configuration with Poseidon® Asistent software

It is primarily designed to control P8 R DALI N and P8 R 01-10 N receivers, i.e. to continuously control the level of their outputs depending on the level of daylight. Using one controller, it is possible to control up to two groups of receivers at different levels and optimise the light output of light fittings that are located closer to or further away from windows. It contributes to the user comfort and monitors proper working conditions, especially in larger offices such as call, shared service centers or in government buildings.

Power supply	230 V ±10 % 50 Hz
Delay setting range	about 5 sec to 105 min
Range of ambient light influence	0.5 to 12 288 lx (measured using the lighting sensor)
Connection terminals	max. 2.5 mm²
Operating frequency	868 MHz
Range	up to 150 m (open area)
Max. number of codes stored in the memory	32
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C
Transmitted information	presence
	actual illumination value (lx)
	2× value of the required light output of light fittings (%)







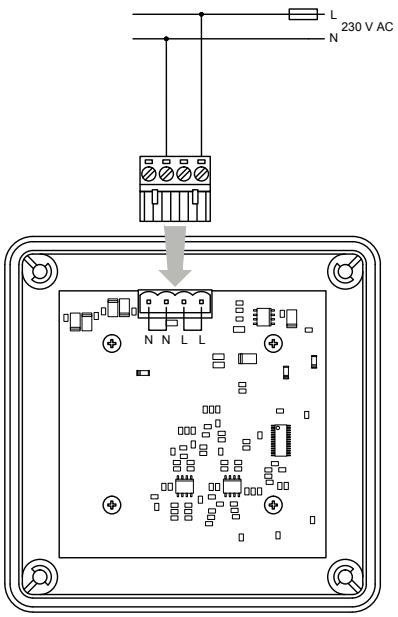
P8 TR PS HB

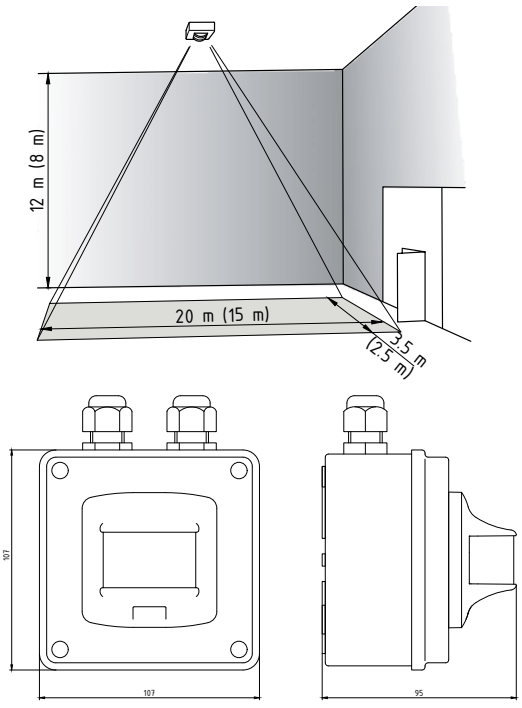
High bay occupancy and light regulator Poseidon®

mounting height up to 12 m | savings up to 70 % | movement and light sensors | flexible configuration with Poseidon® Asistent software

It is primarily designed to control P8 R DALI N and P8 R 01-10 N receivers, i.e. to continuously control the level of their outputs depending on the level of daylight. Thanks to a mounting height of up to 12 meters and the method of monitoring the space below, it is especially useful in halls and large storage areas where it will provide all advantages of wireless controllers. Using one controller, it is possible to control up to two groups of receivers at different levels and optimise the light output of light fittings that are located, for example, closer to or further away from windows.

Power supply	230 V ±10 % 50 Hz
Delay setting range	about 5 sec to 105 min
Range of ambient light influence	0.5 to 12 288 lx (measured using the lighting sensor)
Connection terminals	max. 2.5 mm^2
Operating frequency	868 MHz
Range	up to 150 m (open area)
Max. number of codes stored in the memory	32
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C
Transmitted information	presence
	actual illumination value (lx)
	2× value of the required light output of light fittings (%)





Poseidon® sensors

temperature | humidity | movement | flooding | CO_2

For the building automation and proper functioning of subsystems, the sensors, sometimes also referred to as peripherals of heating, air-conditioning or ventilation systems, play a key role. Properly adjusted and placed sensors ensure effective control of individual functional units of buildings, and thus are directly responsible for the comfort of users. When compared to conventional analogue sensors, the wireless sensors offer comparable connectivity with other parts of the system and also provide maximum flexibility at the start of building operation as well as for changes to the interior. The battery wireless sensors Poseidon® transmit not only the information on main variables, such as temperature, humidity and presence, but also the information on battery condition, and thus allow the building administrators to ensure smooth operation of the buildings.

P8 T Temp/RH_Time, _Time Arbo, _Element

Temperature and humidity sensor Poseidon®

easy to install | range up to 150 m | compatible with Poseidon® | easy to integrate into other systems

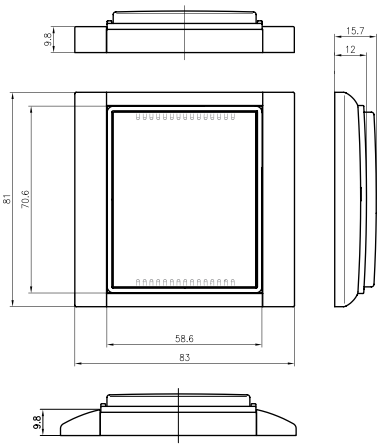
The P8 T Temp transmitter is used to measure and transmit the temperature in the room using wireless transmission. For the receipt and further processing of this information, the P8 TR IP Ethernet interface is mainly used.

The P8 T Temp/RH is used to measure the temperature and relative humidity in the room and to transmit the same using wireless transmission. For the receipt and further processing, the P8 TR IP Ethernet interface is mainly used. The transmitter also allows you to set a limit value of humidity. In cooperation with an appropriate receiver, it is then used for two-state control (hydrostat).

	P8 T Temp	P8 T Temp/RH
Power supply	2× 1.5 V, alkaline AAA (LR03)	
Accuracy of temperature measurement	±0.5 K in the range 0 to + 55 °C ±2 K in the range –20 to 0 °C	
Ingress protection	IP20 acc. to EN 60529	
Operating temperature	–20 to +55 °C	
Accuracy of relative humidity measurement		±3 % in the range 20 to 80 % RH ±7 % in the range 80 to 100 % RH
Humidity control range		20 to 90 % RH
Operating frequency	868 MHz	
Range	up to 150 m (open area)	

transmitter + frame = complete transmitter

The wireless transmitters shown in figures consist of two parts, i.e. the proper transmitter functional part and the frame. These parts can be arbitrarily combined; when ordering, it is necessary to indicate the code of the switch + the code of the frame you desire.



03 white / white

P8 T Temp 03
P8 T Temp/RH 03
3901F-A00110 03

01 graphite / ice white

P8 T Temp 01
P8 T Temp/RH 01
3901F-A00110 01

08 titanium

P8 T Temp 08
P8 T Temp/RH 08
3901F-A00110 08

32 old-silver

P8 T Temp 32
P8 T Temp/RH 32
3901F-A00110 32

33 champagne

P8 T Temp 33
P8 T Temp/RH 33
3901F-A00110 33

34 anthracite

P8 T Temp 34
P8 T Temp/RH 34
3901F-A00110 34

50 old silver / beech

P8 T Temp 32
P8 T Temp/RH 32
3901F-A50110 50

51 old silver / alder

P8 T Temp 32
P8 T Temp/RH 32
3901F-A50110 51

52 old silver / cherry

P8 T Temp 32
P8 T Temp/RH 32
3901F-A50110 52

08 titanium / cherry

P8 T Temp 08
P8 T Temp/RH 08
3901F-A50110 52

53 anthracite / mahogany

P8 T Temp 34
P8 T Temp/RH 34
3901F-A50110 53

03 white / white

P8 T Temp 03
P8 T Temp/RH 03
3901E-A00110 03

01 graphite / ice white

P8 T Temp 01
P8 T Temp/RH 01
3901E-A00110 01

04 white/ice gray

P8 T Temp 04
P8 T Temp/RH 04
3901E-A00110 04

21 ivory / ice white

P8 T Temp 21
P8 T Temp/RH 21
3901E-A00110 21

22 agave/ice white

P8 T Temp 22
P8 T Temp/RH 22
3901E-A00110 22

07 caramel / ice gray

P8 T Temp 07
P8 T Temp/RH 07
3901E-A00110 07

24 carmine / ice gray

P8 T Temp 24
P8 T Temp/RH 24
3901E-A00110 24

25 coffee / ice opal

P8 T Temp 25
P8 T Temp/RH 25
3901E-A00110 25

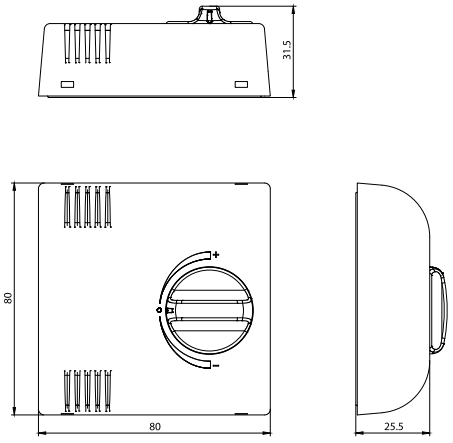
P8 T Temp/CR

Temperature transmitter Poseidon®

easy to install | range up to 150 m | battery lifetime up to 3 years | easy to integrate into other systems

The temperature transmitter Poseidon® is used to measure and transmit the temperature using the wireless transmission. For the receipt and further processing of this information, the P8 TR IP Ethernet interface is mainly used. Using the button on the transmitter, it is possible to set the transmitted value of the temperature compensation in the range of -3°C to +3°C with increments of 0,1°C.

Power supply	2× 1.5 V, alkaline AAA (LR03)
Accuracy of temperature measurement	±0.5 K in the range 0 to + 55 °C ±2 K in the range –20 to 0 °C
Interval of temperature measurement	1 minute
Ingress protection	IP20 acc. to EN 60529
Weight including batteries	60 g
Operating temperature	–20 to +55 °C
Operating frequency	868 MHz
Range	up to 150 m (open area)



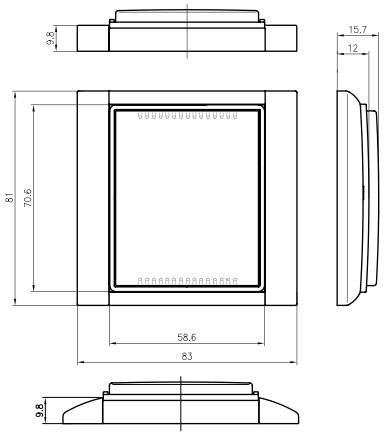
P8 T CO_2_Time, _Time Arbo, _Element

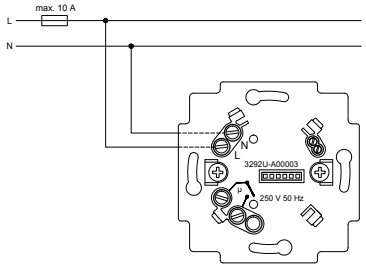
Air quality and CO_2 sensor Poseidon®

easy to integrate into other systems | compatible with Poseidon® | range up to 150 m

The P8 T CO_2 is used to measure the concentration of air pollution (VOC – volatile organic compounds) and CO_2 levels in the space and send the values with the use of wireless communication protocol. For the receipt and further processing of this information, the P8 TR IP Ethernet interface is mainly used. The sensor also allows to set a limit to indicate the air pollution. In connection with a suitable receiver or with an in-built relay is used for a two-state control. There are two design versions Time and Element, in all color combinations that these designs offer.

Power supply	230 V ±10 % 50 Hz
Ingress protection	IP20 acc. to EN 60529
Operating temperature	0°C to +45 °C
Measuring range CO_2	0 – 5 000 ppm
Accuracy of CO_2 measuring	±50 ppm ±3 % of measured value
Operating frequency	868 MHz
Range	up to 150 m (open area)





transmitter + frame = complete transmitter

The wireless transmitters shown in figures consist of two parts, i.e. the proper transmitter functional part and the frame. These parts can be arbitrarily combined; when ordering, it is necessary to indicate the code of the switch + the code of the frame you desire.

03 white / white	01 graphite / ice white	08 titanium	32 old-silver	33 champagne	34 anthracite
					
P8 T Temp 03 P8 T CO_2 03 3901F-A00110 03	P8 T Temp 01 P8 T CO_2 01 3901F-A00110 01	P8 T Temp 08 P8 T CO_2 08 3901F-A00110 08	P8 T Temp 32 P8 T CO_2 32 3901F-A00110 32	P8 T Temp 33 P8 T CO_2 33 3901F-A00110 33	P8 T Temp 34 P8 T CO_2 34 3901F-A00110 34

50 old silver / beech	51 old silver / alder	52 old silver / cherry	08 titanium / cherry	53 anthracite / mahogany
				
P8 T Temp 32 P8 T CO_2 32 3901F-A50110 50	P8 T Temp 32 P8 T CO_2 32 3901F-A50110 51	P8 T Temp 32 P8 T CO_2 32 3901F-A50110 52	P8 T Temp 08 P8 T CO_2 08 3901F-A50110 52	P8 T Temp 34 P8 T CO_2 34 3901F-A50110 53

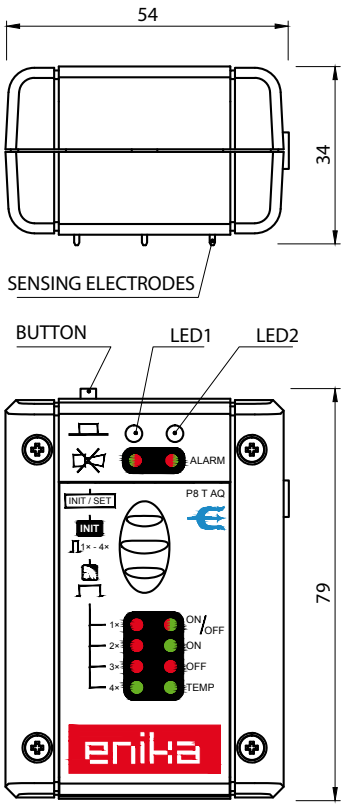
03 white / white	01 graphite / ice white	04 white/ice gray	21 ivory / ice white	22 agave/ice white	07 caramel / ice gray	24 carmine / ice gray	25 coffee / ice opal
							
P8 T Temp 03 P8 T CO_2 03 3901E-A00110 03	P8 T Temp 01 P8 T CO_2 01 3901E-A00110 01	P8 T Temp 04 P8 T CO_2 04 3901E-A00110 04	P8 T Temp 21 P8 T CO_2 21 3901E-A00110 21	P8 T Temp 22 P8 T CO_2 22 3901E-A00110 22	P8 T Temp 07 P8 T CO_2 07 3901E-A00110 07	P8 T Temp 24 P8 T CO_2 24 3901E-A00110 24	P8 T Temp 25 P8 T CO_2 25 3901E-A00110 25

P8 T AQ
Flood and external temperature sensor Poseidon®

easy to install | range up to 150 m | optical and acoustic signalisation | battery life up to 5 years | compatible with Poseidon®

The flood detector is designed for direct installation on the floor. When the monitored area is flooded, it transmits this information. It can be used, for example, to close the water supply or to raise the alarm. The transmitter may also be equipped with an external temperature sensor.

Power supply	2× 1.5 V, alkaline AA
Number of transmitted channels	2 (flood sensor state, measured temperature)
Circuit impedance for the "flood" state	max. 4 MΩ
Circuit impedance for the "dry" state	min. 5 MΩ
Operating frequency	868 MHz
Range	up to 150 m (open area)
Weight	65 g (without batteries)
Temperature measurement range (sensor type 3299U-A90100)	-30 to +70 °C
Operating temperature	-20 to +55 °C
Accuracy of temperature measurement	±2 K in the range 0 to + 50 °C ±3 K in the range -30 to 0 and +50 to +70 °C



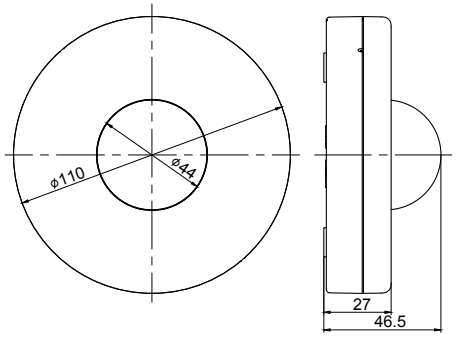
P8 T PS W

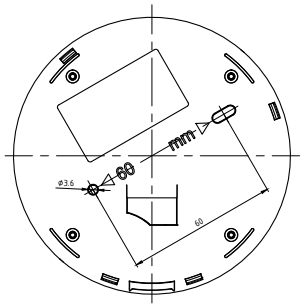
Movement sensor Poseidon® for surface mounting

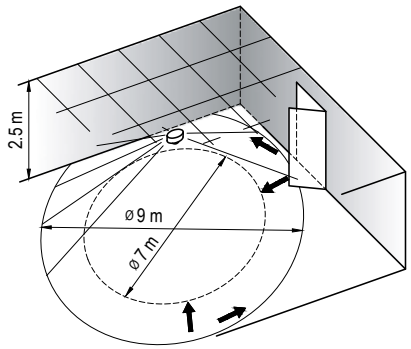
easy to install | compatible with Poseidon® | mounting height max. 8 m

The movement sensor is especially suitable for the use in the interior, for mounting on a surface without any mounting holes. Thanks to its parameters, it will cover a relatively large area. So it is ideal for rooms where the lighting is to be ensured only for the necessary period when people are present in it.

Power supply	2× AA 1.5 V alkaline
Delay setting range	about 20 sec to 30 min
Range of ambient light influence	about 1 to 1 000 lx
Operating frequency	868 MHz
Range	up to 150 m (open area)
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C







P8 T PS MR16/A, P8 T PSMR16/A HR

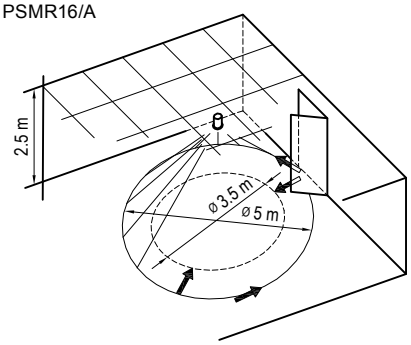
Buil-in movement sensor Poseidon®

easy to install | compatible with Poseidon® | mounting height max. 8 m

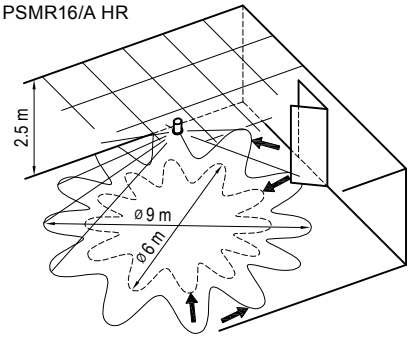
Contactless lighting controller that will ensure efficient, time-limited lighting. It is suitable for installation in holders of MR 16 halogen bulbs. It is especially well suited for installation in suspended ceilings. Its functionality is further extended by the option to use a tilting frame; thanks to this, the controller will also cover blind spots of other sensors such as corners, niches, large halls, etc. You can utilise the 8 m mounting height for installations in warehouses, production or logistic halls in particular; in addition, two variants of lenses with different characteristics are available.

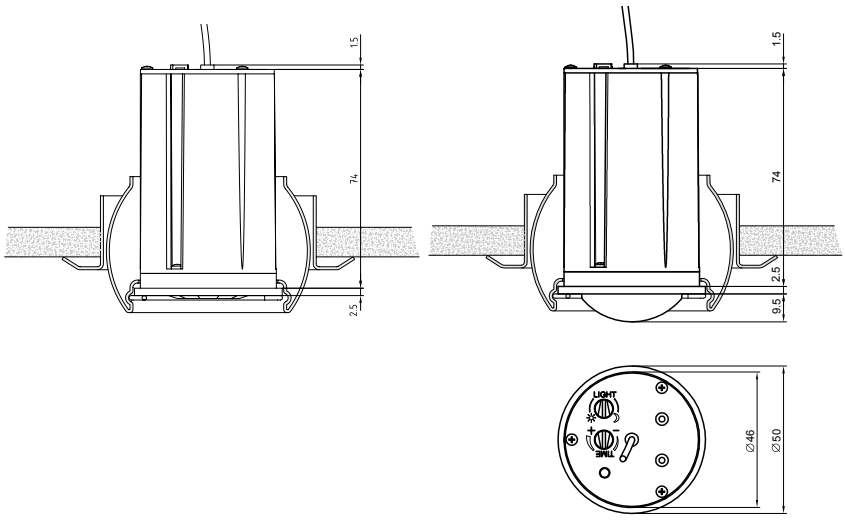
Power supply	2× AA 1.5 V alkaline
Delay setting range	about 20 sec to 30 min
Range of ambient light influence	about 1 to 1 000 lx
Operating frequency	868 MHz
Range	up to 150 m (open area)
Ingress protection	IP40 acc. to EN 60529
Operating temperature	-20 to +55 °C

P8 T PSMR16/A



P8 T PSMR16/A HR

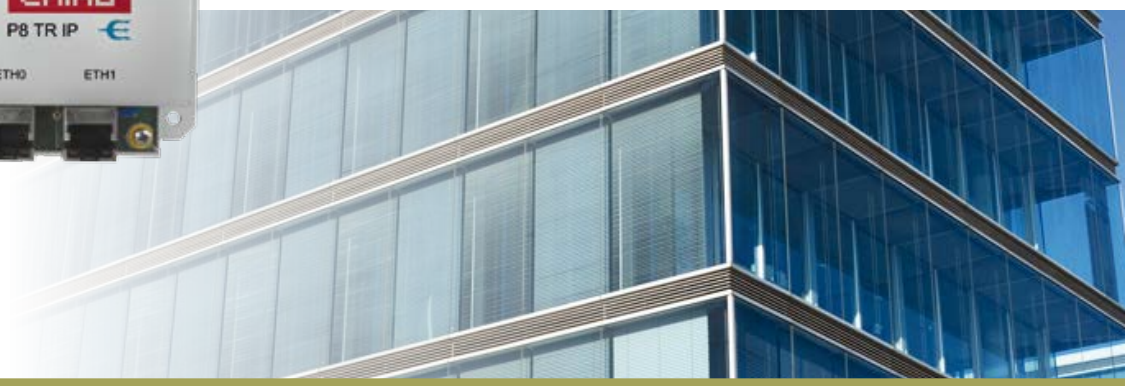




Poseidon® Interface

Ethernet | USB

The building automation system has two basic levels of automation (control), i.e. local and central. The local control ensures an immediate response to current requirements by the users such as an adjustment of temperature, air-conditioning or an increase in the lighting intensity. The central control ensures the use of synergies of cooperation of systems and safe functioning of the building as a whole. Appropriate timing of the shading will allow a delay in the start of air-conditioning units and so save a considerable amount of energy. Damage to outdoors louvers will be avoided if they are pulled up in time when there is a strong wind. The interface represents an essential element for the integration of any system allowing linkage of the local and the central control levels. The interface for the integration of wireless system Poseidon® uses the MODBUS TCP/IP protocol and allows you to control the systems using a computer, tablet, or a mobile phone. The communications interface allows you to transfer the analogue values from wireless sensors, remote configuration of all devices of the Poseidon® system, and offers RS 485 and RS 232 serial interface.



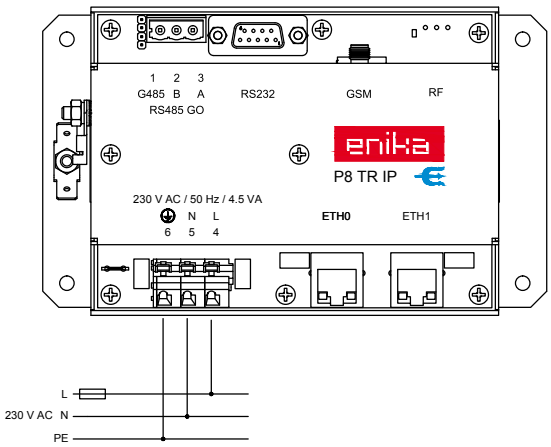
P8 TR IP

Ethernet interface Poseidon®

easy to integrate into other systems | support of MODBUS TCP/IP and RTU protocol | web server | RF signal repeater

It is used for the integration of a Poseidon® system into higher-level, e.g. building management systems (BMS) or enables control of the same using a computer, a tablet, or a mobile phone. So it is possible to directly control individual receivers, and receive the information on the state of their outputs or measured values from wireless sensors for further processing. One indisputable advantage consists of the possibility to configure the entire installation practically from anywhere using the Poseidon® Asistent software.

Power supply	230 V ±10 % 50 Hz
Antenna connection	SMA connector
Ethernet interface	2× RJ 45 (switch)
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-10 to +55 °C
Baud rate	100/10 MBs
Insulation strength	300 V AC/1 min (the insulation must not be used for the isolation of hazardous voltage)
Connection terminals	max. 2.5 mm^2
Operating frequency	868 MHz
Range	up to 150 m (open area)
Serial interface	RS485 (galvanic isolated) and RS232

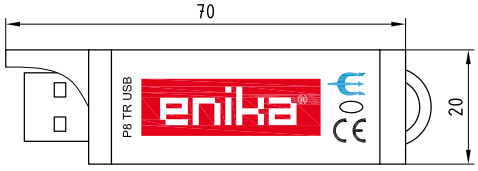


P8 TR USB

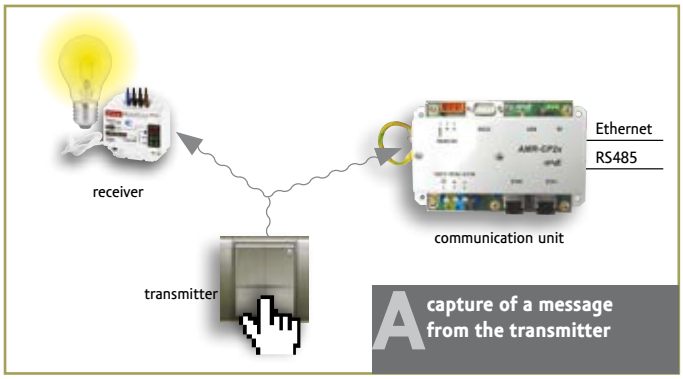
USB transmitter for the configuration of Poseidon® devices

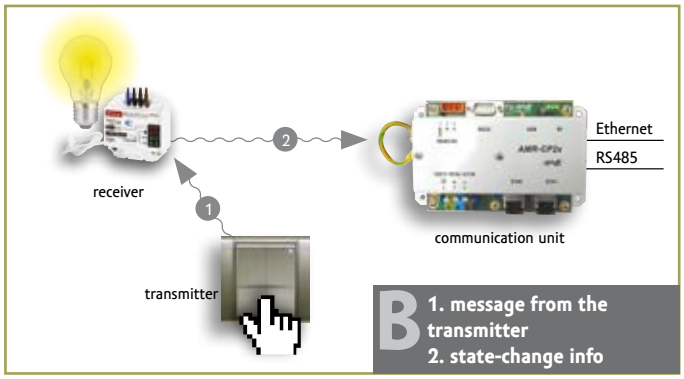
easy system configuration | higher functionality of the equipment | easy control using software applications

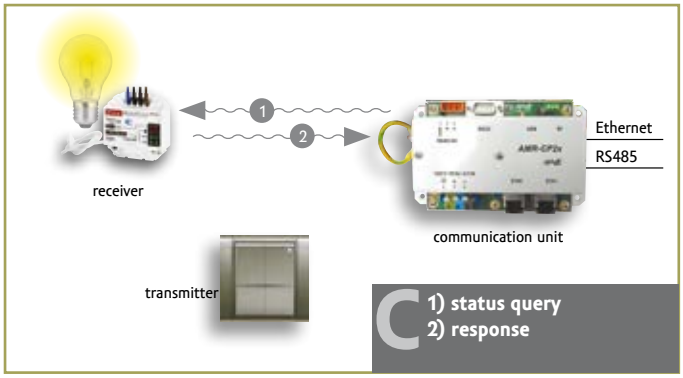
Configure the system or directly control the receivers of the Poseidon® system from your PC. As a configuration option, you can "link" transmitters to receivers, and, above all, take advantage of the advanced functionality of the equipment.

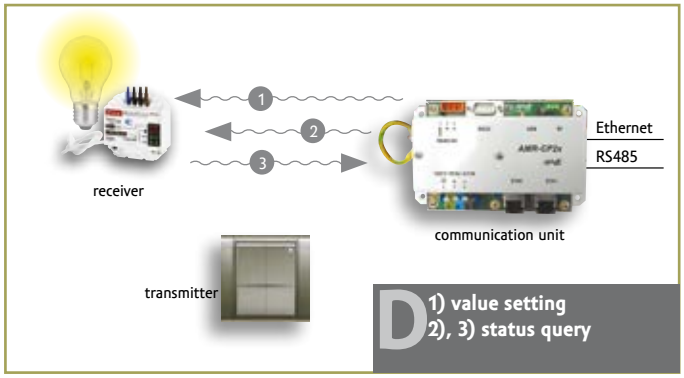


1 Response diagrams for Transmitter - Receiver signal

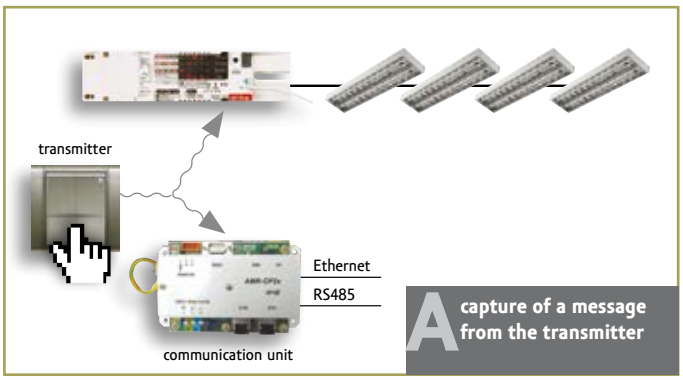


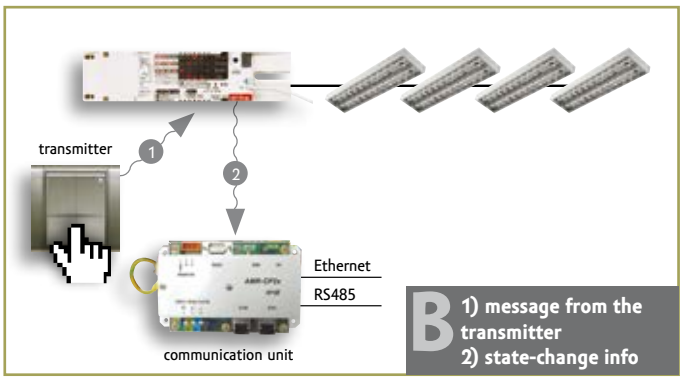


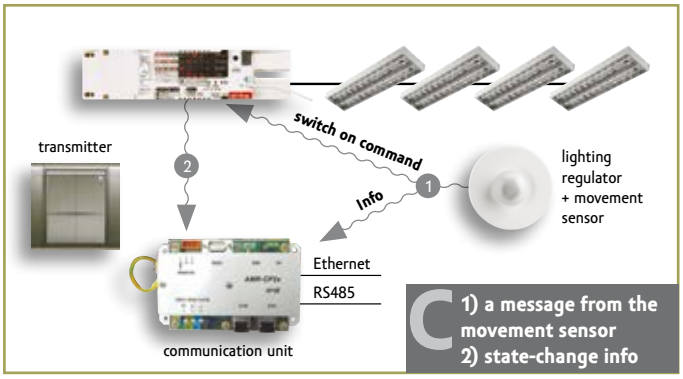


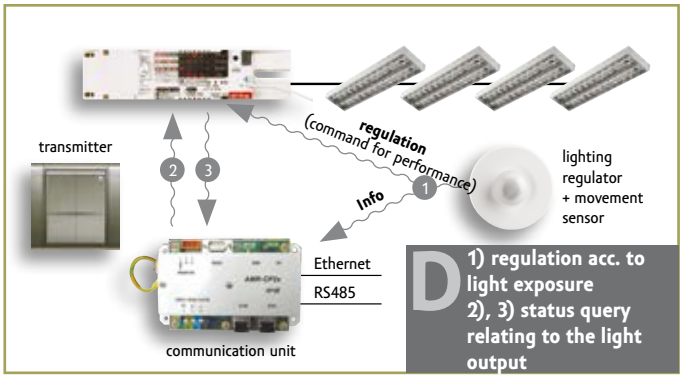


2 Lighting control



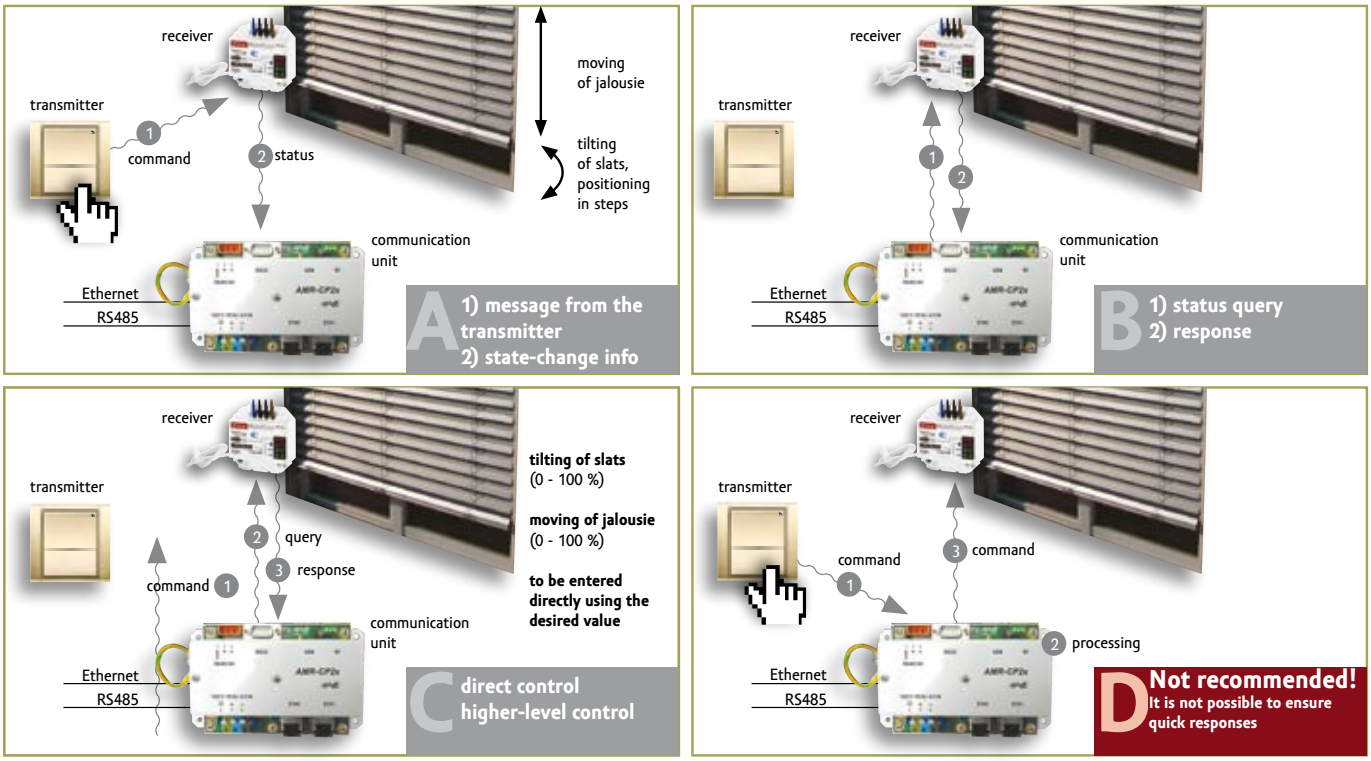






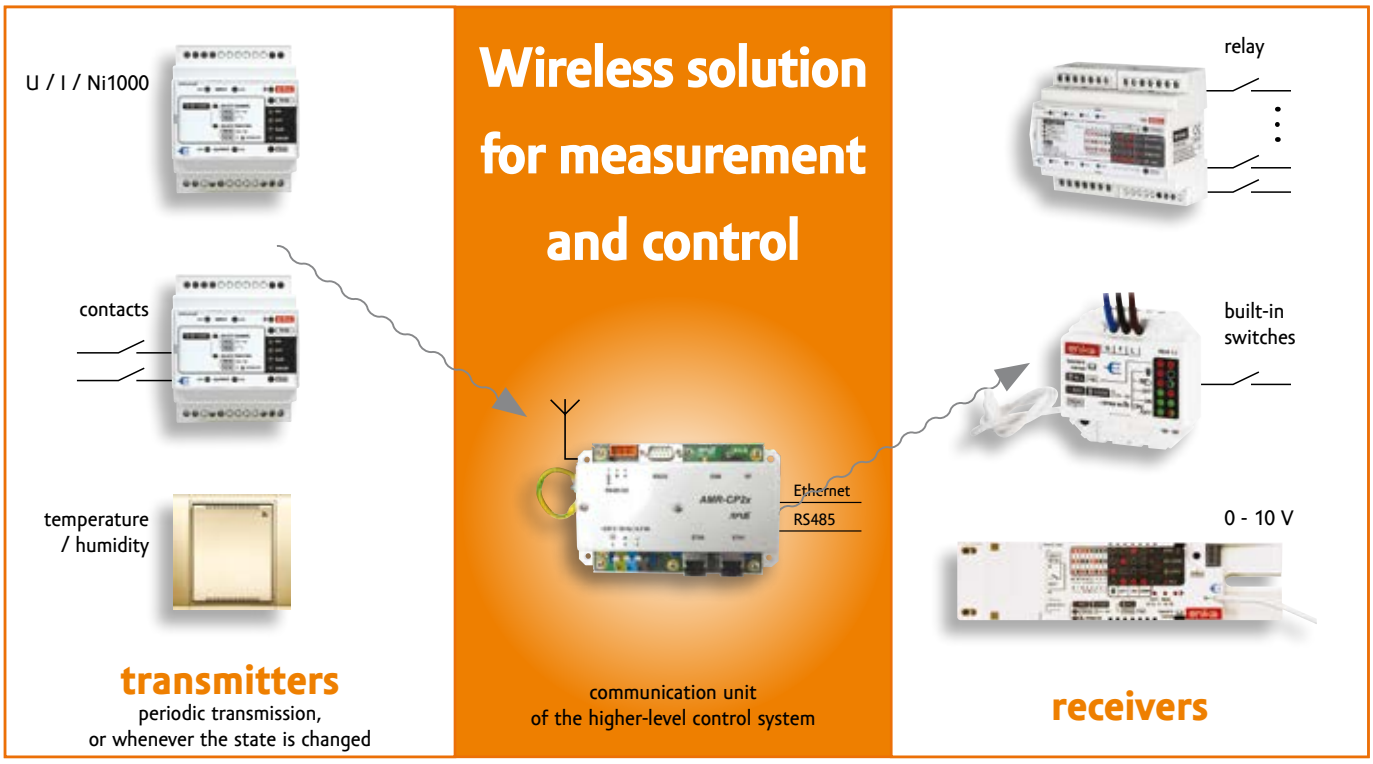
Control of jalousies and roller shutters

3



Integration of third-party devices

4



Devices for access systems

They ensure safe access of persons or entry of vehicles into a variety of closed premises, buildings, sites or parking lots. The receivers open the gates, doors or barriers based on commands from wireless transmitters/keyrings of the Poseidon® system. For each button of the transmitter, it is also possible to set a different function for several receivers, assign time-limited access authorisation and archive all events. An indisputable advantage of these receivers rests in the possibility of remote access (using remote management).

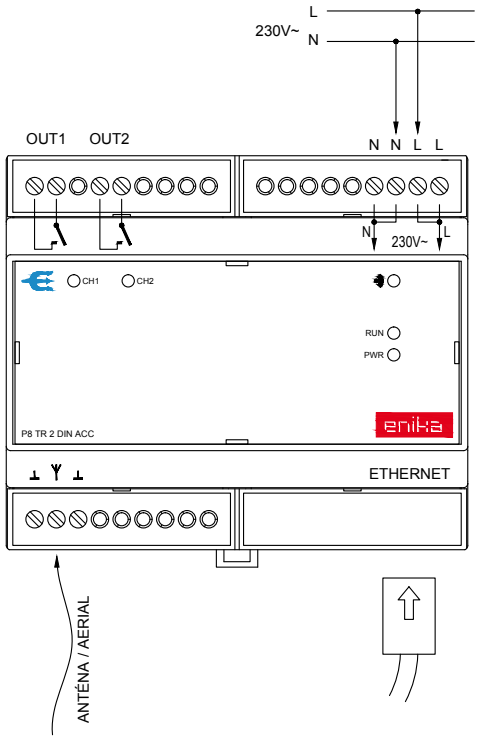
P8 TR 2 DIN ACC

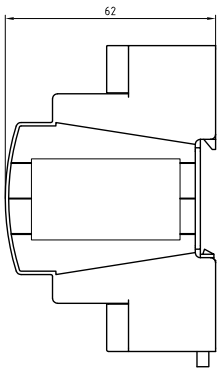
Receiver for access systems Poseidon®

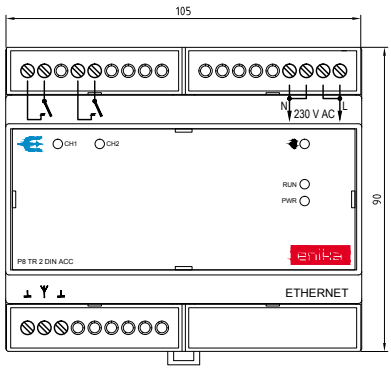
for mounting on a DIN rail | Ethernet interface | web server | compatible with Poseidon®

A module type receiver for easy installation in switchboards with two output channels that can be used for direct control of entry doors or barriers. It is also equipped with an Ethernet interface which, together with an integrated web server, provides for remote access for parametrisation. You can create user groups, define a time-limited access, while the archiving of individual events is a commonplace.

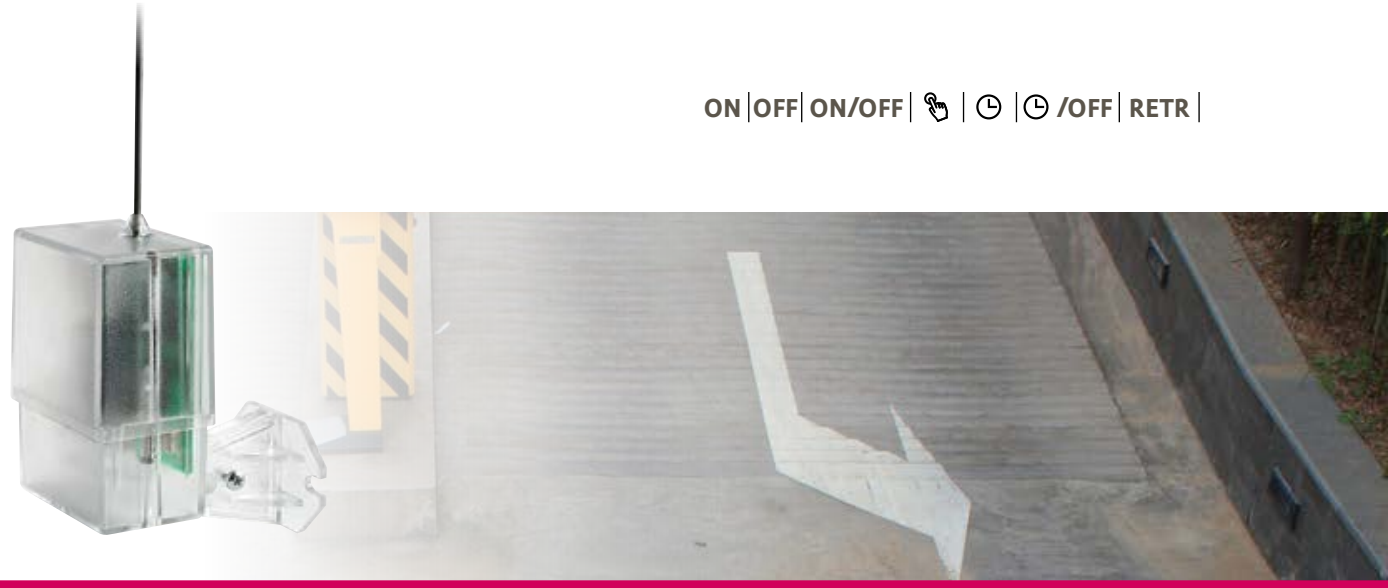
Power supply	230 V ±10 % 50 Hz
Max. switching power	max. 1 A / 230 V
Switching element	relay
Number of channels	2
Power loss	max. 3.5 W
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55°C
Dimensions	6 M
Connection terminals	screw-type, max. 2.5 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 200 m (open area)
Ethernet interface	1× RJ 45
Baud rate	100/10 MBs
Interface USB	1× HOST







ON | OFF | ON/OFF | | | /OFF | RETR |



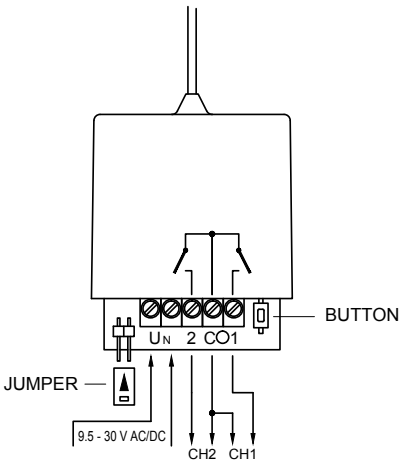
P8 R 2 Pulse

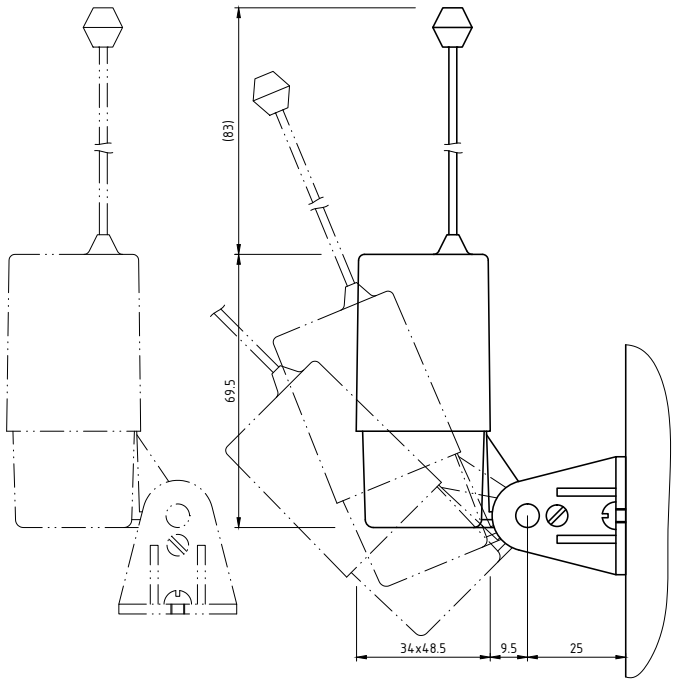
2-channel receiver Poseidon® for pulse control

easy to set | possibility of controlling using a large number of transmitters | RF signal repeater | configuration using Poseidon® software

It is used to control any control units for doors and gates made by different manufacturers. Using one controller, it is then possible to control the access gate, parking lot barrier and garage doors. It can also be used as a signal repeater.

Power supply	9.5 - 30 V AC/DC
Max. load of output contacts	max. 350 mA / 140 V / 7 W
Output pulse length	1 sec
Number of channels	2
Ingress protection	IP33 acc. to EN 60529
Operating temperature	-30 to +70 °C
Weight	80 g
Connection terminals	screw-type, max. 1 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 150 m (open area)
Maximum number of codes stored in the memory	1 000





Outdoor mounting options

ON | OFF | ON/OFF | | | /OFF | RETR |

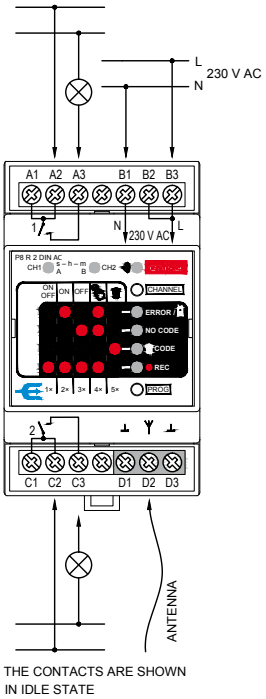
P8 R 2 DIN AC

2-channel receiver for access systems Poseidon®

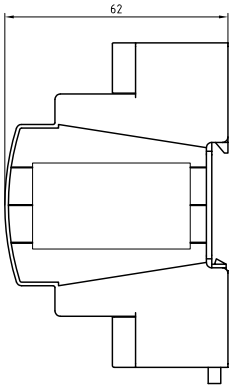
easy to set | possibility of controlling using a large number of transmitters | possibility of connecting an external antenna | RF signal repeater

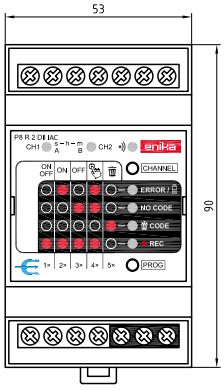
A module type receiver for easy installation in switchboards with two output channels that can be used for direct control of entry doors or barriers. It has an extended memory for up to 1 000 transmitters; therefore, it can be used for control of points of arrival in reserved parking lots of large companies, government buildings, hospitals, and residential buildings. It can also be used as a signal repeater.

Power supply	230 V ±10 % 50 Hz
Max. switching power	2 300 W conventional bulbs
	1 750 VA electronic multipliers, halogen bulbs with transformer
	500 VA/64 µF fluorescent light fittings
Number of channels	2
Power loss	max. 2.5 W
Ingress protection	IP20 acc. to EN 60529
Operating temperature	-20 to +55 °C
Output protection	external (max. 16 A)
Dimensions	3 M
Weight	100 g
Connection terminals	screw-type, max. 4 mm²
Operating frequency	868 MHz
Range with the supplied antenna	up to 300 m (open area)
Maximum number of codes stored in the memory	1 000



THE CONTACTS ARE SHOWN IN IDLE STATE





POSEIDON® Accessories

Antennas and extension cables Poseidon®

use in case of problems with the range | use in case of a long distance between the transmitter and the receiver

If there are problems with the range or when a great distance exists between the transmitter and the receiver, it is possible to use external antennas. They are supplied with a 2 m cable with an SMA connector and an adapter for the connection to the device.

P8 AND EXT2

It is ideal for ensuring the required range, especially for P8 TR 2C/U DIN transmitters of input information. It enables an increase in the range up to a distance of 3 km if there is a direct line of sight between antennas. The antenna only propagates/captures the signal in a narrow corridor; so it must be oriented towards the transmitter/receiver, or transmitting/receiving antenna (horizontal polarisation). It is supplied with a 5 m cable with an SMA connector and an adapter for the connection to the device. If the antenna needs to be installed at a greater distance from the transmitter/receiver, a 5 m or 10 m extension cable may be used.

If the antenna needs to be installed at a greater distance from the transmitter/receiver, an extension cable may be used.

Antenna indoor

P8 A INT1

Antenna indoor

P8 A INT2

Antenna outdoor

P8 A EXT1

Antenna outdoor omnidirectional

P8 A EXT2

Cable 5 m

P8 A CA5

Cable 10 m

P8 A CA10

Control systems and peripherals

| control systems | wall-mounted controllers | AMREG programmable controllers | remote input/output modules | control center visualisation system

Information in the right place at the right time.

The control systems and programmable controllers control and monitor a variety of mechanical and electrical equipment in buildings such as the heating, ventilation, air-conditioning, lighting, shading, power systems, security systems, etc.

The modern installations of control systems with all respective peripherals, control and measurement subsystems control or directly affect up to 80 % of the energy used during the actual operation of the building. So these control and measurement elements are increasingly becoming the key technologies that determine the resulting cost effectiveness and efficiency.

Modern control systems are characterised by high decentralisation with a clear hierarchical structure of individual types of components.

Control systems and peripherals
Openness and flexibility

Control center visualisation system

The main task of the control center system is to collect, administer, archive and display the current data from the control systems and measuring devices. Emphasis is placed on fast, accurate and clear transmission of all required information required for the operation of all process plants in buildings. This information is primarily intended for the administration of buildings, service activities, and last but not least for the real estate operators who need to obtain necessary statements.

Control systems

The core of control systems are powerful, freely programmable process stations that are ready to deal with any tasks of process plants being controlled, even very specific ones. Thanks to the openness, flexibility and communication capabilities with higher-level systems and subsystems, the process stations are the backbone of the entire concept of the building automation.

Programmable controllers

The controllers are usually used for the control of specific smaller technological units such as fan coil units, induction beams, air-handling units, heating branch lines, etc. The possibility of free programming of applications even in these controllers brings a great adaptability to the specific selected technology and required functions.

Input/output modules

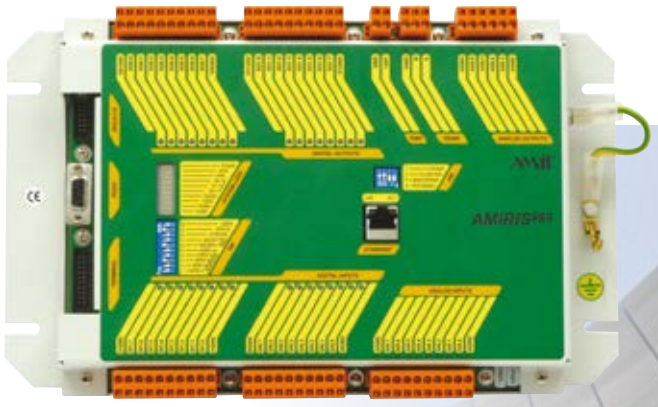
The modules of remote inputs/outputs are used to increase the number of inputs and outputs of control systems or controllers and to provide a standardised connection of remote signals, thereby significantly save the costs for cabling. If signals are connected to these modules in the place where they originate, the resistance to possible interference will increase, especially in analogue signals; the values are transmitted to control systems via a secured communication protocol.

Peripherals

The peripherals of control systems and controllers include, in particular, the temperature, humidity, pressure, air quality, and lighting sensors, sensors of the presence of persons in rooms, etc.
In addition the indoor peripherals are expected to have an aesthetic design.

Control systems

Freely programmable control systems specifically designed for general use in building automation. These systems have no limits - their applications include the control of heat sources (boiler plants, heat exchanger stations), air handling units, air-conditioning and other plants in buildings including the realisation of large measurement and control units with energy monitoring. The openness of the system, use of standard signals and interfaces, and, last but not least, the possibility of creating own algorithms without limitations open up the possibility for providing comprehensive solutions of full building automation of all types.



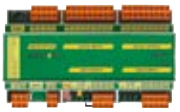
AMiNi, AMAP, AMiRiS, ADiR
Programmable control systems

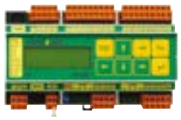
programming in DetStudio environment | reliability | integrated web server | a wide range of communication options

	DI	DO	AI	AO	Interface	Display
ADiR	6 I/O + 8 relays			-	RS232 and RS485	2× 8 characters, 6 keys
AMiNi4W2	8	8	8	4	RS232, RS485, Ethernet, SD, web server	-
AMiNi4DW2	8	8	8	4	RS232, RS485, Ethernet, SD, web server	122 × 32 pixels, 8 keys
AMiNi4DW2/G	8	8	8	4	RS232, RS485, Ethernet, GSM (SMS), SD, web server	122 × 32 pixels, 8 keys
AMiRiS99S	16	16+9r	8	4	RS232, Ethernet, (RS485 / CAN / M-Bus)	-
AMAP99S	24	4+19r	15	6	RS232, Ethernet, (RS485 / CAN / M-Bus)	-

The configuration of all control systems can be extended by remote I/O modules DMM-xx and DM-xx series and by freely programmable controllers AMREG series. For interconnection the standard MODBUS RTU protocol or ARION protocol is available.

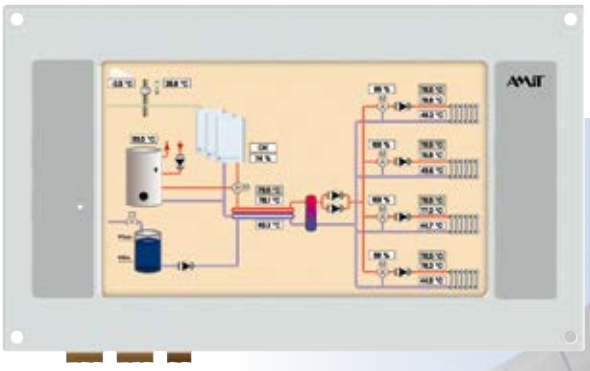

ADiR


AMiNi4W2


AMiNi4DW2(G)


AMiRiS99S


AMAP99S



ART4000W3, APT1000G, AMR-OP84, AMR-OP87
Programmable control HMIs

programming in DetStudio environment | control panel and control system in one | built-in web server | text and graphic displays

	Type	Display	Keys	Interface
APT1000G	text	4× 20 characters	27	RS232, RS485/422
ART4000W3*	text	4× 20 characters	27	RS232, RS485, Ethernet, (CAN), web server
AMR-OP84	graphic, touchscreen, 4.3"	480 × 272 pixels, 65 536 colours	-	2× RS485, Ethernet, SD, (SMS), web server
AMR-OP87	graphic, touchscreen, 7"	800 × 480 pixels, 65 536 colours	-	2× RS485, Ethernet, SD, (SMS), web server

* integrated I/O: 8× DI, 8× DO, 8× AI, 2× AO

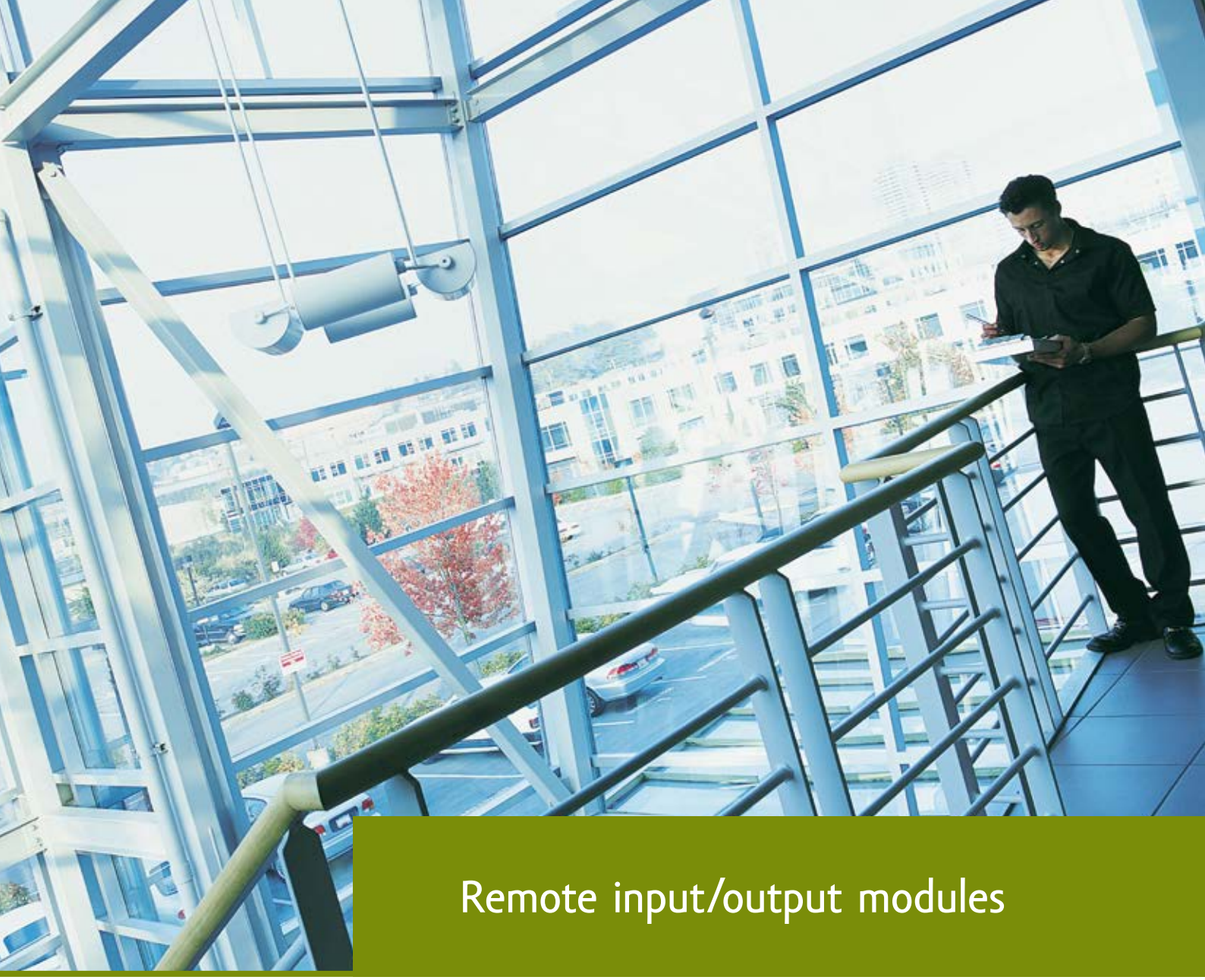
Besides the ART4000W3, other control terminals do not have their own inputs and outputs. Yet terminals are used as standard control system which obtains I/O signals via a direct connection to remote I/O modules or AMREG programmable controllers. In both cases MODBUS RTU or ARION communication protocol is used.

APT1000G

ART4000W3

AMR-OP84

AMR-OP87

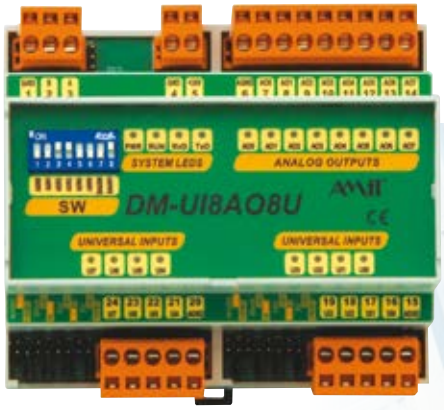


Remote input/output modules

The modules of remote inputs/outputs are used to increase the number of inputs and outputs of the control systems and connect the remote signals, which significantly saves on the costs for cabling. If signals are connected to the extension modules in the place where the signals originate, the resistance to interference will increase, especially in analogue signals; the values are transmitted to the control system using secured communication protocol and so no distortion occurs.

Extension modules can have their own "intelligence"; they can detect a communication failure and set output signals for a predefined state in such case.

Modules can be either of one type (one type of I/O signal) or combined. For the connection to the control system, the RS485 line with MODBUS RTU or ARION protocol is used.



DMM-xx (MODBUS RTU), DM-xx (ARION)

Expansion modules of input/outputs for control systems

power supply 24 V DC | mounting on DIN rail 35 mm | RS485 interface | MODBUS RTU / ARION

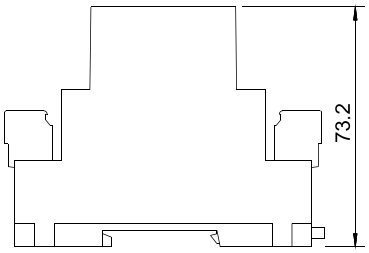
List of extension I/O modules with MODBUS RTU protocol

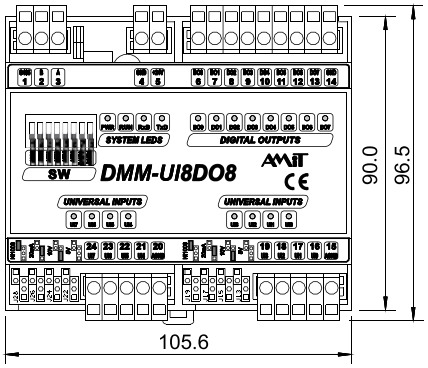
DMM-DI24	24× digital input 24 V DC/AC, galv. isolation
DMM-DO18	18× digital output 24 V DC, 300 mA, galv. isolation
DMM-RDO12	12× switching relay 250 V / 6 A
DMM-AI12	12× analog input 0 - 5 V, 0 - 10 V, 0 - 20 mA, Ni1000/Pt1000, 12 bit
DMM-AO8U	8× analogue output 0 - 10 V, 12 bit resolution
DMM-AO8I	8× analogue output 0 - 20 mA, 12 bit resolution
DMM-PDO6NI6	6× Ni1000/Pt1000, 6× digital output 24 V DC, 1 A, galv. isolation
DMM-UI8DO8	8× general-purpose input*), 8× digital output 24 V DC, 300 mA, galv. isolation
DMM-UI8RDO8	8× general-purpose input*), 8× switching relay 230 V AC / 24 V DC / 2 A
DMM-UI8AO8U	8× general-purpose input*), 8× analogue output 0 - 10 V, 12 bit resolution

*) 0-5 V / 0-10 V / 0-20 mA / Ni1000 / Pt1000 / contact / digital input 24 V DC

Communication line	RS485 (galv. isolation)
Baud rate	9 600 to 57 600 Bd
Number of modules in RS485 network	max. 63 (in one segment max. 31)
Power supply	24 V DC ±20 %
Mounting	DIN rail 35 mm

The same types of modules are also available for DM-xx series with the ARION protocol.

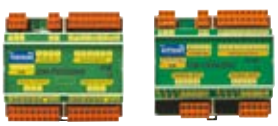




MODBUS

DMM-xx

ARION



DM-xx

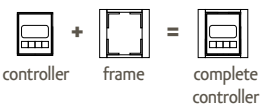
Wall-mounted controllers

measurement of the temperature in the room | mechanical control graphic displays | MODBUS RTU / ARION / DB-Net communication

A new generation of freely programmable wall-mounted controllers for building automation. The controller makes it possible to program any functionality, and for the variants with graphic displays, they even allow creation of own designs of individual control screens.

All wall-mounted controllers support the communication protocols MODBUS RTU or ARION and allow easy integration into the network of programmable controllers, series AMREG, as well as into the network of control systems made by other manufacturers.

The controllers in ABB designs contain two parts, i.e. the proper functional part of the transmitter and the frame. These parts can be arbitrarily combined; during ordering, it is necessary to indicate the code of the controller + the code of desired frame.



AMR-OP60

Freely programmable controller with temperature measurement

graphic display | 4 pushbuttons | ABB design | MODBUS RTU / ARION / DB-Net

The AMR-OP60 with the blue and white graphic LCD display with excellent resolution provides a high level of user comfort and clear information about the temperature and mode of operation in the room. The unit is controlled using 4 pushbuttons placed directly below the display. The great advantage of AMR-OP60 controllers is their design – they are available in the best-selling designs by ABB Electro Praga, i.e. Time, Element and Time Arbo. Their wide range of colours and various combinations will satisfy even the most demanding users.

Control	4× pushbutton
Display	blue and white graphic LCD display
Resolution	(256 × 128) pixels
Display area	(44 × 25 mm)
Measurement range	-10 to +50 °C
Communication	RS485 (without GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Programming	DetStudio / EsiDet

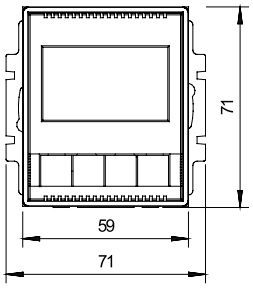
controller + frame = complete controller

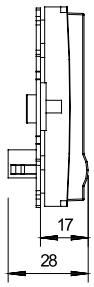
Time

03 white – white	01 white – ice white	08 titanium	32 old-silver	33 champagne	34 anthracite
					
AMR-OP60/03 3901F-A00110 03	AMR-OP60/01 3901F-A00110 01	AMR-OP60/08 3901F-A00110 08	AMR-OP60/32 3901F-A00110 32	AMR-OP60/33 3901F-A00110 33	AMR-OP60/34 3901F-A00110 34

ARBO

50 old-silver – beech	51 old-silver – alder	52 old-silver – cherry	08 titanium – cherry	53 anthracite – mahog-any
				
AMR-OP60/32 3901F-A50110 50	AMR-OP60/32 3901F-A50110 51	AMR-OP60/32 3901F-A50110 52	AMR-OP60/08 3901F-A50110 52	AMR-OP60/34 3901F-A50110 53





Element

03 white – white	01 white – ice white	04 white-ice gray	21 ivory – ice white	22 agave-ice white	07 caramel-ice gray	24 carmine-ice gray	25 coffee-ice opal
							
AMR-OP60/03 3901E-A00110 03	AMR-OP60/01 3901E-A00110 01	AMR-OP60/04 3901E-A00110 04	AMR-OP60/21 3901E-A00110 21	AMR-OP60/22 3901E-A00110 22	AMR-OP60/07 3901E-A00110 07	AMR-OP60/24 3901E-A00110 24	AMR-OP60/25 3901E-A00110 25

AMR-OP70, AMR-OP71, AMR-OP7xC

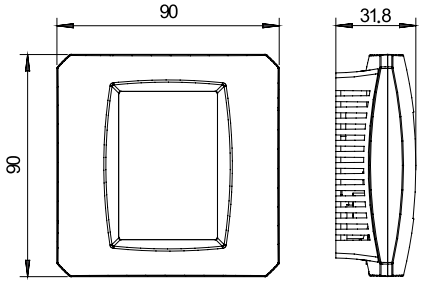
Freely programmable controller with touch screen

graphic display | touch control | colours variants | MODBUS RTU / ARION / DB-Net | CO_2 sensor

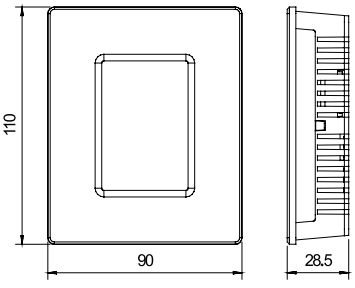
The AMR-OP7x is a completely new type of wall-mounted controller; its main part consists of a graphic display, size 58 × 38 mm with a touch panel that enables control of the device comfortably, just with the touch of a finger. The controller measures the room temperature as standard. The AMR-OP7xC version also measures the CO_2 concentration and provides audible alarms when selected threshold of concentration is exceeded. In the design environment DetStudio, any controller functionality can be programmed, e.g. setting the mode of control in the room, correction of the required temperature, fan speed for fan coil units, control of the lighting in the room, louvers and roller shutters, etc. The advantage is that the control of all functions requires only one controller which in cooperation with other controllers, series AMREG will ensure any solution for control of process plants in buildings.

Control	touch panel
Display	graphic monochrome LCD
Resolution	(64 × 132) pixels
Display area	(58 × 38) mm
Measurement range	-10 to +50 °C
CO_2 Sensor (AMR-OP7xC)	0 to 3 000 ppm, ±5 %
Communication	RS485 (without GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Programming	DetStudio / EsiDet

AMR-OP70/xx

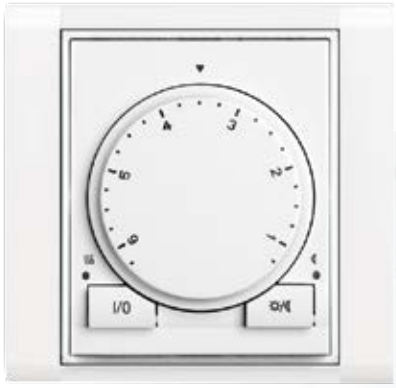


AMR-OP71/xx



01	02	03	04	05	06	07	01	02
white – gray	ivory	gray	white	reddish brown	light blue	dark blue	platinum	metallic gloss

AMR-OP70/01 AMR-OP70/02 AMR-OP70/03 AMR-OP70/04 AMR-OP70/05 AMR-OP70/06 AMR-OP70/07 AMR-OP71/01 AMR-OP71/02



AMR-OP41, AMR-OP40

Controllers with temperature measurement and mechanical elements

easy to operate | mechanical control | favorable price | MODBUS RTU / ARION

The AMR-OP41 wall-mounted controller featuring mechanical control with buttons and turn-knob combines the ease of operation and ABB designs (Time, Element and Time Arbo) at reasonable prices. The controller measures current temperature and provides room control mode setting, correction of required temperature and option to define ON/OFF button for any function. LEDs are used to show statuses selected by buttons. The controller is freely programmable and its functions are freely customisable.

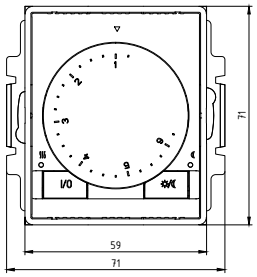
Control	2× button
Status display	2× LED
Measurement range	-10 to +50 °C
Communication	RS485 (without GI)
Communication protocol	MODBUS RTU / ARION
Programming	DetStudio / EsiDet

The controller is also available without mechanical control elements as in AMR-OP40 version.

controller + frame = complete controller

Time

03 white – white	01 white – ice white	08 titanium	32 old-silver	33 champagne	34 anthracite
					
AMR-OP41/03 3901F-A00110 03	AMR-OP41/01 3901F-A00110 01	AMR-OP41/08 3901F-A00110 08	AMR-OP41/32 3901F-A00110 32	AMR-OP41/33 3901F-A00110 33	AMR-OP41/34 3901F-A00110 34



ARBO

50 old-silver – beech	51 old-silver – alder	52 old-silver – cherry	08 titanium – cherry	53 anthracite – mahogany
				
AMR-OP41/32 3901F-A50110 50	AMR-OP41/32 3901F-A50110 51	AMR-OP41/32 3901F-A50110 52	AMR-OP41/08 3901F-A50110 52	AMR-OP41/34 3901F-A50110 53

Element

03 white – white	01 white – ice white	04 white-ice gray	21 ivory – ice white	22 agave-ice white	07 caramel-ice gray	24 carmine-ice gray	25 coffee-ice opal
							
AMR-OP41/03 3901E-A00110 03	AMR-OP41/01 3901E-A00110 01	AMR-OP41/04 3901E-A00110 04	AMR-OP41/21 3901E-A00110 21	AMR-OP41/22 3901E-A00110 22	AMR-OP41/07 3901E-A00110 07	AMR-OP41/24 3901E-A00110 24	AMR-OP41/25 3901E-A00110 25

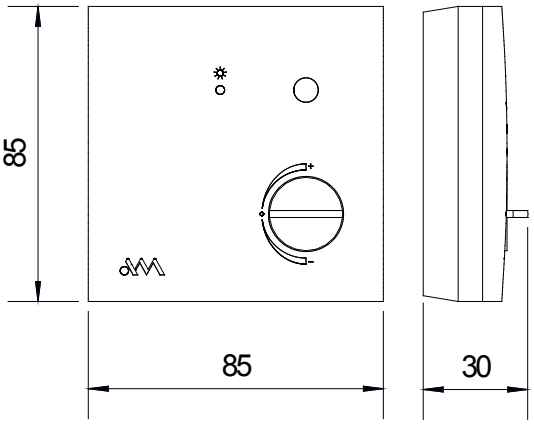
AMR-OP30A, AMR-OP31A, AMR-OP33A, AMR-OP35A

Controllers with temperature measurement and mechanical elements

easy to operate | mechanical control | favorable price | MODBUS RTU / ARION

The wall-mounted controllers, series AMR-OP3xA with mechanical controls and signalisation of modes are similar to the other wall-mount, freely programmable controllers. Their functionality can be freely modified. The controllers are designed to measure the temperature in the room, set the operating modes, or control the fan coil units. It is manufactured in white colours RAL 9010.

Control	pushbutton, correction knob
Status display	green LED
Measurement range	-10 to +50 °C
Communication	RS485 (without GI)
Communication protocol	MODBUS RTU / ARION
Programming	DetStudio / EsiDet




AMR-OP30A


AMR-OP31A


AMR-OP33A

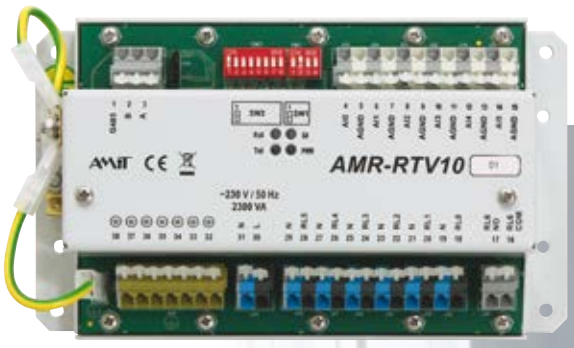

AMR-OP35A

AMREG programmable controllers

freely programmable | sample control projects
great variability | MODBUS RTU / ARION / DB-Net communication

Freely programmable controllers, series AMREG make the use of own control algorithm possible. Every configured controller is designed for specific control issues (control of fan coil units, control of heat sources, control of heating branches, etc.), but both specific use and integration into a comprehensive solution will only depend on the creator of the user algorithm without any restrictions. For AMREG controllers, it is practical to use the wall-mount programmable control units that are based on the same concept of program development and communication. For standard solutions and commonly used algorithms, type solutions of application programs are freely available.

All controllers of the AMREG series support the MODBUS RTU, ARION and DB-Net communication protocol.



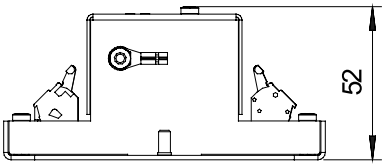
AMR-RTV10

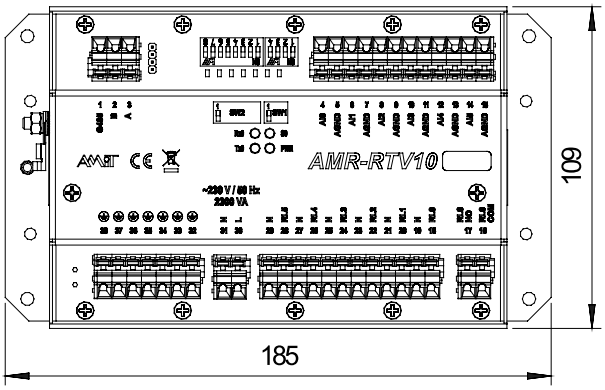
Heat source programmable controller

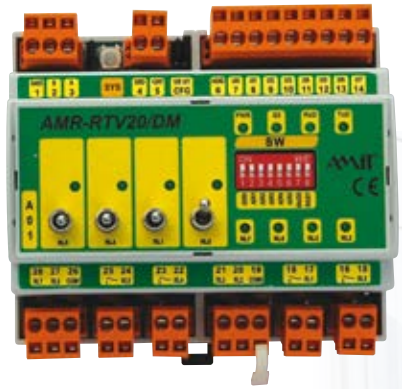
230 V AC | built-in design | 1× RS485 | MODBUS RTU / ARION / DB-Net

The AMR-RTV10 controller ensures the control of heat sources (gas boiler, electric boiler, solid fuel boiler, etc.) including charging of hot water tanks. Another possible application is the control of heating branches - in case of water mixing it will ensures 2 branches; for branches that are only controlled by pumps running, it covers up to 6 branches.

Inputs	6× Ni1000 / Pt1000 / passive contact
Relay outputs	6× phase switching 4 A at 230 V AC 1× relay 4 A at 230 V AC /24 V DC
Communication	1× RS485 (without GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Mounting	on base plate
Power supply	230 V AC ±10 %







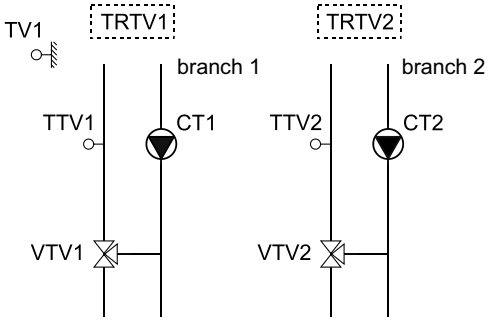
AMR-RTV20

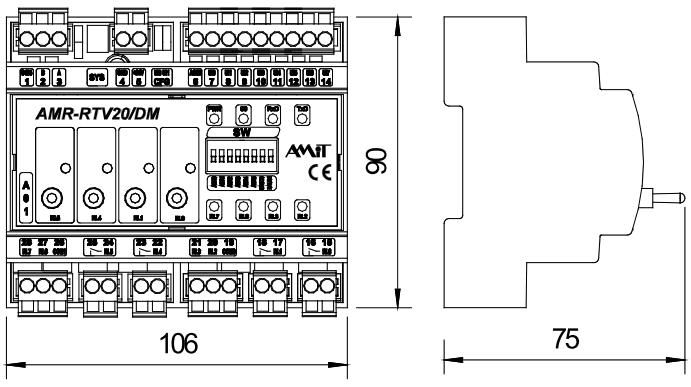
Heat source programmable controller

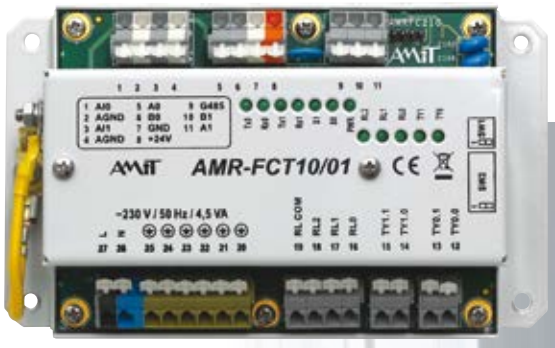
24 V DC | 35 mm DIN rail | 1× RS485 | MODBUS RTU / ARION / DB-Net

The AMR-RTV20 controller is typically used for heating branches, heat source and hot water tanks charging control. Unlike the ART-RTV10 it has two more universal analogue inputs and one more relay. Four relays can be manually set to ON/OFF/AUTO mode with internal current status readout. It is adapted for mounting on a DIN "rail", switches are located on the front panel.

Inputs	6× Ni1000 / Pt1000 / passive contact 2× AI 4-20 mA / Ni1000 / Pt1000 / contact
Relay outputs	4× phase switching relay with manual control 6 A at 230 V AC / 24 V DC 2× 2 relay 2 A at 230 V AC / 24 V DC
Communication	1× RS485 (with GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Mounting	35 mm DIN rail
Power supply	24 V DC







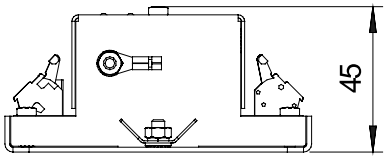
AMR-FCT10

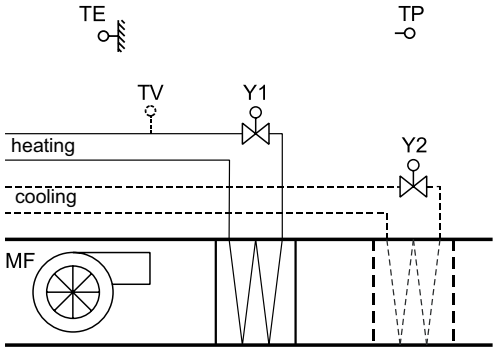
Programmable controller of fan coil units

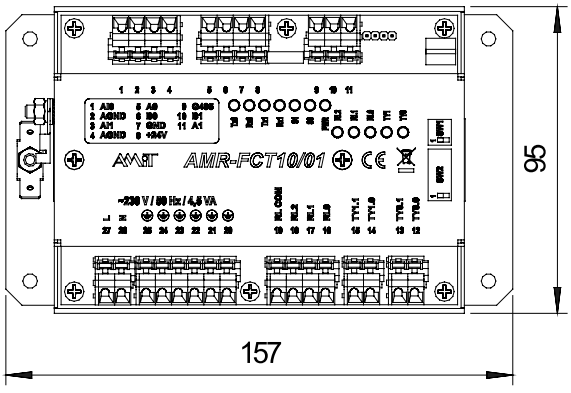
230 V AC | built-in design | 2× RS485 | MODBUS RTU / ARION / DB-Net

Freely programmable controller designed for fan coil units control. Local control of the room with fan coil units installed can be provided by one of AMR-OP7x, AMR-OP60 or AMR-OP3xA controllers connected with RS485 line. The second line of RS485 is intended for the connection of the controller to a higher-level control system. Sample projects for fail coil units control are available.

Inputs	2× Ni1000 / Pt1000 / passive contact
Triac outputs	2× 250 V AC /0.6 A AC
Relay outputs	3× switching relay 4 A at 230 V AC /24 V DC
Communication	1× RS485 (without GI), 1× RS485 (with GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Mounting	on base plate
Power supply	230 V AC ±10 %





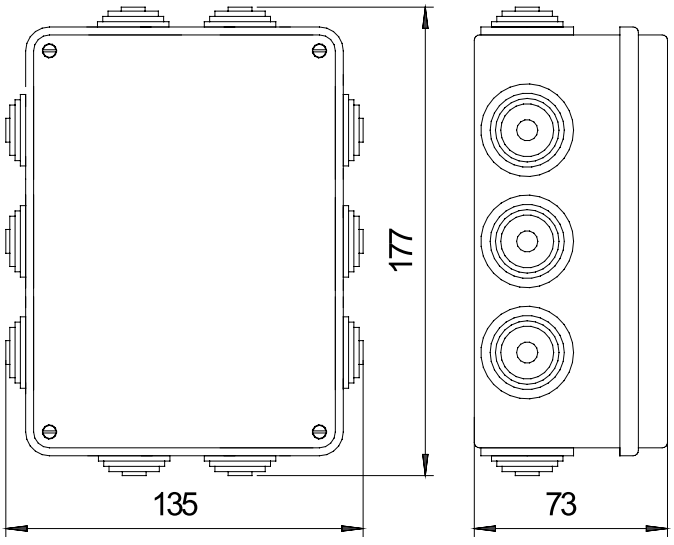


AMR-IRC10
Programmable room controller

24 V DC | plastic case IP55 | 2× RS485 | MODBUS RTU / ARION / DB-Net

The AMR-IRC10 controller is the most frequently used device to regulate the air systems of rooms, but thanks to free programming, it can be used for a variety of tasks within the control of buildings. Local control can be ensured by one of the AMR-OP7x, AMR-OP60, AMR-OP41 or AMR-OP3xA controllers connected with RS485 line. The second line of RS485 is intended for the connection of the controller to a higher-level control system. The controller is installed in a junction box with IP55.

Analogue inputs	1× voltage, 0 - 10 V DC
Analogue outputs	4× voltage, 0 - 10 V DC
Digital inputs	1× passive contact
Digital outputs	2× MOS, 24 V DC ±20 %
Communication	1× RS485 (without GI), 1× RS485 (with GI)
Communication protocol	MODBUS RTU / ARION / DB-Net
Mounting	on the wall
Power supply	24 V DC ±20 %



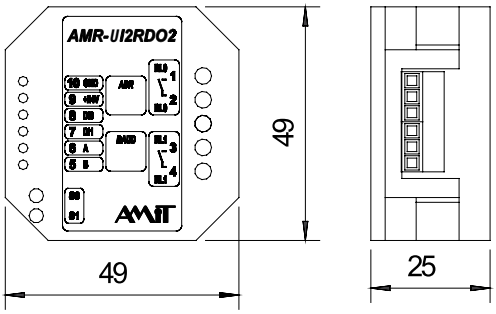
AMR-UI2RDO2

Under-plaster input/output programmable module

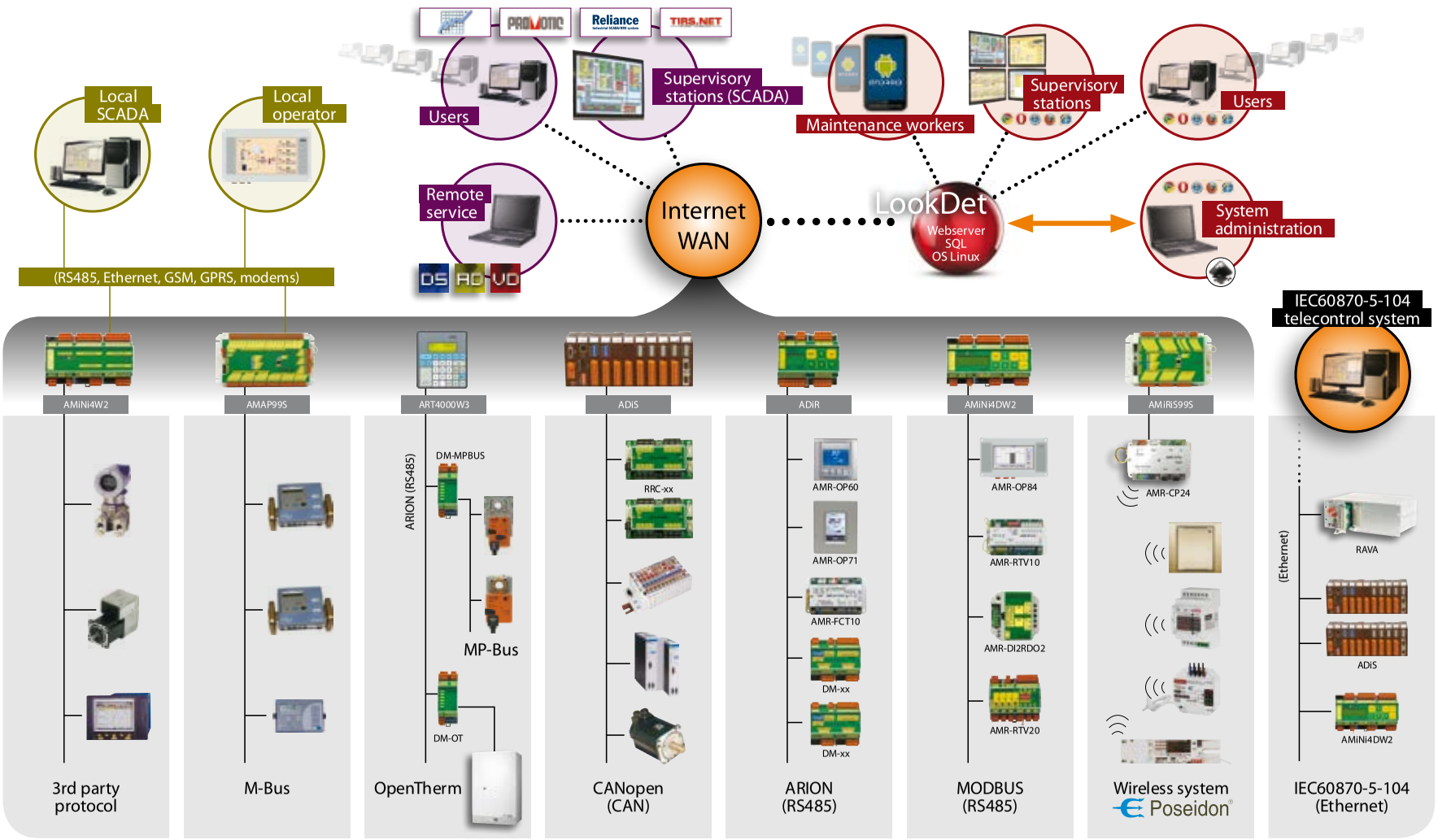
24 V DC | in the junction box | 1× RS485 | MODBUS RTU / ARION

Although at first glance the AMR-UI2RDO2 unit looks like a normal input/output module, it is a fully developed programmable controller. It can be used for a variety of applications. When connected to various switches, it is possible to provide local control with access from a higher-level system via RS485 line - control of lights (timing, switching logic...), roller shutters and louvers, control of local sources of heat, ventilation, actuators, etc.

Outputs	2× switching relay 3 A at 230 V AC /30 V DC
Inputs	2× Ni1000 / Pt1000 / passive contact
Communication	1× RS485 (without GI)
Communication protocol	MODBUS RTU / ARION
Mounting	in a box under the plaster
Power supply	24 V DC ±20 %



Complex building automation system



LookDet supervisory system

The LookDet supervisory system is a completely new control and management concept for control centers. Its principle is based on a cloud solution; the powerful program, environment parameters and measured data are located on a secured server, and the only thing the user and the administrator need to have is a common web browser running on an ordinary computer, tablet or smart mobile phone. Through strict utilisation of common and proven IT technologies we have succeeded in building a very robust and powerful visualisation system that is even suitable for large projects, both in terms of the number of connected control systems and measuring devices and in terms of the number of simultaneously connected users.

LookDet
Supervisory system

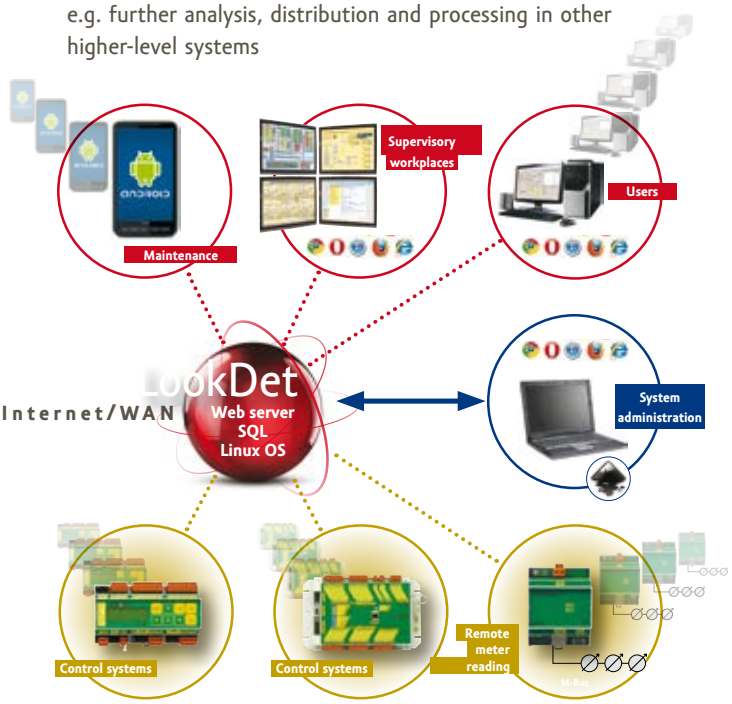
secured access | archiving | fault records | predefined graphic elements

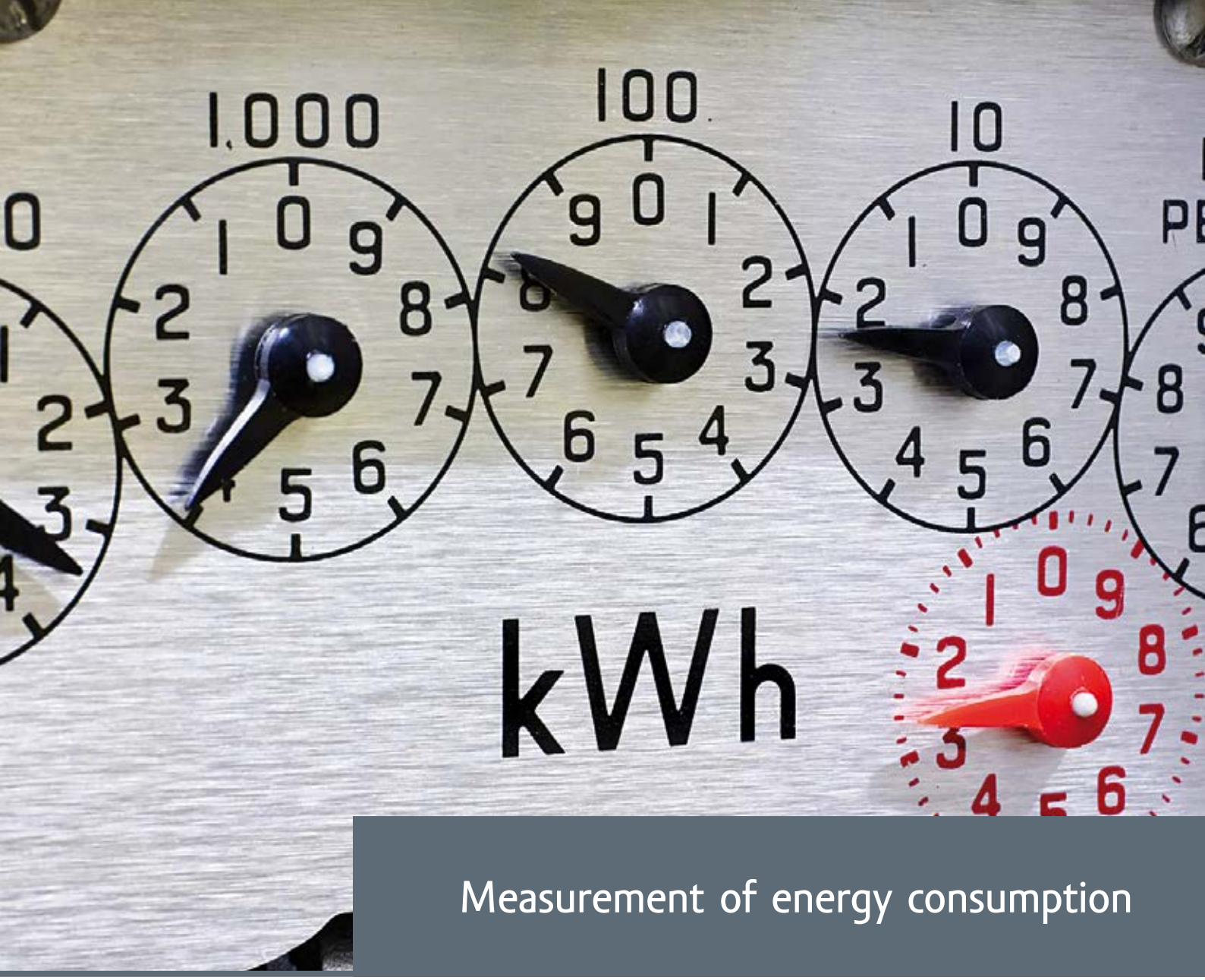
Basic properties of the LookDet system

- display of the process plant being monitored in form of websites
- access to the control system and measuring device data from any location, direct read/write option for control systems data
- predefined graphic elements for data displaying and editing (charts, schedules, heating curves)
- automatic archiving on an external network disc at a set period of time
- freely editable graphical presentation of process plants and collected data - easy to edit in SVG graphic format
- secured access to applications and data
- logging of changes to parameters according to users
- powerful system for fault processing, records indicating who has received the fault information and when, and subsequent fault resolution (email, mobile applications, web)
- possibility of user creation of multilingual versions at the level of both environment and application itself
- comfortable system of user and administrator authorisations
- time synchronisation of control systems

Advantages of LookDet system

- the parameterisation of the control center (setting of the application, visualisation itself) is performed online in one place (server) from anywhere via a web browser; It is neither bound to a specific client computer nor development versions
- operational system of fault management and limit values of the process plants being controlled - own mobile applications (Android OS) for immediate notification of service personnel in the field site, takeover of reports, and repair solution
- clear check of the status of faults reported at any client station
- openness enabling to make any extension of the visualisation functionality using own JavaScript
- control systems can be connected to dynamic IP addresses
- In addition to standard outputs (visualisation, charts, data exports), thanks to SQL database the data can be used for, e.g. further analysis, distribution and processing in other higher-level systems





Measurement of energy consumption

three-phase energy meters | single-phase energy meters

The instruments for measuring the consumption of electrical energy, i.e. energy meters, represent much sought-after equipment and also provide, along with the basic consumption measurements, comprehensive measurements of mains parameters, as well as calculations of average values on a continuous basis. The energy meters are designed for measuring single-phase, two-phase or three-phase AC distribution systems and are supplied in an officially certified version (for billing) and also in version intended for analytical or internal measurements (submetering). In order to enable the remote transmission of data, and its central processing and visualisation through selected interfaces, the energy meters are equipped with communications ports. Keep your energy under control – maximise the savings by using an effective tool for the monitoring, analysing and planning of the consumption of electric energy for your business.

Keep the energy under control Maximise your savings!

Keep your energy under control – maximise savings by utilising an effective tool for monitoring, analysis and planning of electrical energy consumption for your business.

Nowadays modern instruments for the measurement of electric energy consumption are multifunctional and multipurpose meters that can provide not only information about consumption, but are also able to monitor all network parameters in detail and identify problems with the powering of individual equipment, the start of failures or threat of overload of the power supply line. In order to select the most appropriate instrument for the required purpose, it is necessary to know some basic information:

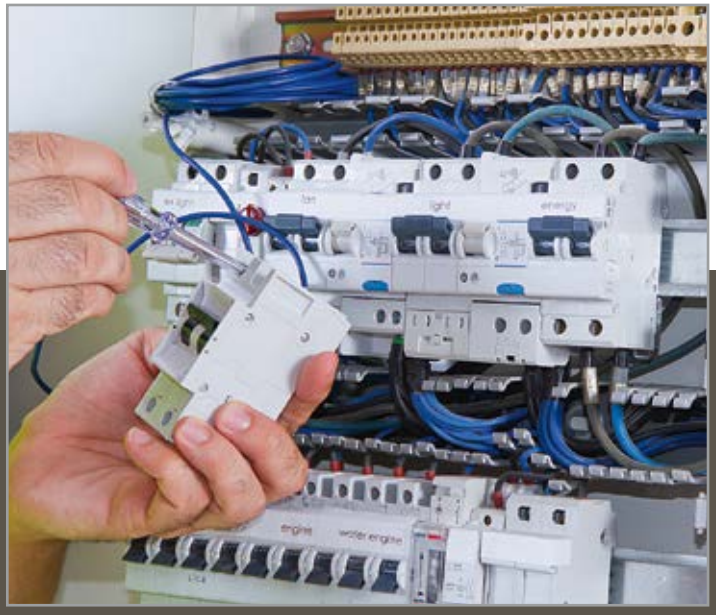
Measurement of energy consumption
Continuous information on energy consumption

AMP RATING

Most devices used for direct measurement have a maximum rating of 3× 65 A. Should this value be exceeded, a device with indirect measurement equipped with external current transformers must be used; in order to select the right device, it is necessary to know the amp rating and wire diameter, on which the transformer will be applied.

INSTALLATION METHOD

Meters are installed a versatile carrier for most elements of the newly completed switchboards. If frequent access to the instrument display or to its controls is needed, some instruments are prepared for the installation in a panel hole.



BILLING MEASUREMENT OR SUBMETERING

The energy meters are delivered with various calibration certificates. If an instrument which data are to be used for financial transactions is required, it will be necessary to use such an instrument as has been verified by an authorised testing laboratory, generally in accordance with the new directive of the European Union 2004/22/EC on measuring instruments (referred to as MID). If the measurements are required only for own purposes and monitoring of the consumption, it will not be necessary to use any billing measurement instrument; it will be possible to use an energy meter without such certificate.

COMMUNICATIONS INTERFACE INPUTS AND OUTPUTS

of electronic energy meters uses an output communication port that can be used for remote transmission of the measured data. The RS485 serial port for industrial applications is used as a basic port; alternatively, an Ethernet port can be used directly for the transmission of data via a common data network.

The basic design offers pulse outputs S0 which transmit information about the active or reactive energy consumption (kWh, kvarh). In addition the instrument can have digital outputs that enable to change over multiple tariff counters or can be used as inputs for pulse signals from flow meters of water, gas, heating fluid or from any other energy meter.

EM23 DIN

Simple three-phase energy meter mounted on a DIN rail (4M)

energy meter: kWh + kvarh | overall measurement: W, var | individual phases: A | phase rotation indication | LCD display

The meter has inputs for current measurements designed for direct measurement up to 65 A. The meter uses the TRMS advanced method, so it is even able to correctly measure distorted waveforms of voltage and current. It is equipped with a two-line LCD display without backlight. The outputs can be provided either as pulses S0 (kWh) or via RS485 Modbus communication port. Versions for submetering or verified for billing are available.

It is possible to mount the meters into panels using the "4DIN96 Adapter" kit.

ordering code	billing meter	pulse output S0	RS485	bidi-recti-onal measu-rement
EM23DIN AV93X O1X		•		
EM23DIN AV93X S1X			•	
EM23DIN AV93X O1PFA	•	•		•
EM23DIN AV93X O1PFB	•	•		
EM23DIN AV93X S1PFA	•		•	•
EM23DIN AV93X S1PFB	•		•	

- energy meter: kWh + kvarh
- overall measurements: W, var
- individual phases: A
- indication of phase rotation
- size: 4 DIN
- LCD display

EM24 DIN

Three-phase energy meter with a detailed measurement of mains parameters

energy meter: kWh + kvarh | overall measurement: W, var | individual phases: A | phase rotation indication | LCD display

The meter has inputs for current measurements designed for direct measurement up to 65 A; its version for indirect measurements enables connection of standard external current transformers with an output of 5 A. The meter uses the TRMS advanced method, so it is even able to correctly measure distorted waveforms of voltage and current. It is equipped with a three-line LCD display without backlight. The outputs can be provided either as pulses S0, alarms or via RS485 Modbus communication port. The inputs can be provided as pulses (registration of consumption of water, gas, etc.) and used for tariff changeover, or for reading.

Versions for submetering or verified for billing are available.

It is possible to mount the meters into panels using the "4DIN96 Adapter" kit.

- energy meter: + kWh, kvarh +, kWh, kvarh-, (3×1 F kWh)
- individual counters kWh, kvarh, up to 4 tariffs, operating hours
- overall measurements: W, var, VA, in, PF, Hz
- time period 1-30 min: Amax, VA, VAmax, W, Wmax
- individual phases: V, A, VA, W, var, PF
- indication of phase rotation
- 3× input for external measurement of consumption of water, gas, heating fluids, kWh
- 2× output – pulses, alarms
- size: 4 DIN
- LCD display

Table of ordering codes (direct measurement 65 A):

ordering code	billing meter	pulse output S0	relay output	RS485	bidirectional measurement
EM24DIN AV93X XXPFA	•				•
EM24DIN AV93X XXPFB	•				
EM24DIN AV93X O2PFA	•	•			•
EM24DIN AV93X O2PFB	•	•			
EM24DIN AV93X ISPFA	•			•	•
EM24DIN AV93X ISPFB	•			•	
EM24DIN AV93X XXX					
EM24DIN AV93X O2X		•			
EM24DIN AV93X ISX				•	
EM24DIN AV93X R2X			•		

Table of ordering codes (indirect measurement 5 A):

ordering code	billing meter	pulse output S0	relay output	RS485	bidi-recti-onal measu-rement	power supply 18-60 V
EM24DIN AV53D XXPFA	•				•	
EM24DIN AV53D XXPFB	•					
EM24DIN AV53D O2PFA	•	•			•	
EM24DIN AV53D O2PFB	•	•				
EM24DIN AV53D ISPFA	•			•	•	
EM24DIN AV53D ISPFB	•			•		
EM24DIN AV53D XXX						
EM24DIN AV53D O2X		•				
EM24DIN AV53D ISX				•		
EM24DIN AV53D R2X			•			
EM24DIN AV53L O2X		•				•
EM24DIN AV53L ISX				•		•

WM40 96

With detailed measurements of network parameters and additional functions

energy meter with a higher accuracy (0.5 % kWh) in a box which can be mounted in a 96 × 96 mm panel, with extended functionality

Thanks to its modular design, the energy meter can be easily adapted to the required application. The inputs for current measurements are prepared for the use of standard external current transformers with an output 5 A. The device uses the TRMS advanced method, so it is even able to correctly measure distorted waveforms of voltage and current. It is equipped with an LCD display with colour backlight. From one to three optional auxiliary modules can be connected to the basic unit to ensure the functions of inputs, outputs, data recording and communication. The meter is only suitable for submetering.

- energy meter: +kWh, +kvarh, -kWh, -kvarh
- 4 individual counters kWh, kvarh, 4 tariffs
- higher accuracy class 0.5 % kWh (0.2 % V/A)
- real time clock, operating hours
- overall measurements: W, var, VA, V, A, PF, Hz,
- individual phases: W, var, VA, V, A, An, PF
- asymmetry, rotation and loss of phase
- all minimum and maximum values, average values
- distortion V/A up to 32nd harmonic
- 8× output (pulses, alarms, control), 6× relay output, 6× digital input (tariff, pulses, synchronization), 4× analogue output (20 mA, 10 V)
- 16× alarm AND/OR
- datalogger for 10 000 records
- BACnet-IP (BACnet-MS/TP) port
- size: 96 × 96 mm
- LCD graphic backlit display

ordering code	description
WM40 AV53H	WM40 96 base + power supply 90 - 260 VAC/DC
WM40 AV53L	WM40 96 base + power supply 21 - 60 VAC/DC

Possible combinations of auxiliary modules:

ordering code	description	pos. A	pos. B	pos. C
MOR2	2× relay output	•		
MOO2	2× output opto-mosfet	•		
MOA2	2× analog output 20 mA	•	•	
MOV2	2× analog output 10 V	•	•	
MFI6R4	6× input, 4× relay		•	
MFI606	6× input, 6× output		•	
MC485232	RS485/232 communication			•
MC485232M	RS485/232 communication + memory			•
MCETH	Ethernet port			•
MCETHM	Ethernet port + memory			•
MCBACIP	BACnet-IP port			•
MCBACIPM	BACnet-IP port + memory			•
MCBACMS	BACnet-MS/TP port			•
MCBACMSM	BACnet MS/TP port + memory			•
MATP	1× input temperature + 1× input 20 mA		•	
MATPN	1× measurement N current + 1× input temperature + 1× input 20 mA		•	

EM111 DIN

Single-phase energy meter with extended functionality

energy meter: ±kWh, ±kvarh | size 1 DIN | LCD display with backlight

Single-phase electronic energy meter in small case to be mounted on a DIN rail (1 module), with more detailed measurement of network parameters and extended functions. The inputs for current measurement are prepared for direct measurements up to 45 A. The user can choose the method of measurement of the direction of energy flow, when both directions are registered by the shared counter, or when a separate counter is used for each directions. It is also possible to perform measurements with two tariffs to be switched using the status on the control input.

The energy meter is equipped with a single-line backlit LCD display. The output can be in the form of a pulse S0 (kWh), or data in case of RS485 Modbus or M-BUS versions. The available versions are intended for submetering, the versions for billing measurement are currently subject to approval procedure.

ordering code	pulse output S0	RS485 Modbus	M-BUS
EM111-DINAV81-X O1X	•		
EM111-DINAV81-X S1X		•	
EM111-DINAV81-X M1X			•

- electric meter: ±kWh, ±kvarh
- two tariffs switched with contact
- adjustable measurement mode A = only consumption, B = consumption and supply separately
- measurement: V, A, W, Wdmd, Wdmd max, var, Hz, PF
- size: 1 DIN
- LCD display with backlight
- control using touch sensors
- RS485 Modbus or M-BUS communication

EM112 DIN

Single-phase energy meter with extended functionality

energy meter: ±kWh, ±kvarh | size 2 DIN | LCD display with backlight

Single-phase electronic energy meter in a small case to be mounted on a DIN rail (2 module) with a more detailed measurement of network parameters and extended functions. The inputs for current measurement are prepared for direct measurements up to 100 A. The user can choose the method of measurement of the direction of energy flow, when both directions are registered by the shared counter, or when a separate counter is used for each directions. It is also possible to perform measurements with two tariffs to be switched using the status on the control input.

The energy meter is equipped with a three-line backlit LCD display. The output can be in form of a pulse S0 (kWh), or data in case of RS485 Modbus or M-BUS versions. The available versions are intended for submetering.

ordering code	pulse output S0	RS485 Modbus	M-BUS
EM112-DINAV01-XO1X	•		
EM112-DINAV01-XS1X		•	
EM112-DINAV01-XM1X			•

- electric meter: ±kWh, ±kvarh
- two tariffs switched with contact
- adjustable measurement mode A = only consumption, B = consumption and supply separately
- measurement: V, A, W, Wdmd, Wdmd max, var, Hz, PF
- size: 2 DIN
- LCD display with backlight
- control using touch sensors
- RS485 Modbus or M-BUS communication
- suitable for connection to VMUC-EM energy consumption monitor

Motion switches

| ceiling mounted | built-in | surface mounted

The motion switches control selected electrical appliances depending on the presence of moving persons. The switch sensor, that uses infrapassive technology for its operation, will react to the temperature of moving persons. The benefit of motion switches is the elimination of unnecessary lighting of empty areas in offices, corridors or aisles between shelves and comfortable and contactless control of selected electrical appliances, e.g. lighting, ventilation, etc. The motion sensors are used in the health sector, in buildings of authorities or railway stations and airports and help increase the safety, comfort and hygiene conditions of shared space.

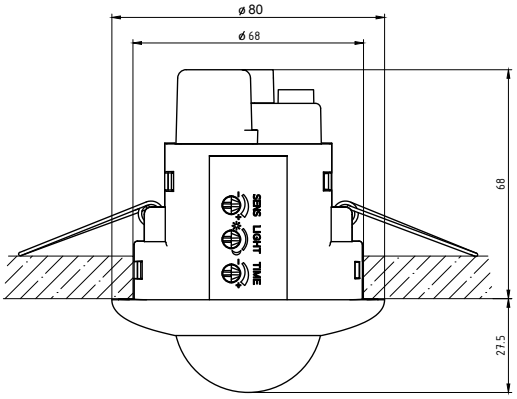
PS BIC

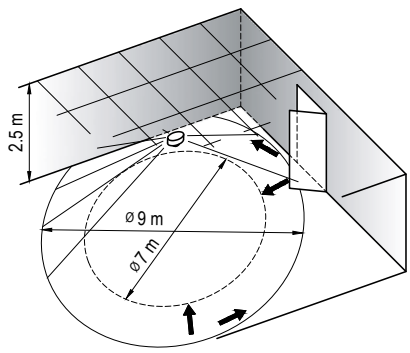
Ceiling mounted infrapassive motion sensor

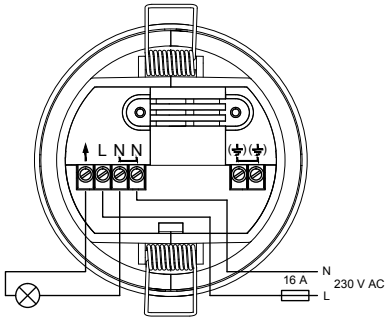
fast installation in suspended ceilings | high-performance relay | mounting height max. 8 m

The infrapassive sensor is used for contactless control of electrical appliances. It enables economic, time-limited lighting. It offers fully automated, maintenance-free, reliable operation. The switch sensor reacts to the heat radiated by moving person. The PS BIC is suitable for switching all types of light fittings (loads) using a high-performance relay. Its offers a wide range of application options thanks to a large coverage area and mounting height up to 8 m (corridors, warehouses, landings,...). It is primarily well suited for installation in suspended ceilings.

Power supply	230 V ±10 % 50 Hz
Switching element	relay
Maximum switching power	2 300 W (conventional bulbs, network halogen lamps)
	1 750 VA (12 in halogens with transformer, electronic multipliers)
	500 VA / 64 µF (fluorescent lamps)
OFF delay	5 sec to 10 min
Lighting threshold	1 to 1000 lx
Operating temperature	+10 to + 35 °C
Ingress protection	IP 40 acc. to EN 60529







PS 1003

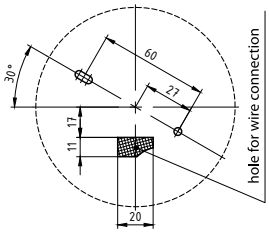
Surface mounted infrapassive motion sensor

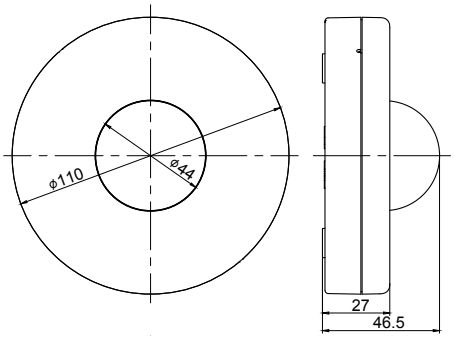
fast installation | setting of the light level of switching and switching times | mounting height max. 8 m

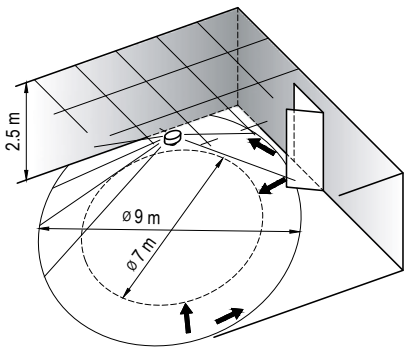
The device is used for contactless control of electrical appliances. The infrapassive sensor receives the radiation in the infrared part of the spectrum. If it detects a change caused, for example, by motion of a person present within its range, the output is closed. The "closed" state will exist as long as the presence of persons is indicated by the sensor and also for a time period to have been set on the switch.

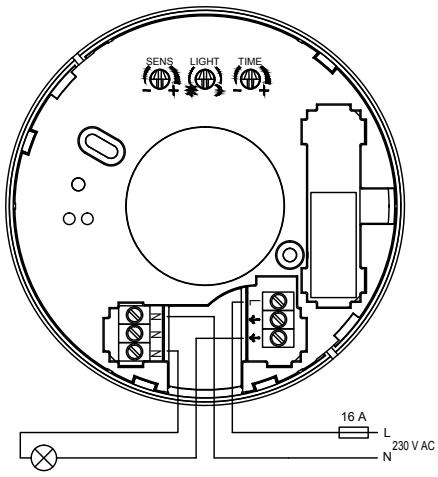
The motion captured by the switch will be indicated by a red LED indicator under the lens. This indication will be active if the ambient lighting level is higher than the set level and no load is switched on.

Power supply	230 V ±10 % 50 Hz
Switching element	relay
Maximum switching power	2 300 W (conventional bulbs, network halogen lamps)
	1 750 VA (12 in halogens with transformer, electronic multipliers)
	500 VA / 64 µF (fluorescent lamps)
OFF delay	5 sec to 10 min
Lighting threshold	1 to 1000 lx
Operating temperature	+10 to + 35 °C
Ingress protection	IP 40 acc. to EN 60529









PS MR16, PS MR16 HR

Built-in infrapassive motion sensor

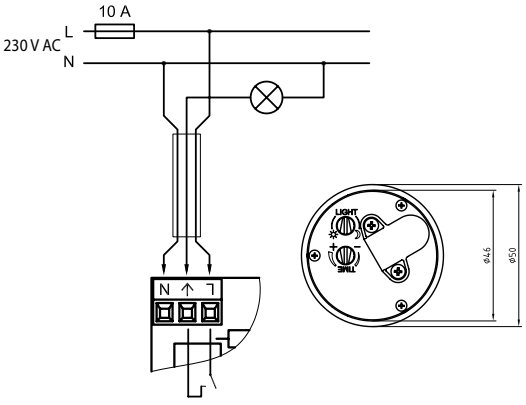
fast installation in suspended ceilings | high-performance relay | mounting height max. 8 m

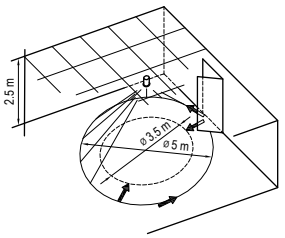
The sensors are designed for mounting in holders of MR16 halogen bulbs which enable the switch body to be pulled through.

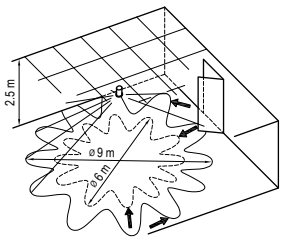
Their advantage is that you can choose any frame colour and adapt PIR switch to the other light fittings in the room.

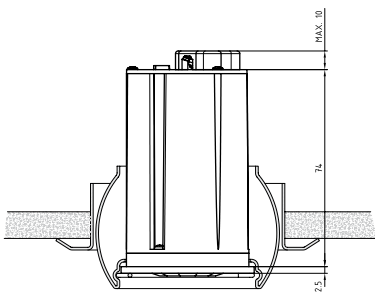
When a tilting frame is used, this sensor is exceptionally appropriate for covering blind spots of other sensors, e.g. in corners, niches, under balconies in large halls, etc.

Power supply	230 V ±10 % 50 Hz
Switching element	relay
Maximum switching power	750 W (conventional bulbs, network halogen lamps)
	500 VA (12 v halogens with transformer, electronic multipliers)
	350 VA / 64 µF (fluorescent lamps)
OFF delay	5 sec to 10 min
Lighting threshold	1 to 1000 lx
Operating temperature	-10 to + 35 °C
Ingress protection	IP 40 acc. to EN 60529
Protection	external, max. 10 A
Conductor cross-section	1.5 mm² (screw-type termin. – PS MR16)
Connecting cable diameter	5 – 8 mm²
Connectors	Ensto NCC31S.P a NAC32S.W (PS MR16 E3)
Cable length	2× 300 mm (PS MR16 E3)

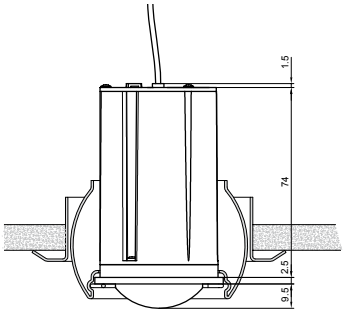






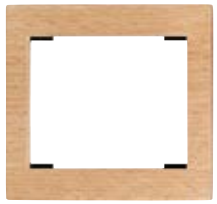


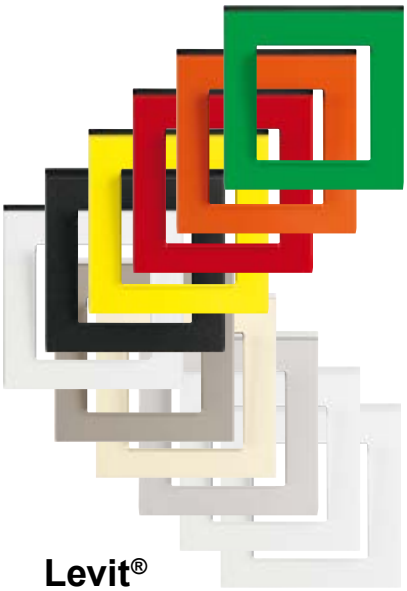
PS MR16



PS MR16 HR

4×	3×	2×2	2×	5×	4×	3×	2×	1×	ORD.NUMBER/№	COLOURS	design ABB®	
41 01	31 01	22 01	21 01	50 01	40 01	30 01	20 01	10 01	3901F-A001□□ □□	WHITE/ICE WHITE	01	TIME®
41 03	31 03	22 03	21 03	50 03	40 03	30 03	20 03	10 03		WHITE/WHITE	03	
41 08	31 08	22 08	21 08	50 08	40 08	30 08	20 08	10 08		TITANIUM	08	
41 32	31 32	22 32	21 32	50 32	40 32	30 32	20 32	10 32		SILVER	32	
41 33	31 33	22 33	21 33	50 33	40 33	30 33	20 33	10 33		CHAMPAGNE	33	
41 34	31 34	22 34	21 34	50 34	40 34	30 34	20 34	10 34		ANTHRACITE	34	
41 50	31 50	22 50	21 50	50 50	40 50	30 50	20 50	10 50	3901F-A 501□□ □□	BEECH	50	ARBO®
41 51	31 51	22 51	21 51	50 51	40 51	30 51	20 51	10 51		ALDER	51	
41 52	31 52	22 52	21 52	50 52	40 52	30 52	20 52	10 52		CHERRY	52	
41 53	31 53	22 53	21 53	50 53	40 53	30 53	20 53	10 53		MAHAGONY	53	
41 01	31 01	22 01	21 01	50 01	40 01	30 01	20 01	10 01	3901E-A001□□ □□	WHITE/ICE WHITE	01	ELEMENT®
41 03	31 03	22 03	21 03	50 03	40 03	30 03	20 03	10 03		WHITE/WHITE	03	
41 04	31 04	22 04	21 04	50 04	40 04	30 04	20 04	10 04		WHITE/ICE GRAY	04	
41 07	31 07	22 07	21 07	50 07	40 07	30 07	20 07	10 07		CARAMEL/ICE GRAY	07	
41 21	31 21	22 21	21 21	50 21	40 21	30 21	20 21	10 21		IVORY/ICE WHITE	21	
41 22	31 22	22 22	21 22	50 22	40 22	30 22	20 22	10 22		AGAVE/ICE WHITE	22	
41 24	31 24	22 24	21 24	50 24	40 24	30 24	20 24	10 24		CARMINE/ICE GRAY	24	
41 25	31 25	22 25	21 25	50 25	40 25	30 25	20 25	10 25		COFFEE/ICE OPAL	25	
41 B	31 B	-	21 B	50 B	40 B	30 B	20 B	10 B	3901A-B□□ □	WHITE	B	TANGO®
41 C	31 C	-	21 C	50 C	40 C	30 C	20 C	10 C		IVORY	C	
41 S	31 S	-	21 S	50 S	40 S	30 S	20 S	10 S		GRAY	S	
41 D	31 D	-	21 D	50 D	40 D	30 D	20 D	10 D		BEIGE	D	
41 H	31 H	-	21 H	50 H	40 H	30 H	20 H	10 H		BROWN	H	
41 N	31 N	-	21 N	50 N	40 N	30 N	20 N	10 N		BLACK	N	
41 R2	31 R2	-	21 R2	50 R2	40 R2	30 R2	20 R2	10 R2		HEATHER RED	R2	
41 S2	31 S2	-	21 S2	50 S2	40 S2	30 S2	20 S2	10 S2		SMOKE-GRAY	S2	





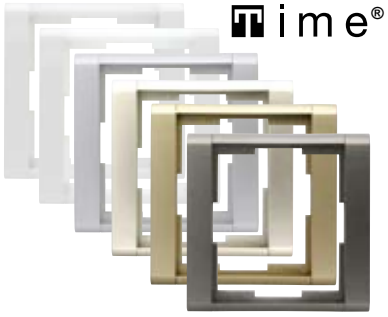
Levit®

NEO®

01	03	41	42	43	44	61	35	08	36	37
ICE WHITE	WHITE	ICE BLUE	ICE GREEN	ICE ORANGE	ICE GRAY	GRAPHITE	TERRACOTTA	TITANIUM	STEEL	ONYX
3901M-A001□□ □□										
10 01	10 03	10 41	10 42	10 43	10 44	10 61	10 35	10 08	10 36	10 37
20 01	20 03	20 41	20 42	20 43	20 44	20 61	20 35	20 08	20 36	20 37
30 01	30 03	30 41	30 42	30 43	30 44	30 61	30 35	30 08	30 36	30 37
40 01	40 03	40 41	20 42	40 43	40 44	40 61	40 35	40 08	40 36	40 37
50 01	50 03	50 41	50 42	50 43	50 44	50 61	50 35	50 08	50 36	50 37

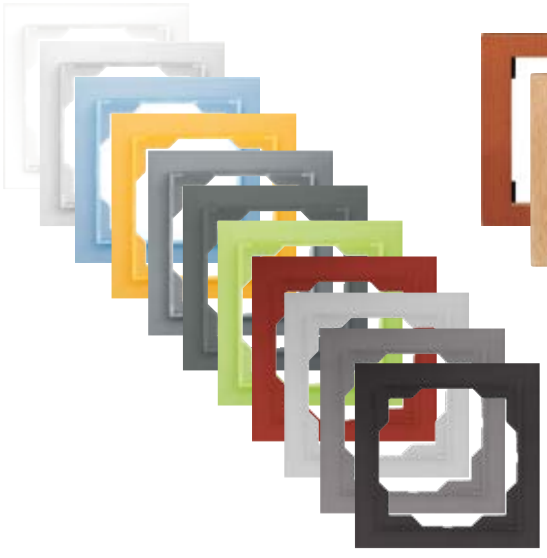
LEVIT®

01	03	16	17	18	62	63	64	65	66	67
WHITE/ICE WHITE	WHITE/WHITE	GRAY/WHITE	IVORY/WHITE	MACCHIATO/WHITE	WHITE/SMOKE-BLACK	ONYX/SMOKE-BLACK	YELLOW/SMOKE-BLACK	RED/SMOKE-BLACK	ORANGE/SMOKE-BLACK	GREEN/SMOKE-BLACK
3901H-A050□□ □□										
10 01	10 03	10 16	10 17	10 18	10 62	10 63	10 64	10 65	10 66	10 67
20 01	20 03	20 16	20 17	20 18	20 62	20 63	20 64	20 65	20 66	20 67
30 01	30 03	30 16	30 17	30 18	30 62	30 63	30 64	30 65	30 66	30 67
40 01	40 03	40 16	20 17	40 18	40 62	40 63	40 64	40 65	40 66	40 67
50 01	50 03	50 16	50 17	50 18	50 62	50 63	50 64	50 65	50 66	50 67



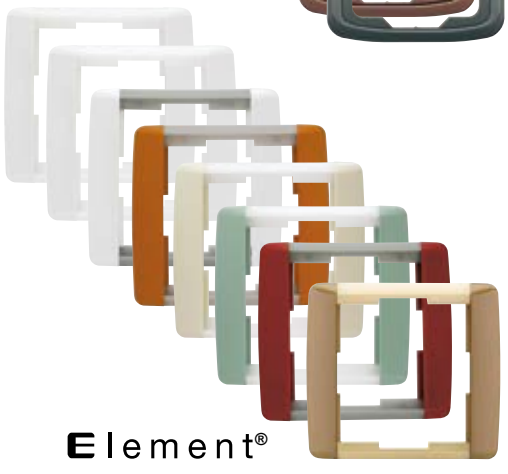
Time®

Tango®



Neo®

ARBO®



Element®

Switching receivers

FUNCTION ON

Whenever the transmitter pushbutton is pressed, the receiver relay is closed and remains closed.

FUNCTION OFF

Whenever the transmitter is pressed, the receiver relay is opened and remains opened.

FUNCTION ON/OFF

Single-pushbutton mode

Pressing of the transmitter pushbutton will alternately close and open the receiver relay.

Two-pushbutton mode

Whenever the upper pushbutton of the transmitter is pressed, the receiver relay is closed. Whenever the lower pushbutton of the transmitter is pressed, the receiver relay is opened.

FUNCTION PUSH

The receiver relay will remain closed until the transmitter is released.

FUNCTION TIMER

After the transmitter pushbutton is pressed, the receiver relay is closed for a preset period of time (1 sec to 8 hrs). Any other pressing of the transmitter pushbutton will reset the time.

/OFF FUNCTION TIMER /OFF

Single-pushbutton mode

If the receiver relay is opened, it will be closed for a preset period of time (1 sec to 8 hrs) once the transmitter pushbutton is pressed. If the relay is closed, it will be opened.

Two-pushbutton mode

Once the upper pushbutton of the transmitter is pressed, the receiver relay will be closed for a preset period of time (1 sec to 8 hrs). Whenever the lower pushbutton of the transmitter is pressed, the receiver relay is opened.

RETR FUNCTION RETR

This function is only used to send the code of the programmed transmitter pushbutton when the range of instruments is insufficient. It does not affect the state of the relay. Min. distance between the instruments shall be 2 m!

Roller shutter receivers

JAL FUNCTION LOUVER (two- or three-pushbutton mode of control)

A long press of the transmitter pushbutton (>0.5 sec) will close the output relay (3 min), i.e. it will get moved to the end position. A short press of the transmitter pushbutton is used for louver positioning. The upper (left) pushbutton is used to control the output relay for opening, while the lower (right) pushbutton is used to control the output relay for closing. It is also possible to use the three-pushbutton mode of control; whenever the third pushbutton is pressed, the louver will stop.

ROLL FUNCTION ROLLER SHUTTER (single-, two- or three-pushbutton mode of control)

A short press of the transmitter pushbutton will close the output relay (3 min), i.e. it will be moved to the end position. A repeated short press of the transmitter pushbutton will open the relay (stop). A long press (>0.5 sec) of the pushbutton will close the output relay (travel) only for the time of its holding. The upper (left) pushbutton is used to control the output relay for opening, while the lower (right) pushbutton is used to control the output relay for closing. It is also possible to use the three-pushbutton mode of control; whenever the third pushbutton is pressed, the roller shutter will stop.

CO FUNCTION CENTRAL OPEN

A short press of the transmitter pushbutton = travel to the end position "open". It is not possible to stop travel by repeated pressing of the pushbutton.

CC FUNCTION CENTRAL CLOSE

A short press of the transmitter pushbutton = travel to the end position ´closed´. It is not possible to stop travel by repeated pressing of the pushbutton.

STOP FUNCTION STOP

When the transmitter pushbutton is pressed, the closed output relay will be opened. For functions programmed in three-pushbutton mode, this function will be automatically assigned to the lower pushbutton (pushbuttons) and will be activated by simultaneous pressing of opening and closing pushbuttons.

POS FUNCTION POSITION

The relay will be closed for such a period of time as allows the louver to reach the position corresponding to the value of 0-100% (provided that time constants of the louvers have been set properly).

Receivers with analogue output P8 R 01-10 N and receivers with DALI output P8 R DALI N

DIMM FUNCTION DIMMER

Single-pushbutton mode

A short press of the transmitter pushbutton will close the output relay and alternately change the output signal from min. to max. and vice versa. A long press of the transmitter pushbutton will result in gradual rise/drop of the output signal.

Two-pushbutton mode

A short press of the upper (left) transmitter pushbutton will close the output relay and set the max. value of the output signal. A short press of the lower (right) transmitter pushbutton will open the output relay and set the min. value of the output signal.

A long press of the upper (left) transmitter pushbutton will close the output relay, and the output signal will gradually rise. A long press of the lower (right) transmitter pushbutton will open the output relay, and the output signal will gradually drop.

FUNCTION ON

Whenever the transmitter pushbutton is pressed, the receiver relay will be closed and remain closed. The output signal will be set to the maximum value.

FUNCTION OFF

Whenever the transmitter pushbutton is pressed, the receiver relay will get switched off and remain off. The output signal will be set to the minimum value

FUNCTION ON/OFF

Single-pushbutton mode

The pressing of the transmitter pushbutton will close and open the receiver relay alternately.

Two-pushbutton mode

When the upper pushbutton of the transmitter is pressed, the receiver relay will get closed. Whenever the lower pushbutton of the transmitter is pressed, the receiver relay is opened.

FUNCTION TIMER

After the transmitter pushbutton is pressed, the output relay will get closed and the value of the output signal will be set to the maximum value for a preset period of time (1 sec to 8 hrs). Any other pressing of the transmitter pushbutton will reset the time.

/OFF FUNCTION TIMER /OFF

Single-pushbutton mode

If the receiver relay is open, it will be closed once the transmitter pushbutton is pressed, and the value of the output signal will be set to maximum for a preset period of time (1 sec to 8 hrs). If the relay closed, the output signal will be set to the minimum value and the relay will open.

Two-pushbutton mode

A short press of the upper transmitter pushbutton will close the output relay, and the value of the output signal will be set to its maximum for a preset period of time (1 sec to 8 hrs). Any other pressing of the transmitter pushbutton will reset the time.

A short press of the lower transmitter pushbutton will set the output signal to its minimum value, and the relay will be opened.

FUNCTION LEVEL

This function is used to set the required value of the control signal for switching on (functions DIMM, ON and TIMER) for the given transmitter.

DIR FUNCTION DIRECT

Output will be set to a received value of 0-100 %.

Attenuation of the signal when passing through given materials

Wooden structures, gypsum boards, drywall, OSB	**5 - 15 %**
Brick wall	**10 - 40 %**
Glazed surfaces with regular glass	**10 - 30 %**
Reinforced concrete structures	**50 - 80 %**
Steel and all-metal structures and surfaces	**80 - 100 %**

Signal attenuation is just approximate. The real range will depend on the number of obstacles, moisture of the material through which the signal passes, and local interference from other sources, if any.

Data subject to change.

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