EPV
Energy Efficiency
—— Made in Germany

ecos

Ceiling Occupancy Sensors

Product Overview
Ex-Works Germany

Contents

EPV

Company Introduction: EPV Electronic GmbH

EPV

Company

- Founded 1990 in Germany
- Development & manufacturing of energy saving controls
- ISO 9001 certified manufacturing,
- Almost all EPV products are designed and manufactured to 100 % in Germany.

Business activities

- Range of innovative lighting & aircon control equipment
- Proprietary product range + technology partner for OEMs

Main products

- Occupancy sensors, motion sensors, light sensors
- Dimming ballasts
- Dimmers
- AIRCOSAVER

Contact

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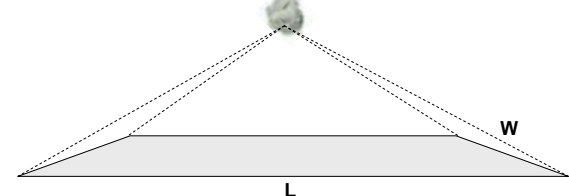
Research & Development

**Manufacturing (Germany)
ISO 9001**

Digital PIR sensor head for maximum sensitivity & reliability

- Market-leading sensitivity

- Very small, looks great in any ceiling

- Practically immune to mistriggerings

Rectangular coverage area with simple adjustability (pull-out shading ring)

5m types		
Height (m)	W (m)	L (m)
1,9	4,3	5,37
2	4,53	5,65
2,1	4,75	5,93
2,2	4,98	6,21
2,3	5,21	6,5
2,4	5,43	6,78
2,5	5,66	7,06
2,6	5,89	7,34
2,7	6,11	7,62
2,8	6,34	7,91
2,9	6,57	8,19
3	6,79	8,47
3,1	7,02	8,75
3,2 - 5m	7,24	9,04

Settings easily accessible on front of sensors

- Easy & quick adjustments without having to take the sensor out of the ceiling.

EPV

Flush Mounting into false, partitioned ceilings.

- Applicable to all false/suspended ceilings when you can reach around to the rear of the sensor and put the clip onto it.

- **Clip supplied with each sensor**

Spring Clip for flush mounting into false 1-piece ceilings

- Applicable when standard clip cannot be placed onto rear of sensors, e.g. in plasterboard ceilings

- Similar to down light fitting

- Product no. 101683

Surface Mounting Enclosure

- Applicable when flush mounting is not possible, e.g. on bare concrete ceilings.

- Product no. 101472

**The ecos sensor range offers solutions
for all your main application scenarios:**

Individual / Standalone

Large Areas

**Integration into
control systems**

**230V Sensors
(with powerful
built-in relay)**
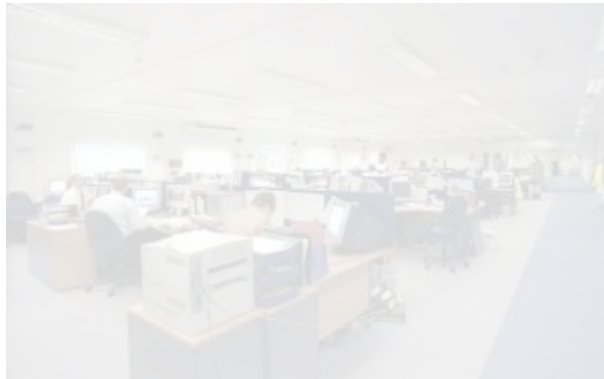
**24V Sensors
plus
Power Pack**

**24V Sensors
Open Collector Output
or potential free relay**

Individual / Standalone

**230V Sensors
(with powerful
built-in relay)**

Large Areas

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Integration into control systems

24V Sensors
Open Collector Output or
potential free relay

230V sensors with powerful built-in relay

- Double-latch Tungsten relay for maximum reliability and very long lifetime (2300 VA constant power / 800 A inrush current)

Typical applications: individual offices, meeting rooms, class rooms, kitchens, toilets etc.

Various wiring / connection options

WAGO Kit with strain relief & cover	**Wiring Adapter (full 6-core)**	**WIELAND / WINSTA full plug & play pre-wiring**
Standard 100956 / 101426 (1-10V) **included in all quoted 230V sensor prices**	On request Several models available on request	On request Several models available on request

On/Off sensors

L

N

In: L&N

N

L'

Out: Switched Live

Light Fittings
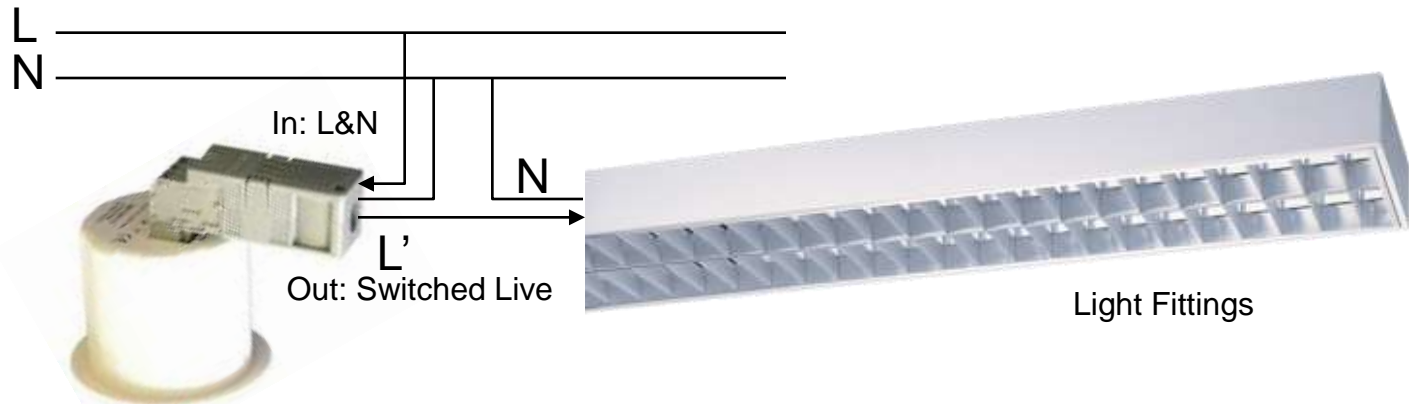
Connection pictured with WAGO plug set 100956

Sensors with additional
1-10V dimming output

L

N

In: L&N

N

L'

Out: Switched Live

-

+

1-10V

Light Fitting with 1-10V dimmable ballast
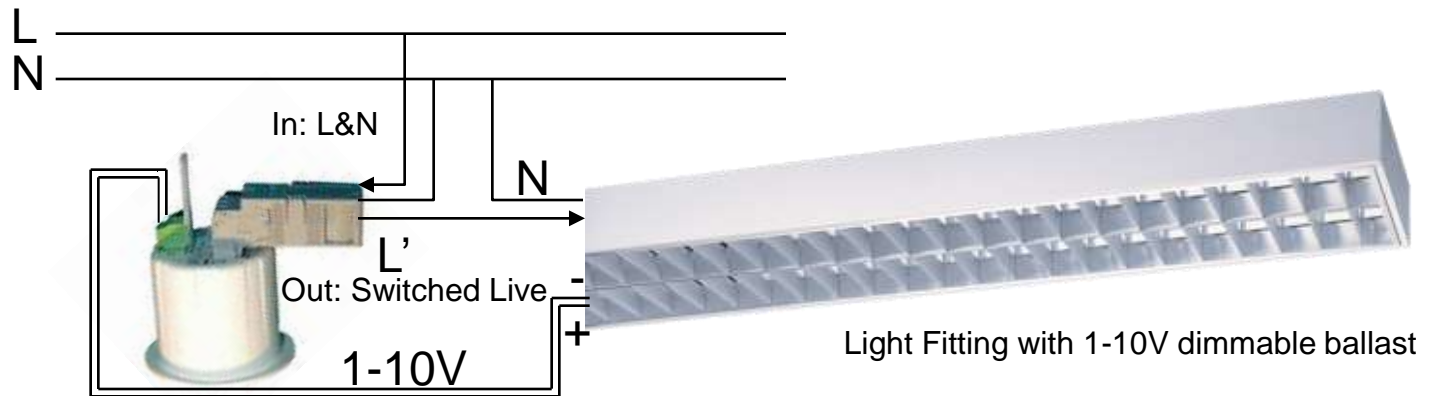
Connection pictured with WAGO plug set 101426

Occupancy Sensing (on/off, no dimming)

ecos PM/230V/5

- Simple on/off, based on occupancy only, <u>fixed delay time</u> 10 minutes, no twilight switch, 2300 VA / 800 A inrush, max. 5 m height   101918

ecos PM/230V/5T

- Simple on/off, based on occupancy only, <u>adjustable</u> delay time 10 seconds - 14 minutes, no twilight switch, 2300 VA / 800 A inrush, max. 5 m height   101920

ecos PM/230V/5L (suitable for most applications!)

- On/Off, with adjustable delay time 10 seconds - 14 minutes, adjustable twilight switch 100-1000 Lux, 2300 VA / 800 A inrush, max. 5 m height   101919

Occupancy Sensing (on/off, no dimming)

ecos PM/230V/12

- Simple On/Off, based on occupancy only, <u>fixed delay time</u> 10 minutes, no twilight switch, 2300 VA / 800A inrush, max. 12 m height,   102052

ecos PM/230V/12T

- Simple on/off, based on occupancy only, <u>adjustable</u> delay time 10 seconds - 14 minutes, no twilight switch, 2300 VA / 800 A inrush current, max. 12 m height   102053

ecos PM/230V/12L

- On/Off with adjustable delay time 10 seconds - 14 minutes, adjustable twilight switch 100-1000 Lux, 2300 VA / 800 A inrush current, max. 12 m height   102054

Occupancy Sensing + Daylight Dimming 1-10V

ecos PM/230V/5LSa DIM

- On/Off + Daylight Harvesting (1-10V dimming) output, adjustable delay time 10 seconds - 14 minutes, adjustable dimming set point 100-1000 Lux, max. 5 m height.

- Off-Priority: Light level.   101921

- *Explanation: When sufficient ambient light is available, the artificial light will remain in maximum dimming position for the set delay time. After that, the artificial light is turned off, regardless of motion in the room. **Highest savings.***

ecos PM/230V/5LSb DIM

- On/Off + Daylight Harvesting (1-10V dimming) output, adjustable delay time 10 seconds – 14 minutes, adjustable dimming set point 100-1000 Lux, max. 5 m height

- Off-Priority: Motion   101922

- *Explanation: When sufficient ambient light is available, the artificial light will remain in maximum dimming position as long as there is any motion in the room. The lights will turn off only when the room is vacant. **Lower savings.***
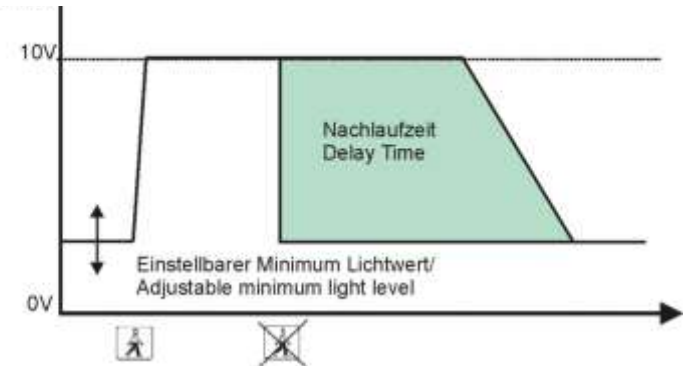
Occupancy Based Dimming 1-10V

These sensors dim the artificial lights when an area is not occupied. Both the minimum level and the time after which dimming occurs can be adjusted. They do NOT switch off. This is also known as "Corridor function" or "Standby function".

Dimming takes place in smooth ramps, not abruptly.

Dimming Output (1-10V) zu EVG's to ballasts

Ideal for: Supermarket aisles, corridors in hospitals or pensioners' homes, parking decks …

ecos PM/230V/5K DIM

- Occupancy based dimming sensor. 1-10V output, dims when area is not occupied and ramps up when occupied. Adjustable minimum level 1-5V (typ. 10% - 50% brightness), adjustable delay time 10 seconds - 14 minutes. Dims in smooth ramps, max. 5 m height.   101926

ecos PM/230V/12K DIM

- Occupancy based dimming sensor. 1-10V output, dims when area is not occupied and ramps up when occupied. Adjustable minimum level 1-5V (typ. 10% - 50% brightness), adjustable delay time 10 seconds - 14 minutes. Dims in smooth ramps, max. 12 m height.   102072

EPV

Individual	**Large Areas**	Integration into control systems

230V Sensors (with powerful built-in relay)	**24V Sensors plus Power Pack**	24V Sensors Open Collector Output or potential free relay

SLAVES sind nur in Kombination mit 1 MASTER einsetzbar.
SLAVES can be used only in combination with 1 MASTER.

On/Off

L
N
PE

| MASTER 24V | SLAVE 24V | SLAVE 24V |

→ L/N/PE
EPV
← L'/N/PE **Power Pack XL**
Sensor IN (RJ12)

RJ12

Bis max. 30 SLAVES möglich.
Up to 30 SLAVES possible.

Plug & Play with RJ12 Adapters
Article No. 101382

Last, z.B. Leuchten
Load, e.g. Light Fittings

L'/N/PE

Pro Power Pack: Immer 1 MASTER erforderlich
Per Power Pack: Always 1 MASTER required

On/Off + Daylight Dimming 1-10V

L
N
PE

| MASTER 24v | SLAVE 24V | SLAVE 24V |

→ L/N/PE
EPV
← L'/N/PE **Power Pack XL DIM** 1-10V
Sensor IN (RJ12)

RJ12

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Plug & Play with RJ12 Adapters
Article No. 101382

→ 1-10V
Dimmbares EVG (1-10V)
→ L/N/PE **Dimming Ballast (1-10V)**

EPV

Occupancy Sensing (on/off, no dimming)

ecos PM/24V/5 MASTER

- Simple On/Off, based on occupancy only, <u>fixed delay time </u>10 minutes, no twilight switch, potential free relay, coverage extension with SLAVES possible, max. 5 m height   102043

ecos PM/24V/5T MASTER

- Simple On/Off, based on occupancy only, adjustable delay time 10 seconds – 14 minutes, no twilight switch, potential free relay, coverage extension with SLAVES possible, max. 5 m height   102044

ecos PM/24V/5L MASTER

- On/Off with adjustable delay time 10 seconds - 14 minutes, adjustable twilight switch 100-1000 Lux, potential free relay, coverage extension with SLAVES possible, max. 5 m height.   102045

Occupancy Sensing (on/off, no dimming)

ecos PM/24V/12 MASTER

- Simple On/Off, based on occupancy only, <u>fixed delay time</u> 10 minutes, no twilight switch, potential free relay, coverage extension with SLAVES possible, max. 12 m height   102046

ecos PM/24V/12T MASTER

- Simple On/Off, based on occupancy only, adjustable delay time 10 seconds - 14 minutes, no twilight switch, potential free relay, coverage extension with SLAVES possible, max. 12 m height   102047

ecos PM/24V/12L MASTER

- On/Off with adjustable delay time 10 seconds - 14 minutes, adjustable twilight switch 100-1000 Lux, potential free relay, coverage extension with SLAVES possible, max. 12 m height   102048

Occupancy Sensing + Daylight Dimming 1-10V

ecos PM/24V/5LSa DIM MASTER

- On/Off + Daylight Harvesting (1-10V dimming) output, adjustable delay time 10 seconds - 14 minutes, adjustable dimming set point 100-1000 Lux, coverage extension with SLAVES possible, max. 5 m height

- Off-Priority: Light level.   102049

- *Explanation: When sufficient ambient light is available, the artificial light will remain in maximum dimming position for the set delay time. After that, the artificial light is turned off, regardless of motion in the room. **Highest savings**.*

ecos PM/24V/5LSb DIM MASTER

- On/Off + Daylight Harvesting (1-10V dimming) output, adjustable delay time 10 seconds - 14 minutes, adjustable dimming set point 100-1000 Lux, coverage extension with SLAVES possible, max. 5 m height

- Off-Priority: Motion   102050

- *Explanation: When sufficient ambient light is available, the artificial light will remain in maximum dimming position as long as there is any motion in the room. The lights will turn off only when the room is vacant. **Lower savings**.*
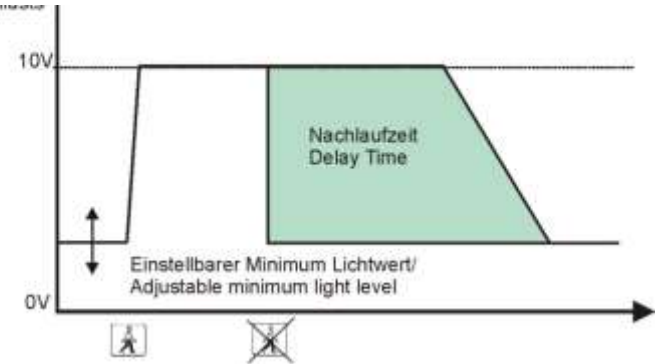
Occupancy Based Dimming 1-10V

Dimming Output
(1-10V) zu EVG's
to ballasts

These sensors dim the artificial lights when an area is not occupied. Both the minimum level and the time after which dimming occurs can be adjusted. They do NOT switch off. This is also known as "Corridor function" or "Standby function".

Dimming takes place in smooth ramps, not abruptly.

Ideal for: Supermarket aisles, corridors in hospitals or pensioners' homes, parking decks …

ecos PM/24V/5K DIM MASTER

- Occupancy based dimming sensor, 1-10V output, dims when area is not occupied and ramps up when occupied. Adjustable minimum level 1-5V, adjustable delay time 10 seconds -14 minutes. Dims in smooth ramps. Coverage extension with SLAVES possible, max. 5 m height.   101792
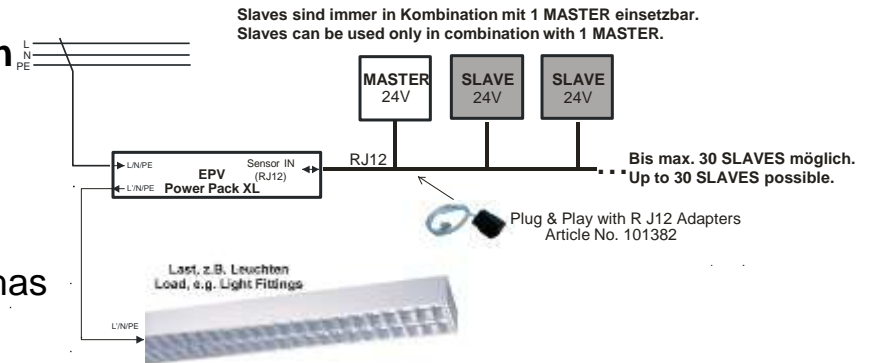
ecos PM/24V/12K DIM MASTER

- Occupancy based dimming sensor, 1-10V output, dims when area is not occupied and ramps up when occupied. Adjustable minimum level 1-5V, adjustable delay time 10 seconds - 14 minutes. Dims in smooth ramps. Coverage extension with SLAVES possible, max. 12 m height.   102128

SLAVE sensors: extension of coverage area

The coverage of every MASTER sensor (any type) can be extended with up to 30 SLAVE sensors.

Together, the MASTER and SLAVE sensors act like one sensor with a very large coverage area (i.e. in parallel).

All settings are done only on the MASTER – the SLAVE has no adjustments.

Slaves sind immer in Kombination mit 1 MASTER einsetzbar.
Slaves can be used only in combination with 1 MASTER.

MASTER 24V   SLAVE 24V   SLAVE 24V

L/N/PE   EPV Power Pack XL   Sensor IN (RJ12)   RJ12

Bis max. 30 SLAVES möglich.
Up to 30 SLAVES possible.

Plug & Play with R J12 Adapters
Article No. 101382

Last, z.B. Leuchten
Load, e.g. Light Fittings

ecos PM/24V/5 SLAVE

- SLAVE sensor for coverage area extension, max. 5 m height.

101798

ecos PM/24V/12 SLAVE

- SLAVE sensor for coverage area extension, max. 12 m height.

102127

Power Packs

ecos Power Pack DIM

- Simple power supply for the ecos PM/5K and /12K Master dim. Connects 1 MASTER sensor and up to 30 SLAVE sensors. With strain relief & terminal covers.   102012
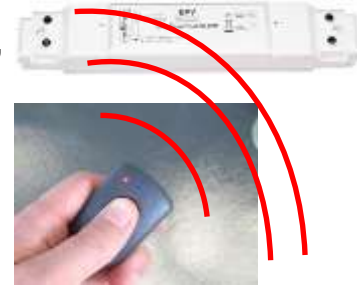

ecos Power Pack XL DIM

- On/Off + Daylight Dimming, switches 2300 VA / 800 A inrush. Connects 1 MASTER sensor and up to 30 SLAVE sensors. 1-10V dimming output. With strain relief & terminal covers. For MASTER sensors WITH Daylight Dimming output (e.g. ecos PM/24V/5LSa).   102144

Power Packs

ecos Power Pack DIM RF   with additional manual dimming mode

- On/Off + Daylight Dimming + Manual Dimming Mode (e.g. for conference rooms), with remote RF receiver function. 1-10V dimming output.
  Switches 2300 VA / 800 A inrush. Connects 1 MASTER sensor and up to 30 SLAVE sensors. With strain relief & terminal covers. For MASTER sensors WITH Daylight Dimming output (e.g. ecos PM/24V/5LSa).   101778

- RF Remote Control, single channel   101400

ecos Power Pack DALI

- Supports up to 45 DALI devices or LED-drivers. Enables DALI dimming and switching. DALI Master in broadcast mode. Connects 1 MASTER sensor and up to 30 SLAVE sensors or EPV DAYTRONIC sensors to control DALI devices. With strain relief & terminal covers.   102003

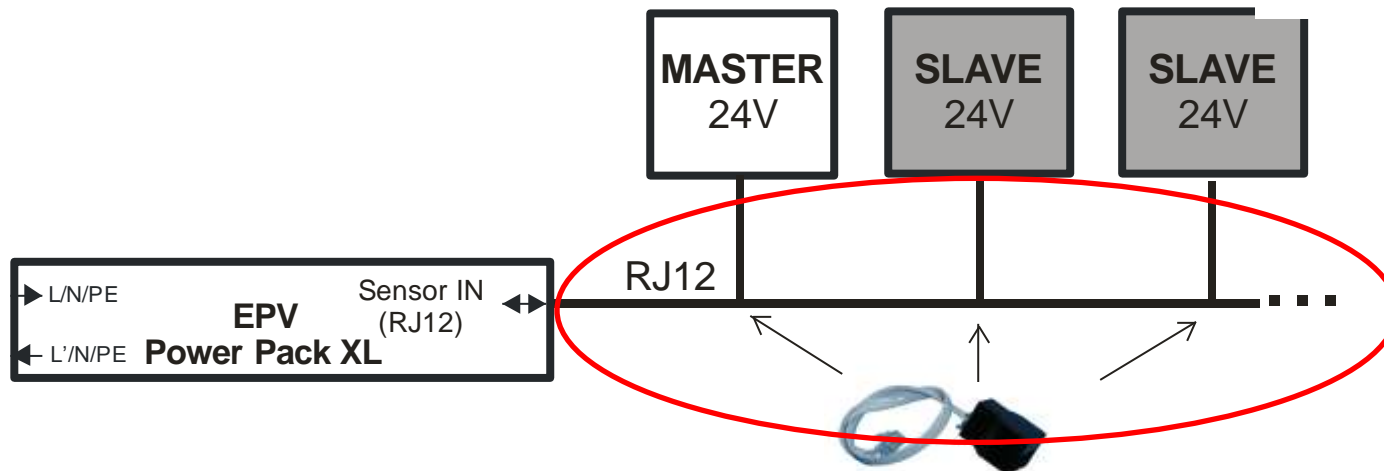# 24V RJ12 Accessories (plug & play)

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2-into-1 RJ12 Adapters

- Used for plugging several 24V sensors together (MASTER / SLAVE)
- Rule of thumb: Typically 1 unit per SLAVE sensor required.
- 101382

6 meter RJ12 cable

- For connecting several 24V sensors together
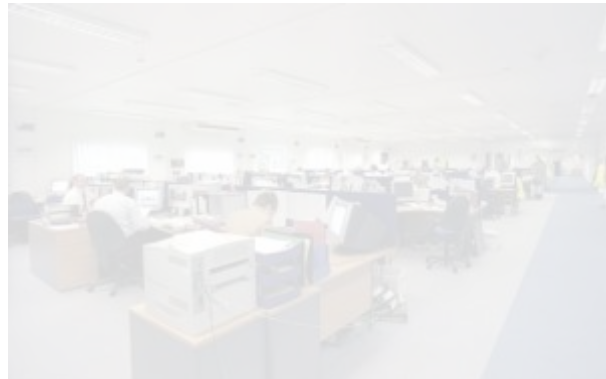- 1-to-1 straight through cable 6P6C
- 101871

Plug & Play with RJ12 accessories

Individual

Large Areas

Integration into control systems

230V Sensors (with powerful built-in relay)

24V Sensors plus Power Pack

24V Sensors Open Collector Output or potential free relay

All of the 24V sensors listed on the previous pages can be used in most building control systems.

- In this case no EPV Power Pack is necessary.
- The voltage supply is taken from the control system, AC or DC
- **ecos** sensors can operate on a wide voltage range (e.g. 10.8 – 28V AC or DC for the On/Off models).
- Can be used in most DALI, KNX or similar systems
- Popular for Home Automation systems

MASTER / SLAVE option for large coverage areas

- MASTER & SLAVE sensors can be combined to extend the sensor area (1 MASTER with multiple SLAVES)
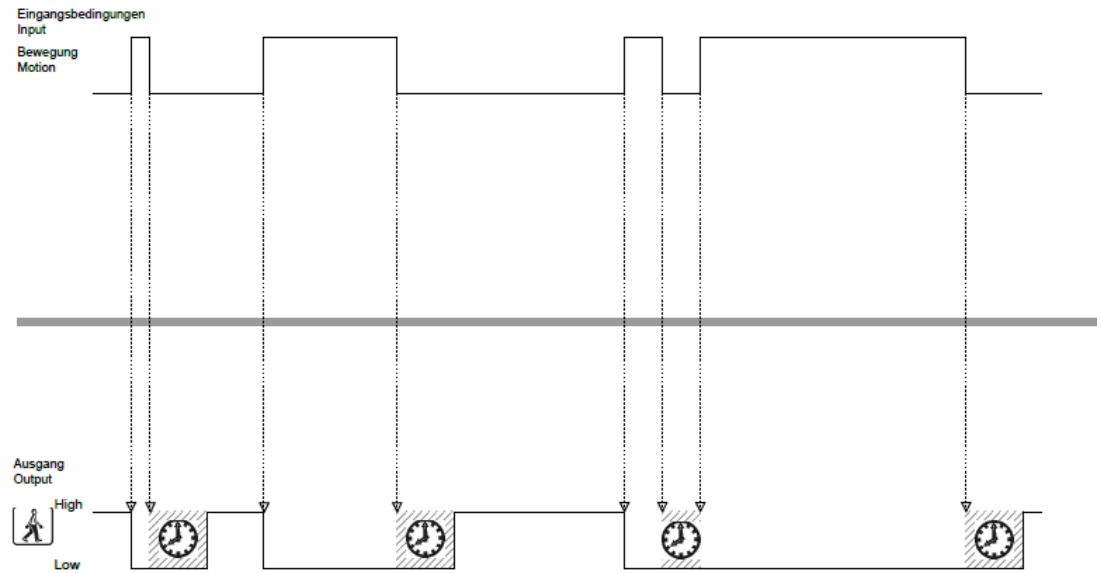
One extra model for control systems is available:

ecos PM/24V/5LSc MASTER

- Potential free relay or Open Collector Output of Occupancy Signal with 10 seconds fixed delay time. Light linear analog output (active and passive) 1-10V:
100 Lux = 10V, 1000 Lux = 1V, max. 5 m height
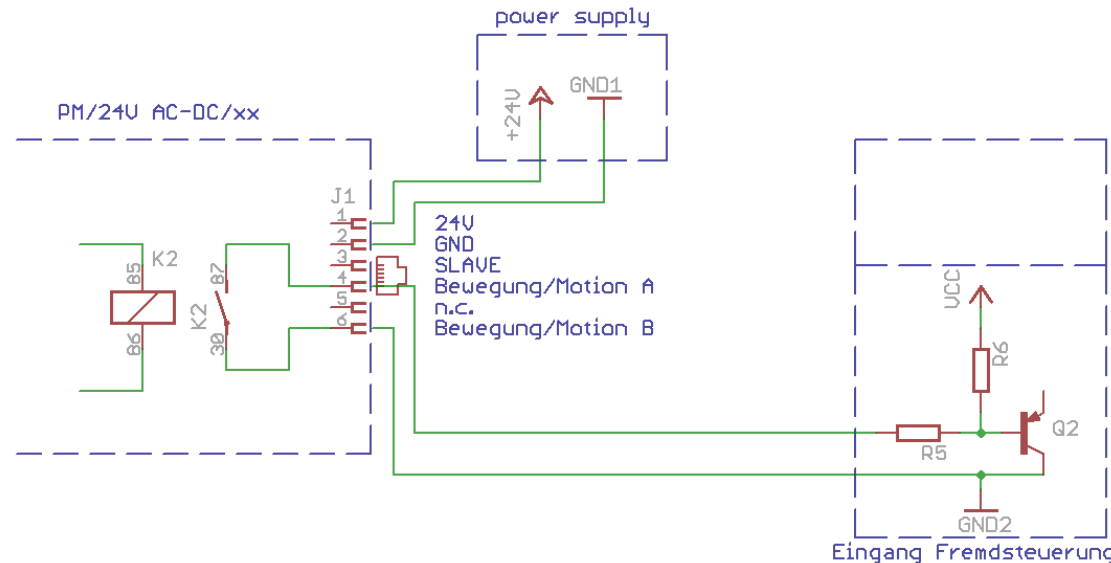 101318

Example of Open Collector Logical Output:

Example of how to use the potential free relay inside the occupancy sensor

Extensive technical details and support are available. Please contact us.

info@EPVelectronics.com

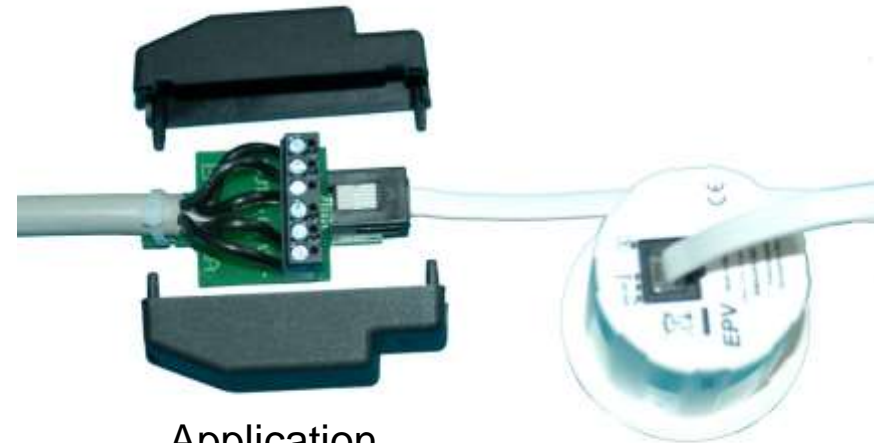Beispielschaltung: Potentialfreier Kontakt an ein PNP-Transistoreingang (nicht Invertiert)
Example circuit: potential free relay

Cable Adapter KA2 Set

- Allows easy access to the signals on each core of an RJ12 cable

- RJ12-plug to 6-core screw terminal   101947

Contents of kit   Application

More plug & play RJ 12 accessories are available, please refer to page 22.

EPV

Samples & Small Orders

- UPS Expedited, (preferential pricing) or any logistics company of your choice.

Medium orders

- SCHENKER or Quick Cargo AIR Freight, CIF to next airport
- SCHENKER/ Quick Cargo / UPS Cooperation, DAP (door-to-door)
- or any logistics company of your choice.

Large Orders

- SCHENKER or Quick Cargo SEA Freight, CIF your next port, door-to-door on request
- SCHENKER or Quick Cargo AIR Freight CIF to next airport
- or any logistics company of your choice.

We are happy to work out a detailed quote for you
Please contact us info@EPVelectronics.com