

**NEW!** TIME-DEPENDENT  
OPERATING MODES

# DEFENSOR IS **ESY** BECAUSE IT SIMPLY OFFERS MORE PROTECTION

## MOTION DETECTORS AND TWILIGHT SWITCHES FROM THE DEFENSOR SERIES

- Time-dependent operating modes
- Intelligent vandalism and sabotage protection
- Switch-off delay times based on motion direction detection



# PROTECTION **AROUND THE CLOCK**

## LIGHT CONTROL FOR ENHANCED SAFETY, CONVENIENCE AND ENERGY EFFICIENCY

The motion detectors and twilight switches from the DEFENSOR series are not only stylishly designed and easy to install, they also feature first-class functionality that delivers safety, convenience and energy efficiency.

The various products within the range offer a host of options for flexible yet precise control of outdoor lighting, including time-dependent operating modes, intelligent vandalism and switch-off delay times based on motion direction detection. Durability is also a given, thanks to zero-cross switching to protect the relay from the high in-rush currents of LEDs, and particularly high overvoltage protection.

- Time-dependent operating modes
- Intelligent vandalism and sabotage protection
- Switch-off delay times based on motion direction detection

Functions	Motion detectors		Twilight switches	
				
	MD 280°/230°	MD 200°	TS T	TS
Time-dependent operating modes	•		•	
Intelligent vandalism and sabotage protection	•			
Creep protection for unbroken coverage	•			
Switch-off delay times based on motion direction detection	•			
Customisable fields of detection	•	•		
Impulse feature	•	•		
Integrated push button input	•	•	•	•
Zero-cross switching to protect the relay	•	•	•	•
Password-protected parameterisation	•	•	•	•
High overvoltage protection	•	•	•	•
Easy configuration with the ESY-Pen and ESY-App	•	•	•	•

# LET THERE BE LIGHT

## DEFENSOR MOTION DETECTORS

The DEFENSOR motion detectors can be relied upon in every situation thanks to time-dependent operating modes or intelligent vandalism and sabotage protection. Particularly convenient: With the factory settings, the device can be commissioned immediately and the settings can be conveniently adjusted at a later date using the ESY-Pen and ESY-App. Tailored configuration of fields of detection and variants with switch-off delay times based on motion direction detection mean that this device can be controlled even more precisely, while the many mounting options ensure great flexibility.

### TILTING SENSOR HEAD FOR WALL AND CEILING MOUNTING

MD 280°/230°



### ROTATING AND TILTING DETECTOR LENS

MD 200°



280°

230°

- > TIME-DEPENDENT OPERATING MODES
- > INTELLIGENT VANDALISM AND SABOTAGE PROTECTION
- > SWITCH-OFF DELAY TIMES BASED ON MOTION DIRECTION DETECTION
- > CREEP PROTECTION FOR UNBROKEN COVERAGE



280°

230°

200°

- > CUSTOMISABLE FIELDS OF DETECTION
- > INTEGRATED PUSH BUTTON INPUT
- > PASSWORD-PROTECTED PARAMETERISATION
- > HIGH OVERVOLTAGE PROTECTION

# DISCREET KEEPERS

## DEFENSOR TWILIGHT SWITCHES

The DEFENSOR twilight switches reliably and discreetly increase safety around the building. Once darkness falls, they automatically or semi-automatically switch on the lights in the event of insufficient ambient lighting.

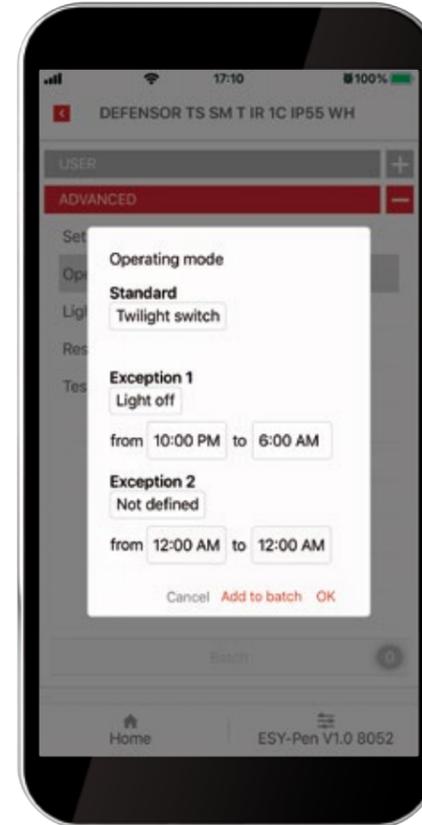
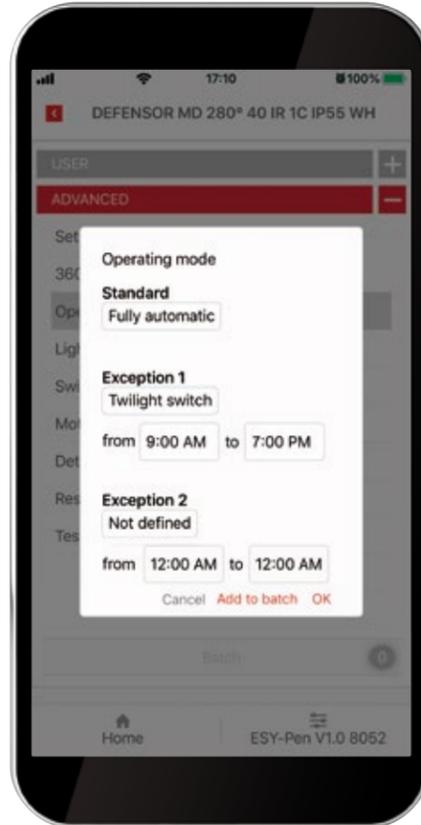
The T variant features time-dependent operating modes that allow for highly customisable configurations. The twilight switches therefore guarantee flexibility and energy efficiency, as well as protecting the relay during the operation of LED lights, for instance, due to zero-cross switching. The factory settings allow the device to be commissioned immediately and the settings can be conveniently adjusted using the ESY-Pen and ESY-App.



# TIME-DEPENDENT OPERATING MODES

DEFENSOR motion detectors are generally used in fully automatic mode, switching on the lighting based on motion detection and daylight conditions. However, the operating mode can easily be changed to suit a particular place of use or individual requirements. The 280° and 230° variants offer a particularly high degree of flexibility, as they have an internal clock.

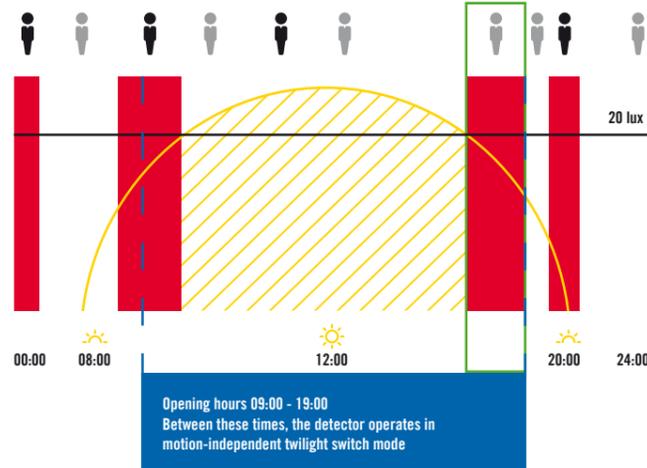
Within a 24-hour day, the clock allows two time windows to be defined in which, from the standard operating mode can be deviated from. You can choose between fully automatic, semi-automatic, a twilight switch mode as well as selective switching on or off of the lighting. Set the date to allow automatic switching between summer and winter time.



As their name suggests, the DEFENSOR twilight switches switch on the lighting when dusk begins to fall and only switch it off again the next morning once there is sufficient daylight. However, there are various scenarios in which it may be necessary to deviate from this operating mode.

For this reason, with the T variant it is possible to deactivate twilight switch mode for specific time windows due to an internal clock and parameterisation using the ESY-Pen and ESY-App. This means that lighting can be intentionally switched on or off at specific times.

## TIME-DEPENDENT OPERATING MODES: MOTION DETECTORS



### Motion-independent twilight switch mode

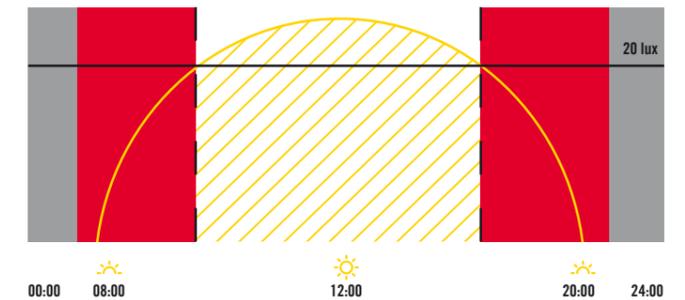
In the example, a 230° motion detector is working in fully automatic mode on the premises of a retail outlet, where it enhances protection, convenience and energy efficiency. However, during opening hours the lighting should be switched on at all times whenever there is insufficient daylight, even if no motion is detected. The detector therefore operates in twilight switch mode between 09:00 and 19:00.

- Artificial light
- ▨ Sufficient daylight
- 👤 Present
- 👤 Absent



**Configuring the DEFENSOR series**  
Easy to parameterise using the ESY-App. The ESY-Pen creates a bridge for transfer.

## TIME-DEPENDENT OPERATING MODES: TWILIGHT SWITCH



### Intentional deactivation of the lighting at night

In the example, the T variant of the twilight switch switches on the lighting as usual during the early evening and early morning if there is insufficient daylight. By contrast, the lighting is intentionally deactivated between 22:00 and 06:00, in order to reduce energy consumption and also reduce night-time light pollution!

- Artificial light
- ▨ Sufficient daylight
- Operating mode: light OFF



# INTELLIGENT VANDALISM AND SABOTAGE PROTECTION

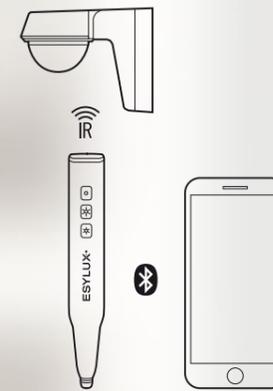
Outdoor motion detectors can only enhance protection around a building if they themselves are adequately protected against external influences – such as extreme temperatures, water and dust and also vandalism or sabotage.

That is why the 280° and 230° variants of the DEFENSOR motion detectors feature intelligent vandalism and sabotage protection that is designed to keep everything safe: The lighting stays switched on permanently if the sensor head is knocked off by a forceful impact, turning the spotlight on the perpetrator!

**BURGLAR PROTECTION:  
LIGHTS ON!**



# PASSWORD-PROTECTED PARAMETRISATION



**Configuring the DEFENSOR series**  
Easy to parameterise using the ESY-App.  
The ESY-Pen creates a bridge for transfer.

The DEFENSOR motion detectors and twilight switches are ready for immediate use without any changes to the factory settings. However, anyone wishing to adjust the parameters to suit their specific conditions or customise the intelligent device functions for their own use can do so with ease using the ESY-Pen and ESY-App. The ESY-App is available free of charge and the ESY-Pen acts as a bridge, transmitting the commands from the mobile end devices to the infrared sensor technology.

The DEFENSOR series offers enhanced protection here too: To prevent sabotage, the housing has been designed with no controls on the outside, and a personal password in the ESY-App keeps the configuration process secure!



**Always ready with the right tool**  
Use the ESY-Pen and ESY-App for easy parametrisation, remote control, light measurement and mobile project management of all remotely controlled ESYLUX automation and lighting solutions!

**ESY-PEN**  
Item no. EP10425356

Find out more at:  
[www.esylux.com/esy-pen](http://www.esylux.com/esy-pen)

**ESY-APP**  
Download for free



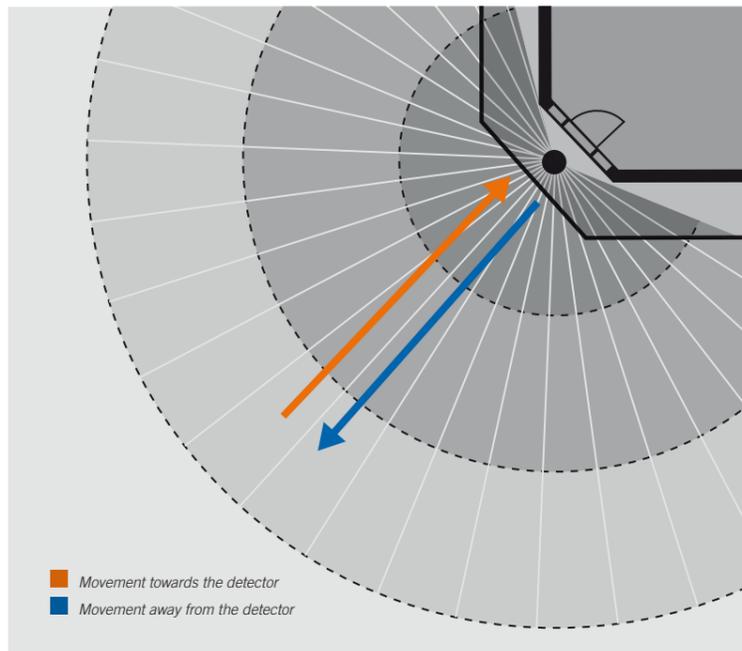


# SWITCH-OFF DELAY TIMES BASED ON MOTION DIRECTION DETECTION

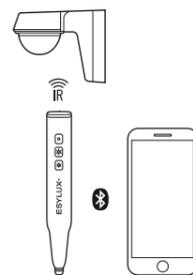
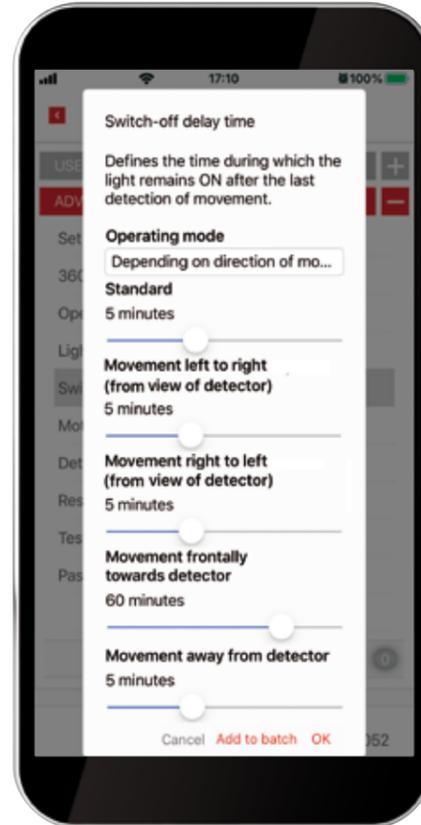
The switch-off delay time built into motion detectors means that the lighting only remains on while it is actually needed, in order to reduce energy consumption and optimise the lifetime of LEDs. However, requirements in this area can vary greatly – e.g. depending on whether someone is entering or leaving the premises.

For this reason, the 280° and 230° variants can detect whether someone is passing the detector from the right or from the left, or whether someone is moving underneath the detector and is therefore entering or leaving the creep protection area. A customised switch-off delay time can be selected for each of these four directions of movement.

## SWITCH-OFF DELAY TIMES BASED ON MOTION DIRECTION DETECTION



A 230° motion detector is fitted above a door area. If someone leaves the house, thus moving further away from the detector, the switch-off delay time will last for just five minutes in order to save energy. If there is walking movement in the opposite direction, the switch-off delay time for the light will last for another hour, illuminating the outdoor area and creating security and peace of mind.



**Configuring the DEFENSOR series**  
Easy to parameterise using the ESY-App.  
The ESY-Pen creates a bridge for transfer.

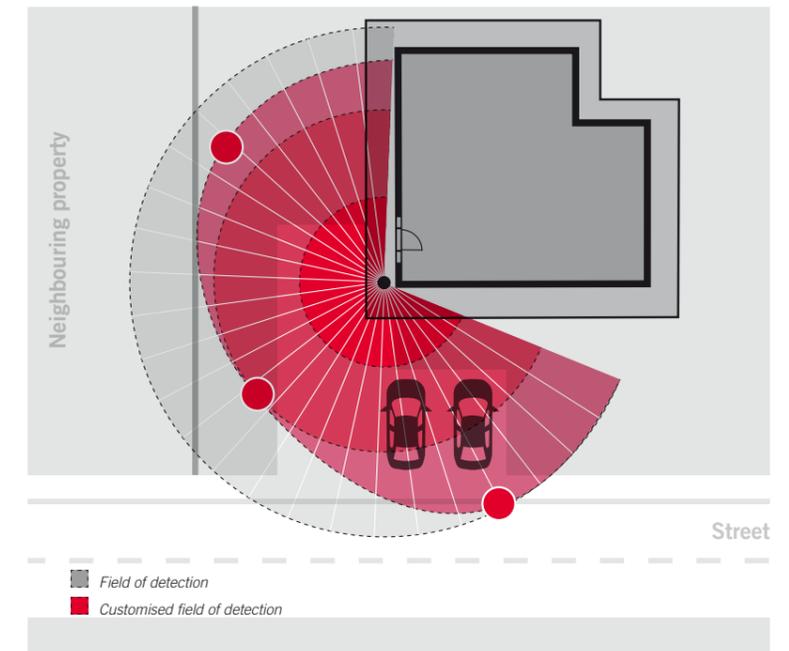


# CUSTOMISABLE FIELDS OF DETECTION

The field of detection of the DEFENSOR motion detectors ensures maximum security in outdoor areas. In some cases, however, it may be necessary to adjust the field of detection in order to prevent a detector from being triggered in error. If the lens mask doesn't offer you sufficient flexibility to make the required adjustments, using the ESY-Pen and ESY-App could give you a little more freedom.

On the 200° variants, the sensitivity of the entire field of detection can be reduced in multiple stages. In addition, with the 280° and 230° variants it is even possible to customise individual detection zones via the ESY-App: This is done either by moving adjusting visual controls using your finger, or by entering percentage values.

## CUSTOMISABLE FIELDS OF DETECTION



In the example, the maximum field of detection would extend to the street and to the neighbouring property, and as such would result in the lighting frequently being switched on unnecessarily. The range in these zones has therefore been reduced accordingly.

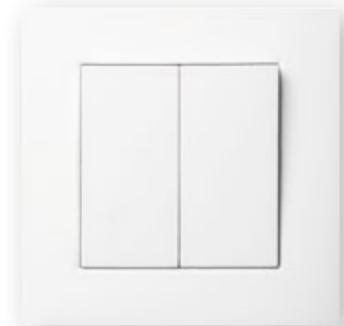


# INTEGRATED PUSH BUTTON INPUT

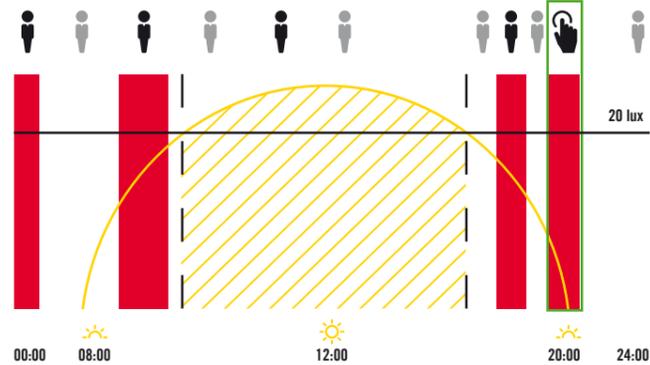
Customers who opt to use fully automatic DEFENSOR motion detectors with motion- and daylight-dependent light control will enjoy enhanced security with no additional effort. But even in this scenario, homeowners might wish to switch on the outdoor lighting themselves, e.g. in order to check that everything is OK when spontaneously looking out of the window.

Integrated push button input creates greater security and convenience in this instance, allowing the end user to activate the lighting from inside regardless of which operating mode is being used. And if the user forgets to switch off the lights, the motion detector will take care of it automatically once the switch-off delay time has come to an end.

The twilight switches also feature push button input. As with the motion detectors, the feature not only allows for spontaneous activation of the lighting but also for permanent activation or deactivation of the outdoor light for either 4 or 12 hours.



## INTEGRATED PUSH BUTTON INPUT EXAMPLE



A 200° motion detector is installed on the front of a detached house. In fully automatic mode, it uses motion- and daylight-dependent light control. The user can also switch on the lighting manually from inside using a button.

- Artificial light
- ▨ Sufficient daylight
- Present
- Absent
- Button press



# 200 % OVERVOLTAGE PROTECTION

Lightning strikes and temporary overloading of the power supply systems can cause irreparable damage to installed devices. For this reason, the DEFENSOR motion detectors and twilight switches, just like other ESYLUX products, feature overvoltage protection that exceeds standards requirements by a full 100 %:

## Surge 2 kV, burst 4 kV!

Surge: surge voltage

Burst: repeating fast transients

# EASY TO INSTALL

## DUE TO VERSATILE COMPONENTS



### MOUNTING BASE

The mounting base for the DEFENSOR series allows easy through-wiring due to its two cable entries with elastic sealing membrane. Earthing cable wiring with a sheath diameter of up to 15 mm is also possible.

### CORNER BRACKET

Customers wishing to install motion detectors or twilight switches on the corner of a house can simply use the corner bracket, which is available as an accessory.



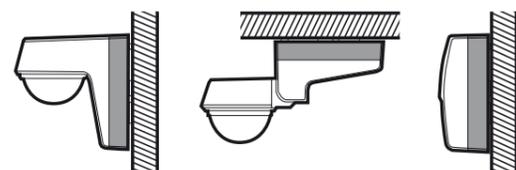
### SPACER

Spacers (available separately) are an easy way to slightly increase the distance from the mounting surface, e.g. for mounting using a cable duct.

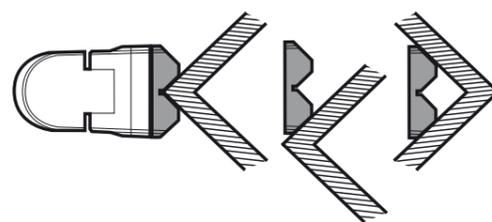
### MOUNTING BASE

The new platform concept from ESYLUX also creates future-proof flexibility: The screw holes on the back of the base are exactly the same as those for the RC series from ESYLUX. Customers who own an RC motion detector but wish to make use of the new DEFENSOR functions can therefore easily use the two interchangeably!

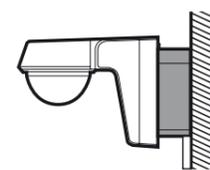
### WALL AND CEILING MOUNTING



### MOUNTING ON INNER AND OUTER CORNERS



### SPACER MOUNTING

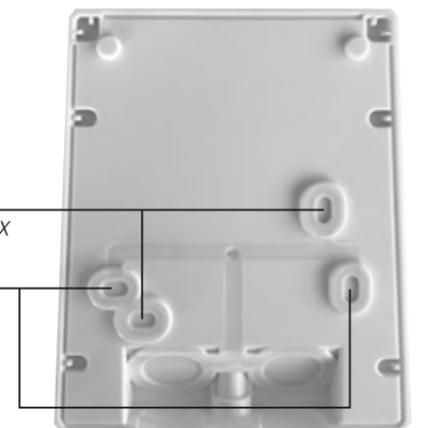


### Screw holes

Compatible with RC series from ESYLUX

### Screw holes

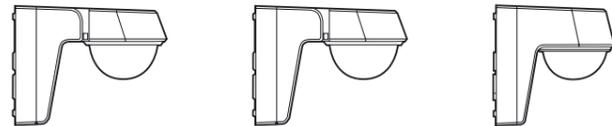
Switchbox/recessed box (60 mm)



# THE BENEFITS AT A GLANCE

## DEFENSOR MOTION DETECTORS

Product group / product name	DEFENSOR MD 280°	DEFENSOR MD 230°	DEFENSOR MD 200°
Item no.	White EM10025396 Anthracite grey EM10025402	EM10025372 EM10025389	EM10025358 EM10025365



### MOTION DETECTION

Detection angle	280°	230°	200°
Detection range diagonally	Ø 40 m	Ø 40 m	Ø 24 m
Detection range head-on	Ø 10 m	Ø 10 m	Ø 8 m
360° creep protection (factory setting: ON; can be deactivated)	Ø 4 m	Ø 4 m	
Field of detection	Up to 979 m²	Up to 804 m²	Up to 252 m²
Electronic sensitivity adjustment via ESY-App	• (3 detection zones; separate adjustment)	• (2 detection zones; separate adjustment)	•
Movable sensor lens			Rotates horizontally +/- 30°, tilts downwards through 10°
Movable sensor head	Tilts vertically through +90°/-10°	Tilts vertically through +90°/-10°	
Level of brightness (factory setting: 20 lx)	2 - 2000 lx	2 - 2000 lx	2 - 2000 lx

### FUNCTIONS

Time-dependent operating modes (factory setting: not defined)	•	•	
Switch-off delay times based on motion direction detection	•	•	
Vandalism and sabotage protection (permanently ON)	•	•	
Push button input for manual ON/OFF and 4-hour/12-hour permanent ON/OFF	•	•	•
Twilight switch function	•	•	•
High overvoltage protection (surge 2 kV, burst 4 kV)	•	•	•
Smart factory settings mean device is ready for immediate use	•	•	•
Password-protected parameterisation	•	•	•
Easy to configure using the ESY-Pen and ESY-App	•	•	•

### LIGHTING

Interface	Switching	Switching	Switching
Contact	normally open / non-floating	normally open / non-floating	normally open / non-floating
Switching capacity	230 V / 50 - 60 Hz 2300 W / 10 A (cos phi = 1), 1150 VA / 5 AX (cos phi = 0.5)	230 V / 50 - 60 Hz 2300 W / 10 A (cos phi = 1), 1150 VA / 5 AX (cos phi = 0.5)	230 V / 50 - 60 Hz 2300 W / 10 A (cos phi = 1), 1150 VA / 5 AX (cos phi = 0.5)
Zero-cross switching	•	•	•
Switch-off delay time (factory setting: 5 min.)	60 s...240 min	60 s...240 min	60 s...240 min
Impulse feature	•	•	•
Push button input	•	•	•

### TECHNICAL DATA

Nominal voltage	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz
Permissible ambient temperature during operation	-25°C...+50 °C	-25°C...+50 °C	-25°C...+50°C
Protection type	IP55	IP55	IP55
Protection class	II	II	II
Impact resistance	IK07	IK07	IK07
Dimensions	108 x 92 x 138 mm	108 x 92 x 138 mm	108 x 92 x 108 mm

# DEFENSOR TWILIGHT SWITCHES

## DEFENSOR TWILIGHT SWITCHES

Product group / product name	DEFENSOR TS T	DEFENSOR TS
Item no.	ED10025464	ED10025471



### FUNCTIONS

Time-dependent operating modes (factory setting: not defined)	•	
Push button input for manual ON/OFF and 4-hour/12-hour permanent ON/OFF	•	•
High overvoltage protection (surge 2 kV, burst 4 kV)	•	•
Smart factory settings mean device is ready for immediate use	•	•
Password-protected parameterisation	•	•
Easy to configure using the ESY-Pen and ESY-App	•	•

### LIGHTING

Interface	Switching	Switching
Contact	normally open / non-floating	normally open / non-floating
Switching capacity	230 V / 50 - 60 Hz 2300 W / 10 A (cos phi = 1), 1150 VA / 5 AX (cos phi = 0.5)	230 V / 50 - 60 Hz 2300 W / 10 A (cos phi = 1), 1150 VA / 5 AX (cos phi = 0.5)
Zero-cross switching	•	•
Push button input	•	•
Level of brightness (factory setting: 20 lx)	2 - 500 lx	2 - 500 lx

### TECHNICAL DATA

Power supply	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 - 60 Hz
Permissible ambient temperature during operation	-25°C...+50°C	-25°C...+50°C
Protection type	IP55	IP55
Protection class	II	II
Impact resistance	IK07	IK07
Dimensions	108 x 92 x 46 mm	108 x 92 x 46 mm

Product group / product name	Item no.	Product description	Dimensions
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### ACCESSORIES

<b>Mounting</b>			
DEFENSOR EDGE MOUNTING WH	EM10025419	Corner bracket for DEFENSOR series, white	107.5 x 91.5 x 31.2 mm
DEFENSOR EDGE MOUNTING AN	EM10025457	Corner bracket for DEFENSOR series, anthracite	107.5 x 91.5 x 31.2 mm
DEFENSOR SPACER WH	EM10025426	Spacer for DEFENSOR series, white	86.5 x 85.2 x 28 mm
DEFENSOR SPACER AN	EM10025433	Spacer for DEFENSOR series, anthracite	86.5 x 85.2 x 28 mm
<b>Remote control</b>			
ESY-Pen	EP10425356	ESY-Pen and ESY-App, two tools for every task: (1) parameterisation, (2) remote control (3) light measurement, (4) mobile project management	166 x 24 x 21.5 mm

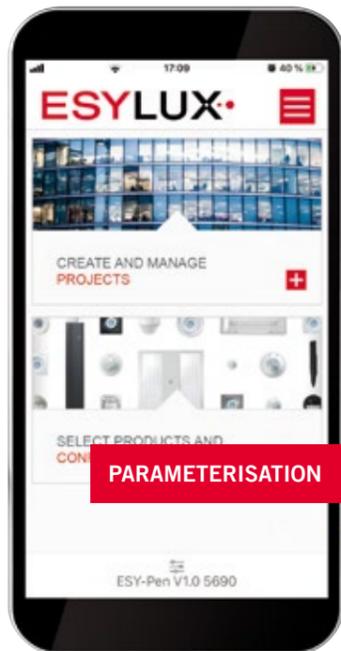
# ALWAYS READY WITH THE RIGHT TOOL

## EASY PARAMETRISATION, REMOTE CONTROL, LIGHT MEASUREMENT AND MOBILE PROJECT MANAGEMENT

Whether you use presence detectors, outdoor lights with motion detectors or lighting systems with ESYLUX Light Control, the ESY-Pen and the ESY-App ensure you always have the right tools for all remotely controlled ESYLUX solutions.

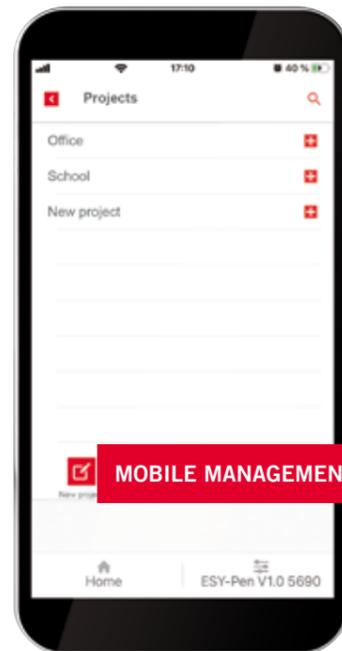


Bluetooth control for Android and iOS



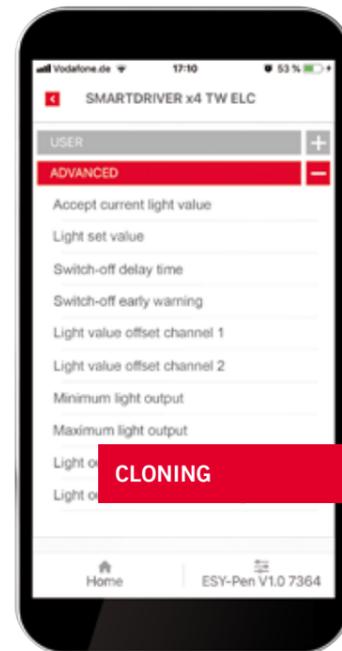
PARAMETERISATION

The ESY-Pen and the ESY-App make commissioning and parameterisation easy.



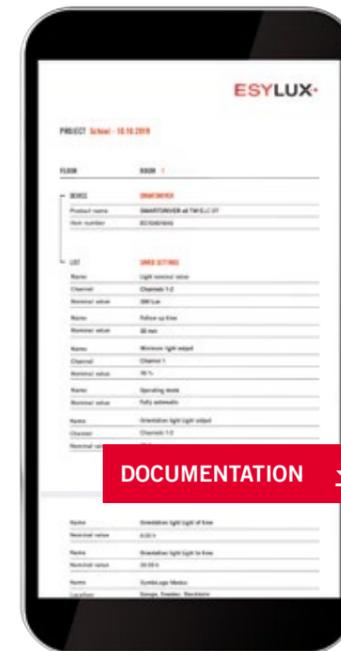
MOBILE MANAGEMENT

With the ESY-App, you have access to your project library at all times! And for optimum flexibility, you can create projects in your office and then easily transfer the configuration when at the construction site.



CLONING

Previously implemented configurations can be stored and transferred to products of the same type via the ESY-Pen using the cloning function.



DOCUMENTATION

The project documentation is integrated into a PDF report that can then be emailed and printed off as required.

## MOBILE PROJECT MANAGEMENT

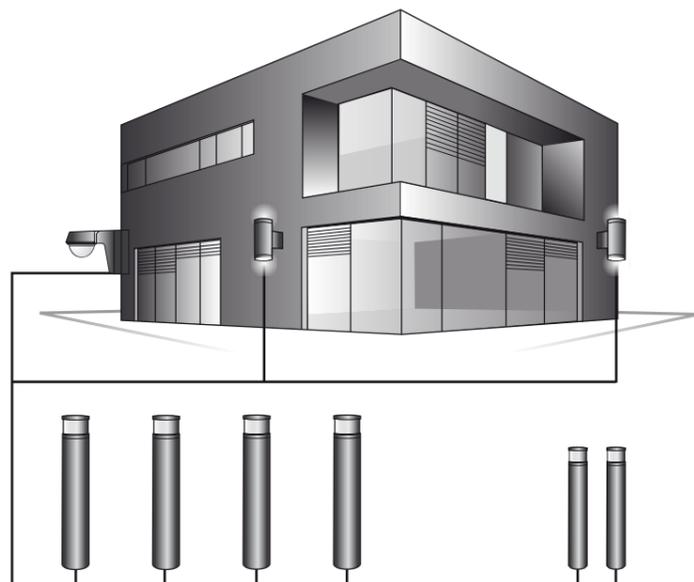
The ESY-Pen and the ESY-App allow users to save, access and transfer configured projects:

- Each project can be saved with a unique name and description in the ESY-App
- No project is too big for the ESY-App: Up to 64 floors can be created, each with up to 64 rooms and up to 64 devices per room
- Within the ESY-App, a few clicks take the user from the project to the room of their choice where they can quickly identify, select and configure ESYLUX products
- Configured projects can be stored in the ESY-App or forwarded on to other users as necessary. Previously stored configurations can be easily transferred to products of the same type via the ESY-Pen using the cloning function
- The project documentation is integrated into a project report that can then be sent as a PDF document and also printed off as required

# DURABLE SYNERGY

## ALVA OUTDOOR LIGHTS AND DEFENSOR

Even just the matching colour schemes and elegant design of the ALVA outdoor lights from ESYLUX makes them the ideal partner for the DEFENSOR series. Combine the DEFENSOR protection functions with an aluminium housing that is protected against sea air, a high level of impact resistance and the durability of the LEDs used, and you have an intelligent and extremely reliable lighting solution.



— 230 V

Controlling bollard lights and up-/downlights from the ALVA series using a DEFENSOR motion detector creates a lighting solution for outdoor areas that is every bit as intelligent as it is visually harmonious. Alternatively, or even in addition, the ALVA series includes bollard lights with integrated DALI motion detectors, for instance. ▲



### ALVA SERIES LED OUTDOOR LIGHTS

- Robust aluminium housing that is protected against sea air
- Dirt-resistant anti-graffiti effect
- Variants with integrated motion detector

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