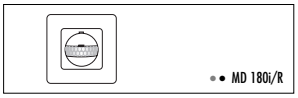
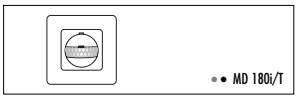
MOTION DETECTOR





ESYLUX www.esylux.com

GB • MOTION DETECTOR

Congratulations on your purchase of this high-quality ESYLUX product. To ensure proper operation, please read these user instructions carefully and keep them for future reference.

1 • SAFETY INSTRUCTIONS

CAUTION: Work on the 230 V power system must be carried out by authorised personnel only with due regard to the applicable installation regulations. Switch off the power supply before installing the system.

Use this product only as intended (as described in the user instructions). Changes or modifications to the product or painting it will result in loss of warranty. You should check the device for damage immediately after unpacking it. If there is any damage, you should not install the device under any circumstances. If you suspect that safe operation of the device cannot be guaranteed, you should turn the device off immediately and make sure that it cannot be operated unintentionally.

2 • DESCRIPTION

The relay model of the ESYLUX MD 180i/R and the ESYLUX MD 180i/T 2-conductor model/Triac are wall-mounted motion detectors with a 180° field of detection. Both motion detectors have an integrated acoustic sensor to allow optimum use in areas and transit areas where there is no clear visual coverage; they can be programmed by remote control, allowing quick and precise setting of a range of parameters without the need for tools.

3 • INSTALLATION / ASSEMBLY / CONNECTION

- The recommended installation height is 1,10 - 2,20 m. The greater the installation height, the greater the range. The sensitivity is, however, reduced. The sensor is at its most sensitive if approached diagonally. If approached directly or frontally it is more difficult for the detector to detect motion and the range is thus considerably reduced.
- The detector should be positioned as suits the local environment and conditions **(fig. 1a (1) Frontal approach to detector (2) Diagonal approach to detector)**.
- Switch off the mains supply before installing the product. The standard model is designed for recessed mounting **(fig. 2a/3a)**. The sensor inserts **(fig. 2b/3b)** can be combined with an IP 20 **(fig. 2)** or an IP 44 cover **(fig. 3)**. Covers are not supplied as standard and should be ordered separately. Connect sensor inserts **(fig. 2b/3b)** as shown in the circuit diagram **(fig. 4 or 5)** and install as shown in **fig. 2 or 3** depending on which cover is used.
  - **(4.1/5.1) Standard operating mode**
  - **(4.2) Standard operating mode with additional control using lock button. The light can be switched on and off manually as required using the button**
  - **(4.3) Master-Slave switch: The master switch switches connected loads depending on the set parameters. The slave devices only serve to detect the presence of persons. They send an impulse to the master device if motion is detected. The light is therefore only measured in the master device. Please therefore ensure that the master device is positioned accordingly. Up to 10 Slave devices can be connected to the master device.**
  - **(4.4) Parallel operation of up to 5 devices with MD 180i/R**
  - **(5.2) Parallel operation of up to 2 devices with MD 180i/T (max. 600 W, min. 80 W, resistive load only)**
  - **(5.3) Standard operating mode with additional constant light function using external switch**
  - **(5.4) Standard operating mode with additional option of switching manually**

NOTE: The "S/P" terminal can be used both as the external button input and as the slave device input.

- If surface mounting, a surface mounting box (accessory) is required **(fig. 2d/3d)**.
- **Note:** The installation claws **(fig. 2c/3c)** are to be removed if fitting with a hollow wall box or if using an IP 44 cover.
- The motion detectors also have a vertical field of detection; this can be deactivated using the cover plate supplied **(fig. 2e/3e)** , thereby avoiding inadvertent activation (e.g. by small animals) **(fig. 1b)**.

4 • STARTING UP

Individual settings can be simply programmed using the remote control **(fig. 7)** or manually using the programming elements **(fig. 6a - 6d)**.

- **Connecting mains voltage**
  An initialisation phase (warm-up) starts.
  This lasts approximately 60 seconds.
  The **red LED** signals the **channel** status = lighting
  Red LED flashes slowly (f = 1 Hz).
  The connected lighting is switched on.

- **LED display after warm-up phase**
  The level of light is below the set light value → the LED is then activated as a display for the motion detector = 2 brief flashes each time motion is detected **(red LED)**.
  The connected lighting is switched on.

NOTE: In operating mode, the red LED will only light up if it has not been disabled via the LED ON/OFF feature on the infrared remote control (see point 6). When disabled, it will only light up during the warm up phase and to acknowledge settings programmed with the infrared remote control.

The level of light is above the set light value → the **red LED** is switched OFF.
No display to indicate that motion is detected.
The connected lighting is switched OFF.

4.1 Operation
The lighting is automatically switched on if the detector is triggered by motion and the lighting level is below the set value. The acoustic function is not activated until the lighting is switched on.

The light automatically switches off if motion and/or sounds are no longer detected and when the set follow-up time has expired.

4.2 Manual lighting control
The lighting can be switched on at any time with the key on the infrared remote control or by the external switch (switch - operating current - with neutral wire connection), connected to the detector (MD 180i/R) with the "S/P"clip **(fig. 4.2)**.
The lighting can be turned on or off at any time using the infrared remote control key **(fig. 7)**.
The lighting remains switched on/off for as long motion is detected.
When no further motion is detected the detector does not return to the previous programming mode until the follow-up time has expired.

5 • SETTING BY PROGRAMMING ELEMENTS

- **Switch ON/OFF/AUTO (fig. 6a)**
  The lighting can be controlled as follows using the sliding switch:

  Position **ON** = lighting is permanently ON, the motion detector is not active.
  Position **OFF** = lighting is permanently OFF, the motion detector is not active.
  Position **AUTO** = Automatic mode, see section 4.1 Operation.

NB: The remote control can only be used in "AUTO" mode.

- **Adjuster: Follow-up time = lighting (fig. 6b)**
  The time can be selected between 15 seconds and 30 minutes.
  TEST: If the arrow is pointing to **"TEST"**, "test mode" is selected, i.e.:
  - The light value is deactivated.
  - When the detector is activated by motion, the **red LED** and the connected lighting repeatedly flash ON for 1 second and OFF for 2 seconds.

  : If the arrow is pointing towards , "short impulse" is selected, i.e.:
  - The detector reacts to motion and to the set value for the lighting level.
  - When the detector is activated by motion, the **red LED** and the lighting (relay 1) are repeatedly switched on for 1 second and off for 9 seconds.

- **Adjuster: Lighting values LUX = lighting (figure 6c)**
  The lighting values can be selected from 5 Lux to 2000 Lux.

  : Lighting value is approx. 5 Lux

  : Day/night operating mode

NB: When the current lighting level is reached by turning the LUX regulator (starting at the moon symbol), this is indicated by the red LED, which lights up (the LED thus acts as a programming aid). The LED automatically switches off after 30 seconds

- **Adjuster: Acoustic sensor (fig. 6d)**
  The acoustic sensor must be set manually.
  If the detector switches the lighting off once the follow-up ,time has expired, the light is activated again within max. 8 seconds by a call (noise). If the device is not mactivated for longer periods, it needs to be activated again by motion rather than by noise.
  This ensures that external noises do not inadvertently mswitch on the light.

  • Left position = max. sensitivity
  • Right position = acoustic sensor deactivated

  Set the acoustic sensor to suit the local environment (please bear in mind the volume of any stereos or TVs, etc – this is to prevent inadvertent activation). The **red LED** is an additional indicator to show if the acoustic sensor is activated.

6 • PROGRAMMING BY REMOTE CONTROL

NB: The remote control can only be used in "AUTO" mode.

The remote control Mobil-PDi/MDi **(fig. 7)** allows you to set the device conveniently from the ground, without the need for a ladder or tools.

The values of the programming elements **(fig. 6)** are overwritten when the remote control is used. All entries made by remote control are saved (EEPROM). If there is a power cut the values are not lost. If you press the RESET key when the infrared remote control is not locked, the information is deleted in EEPROM and the sensor works according to the programming elements **(fig. 6)**.

NB: The saved remote control entries are also lost if the programming elements (fig. 6) are changed: the value on the programmer is then active again.

To ensure the best reception, the remote control should be pointed towards the motion detector when programming. Please note that the standard range of approx. 6 m can be substantially affected by direct sunlight, on account of the infrared rays of the sun.

Key	Function
	Signal reception: - The **red LED** flashes for 2 seconds → the signal from the remote control has been understood. - The **red LED** flashes briefly 2 x → the signal from the remote control has not been understood.
	Lock programming mode Press this key to exit programming mode. The detector only reacts automatically in accordance with the set values. **NOTE: When programming mode is locked, only the LIGHT ON/OFF key, RESET and TEST button can be used, all other button are locked.**
	Programming mode open The programming mode is opened with this key. 1. The connected lighting is switched OFF. - Press the key; the lighting switches ON/OFF. The **red LED** is lit continuously, providing the detector is in programming mode. 2. The connected lighting is switched ON. - Press the key; the lighting switches OFF. The **red LED** is lit up continuously, providing the detector is in programming mode. **NB: If programming mode is not locked by pressing the , the detector automatically closes programming mode if no key is pressed for 10 minutes. The detector does not react to motion when in programming mode.**

Key	Function
	Programming the current lighting level as the value to switch the lighting on/off. • **The range of the current lighting level (between 5 - 2000 Lux) can be read in as the activation/ deactivation value.** **Please note:** Press in programming mode. Rapid flashing of the **red LED** shows that the current lighting level is too high (> 2000 Lux) or too low (< 5 Lux), i.e. the current lighting level cannot be programmed. • **Programming the current lighting level as the activation value (when the lighting is switched off)** Input method: When the required ambient light value is reached, press in programming mode. Confirmation of the signal received: the connected lighting switches ON for 2 seconds and the **red LED** flashes slowly. When this process has been successfully completed the lighting switches OFF and the **red LED** is continuously lit up.
	When programming the keys to indicate the lighting level "LUX", the signal is confirmed as follows: 1. The connected lighting is switched OFF. - Press the key; the lighting switches ON/OFF. The **red LED** flashes for 2 seconds. 2. The connected lighting is switched ON. - Press the key; the lighting switchesOFF/ON. The **red LED** flashes for 2 seconds.
10 LUX 2000 LUX	**Set activation value (10 Lux - 2000 Lux)**
Keypad c1	**When the keys "time value" and "test for channel" = lighting are operated, the signal is confirmed as follows:** 1. The connected lighting is switched OFF. - Press the key; the lighting switches ON/OFF. The **red LED** flashes for 2 sec. 2. The connected lighting is switched ON. - Press the key; the lighting switches OFF/ON. The **red LED** flashes for 2 sec.
PULSE	**Short impulse:** The detector reacts to motion and to the set value for the lighting level. When the detector is activated by motion, the **red LED** and the lighting are switched on for 1 second and off for 9 seconds.
1 min 15min	**Set follow-up time (1 minute - 15 minutes)**
TEST	**Test mode:** The light value is deactivated. When the detector is activated by motion, the **red LED** and the connected lighting switch ON for 1 second and OFF for 2 seconds.
ON/OFF	**Lighting ON/OFF** By pressing the key the lighting can be switched on at any time if it was previously switched OFF. If you repeat this process the lighting can be switched off (see section 4.2 Manual lighting control).
RESET	**Reset** • Press in programming mode to clear the information stored in the EEPROM. The detector will then operate according to the settings programmed using the device. • When programming mode is locked, press to disable the light. The detector will switch to the default settings.

Key	Function
ON/OFF	**LED ON/OFF** In programming mode, press the key to disable or enable the **red LED**. **The light acknowledges the signal as follows:** 1. The connected light is OFF. - Press the key, the light switches ON/OFF. 2. The connected light is ON. - Press the key, the light switches OFF/ON. **Function: Disable the LED:** - Press the button. The **red LED** will go out for 2 seconds. The **LED** is now disabled and will only light up during the warm-up phase and to acknowledge settings in programming mode. **Function: Enable the LED:** - Press the button. The **red LED** will flash for 2 seconds. The **LED** is now enabled again in operating mode.
4h ON/OFF	**Maintained lighting 4h ON/OFF for channel 1 = lighting** If the lighting is OFF, it can be switched on at any time for a duration of 4 hours by pressing the key. Press this key again to switch the 4 hour-lighting OFF. Once the 4 hours have expired, thedetector will switch back to the corresponding setoperating mode. You can interrupt the **4h ON/OFF** feature before the 4 hours have expired by pressing the key. **Note: the detector no longer enables the 4h ON/OFF feature when movement is detected and is not controlled by the light intensity value.**

7 • COMPATIBLE WITH STANDARD SWITCHES

The ESYLUX wall-mounted motion detectors can be combined with other standard switching programs. This requires the use of the individual or multiple frames **(fig. 8a)** and an intermediate frame **(fig. 8b)** for each switching program.
Specialist suppliers can provide intermediate frames for mounting standard devices according to DIN 49075 with a 50 x 50 mm cover.

NB: Colour variations are possible as the RAL information is provided with the word "similar" and the materials and surfaces may vary.

Please refer to our catalogue or our website at www.esylux.com for an overview/extract of the most common standard switching programs.

FIG. 1

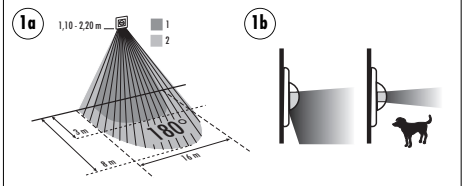


FIG. 2

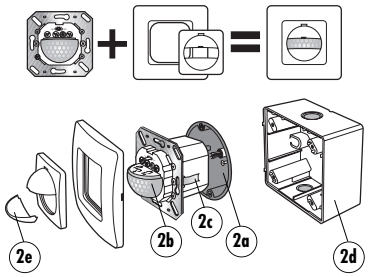


FIG. 3

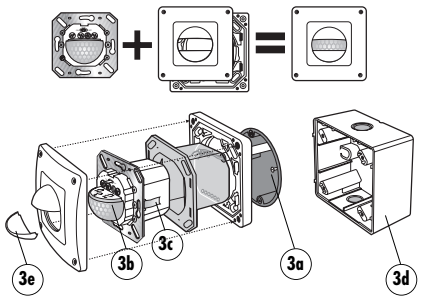


FIG. 4 MD 180i/R

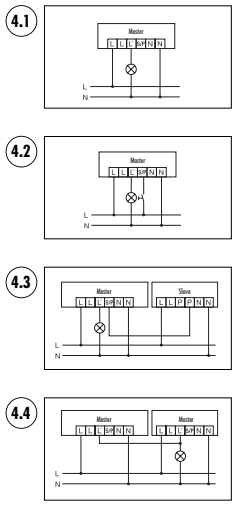


FIG. 5 MD 180i/T

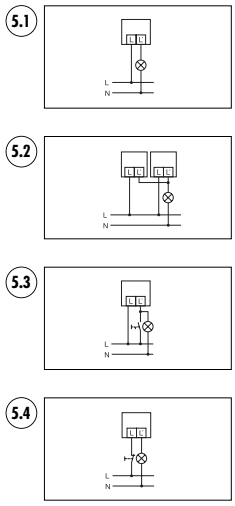


FIG. 6

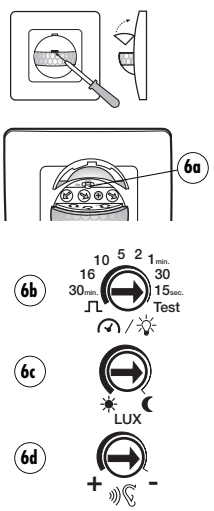
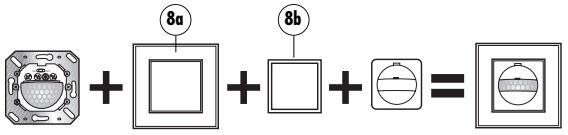


FIG. 7

Mobil-PDi/MDi
(Version 11/2007)

FIG. 8



8 • PRACTICAL ADVICE

Fault	Cause
Lighting does not switch ON or lighting switches despite motion and darkness	- Lighting value is set too low - Lighting was switched off manually - Person is not in the field of detection - Obstacle(s) affect(ed) detection - Set follow-up time too short
Lighting switches ON if motion is detected, even if the lighting level is sufficient	- Lighting value is set too high - Lighting has been recently operated manually - Detector is in test mode
Lighting does not switch OFF or lighting switches ON, even if there is no motion	- Wait for follow-up time - Thermal disturbance in field of detection: Patio heaters, halogen flood light/light bulb, moving objects (e.g. curtains at an open window), load (series connection unit relay) not suppressed
Light constantly switches ON and OFF in the warm-up phase	- Too much artificial light on the detector - Increase lighting value or reposition detector
Device does not react	- Check mains voltage

• TECHNICAL DATA

MAINS VOLTAGE	230 V ~ 50 - 60 Hz
FIELD OF DETECTION	180° horizontal, 60° vertical
RANGE	approx. 8 m, at an installation height of 1,10 - 2,20 m
SETTINGS	mechanically using setting controls, electronically using infrared remote control (accessory)
BREAKING CAPACITY	MD 180i/R 230 V ~50 - 60 Hz, 2300 W, 10 A (cos φ = 1), 1150 VA, 5 A (cos φ = 0,5), EVG: 30 x (1 x 18 W), 20 x (2 x 18 W), 25 x (1 x 36 W), 15 x (2 x 36 W), 20 x (1 x 58 W), 10 x (2 x 58 W) MD 180i/T 40 - 300 W, resistive load only minimum 40 W)
FOLLOW-UP TIME	impulse/approx. 15 seconds - 30 minutes
LIGHT EXPOSURE RANGE	5 - 2000 Lux
KEY INPUT	MD 180i/R = yes, MD 180i/T = no
SLAVE INPUT	MD 180i/R = yes, MD 180i/T = no
PROTECTION TYPE	IP 20, IP 44 depending on cover
PROTECTION CLASS	II
TEST SYMBOL	TÜV Süd
OPERATING TEMPERATURE RANGE	-25 °C…+55 °C
CASING	UV stabilised polycarbonate
APPROX. DIMENSIONS	width 70 mm, height 70 mm, depth 63 mm

Technical and design features may be subject to change.

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ESYLUX

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