

Observer-System 180 / 16

Order No. 0840 ..

Observer-System 240

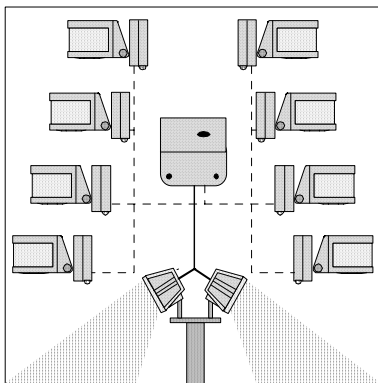
Order No. 0844 ..

System Power Booster

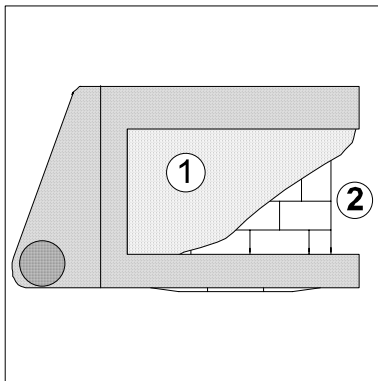
Order No. 0849 ..

Principle of Functioning

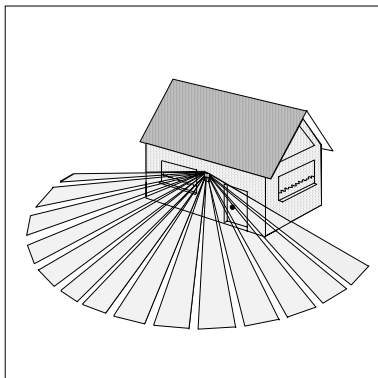
System sensors react to colloidal movement initiated by persons, animals or objects and transfer this information to the system power unit for evaluation and for connecting the consumer(s) concerned.



This observer system is recommendable whenever local conditions make several sensors necessary. Due to its simple connections the system may be extended to comprise up to a maximum of 8 sensors. Three system sensor types 180/16, 240, 180 UP (see "Observers" Operating Instructions) solve almost any detection problem. The consumer remains operative as long as movements are being detected. Otherwise, the observer system will be rendered inoperative after elapse of the delay preset. Optical displays become activated upon response of the devices. Both operating time and brightness value which renders the system operative when fallen below of, may be preset in the system power unit.

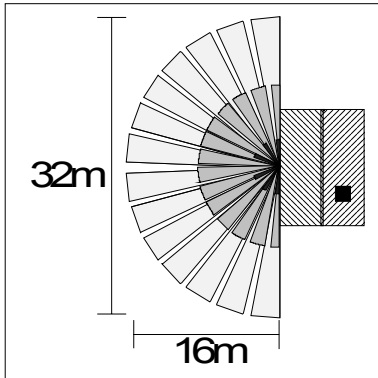


A protective foil ① in front of the lens system ② makes the equipment weather-proof and reliable in operation and ensures a high quality standard.



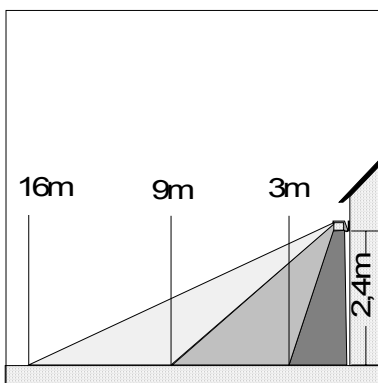
Detection Range System Sensor 180°/16

System Sensor 180°/16 designed for a dense semicircular detection range consisting of 3 levels with 144 switching segments.



Size of detection range: 16 m x 32 m, see illustration.

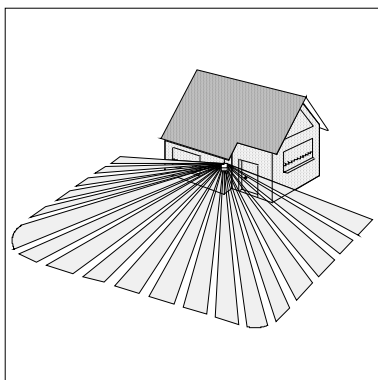
The grey shades in the illustration indicate the 3 observation levels.



The 3 observation levels are defined as follows:

Closeup range from	0 m to appr. 3 m
Medium range from	appr. 3 m to appr.9 m
Distant range from	appr. 9 m to appr.16 m

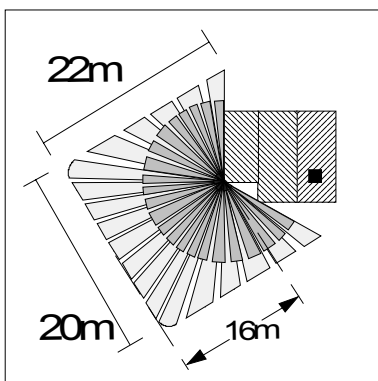
(Mentioned detection range refer to installation height of 2,40 m, sensor head not tilted, movement direction lateral to observer and sufficient temperature difference between moving body and environment.)



Detection Range System Sensor 240°

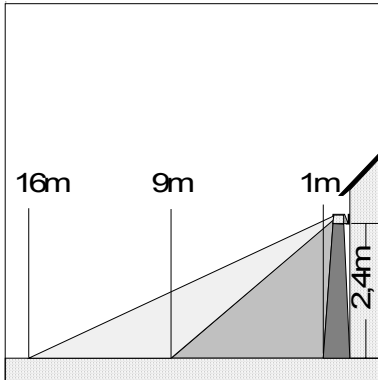
System Sensor 240°:

designed for a dense rectangular detection range consisting of 3 levels with 168 switching segments.



Size of detection range: 22 m x 20 m, see illustration.

The grey shades in the illustration indicate the 3 observation levels.



The 3 observation levels are defined as follows:

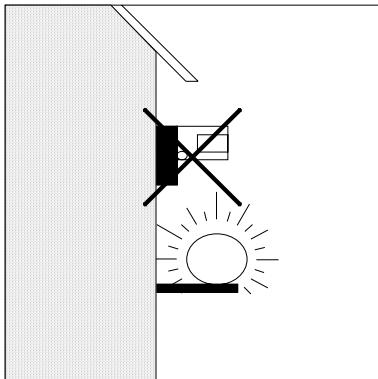
Closeup range	from 0 m to appr. 1 m
Medium range	from appr. 1 m to appr. 9 m
Distant range	from appr. 9 m to appr. 16 m.

realized with separate protection to prevent bypassing from below

(Mentioned detection range refer to installation height of 2,40 m, sensor head not tilted, movement direction lateral to observer and sufficient temperature difference between moving body and environment.)

Selection of Location

In order to ensure an optimal reach, install system sensors at 2,40 m height and laterally to the direction of walking. Otherwise, shorter detection ranges must be anticipated. Attention should be paid to interference sources e.g. animals, shrubs moving in the wind, motor vehicles or lamps within the detection range. If necessary, restrict the detection range of sensor with the attachment and masking diaphragms included in the supply.



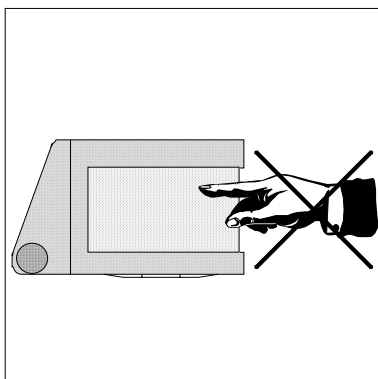
Installation

All screws and dowels required for installation are included in the scope of supply.

Attention! Electrical equipment may be installed by skilled electricians only.

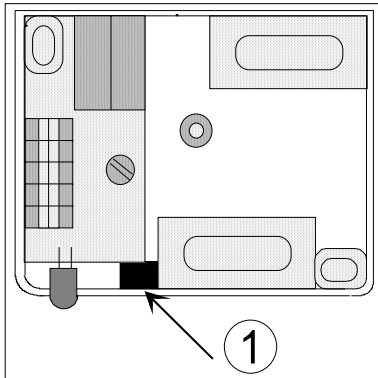
Do not install directly above a lighting fixture. Luminous substances cooling down may be considered as an alteration of heat and may cause the system to be reactivated.

Choose the most suitable location. The detection range should not be restricted by walls, fences, bushes etc.



Do not touch sensor window and do not expose sensor window to incident sunlight. Sensors will be destroyed when subjected to excessive thermal energy.

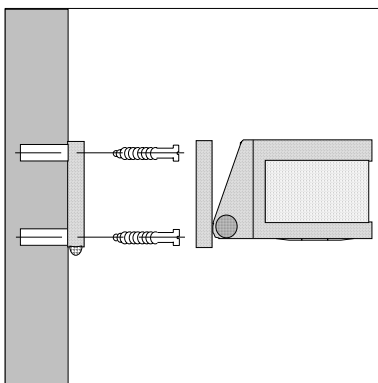
Make sure to install the system sensors free from vibration, since sensor vibration may also cause the system to become activated.



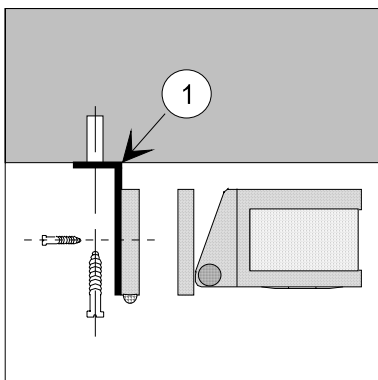
Installation of System Sensors

Open condensate water drain hole ① prior to installation (not in case of installation in a dust-laden environment).

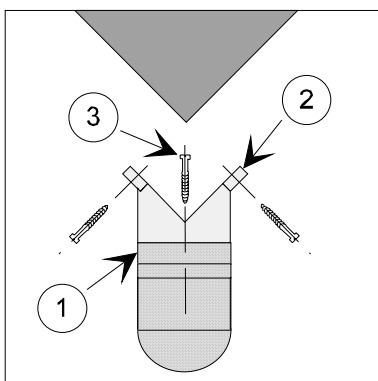
Introduction of leads both from above and from below. In case of non-protected installations we recommend lead entry from below.



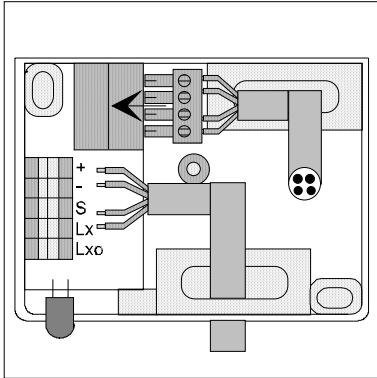
For installation of system sensor secure junction box of the device by means of 2 screws.



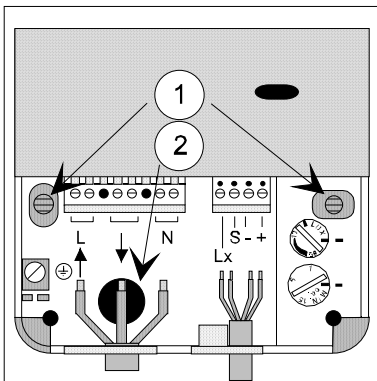
For installation of system sensor below ceilings use a separate accessory part "Mounting Angle" ①. Attach mounting angle to the ceiling with 2 screws and secure sensor junction box in place using the center screw.



For installation of the system sensor at building corners use the special accessory "Corner Part" ②. Connect sensor junction box ① with corner part ② by means of center screw ③ and then attach corner piece at the building corner using two screws.

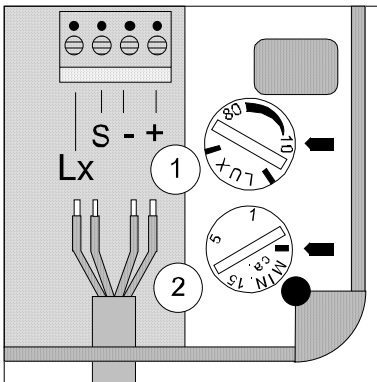


1. Introduce connecting line and connect it to the appropriate terminal as shown in wiring diagram.
2. Fit sensor plug onto the contacts in junction box.
3. Attach sensor housing on junction box by means of center screw.



Installation of System Power Unit

1. Remove cover of junction box by loosening both screws. (In case of lead introduction from the rear, press-fit grommet ② and insert lead.)
2. Secure device in position with two screws ①.
3. Introduce leads into the junction box and connect them **according to wiring diagram**.
4. A connecting terminal is supplied with the device for looping-in the leads.
5. Close cover of device.

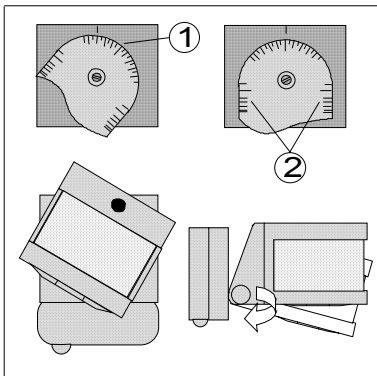


Settings

The **brightness setting device** ① is located in the connection compartment of system power unit. Recommendation: When set to 10 LUX as shown in the illustration on the left, the device will become operative in the dusk.

Time setting device ②

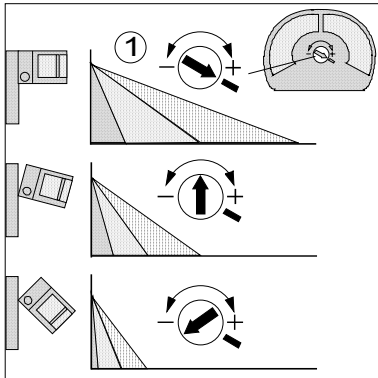
Setting range from appr. 4 seconds to appr. 15 minutes.



Detection Range Setting:

In order to adapt the detection range of system sensors to the local conditions prevailing, the sensor head may be tilted and rotated.

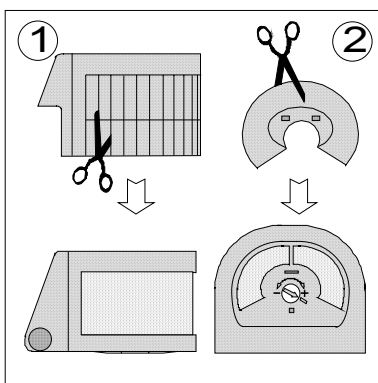
For opening and closing of the sensor junction box it will be necessary to have the sensor head tilted. To this effect, the angle of rotation ① and the tilting angle ② will be indicated on a scale on the system sensor housing, and the desired position will be reproducible at any time.



Besonderheit:

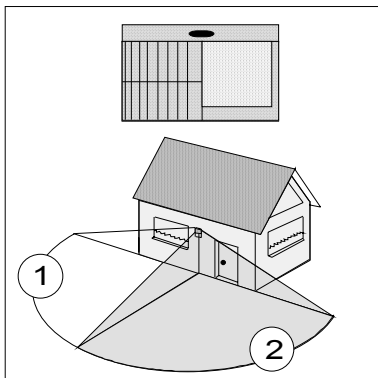
Special note:

In case of the 240° system sensor the sensitivity will be adjustable as a function of the inclination of sensor head. In case of a shorter detection range, the sensitivity should be reduced. Initially, select the maximum sensitivity stage as shown under (1) and then determine and adjust the desired value by pacing through the detection range in the course of functional testing.



Application of Attachment and Masking Diaphragms

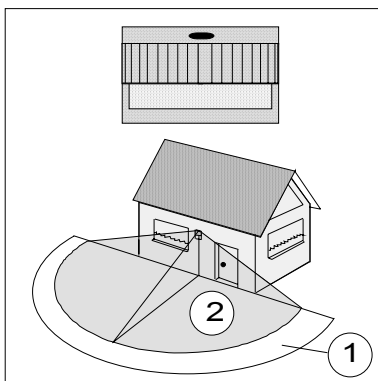
The diaphragms included in the supply permit interference sources to be eliminated by restriction of the detection angle. To this effect, cut out attachment diaphragm ① and slide it onto the sensor head and/or in case of observers 240° additionally cut out masking diaphragm ② and position it on the protection to prevent bypassing from below.



Example Observer 180°/16:

① : Range blanked

② : Range observed

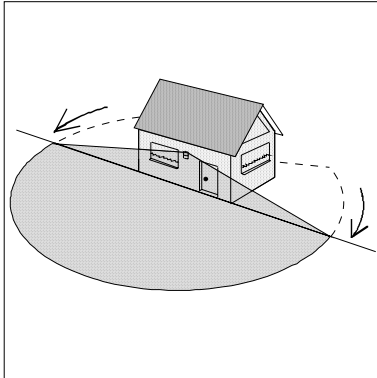


In order to blank the distant range, cut out the lower diaphragm blades only.

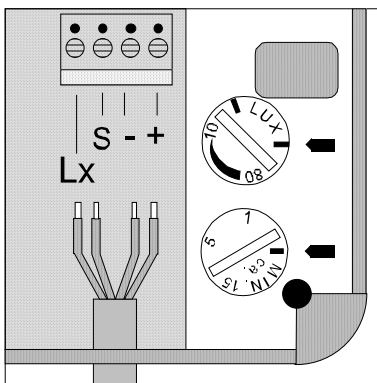
Example Observer 180°/16:

① : Range blanked

② : Range observed

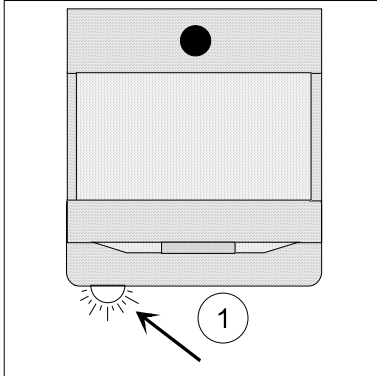


When the detection angle of the system sensor employed is greater than actually required under the given conditions (e.g. installation of 240° system sensor on a straight building wall), the detection angle shall be restricted by use of the attachment and masking diaphragms. Otherwise, detection of building wall at shortest distance will result in faulty alarms.

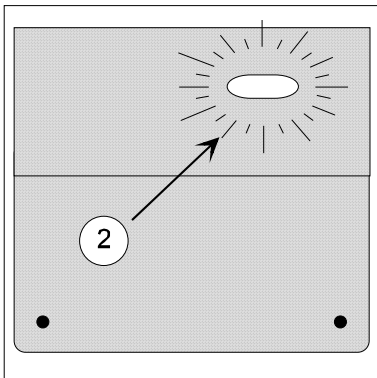


When the detection angle of the system sensor employed is greater than actually required under the given conditions (e.g. installation of 240° system sensor on a straight building wall), the detection angle shall be restricted by use of the attachment and masking diaphragms. Otherwise, detection of building wall at shortest distance will result in faulty alarms.

Time setting appr. 4 seconds
 Brightness setting Daylight operation Limit off



The optical display of system sensors ① will indicate the detection of colloidal movements as a function of brightness and transfer of this information to the system power unit.



The optical display of system power unit ② indicates the activation of consumers.

Attention!

Upon disconnection of the system power unit, wait for approx. 3 seconds before reactivation, in order to prevent reactivation due to cooling down of the lamp.

Reactivation will be possible by reflection of heat radiation from the lighting fixture or due to too short a distance between the system sensor and the lighting fixture. A switching operation of the power unit will always be initiated (irrespective of the setting of brightness regulator) upon any application of mains voltage.

Should this not be desirable for your system, an additional switch should be installed as shown in the wiring diagram.

WIRING DIAGRAMS

1. Connection of System Sensors:

Connection in parallel according to Figure ① or in star as shown in Figure ②. Mixed configurations are also permissible.

Telecommunication lines such as JY-ST-Y 2x2x0.6, JY-ST-Y 2x2x0.8 or YR 4x0.8 are recommended for connection of the system sensors.

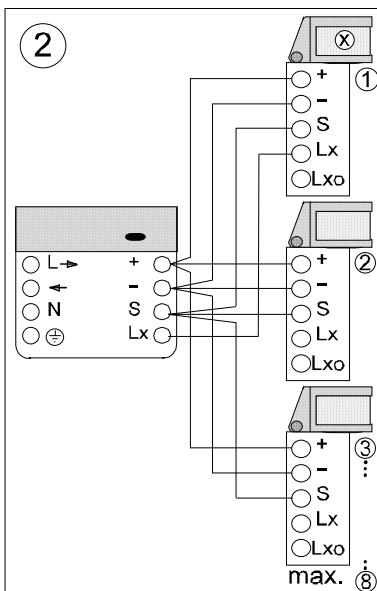
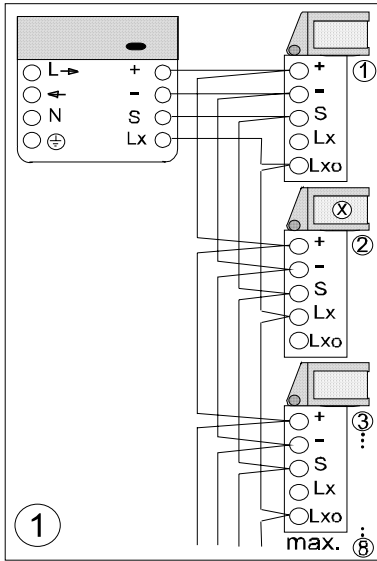
Signal definition:

+, -: Supply of system sensors with extra-low voltage

S: Switching signal of system sensors

Lx: Output signal of brightness feelers in the system sensors.

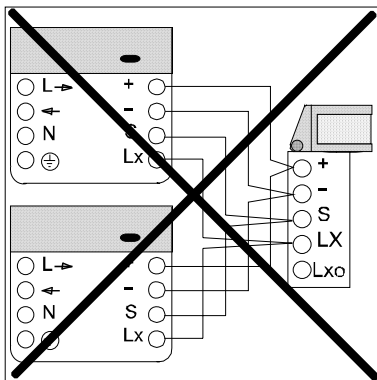
Lxo: Non-connected terminal which may be used for looping through the Lx signal.



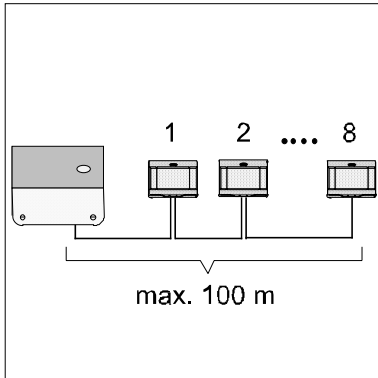
Attention!

Each system sensor has a brightness feeler, but within one single system the brightness feeler of **one** system sensor only may be connected, i.e. the "Lx" terminal of **one single** system sensor will be occupied. It is **only this one single** system sensor that will measure brightness and transmit the measured value to the system power unit for evaluation.

In Figures ① and ② the system sensor with activated brightness feeler is marked with "x".

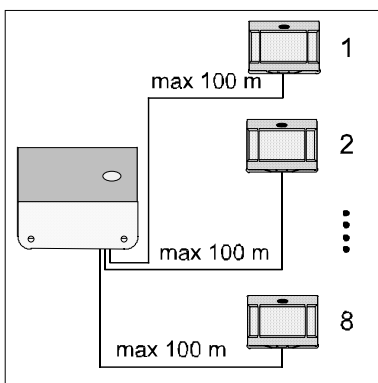


The connection of several system power units to one system sensor line is not permissible and will result in improper functioning. Use relays to increase the connected load.

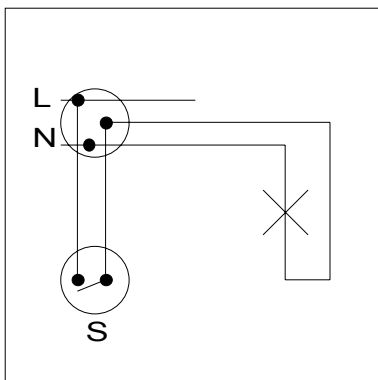


Maximum length of system sensor lines:

a) Connection in parallel:
 Keep line losses small. To this effect, do not exceed a maximum line length of 100 m between system power unit and the last system sensor.

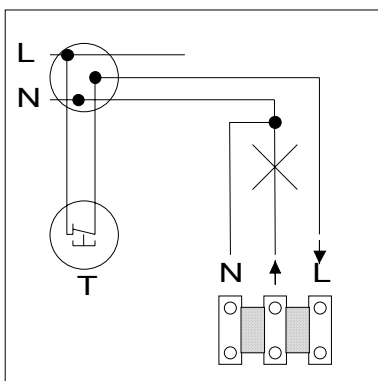


b) Connection in star:
 Keep line losses small. To this effect, do not exceed a maximum line length of 100 m between system power unit and every system sensor.



2. Connection of System Power Unit and Consumers.

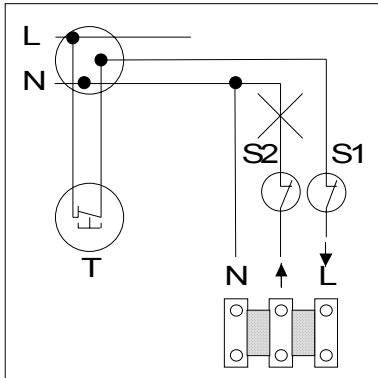
Existing installation



Connection of System Power Unit:

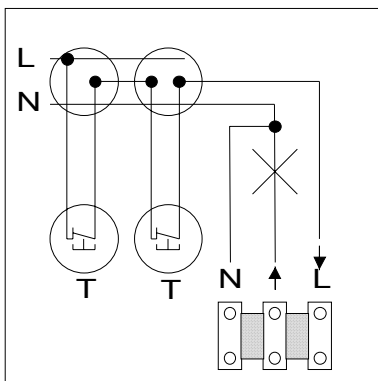
Replace switch "S" by momentary-contact "T" (normally closed contact).

Switching of the observer system will be initiated upon actuation of the momentary-contact for at least 1 second.



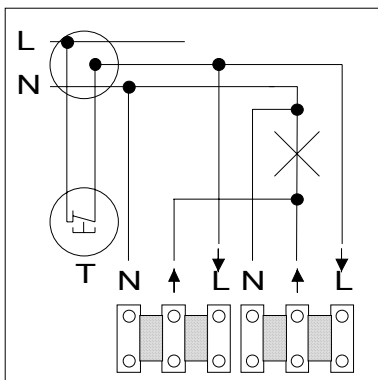
Disconnection of Observer System:

The observer system may be rendered inoperative by means of switch S1 or S2. Upon reactivation of the system switch S1 will initiate a switching operation whereas this is not the case with switch S2.



Two-way circuit:

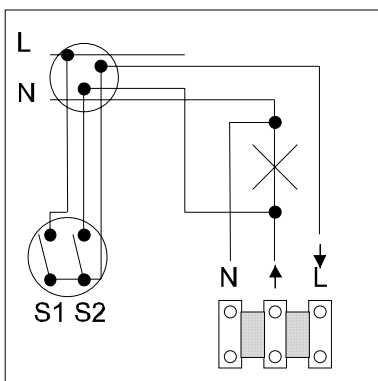
Existing two-way switches may be replaced by momentary-contacts "T" (normally closed contacts).



Connection of several observer systems to one consumer: Momentary-contact "T" (normally closed contact)

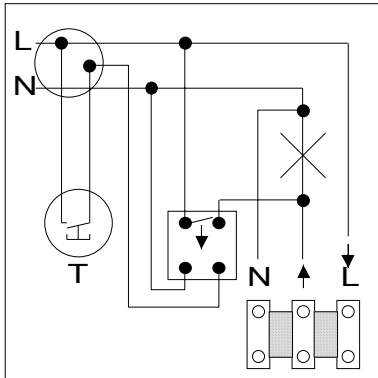
(System sensor lines of 2 or more observer systems must not be interconnected!)

Attention! Maximum connected load will not be increased by connection in parallel.



Automatic/Manual operation with two-circuit switch

S1 open, S2 open:	all OFF.
S1 closed, S2 open:	normal automatic operation.
S1 closed, S2 closed:	steady light, manual operation, observer system inoperative.



Connection in parallel with staircase lighting timer and/or remote control switch

Lighting will be switched on either via the staircase lighting timer or via the observer system.

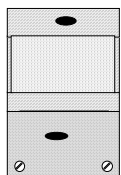
Technical Data:

1. System Power Unit

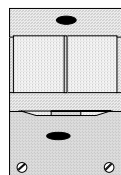
Rated voltage:	230 V +6%,-10%, 50 Hz
Switch contact:	Relay
Switching capacity:	
Incandescent lamps	2500 W
HV halogen lamps	2500 W
Fluorescent tubes	
Uncorrected	1200 W
Corrected in parallel	920 W
Twin-lamp circuit	2400 W
Wattage:	1,1 W
Temperature range:	- 25 °C bis 55 °C
Inrush current:	max. 20 Amps.
Operating time:	appr. 4 seconds to appr. 15 minutes. Retriggering, accuracy +/- 10 %
Brightness Setting:	appr. 3 to appr. 80 Lux Accuracy +/- 35 %
Type of protection:	IP 55, splash-water protected
Interference suppression:	according to VDE 0875, Part 1 / 12.88

2. System Sensors:

Rated voltage:	Extra-low voltage
Wattage:	appr. 60 mW
Temperature range:	- 25 °C bis 55 °C
Detection ranges:	
System-sensors 180°/16	16 m x 32 m
System-sensors 240°	22 m x 20 m
Sensitivity:	
Observers 180°/16:	set ex works
Observers 240°:	infinitely variable
System sensor installation height	
Sensors:	ca. 2,40 m
System sensors line:	
	JY-ST-Y 2x2x0,6
	JY-ST-Y 2x2x0,8
	or YR 4x0,8
	max. 100 m length
Number of system sensors:	max 8
Type of protection:	IP 55 splash-water protected.



180°/16



240°

Annex

1. Notes

The observer system is not protected against acts of sabotage and therefore not suitable as an alarm system. The system sensors for surface wiring may also be combined with system sensors for underplaster wiring. Please also pay attention to our compact devices 70°, 110°, 180°/10, 180°/16, 240°. With these observers the sensors and the power unit are combined to form one single unit. This permits minimum dimensions to be achieved at high switching capacities.

2. Fault Analysis List

Fault Analysis List	Possible Cause	Remedy
No lighting		
Power unit diagnosis light ON	Defect of lamp	Replace lamp
System sensor diagnosis light ON when detection activated	Brightness value setting of reference sensor not fallen below of	Check brightness setting and correct, if necessary
Power unit diagnosis light OFF	Line interruption between system sensor and power unit	Check line/installation
System sensor diagnosis light permanently OFF	No supply voltage	Check circuit breaker and mains voltage
Power unit diagnosis light OFF	Series momentary-contact defective	Replace momentary-contact
	Incorrect setting of detection range	Check detection range (e.g. by pacing through detection area)
Steady light		
Power unit diagnosis light ON	Continuous movement within the detection area	Restrict detection area by tilting and/or using attachment and masking diaphragms
	System sensors not installed free from vibration	Install system sensors free from vibration
	Preset operating time not yet elapsed	Correct operating time, if necessary
Power unit diagnosis light OFF	Power unit bridged by switch	Set switch to automatic operation
Light switching ON and OFF at random	Lamp within detection area Heat radiation of lamp causes activation	Eliminate heat sources or restrict detection area
	Animals passing through detection area	No fault
Self-activation	Power supply failure. Observer activated upon restoration of power supply.	No fault
	Optical system exposed to direct or changing radiation of the sun	Protect optical system from direct exposure to sunlight by tilting, inclination, attachment or masking dia.
	Heat is being reflected from bright walls within the detection area	Restrict detection range by excluding the walls

Fault Analysis List	Possible Cause	Remedy
Self-activation	Temperature variations e.g. due to windows, cellar pits, wind, gale, rain, snow, or cars	Restrict detection range or select more suitable location, if necessary
	Trees or shrubs moving in the wind cause activation	Take objects out of detection range by using the attachment and masking diaphragms
Observer reach too short	Excessive inclination of system sensors	Optimal realignment of system sensors
	Optical system contaminated	Clean optical system
	Movement too slow or directly in the direction of observer	Select more suitable location, if necessary
Lighting switched on at nightfall remains ON during daytime	Observer is continuously detecting movements	Set limit switch to "90 minutes"
Lighting switched OFF despite movements being detected	Set limit switch to "90 minutes"	Set limit switch to "OFF"

Should the problem still remain after having checked the above points, return the unit to the manufacturer for examination. Please include a description of the problem involved.

If installation of the observer systems results in permanent short-circuiting of the power supply to the system sensors, this will cause overheating and disconnection of the power unit. In such a case eliminate short-circuit and allow the power unit to cool down. Thereafter, the device will again be ready for operation. All devices are protected against the ingress of water and weatherproof. Rain, fog or snow, however, may slightly reduce the detection range because of the absorption of heat radiation.

Acceptance of guarantee

We accept the guarantee in accordance with the corresponding legal provisions.

Please return the unit postage paid to our central service department giving a brief description of the fault:

Gira
 Giersiepen GmbH & Co. KG
Service Center
 Dahlienstrasse 12
 D-42477 Radevormwald



The CE sign is a free trade sign addressed exclusively to the authorities and does not include any warranty of any properties.

Gira
 Giersiepen GmbH & Co. KG
 Postfach 1220
 D-42461 Radevormwald

Telefon: +49 / 21 95 / 602 - 0
 Telefax: +49 / 21 95 / 602 - 339
 Internet: www.gira.de