

- ▶ 1-channel amplifiers
- ▶ multi-channel multiplexers
- ▶ automatic amplifiers
- ▶ measuring amplifiers
- ▶ transmitters and receivers
- ▶ fiber optics
- ▶ housings and accessories

**high performance through-beam sensors**

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**NOTES**

A large grid area for taking notes, consisting of a 20x30 grid of small squares.

dimensions                    **38.5 x 90 x 58.5mm**  
to  
**158.5 x 90 x 58.5mm**

through-beam sensor    operating range                    **up to 60m**

**sensor**

- ✓ plastic housing Ø 10mm
- ✓ nickel-plated brass sleeve or stainless steel M12x1mm
- ✓ aluminum housing 12mmx12mm
- ✓ connection to amplifier
- ✓ threaded devices acc. to European standards
- ✓ large sensing ranges

**amplifier**

- ✓ relay or short-circuit protected semiconductor relay
- ✓ alignment aid via test function
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ up to 4 different transmitting frequencies selectable
- ✓ turn-on and turn-off delay
- ✓ 2 different transmit powers selectable
- ✓ selectable light-on / dark-on mode
- ✓ auto-monitoring



**combination of sensor and amplifier  
up to 60m operating range**



**description**

The high-performance sensor systems have been engineered specifically for applications where conventional light barriers have reached their limits. With their extreme resistance to soiling and long operating range, they are ideally suited for the most demanding applications, for which only compromise solutions existed up to now. Thanks to the high performance of the systems, significant penetration is ensured even under conditions of heavy soiling. Chips, dust, flour, oil or dirty water no longer present any obstacle. They are thus perfectly suited for applications in the wood and paper industry, for car-washes, for the control of bulk materials, in elevators, for door controls out in the open,

in the food processing industry, etc. Each system comprises one transmitter, one receiver and one amplifier. The transmitters and receivers, in various very compact robust designs, can be accommodated in any construction. Their large angle of beam spread facilitates their alignment with each other even for operating ranges of 60m. At the same time they are insensitive to vibration, shock and a resulting loss of alignment. The high level of user-friendliness is underlined by the ease of installation of the amplifier and sensors as well as by the uncomplicated operation of the devices.

The OV6x series is a further development of the tried and tested amplifiers of the OV58 and OV59 series. Cased in modern housings with top hat rail installation, the processor controlled devices work with modulated infrared light, thus allowing a high level of security against external light. The circuit is configured in such a way that only signals with the correct frequency and phase position are recognized.

### alarm display

see alarm output

### alarm output "alarm" and/or "limit"

A signal is transmitted before the power limit is reached. The red LED on the amplifier lights up at the same time. The system nevertheless continues to be fully functional.

### output signal (analog)

The output signal (analog) helps with the alignment of the sensors and provides a voltage of 0 ... 10V DC, which is proportional to the signal received.

### automatic operation

The automatic amplifiers represent a logical further development of the light barrier amplifiers. The amplifiers automatically adapt the transmitting power to the existing environmental conditions, constantly and fully compensating for any interference acting on the system. The switching point is constant over the full power band width and reproducible.

### error output

see permanent sensor monitoring

### transmit power

Some devices have selectable output ranges.

### intensity display

The green intensity display is permanently lit whenever the transmitting power is sufficient. If the display flashes or goes out completely, then the transmitting power has been set too low, the transmitter and/or receiver lenses are too heavily soiled, the distance between transmitter and receiver is too great, or the transmitter and receiver are misaligned beyond the tolerance limits.

### light curtain (only OV64 and OV65)

A switching output selected in the menu will react in the case that one of the light barriers is interrupted.

### manual operation

Using the control the user can set the transmitting power to the desired level. Any change of the environmental conditions requires a readjustment.

### master-slave operation (only OV64 and OV65)

The number of light barriers can be increased even further by connecting multiplexers in series.

### permanent sensor monitoring

This device signals any sensor error occurring during operation (short-circuit or interruption) by the lighting up of LEDs specifying the error and sensor type. On some versions an additional error output will become active.

Apart from 1-channel amplifiers, devices are also realized with 2, 4 or 8 channels, working in multiplex mode. In the versions that have many features, the transmitting power can be set manually or automatically. An optionally available PC software for the 4- and 8-channel versions allows convenient operation.

### regulation active display

The green regulation active display is permanently lit while the automatic regulation of the transmitting power is active. Whenever it extinguishes, the regulation has been stopped.

### relay output (only OV63)

The relay output, executed as a floating changeover contact, reacts to any interruption of the light barrier.

### switching output

The switching output, a short-circuit protected semi-conductor relay (normally open), reacts to the interruption of the light barrier.

### switching reaction (OV634915, OV64 and OV65)

A choice can be made between a permanent (delayed) reaction to the interruption of the light barrier or an output pulse with a settable pulse length of 0 ... 10s.

### switching function

It describes the behavior of the switching output during an interruption of the infrared beam. In the dark-on mode „dark“ an output signal is generated if the light path is interrupted. In the light-on mode „light“ it is generated if the light path is uninterrupted.

### switching delay (OV634915, OV64 and OV65)

The turn-on delay or turn-off delay delays the reaction of the relay output by a time that is adjustable between 0 ... 10s.

### switching state display

The yellow switching state display lights up when the switching output or the relay output is active.

### transmitting frequency

The transmitting frequency is the frequency with which the light of the transmitter has been clocked. Some versions can be operated with different frequencies.

### transmitter and receiver connections

All transmitter and receiver connections of the amplifiers have short-circuit protection. Even in case of an unintentional short-circuit it is impossible to damage the inputs.

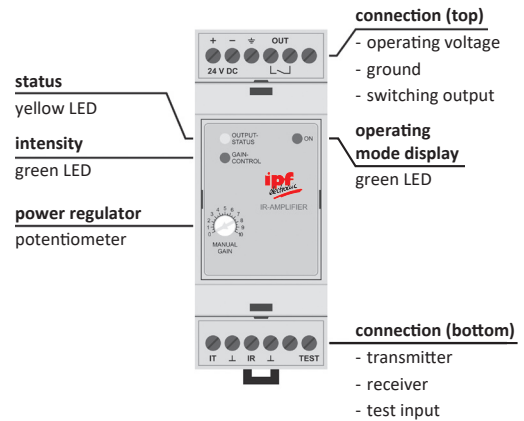
### test input

To test the functionality of the system, it is possible for example to switch off the transmitter using a PLC, in order to test if a status change is taking place on the relay or on the transistor output of this amplifier.

### test function

The amplifier signals the user whether or not an error has occurred at the transmitter or the receiver. If no errors are present, the test function indicates the path quality. An LED serves as an indicator. It can flash one to ten times, whereby the number of flashes is proportional to the received signal.

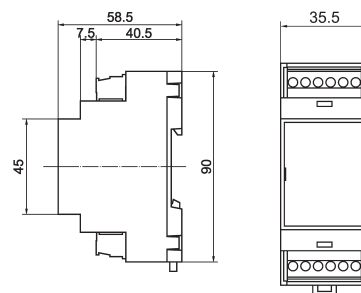
- ✓ up to 55m operating range
- ✓ sensitivity adjustable with potentiometer
- ✓ relay output 60V / 100mA - short-circuit protection
- ✓ test input for disabling the transmitter



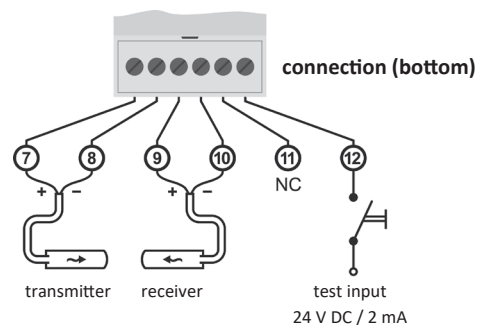
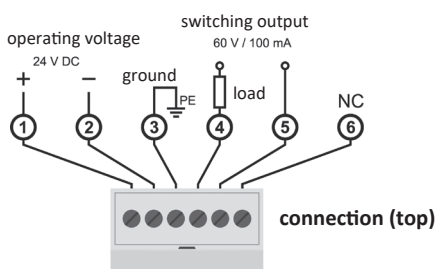
1

TECHNICAL DATA	1-channel amplifier, relay output
article-no.	OV620880
operating voltage	24V DC / ±20% / 2.4W
transmitting element (pulsed)	infrared: 4.0kHz
transmitting power	manual adjustment
output signal	light-on mode
transmit power	-
turn-on/off delay	-
relay output	1 normally open contact: 60V DC (AC) / 100mA
readiness delay	24ms
alarm output	-
output signal (analog)	-
test input	max. 24V DC / 2mA
operating range (stand./incr./max.)	15/25/55m (7/10/20m for OE126303)
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	screw terminals

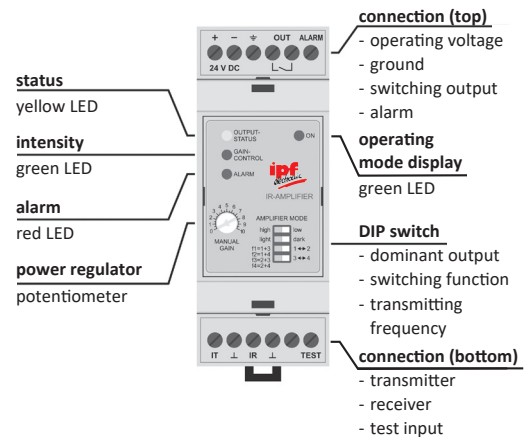
**dimensional drawing**



**connection**



- ✓ up to 55m operating range
- ✓ 4 different transmitting frequencies selectable
- ✓ sensitivity adjustable with potentiometer
- ✓ high / low transmit power selectable
- ✓ relay output 60V / 100mA - short-circuit protection
- ✓ selectable light-on / dark-on mode
- ✓ alarm output for power limit
- ✓ test input for disabling the transmitter



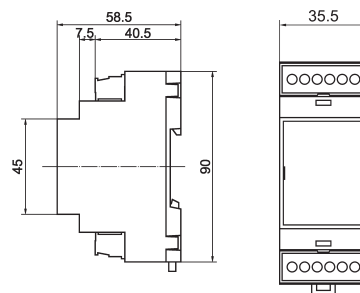
TECHNICAL DATA	1-channel amplifier, relay output, alarm output
article-no.	OV620800
operating voltage	24V DC / ±20% / 2.4W
transmitting element (pulsed)	infrared: 3.5 / 3.8 / 4.0 / 4.5kHz
transmitting power	manual adjustment
output signal	light-on mode / dark-on mode
transmit power	low / high
turn-on/off delay	-
relay output	1 normally open contact: 60V DC (AC) / 100mA
readiness delay	24ms
alarm output	pnp, 24V DC, 100mA
output signal (analog)	-
test input	0 ... 30V DC
operating range (stand./incr./max.)	15/25/55m (7/10/20m for <b>OE126303</b> )
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	-25...+50°C
connection	screw terminals

### DIP switch position

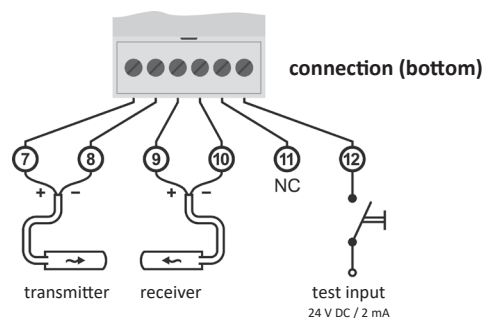
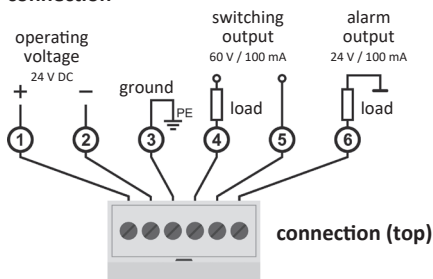
1	transmit power	high	low
2	switching function	light	dark
3	transmitting frequency	3.5kHz	3.8kHz
		4.0kHz	4.5kHz
4			

Manufacturer's settings highlighted gray.

### dimensional drawing

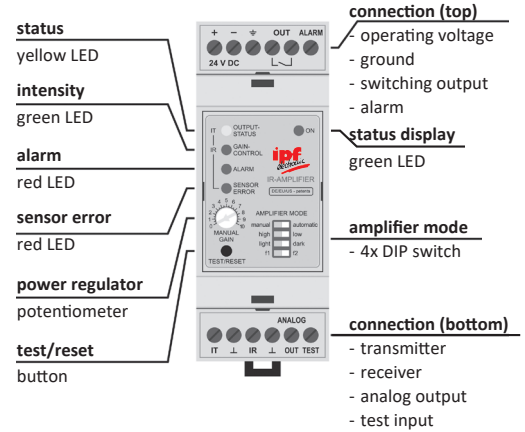


### connection





- ✓ up to 55m operating range
- ✓ 2 different transmitting frequencies selectable
- ✓ selectable manual / automatic operation
- ✓ high / low transmit power selectable
- ✓ relay output 60V / 100mA - short-circuit protection
- ✓ selectable light-on / dark-on mode
- ✓ output signal (analog) for testing and alignment
- ✓ alarm output for power limit
- ✓ test input for disabling the transmitter
- ✓ test function
- ✓ permanent sensor monitoring



1

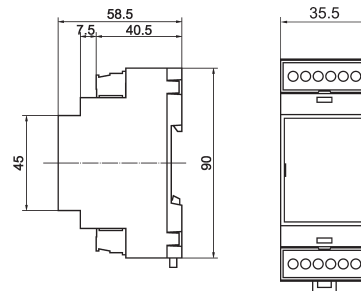
TECHNICAL DATA	1-channel amplifier, relay output, alarm output, output signal (analog)
article-no.	OV620810
operating voltage	24V DC / ±20% / 2.4W
transmitting element (pulsed)	infrared: 3.7 / 4.3kHz
transmitting power	manual / automatic adjustment
output signal	light-on mode / dark-on mode
transmit power	low / high
turn-on/off delay	-
relay output	1 normally open contact: 60V DC (AC) / 100mA
readiness delay	24ms
alarm output	pnp, 24V DC, 100mA
output signal (analog)	0 ... 10V DC
test input	0 ... 30V DC
operating range (stand./incr./max.)	15/25/55m (7/10/20m for OE126303)
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	screw terminals

**DIP switch position**

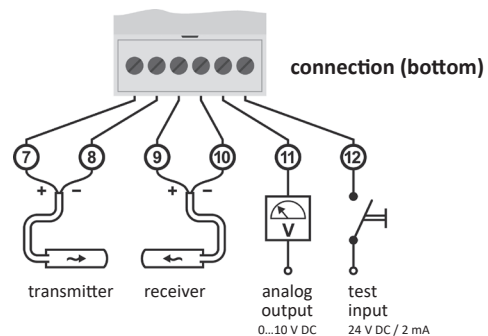
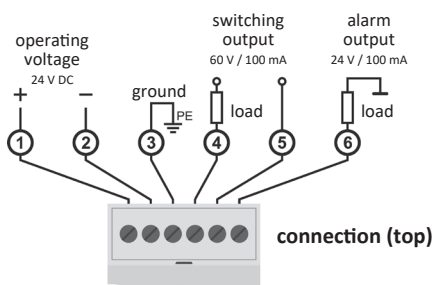
1	operational mode	manual	manual
2	transmit power	high	low
3	switching function	light	dark
4	transmitting frequency	3.7kHz	4.3kHz

Manufacturer's settings highlighted gray.

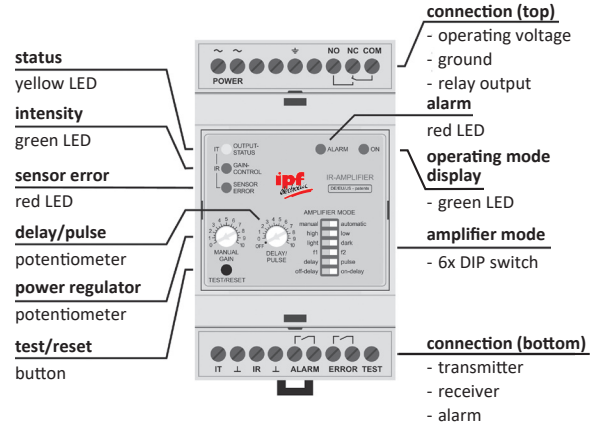
**dimensional drawing**



**connection**



- ✓ up to 50m operating range
- ✓ 2 different transmitting frequencies selectable
- ✓ selectable manual / automatic operation
- ✓ high / low transmit power selectable
- ✓ relay output, 1 change-over contact
- ✓ selectable light-on / dark-on mode
- ✓ turn-on and/or turn-off delay or pulsed switching reaction of the relay
- ✓ alarm output for power limit
- ✓ test input for disabling the transmitter
- ✓ test function
- ✓ permanent sensor monitoring



### TECHNICAL DATA

### 1-channel amplifier, relay output, alarm output, time delay

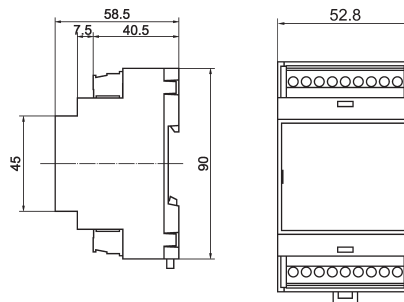
article-no.	OV634915
operating voltage	230V AC / ±10% / 4.8VA
transmitting element (pulsed)	infrared: 3.7 / 4.3kHz
transmitting power	manual / automatic adjustment
output signal	light-on mode / dark-on mode
transmit power	low / high
turn-on/off delay	0 ... 10s
relay output	1 change-over contact: 5A / 230V AC (24V DC)
readiness delay	30-60ms
alarm output	1 normally open contact: 60V AC (DC) / 100mA
output signal (analog)	-
test input	0 ... 30V DC
operating range (stand./incr./max.)	15/20/50m (8/10/20m for OE126303)
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	screw terminals

### DIP switch position

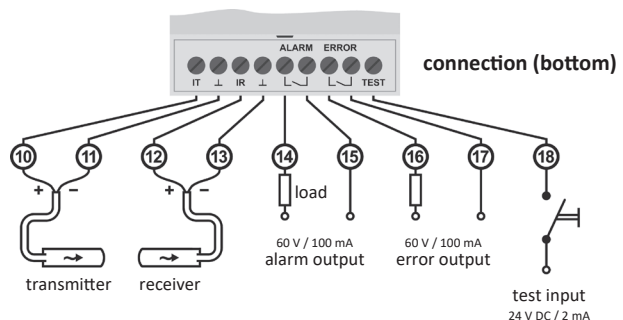
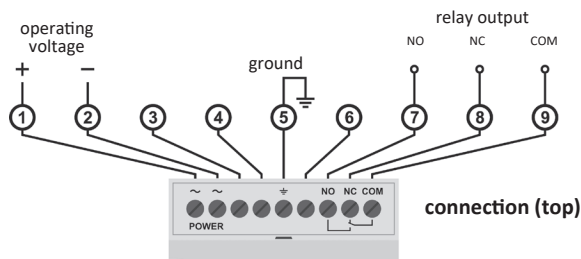
	1	operational mode	manual	automatic
2	transmit power	high	low	
3	switching function	light	dark	
4	transmitting frequency	3.7kHz	4.3kHz	
5	switching reaction mode	delay	pulse	
6	switching delay	off-delay	on-delay	

Manufacturer's settings highlighted gray.

### dimensional drawing

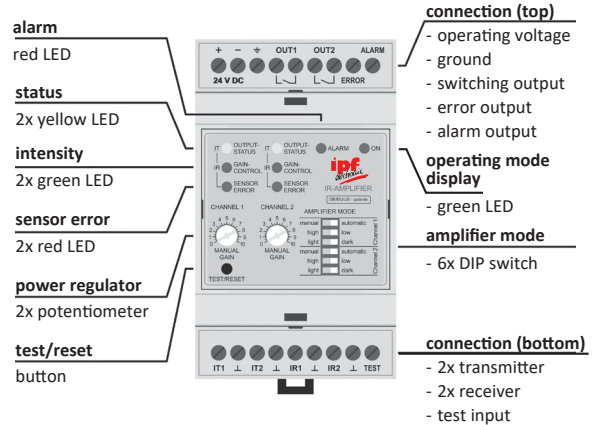


### connection





- ✓ up to 55m operating range
- ✓ manual / automatic operation
- ✓ high / low transmit power selectable
- ✓ relay output 60V / 100mA - short-circuit protection
- ✓ selectable light-on / dark-on mode
- ✓ alarm output for power limit
- ✓ test input for disabling the transmitters
- ✓ test function
- ✓ permanent sensor monitoring



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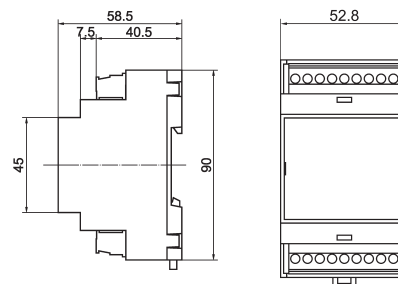
TECHNICAL DATA	2-channel multiplexer, relay output, alarm output
article-no.	<b>OV630840</b>
operating voltage	24V DC / ±20% / 2.4W
transmitting element (pulsed)	infrared: 4.0kHz
multiplex speed	8ms
transmitting power	manual / automatic adjustment
output signal	light-on mode / dark-on mode
transmit power	low / high
turn-on/off delay	-
relay output	2 normally open contacts: 60V DC (AC) / 100mA
readiness delay	24ms
additional output	alarm and error: pnp, 24V DC, 100mA
output signal (analog)	-
test input	0 ... 30V DC
operating range (stand./incr./max.)	20/30/55m (8/10/20m for <b>OE126303</b> )
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	screw terminals

**DIP switch position**

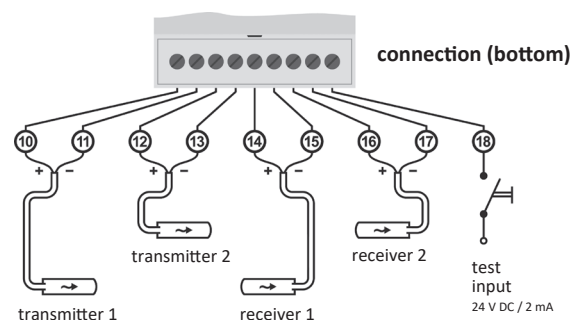
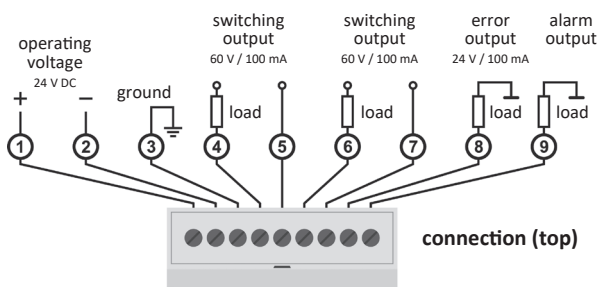
1	operational mode channel 1	manual	automatic
2	transmit power channel 1	high	low
3	switching function channel 1	light	dark
4	operational mode channel 2	3.7kHz	automatic
5	transmit power channel 2	delay	low
6	switching function	off-delay	dark

Manufacturer's settings highlighted gray.

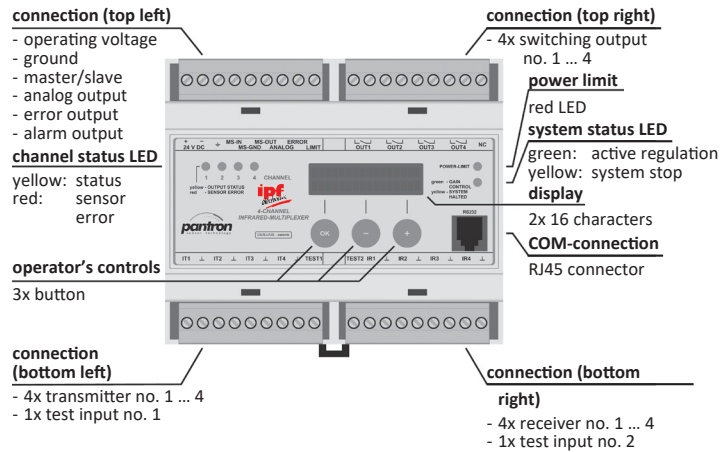
**dimensional drawing**



**connection**



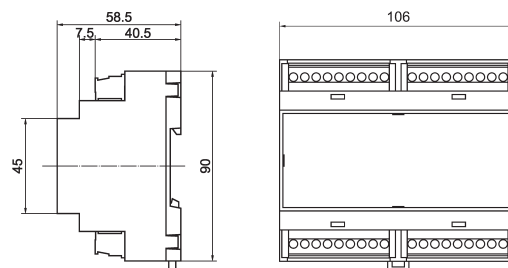
- ✓ up to 60m operating range
- ✓ menu-driven operation via display
- ✓ manual / automatic operation
- ✓ high / low transmit power selectable
- ✓ switching outputs 60V / 100mA - short-circuit protection
- ✓ selectable light-on / dark-on mode
- ✓ turn-on/off delay 0 ... 60s
- ✓ alarm output
- ✓ test input for disabling the transmitters
- ✓ test function
- ✓ output signal (analog)
- ✓ permanent sensor monitoring
- ✓ operation via PC-software (accessory)



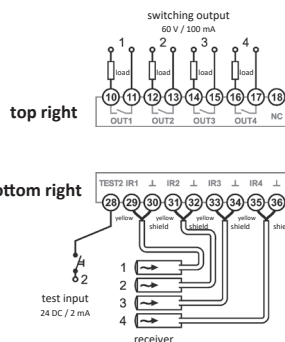
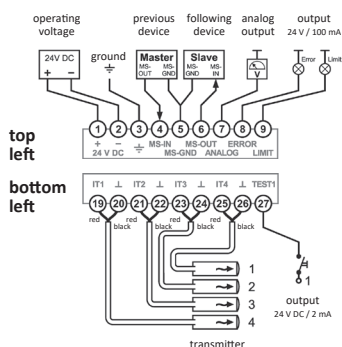
### 4-channel multiplexer, relay output, analog output, alarm output

TECHNICAL DATA	
article-no.	<b>OV640840</b>
operating voltage	24V DC / ±20% / 6.5W
transmitting element (pulsed)	infrared: 4.0kHz
multiplex speed	18ms
transmitting power	manual / automatic adjustment
output signal	light-on mode / dark-on mode
transmit power	low / high
turn-on/off delay	0 ... 60s
relay output	4 normally open contacts: 60V DC (AC) / 100mA
readiness delay	20ms
output	alarm and error: pnp, 24V DC, 100mA
output signal (analog)	0 ... 10V DC
test input	0 ... 30V DC
interface	RS 232
operating range (stand./incr./max.)	15/25/60m (10/12/25m for <b>OE126303</b> )
housing material	noryl
degree of protection (EN 60529)	IP 20
operating temperature	0 ... +50°C
connection	pluggable screw terminals
accessories	<b>AO00098</b> (RS232-cable including software)

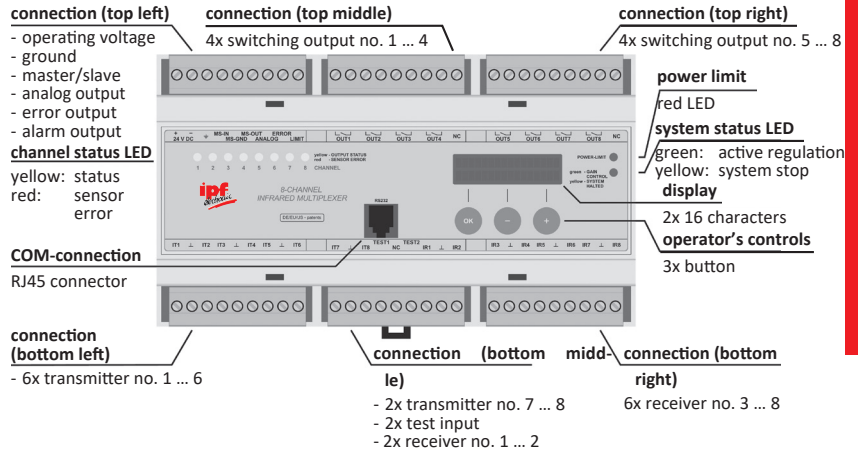
### dimensional drawing



### connection



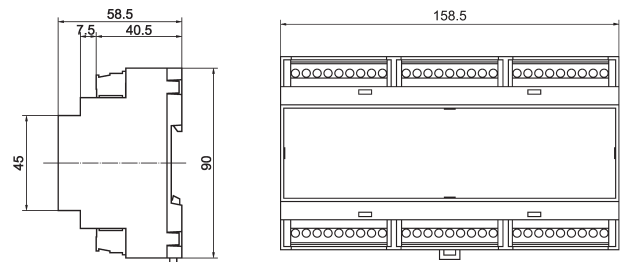
- ✓ up to 60m operating range
- ✓ menu-driven operation via display
- ✓ manual / automatic operation
- ✓ high / low transmit power selectable
- ✓ switching outputs 60V / 100mA - short-circuit protection
- ✓ selectable light-on / dark-on mode
- ✓ turn-on/off delay 0 ... 60s
- ✓ alarm output
- ✓ test input for disabling the transmitters
- ✓ test function
- ✓ output signal (analog)
- ✓ permanent sensor monitoring
- ✓ operation via PC-software (accessory)



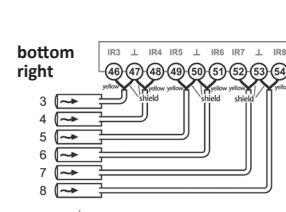
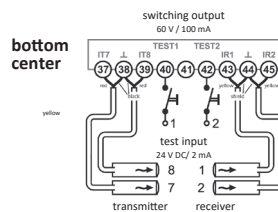
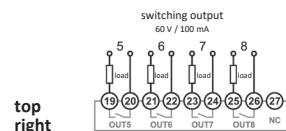
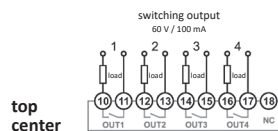
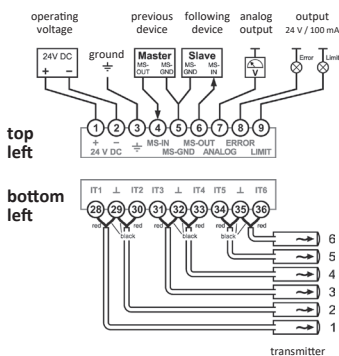
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TECHNICAL DATA		8-channel multiplexer, relay output, analog output, alarm output
article-no.		<b>OV650840</b>
operating voltage		24V DC / ±20% / 8.5VA
transmitting element (pulsed)		infrared: 4.0kHz
multiplex speed		34ms
transmitting power		manual / automatic adjustment
output signal		light-on mode / dark-on mode
transmit power		low / high
turn-on/off delay		0 ... 60s
relay output		8 normally open contacts: 60V DC (AC) / 100mA
readiness delay		36ms
additional output		alarm and error: pnp, 24V DC, 100mA
output signal (analog)		0 ... 10V DC
test input		0 ... 30V DC
interface		RS 232
operating range (stand./incr./max.)		15/25/60m (10/12/25m for <b>OE126303</b> )
housing material		noryl
degree of protection (EN 60529)		IP 20
operating temperature		0 ... +50°C
connection		pluggable screw terminals
accessories		<b>A0000098</b> (RS232-cable including software)

**dimensional drawing**



**connection**



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**NOTES**

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.

dimensions **100 x 75 x 110mm**  
to  
**149 x 75 x 110mm**

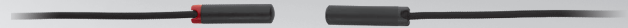
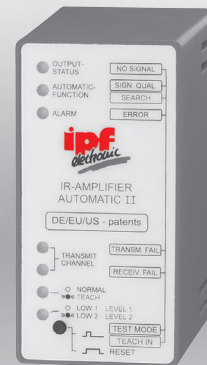
through-beam sensor operating range **up to 70m**

**sensor**

- ✓ plastic housing Ø 10mm
- ✓ nickel-plated brass sleeve or stainless steel M12x1mm
- ✓ aluminum housing 12mmx12mm
- ✓ connection to amplifier
- ✓ threaded devices acc. to European standards
- ✓ large sensing ranges

**amplifier**

- ✓ relay or transistor switching output
- ✓ alignment aid via test function
- ✓ teach input
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ up to 4 different transmitting frequencies selectable
- ✓ turn-on and turn-off delay
- ✓ up to 4 different transmit powers selectable
- ✓ selectable light-on / dark-on mode
- ✓ auto-monitoring
- ✓ plug-in base connection



**combination of sensor and amplifier  
up to 70m operating range**



**description**

The high-performance sensor systems have been engineered specifically for applications where conventional light barriers have reached their limits. With their extreme resistance to soiling and long operating range, they are ideally suited for the most demanding applications, for which only compromise solutions existed up to now. Thanks to the high performance of the systems, significant penetration is ensured even under conditions of heavy soiling. Chips, dust, flour, oil or dirty water no longer present any obstacle. They are thus perfectly suited for applications in the wood and paper industry, for car-washes, for the control of bulk materials, in elevators, for door controls out in the open,

in the food processing industry, etc. Each system comprises one transmitter, one receiver and one amplifier. The transmitters and receivers, in various very compact robust designs, can be accommodated in any construction. Their large angle of beam spread facilitates their alignment with each other even for operating ranges of 70m. At the same time they are insensitive to vibration, shock and a resulting loss of alignment. The high level of user-friendliness is underlined by the ease of installation of the amplifier and sensors as well as by the uncomplicated operation of the devices.

The amplifiers operate with modulated infrared light, thus allowing a high level of security against external light. The circuit is configured in such a way that only signals with the correct frequency and phase position are recognized. This excludes any interference from other light barriers to the greatest extent. For

### alarm display

The red alarm display is permanently lit while the light path stays uninterrupted and when the intensity display has been turned off for a few seconds. With automatic amplifiers it is turned on, if the transmitting power is at least 95% of the maximum transmitting power.

### alarm output

A signal is transmitted before the power limit is reached. The red LED on the amplifier lights up at the same time. The system nevertheless continues to be fully functional.

### output signal (analog)

The output signal (analog) helps with the alignment of the sensors and provides a voltage of 0 ... 10V DC, which is proportional to the signal received.

### turn-off delay

The turn-off delay is the period between release (light-on mode) or interruption (dark-on mode) of the infrared beam and the switchover of the switching output.

### automatic operation

The amplifiers automatically adapt the transmitting power to the prevailing environmental conditions, permanently compensating 100% for any effects on the system resulting from interference. The switching point is constant over the full power band width and reproducible.

### turn-on delay

The turn-on delay is the period between interruption (light-on mode) or release (dark-on mode) of the infrared beam and the switchover of the switching output.

### transmit power

The devices have pre-set output ranges.

### intensity display

The green intensity display is permanently lit whenever the transmitting power is sufficient. If the display flashes or goes out completely, then the transmitting power has been set too low, the transmitter and/or receiver lenses are too heavily soiled for the set transmitting power, the distance between transmitter and receiver is too great, or the transmitter and receiver are misaligned beyond the tolerance limits.

### manual operation

Using the control the user can set the transmitting power to the desired level. Any change of the environmental conditions requires a readjustment.

### permanent sensor monitoring

This device signals any sensor error occurring during operation (short-circuit or interruption) by the lighting up of LEDs specifying the error and sensor type. On some versions an additional error output will become active.

applications where several light barriers of the same type are to be operated side by side there are versions with adjustable transmitting frequency. In addition to amplifiers with manual setting of the transmitting power, we also offer processor-controlled versions with automatic control.

### regulation active display

The green regulation active display is permanently lit while the automatic regulation of the transmitting power is active. Whenever it extinguishes, the regulation has been stopped.

### relay output

The relay output (change-over contact) comes in a floating version.

### output signal

The output signal describes the behavior of the switching output during an interruption of the infrared beam. In the dark-on mode „dark“ an output signal is generated if the light path is interrupted. In the light-on mode „light“ no output signal is generated if the light path is interrupted.

### switching state display

The yellow switching state display lights up when the switching output is active.

### transmitting frequency

The transmitting frequency is the frequency with which the light of the transmitter has been clocked. Some versions can be operated with different frequencies.

### transmitter and receiver connections

All transmitter and receiver connections of the amplifiers have short-circuit protection. Even in case of an unintentional short-circuits, damage is impossible.

### teach function

The teach function allows the user to program the turn-off point of the switching output. The object to be recognized must be placed between the sensors, the teach-in function is then activated by pressing the button. The amplifier sets the switch-point in a way that the object is recognized. A transparent object, however, will not be recognized.

### test input

To test the functionality of the system, it is possible for example to switch off the transmitter using a PLC, in order to test if a status change is taking place on the relay or on the transistor output of this amplifier.

### test function

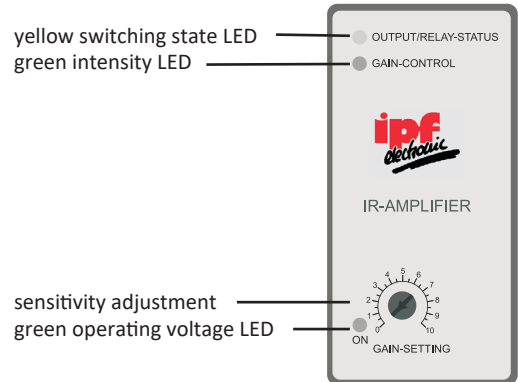
Some of the automatic devices have a sensor monitoring function included to recognize functional errors or defects on the sensors. It can be activated by pushing the button of the test function. The amplifier signals the user whether or not an error has occurred at the transmitter or the receiver. If no error is present, the test function displays the quality of the path. An LED serves as an indicator. It can flash one to ten times, whereby the flashing is proportional to the received signal.

### transistor output

These outputs can be used as NPN output or PNP output depending on the external wiring.



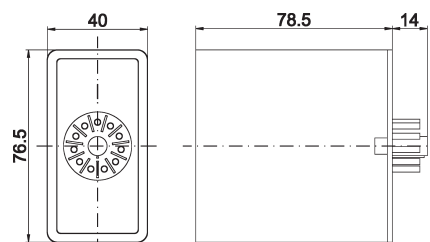
- ✓ up to 70m operating range
- ✓ sensitivity adjustable with potentiometer
- ✓ relay output



1

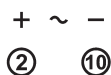
TECHNICAL DATA	1-channel amplifier, relay output
article-no.	<b>OV580980</b> (DC device)
article-no.	<b>OV584980</b> (AC device)
operating voltage	24V DC / ±20% / 1.9W
operating voltage	230V AC / ±10% / 3.8VA
relay output	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency	18Hz
alarm output	-
transmitting element (pulsed)	infrared: 3.5kHz
transmitting power	manual
operating range (stand./incr./max.)	25/35/70m (20/30/50m for <b>OE126303</b> )
transmit power	100%
teach input	-
turn-on/off delay	-
output signal	light-on mode
test input	-
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

**dimensional drawing**

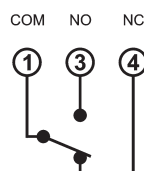


**connection**

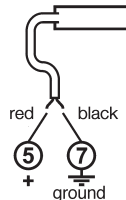
operating voltage



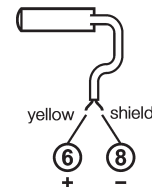
relay



transmitter



receiver



- ✓ up to 70m operating range
- ✓ sensitivity adjustable with potentiometer
- ✓ relay output
- ✓ transistor output pnp / npn
- ✓ test input
- ✓ 4 different transmitting frequencies selectable
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode

yellow switching state LED  
green intensity LED



sensitivity adjustment  
green operating voltage LED

TECHNICAL DATA	1-channel amplifier, relay output, transistor output
article-no.	<b>OV580900</b> (DC device)
article-no.	<b>OV584900</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.2VA
relay output	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	18Hz
transistor output (AC device)	nnp: 0.1A (30V DC) / pnp: 5mA (12V DC)
transistor output (DC device)	nnp / pnp: 0.1A (30V DC)
switching frequency (transistor)	30Hz
alarm output	-
transmitting element (pulsed)	infrared: 3.5 / 3.8 / 4.0 / 4.4kHz
transmitting power	-
operating range (stand./incr./max.)	25/35/70m (20/30/50m for <b>OE126303</b> )
transmit power	20% / 100%
teach input	-
turn-on/off delay	-
output signal	light-on mode / dark-on mode
test input	24V DC
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

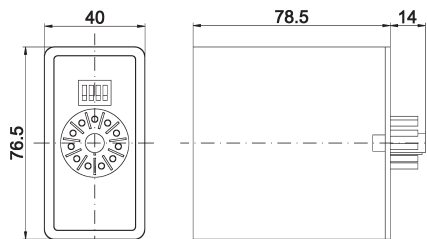
### DIP switch position



1		2		3		4	
transmit power		switching function		transmitting frequency			
20 %	ON	dark	ON	3.5 kHz	ON	ON	
				3.8 kHz	ON	OFF	
100 %	OFF	light	OFF	4.0 kHz	OFF	ON	
				4.4 kHz	OFF	OFF	

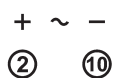
Manufacturer's settings highlighted grey.

### dimensional drawing

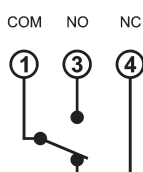


### connection

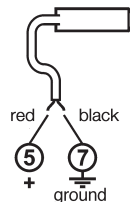
operating voltage



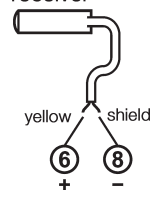
relay



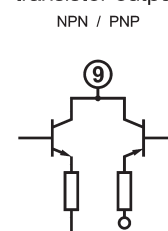
transmitter



receiver



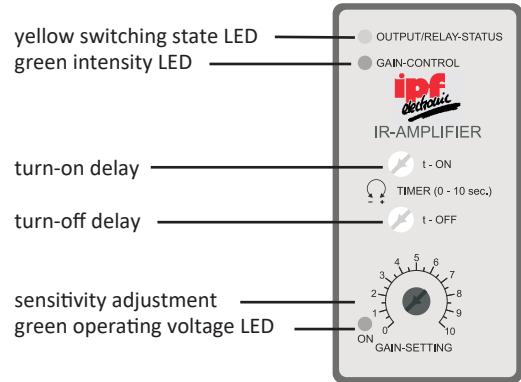
transistor output



test input



- ✓ up to 70m operating range
- ✓ sensitivity adjustable with potentiometer
- ✓ relay output
- ✓ transistor output pnp / npn
- ✓ turn-on and turn-off delay
- ✓ test input
- ✓ 4 different transmitting frequencies selectable
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode



1

TECHNICAL DATA	1-channel amplifier, relay output, transistor output, time delay
article-no.	<b>OV580905</b> (DC device)
article-no.	<b>OV584905</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.2VA
relay output	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	12Hz
transistor output (AC device)	npn: 0.1A (30V DC) / pnp: 5mA (12V DC)
transistor output (DC device)	npn / pnp: 0.1A (30V DC)
switching frequency (transistor)	20Hz
alarm output	-
transmitting element (pulsed)	infrared: 3.5 / 3.8 / 4.0 / 4.4kHz
transmitting power	-
operating range (stand./incr./max.)	25/35/70m (20/30/50m for <b>OE126303</b> )
transmit power	20% / 100%
teach input	-
turn-on/off delay	0 ... 10s
output signal	light-on mode / dark-on mode
test input	24V DC
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

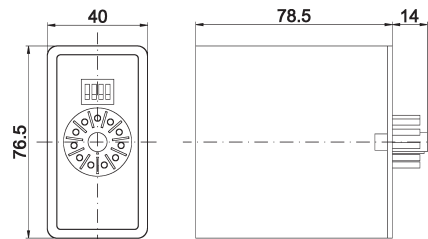
**DIP switch position**



1		2		3		4	
transmit power		switching function		transmitting frequency			
20 %	ON	dark	ON	3.5 kHz	ON	ON	
				3.8 kHz	ON	OFF	
100 %	OFF	light	OFF	4.0 kHz	OFF	ON	
				4.4 kHz	OFF	OFF	

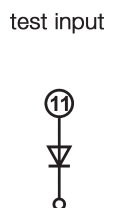
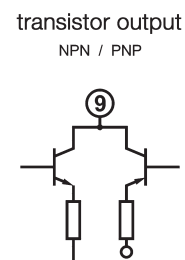
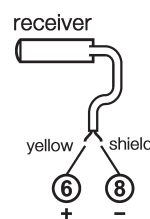
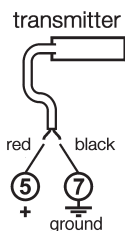
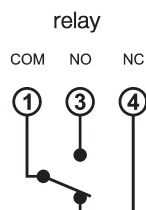
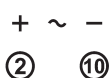
Manufacturer's settings highlighted grey.

**dimensional drawing**

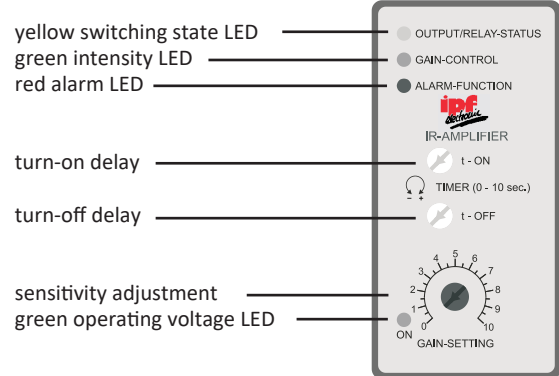


**connection**

operating voltage



- ✓ up to 70m operating range
- ✓ sensitivity adjustable with potentiometer
- ✓ relay output
- ✓ transistor output pnp / npn
- ✓ turn-on and turn-off delay
- ✓ alarm output for soiling display
- ✓ 4 different transmitting frequencies selectable
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode



TECHNICAL DATA	1-channel amplifier, relay output, transistor output, alarm output, time delay
article-no.	<b>OV580907</b>
operating voltage	24V DC / ±20% / 2.0W
relay output	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	12Hz
transistor output	npn / pnp: 0.1A (30V DC)
switching frequency (transistor)	20Hz
alarm output	npn / pnp: 0.1A (30V DC)
transmitting element (pulsed)	infrared: 3.5 / 3.8 / 4.0 / 4.4kHz
transmitting power	not adjustable
operating range (stand./incr./max.)	25/35/70m (20/30/50m for <b>OE126303</b> )
transmit power	20% / 100%
teach input	-
turn-on/off delay	0 ... 10s
output signal	light-on mode / dark-on mode
test input	-
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

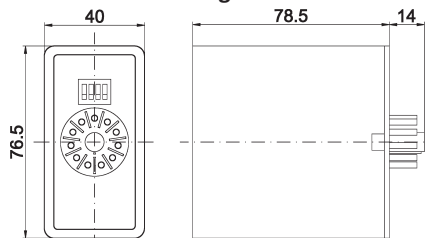
### DIP switch position



1		2		3		4	
transmit power		switching function		transmitting frequency			
20 %	ON	dark	ON	3.5 kHz	ON	ON	
				3.8 kHz	ON	OFF	
100 %	OFF	light	OFF	4.0 kHz	OFF	ON	
				4.4 kHz	OFF	OFF	

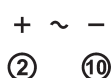
Manufacturer's settings highlighted grey.

### dimensional drawing

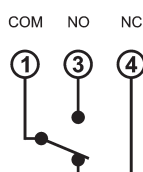


### connection

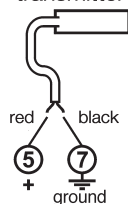
operating voltage



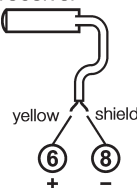
relay



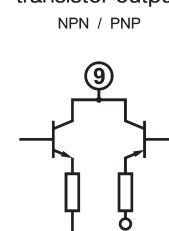
transmitter



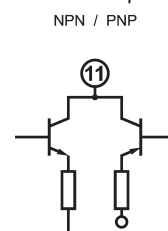
receiver



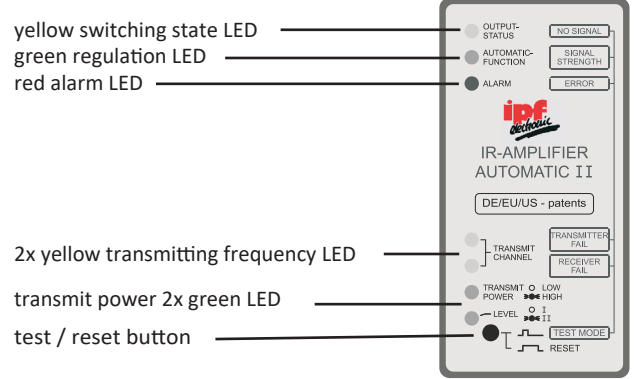
transistor output



alarm output



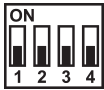
- ✓ up to 50m operating range
- ✓ transistor output npn / pnp
- ✓ relay output
- ✓ alignment aid via test function
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ 2 different transmitting frequencies selectable
- ✓ 4 different transmit powers selectable
- ✓ selectable light-on / dark-on mode
- ✓ auto-monitoring
- ✓ plug-in base connection



1

TECHNICAL DATA	1-channel automatic amplifier, relay output, transistor output, alarm output	
article-no.	<b>OV580510</b> (DC device)	<b>OV580910</b> (DC device)
article-no.	<b>OV584510</b> (AC device)	<b>OV584910</b> (AC device)
operating voltage	24V DC / ±20% / 2.2W	24V DC / ±20% / 2.2W
operating voltage	230V AC / ±10% / 4.8VA	230V AC / ±10% / 4.8VA
transistor output	nnp/npn, max. 30V DC / 100mA	-
switching frequency (transistor)	low: 20Hz / high: 11Hz	-
relay output	-	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	-	low: 20Hz / high: 11Hz
alarm output	pnp, 24V DC, DC:100mA, AC: 5mA	pnp, 24V DC, DC:100mA, AC: 5mA
transmitting element (pulsed)	infrared: 3.7kHz/4.1kHz	infrared: 3.7kHz/4.1kHz
transmitting power	automatic setting	automatic setting
operating range (stand./incr./max.)	15/25/50m (7/10/20m for <b>OE126303</b> )	15/25/50m (7/10/20m for <b>OE126303</b> )
transmit power	low 1 / low 2 / high 1 / high 2	low 1 / low 2 / high 1 / high 2
teach input	-	-
turn-on/off delay	-	-
output signal	selectable light-on/dark-on mode (no/nc)	selectable light-on/dark-on mode (no/nc)
test input	0 ... 30V DC	0 ... 30V DC
housing material	plastic	plastic
degree of protection	IP 40	IP40
operating temperature	-25 ... +50°C	-25 ... +50°C
connection	pluggable into 11-pin socket	pluggable into 11-pin socket

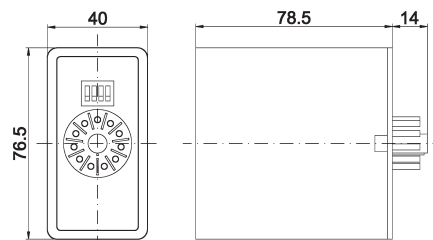
**DIP switch position**



	1	2	3		4	
	transmit power		switching function		transm.frequency	
high 2	ON	ON	dark	ON	4,1 kHz	ON
high 1	ON	OFF				
low 2	OFF	ON	light	OFF	3,7 kHz	OFF
low 1	OFF	OFF				

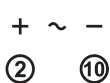
Manufacturer's settings highlighted grey.

**dimensional drawing**

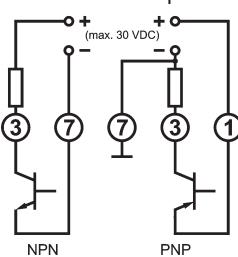


**connection**

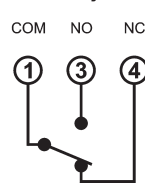
operating voltage



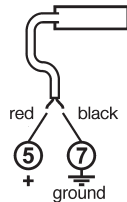
transistor output



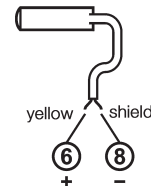
relay



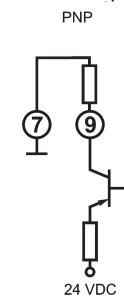
transmitter



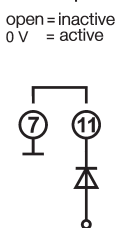
receiver



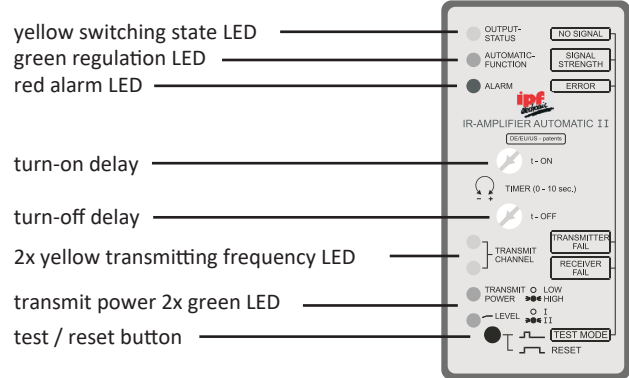
alarm output



test input



- ✓ up to 50m operating range
- ✓ transistor output npn / pnp
- ✓ relay output
- ✓ alignment aid via test function
- ✓ turn-on and turn-off delay
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ 2 different transmitting frequencies selectable
- ✓ 4 different transmit powers selectable
- ✓ selectable light-on / dark-on mode



TECHNICAL DATA	1-channel automatic amplifier, relay output, transistor output, alarm output, time delay	
article-no.	<b>OV580515</b> (DC device)	<b>OV580915</b> (DC device)
article-no.	<b>OV584515</b> (AC device)	<b>OV584915</b> (AC device)
operating voltage	24V DC / ±20% / 2.2W	24V DC / ±20% / 2.2W
operating voltage	230V AC / ±10% / 4.8VA	230V AC / ±10% / 4.8VA
transistor output	nnp/pnp, max. 30V DC / 100mA	-
switching frequency (transistor)	low: 20Hz / high: 11Hz	-
relay output	-	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	-	low: 20Hz / high: 11Hz
alarm output	pnp, 24V DC, DC: 100mA, AC: 5mA	pnp, 24V DC, DC: 100mA, AC: 5mA
transmitting element (pulsed)	infrared: 3.7kHz/4.1kHz	infrared: 3.7kHz/4.1kHz
transmitting power	automatic setting	automatic setting
operating range (stand./incr./max.)	15/25/50m (7/10/20m for <b>OE126303</b> )	15/25/50m (7/10/20m for <b>OE126303</b> )
transmit power	low 1 / low 2 / high 1 / high 2	low 1 / low 2 / high 1 / high 2
teach input	-	-
turn-on/off delay	0 ... 10s	0 ... 10s
output signal	selectable light-on/dark-on mode (no/nc)	selectable light-on/dark-on mode (no/nc)
test input	0 ... 30V DC	0 ... 30V DC
housing material	plastic	plastic
degree of protection (EN 60529)	IP 40	IP 40
operating temperature	-25 ... +50°C	-25 ... +50°C
connection	pluggable into 11-pin socket	pluggable into 11-pin socket

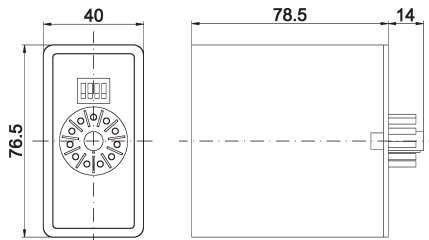
### DIP switch position



	1	2	3		4	
transmit power			switching function		transm. frequency	
high 2	ON	ON	dark	ON	4,1 kHz	ON
high 1	ON	OFF	light	OFF	3,7 kHz	OFF
low 2	OFF	ON				
low 1	OFF	OFF				

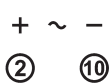
Manufacturer's settings highlighted grey.

### dimensional drawing

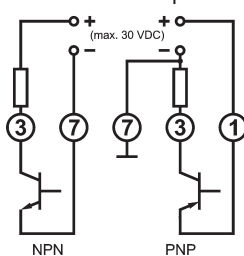


### connection

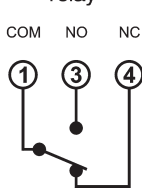
operating voltage



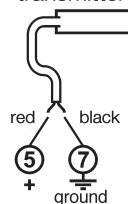
transistor output



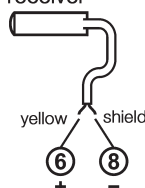
relay



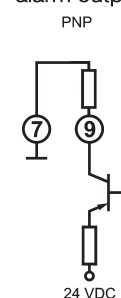
transmitter



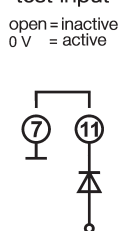
receiver



alarm output

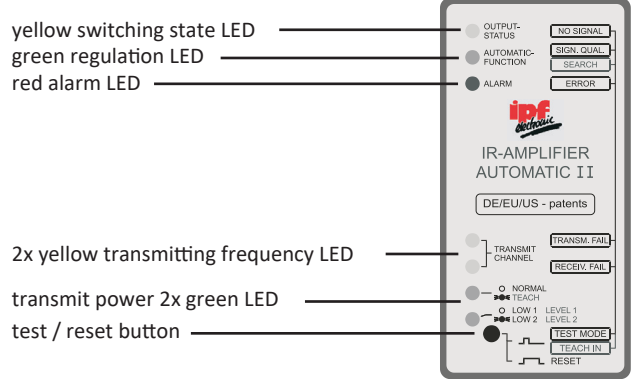


test input





- ✓ up to 50m operating range
- ✓ transistor output npn / pnp
- ✓ relay output
- ✓ alignment aid via test function
- ✓ teach-in
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ 2 different transmitting frequencies selectable
- ✓ 2 different transmit powers selectable
- ✓ selectable light-on / dark-on mode



1

TECHNICAL DATA	1-channel automatic amplifier, relay output, transistor output, alarm output, teach-in	
article-no.	<b>OV580530</b> (DC device)	<b>OV580930</b> (DC device)
article-no.	<b>OV584530</b> (AC device)	<b>OV584930</b> (AC device)
operating voltage	24V DC / ±20% / 2.2W	24V DC / ±20% / 2.2W
operating voltage	230V AC / ±10% / 4.8VA	230V AC / ±10% / 4.8VA
transistor output	nnp/npn, max. 30V DC / 100mA	-
switching frequency (transistor)	20Hz	-
relay output	-	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	-	20Hz
alarm output	npn, 24V DC, DC:100mA, AC: 5mA	npn, 24V DC, DC:100mA, AC: 5mA
transmitting element (pulsed)	infrared: 3.7kHz/4.1kHz	infrared: 3.7kHz/4.1kHz
transmitting power	automatic setting	automatic setting
operating range (stand./incr./max.)	15/25/50m (7/10/20m for <b>OE126303</b> )	15/25/50m (7/10/20m for <b>OE126303</b> )
transmit power	low 1 / low 2	low 1 / low 2
teach input	level 1 / level 2	level 1 / level 2
turn-on/off delay	-	-
output signal	selectable light-on/dark-on mode (no/nc)	selectable light-on/dark-on mode (no/nc)
test input	0 ... 30V DC	0 ... 30V DC
housing material	plastic	plastic
degree of protection (EN 60529)	IP 40	IP 40
operating temperature	-25 ... +50°C	-25 ... +50°C
connection	pluggable into 11-pin socket	pluggable into 11-pin socket

**DIP switch position**

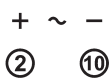


	1	2	3		4
operational mode			switching function	transm. frequency	
teach 2	ON	ON	dark	ON	4,1 kHz
teach 1	ON	OFF	light	OFF	3,7 kHz
low 2	OFF	ON	dark	ON	4,1 kHz
low 1	OFF	OFF	light	OFF	3,7 kHz

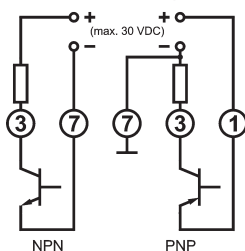
Manufacturer's settings highlighted grey.

**connection**

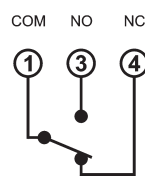
operating voltage



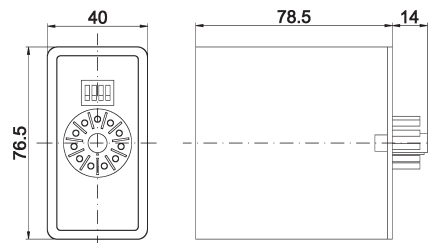
transistor output



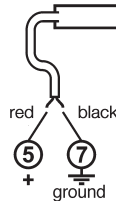
relay



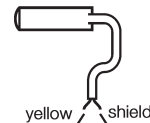
**dimensional drawing**



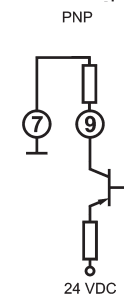
transmitter



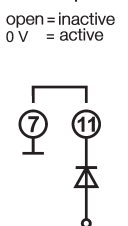
receiver



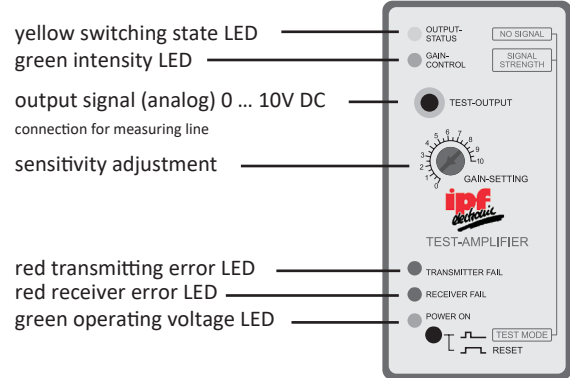
alarm output



test input



- ✓ up to 70m operating range
- ✓ sensor alignment and test function via output signal (analog) 0 to 10V DC (connection of a measuring instrument)
- ✓ relay output
- ✓ transistor output pnp / npn
- ✓ test input
- ✓ sensitivity adjustable with potentiometer
- ✓ 2 different transmitting frequencies selectable
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode



TECHNICAL DATA	1-channel measuring amplifier, relay output, transistor output, analog data output
article-no.	<b>OV580080</b> (DC device)
article-no.	<b>OV584080</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.2VA
relay output	1 change-over contact: 5A / 230V AC (24V DC)
switching frequency (relay)	18Hz
transistor output (AC device)	npn: 0.1A (30V DC), pnp: 5mA (12V DC)
transistor output (DC device)	npn / pnp: 0.1A (30V DC)
switching frequency (transistor)	30Hz
output signal (analog)	0 ... 10 / 10 ... 0V DC
alarm output	-
transmitting element (pulsed)	infrared: 3.5 / 4.4kHz selectable
transmitting power	not adjustable
operating range (stand./incr./max.)	25/35/70m (10/15/35m for <b>OE126303</b> )
transmit power	20% / 100%
teach input	-
turn-on/off delay	-
output signal	light-on mode / dark-on mode
test input	24V DC
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C

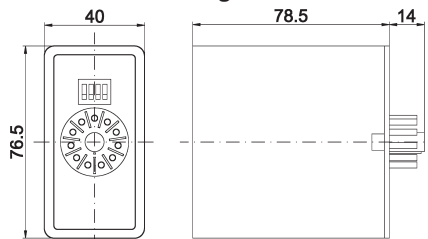
### DIP switch position



1		2		3		4	
transmit power		switching function		output voltage		transmitting frequency	
20%	ON	dark	ON	10-0V	ON	3,5kHz	ON
100%	OFF	light	OFF	0-10V	OFF	4,4kHz	OFF

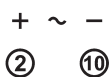
Manufacturer's settings highlighted grey.

### dimensional drawing

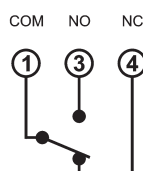


### connection

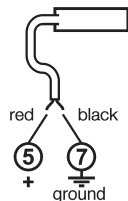
#### operating voltage



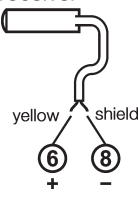
#### relay



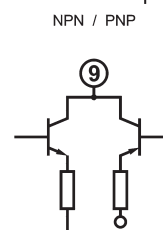
#### transmitter



#### receiver



#### transistor output



#### test input



dimensions **100 x 75 x 110mm**  
to  
**149 x 75 x 110mm**

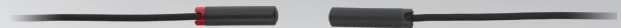
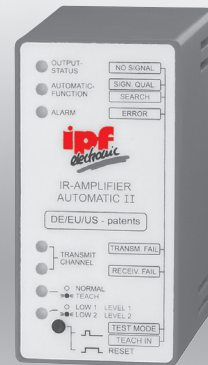
through-beam sensor operating range **up to 55m**

**sensor**

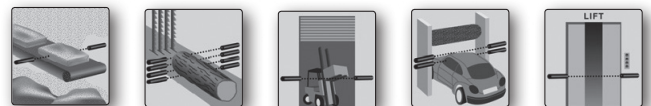
- ✓ plastic housing Ø 10mm
- ✓ nickel-plated brass sleeve or stainless steel M12x1mm
- ✓ aluminum housing 12mmx12mm
- ✓ connection to amplifier
- ✓ threaded devices acc. to European standards
- ✓ large sensing ranges

**amplifier**

- ✓ up to 55m operating range depending on sensor type
- ✓ relay or transistor switching output
- ✓ alignment aid via test function
- ✓ teach input
- ✓ test input for disabling the transmitter
- ✓ alarm output for soiling display
- ✓ up to 4 different transmitting frequencies selectable
- ✓ turn-on and turn-off delay
- ✓ up to 4 different transmit powers selectable
- ✓ selectable light-on / dark-on mode
- ✓ auto-monitoring
- ✓ plug-in base connection



**combination of sensor and amplifier  
up to 55m operating range**



**description**

The high-performance sensor systems have been engineered specifically for applications where conventional light barriers have reached their limits.

With their extreme resistance to soiling and long operating range, they are ideally suited for the most demanding applications, for which only compromise solutions existed up to now. Thanks to the high performance of the systems, significant penetration is ensured even under conditions of heavy soiling. Chips, dust, flour, oil or dirty water no longer present any obstacle. They are thus perfectly suited for applications in the wood and paper industry, for car-washes, for the control of bulk materials, in elevators, for door controls out in the open,

in the food processing industry, etc.

Each system comprises one transmitter, one receiver and one amplifier. The transmitters and receivers, in various very compact robust designs, can be accommodated in any construction.

Their large angle of beam spread facilitates their alignment with each other even for operating ranges of 35m. At the same time they are insensitive to vibration, shock and a resulting loss of alignment.

The high level of user-friendliness is underlined by the ease of installation of the amplifier and sensors as well as by the uncomplicated operation of the devices.

The multiplexers of the OV series operate, as the name already suggests, in multiplex mode. The connected light barriers are addressed one after the other in such a way that they do not mutually influence each other. In both the 4 and 8 channel versions it is even possible to increase their number by connecting

them in series. Some of the devices are processor-controlled and all of them operate with modulated infrared light, thus allowing a high level of security against external light. The circuit is configured in such a way that only signals with the correct frequency and phase position are recognized.

### **alarm display**

see alarm output

### **alarm output „alarm“**

A signal is transmitted before the power limit is reached. The red LED on the amplifier lights up at the same time. The system nevertheless continues to be fully functional.

### **turn-off delay**

The turn-off delay is the period between release (light-on mode) or interruption (dark-on mode) of the infrared beam and the switchover of the switching output.

### **automatic mode**

The automatic amplifiers represent a logical further development of the light barrier amplifiers. The amplifiers automatically adapt the transmitting power to the prevailing environmental conditions, permanently compensating 100% for any effects on the system resulting from interference. The switching point is constant over the full power band width and reproducible.

### **turn-on delay**

The turn-on delay is the period between interruption (light-on mode) or release (dark-on mode) of the infrared beam and the switchover of the output.

### **transmit power**

Some devices have selectable output ranges.

### **intensity display**

The green intensity display is permanently lit whenever the transmitting power is sufficient. If the display flashes or goes out completely, then the transmitting power has been set too low, the transmitter and/or receiver lenses are too heavily soiled, the distance between transmitter and receiver is too great, or the transmitter and receiver are misaligned beyond the tolerance limits.

### **light curtain**

Only one relay or transistor output (channel 1) will react in the case that one of the light barriers is interrupted.

### **manual operation**

Using the potentiometer the user can set the transmitting power to the desired level. Any change of the environmental conditions requires a readjustment.

### **master-slave operation**

The number of light barriers can be increased even further by connecting multiplexers in series.

### **regulation active display**

The green regulation active display is permanently lit while the automatic regulation of the transmitting power is active. Whenever it extinguishes, the regulation has been stopped.

### **relay output**

The relay output, executed as a floating normally open or changeover contact (depending on type), reacts to any interruption of the light barrier.

### **output signal**

It describes the behavior of the output during an interruption of the infrared beam. In the dark-on mode „dark“ an output signal is generated if the light path is interrupted, whereas in the light-on mode „light“ no output signal is generated in this case.

### **switching delay**

The turn-on delay or turn-off delay delays the reaction of the output by a time that is adjustable between 0 ... 15s.

### **switching state display**

The yellow switching state display lights up when the switching output or the relay output is active.

### **transmitting frequency**

The transmitting frequency is the frequency with which the light of the transmitter has been clocked. Some versions can be operated with different frequencies.

### **transmitter and receiver connections**

All transmitter and receiver connections of the amplifiers have short-circuit protection. Even in case of an unintentional short-circuit it is impossible to damage the inputs.

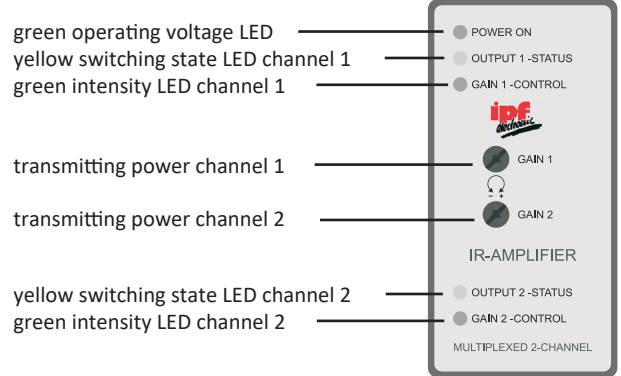
### **test function**

The amplifier signals the user whether or not an error has occurred at the transmitter or the receiver. If no error is present, the test function displays the quality of the path. An LED serves as an indicator. It can flash one to ten times, whereby the flashing is proportional to the received signal.

### **transistor output**

This output can be used as NPN output or PNP output depending on the external wiring.

- ✓ up to 50m operating range
- ✓ sensitivity adjustable per channel with potentiometer
- ✓ relay output per channel
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode per channel
- ✓ 16ms / 8ms selectable multiplex speed



1

TECHNICAL DATA	2-channel multiplexer, relay output
article-no.	<b>OV580920</b> (DC device)
article-no.	<b>OV584920</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.1VA
relay output	2 normally open contacts: 5A each / 230V AC (24V DC)
switching frequency	20Hz
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	20/30/50m (10/15/25m for <b>OE126303</b> )
multiplex speed	16ms / 8ms
master-slave operation	-
light curtain function	-
transmit power	20% / 100%
turn-on/off delay	-
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

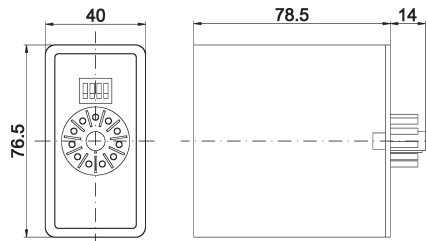
**DIP switch position**



1		2		3		4	
switching function				transmit power		multiplex speed	
channel 1		channel 2					
dark	ON	dark	ON	100%	ON	16msec	ON
light	OFF	light	OFF	20%	OFF	8msec	ON

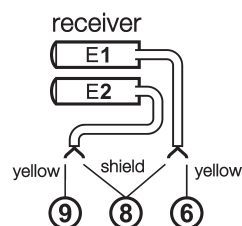
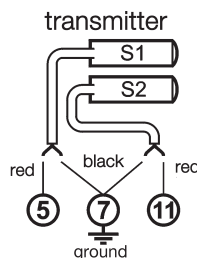
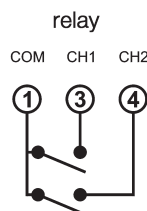
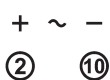
Manufacturer's settings highlighted grey.

**dimensional drawing**

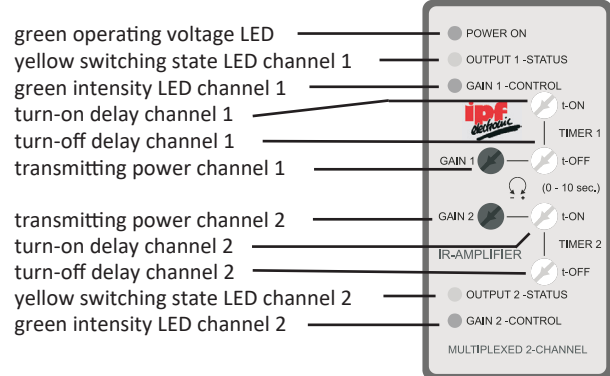


**connection**

operating voltage



- ✓ up to 50m operating range
- ✓ sensitivity adjustable per channel with potentiometer
- ✓ 1 relay output per channel
- ✓ turn-on and turn-off delay adjustable per channel
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode per channel
- ✓ 16ms / 8ms selectable multiplex speed



TECHNICAL DATA	2-channel multiplexer, relay output, time delay
article-no.	<b>OV580925</b> (DC device)
article-no.	<b>OV584925</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.1VA
relay output	2 normally open contacts: 5A each / 230V AC (24V DC)
switching frequency	20Hz
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	20/30/50m (10/15/25m for <b>OE126303</b> )
multiplex speed	16ms / 8ms
master-slave operation	-
light curtain function	-
transmit power	20% / 100%
turn-on/off delay	0 ... 15s
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

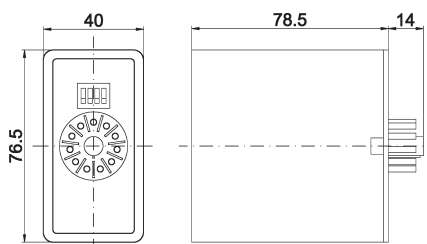
### DIP switch position



1		2		3		4	
switching function channel 1		switching function channel 2		transmit power		multiplex speed	
dark	ON	dark	ON	100%	ON	16msec	ON
light	OFF	light	OFF	20%	OFF	8msec	ON

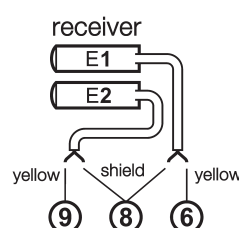
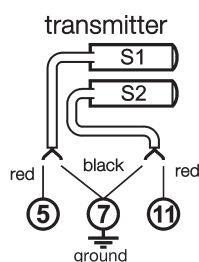
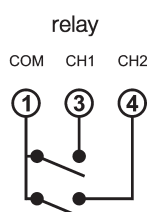
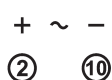
Manufacturer's settings highlighted grey.

### dimensional drawing



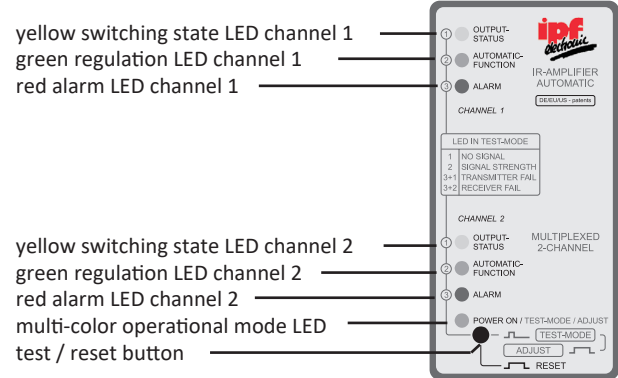
### connection

operating voltage





- ✓ up to 40m operating range
- ✓ automatic transmitting power switchover
- ✓ test function for checking the light path quality and installation
- ✓ 1 relay output per channel
- ✓ 4 different transmit powers selectable
- ✓ selectable light-on / dark-on mode per channel



1

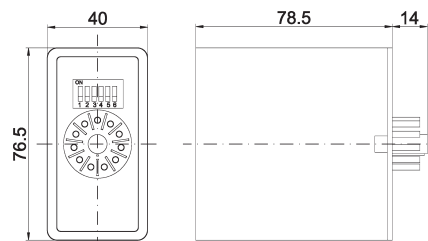
TECHNICAL DATA	2-channel automatic multiplexer, relay output
article-no.	<b>OV580940</b> (DC device)
article-no.	<b>OV584940</b> (AC device)
operating voltage	24V DC / ±20% / 2.0W
operating voltage	230V AC / ±10% / 4.0VA
relay output	2 normally open contacts: 5A / 230V AC (24V DC)
readiness delay	max. 8ms
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	13/20/40m (7/9/15m for <b>OE126303</b> )
multiplex speed	4ms
master-slave operation	-
light curtain function	-
transmit power	low 1 / low 2 / high 1 / high 2
turn-on/off delay	-
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 40
operating temperature	-25 ... +50°C
connection	pluggable into 11-pin socket

**DIP switch position**

	1	2	3	4	5	6
channel 1 transmit power	high 2	ON	ON	high 2	ON	ON
channel 1 switching function	high 1	ON	OFF	dark	ON	high 1
channel 2 transmit power	low 2	OFF	ON	low 2	ON	ON
channel 2 switching function	low 1	OFF	OFF	light	OFF	low 1

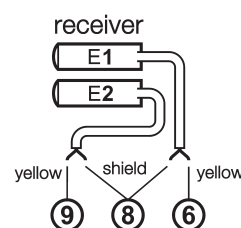
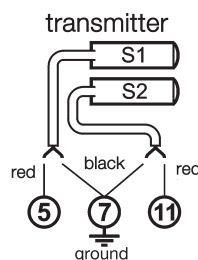
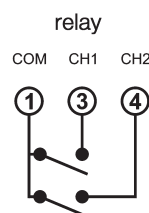
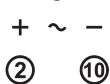
Manufacturer's settings highlighted grey.

**dimensional drawing**

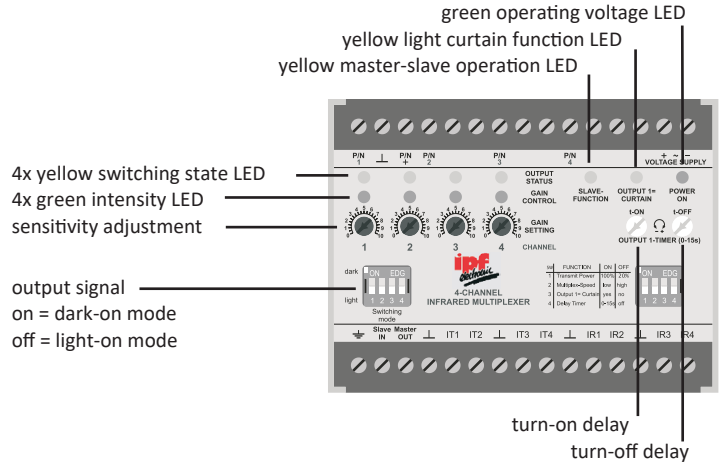


**connection**

operating voltage



- ✓ up to 40m operating range
- ✓ sensitivity adjustable per channel with potentiometer
- ✓ 1 transistor output pnp / npn per channel
- ✓ turn-on and turn-off delay for channel 1
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode per channel
- ✓ 32ms / 16ms selectable multiplex speed
- ✓ master-slave operation
- ✓ light curtain function



TECHNICAL DATA	4-channel multiplexer, transistor output, time delay
article-no.	OV540520
operating voltage	24V DC / ±20% / 4.5W
transistor output	4 x npn/pnp, max. 30V DC / 20mA
switching frequency	28Hz
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	20/30/40m (10/15/20m for OE126303)
multiplex speed	32ms / 16ms
master-slave operation	yes
light curtain function	yes
transmit power	20% / 100%
turn-on/off delay	0 ... 15s
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	terminal strip 4mm <sup>2</sup>

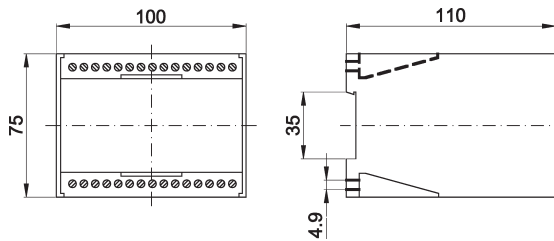
### DIP switch position



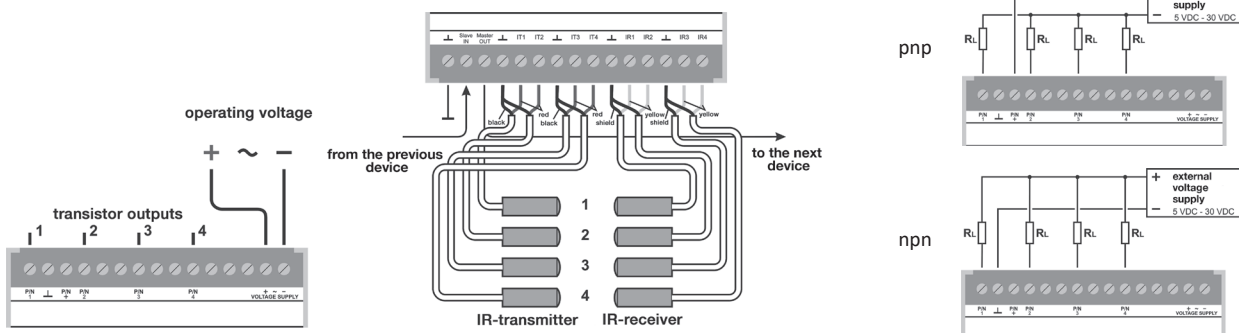
1		2		3		4	
transmit power		multiplex speed		light curtain		switching delay	
100%	ON	32msec	ON	ON	ON	ON	ON
20%	OFF	16msec	OFF	OFF	OFF	OFF	OFF

Manufacturer's settings highlighted grey.

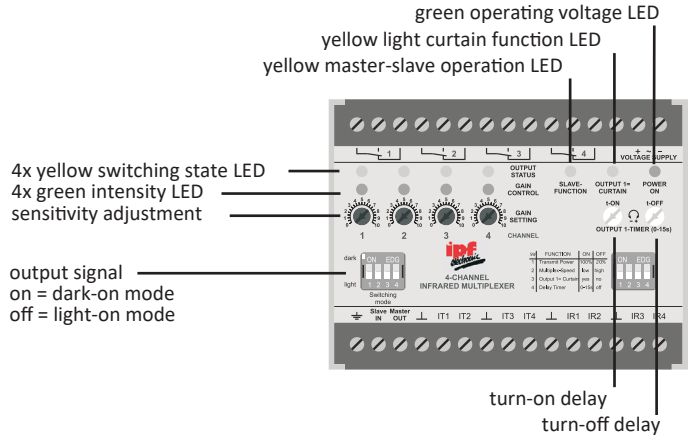
### dimensional drawing



### connection



- ✓ up to 40m operating range
- ✓ sensitivity adjustable per channel with potentiometer
- ✓ 1 relay output per channel
- ✓ turn-on and turn-off delay for channel 1
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode per channel
- ✓ 32ms / 16ms selectable multiplex speed
- ✓ master-slave operation
- ✓ light curtain function



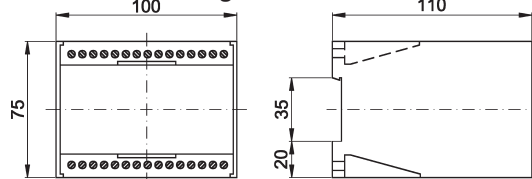
TECHNICAL DATA	4-channel multiplexer, relay output, time delay
article-no.	<b>OV540920</b> (DC device)
article-no.	<b>OV544920</b> (AC device)
operating voltage	24V DC / ±20% / 4.5W
operating voltage	230V AC / ±10% / 6.0VA
relay output	4 change-over contacts: 5A each / 230V AC (24V DC)
switching frequency	20Hz
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	20/30/40m (10/15/20m for <b>OE126303</b> )
multiplex speed	32ms / 16ms
master-slave operation	yes
light curtain function	yes
transmit power	20% / 100%
turn-on/off delay	0 ... 15s
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	terminal strip 4mm <sup>2</sup>

**DIP switch position**



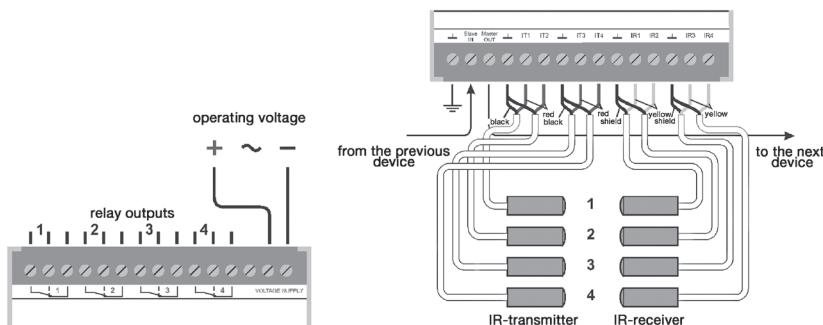
1		2		3		4	
transmit power		multiplex speed		light curtain		switching delay	
100%	ON	32msec	ON	ON	ON	ON	ON
20%	OFF	16msec	OFF	OFF	OFF	OFF	OFF

**dimensional drawing**

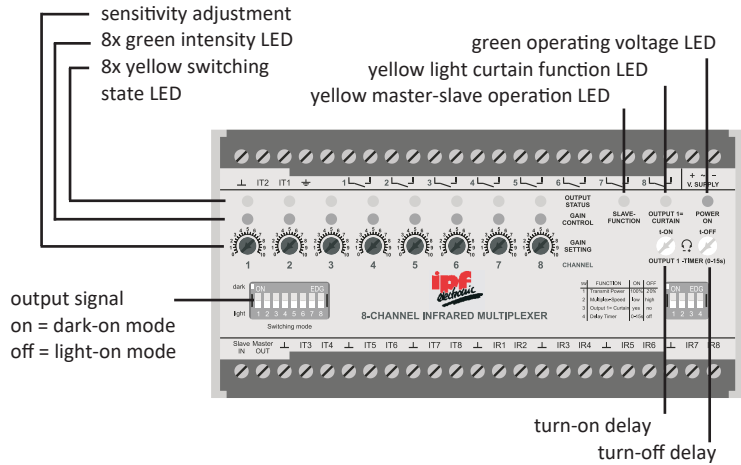


Manufacturer's settings highlighted grey.

**connection**



- ✓ up to 40m operating range
- ✓ sensitivity adjustable per channel with potentiometer
- ✓ 1 relay output per channel
- ✓ turn-on and turn-off delay for channel 1
- ✓ 20% / 100% transmit power selectable
- ✓ selectable light-on / dark-on mode per channel
- ✓ 68ms / 34ms selectable multiplex speed
- ✓ master-slave operation
- ✓ light curtain function



TECHNICAL DATA	8-channel multiplexer, relay output, time delay
article-no.	<b>OV590920</b> (DC device)
article-no.	<b>OV594920</b> (AC device)
operating voltage	24V DC / $\pm 20\%$ / 8.0W
operating voltage	230V AC / $\pm 10\%$ / 10.0VA
relay output	8 normally open contacts: 5A each / 230V AC (24V DC)
switching frequency	15Hz
alarm output	-
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	20/30/40m (10/15/20m for <b>OE126303</b> )
multiplex speed	68ms / 34ms
master-slave operation	yes
light curtain function	yes
transmit power	20% / 100%
turn-on/off delay	0 ... 15s
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	terminal strip 4mm <sup>2</sup>

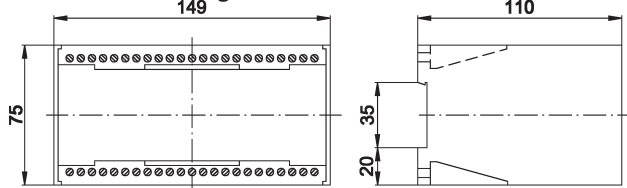
### DIP switch position



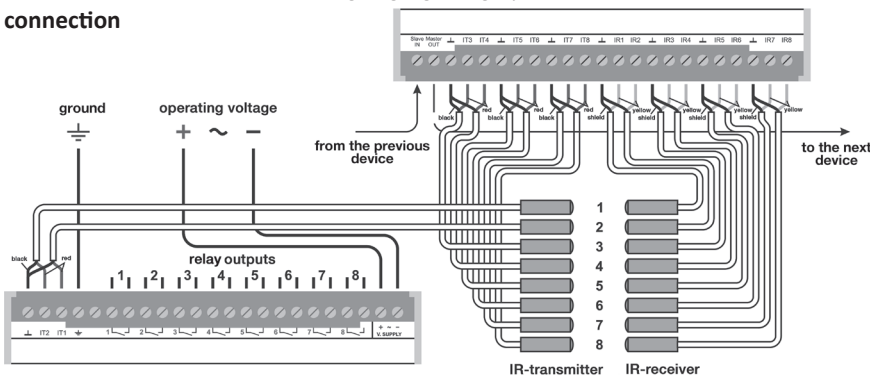
	1	2	3	4
transmit power	100%	68msec	light curtain	switching delay
100%	ON	ON	ON	ON
20%	OFF	OFF	OFF	OFF

Manufacturer's settings highlighted grey.

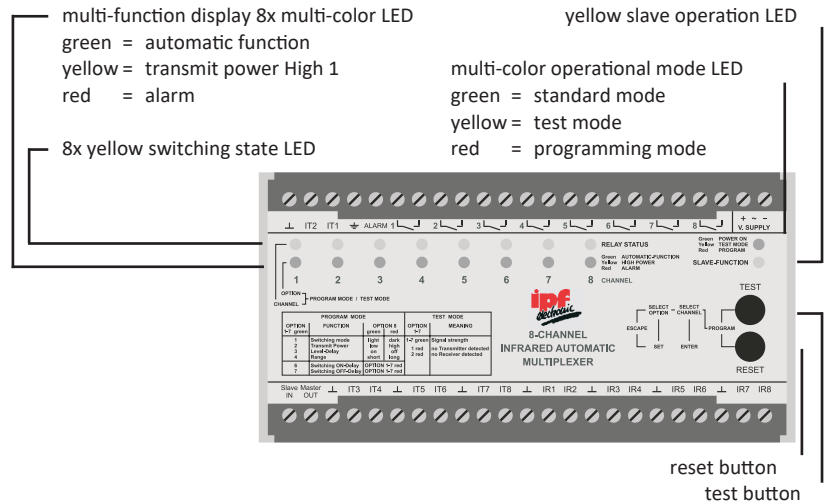
### dimensional drawing



### connection



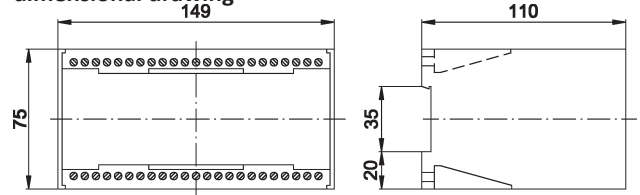
- ✓ up to 55m operating range
- ✓ automatic transmitting power adjustment
- ✓ test function for checking the light path quality and installation
- ✓ 1 relay output per channel
- ✓ turn-on, turn-off and regulation delay programmable per channel
- ✓ programmable light-on / dark-on mode per channel
- ✓ 2 different transmit powers selectable
- ✓ master-slave operation



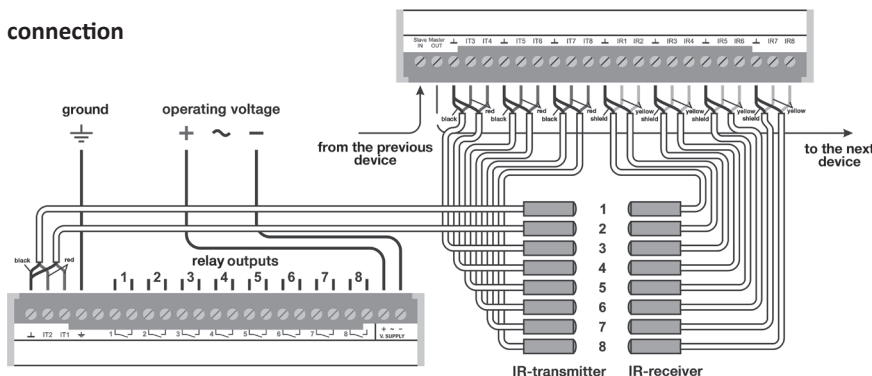
1

TECHNICAL DATA	8-channel automatic multiplexer, relay output, alarm output, time delay
article-no.	<b>OV590935</b> (DC device)
article-no.	<b>OV594935</b> (AC device)
operating voltage	24V DC / ±20% / 8.0W
operating voltage	230V AC / ±10% / 10.0VA
relay output	8 normally open contacts: 5A each / 230V AC (24V DC)
switching frequency	15Hz
alarm output	pnp, 24V DC / 100mA (AC: 5mA)
transmitting element (pulsed)	modulated infrared light, 4kHz
operating range (stand./incr./max.)	15/20/55m (8/10/20m for <b>OE126303</b> )
multiplex speed	34ms
master-slave operation	yes
light curtain function	-
transmit power	low / high
turn-on/off delay	0 ... 7s
output signal	light-on mode / dark-on mode
housing material	plastic
degree of protection (EN 60529)	IP 20
operating temperature	-25 ... +50°C
connection	terminal strip 4mm <sup>2</sup>

dimensional drawing



connection



### transmitter and receiver

fig. 1

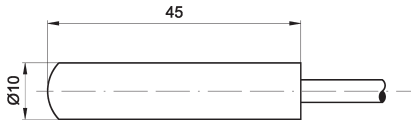


fig. 2

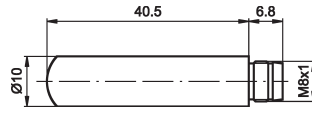


fig. 3

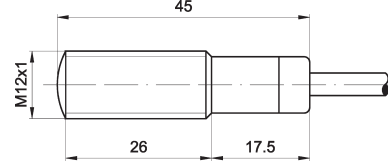


fig. 4

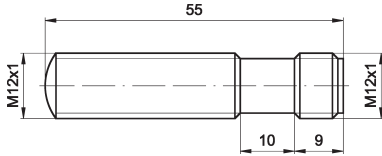


fig. 5

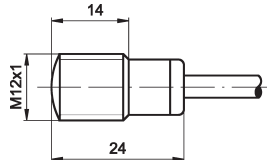


fig. 6

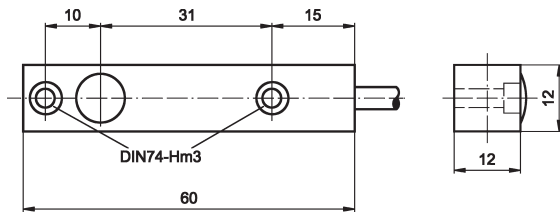
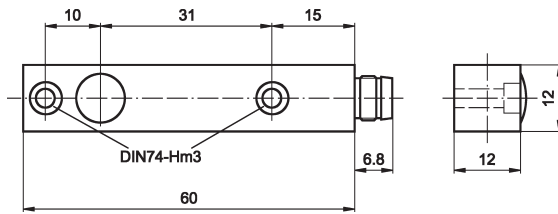


fig. 7



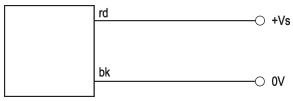
article-no.	transmitter / receiver	switching frequency	angle of beam spread	transmitting power	sensing range*	temperature (operation)	material	connection	fig.
OS106001	transmitter		12°	40mW / sr	normal	-25 ... +60°C	plastic	cable, 5m	1
OS106101	transmitter		6°	350mW / sr	maximum	-25 ... +60°C	plastic	cable, 5m	1
OE106001	receiver	15Hz	25°			-25 ... +60°C	plastic	cable, 5m	1
OS106003	transmitter		12°	40mW / sr	normal	-25 ... +60°C	plastic	cable, 15m	1
OE106003	receiver	15Hz	25°			-25 ... +60°C	plastic	cable, 15m	1
OS106070	transmitter		12°	40mW / sr	normal	-25 ... +60°C	plastic	M8-connector	2
OS106170	transmitter		6°	350mW / sr	maximum	-25 ... +60°C	plastic	M8-connector	2
OE106070	receiver	15Hz	25°			-25 ... +60°C	plastic	M8-connector	2
OS126001	transmitter		12°	40mW / sr	normal	-25 ... +60°C	n-pltd. brass	cable, 5m	3
OS1260V1	transmitter		12°	40mW / sr	normal	-25 ... +60°C	stainl. steel	cable, 5m	3
OS126101	transmitter		6°	350mW / sr	maximum	-25 ... +60°C	stainl. steel	Kabel, 5m	3
OE126001	receiver	15Hz	25°			-25 ... +60°C	n-pltd. brass	cable, 5m	3
OE1260V1	receiver	15Hz	25°			-25 ... +60°C	stainl. steel	cable, 5m	3
OS126003	transmitter		12°	40mW / sr	normal	-25 ... +60°C	n-pltd. brass	cable, 15m	3
OS126008	transmitter		20°	70mW / sr	increased	-25 ... +60°C	n-pltd. brass	cable, 15m	3
OE126003	receiver	15Hz	25°			-25 ... +60°C	n-pltd. brass	cable, 15m	3
OS126020	transmitter		12°	40mW / sr	normal	-25 ... +60°C	stainl. steel	M12-connector	4
OS126120	transmitter		6°	350mW / sr	maximum	-25 ... +60°C	stainl. steel	M12-connector	4
OS126026	transmitter		20°	70mW / sr	increased	-25 ... +60°C	stainl. steel	M12-connector	4
OE126020	receiver	15Hz	25°			-25 ... +60°C	stainl. steel	M12-connector	4
OS126303	transmitter		6°	350mW / sr	maximum	-25 ... +60°C	n-pltd. brass	cable, 15m	5
OE126303	receiver	15Hz	25°			-25 ... +60°C	n-pltd. brass	cable, 15m	5
OS136003	transmitter		12°	40mW / sr	normal	-25 ... +60°C	aluminum	cable, 15m	6
OE136003	receiver	15Hz	25°			-25 ... +60°C	aluminum	cable, 15m	6
OS136070	transmitter		12°	40mW / sr	normal	-25 ... +60°C	aluminum	M8-connector	7
OE136070	receiver	15Hz	25°			-25 ... +60°C	aluminum	M8-connector	7

\* the operating range depends on the settings of the used amplifier



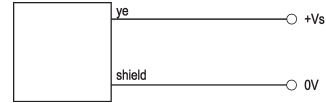
**connection**

cable device transmitter

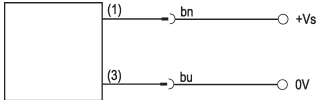


**wire colors:** rd = red, bk = black, ye = yellow, shield = shielding

cable device receiver

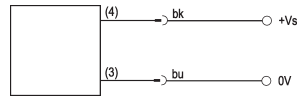


connector device transmitter



**wire colors:** bn = brown (1), bu = blue (3), bk = black (4)

connector device receiver



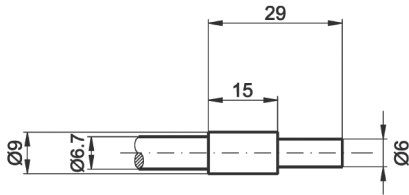
**FURTHER ACCESSORIES:**

cooler housing **AO000161** for optical sensors M12x1 with cable – stainless steel housing 40x90mm

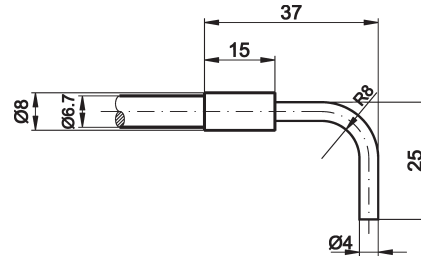
### fiber optics

- ✓ adaptation M12 x1
- ✓ suited to screw onto OS/OE12
- ✓ end sleeve made of stainless steel
- ✓ silicone and/or stainless steel sheathing
- ✓ suited for high temperatures

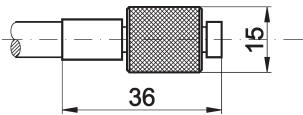
### fiber optic head 1



### fiber optic head 2



### adaptation



article-no.	length	description	outer jacket	temperature range	glass fiber	adaptation	fiber optic head
LS050916	500mm	fiber optics	silicone	-40 ... +180°C	3.5mm	M12x1	1
LS070916	700mm	fiber optics	silicone	-40 ... +180°C	3.5mm	M12x1	1
LS100916	1000mm	fiber optics	silicone	-40 ... +180°C	3.5mm	M12x1	1
LS200916	2000mm	fiber optics	silicone	-40 ... +180°C	3.5mm	M12x1	1
LS102916	1000mm	fiber optics	stainl. steel	-40 ... +300°C	3.5mm	M12x1	1
LS302916	3000mm	fiber optics	stainl. steel	-40 ... +300°C	3.5mm	M12x1	1
LS102911	1000mm	fiber optics	stainl. steel	-40 ... +300°C	2.8mm	M12x1	2

accessories

fig. 1

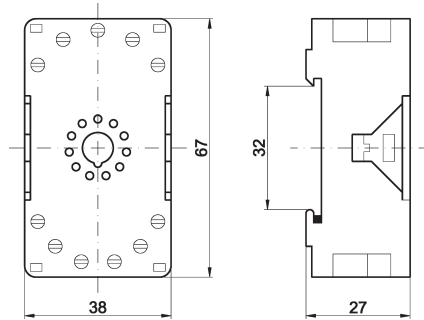


fig. 2

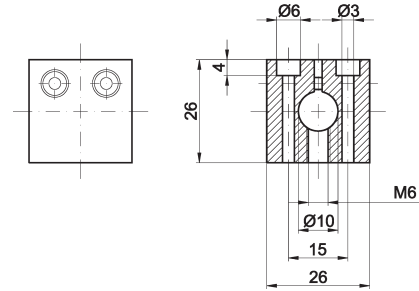


fig. 3

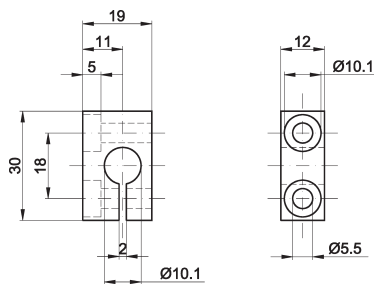


fig. 4

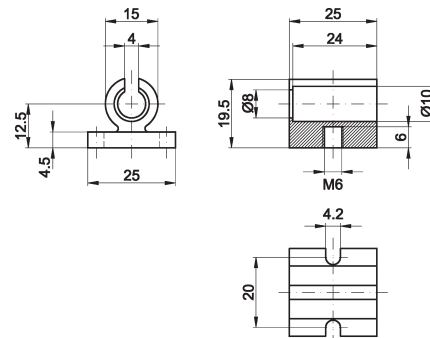


fig. 5

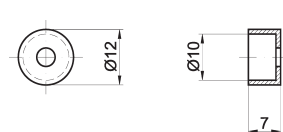


fig. 6

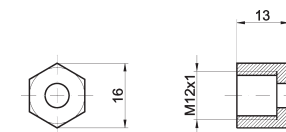
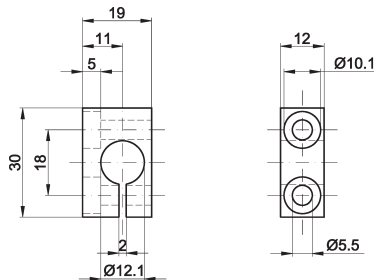


fig. 7



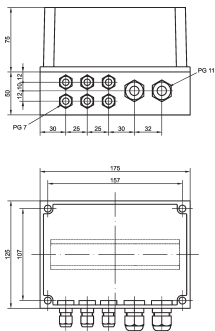
article-no.	description	fig.
AV000004	plug-in base 11-pin, plastic	1
AV000042	spring clip 58, holder for plug-in base 11-pin, amplifier 58	w/o
AY000004	mounting clip 10 for design 10, plastic, round	2
AY000020	mounting clip 10 for design 10, aluminum, round	3
AY000042	clamp holder 10 for design 10, plastic, round	4
AO000021	aperture diaphragm / 10mm, aperture diameter 1mm	5
AO000023	slit diaphragm / 10mm, slit width 1mm	similar to 5
AO000022	aperture diaphragm / M12x1, aperture diameter 1mm	6
AO000048	aperture diaphragm, glass / M12x1, aperture diameter 1mm	6
AO000064	slit diaphragm / M12x1, slit width 1mm	similar to 6
AO000024	slit diaphragm, glass / M12x1, slit width 1mm	similar to 6
AO000063	aperture diaphragm, glass / M12x1, aperture diameter 8mm	similar to 6
AO000095	air purge for optical sensors / M12x1	w/o
AY000032	sensor, clip 12mm, aluminum, for design 12, round	7

### protective housing

- ✓ shock-resistant plastic
- ✓ transparent lid
- ✓ degree of protection IP66
- ✓ PG7 and PG11 cable gland

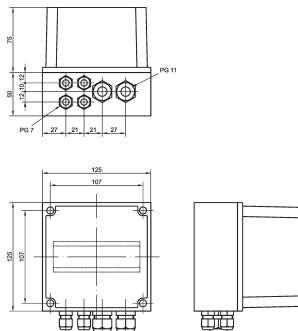
#### AV000108

protective housing for three amplifiers



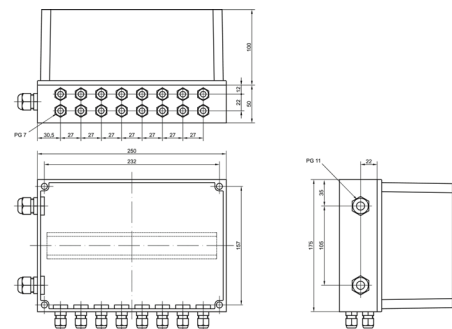
#### AV000109

protective housing for one 2-way multiplexer



#### AV000110

protective housing for one 8-way multiplexer



### TECHNICAL DATA

	AV000108	AV000109	AV000110
material (base)	polycarbonate (glass fiber reinforced)	polycarbonate (glass fiber reinforced)	polycarbonate (glass fiber reinforced)
material (top)	polycarbonate	polycarbonate	polycarbonate
material (sealing)	polyurethane	polyurethane	polyurethane
degree of protection (EN 60529)	IP 66	IP 66	IP 66
shock-resistance (EN 50102)	IK 08	IK 08	IK 08
color (base)	gray (RAL 7035)	gray (RAL 7035)	gray (RAL 7035)
color (top)	smoky	smoky	smoky
operating temperature	-40 ... +80°C	-40 ... +80°C	-40 ... +80°C