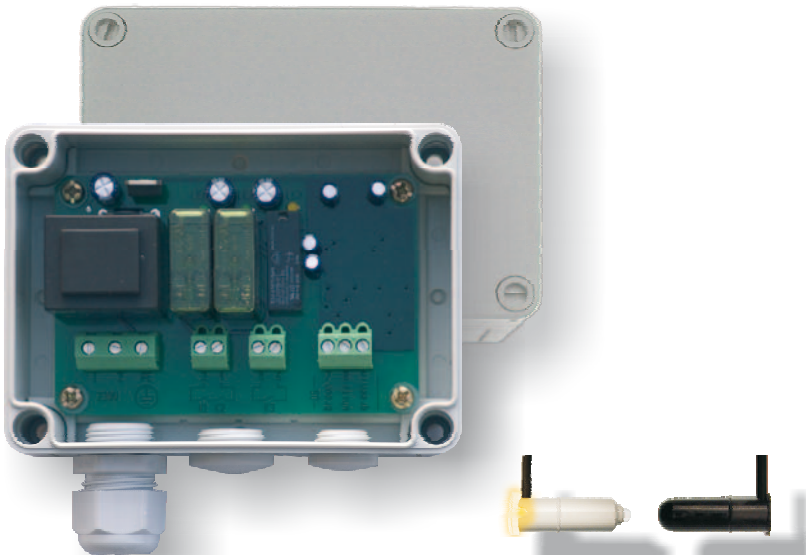


User manual

## **AOS 3024 safety processing unit**

**for 1 optoelectronic safety edge or  
for 1 “TwinPro” pull-in protection  
operating voltage 24VDC**



## **Signs and symbols**



This indication informs you of special features of the system.



Background knowledge



A recommendation for optimum procedure.



Warning instructions please read carefully and comply in all respects.



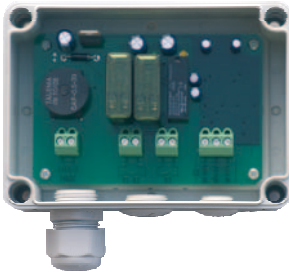
Risk of fatal injuries if disregarded.

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## **Safety information**

- The AOS safety processing unit complies with EN 954-1/category 3 requirements. Correct protective functioning requires fail-safe connection in the sequential process in accordance with relevant standards and regulations.
- The AOS safety processing unit may only be used on door installations.
- Safety information in the user manual must be complied with in all respects.
- Installation and electrical connection must only be carried out by expert personnel.
- Any switching device must be de-energized and checked for safe isolation from supply before working on it.
- The relevant standards and regulations, in particular EN 12453 (Doors Operational safety for power-operated doors - Requirements), must be observed during assembly, installation, commissioning, maintenance and repair.
- When connecting the optoelectronic safety edge, compliance with EN 12978 “Safety devices for power operated doors and gates” must be observed.
- The manufacturer accepts no liability for damages arising from incorrect operation or connection, failure to observe the user manual or a lack of maintenance and care.

## **AOS 3024 safety processing unit**



- Safety category 3
- Processing for 1 optoelectronic safety edge or processing for 1 "TwinPro" pull-in protections
- Signalling contact
- LED indicators

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### **Functional description**

The AOS 3024 safety processing units were developed to EN 12978 "Safety devices for power operated doors and gates".

The AOS 3024 safety processing units contain one safety circuit for processing optoelectronic safety edge or "TwinPro" pull-in protection to EN 954-1, category 3.

These units thus offer a comprehensive high level of safety to category 3.

The output state at any time is indicated by LEDs.

Furthermore all safety processing units include a signalling contact, which closes when the optical safety edge or "TwinPro" pull-in protection is triggered, and opens again after approx. 1,5s.

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### **Declaration of conformity $\text{CE}$**



This device complies with the standards listed below:

EMC directive 2004/108/EEC  
EN 61000-6-2 and EN 61000-6-4

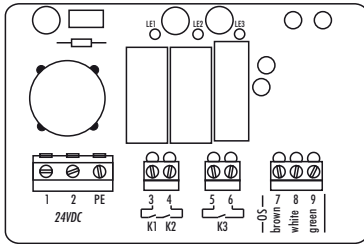
Low voltage directive 73/23/EEC  
EN 60335-1


Safety devices for power operated doors and gates  
EN 12978

## Technical data

Power supply (1/2)	24VDC $\pm$ 10%
Nominal frequency	50Hz $\pm$ 10%
Power consumption	max. 3,2VA
Safety circuit relay (3/4) (12/13)	2 enabling circuits (NO contact), safety-related, positive-action, Protect externally with 4A time-lag fuse
Switching voltage	 250VAC / 50VDC
Switching current	min. 10mA, max. 4A
Switching performance	The safety relay drops out max. 20ms after tripping and triggers again 1,5s after the optoelectronic safety edge is enabled.
Service life mech. switching cycles	50x10 <sup>6</sup>
Service life electr. switching cycles	80x10 <sup>3</sup> at AC 15 (230VAC/4A) 50x10 <sup>3</sup> at DC 13 (24VDC/4A) Utilization category AC15/DC13 nach EN 60947-5-1
Signalling contact (5/6)	not a safety contact; must not be brought into safety circuit
Switching voltage	 (protect externally with 4A time-lag fuse) 250VAC / 50VDC
Switching current	min. 10mA, max. 4A
Switching performance	The signalling relay triggers 220ms after the optoelectronic safety edge trips and drops out again 1,5s later (wipe function).
Connection of opt. safety edge (7/8/9)	Terminal 7 = +12VDC / max. 50mA Terminal 8 = 0V / GND Terminal 9 = Changeover signal/input
Indicators	3 yellow LEDs, LE1 yellow lights up when K1 is triggered LE2 yellow lights up when K2 is triggered LE3 yellow lights up when K3 is triggered
Wire ranges	finely stranded 0.2-2.5mm <sup>2</sup> solid 0.2-4.0mm <sup>2</sup>
Degree of protection	IP 66, EN60529
Protection class	Basic insulation for 230VAC
Operating temperature	-25° to +55°C
Storage temperature	-25° to +65°C
Weight	0.4kg
Casing size	130x95x57mm

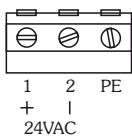
## Location diagram



- 1+2 PE Power supply connection
- 3+4 Safety output for optoelectronic safety edge
- 5+6 Signalling contact
-  The signalling contact is for transmitting information only and must not be brought into the safety circuit.
- 7+8+9 Connection, optoelectronic safety edge or pull-in protection "TwinPro"
- LE1 to LE3 Light up when associated relay trips

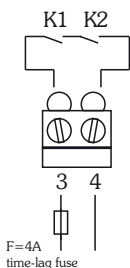
## Connection scheme for power supply

 RISK OF FATAL INJURIES! - De-energize and check for safe isolation



If required, the protective conductors can be connected together under the PE terminal.

## Safety output for optoelectronic safety edge



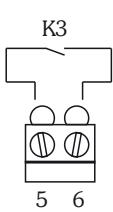
The safety circuit for the optoelectronic safety edge must be provided with a back-up to protect against contact welding. The safety relay drops out max. 25ms after tripping (when it detects an obstacle) and triggers again 1s after the optoelectronic safety edge is enabled. This must stop the door moving towards the closed position.



LE 1 lights up, when K1 is triggered  
LE 2 lights up, when K2 is triggered

During the entire time for which the safety edge is activated, the safety output contacts are open.

## Signalling relay output



K3 is not a safety relay and must therefore not be connected directly to the safety circuit.

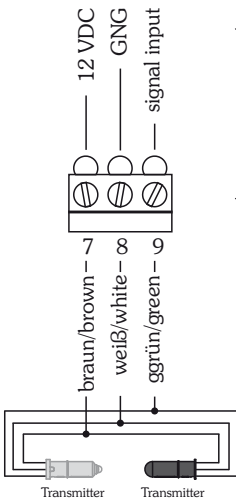


The signalling relay triggers 220ms after the optoelectronic safety edge trips and drops out again 1,5s later (wipe function).



LE 3 lights up, when K3 is triggered

## Connection scheme for optoelectronic safety edge

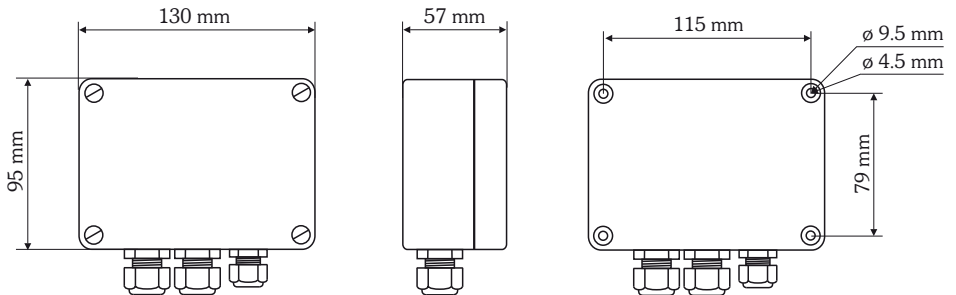


The optoelectronic safety edge is a through-beam photoelectric switch with a special dynamic output function. When the light beam in the safety edge profile is uninterrupted, a changeover signal is generated on the green line within a frequency range of 500 to 2000Hz.



If the light beam in the rubber is interrupted, e.g. because the door has met an obstacle, then the changeover signal becomes a static signal that the controls reliably detect and interpret as an obstacle.

## Size



## Ordering details

type	operating voltage	order number
AOS 3024	24VDC	1.113 753



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