

DATA SHEET

- ❖ 70 beams, direct and cross.
- ❖ Supply voltage 24 V DC (or 110V AC / 230V AC with optional Control box).
- ❖ Relay output, both N.O. and N.C. are available to user (changeover).
- ❖ Diagnostic LEDs.
- ❖ Slim and wide housing available.

Description

The SAR70E is used to protect passengers in elevators equipped with automatic doors. This protection is achieved by **70 DISCRETE INFRARED BEAMS** which are transmitted and received between two edges. When one or more beams are obstructed the buzzer is activated and the relay is de-energised. The output relay is a one change over relay with N.O. and N.C. contacts both available to the user.

The major system components are a transmitting edge "TX" and a receiving edge "RX". The edges are mounted to the car doors or strike posts. Edges are electrically connected according to fig. 6.

The system is fail-safe, i.e. the output relay will de-energise if either of the following occurs:

1. System power is lost.
2. Edge cable is damaged.

Housing

Aluminium housings available for SAR70E are:

- ❖ Model **S**: Slim extrusion of housing (see fig. 3)
- ❖ Model **W**: Wide extrusion of housing (see fig. 4)

Faulty beam cancellation

Faulty beam cancellation can be enabled or disabled by connecting or disconnecting a cable wire on TX edge to +24V (refer to fig. 5 & fig. 6 for location).

If the system senses an obstruction of one beam for a period of one minute it will designate the beam as faulty and cancel that beam whereupon normal door operation will resume. The system will continue to operate normally until three successive beams are designated as faulty. If the system senses that a faulty beam is restored then after one minute it will countermand the cancellation and the beam will come back into operation.

If this feature is disabled and the system senses an obstruction then the doors will remain open indefinitely.

The bottom and top beams are not cancelled by the system. If one of these beams becomes faulty the doors will remain open indefinitely.

The faulty beam cancellation can be enabled or disabled by connecting or disconnecting the Pink cable wire of TX to +24V.

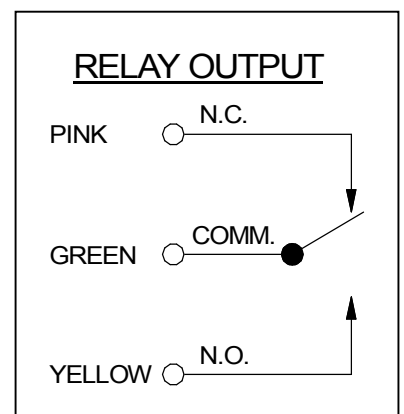
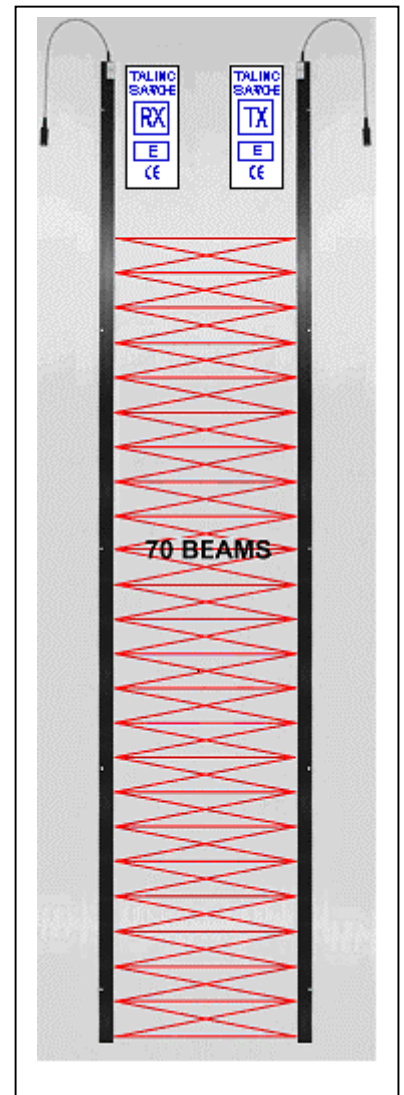
Diagnostics

For diagnostics and trouble-shooting there are two LEDs on the RX edge and one LED on the TX edge. These LEDs inform the user, via diagnostic codes, of the status of the system (refer to fig. 1 & fig. 2).

External Control Box

For operation on voltages other than 24V DC, such as 110V AC or 230V AC, or when output relay rating on edges is too small, an external control box should be used (refer to fig. 7). This external control box contains a transformer, a buzzer and a 10A one changeover relay.

The external control box is optional and must be ordered separately.



DIAGNOSTICS LEDs

DIAGNOSTICS CODES

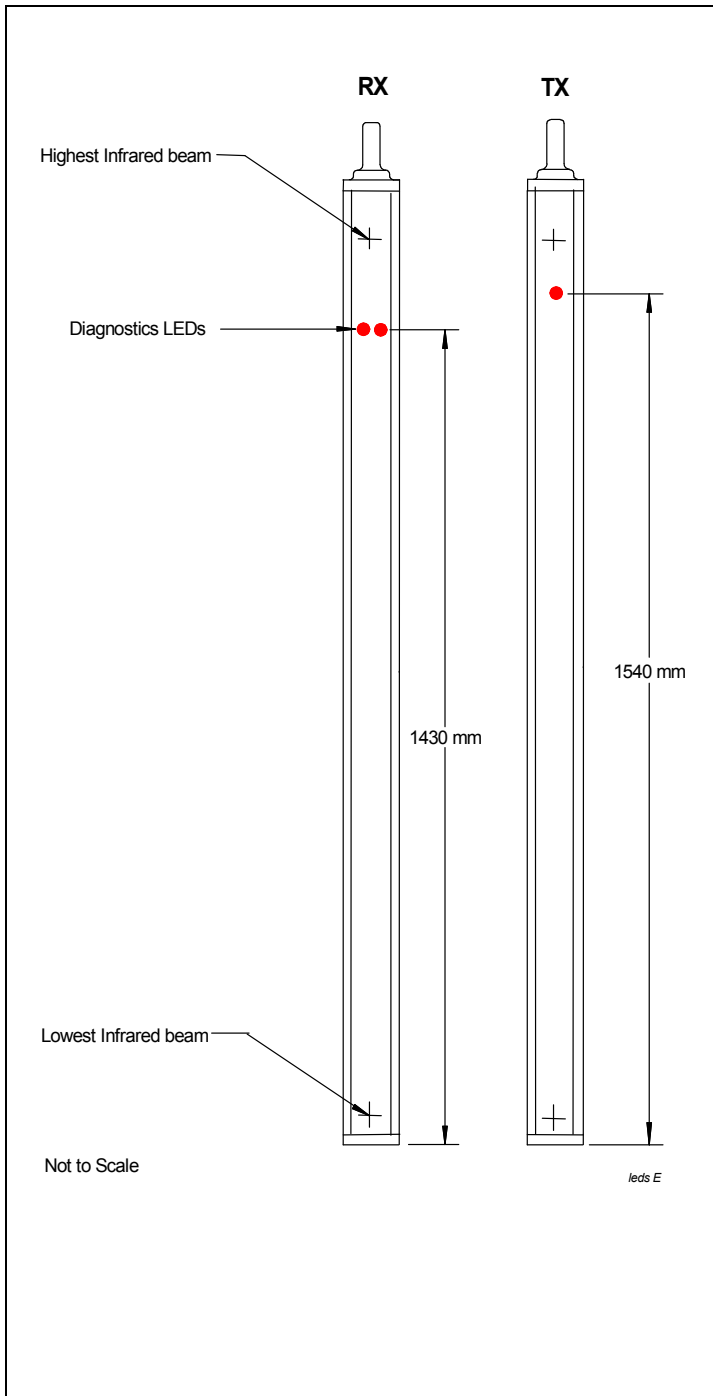


Fig. 1

	LED	Description
TX	Single LED 	When "ON" - power is applied and micro-computer on TX edge is functioning correctly.
		When left and right LEDs are "ON" - no beam is obstructed, system is operating.
RX		When left LED is "OFF" and right LED is "ON" - one or more beams are obstructed.
		When right LED is flashing slowly - there is one cancelled IR diode on TX edge.
		When right LED is flashing fast - there is more than one IR diode cancelled on TX edge, not possible to cancel more IR diodes. Note1
		When left LED is flashing slowly - there is one cancelled receiving diode on RX edge.
		When left LED is flashing Fast - there is more than one cancelled receiving diode on RX edge, not possible to cancel more receiving diodes. Note2
		When left and right LEDs are flashing alternately - the synchronisation signal between TX edge and RX edge is lost.
	X = Don't care = Flashing LED	

Fig. 2

Note1 – We recommend installing a new TX edge at this time thus avoiding the elevator becoming out of service.

Note2 – We recommend installing a new RX edge at this time thus avoiding the elevator becoming out of service.

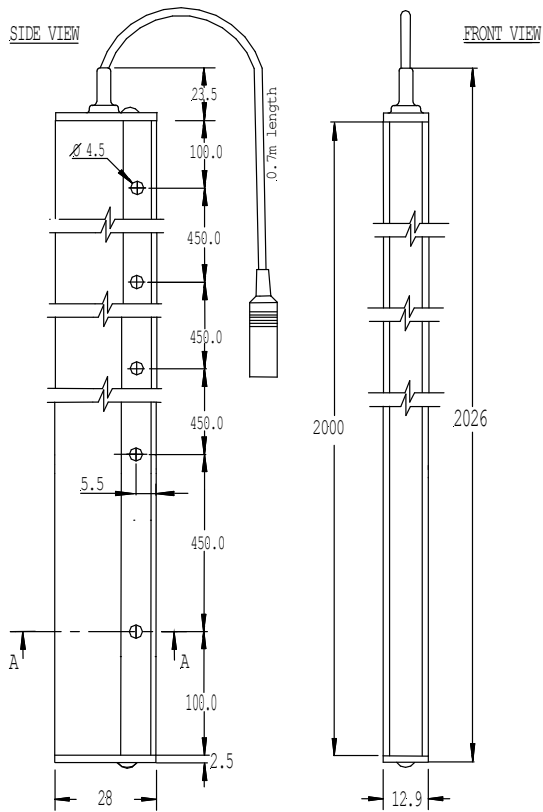
TWO MODELS OF HOUSING

Model S

Model W

SLIM HOUSING

WIDE HOUSING



Dim: mm

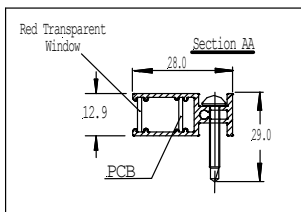
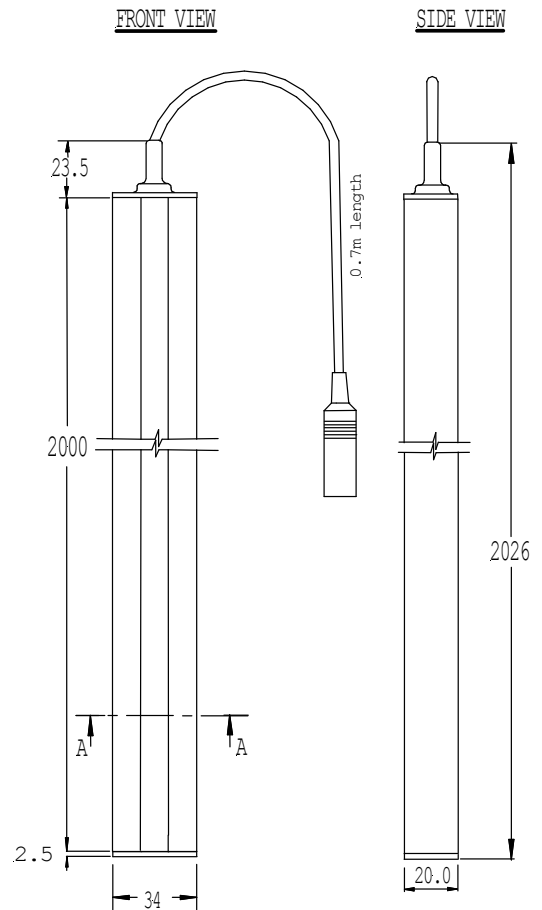


Fig. 3



Dim: mm

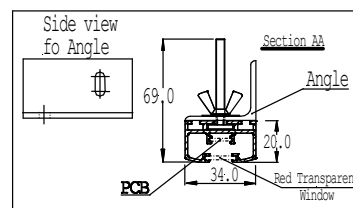
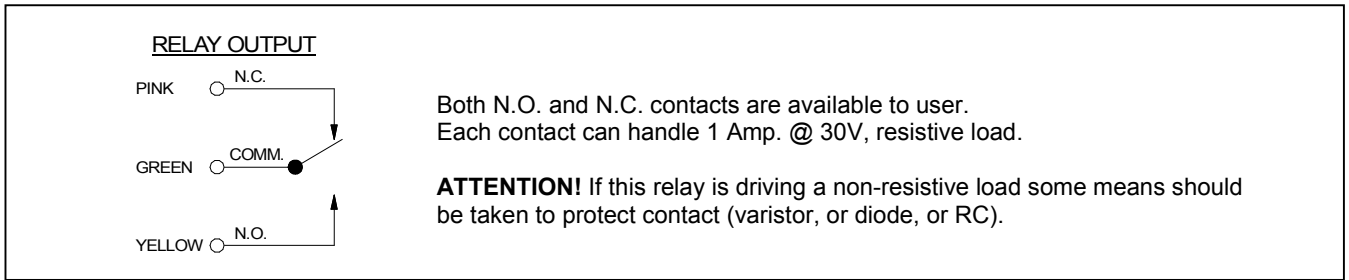
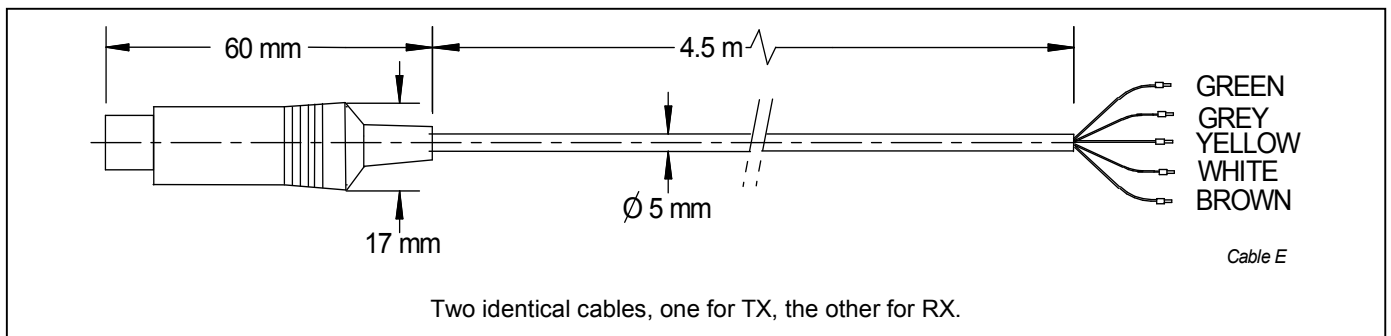


Fig. 4

Output relay details



Cable Details



WIRE ASSIGNMENT

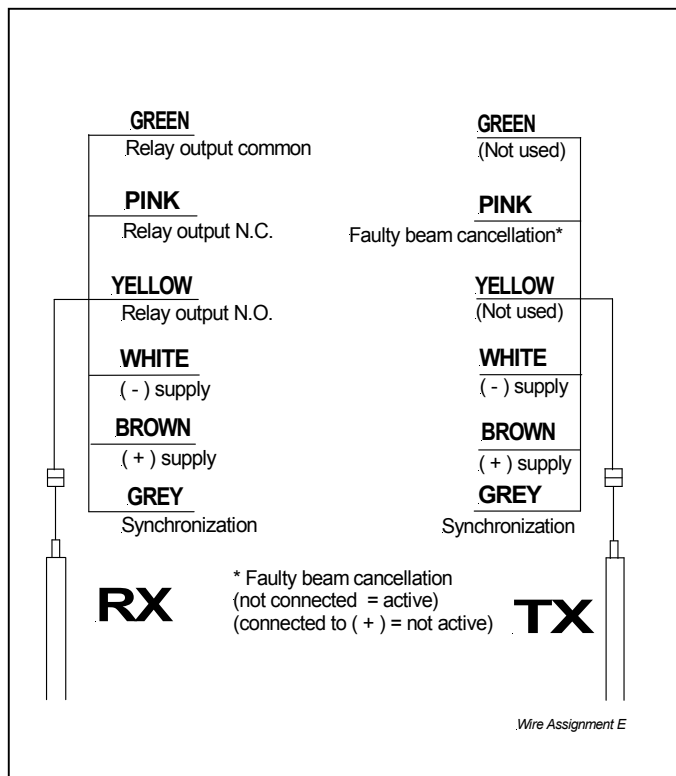


Fig. 5

CONNECTION DIAGRAM

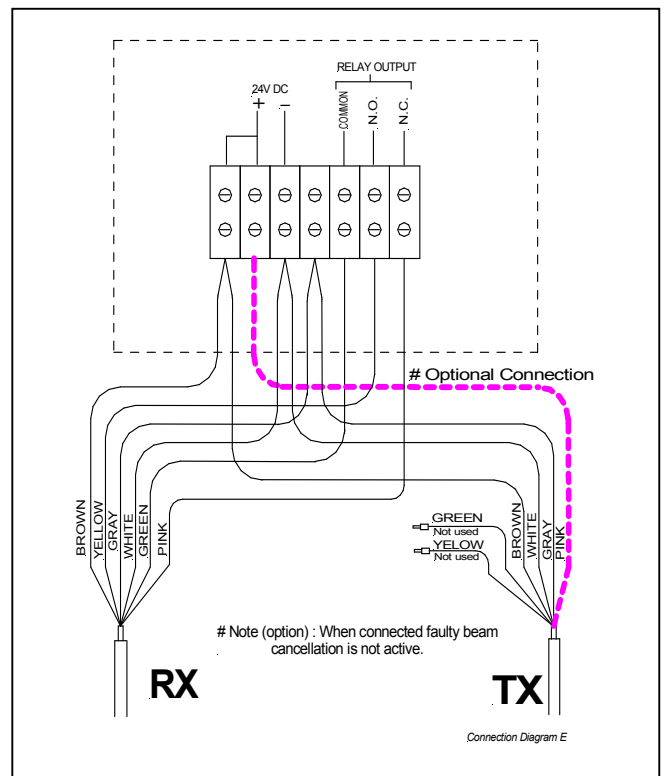

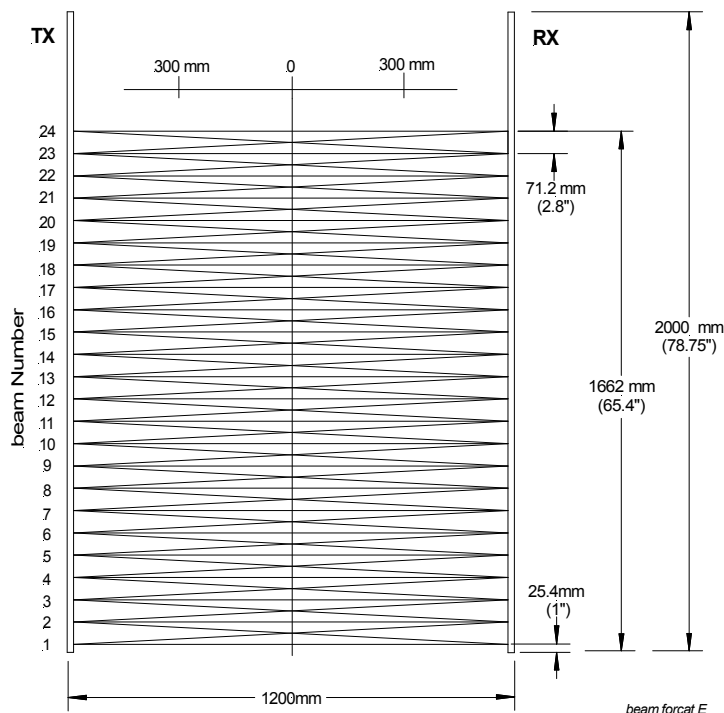


Fig. 6

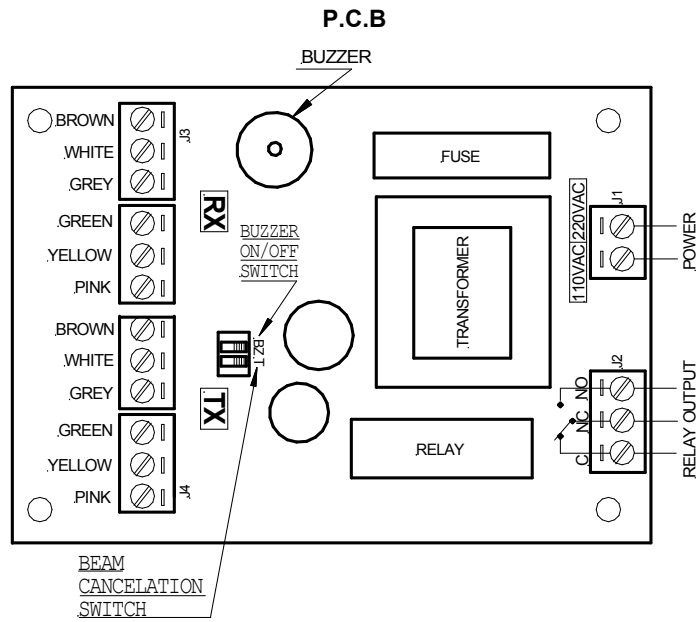
Specifications

Supply voltage	24V DCm (rectified unfiltered) or 110V AC / 230V AC (by use of external control box).
Power consumption	4VA max
Output	Relay, dry contact, N.O. and N.C. 1A @ 30V, both contacts are available to user. The relay is energized during operation when no beam is interrupted. Booster relay of 10A one changeover is available by use of external control box (model: C4).
 Output relay information	Output relay is specified for 5x10 ⁹ operations at 1A, 30VDC resistive load only, user shall not exceed these specification! Operation at 0.1A or less will increase expected No. of operations
Range	min.: 0m max.: 4.5m
Edge height	2000mm (78.75")
Highest beam height	1662mm (65.4")
Lowest beam height	25.4mm (1")
Total no. of beams	70 (Not dependent on the door opening.)
No. of direct beams	24
Grid distance	71.2mm (2.8") 71.2mm (2.8") for direct beams only, together with crossing beams grid is much more dense.
Faulty Beam Cancellation	Enable by disconnecting TX pink wire cable from 24V, disable by connecting TX pink wire, to 24V (or by dip switch on optional control box C4). Up to three non-successive beams can be cancelled.
Buzzer	Optional, on external control box.
Indicators	LED, for proper operation and diagnostics.
Faulty beams indicators	Two LEDs on RX edge, a beam is declared as faulty after one minute of not responding.
Cable	Flexi, 6 x 0.25
Cable length	4.5m each (14.76 ft)
Mounting arrangements	Five holes of 4.5 mm diameter for slim version. Sliding bolt for wide version.
Edge case material	Aluminium, black anodized.
Packed weight	2.3 kg
Ambient temp.	-10°C to 50°C
Edges sealing	IP 51
Ambient light	Full sunlight (40 Klux), full dark.
Approvals	CE

Beam Location

Control Box (optional)

Optional Control Box Model: C4



Metal Cover of the Control Box

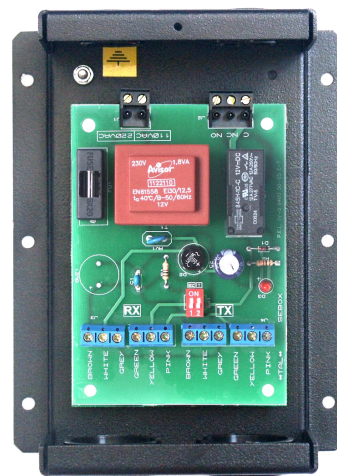
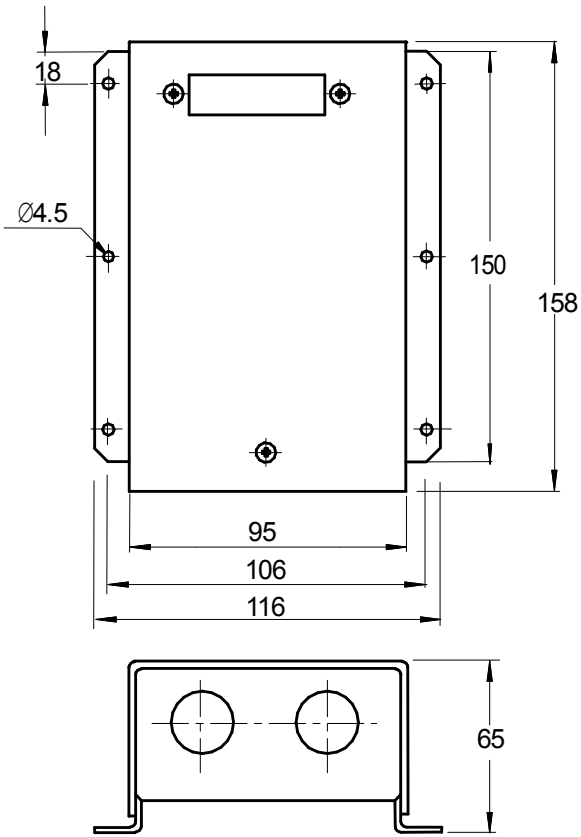
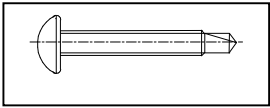
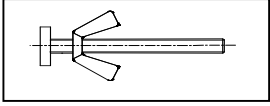
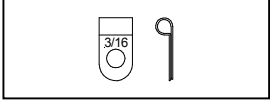
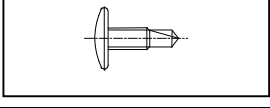
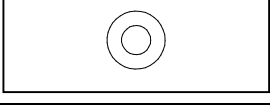
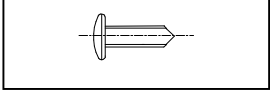


Fig. 7

Mounting Hardware

Self-drilling screws 8x1" included in the set. Only for model SAR70E-S (slim housing).	10x	
Square headed bolts, wing nuts, washers & spring washers included in the set. Only for model SAR70E-W (wide housing).	4x	
P-clips: p-clips 3/16" (cable holders).	6x	
Self-drilling, wide-headed screws.	6x	
Washers.	6x	
Sheet metal screws.	6x	

Ordering informationSAR70E - 24VS = Slim housing
W = Wide housing**Example for ordering.**

Part No.	Description
SAR70ES-24V	SAR70E, SLIM housing
SAR70EW-24V	SAR70E, WIDE housing

Control box Ordering information (optional)SAR70E/EL - C4 -
110V
220V

SAR70E/EL - C4 – 110V	110V Operation Control box
SAR70E/EL - C4 – 220V	220V Operation Control box

Limitations and warnings

The SAR70E light curtains will not detect the followings objects:

- Transparent objects.
- Chains, ropes, ribbons and similar objects with a small cross-section.
- Small or thin objects.

WARNING

SAR70E light curtain is not a safety system and must not be used as such.
SAR70E is not designed for personnel safety, and must not be used as a stand-alone personnel safety system.
SAR70E light curtain is for elevator use only.

Talnor (UK) Ltd. Engineering reserves the right to change specifications without notice.

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