MEMCO

éLITE

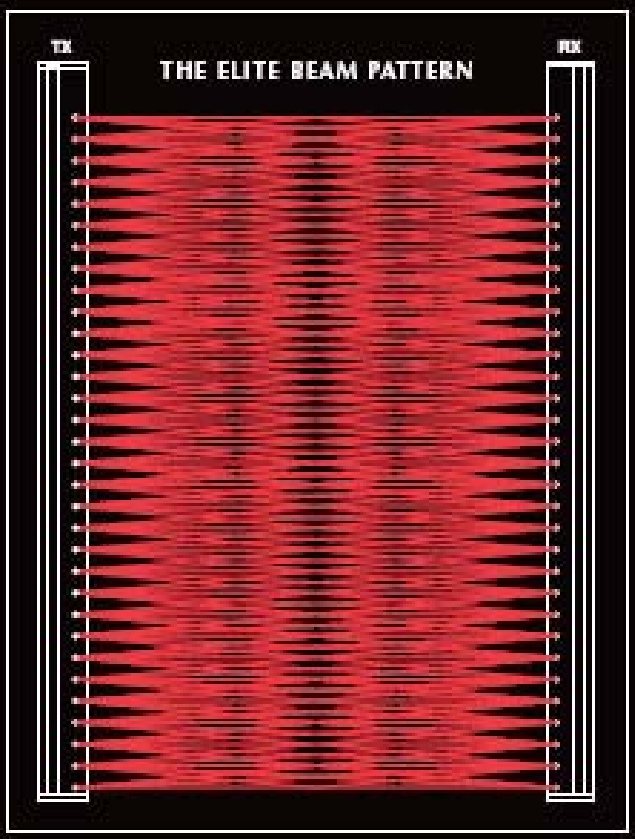
– gives you the edge in lift safety

ELITE

The Elite range, which comprises several variants of infrared detectors, delivers the ultimate in technology and safety.

The integrated controller enables the system to be used without a control box, making the Elite range one of the most competitive systems on the market.

Elite systems are fitted with the latest software as standard, including Power Reduction and Timeout feature, and can be fitted to nearly all new and existing lifts.



BENEFITS

- Improves passenger safety
- Protects lift doors
- Upgrades lift performance
- Optimises lift uptime

LATEST TECHNOLOGY

- Microcontroller inside 9mm (or 32mm) width detector
- Logic output NPN-PNP with N/C or N/O transistor
- Latest component generation
- Unrivallled software

PRECISE DETECTION BETWEEN DOORS

- Infrared curtain of 154 criss-cross beams
- Diagonal beams to closure
- High speed scanning
- Automatic signal level adjustment

HIGH LIFE EXPECTANCY

- Power Reduction software
- Timeout function

ENVIRONMENTAL PERFORMANCE

- Light immunity > 50,000 lux
- Flexible mounting (static or dynamic)
- Detectors with IP54 rating and high impact resistance
- EMC approval

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PRODUCT INFORMATION SHEET

Memco Elite

Model 618

INFRA RED SAFETY CURTAIN FOR LIFTS

- **Greatly reduces damage to the lift doors**
- **Microcontroller based TX and RX**
- **81 criss-cross beams offer protection up to a height of 1.8m as required by EN81-70:2003**
- **Supplied with patented Power Reduction software**
- **Designed for new and existing lifts**
- **Diagnostic LEDs and timeout software**
- **Robust 9mm wide profile**
- **4m range**

INTRODUCTION

The Memco élite 618 safety system provides a light curtain of infra-red beams operating between the lift car doors. Any person or object breaking the beams will trigger the system and re-open the doors. The beam pattern will pick up even small objects between the car doors.

The 618 safety system consists of a transmitter detector (TX) and a receiver detector (RX) mounted on the car doors. The system will automatically sense the door separation and adjust itself for optimum performance. No setting up is required.

In many installations a separate controller is unnecessary and the detectors can be connected direct to the lift controller or door operator.

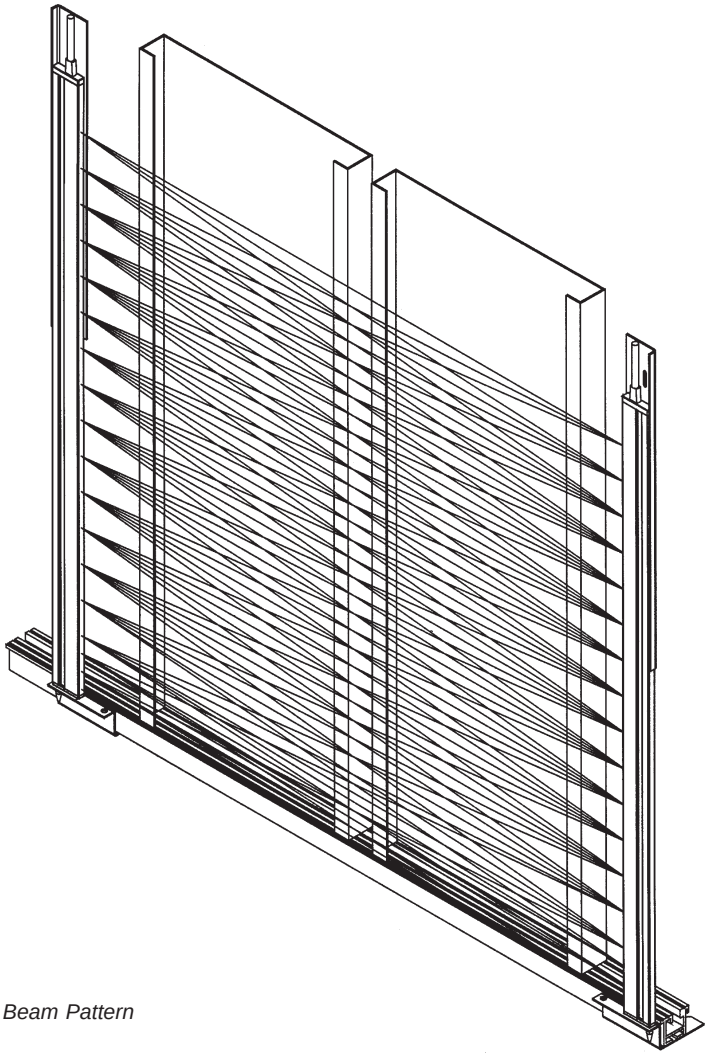

Fig 1: 618 Beam Pattern

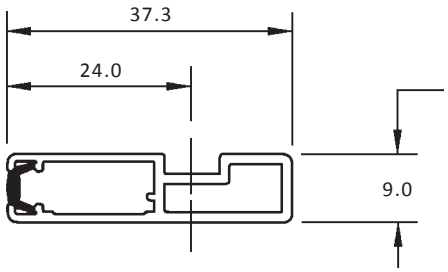

Fig 2: 618 profile

OPERATION

Light Curtain Operation

The 618 light curtain uses 18 transmit diodes in the TX detector and 18 receive diodes in the RX detector. The light curtain uses an 81 beam pattern when the doors are fully open (Fig 1). The pattern changes to 50 beams as the doors close to approximately 650mm, and maintains 18 beams right up to closure.

Surface mount technology has led to a great improvement in the optics allowing diagonal beams to function to almost door closure. The diodes are manufactured using a technique which improves both consistency and reliability. The special lenses, unique to Memco, used in conjunction with the surface mount diodes optimise the system performance.

Trouble-Shooting LEDS

There are two red trouble-shooting LEDS positioned 25cm and 31cm from the top of the TX detector. The states they can indicate are shown in Table 1.

Power Reduction Function

This software feature prolongs the life-span of the detectors by putting them into a less active state when the lift is not in use. It automatically activates when the detectors are stopped and close together for more than 10 seconds. In this mode scanning is reduced to once every 2 seconds. If the doors start to open, or an obstruction is detected then the normal scanning and trigger mode is resumed.

Timeout Function

This software feature allows up to 3 non-adjacent light-curtain TX diodes to be ignored if they are permanently obstructed. It is automatically activated 10 seconds after a beam is permanently blocked. This is a useful service feature which enables detectors defaced by vandalism to continue working while arrangements are made to replace them.

System Connection

For trouble-free installation we recommend installing the 618 system with a Memco 280 or 281 power supply. However in many situations the 618 can be directly connected to the lift controller or door operator.

The power supply is available in two versions; the Model 280 is powered from an AC supply (115 / 230V) while the Model 281 is powered from a DC supply (15 - 36V).

Table 1: Trouble Shooting Guide

LED	Status	Possible Cause
☐ ☐	OFF OFF	No Power
✳ ☐	FLASHING OFF	TX/RX connection open circuit
■ ☐	ON OFF	Triggered state obstruction between detectors
■ ■	ON ON	Normal scanning state
■ ✳	ON FLASHING SLOWLY	A diode has been timed out

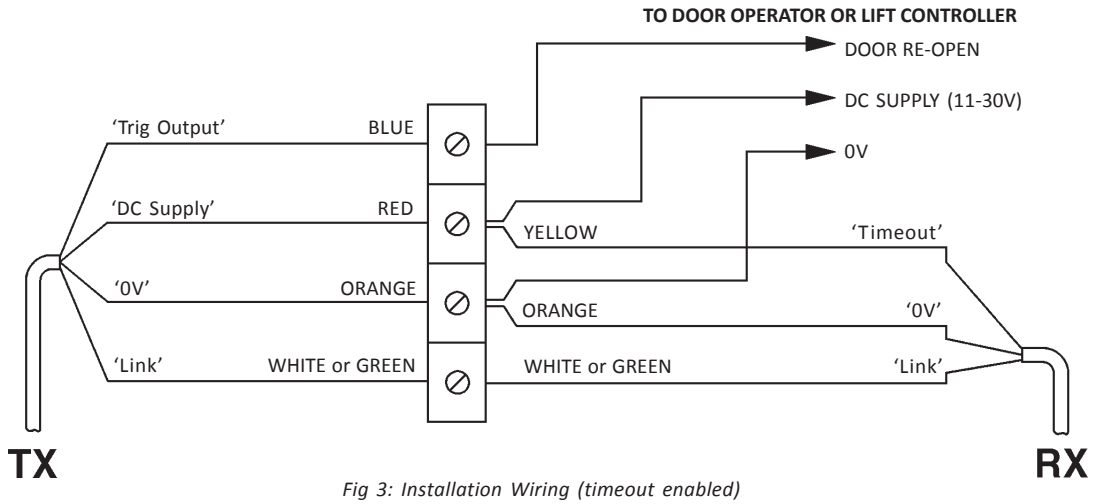

Fig 3: Installation Wiring (timeout enabled)

Using a Memco 280/281 Power Supply

The Memco power supply provides:-

- a regulated DC supply for the 618 detectors.
- a relay output for connection to the car door re-open circuit.

This eliminates concern about the electrical environment into which the 618 is being installed and makes wiring straightforward (Fig 3).

The power supply also has a beeper which sounds when an object is detected. A switch is provided to disable this beeper. The unit is factory-set for "failsafe" operation using standard 618 (PNP-N/C) detectors, but switches allows detectors with other transistor configurations to be used.

Direct Connection

The 618 can be connected directly to the lift-controller or door-operator if it has asuitable power supply and "door reopen" circuit (Fig 4). The power supply must be *regulated* DC (11-30V) with no transients. The door re-open circuit must accept a transistor drive and guarantee the signal current will never exceed 100mA.

The standard 618 transistor configuration is PNP Normally-Closed (PNP-N/C). A PNP transistor means the load will be connected between the output and 0V (i.e. when the transistor is turned on the load will draw current from the transistor output). Normally Closed means the transistor is turned on when a person or object is not being detected. Other transistor configurations are available on request but PNP Normally-Closed offers "fail-safe" operation.

Contact Memco to discuss direct connection in more detail.

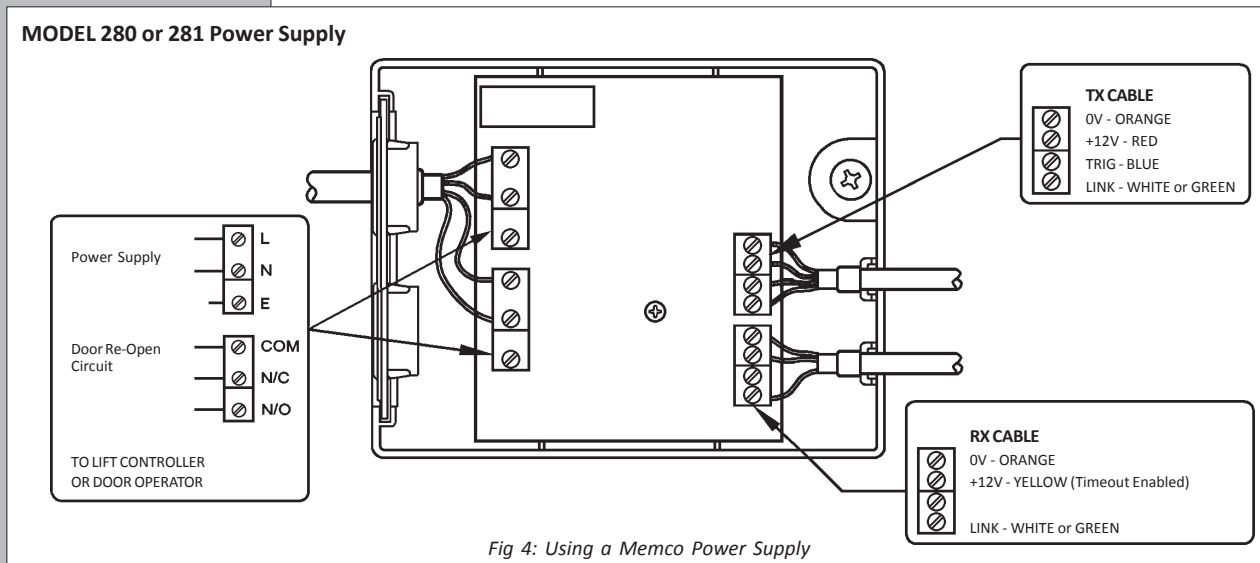

Fig 4: Using a Memco Power Supply

618 SPECIFICATION		
Detector size		9mm ($^{3}/_{8}$") x 37.3mm ($1^{1}/_{2}$") x 2008mm (6' $7^{1}/_{16}$")
Fixing kit		10 x 6mm 'P' Clip 10 x No.6 x 20mm CSK screws 12 x No.8 12mm S/T screws 10 x No.6 16mm S/T Pan Head screws 10 x M3.5 shakeproof washers 2 x M4 shakeproof washers
Distance between bottom beam and bottom of housing		20.5mm ($^{13}/_{16}$")
Distance between top beam and bottom of housing		1834mm (6' $^{3}/_{16}$")
Range		4m
Number of diodes per detector		18
Distance between diodes		bottom 4 diodes 58.5mm, top 14 diodes 117mm
Number of beams		81 when detectors are more than 650mm apart, 50 when less than 650mm apart, 18 when detectors are closer than approx 250mm
Input Voltage		11-30V DC max @ 80mA max (excluding PNP load current). Supply must have a ripple voltage of no more than 36V peak
Output Stage		NPN or PNP transistor (factory set)
Indicators		2 red LEDs on TX (visible through the lens)
Light immunity		>100,000 lux
Operating temperature range		-10°C to 55°C as per BS2011 Part2.1 Ab and Part 2.2 Bb
Temperature storage		-20°C & 65°C for 16 hours at each temperature
High temperature/high humidity		BS2011:Part2.1Db:1981, Variant2 at +55°C
EMC compliance		Emissions to EN12015, Immunity to EN12016
IP Rating		IP54 in accordance with BS EN60529:1992
Sleep Software Patent Nos	UK Germany Japan USA	9822359.7 29918009.3 291527/1999 09/416,585

Ordering Information
Normal Product Range 618 180 Set of Model 618 Detectors each with 2.7m cable PNP-N/C output 618 180-B Set of Model 618 Detectors each with 4m cable PNP-N/C output
Available on Request 618 080 Set of Model 618 Detectors each with 2.7m cable NPN-N/C output 618 090 Set of Model 618 Detectors each with 2.7m cable NPN-N/O output 618 190 Set of Model 618 Detectors each with 2.7m cable PNP-N/O output
Accessories 280 000 Power Supply: 115/230V AC 281 000 Power Supply: 15-36V DC 616 800-010 Static Fixing Kit

This product is designed for use in elevators with powered automatic doors where the closing force is 25N/mm or less as per EN81 requirements. It should be installed by qualified personnel only, therefore any use outside of this application is at the installer's own risk and should be assessed appropriately.

As a result of our policy of continual improvement, the information in this document is subject to change without notice and it is intended only as general guidance on product performance and suitability. This information shall not form part of any contract.

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DSHEET13/SPA/24.03.2011