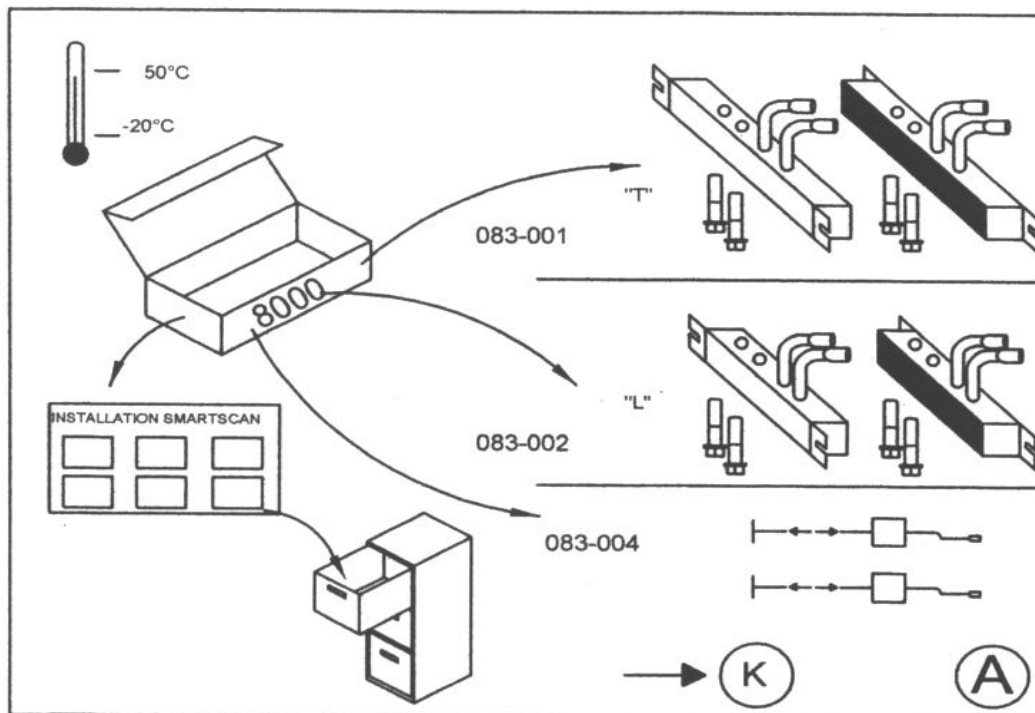


8000 Series Mute Accessories Installation Sheet (CD174/030210)

Unpacking

- ❑ Remove all packaging material and retain it
- ❑ Locate and keep the delivery note
- ❑ Inspect all items for transit damage
- ❑ Match goods supplied to those specified on the delivery note
- ❑ Keep the Installation Sheet in a safe place



An 8000 Series mute accessory kit would normally include:

- ❑ Pair of 'L' or 'T' muting modules with fixing bolts or, a pair of through-beam mute sensors, or polarised retro reflective sensors with cables and connectors affixed, together with mounting brackets.
- ❑ Installation sheet
- ❑ Service questionnaire form

Storage requirements

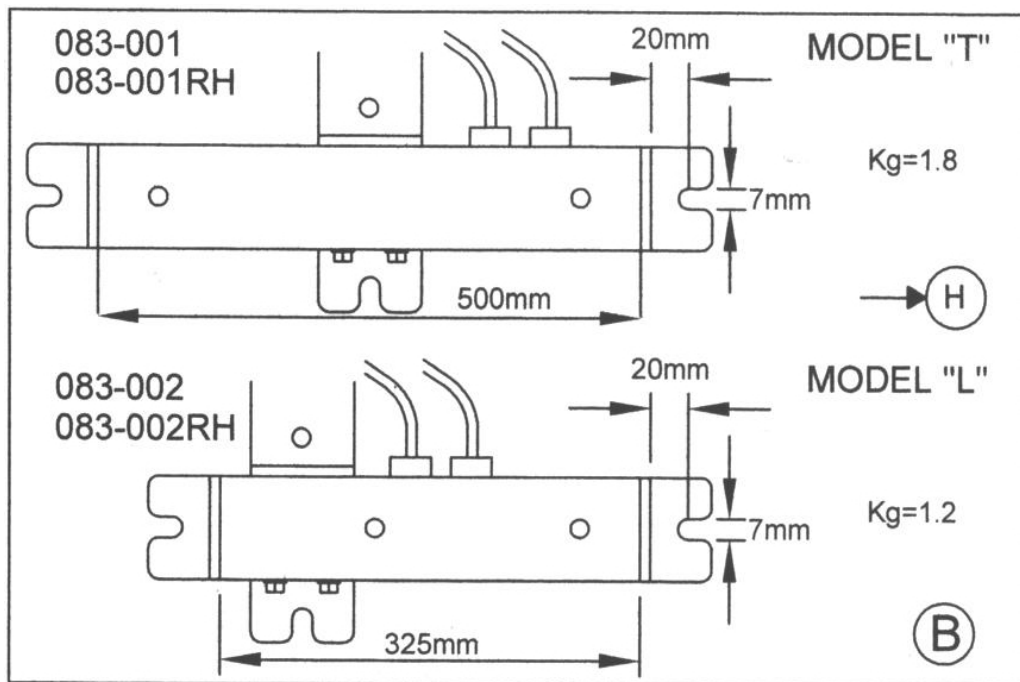
- ❑ Humidity - <95%
- ❑ Temperature range between -20° C and +50°C

Figure B shows the dimensions and weights for the Integral Muting modules.

083-001. Model 'T' (entry / exit) can be configured to provide either cross-beam or parallel beam muting for in-feed or out-feed zones or in situations where a pallet load is required to pass along the conveyor in both directions through the light curtain.

083-002. Model 'L' (exit) is for positioning at out-feed zones only where a pallet load is travelling out from the danger area into the safe area.

083-004. Plug-in retro-reflective polarised muting sensors for applications that require the sensors to be positioned remotely from the light curtain columns. The sensors provide a scanning range of up to 4m between transceiver and a reflector. They come complete with plug-in connectors and 1.5m cables. Refer to Figure K.



The 8000 Series T and L muting modules have the same cross section as the light curtain, 50 x 50mm.

Figure C Fixing 'L' or 'T' mute modules to the main light curtain columns is very easy. Undo the fixing bolts and remove the end-cap fixing bracket and rubber seal from both the transmitter (Tx) and receiver (Rx) columns.

Fit the appropriate 'L' or 'T' module to the base of each column using the longer bolts that are supplied with the units. Tighten the bolts enough to ensure waterproof sealing between the aluminium housings. If an additional guard mounting point is required the bottom end cap bracket can be re-fitted underneath the mute module housing.

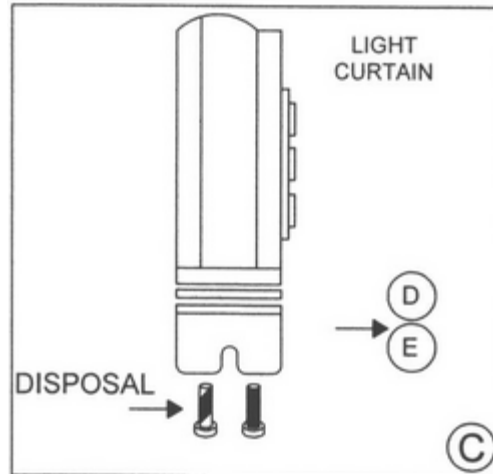
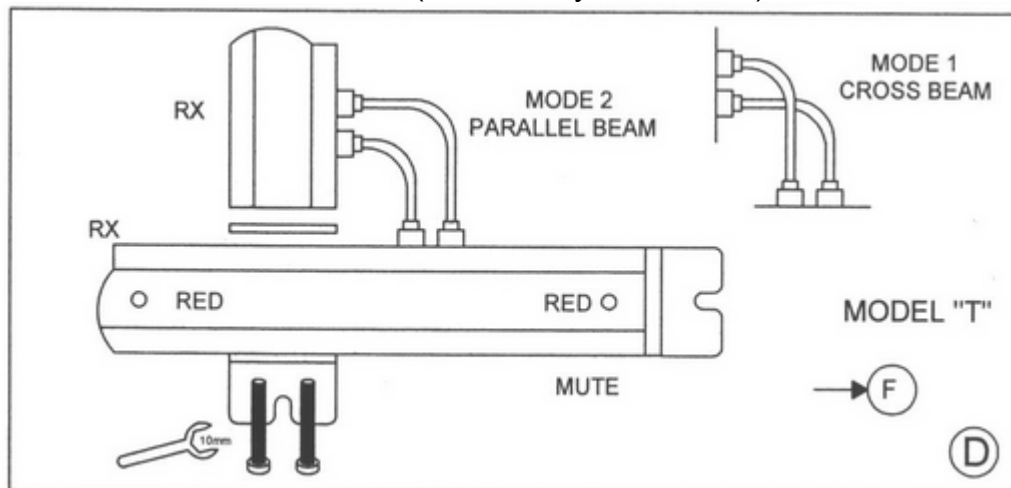


Figure D Plug-in the two cables on the receiver (Rx) mute module to the connectors on the light curtain receiver Rx column as shown. Notice the differences between connections for the cross-beam and parallel-beam configurations. Red LED's in the receiver Rx mute module are illuminated when the mute beams are inactive (clear of any obstruction).



On the Receiver (Rx) the two mute inputs are situated below the B or User cable connection and the A or interconnect cable connection.

On the Transmitter (Tx) mute inputs are situated below the A or interconnect cable connection, refer to **Figure E**.

Plug in the two cables from the transmitter (Tx) mute module to the main light curtain transmitter (Tx) column as shown. Unlike the R/X module there are NO connection differences at the transmitter (Tx) between cross-beam and parallel-beam configurations.

'T' mute modules are suitable for cross-beam and parallel beam whereas only the 'L' module is always configured in cross-beam mode.

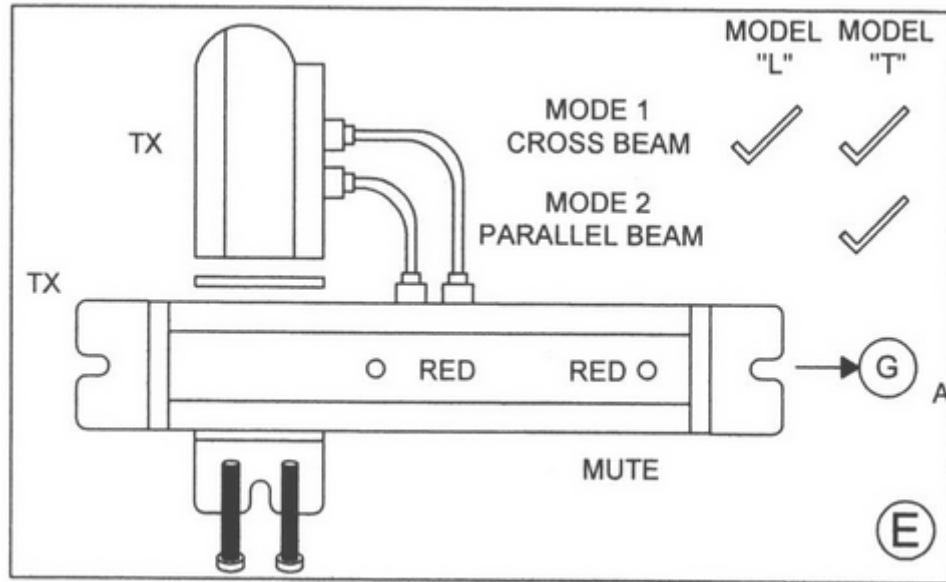


Figure F shows options for configuring an 8000 Series safety light curtain in applications using non-integrated mute sensors.

There are particular applications where standard mute modules are not suitable for example, where there is a limitation in the space available for mounting the modules. In such cases external sensors that allow more flexibility are often used.

Polarised retro-reflective sensor - Type 109-016 Maximum range = 4m

Sensor transceiver comes complete with polarised reflector, a 1.5m cable, mounting brackets and a 4 pin bayonet locking connector for direct connection to the input sockets on the safety light curtain receiver unit.

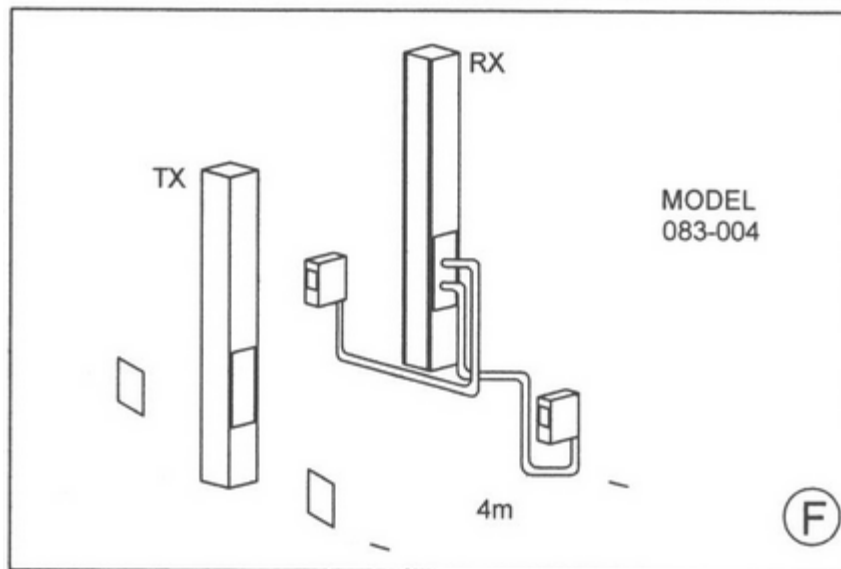


Figure G shows the beam layout for parallel and cross-beam mode configurations associated with the 'T' type mute module (entry / exit).

Mode 1 - Cross-beam muting. To ensure correct operation of the safety system both mute beams must be interrupted by a loaded pallet within 2.5 seconds of each other and both must remain interrupted during the entire period the palletised load is transferring through the light curtain.

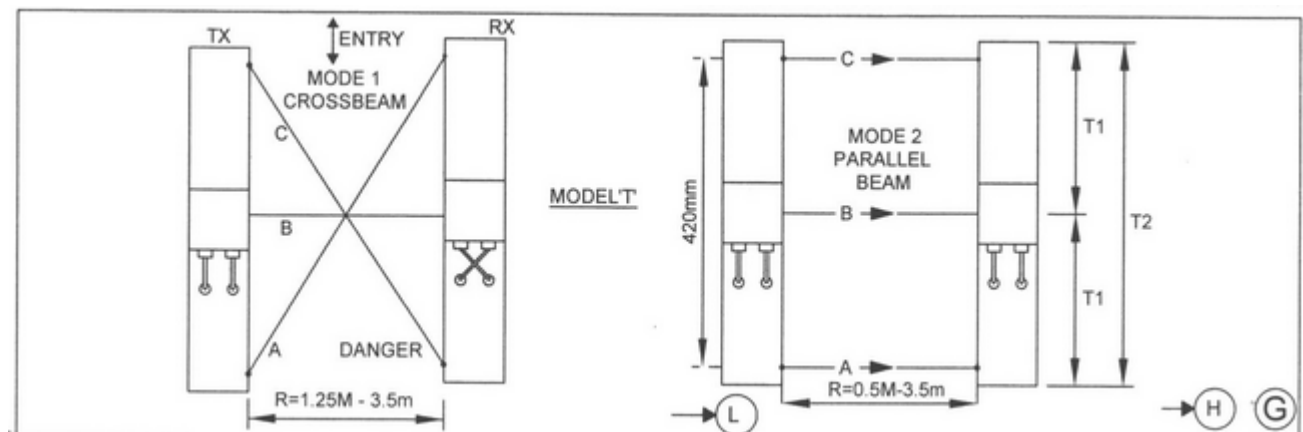
The cross-beam muting configuration is suitable for scanning a range between 1.25m and 3.5m.

Mode 2 - Parallel-beam muting. To ensure correct operation of the safety system the beams must be interrupted in a specific sequence and within a pre-set time period.

Refer to the separate section 'Parallel Beam Muting' for further details regarding parallel-beam mute sequencing. The parallel-beam muting configuration is suitable for scanning a range between 0.5m and 3.5m.

Mute Enable Input

The 'mute enable' signal is a control system requirement that a 'conveyor run' signal be provided. . This third signal is normally taken from the conveyor transport system (conveyor run). Inclusion of the signal indicates to the safety control that the conveyor is transferring products towards the light curtain detection field, thus instructing the controller to activate a MUTE ON condition during a pallet transfer through the light curtain.



Note: The mute sensors inside the muting module for the 'T' system are positioned approximately 420mm apart.

Figure H shows the 'L' type muting module (exit only) for safeguarding the area across a conveyor out-feed zone.

Warning: The 'L' type module must NOT be used at in-feed zones, (out-feed only). Always configure an 'L' type mute module as mode 1 - cross-beam.

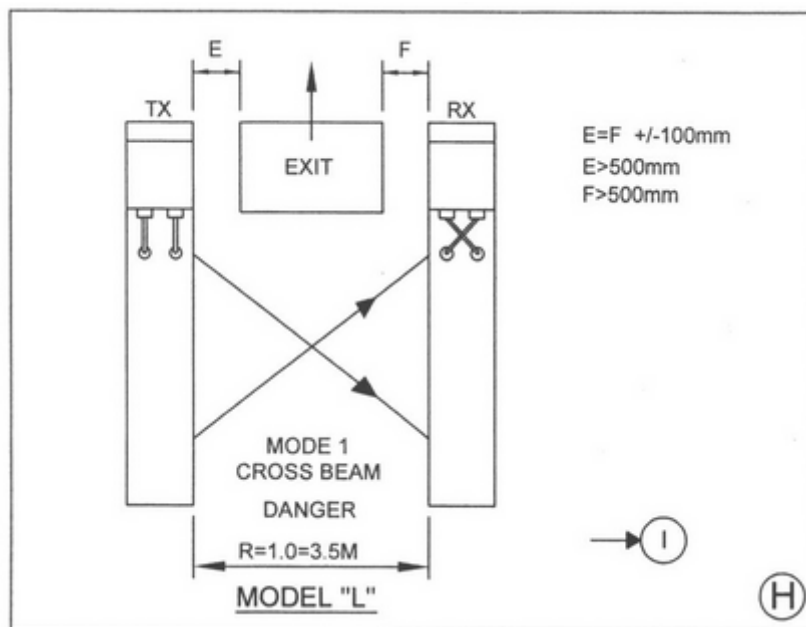
To ensure correct operation of the safety system both mute beams must be interrupted by a loaded pallet within 2.5 seconds of each other and both must remain interrupted during the entire period the palletized load is transferring through the light curtain.

There is a short period of time when the trailing edge of a pallet load 'clears' the detection field of both mute sensors but is still interrupting the light curtain. A timer is incorporated within the safety control system that allows a period of 2.5 seconds between the pallet load 'clearing' the mute sensors and 'clearing' the light curtain. If the 2.5 second period is exceeded the safety system will trip.

Position the light curtain to ensure a pallet load does not stop after clearing both the mute beams and the light curtain.

Pallet load minimum gap requirement (cross-beam mode 1)

Pallet load positioning relative to transmitter and receiver (note distances for A and B)



Ensure that the pallet when entering and exiting the light curtain is central on the conveyor. The distance for A and B as shown on the diagram should be approximately the same.

Figure I shows the electrical connection differences between cross-beam and parallel-beam muting configurations.

Cross-beam muting for 'T' and 'L' mute modules

Activate switch - (F7). Connect the red/white wire in cable B to a normally open switch contact. Connect the other side of the switch contact to +24V DC. The switch could either be a spring return to off key switch or push button.

Mode - (F8). Connect the black / white wire in cable B to 0V DC.

Parallel-beam muting for 'T' modules only

Activate switch - (F7). Connect the red/white wire in cable B to a normally closed switch contact. Connect the other side of the switch contact to +24V DC. The switch could either be a spring-return to on key switch or push button.

Mode - (F8). Connect the black / white wire in cable B to +24V DC.

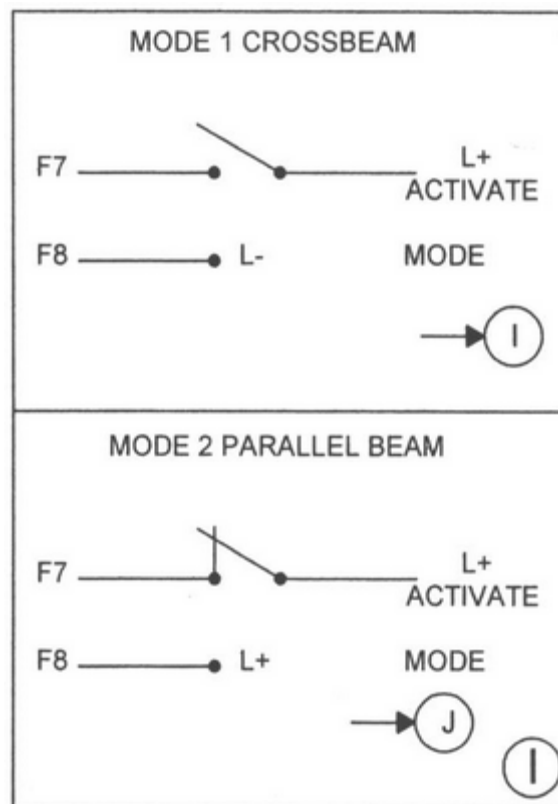
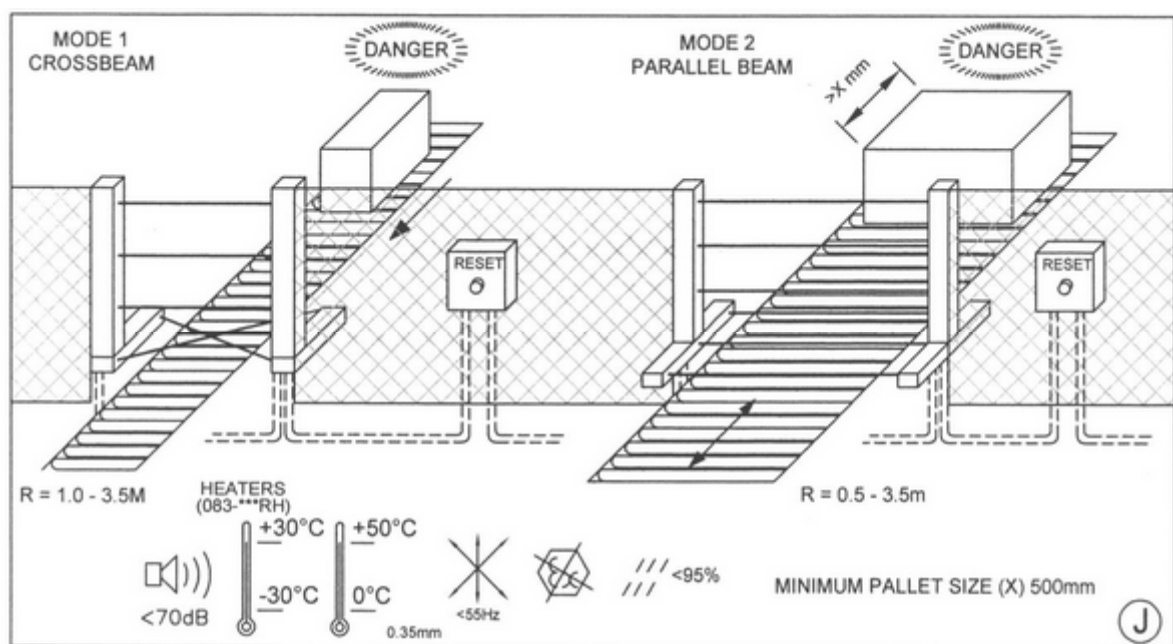


Figure J shows a 8000 Series safety light curtain application using both an 'L' type (exit system) and a 'T' type (entry / exit) muting module.

The 'L' muting module is for out-feed zones ONLY. In this configuration the transmitter (TX) and receiver (RX) should not exceed 3.5 metres.

The diagram shows the muting beams configured in the parallel-beam mode for the 'T' mute module. In this configuration the transmitter (TX) and receiver (RX) column must not be positioned greater than 3.5m apart whereas, if configured in the cross-beam mode the distance apart must not exceed 3.5m.



When using Parallel beam mute configuration the distance between the 2 parallel mute beams (X mm) must be less than the minimum pallet / load length.

Operating requirements for 8000 Series safety light curtains:

- ❑ Humidity <95%
- ❑ Vibration: Frequency <55Hz. Movement <0.35mm
- ❑ Temperature range from 0°C to 50°C
- ❑ The units are not 'EX' rated. Do not use the equipment in explosive atmospheres. For further information on explosive-proof enclosures contact Smartscan Ltd.