

Installation handbook

AutroBeam 25
Beam detector

P-AB25/DE - Rev. C



Autronica Fire and Security AS

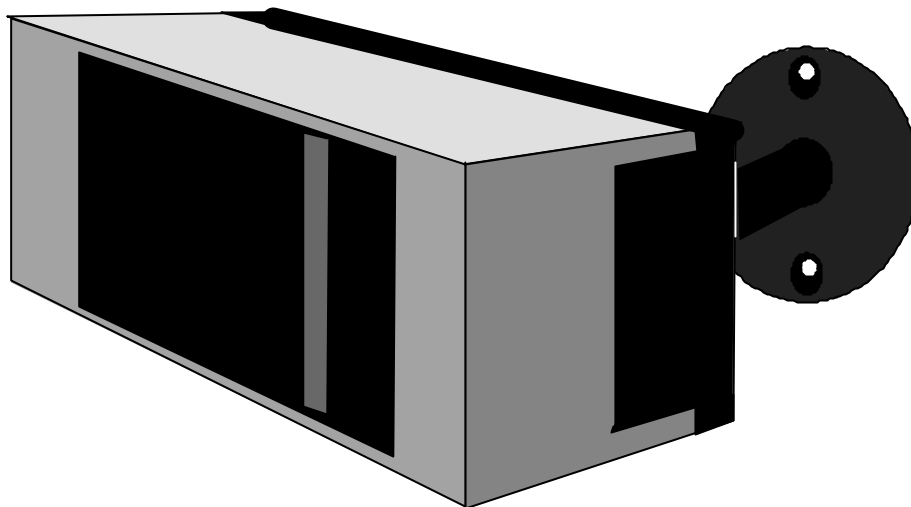
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AutroBeam 25



1 System

AutroBeam 25 is an infrared beam detector designed for monitoring areas from 1,5 to 25 m.

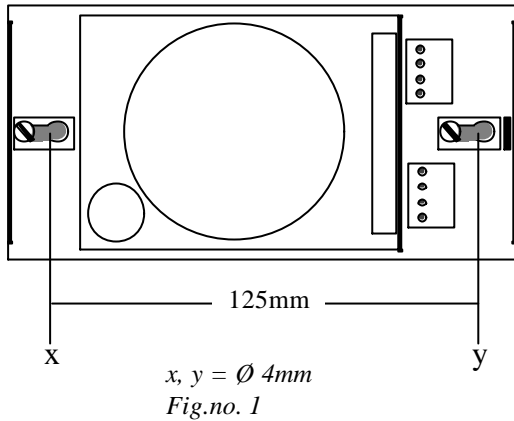
The **AutroBeam 25** system comprises a transmitter (Tx) and a receiver (Rx), mounted in the same housing, and a reflector plate installed at the opposite end of the area to be monitored.

AutroBeam 25 detects the presence of smoke in 3 ways. Reduction of visibility, the development of a special frequency spectrum by smoke and the time-factor for reduced visibility.

AutroBeam 25 and reflector can be fixed direct to a wall or mounted on a adjustable bracket.

2 Installation of Autrobeam 25

2.1 Fixing direct to a wall



- Remove the front cover from the detector unit.
- Prepare the fixing holes (x and y) on the rear of the unit.
- Fix the detector to the wall using 2x4 mm screws.
- After fixing, replace the front cover. Make sure that the light aperture in the lens filter is in front of the LED indicator.

2.2 Mounting on adjustable bracket type 5861-022.1001

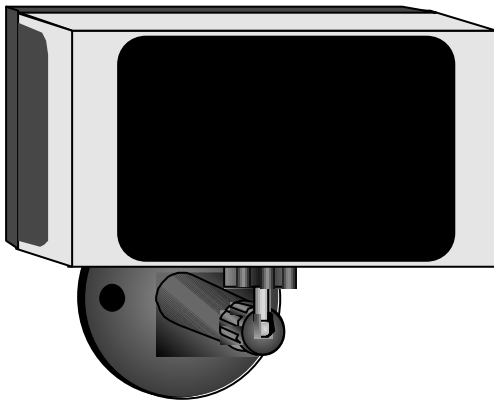


Fig.no. 2

- Remove the front cover from the detector unit.
- Prepare the fixing holes (x and y) on the rear of the unit.
- Fix the bracket to the detector using 2x (M4x10mm) screws.
- After fixing, replace the front cover. Make sure that the light aperture in the lens filter is in front of the LED indicator.
- Adjust the angle of the detector by using an Allan key.

2.3 Positioning and alignment

- Mount AutoBeam 25 in a suitable place in the area to be monitored.
- Align the unit in the general direction of where the reflector is to be mounted.

2.4 Connection

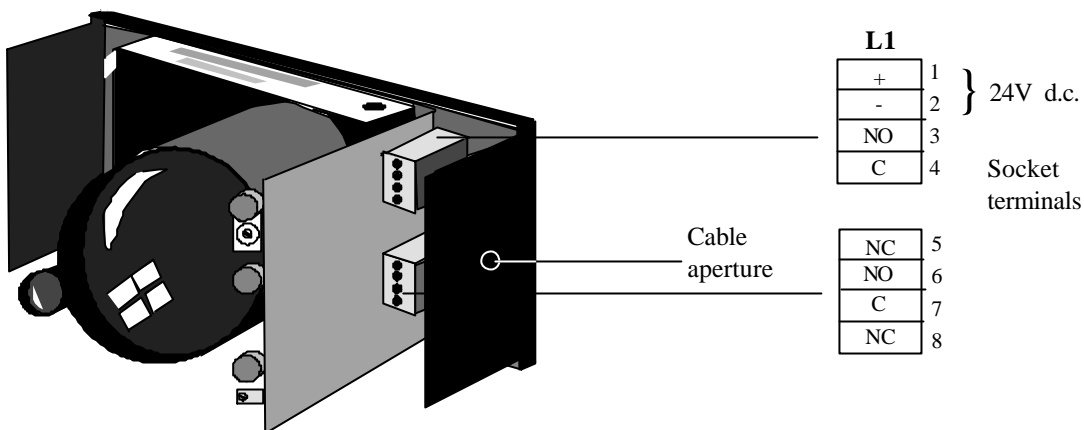


Fig.no. 3

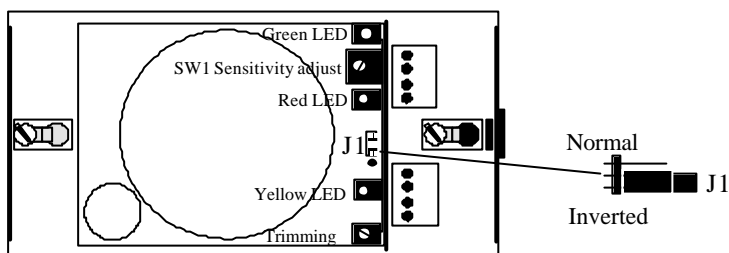


Fig.no. 4

- Set jumper J1 to position "Inverted".*
- Remove the female contact from the terminals (L1).
- Feed the cable through the aperture (on the right-hand side of the detector), and connect the wiring to the plugs.
- Connect 24V d.c. to terminals 1(+) and 2(-).
- Connect a 2K Ω end load or terminal connector (BXY-40) between points 4(+) and 7.
- (See fig.no. 5).
- Connect terminals 3 and 6 together.*
- Connect the output from the address unit (BN-35/N) or the loop output (BX-40) to terminals 3 and 4(+).

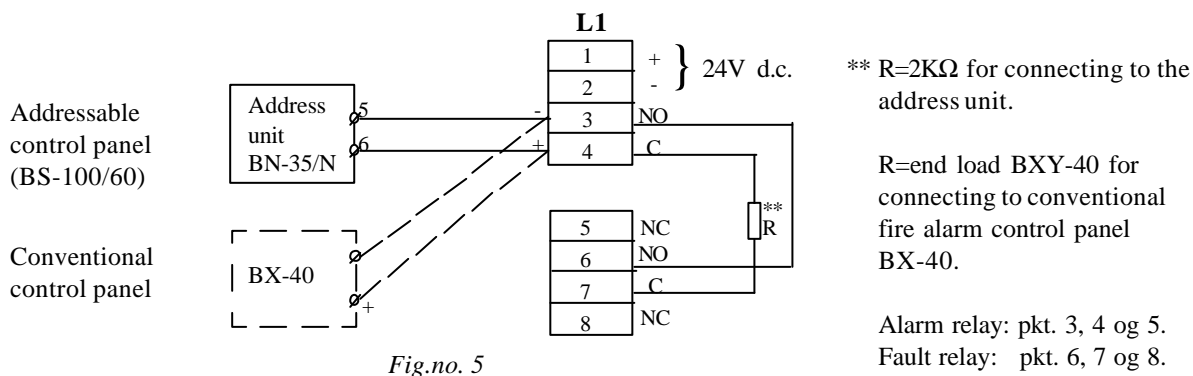


Fig.no. 5

- * With jumper J1 set to "inverted" position, the fault output will activate on loss of supply power. With jumper J1 set to "normal" position, the fault output will not be activated on power loss. If "normal" position is chosen, then terminal 3 and 8 must be connected together (not 3 and 6 as described above).

2.5 Connecting to different fire alarm panels

- BS-100: See diagram BS-1031
- BS-60: See diagram BS-1032
- BX-40: See diagram BX-313

3 Power supply and adjustment

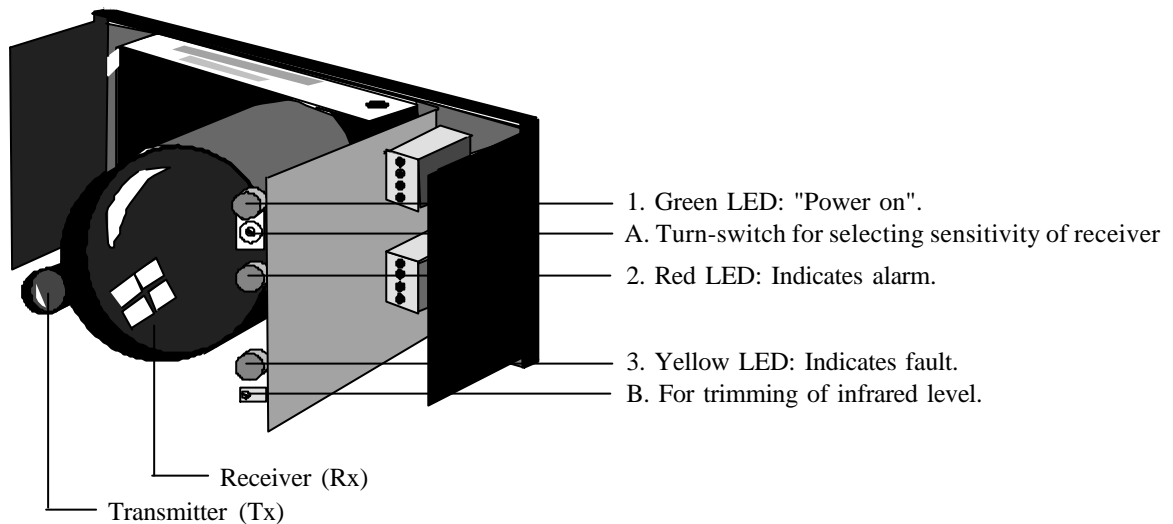


Fig.no. 6

3.1 Adjust transmitter (Tx) to maximum infrared level by turning the potentiometer screw (B) to its limit in a clockwise direction (20 turns).

3.2 Connecting power

- Ensure that the voltage is correct (24V d.c.).
- Connect 24V d.c. to terminals 1(+) and 2 (see fig.no. 4).
- Green LED-1 (power on) and yellow LED-2 (fault) will be on.

3.3 Mounting the reflector

- Move the reflector in a horizontal and vertical plane within the area where the reflector is to be mounted and observe if the yellow LED (3) begins to flash.
- Yellow LED (3) flashes when the reflector is within the diameter of the infrared beam. The diameter of the beam is about 60 cm at a distance of 25 m, and it diminishes proportionally in towards the detector.
- If moving the position of the reflector within the intended area does not result in the yellow LED (3) flashing, the reflector must be fixed temporarily.
- Re-align the detector (Tx/Rx) until the yellow LED (3) starts to flash. The reflector is now within the diameter of the beam.
- Move the reflector (up, down, to the right and left) and mark off the limits where the yellow LED (3) goes out. Position the reflector in the centre.

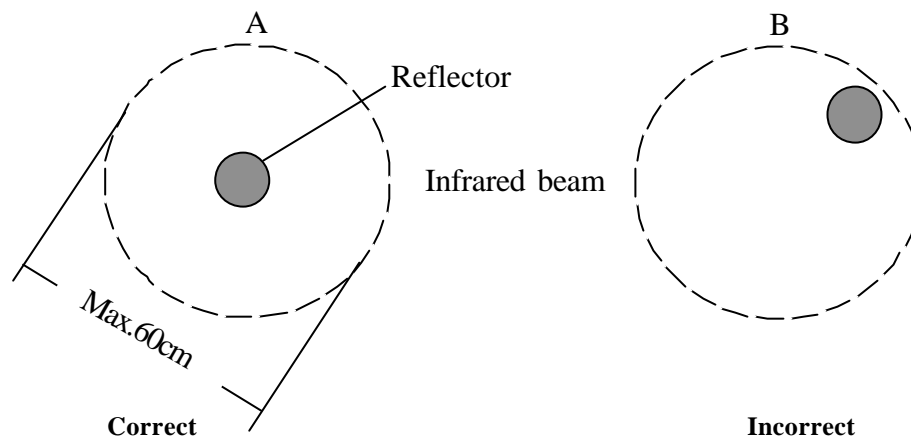


Fig.no. 7

- The reflector is now positioned correctly and the yellow LED should be flashing.

3.4 Fine-tuning of the infrared beam

- Turn the potentiometer screw (B) anticlockwise until the yellow LED (3) goes out. Ensure that the receiver (Rx) is not obstructed in any way (e.g. by your head or hand).
- Block the infrared beam by holding a finger in front of the transmitter (small lens) and check that the yellow LED (3) comes on, and that it goes out when the obstruction is removed.
- If the yellow LED starts to flash after removing the obstruction, the infrared level is still too powerful. Re-adjust the potentiometer slightly and repeat the blocking procedure until the desired result is obtained. This procedure should be repeated 2-3 times to achieve optimal adjustment.
- If the red alarm LED (2) lights up/starts to flash, the detector must be reset. This is done by cutting the 24 V DC power supply to the detector.

- When the infrared beam is blocked, the yellow LED (3) will light up and an error output generated. If this condition is not achieved, then the following may occur:

- a) Yellow LED flashes again.
- b) Yellow LED stops flashing and blocking/unblocking of reflector has no effect.
- c) Yellow LED lights up constantly.

In each case, either the detector/reflector is wrongly aligned, or the infrared beam is being reflected from a shiny surface (glass, metal, etc.).

3.5 Signal level

- When yellow LED is out, the signal strength is correct.
- If the signal is too weak, or the beam blocked, the yellow LED will be on constantly.

3.6 Adjusting the sensitivity of the reflector (Rx)

- It is possible to adjust the level of sensitivity, if external interferences such as light, dust, hot or cold air currents, etc. permit.
The level of sensitivity is reduced by turning the rotating sensitivity selector (A) to a higher number (e.g. 9).
Zero (0) provides the highest level of sensitivity.
The standard position set by the manufacturer is 3.

3.7 Testing the detector

- Test the error signal by blocking the infrared beam (yellow LED (3) lights up). The detector should function normally once the obstruction is removed.
- The fire alarm should be tested using smoke from a smoke machine or test-fire.
With a smoke test, observe the following:
 - * When the detector detects sufficient smoke between the reflector and receiver, the red alarm LED (2) lights up.
 - * If the concentration of smoke persists (> 20s), the detector will indicate alarm status after approximately 15-20 seconds.
 - * Alarm status is indicated by the red LED (2) and green LED (1) flashing alternately.
 - * The detector is reset by cutting the 24 V DC power supply.

4 AutoBeam 25 in system

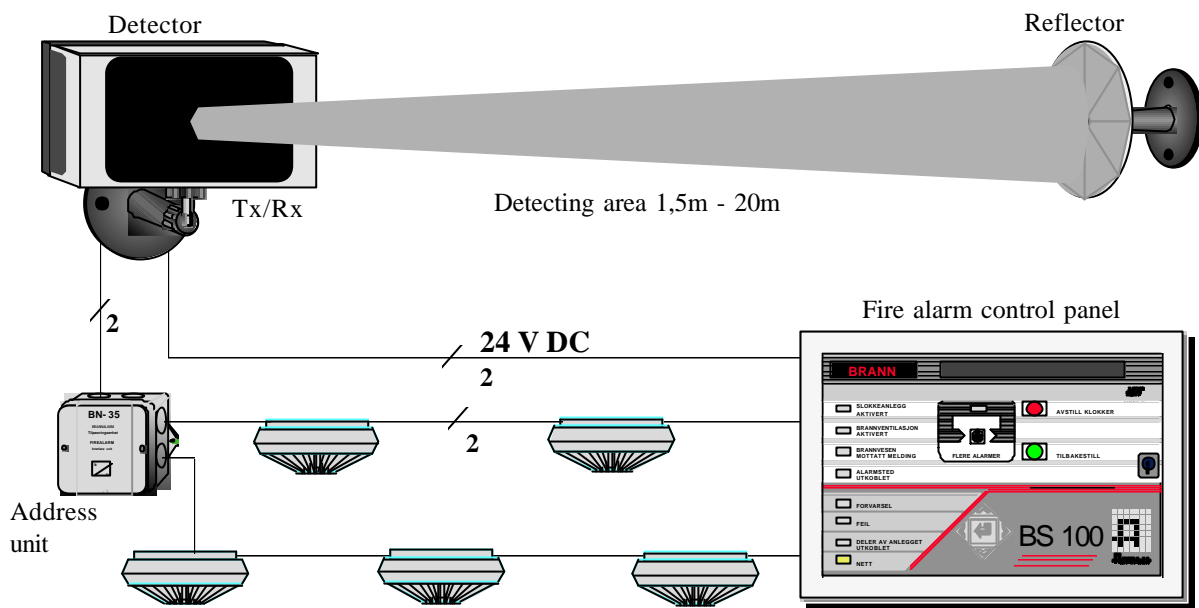


Fig.no. 8

AutoBeam 25 can be connected to Autronica control panel types BS-100 and BS-60, as well as to the BX-40 conventional panel.

Resetting **AutoBeam 25** means that the +24V operating voltage must be interrupted for 2-3 seconds.

When interfacing to an addressable system, an address unit giving alarm by short-circuiting must be used (e.g. BN-35/N).

When the conventional BX-40 control panel is used, the zone in which the **AutoBeam 25** is installed must be configured to give alarm by short-circuit.

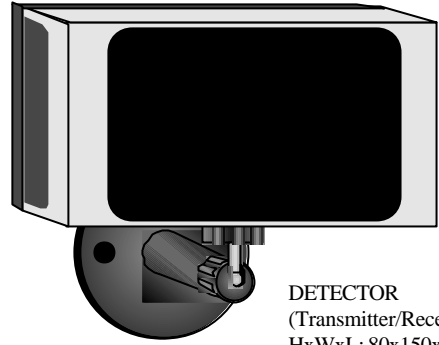
Connection to the respective control panels is given by individual diagrams supplied.

Technical data - AutoBeam 25:

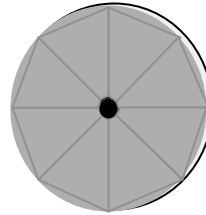
Consists of:

Transmitter and receiver in the same housing.	
Reflector	: Ø 85mm
Weight (without bracket)	: 0.6 kg
Material	: Polycarbonate
Colour	: Dark grey with light grey front. (RAL 7035, 7038) Front cover, smoked plexiglas.
Beam	: Infrared
Max. range	: 1,5 - 25m
Width	: 14m (7 m each side)
Max. detection area	: 350m ²
Diameter of beam at 25m	: 60 cm
Operating voltage	: 24V d.c. ± 20%
(must be interrupted for 2-3 seconds on resetting)	
Current consumption with 24V d.c.:	
Normal	: 30 mA
Alarm	: 43 mA
Fault	: 18 mA
Alarm + Fault	: 30 mA
External temperature	: - 40 + 65°C
Humidity (non-condensing)	: Max. 95% R.H.
Degree of protection	: IP 44
Approval	: EN54/9
Recommended control panel	: BS-100, BS-60 and BX-40 (conventional).

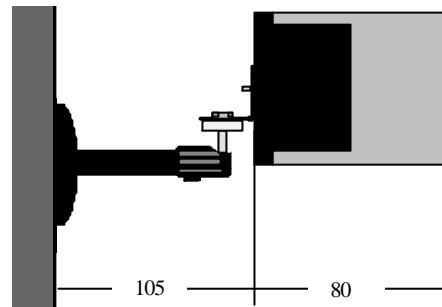
Dimension and installation:



DETECTOR
(Transmitter/Receiver)
HxWxL: 80x150x80mm



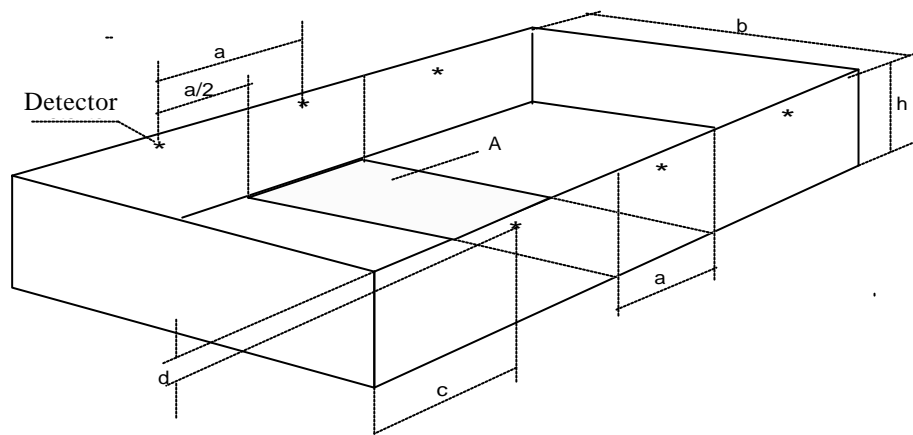
REFLECTOR
Ø=85mm



Adjustable: 180° horizontally
90° vertically

AutroBeam beam detector

Coverage area and distances



- a = Distance between two parallel beams is equal to the width (a) of the surface area to be monitored (14 m).
- b = Distance between transmitter and receiver is equal to the length of the surface area to be monitored (A).
- c = Minimum distance between detector and wall is 30 cm.
- d = Minimum distance from the detector to a ceiling with a maximum height of 10 m is $d=30$ cm, $h=$ room height (from floor to ceiling).

AutoBeam beam detector

The diagram shows the width of area monitored based on how the detector is positioned in a room.

