

*Installation and commissioning
handbook*

**AutroBeam 75 and 100
Beam detector**

P-AB100/DCE

Autronica AS

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Autronica Industrial Ltd., Watford, England

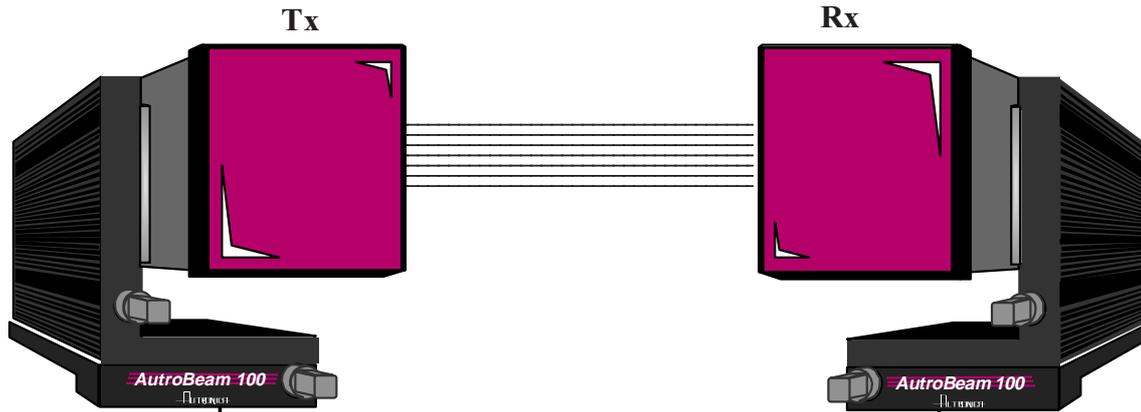
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AutroBeam 75 and 100



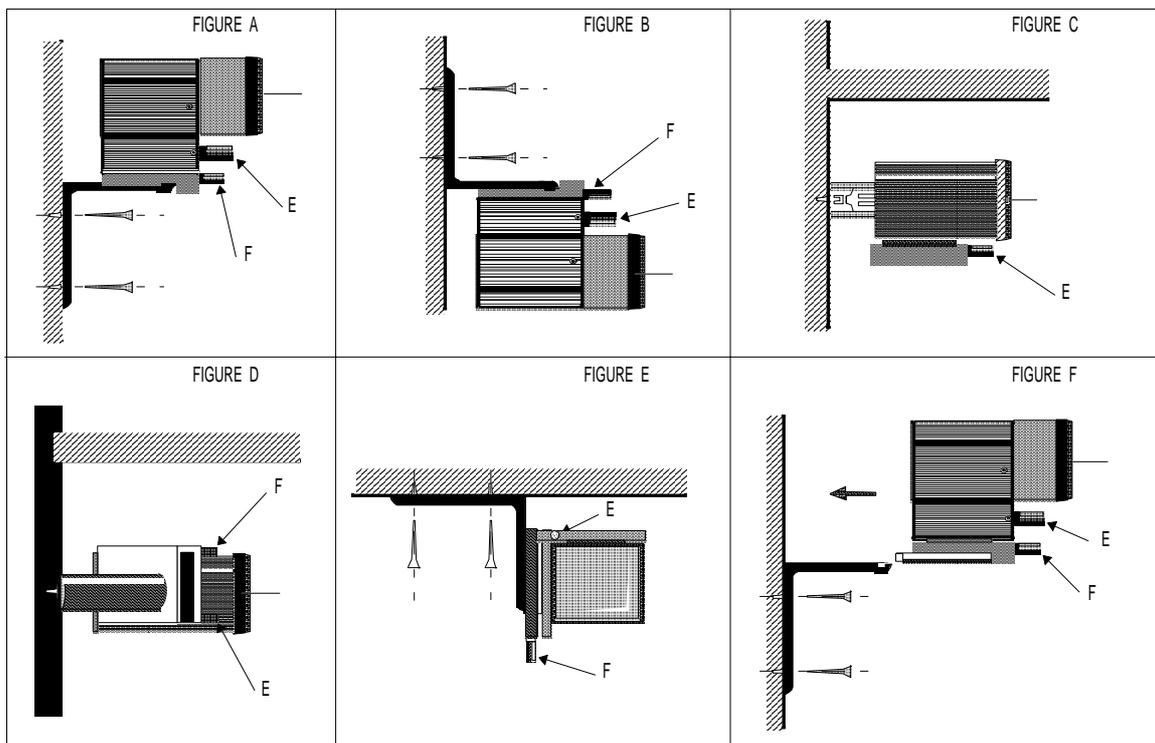
Installation and adjustment

AutroBeam 75 and 100 are easy to install. They both have simple mounting brackets and adjustment facilities, which allow the detector to be fixed to either a wall or ceiling.

Initial adjustment of the transmitter (Tx) and receiver (Rx) is carried out using adjusting screws (E and F), so that the infrared beam points towards Rx. Screw E adjusts the beam vertically (max- 90°) and screw F adjusts it horizontally (max. 180°). If more than one AutroBeam is installed within the same area, the transmitters and receivers have to alternate to avoid interference.

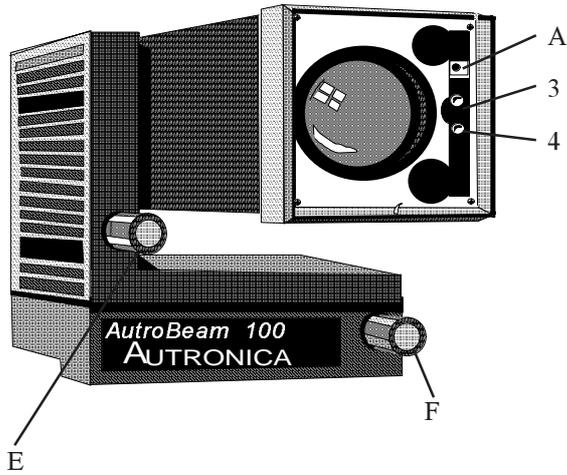
The UTA instrument is used to "set up" the system to the required level for both flame and smoke signals.

Detection area : Distance between Tx and Rx.
 AutroBeam 75: 25 - 75m
 AutroBeam 100: 55 - 100 m
 14 m (7 m either side of the intrared beam)



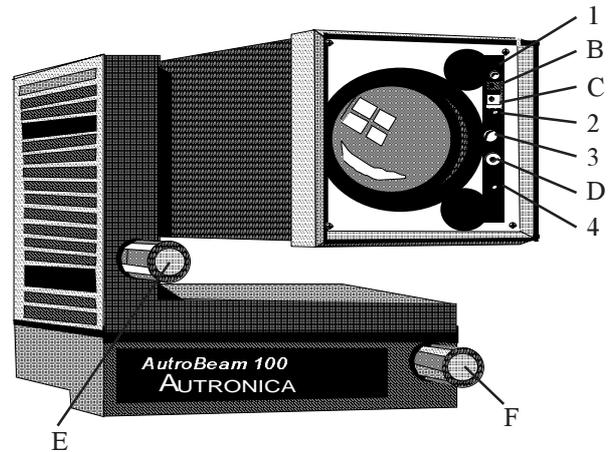
Alternative fixing arrangements.

TRANSMITTER (Tx)

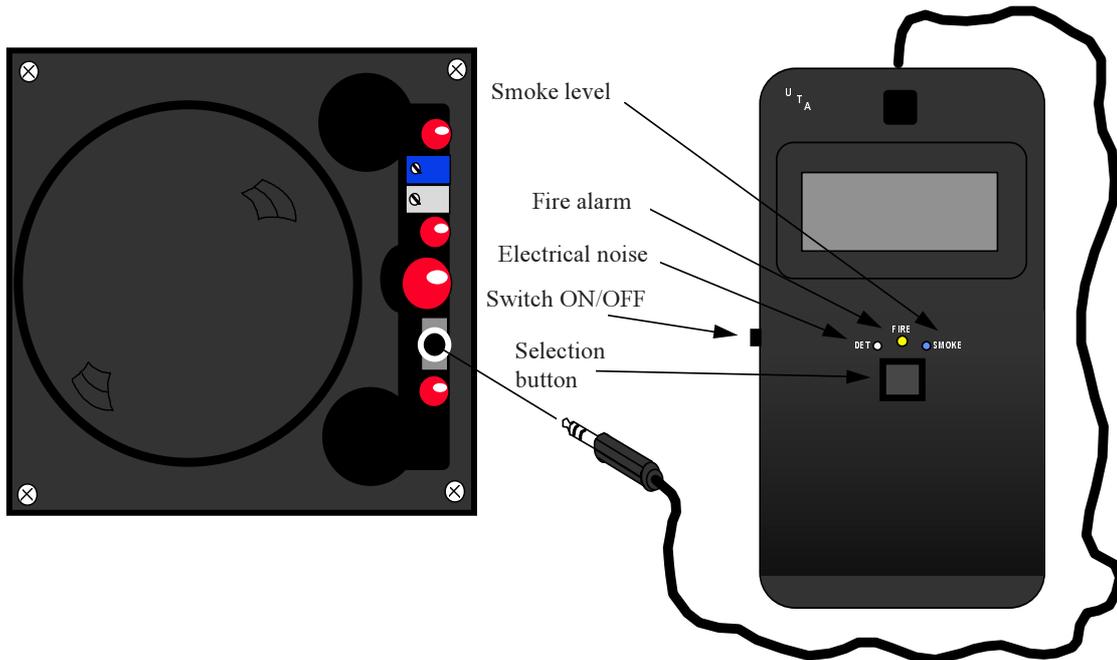


- 1: LED ind. - Flame alarm
- 2: LED ind. - Smoke alarm
- 3: LED ind. - Infrared level
- 4: LED ind. - Power on
- A: Infrared level adjustment
- B: Flame level adjustment
- C: Smoke level adjustment
- D: Socket for UTA "fine tuning" instrument
- E: Vertical adjusting screw (max. 90°)
- F: Horizontal adjusting screw (max. 180°)

RECEIVER (Rx)



UTA calibration instrument



Adjustment procedure for AutoBeam 75 and 100

NB!

It is extremely important that the optical system remains unobstructed throughout the adjustment of the units.

1. Remove the front filter (red) from the transmitter and receiver by levering off with a screwdriver in the notch at the top of the detector front.
2. Turn adjusting screw A on the transmitter fully clockwise (maximum 20 turns).
3. Power up both Tx and Rx.
Adjust both the transmitter and receiver, using screws "F" (horizontally) and "E" (vertically), until LED "3" flashes.
4. Note the following:
 - a) LED "3" flashes - The signal is too strong.
 - b) LED "3" not illuminated- The signal is normal.
 - c) LED "3" illuminated - The signal is too weak.
5. Adjust one of the screws (E or F) on either the transmitter or receiver clockwise until LED "3" is not illuminated. Mark the position.
6. Turn the same adjusting screw anticlockwise and search for a new position where LED "3" is not illuminated. Mark the position.
7. Position the unit to a point midway between the two positions found in points 5 and 6 above.
8. Repeat the procedure described in points 5, 6 and 7 above for the other adjusting screw on the same unit. Then repeat the procedure on the other unit.
9. Turn screw "A" anticlockwise until LED "3" goes out.
10. Connect the calibrating instrument (UTA type) at "D" on the front of the receiver.
Choose "DETECTOR" on the UTA and read off the maximum value for background noise in the room over a period of at least 10 minutes.
Procedures 10 - 12 should, ideally, be repeated after 24 hours and again after 1 week but it is vital that this "fine tuning" is carried out when the premises are fully operational in order to obtain "real" readings.
11. Choose "FIRE" on the UTA and adjust screw "B" until a value is reached at least 200 units higher than the peak value obtained in point 10 above.
12. Choose "SMOKE" on the UTA and adjust screw "C" until a value is reached at least 400 units higher than the peak value obtained in point 10 above.
13. Replace the optical front filters and reset the detector.

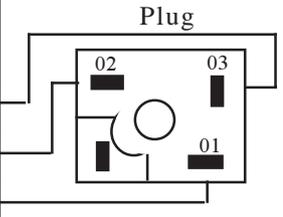
Connecting AutoBeam 75 and 100

The transmitter (Tx) and receiver (Rx) are supplied with a 75 cm long shielded 3-lead cable.

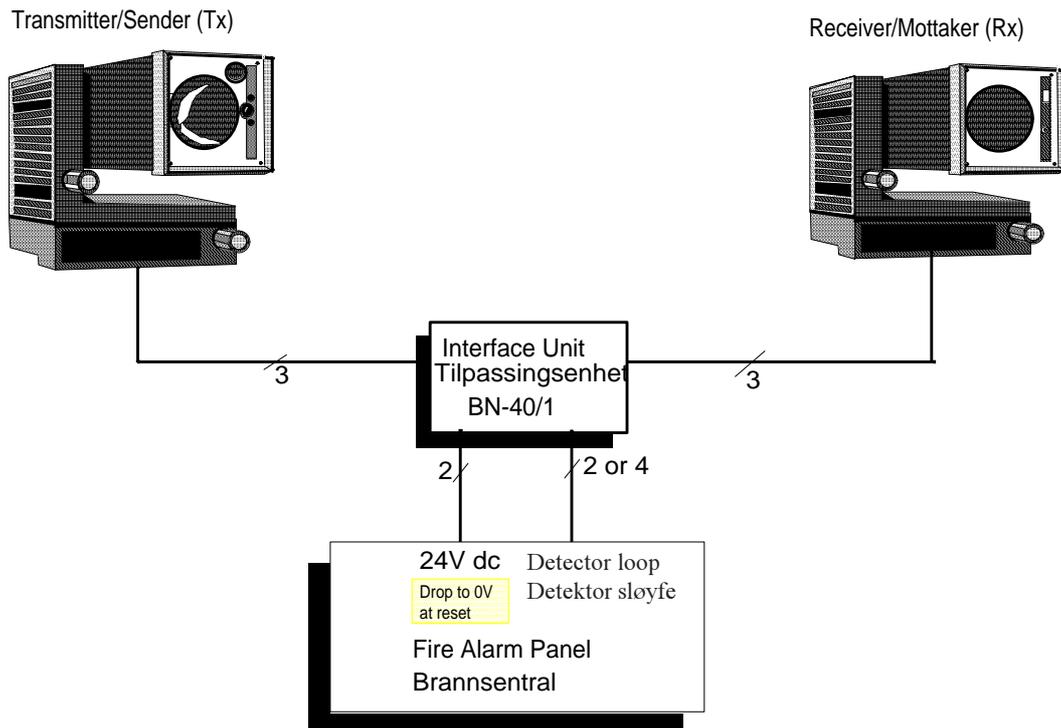
The cable is connected to Tx/Rx via a plug fixed with screws.

The colours of the 3 leads in the cable may vary according to the manufacturer.

The table below provides a summary of the various colours used.

Plug/ Function	Cable 1	Cable 2	Cable 3	Cable 4	Cable 5	Cable 6	Plug term.	
0 V dc	Black	Blue	Black	Blue	Green	Yellow	3	
Signal	Blue	White	Green	Yellow	White	White	2	
+24V dc	Brown	Red	Red	Brown	Brown	Red	1	

General connecting instructions



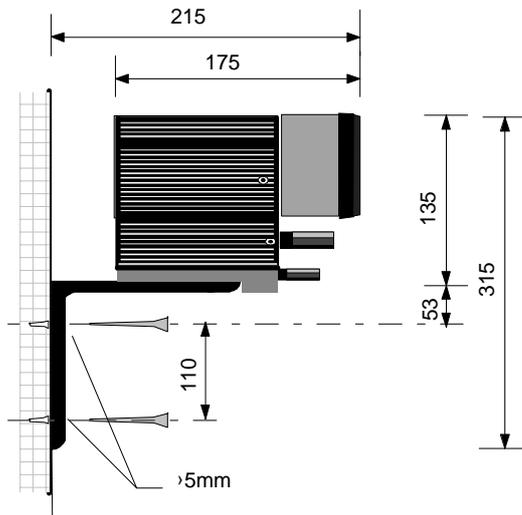
Install the interface unit close to the receiver. Recommended cable length between the interface unit and the receiver is max. 20m.

For connecting to the various fire alarm panels, refer to individual diagrams supplied.

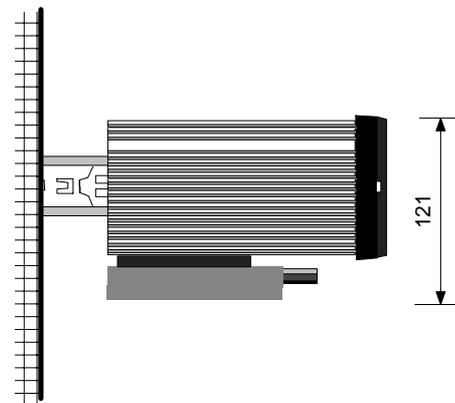
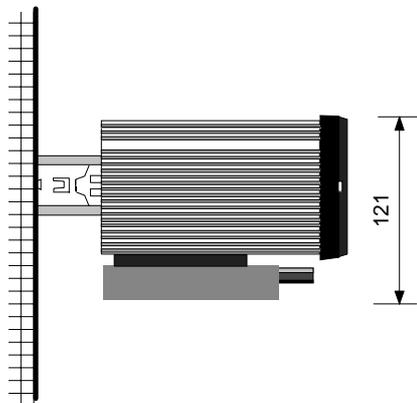
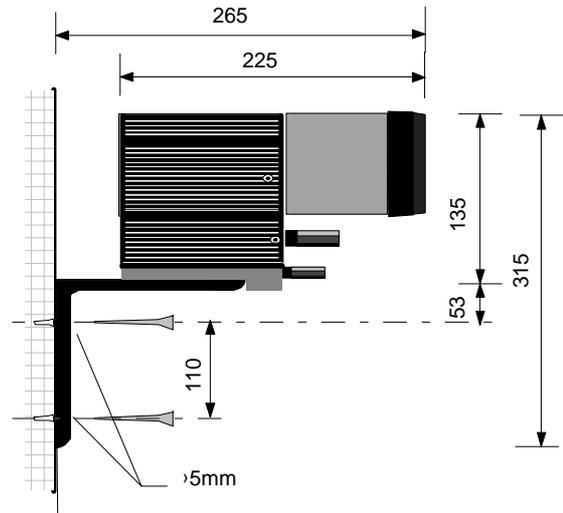
AutroBeam 75 and 100

Dimensions:

Transmitter (Tx)



Receiver (Rx)



AutoBeam 75 and 100

Mechanical construction:	Transmitter Tx and receiver Rx.
Housing:	Extruded anodised aluminium profile with plastic front and rear elements. Optic mounted in the front element. Front filter (cover) is of red Plexiglas.
Installation:	The detector housing is attached to an adjustable bracket for wall-mounting. It can be adjusted using two finger screws through 180° in the horizontal plane and 90° in the vertical plane, with an accuracy of ± 1°.
Installation:	Transmitter (Tx) and receiver (Rx) are supplied with a 75 cm long shielded conductor cable. A standard connection box has to be used for connection to the interface unit.
Detection area:	(distance between Tx and Rx) AutoBeam 75: 25 - 75m AutoBeam 100: 55 - 100 m 14 m (7 m either side of the beam)

Transmitter "Tx"

Type:	AutoBeam 75: TX 1P/75SF
	AutoBeam 100: TX 2P/100SF

Dimensions:	
Height:	315mm
Width:	121mm
Length:	215mm
Weight:	1.7 kg

Electrical specification:	
Operating voltage:	18,5 - 32,5V
Nominal voltage:	24V DC
Current consumption with 24V DC:	
Normal:	90mA
Alarm:	90mA
Fault:	90mA

Operating characteristics:	
Pulse frequency:	2,1KHz
Pulse width:	11µS
Wavelength:	958nm
Working temperature.:	-25°C - +50°C
Humidity:	0% - 95%

Degree of protection: IP 40

Polarity protected connection.

Receiver "Rx"

Type:	AutoBeam 75: RX 1P/75SF
	AutoBeam 100: RX 2P/100SF

Dimensions:	
Height:	315mm
Width:	121mm
Length:	265mm
Weight:	2.0 kg

Electrical specification:	
Operating voltage:	18,5 - 32,5V
Nominal voltage:	24V DC
Current consumption with 24V DC:	
-Normal:	25mA
-Flame and smoke alarm:	60mA
-Obstructed beam or faulty mounting:	110mA
-Obstructed beam with flame and smoke alarm:	170mA

Operating characteristics:	
-Working temperature.:	-25°C - +50°C
-Humidity:	0% - 95%
-Smoke alarm (typical):	30 sec.
-Adjusting flame alarm:	10 - 30 sec.
-Obstruction of beam:	> 0,5 sec.

Automatic resetting time following obstruction of beam: 1 sec.

Degree of protection: IP 40

Polarity protected connection.

Adress-/interface unit: BN-40

Type: BN-40/1 for addressable system.
BN-40/2 for conventional system.

Operating voltage: 24V DC ± 20%.
(must be interrupted for 2-3 seconds on resetting)

Max. current consumption with transmitter and receiver connected:

- Normal:	115mA
- Alarm:	200mA
- Obstructed beam with flame and smoke:	300 mA

Connection:

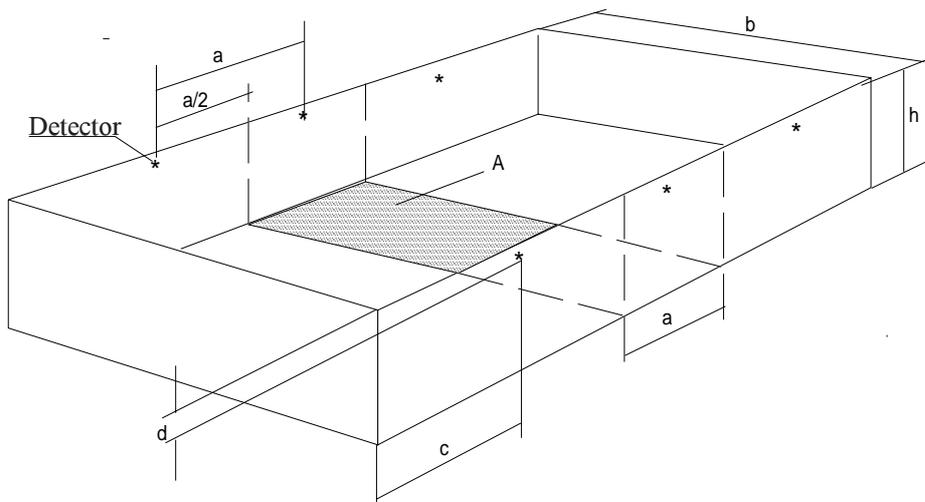
- Operating voltage: 24V DC from control panel.
- Detector loop connection for addressable or conventional system.
- Connection of transmitter and receiver (Tx og Rx).

Degree of protection: IP 54

Recommended for use in conjunction with Autronica fire alarm control panel type BS-100, BS-60 or BX-40 (conventional).

AutoBeam 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).

AutroBeam beam detector

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

