Addressable Auto-Aligning Beam Detector

Instruction Sheet

R10043GB0

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1 Addressable Auto-Aligning Beam Detector overview

The Addressable Auto-Aligning Beam Detector combines a transmitter and receiver in the same detector head with an automatic alignment motor. The beam detector is addressable, which gives a possibility to quick and simple installation. To ensure the best working order, beam compensates for environmental effects on the beam signal. A combination of motorized realignment of the beam and software (automatic gain control) creates the best working order.

1.1 Function

The Intelligent Addressable Auto-Aligning Beam Detector is a compact detector for detecting smoke in large open areas such as warehouses, theatres, churches and sports centers. It comprises a ground level loop-powered controller, a detector head with an operating range of 8m-50m and a single prism. The operating range of each detector head can be increased, up to 100m by using the Extension Kit, which comprises of three additional prisms. An additional detector head can be connected to the controller. Each head has a loop address. It also has a built in 20T negative bi-directional short circuit isolator, and it is compatible with control panels using Intellia and Essentia protocol.

A built-in laser provides rapid initial alignment and thereafter the detector head will continuously automatically align and compensate for any building movement. The status of each detector can be monitored through the controller which is sited at ground level. The detector head operates both as a transmitter and a receiver. A well-defined IR beam is projected to a prism mounted on the opposite wall, which is reflected back to the receiver. In the event of smoke partially obscuring the light an imbalance between the transmitted and received light will occur. The detector will then transmit an alarm value to the control panel.

The detector is factory set to a beam obscuration of 35% which is the best setting for most factories and warehouses. The setting can be changed to 25% for offices and clean areas such as theatres or to 50% for hostile areas such as mills or foundries. The detector reports a pre-alarm (analogue value 48) at approximately 75% of the alarm threshold.

The detector compensates automatically for gradual contamination of the lenses in order to avoid false alarms. The detector is non-latching and resets 30 seconds after an alarm event ceases and in 3 seconds after the removal of a fault.

1.2 Features

- Loop Powered
- Incorporates a bi directional short-circuit isolator
- Automatic drift compensation
- Automatic reset
- Ground level Controller
- Automatic alignment compensation for building movement
- Laser assisted alignment for quick installation
- Allows for two detector heads per controller
- Up to 100m range
- Pre-alarm thershold

1.3 Electrical considerations

The Intelligent Addressable Self Aligning Beam Detector is loop-powered and requires no external power supply. Each beam detector draws 10mA or less in quiescent and 36mA in alignment mode, from the analogue addressable loop and, unless proven by calculation**, it is recommended that no more than ten beam detectors be powered from each loop. A recommended 2-core fire rated cable should be used for connection between the controller and the detector head.

1.4 Further information

The Auto-Aligning beam detector must be installed in accordance with the Quick Start Guide supplied with the product. This guide contains more information on the following topics:

• System design

• Installing beam detectors

• Targeting, aligning and commissioning the Auto-Aligning Beam Detector

• Troubleshooting

1.5 LED fault indication

A fault is indicated by the amber LED flashing every 10 seconds. If the drift compensation function has reached its limit the amber LED flashes once every 10 seconds and an error code is displayed on the ground level Controller. The detector will continue to function but maintenance procedures should be carried out at the earliest opportunity.

2 Connection to addressable loop

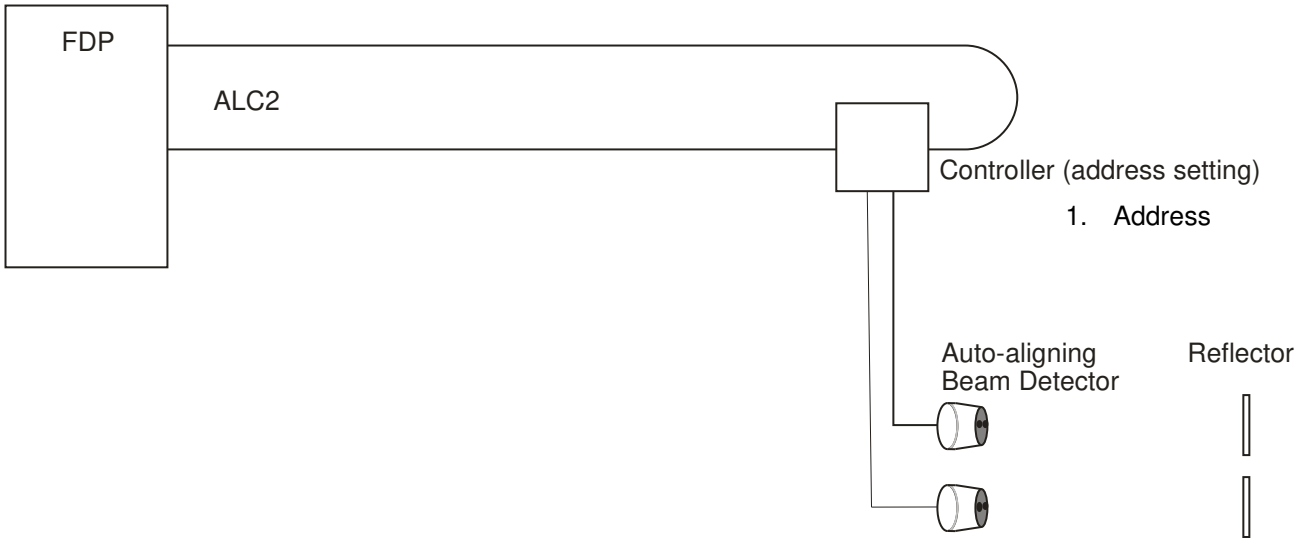
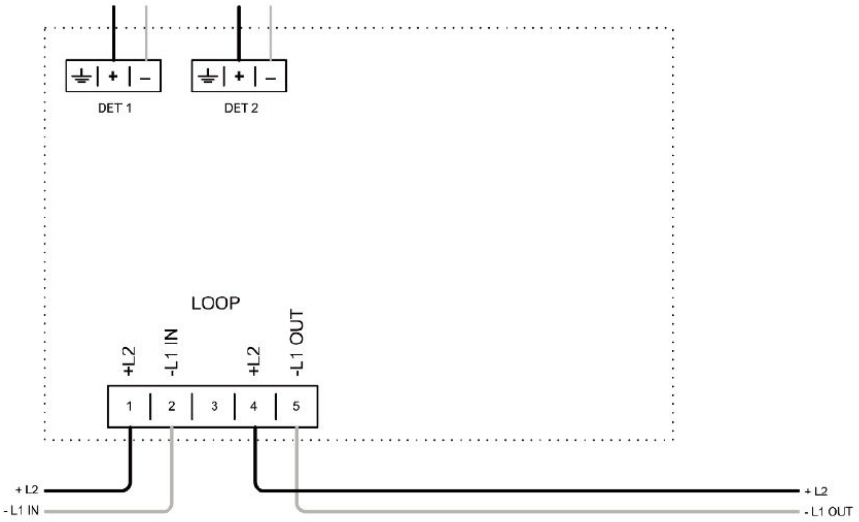


Figure 1 Connection of Addressable Auto-aligning Beam Detector to FDP-ALC addressable loop.

2.1 Wiring Diagram

It is possible to wire either one or two detectors onto one controller.



3 Accessories

Figure 5 Universal Bracket (for use with detector head and prism mounting plates)

Figure 4 Surface Mounting Plate for prisms

Figure 3 Prism Mounting Plate (4 prisms 50-100m)

Figure 2 Prism Mounting Plate (1 prism 18-50m)

3.1 Dimensions

Product	Dimensions w*h*d	Weight
Controller with base	202*230*87mm	1000g
Detector with base	131*134*131mm	500g
Universal bracket	135*135*71mm	200g
Reflector	100*100*10mm	100g

3.2 Product codes

Description	Code
Addressable Auto-Aligning Beam Detector	FFS06725290

Description	Code
Extension Kit 100m	FFS06725275
Universal Bracket (for use with detector head and prism mounting plates)	FFS06725276
Surface Mounting Plate for prisms	FFS06725277
Prism Mounting Plate (4 prisms 50-100m)	FFS06725278
Prism Mounting Plate (1 prism 18-50m)	FFS06725279