FDL242 Linear Smoke Detector

Sinteso™ / Cerberus™ PRO / Cerberus™ FIT

The FDL242 is an addressable bus powered beam detector suitable for Siemens fire panels supporting FDnet and C-NET.

- Installation can be done by one person
- No special tools required
- Automatic compensation for soiling
- Laser-assisted reflector targeting followed by fast auto-alignment
- Automatic reflector targeting for unclear areas (e.g. high ambient lighting)
- Parameter setting via Siemens Fire Control Panel
- Continuous self-alignment during operation

Order number: S54331-F10-A1

Technical specification

Detection performance

Detection Range	0 to 50 m with single Reflector 50 to 120 m with Reflective Long Range Kit
Alignment Method	Laser assisted, Auto-Alignment. Manual alignment – optional setting
Auto-Alignment protocol	Background check, Box search, Adjust and Centre
Building Movement Tracking™	Compensates for natural shifts in alignment from building movement when mounted according to manufacturer's guidelines
Contamination Compensation	Compensates for gradual build-up of contamination on the optical surfaces
Light Cancellation Technology™	Compensates for high levels of sunlight and artificial lighting
Optical Wavelength – smoke detection	850 nm near infrared (invisible)
Integrated laser – laser alignment	650 nm visible. Class 3R <5 mW
Dynamic Beam Phasing	Allows beam detectors to be mounted facing each other with the reflectors in the middle. Eliminates false alarms caused by crosstalk between beams

Programmable User Settings

Parameter Sets

No.	Name	Response Value (EN54-12)
01	Standard with beam interruption = fault	35% (1.87 dB)
02	Standard with beam interruption = alarm	35% (1.87 dB)
03	Sensitive with beam interruption = fault	29% (1.49 dB)
04	Sensitive with beam interruption = alarm	29% (1.49 dB)
05	Very sensitive with beam interruption = fault	25% (1.25 dB)
06	Very sensitive with beam interruption = alarm	25% (1.25 dB)

Configured by Siemens fire control panel.
All parameter sets are EN54-12 approved.

User Features

Integrated user interface	Alignment mode switch, alignment directional buttons
Alignment status indication	2 Green LEDs and 1 Amber LED
System status indication	Normal operation – Green LED flashing every 10 seconds or off (configured by control panel).
	Alarm condition – Red LED flashing every 1 second
	Device test mode – Amber LED flashing twice every 4 seconds
Cleaning	Flat front face with enclosed optics. Cleaning the optics does not affect alignment

Design Parameters

Separation distance between Detector and Reflector	5 to 50 m with single Reflector
	50 to 120 m with Reflective Long Range Kit
Beam path clearance	1 m in diameter from centre line between Detector and Reflector
Detector dimensions	Width x Height x Depth: 130 x 181 x 134 mm (see diagram)
Reflector dimensions	Up to 50 m separation distance – Single reflector 100 x 100 x 9 mm
	50 m to 120 m separation distance – Four reflectors arranged in a square pattern 200 x 200 x 9 mm
Product weight	Detector – 0.7 kg, Reflector – 0.1 kg
Multi-detector arrangement	Dynamic Beam Phasing allows for detectors to face each other with the reflectors in the middle
Housing colour	White RAL9016, UV stable

Electrical Specifications

Operating voltage	12V	20V	30V
Operating current	3.7mA	2.5mA	1.5mA
Alignment current	5.5mA	11.3mA	7.2mA

Communication protocol	FDnet/C-NET
Short circuit isolator according to EN 54-17	Permanent current max. 1.5 A, Switching current max. 2 A, Leakage current max. 1 mA, Serial impedance max. 0.4 Ω

System Compatibility	
- FDnet	FS20
- C-NET	FS720, FS360

Field Wiring

Cable gauge and type	2 core (0.2 - 1.5 mm²) dedicated
	System compatible with fireproof and non-fireproof cable meeting local installation standards
Cable entry	3 knock-out locations capable of accepting M20, ½" or ¾" glands
	4 drill-out locations capable of accepting glands up to 21 mm diameter

Test and maintenance

Alarm test	Optical alarm test using Commissioning and Maintenance Kit accessory

Environmental specifications

Operating temperature	-20 to +55 °C
Storage temperature	-40 to +85 °C
Relative humidity (non-condensing or icing)	93%
IP rating	IP53
Housing flammability rating	UL94 V0 polycarbonate

Optical specifications

Fault level / Rapid obscuration (Δ ≤ 2 seconds)	For n% attenuation: ≥98% EN54-12 attenuation value: ≥85%
Maximum angular alignment of Reflective Detector	±4.5° (±70° with adjustment bracket accessory)
Maximum angular misalignment of Detector	±0.5°
Maximum angular misalignment of Reflector	±5°

Standards, Approvals

Standards	EN 54-12, EN 54-17
Approvals	CE (DOP-F4860) UKCA (DOPUK-F1784) NF (LF 015 A0) VdS (G223060)

Related documents such as datasheets, User Guides, declaration of performance, CE declarations, etc. can be downloaded at Siemens SID: https://sid.siemens.com

Dimensions
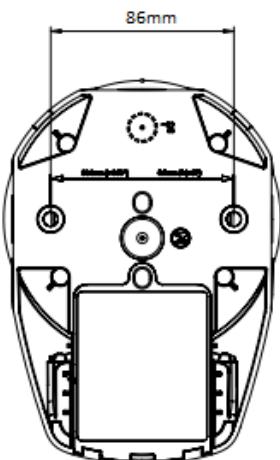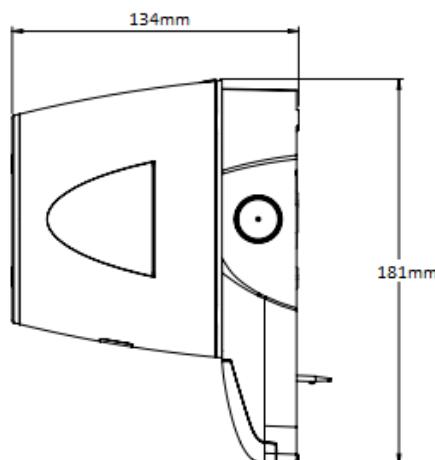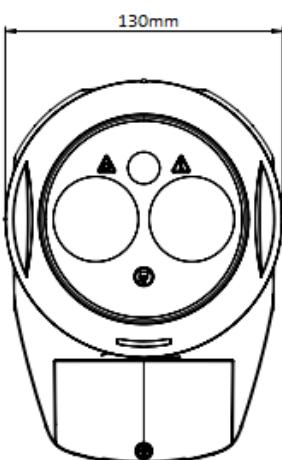
Disposal
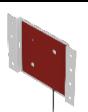
Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon purchase of equivalent new equipment, or dispose of it at designated collection points.
For more information see: www.recyclethis.info

Accessories

	Order Number: S54331-B20-A1 **Type:** FDLH242 **Designation:** Detector Heating Unit	**Operating voltage:** 12-24 V (AC or DC) **Operating current (quiescent):** 832 mA **Resistance:** 57Ω
	Order Number: S54331-S10-A1 **Type:** FDLRL242 **Designation:** Prism Kit (Long Range)	Three additional reflectors that increase the operating range of FDL242 to 120m.
	Order Number: S54331-B24-A1 **Type:** FDLZ242 **Designation:** Protective Cage	
	Order Number: S54331-B25-A1 **Type:** FDLRA242-W **Designation:** Bracket (wall, white)	A white prism wall bracket pre-drilled to accept either a single reflective prism or a long range kit (prisms sold separately).
	Order Number: S54331-B25-A2 **Type:** FDLRA242-B **Designation:** Bracket (wall, black)	A black prism wall bracket pre-drilled to accept either a single reflective prism or a long range kit (prisms sold separately).
	Order Number: S54331-B26-A1 **Type:** FDLRSM242 **Designation:** Alignment Bracket (Short range)	Prism plate and adjustment bracket for 1 prism (not included). Provides 360° rotation plus 160° adjustment.
	Order Number: S54331-B27-A1 **Type:** FDLRLM242 **Designation:** Alignment Bracket (Long range)	Prism plate and adjustment bracket for 4 prisms (not included). Provides 360° rotation plus 160° adjustment.
	Order Number: S54331-B22-A1 **Type:** FDLRSA242 **Designation:** Prism Plate (Short range)	Prism plate for 1 prism
	Order Number: S54331-B23-A1 **Type:** FDLRA242 **Designation:** Prism Plate (Long range)	Prism plate for 4 prisms
	Order Number: S54331-B28-A1 **Type:** FDLRH242-W **Designation:** Prism Heating Unit (White)	Prism heater for reflective prisms (white)
	Order Number: S54331-B28-A2 **Type:** FDLRH242-B **Designation:** Prism Heating Unit (Black)	Prism heater for reflective prisms (black)
	Order Number: S54331-S11-A1 **Type:** FDLU242 **Designation:** Commissioning Kit	A commissioning kit for FDL242 comprising of a full obscuration sheet to simulate a fault condition and a partial obscuration sheet to simulate a fire condition
	Order Number: S54331-B21-A1 **Type:** FDLR242 **Designation:** Prism	
	Order Number: S54331-B29-A1 **Type:** FDLA242 **Designation:** Adapter plate	In case of exchange of FDL241-9 by FDL242 detectors the adapter plate enables the re-use of available drilling holes.