



Thermocable ~

Linear Heat Detection Specification Guide For Solar PV Applications

Linear Heat Detection for Solar PV Applications

Introduction

This document is intended for the use of any person(s) designing, supplying, and/or installing a fire detection system where Linear Heat Detection is required, with specific mention to Solar Panel/ Photovoltaic applications.

Scope of work

To design, supply and install Linear Heat Detection in accordance with the details specified within this document and in accordance with the supplied drawings.

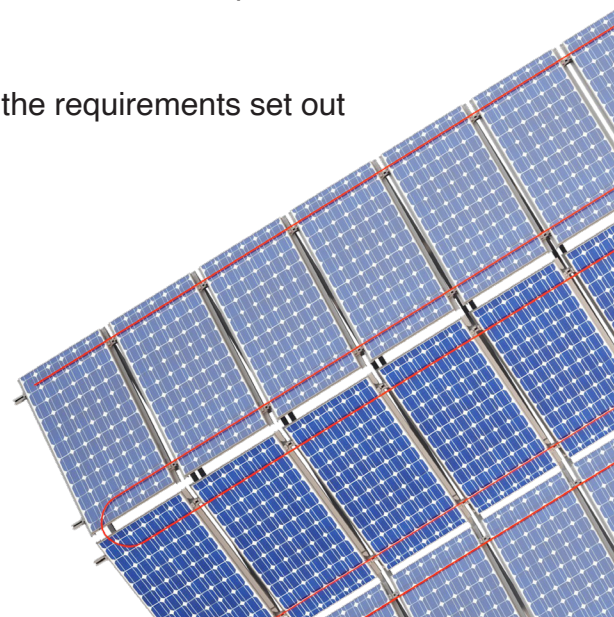
Standards & Specifications

Manufacturer requirements

- The manufacture should be approved to ISO9001.

Installation requirements

- Training – all work should be carried out by person(s) with the relevant training in fire detection and alarm systems.
- Competency – anyone working on the system should be deemed competent and have an understanding of the guidance set out in BS 5839-1.
- Compliance – all designs and installations should meet the requirements set out in BS 5839, and/or any local regulations in place.



Insurers



Insurer	Requirement / Guidance Statement
ALLIANZ	Install an approved, linear heat detection on top of the roof cover and below the PV modules. This would be the most suitable AFD system in terms of reliability and coverage.
AVIVA	Is automatic fire detection provided to detect a fire involving the PV panel array?
FM	Provide FM Approved linear heat detection at the edge of the PV panel furthest above the roof deck and installed along the full length of each PV panel row.
ZURICH	Provide a fire detection system for each rooftop PV system. <i>Options include: Line-type heat detection</i>

Specification for Linear Heat Detection

This document is intended for the use of any person(s) designing, supplying, and/or installing a fire detection system where Linear Heat Detection is required, with specific mention to Solar Panel/ Photovoltaic applications.

Approvals and standards

- Product should be installed as per BS 5839-1:2025 for UK installations.
- Programmable Linear Heat Detection cable should be approved to BS EN 54-22.
- Fixed Temperature Linear Heat Detection cable should be approved to BS EN 54-28.

System requirements

- The system should be able to support a zone length of up to 3,000m.
- The system should be capable of providing alarm location.
- The cable should be installed directly at or alongside the point(s) of risk.
- The system must be capable of providing a double knock or alarm verification, such as an 'Interlock mode'
- The system must have a minimum IP rating of IP65 or NEMA rating of 4X.
- The system should be open protocol using a MODBUS RTU (RS-485) output.

Product requirements

Cable

- The Linear Heat Detection Cable must have a fixed alarm temperature and operate consistently along the entire length of cable.
- The cable will send a signal through to the Digital Centre Control Unit which will then send a digital communication through the system to the Control and Indicating Equipment (Fire Alarm Control Panel).
- The cable should be able to be mounted directly to the underside of the solar panel array.

Coatings

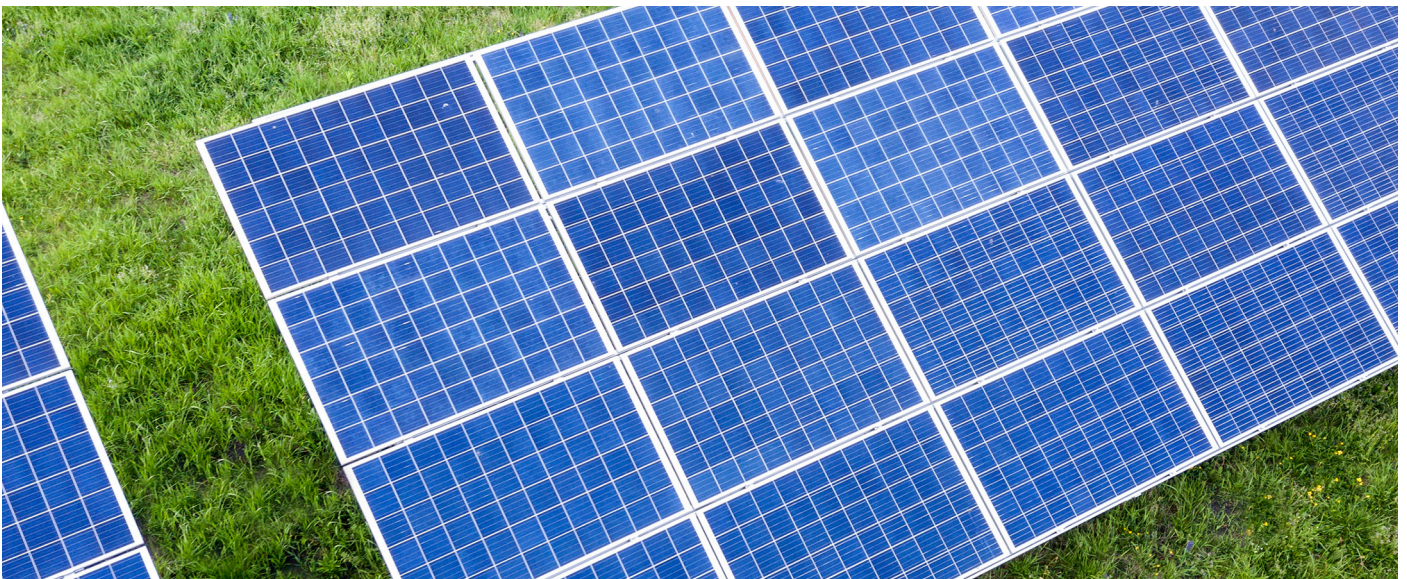
- The Linear Heat Detection cable must have a low-smoke zero halogen coating as standard.
- The Linear Heat Detection cable must have additional environmental protection, such as a stainless-steel braided coating.

Accessories

- The linear heat detection system should be supplied with a digital end of line unit.
- The Linear Heat Detection cable must be mounted directly to the underside of a solar array, using J-clips to secure and be fixed at 1m intervals.
- The cable should be secured with stainless steel clips.

Maintenance

- The system should be easy to maintain, requiring minimal cleaning and be able to perform in dirty environments.
- If a fire should occur, it should be possible to replace only the effected section without having to replace the entire system.



Linear Heat Detection

Full Specification

FM Feature	Thermocable
Approval	UL 864 (10th edi.) & UL 521
SIL 2 Approval	Available
LED Indication	Fire Fault & Supply 2 zone
EOL Testing & Fault	Available
Zones per EOL	2
Zone per Controller	2
Max LHD Zone	3000 mtr / 9842 ft
Min LHD Zone	1 mtr / 3 ft
Interlock Mode	Available
Relay Outputs	Available
Open Protocol	RS-485 Modbus
Alarm Location	Available
Dimensions (HWD)	180 x 120 x 60.5 mm
Operating Voltage	12 to 36 Vdc
Enclosure Standard	Yes
Enclosure Rating	NEMA 4, 4X (IP65)
Cable Material	PVC, Nylon, Silicon, LSZH, Stainless Steel Braid
UL Range (C)	65, 68, 75, 78, 85, 88, 105, 110, 185, 230
UL Range (F)	149, 155, 167, 172, 185, 190, 221, 230, 365, 446
UL Splice Kit	Available (see left)
FM Range (C)	68, 78, 88, 105
FM Range (F)	155, 172, 190, 221
Hazardous Area	IS Barrier

Get in touch

For more information about our range of Linear Heat Detection visit: www.thermocable.com