ProReact
Linear Heat Detection Cable

Applications Guide

- **Pro*React* Digital Linear Heat Detection Cable**
- **Pro*React* Analogue Linear Heat Detection Cable**
- **Pro*React* Linear Rate-of-Change Detection Cable**

Thermocable
ProAcademy
Linear Detection Technology Made Simple

1. Applications

1. Overheat Sensing in Cable Trays

Cable trays, including multi-tier cable trays, can be protected from overheat or fire using ProReact Linear Heat Detection cable.

For trays up-to 0.6m (2ft) wide, a single run of linear heat detection cable should be positioned in the centre of the cable tray.

For trays over 0.6m (2ft) in width, two runs of linear heat detection cable should be positioned, spaced equally apart, in the cable tray.

Linear Heat detection cable should be located between 150mm and 250mm above the tray, free from obstructing any power or data cables within the tray itself.

Using a 'v-clip', linear heat detection cable may be located underneath the cable tray to provide protection for multi-tier cable trays.

Suitable clips:

V-Clip (A1174)
L-Clip (200mm) (A1168/A1169)

2. Overheat Sensing on Conveyor Belts

ProReact Linear Heat Detection cable may be used in multiple locations for detecting overheat conditions on conveyor belts.

A high risk area is in close proximity to the roller bearings. Friction can ignite material which has fallen from the belt and builds up near the bearings. Suitable clips and fastenings should be used to secure the linear heat detection cable near the point of risk.

Linear Heat Detection cable may also be located above the conveyor belt to detect an overheat condition caused by material on the belt.

Nylon coated or, preferably, stainless steel braided, linear heat detection cable should be chosen to provide the maximum robustness and protection against physical damage.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
L-Clip (200mm) (A1168/A1169)

3. Rim-seal Protection on Floating Roof Tanks

ProReact Linear Heat Detection is ideal for early detection of a fire due to a damaged or worn rim seal on a floating roof tank. Similarly lightning strikes may cause fires on floating roof tanks making early warning a necessity.

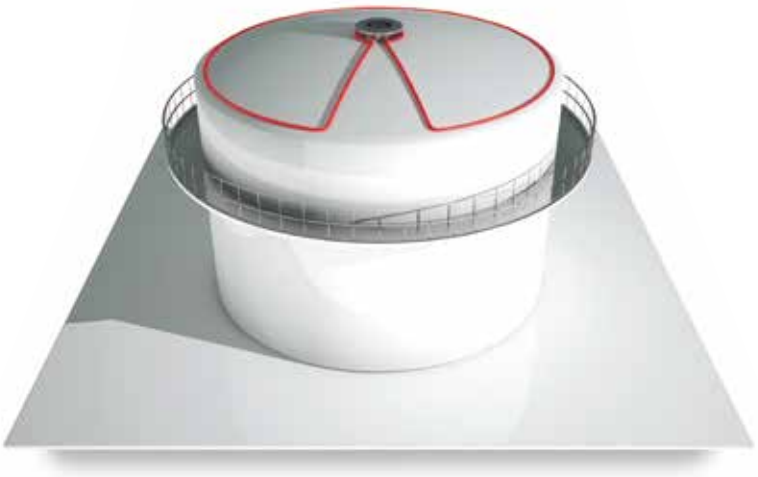
The earlier a fire can be detected on a storage tank containing highly flammable contents, the better chance a suppression system has of preventing a catastrophe.

ProReact Linear Heat Detection cable should be clipped to the foam dam using clips which position the linear heat detection cable close to the rim seal.

The addition of a nylon coating on the linear heat detection cable is strongly recommended for maximum protection against environmental conditions.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
L-Clip (200mm) (A1168/A1169)



4. Overheat Sensing on Fixed Roof Tanks

Tank farms require effective overheat sensing solutions, especially when many tanks are in close proximity to one another.

ProReact Linear Heat Detection cable can be used to provide a high level of protection on fixed roof storange tanks. It can be installed close to the points of risks such as vents, flanges or gauging points.

By linking the detection system to a fire supression system, a highly effective fire protection system can be created, minimising the risk of catastrophe.

Nylon coated linear heat detection cable should be chosen to provide the maximum robustness and protection against environmental conditions.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
L-Clip (200mm) (A1168/A1169)

5. Overheat Sensing in Tunnels

For increased coverage, linear heat detection cable may be installed in tunnels over the roadways. An optional ProReact Alarm Point Distance Locator may be beneficial to quickly locate whereabouts along the cable the alarm has occurred. Alternatively, zoning the cable in separate lengths can provide discrete detection zones.

An extra nylon coating is recommended on the detection cable to ensure maximum longevity in the environmental conditions likely to be encountered.

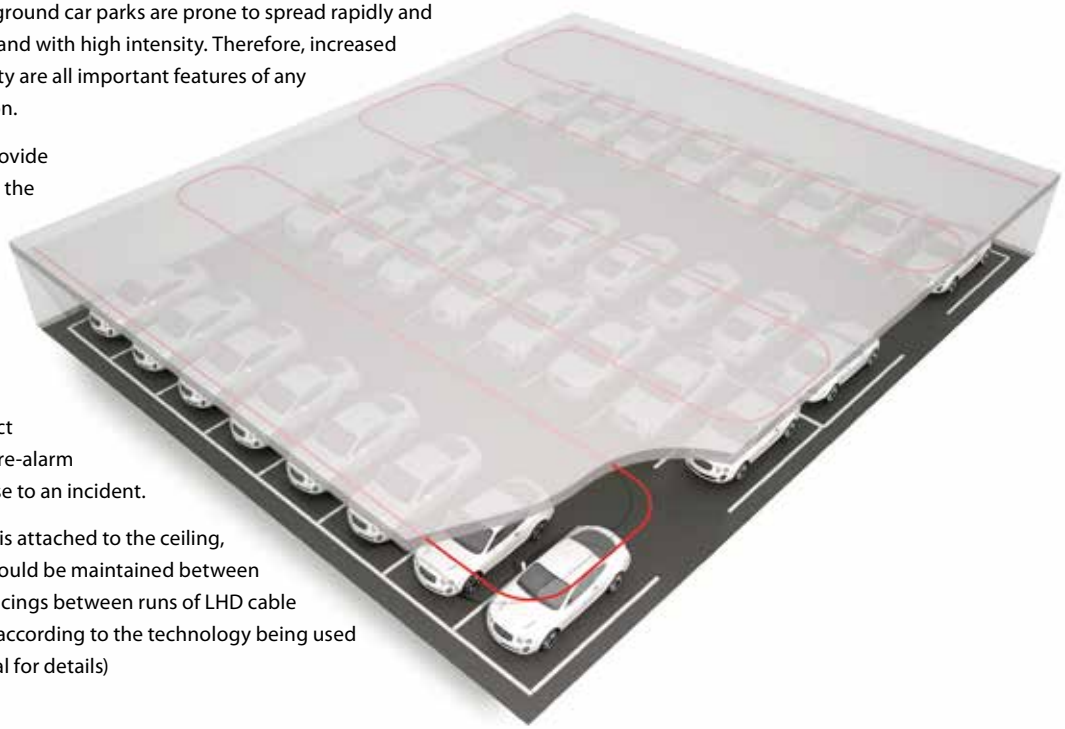
Linear Heat Detection cable may also be sited at low levels in the tunnel, if practical, to improve response time in certain situations.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
Channel Bracket (A1172/A1173)
L-Clip (200mm) (A1168/A1169)

6. Overheat Sensing in Car Parks

ProReact Linear Heat Detection is ideal for the early detection of fires and overheating in car parks. Fires in multi-storey and underground car parks are prone to spread rapidly and burn at extremely high temperatures and with high intensity. Therefore, increased coverage, high sensitivity and reliability are all important features of any fire detection system in this application.



Nylon coated cable may be used to provide a low maintenance, long-life option in the presence of exhaust fumes and other environmental factors.

ProReact LHD cable may be run perpendicular to the car park spaces, as show below, to protect a large area using a single zone of detection cable. Furthermore, ProReact Analogue can provide an additional pre-alarm option to offer the most rapid response to an incident.

For applications where the LHD cable is attached to the ceiling, a minimum of 20mm/0.8in spacing should be maintained between the ceiling and the LHD cable. The spacings between runs of LHD cable and minimum bend radius should be according to the technology being used (see corresponding installation manual for details)

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
L-Clip (200mm) (A1168/A1169)

7. Overheat Sensing for Escalators

Escalators are susceptible to overheating which can lead to a fire because of the continuous operation for long periods. ProReact Linear Heat Detection can be located at the point of risk due to its small size and flexibility, protecting bearings, motors, rollers and other high risk areas.

Care should be taken during installation to minimise the impact moving parts may have on the detection cable and for this reason, a stainless-steel braided cable should be chosen to prevent the detection cable from excessive wear.

Additionally, ProReact Analogue provides an early warning, pre-alarm, option to alert the presence of an overheating component or part, before a fire develops.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
Channel Bracket (A1172/A1173)
L-Clip (200mm) (A1168/A1169)

8. Overheat Sensing for Warehouse Racking

Linear Heat Detection cable is suitable for detection at the point of risk of items stored on dense racking. The nature of the ProReact detection cable, sensitive only to heat, makes this type of detection system ideally suited to the noisy, dusty and industrial application.

ProReact Digital and Analogue can be used to initiate a pre-action sprinkler system often used in these situations, such that once a fire has been detected it is rapidly brought under control.

Depending upon the height of racking, or the perceived risk, linear heat detection cable can be located at different levels to improve the overall system sensitivity. ProReact Linear Heat Detection is also ideal for use in large freezer warehouses to provide early warning of abnormal temperatures.

Suitable clips:

Dual height L-Clip (A1164/A1165)
Standard L-Clip (A1166/A1167)
Channel Bracket (A1172/A1173)
L-Clip (200mm) (A1168/A1169)

2. Thermocable Digital and Analogue LHD Cable Mounting Accessories

The ProReact Zintec and Stainless Steel clips have been specifically chosen to comply with the latest requirements detailed in BS 5839-1 (Code of practice for design, installation, commissioning and maintenance of fire detection and fire alarm systems for buildings).

Zintec clips are suitable for general indoor and outdoor use. Stainless steel clips are suitable for indoor and outdoor use and in environments where the clip may be exposed to harsh chemicals e.g. hydrocarbons or in a caustic environment.

Section 26.2 part f) states that

f) Methods of cable support should be non-combustible and such that circuit integrity will not be reduced below that afforded by the cable used, and should withstand a similar temperature and duration to that of the cable, while maintaining adequate support.

NOTE 8 *In effect, this recommendation precludes the use of plastic cable clips, cable ties or trunking, where these products are the means of cable support.*

NOTE 9 *Experience has shown that collapse of cables, supported only by plastic cable trunking, can create a serious hazard for firefighters, who could become entangled in the cables.*

Dual Height L-Clip
A1164 - Zintec
A1165 - Stainless Steel

Specification: 100mm long with 3 mounting holes for multiple cables and/or options in mounting height

Operating Temperature: up to 815°C

Standard L-Clip
A1166 - Zintec
A1167 - Stainless Steel

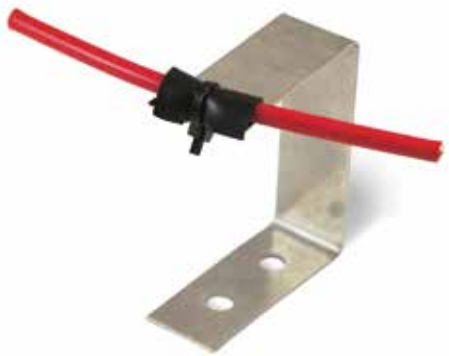
Specification: 50mm long with 1 mounting hole

Operating Temperature: up to 815°C

Channel Bracket
A1172 - Zintec
A1173 - Stainless Steel

Specification: 60mm H x 20mm W x 50mm D

Operating Temperature: up to 815°C



A1174 V-Clip for Cable Trays

Specification: Approx 150mm x 100m x 20mm

Operating Temperature: up to 815°C

L-Clip (200mm)
A1168 - Zintec
A1169 - Stainless Steel

Specification: 200mm long

Operating Temperature: up to 815°C

Distance Extension Piece
A1170 - Zintec
A1171 - Stainless Steel

Specification: 200mm long

Operating Temperature: up to 815°C

Pipe Clip
A1326 - Zintec
A1327 - Stainless Steel

Specification: 60mm H x 20mm W x 50mm D

Operating Temperature: up to 815°C

Indoor/Outdoor UV & Heat Stabilised Tie Wrap
A1175 - PA66

Operating Temperature: 110°C continuous rating

Extra High Temperature Indoor Heat Stabilised Tie Wrap
A1176 - ETFE

Operating Temperature: 170°C continuous rating

A1177 High Temperature Indoor/Outdoor Stainless Tie Wrap (requires special hand tool)

Operating Temperature: 815°C continuous rating

A1342 Hand Tool for Stainless Steel Tie Wrap

A1343 Junction Box with Two Cable Glands and 5 DIN Rail Mounted Terminal Blocks for use with linear heat detection cable as end-of-line box or in-line junction box

C1283 High Temperature Silicone Pads

Specification: 25mm x 25mm x 1mm

Operating Temperature: 180°C continuous rating

Packaged as standard with clips but available separately

Silicone pads insulate and protect the LHD cable from abrasion, excessive pressure and any heat transfer from a metal mounting bracket to the cable, which may affect the operation of the cable.

Beam clips may be used to support the LHD cable directly (in this case a separate silicone pad is required) or fixed to other mounting brackets and used to affix the bracket to a RSJ/I-beam or equivalent.

A1344 Beam Clip (2-3mm)

Specification: 6.5mm dia hole

Does not include silicone pad

A1178 Beam Clip (3-8mm)

Specification: 6.5mm dia hole

Does not include silicone pad

A1328 Beam Clip (8-14mm)

Specification: 6.5mm dia hole

Does not include silicone pad

A1179 Beam Clip (14-20mm)

Specification: 6.5mm dia hole

Does not include silicone pad

A1390 Intrinsically Safe Barrier Kit for Analogue Hazardous Area Installation

The Intrinsically Safe barrier kit should be used when the ProReact Analogue linear heat detection cable is installed in hazardous areas. The barriers have been specifically chosen for compatibility with the ProReact Analogue controller and sensor cable and limit the energy that can be transferred from the safe area into the hazardous area. Each barrier can be mounted securely onto a standard T-section DIN rail which simultaneously makes a reliable IS earth connection. For specific wiring details for the IS barrier kit please refer to the ProReact Analogue installation manual.

3. Mounting Accessories Specifications

			Per Pack				
Product Code	Product Description	Material	Net Weight (g)	Gross Weight (g)	Length (mm)	Width (mm)	Height (mm)
A1326-025	Pipe Clip Zintec (Pack of 25)	Zintec	840	850	260	260	135
A1326-100	Pipe Clip Zintec (Pack of 100)	Zintec	3390	3400	260	260	135
A1327-025	Pipe Clip Stainless Steel (Pack of 25)	Stainless Steel	570	580	260	260	135
A1327-100	Pipe Clip Stainless Steel (Pack of 100)	Stainless Steel	2290	2300	260	260	135
A1170-025	Distance Extension Piece Zintec (Pack of 25)	Zintec	1090	1100	190	260	50
A1170-100	Distance Extension Piece Zintec (Pack of 100)	Zintec	4440	4450	190	260	50
A1171-025	Distance Extension Piece Stainless Steel (Pack of 25)	Stainless Steel	790	800	190	260	50
A1171-100	Distance Extension Piece Stainless Steel (Pack of 100)	Stainless Steel	3190	3200	190	260	50

3. Mounting Accessories Specifications (cont.)

			Per Pack				
Product Code	Product Description	Material	Net Weight (g)	Gross Weight (g)	Length (mm)	Width (mm)	Height (mm)
A1166-025	Standard L-Clip (50mm) Zintec (Pack of 25)	Zintec	390	400	190	260	50
A1166-100	Standard L-Clip (50mm) Zintec (Pack of 100)	Zintec	1590	1600	190	260	50
A1167-025	Standard L-Clip (50mm) Stainless Steel (Pack of 25)	Stainless Steel	250	260	190	260	50
A1167-100	Standard L-Clip (50mm) Stainless Steel (Pack of 100)	Stainless Steel	1040	1050	190	260	50
A1164-025	Dual Height L-clip (100mm) Zintec (Pack of 25)	Zintec	640	650	220	260	70
A1164-100	Dual Height L-clip (100mm) Zintec (Pack of 100)	Zintec	2590	2600	220	260	70
A1165-025	Dual Height L-clip (100mm) Stainless Steel (Pack of 25)	Stainless Steel	400	410	220	260	70
A1165-100	Dual Height L-clip (100mm) Stainless Steel (Pack of 100)	Stainless Steel	1640	1650	220	260	70
A1168-025	LHD L-Bracket 200mm Zintec (Pack of 25)	Zintec	1190	1200	260	260	90
A1168-100	LHD L-Bracket 200mm Zintec (Pack of 100)	Zintec	4790	4800	260	260	90
A1169-025	LHD L-Bracket 200mm Stainless Steel (Pack of 25)	Stainless Steel	790	800	260	260	90
A1169-100	LHD L-Bracket 200mm Stainless Steel (Pack of 100)	Stainless Steel	3190	3200	260	260	90
A1172-025	Channel Bracket Zintec (Pack of 25)	Zintec	840	850	260	260	135
A1172-100	Channel Bracket Zintec (Pack of 100)	Zintec	3390	3400	260	260	135
A1173-025	Channel Bracket Stainless Steel (Pack of 25)	Stainless Steel	570	580	260	260	135
A1173-100	Channel Bracket Stainless Steel (Pack of 100)	Stainless Steel	2290	2300	260	260	135
A1174-025	V-clip for cable trays Spring Stainless Steel (Pack of 25)	Spring Stainless Steel	570	580	260	260	135
A1174-100	V-clip for cable trays Spring Stainless Steel (Pack of 100)	Spring Stainless Steel	2340	2350	260	260	135
A1344-025	Beam Clip 2-3mm (Pack of 25)	Spring Steel	375	425	132	132	194
A1344-100	Beam Clip 2-3mm (Pack of 100)	Spring Steel	1550	1600	132	132	194
A1178-025	Beam Clip 3-8mm (Pack of 25)	Spring Steel	400	450	132	132	194
A1178-100	Beam Clip 3-8mm (Pack of 100)	Spring Steel	1650	1700	132	132	194
A1328-025	Beam Clip 8-14mm (Pack of 25)	Spring Steel	400	450	132	132	194
A1328-100	Beam Clip 8-14mm (Pack of 100)	Spring Steel	1650	1700	132	132	194
A1179-025	Beam Clip 14-20mm (Pack of 25)	Spring Steel	400	450	132	132	194
A1179-100	Beam Clip 14-20mm (Pack of 100)	Spring Steel	1650	1700	132	132	194
A1343	LHD Junction Box/EOL Box Polycarbonate w/ 5 DIN Rail Terminals & 2 glands	Polycarbonate	240	240	94	94	57
C1283-025	Silicone Pad 25mm2 x 1mm (Pack of 25)	Silicone	15	20	160	95	20
C1283-100	Silicone Pad 25mm2 x 1mm (Pack of 100)	Silicone	95	100	160	95	20
A1175-025	110°C constant rated indoor/outdoor tie wrap (Pack of 25)	PA66	10	15	160	110	20
A1175-100	110°C constant rated indoor/outdoor tie wrap (Pack of 100)	PA66	50	55	160	110	20
A1176-025	170°C constant rated indoor tie wrap (Pack of 25)	ETFE	10	15	160	110	20
A1176-100	170°C constant rated indoor tie wrap (Pack of 100)	ETFE	50	55	160	110	20
A1177-025	High Temperature Stainless Steel Indoor/Outdoor tie wrap (Pack of 25)	Stainless Steel	50	60	220	125	20
A1177-100	High Temperature Stainless Steel Indoor/Outdoor tie wrap (Pack of 100)	Stainless Steel	200	210	220	125	20
A1342	Stainless Steel Tie Wrap Hand Tool	N/A	600	600	280	200	55
A1390	Intrinsically Safe Barrier kit for ProReact Analogue	N/A	316	360	145	155	60

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