

UL-EU CERTIFICATE

Certificate No.	UL-EU-01116-CPR
Page	1/4
Date of Issue	2019-08-23
Revision	2019-10-30
Certificate Holder	Thermocable Flexible Elements Ltd Pasture Lane, Clayton, Bradford, BD14 6LU United Kingdom
Manufacturer	Thermocable Flexible Elements Ltd Pasture Lane, Clayton, Bradford, BD14 6LU United Kingdom
Certified Product Type	Non-resettable line-type heat detectors
Product Trade Name	DSCU-EN ProReact Digital Sensor Control Unit EN78 ProReact EN Digital LHD Cable (Performance Type: T078-V10-A045) EN88 ProReact EN Digital LHD Cable (Performance Type: T088-V10-A065) EOLU-EN ProReact Digital End-of-Line Unit
Trademark	ProReact
Rating/Classification	See Appendix
Technical Specifications	EN54-28:2016
Supporting Documentation	S36157-D01-EuropeanDirective-Original
Additional information	NA
Expiry date	2029-08-23



Head of Notified Body
Chris Miles



This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.



Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01116-CPR
 Page 2/4
 Date of Issue 2019-08-23

Essential Characteristics	Performance	Standard
4 - Product Characteristics	Pass	EN 54-28:2016
5.1 - General	Pass	EN 54-28:2016
5.2 - Nominal activation conditions/sensitivity		
5.2.1 - Individual alarm indication	Pass	EN 54-28:2016
5.2.2 - Signaling	Pass	EN 54-28:2016
5.3 - Operational reliability		
5.3.1 - Maximum ambient temperature test (endurance) for sensing element	Pass	EN 54-28:2016
5.3.2 - Connection of ancillary devices	Pass	EN 54-28:2016
5.3.3 - Manufacturer's adjustments	Pass	EN 54-28:2016
5.3.4 - Requirements for software controlled detectors	Pass	EN 54-28:2016
5.3.5 - Sensing element fault	Pass	EN 54-28:2016
5.3.6 - On-site adjustment of response behaviour	NA	
5.4 - Tolerance to supply voltage		
5.4.1 - Variation in supply parameters	Pass	EN 54-28:2016
5.4.2 - Low voltage fault (sensor control unit with external power supply)	Pass	EN 54-28:2016
5.5 - Performance parameters under fire condition	Pass	EN 54-28:2016
5.6 - Durability of performance parameters under fire condition		
5.6.1 - Temperature resistance		
5.6.1.1 - Dry heat (operational) test for sensor control unit	Pass	EN 54-28:2016
5.6.1.2 - Cold (operational) for sensing element	Pass	EN 54-28:2016
5.6.1.3 - Cold (operational) for sensor control unit	Pass	EN 54-28:2016
5.6.2 - Humidity resistance		
5.6.2.1 - Damp heat, steady-state (endurance) for sensor control unit and sensing element	Pass	EN 54-28:2016
5.6.2.2 - Damp heat, cyclic (operational) for sensing element	Pass	EN 54-28:2016
5.6.2.3 - Damp heat, cyclic (operational) for sensor control unit	Pass	EN 54-28:2016
5.6.2.4 - Damp heat, steady-state (operational) for sensor control unit	NA	
5.6.2.5 - Damp heat, cyclic (endurance) for sensor control unit and sensing element	NA	
5.6.3 - Shock and vibration resistance		
5.6.3.1 - Shock (operational) for sensor control unit	Pass	EN 54-28:2016
5.6.3.2 - Impact (operational) for sensor control unit	Pass	EN 54-28:2016
5.6.3.3 - Impact (operational) for sensing element	Pass	EN 54-28:2016
5.6.3.4 - Vibration, sinusoidal (operational) for sensor control unit	Pass	EN 54-28:2016
5.6.3.5 - Vibration, sinusoidal (operational) for sensing element	Pass	EN 54-28:2016
5.6.3.6 - Vibration, sinusoidal (endurance) for sensor control unit	Pass	EN 54-28:2016
5.6.3.7 - Vibration, sinusoidal (endurance) for sensing element	Pass	EN 54-28:2016
5.6.4 - Test for corrosion resistance		
5.6.4.1 - Sulphur dioxide (SO ₂) corrosion (endurance) for sensing element	Pass	EN 54-28:2016
5.6.4.2 - Sulphur dioxide (SO ₂) corrosion (endurance) for sensor control unit	Pass	EN 54-28:2016
5.6.5 - Electrical stability	Pass	EN 54-28:2016



Appendix UL-EU CERTIFICATE

Certificate No. UL-EU-01116-CPR
Page 3/4
Date of Issue 2019-08-23

Ratings for Sensor Control Unit (DSCU-EN)	
Operating Voltage:	24 VDC (12-36 VDC)
Alarm Relay Rating:	30 VAC/42.4 VDC, 2 A (2 x Form C)
Fault Contact Ratings:	35 VDC maximum, 80 mA maximum (2 x outputs)
Zone End-of-Line Resistor	3.6 k ohm (Zone 1 and Zone 2)

This device must only be powered with an EN54-4 compliant power supply.

Ratings for Sensing Element (EN78)	
Marked Rating:	T078-V10-A045
Nominal Alarm Temperature:	78°C
Tolerance Alarm Temperature:	±10% (±7.8°C)
Maximum Ambient Temperature:	45°C

Ratings for Sensing Element (EN88)	
Marked Rating:	T088-V10-A065
Nominal Alarm Temperature:	88°C
Tolerance Alarm Temperature:	±10% (±8.8°C)
Maximum Ambient Temperature:	65°C

Ratings for Functional Unit (EOLU-EN)	
N/A	N/A



Appendix UL-EU Certificate

Certification Mark	UL-EU mark
Certificate No.	UL-EU-01116-CPR
Page	4/4
Date of Issue	2019-08-23

The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.



The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.

