



PRODUCT SPECIFICATIONS

# TEK™ SERIES CONSTANT WATT HEATING CABLE

## APPLICATION

TEK series resistance constant watt heating cables are used where circuit lengths exceed the limitations of parallel resistance heating cables. Circuit lengths up to 3,658 m can be energized from a single power supply point.

The series circuitry of TEK provides consistent watt-per-foot power output along the entire length of the cable.

TEK cables are certified for use in ordinary (nonclassified) areas and in potentially explosive atmospheres in accordance with the ATEX Directive and the IEC Ex Scheme.

## RATINGS

Rated voltage <sup>1</sup> .....	for operation up to 750 Vac
Max. maintenance temperature <sup>2</sup> .....	101°C <sup>3</sup>
Max. continuous exposure temperature	
Power-off .....	250°C
Minimum installation temperature .....	-60°C
Minimum bend radius	
@ -15°C .....	22mm
@ -60°C .....	32 mm
T-rating .....	T2 to T6 <sup>4</sup>
	(using the principles of stabilized design or limiters)

## STABILISED DESIGN . . .

The watt density limitation for TEK cables is directly related to the desired maintain temperature. Thermon is able to ensure the T-rating based on a stabilized design that enables series constant watt heating cables to operate in hazardous areas without the use of limiter thermostats.

### Notes

1. Definition as stated in IEC 60079-30-1. Specific voltage depends on circuit length and design conditions.
2. Watt density limitations are correlated to maintain temperatures.
3. Higher maintenance temperatures may be possible; contact TC-E for design assistance.
4. Heating cable output and T-rating are dependent upon supply voltage, cable resistance, temperature conditions as well as additional variables. These may be determined using CompuTrace® Electric Heat Tracing Design Software or by contacting TC-E design assistance.



## CONSTRUCTION

- 1 Heating Conductors (2 or 3)
- 2 Fluoropolymer Dielectric Insulation
- 3 Fluoropolymer Pairing Jacket
- 4 Nickel-Plated Copper Braid (BN)
- 5 Fluoropolymer overjacket provides additional protection to cable and braid where exposure to chemicals or corrosives is expected.

## BASIC ACCESSORIES

**Power Connection:** All TEK cables require a Terminator or cold lead transition for connection to power. Refer to the back of this specification sheet for details.

**End-of-Circuit Termination:** An end-of-circuit termination must also be used with TEK cables. This termination, detailed on the back of this specification sheet.



**AVAILABLE CABLES**

Catalog Number		Resistance per Conductor at 20°C Ohms/m	Conductor Size (mm)²
2 Conductor	3 Conductor		
TEK 2C40	TEK 3C40	0.01492	1.3
TEK 2C50	TEK 3C50	0.009449	2.1
TEK 2C60	TEK 3C60	0.005945	3.3
TEK 2C70	TEK 3C70	0.003478	5.3

**CIRCUIT BREAKER SIZING AND TYPE<sup>1</sup>**

The maximum circuit length is a function of cable resistance, circuit length and operating voltage. Circuit breaker sizing and earth-fault protection should be based on applicable local codes. For information on design and performance, contact TC-E.

Earth-fault protection of equipment should be provided for each branch circuit supplying electric heating equipment.

**TERMINATIONS AND SPLICES**

Prior to connection to power, TEK heating cables should be terminated using the Terminator ZP-M or with a certified nonheating “cold lead” and a “hot-end” termination. To facilitate ease of installation, in-line splices may also be required. These connections/terminations are available as factory fabricated assemblies or as field fabricated kits.

**Power Connection:** Provides fluoropolymer insulated nickel-plated stranded copper cold leads and ground wire extension plus required splices, insulating tape and sealant. A flexible stainless steel conduit with a 3/4” fitting protects the leads. The number and size of the cold leads is based on the TEK heater type. Exposure temperatures up to 190°C.

**End Termination:** The hot end (opposite end from power) utilizes an under insulation stainless steel fitting that houses the lug, insulating tape, sealant and grounding lug. The size and style of the termination is based on the number and size of conductors. Exposure temperatures up to 190°C.

**In-Line Splices:** To facilitate the installation of the cable, an under insulation splice may be required. The splice utilizes a stainless steel housing (sized for the conductor type and number), splices, grounding lugs, insulating tape and sealant. Exposure temperatures up to 190°C.



**CETK:** Field fabricated cold-end termination kit.



**HETK:** Field fabricated hot-end termination kit.



**HSTK:** Field fabricated splice termination kit.

**CERTIFICATIONS/APPROVALS**

II 2 G Ex eb IIC T260°C (T2) to T6  
II 2 D Ex tb IIIC T260°C to T85°C FM 11ATEX0050

International Electrotechnical Commission  
IEC Certification Scheme for Explosive Atmospheres  
CCVE 11.0002

Factory Mutual Research  
Ordinary and Hazardous (Classified) Locations

Underwriters Laboratories Inc.  
Hazardous (Classified) Locations



**Terminator ZP-M:** Designed to fabricate power connections, in-line splice connections or for making end terminations. Electrical connections are made in terminal blocks utilizing nickel-plated copper terminals to ensure corrosion-free electrical integrity. No cold leads are required. Exposure temperatures up to 250°C.