

Technical Data Sheet  
ThimmTherm-Self-Limiting TSL-F

---

**Technical Data Sheet**  
**Self-Limiting Heating Tape**  
**ThimmTherm Self-Limiting**  
**TSL-F**

# Technical Data Sheet

## ThimmTherm-Self-Limiting TSL-F

---

Product name: Thimm Self-Limiting –F- 10/13//15/25/33 W/m - 230V AC

Product type: Self-limiting heating tape with PTC characteristic (intrinsic limitation)

Area of application: Frost protection,  
maintenance or increase of surface temperature  
(e.g. pipe runs, containers , surfaces)

### **Product design:**

Two tinned flexible copper conductors are embedded at a constant distance apart from each other in a semi-conducting heating element consisting of a polyolefin / carbon mixture.

The semiconductor element has a PTC characteristic and increases internal resistance with rising temperature. The heating power is thus reduced in a non-linear manner. The power values tend asymptotically towards zero with increasing temperature. Overheating is therefore impossible. The heating tapes can cross or touch each other without compromising safety.

TSL-F heating tape has a primary isolation of fluoropolymer, a tinned copper braid (earthing / protection) and a outer sheath.

Construction data: 2 parallel conductors, cross-section 1.2 mm<sup>2</sup>, nickel-plated copper conductors embedded in a semiconductor element made from defined proportions of fluoropolymer and carbon (doping).

Overall dimensions: 11,6 \* 5,6 mm  
Primary isolation: fluoropolymer,  
Wall thickness: 0.8 mm

Operating voltage: 254V, 50Hz, AC

Heating tape temperatures: Heating tape switched on : +65 °C  
Heating tape switched off : +85 °C

Minimum installation temperature: - 55 °C

Minimum start-up Temperature: -40 °C

Min. bend radius: 25 mm

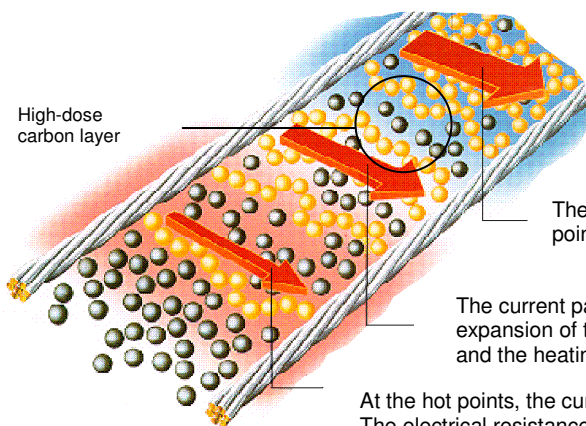
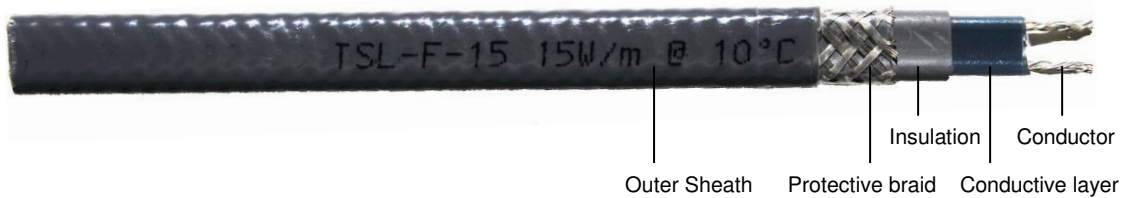
Atex approval: KEMA 07ATEX0176 U

# Technical Data Sheet

## ThimmTherm-Self-Limiting TSL-F

### Permissible heating circuit lengths:

	Start-up Temp. (°C)	Operating Voltage 120 Vac			Operating Voltage 254 Vac		
		16 A	20 A	30 A	16 A	20 A	30 A
TSL-F 10	+10	95	95	95	205	205	195
	-15	69	90	95	139	186	195
	-30	58	75	95	120	150	195
TSL-F 13	+10	78	86	86	169	179	174
	-15	55	72	86	111	149	174
	-30	47	59	86	94	124	174
TSL-F 15	+10	67	80	80	145	162	160
	-15	45	60	80	93	125	160
	-30	39	49	80	77	106	160
TSL-F 20	+10	58	70	70	116	140	140
	-15	37	46	70	72	93	140
	-30	30	38	61	55	77	110
TSL-F 26	+10	43	58	63	88	117	126
	-15	30	38	55	58	75	117
	-30	26	31	53	45	64	100
TSL-F 33	+10	33	45	54	70	90	108
	-15	25	32	45	49	64	95
	-30	21	26	43	43	52	82



The carbon-dosed layers form a multiplicity of current paths at the cold points. The current is converted to heat in the semiconductor layers.

The current paths are proportionally reduced at the hot points by expansion of the semiconductor. The electrical resistance increases and the heating power reduces accordingly.

At the hot points, the current paths are almost completely absent. The electrical resistance increases continuously until heat is no longer produced.