

# Self Regulating Heating Cable

## 11F (FBZ)



**10** YEAR  
Product Warranty

**TRACELEC**   
HEATING SOLUTIONS

# 11F (FBZ)

SELF REGULATING HEATING CABLE

## 1. DESCRIPTION



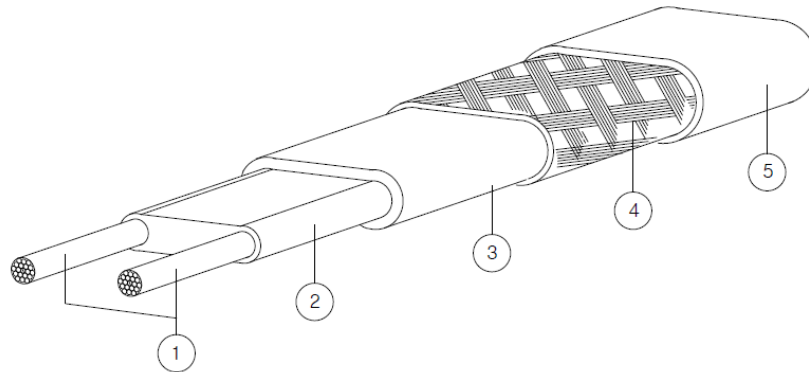
11F self-regulating heating cables provide a power that varies depending on the process temperature. When the temperature drops, the emitted power increases. When the temperature increases, the power of the cable decreases. This prevents hot spots when two cables overlap. This system also adjusts for temperature variations due to stagnant fluids and height differences (vertical pipes).

11F cables are commonly used to maintain temperatures up to 150°C in pipes, tanks, etc. They are suitable for organic and corrosive chemical environments.

## 2. CABLE SELECTION

Model	Nominal power	Temperature	Voltage
11F152	15 ~ 29.9 W/m	10°C	230 Vac
11F302	30 ~ 44.9 W/m	10°C	230 Vac
11F452	45 ~ 59.9 W/m	10°C	230 Vac
11F602	60 ~ 75 W/m	10°C	230 Vac

## 3. CONSTRUCTION



Parts	Construction	Material	Notes
1	Conductors	Nickel-Plated Copper	19/0.28, 1.2mm <sup>2</sup>
2	Heating element	Fluoropolymer + C/B	
3	Inner insulation	PFA	
4	Ground braid	Copper ground braid	8/0.18*16, Coverage: 70%
5	Outer jacket	PFA Fluoropolymer	

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## 4. FEATURES

- Cables can be overlapped without creating hot spots or causing a burn out.
- It automatically adjusts heat output based upon exposure temperature.
- It can be cut to any length in the field.
- It adjusts its output to independently respond to ambient temperatures all along its length.
- Energy efficiency which extends the life of the cable.
- Connection and end termination kits easy to install.

## 5. USE

11F heating cables are mainly intended for:

- Water lines freeze protection
- Industrial maintenance temperature
- Warming of pipes and systems
- Ordinary and hazardous locations (Ex e IIC Gb, IECEx certification)

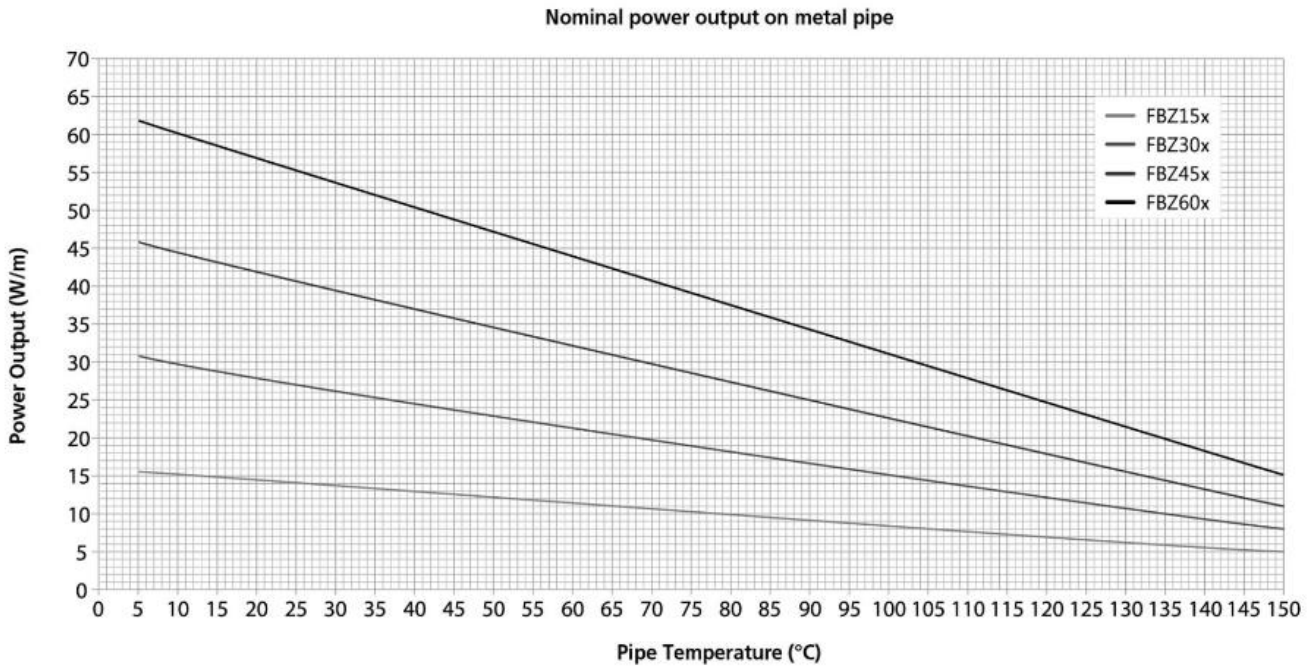
## 6. SPECIFICATIONS

Description	Data
Voltage	200 ~ 277 Vac
Ambient temperature	$-55\text{ °C} \leq T_{\text{amb}} \leq 40\text{ °C}$
Minimum installation temperature	-60 °C
Maximum maintain temperature (power on)	200 °C
Maximum exposure temperature (power off)	240 °C
T-rating	11F152/302/452: T3 (200 °C) 11F602: T2 (220 °C)
Impact resistance	12 J @ -62 °C
Bus wire	ASTM B355 Class 2 NPC 16 AWG
Dimensions (aprox).	$12.2 \pm 0.2\text{ mm} \times 4.8 \pm 0.2\text{ mm}$
Minimum bend radius	35 mm @ -62 °C
Standards	EN 60079-0 EN 60079-7 EN 60079-30-1

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## 7. NOMINAL POWER OUTPUT RATING ON METAL PIPES



## 8. MAXIMUM CIRCUIT LENGTH

Maximum length (m) based on the start-up temperature (°C) and circuit breaker sizes (A). Curve C differential magnetothermic protection. Data considering a supply voltage of 230 Vac.

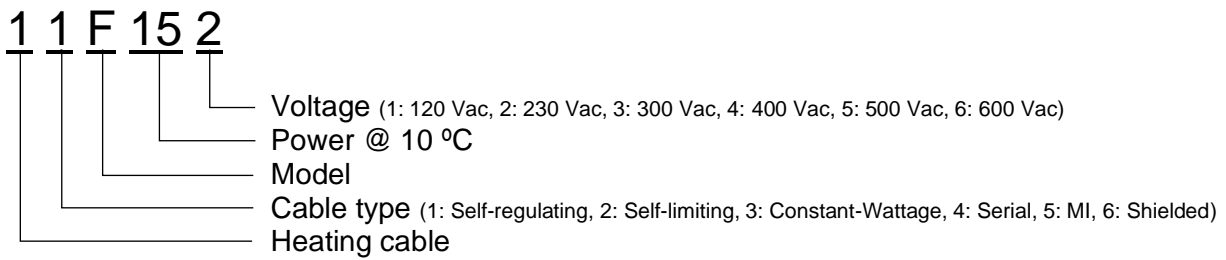
Model	Start-up Temperature °C	Circuit breaker					
		10A	16A	20A	25A	32A	40A
11F152	-50	45	72	90	112	113	113
	-20	51	82	103	121	121	121
	0	60	96	120	130	130	130
	10	62	98	123	132	132	132
11F302	-50	32	52	64	81	96	96
	-20	37	59	74	93	103	103
	0	39	62	78	97	105	105
	10	41	66	82	102	108	108
11F452	-50	24	39	48	60	77	83
	-20	28	44	56	69	89	89
	0	29	47	58	73	91	91
	10	31	49	61	77	93	92
11F602	-50	19	31	39	49	62	74
	-20	22	36	45	56	71	80
	0	24	38	47	59	75	82
	10	25	39	49	61	79	83

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## 9. CABLE CODE

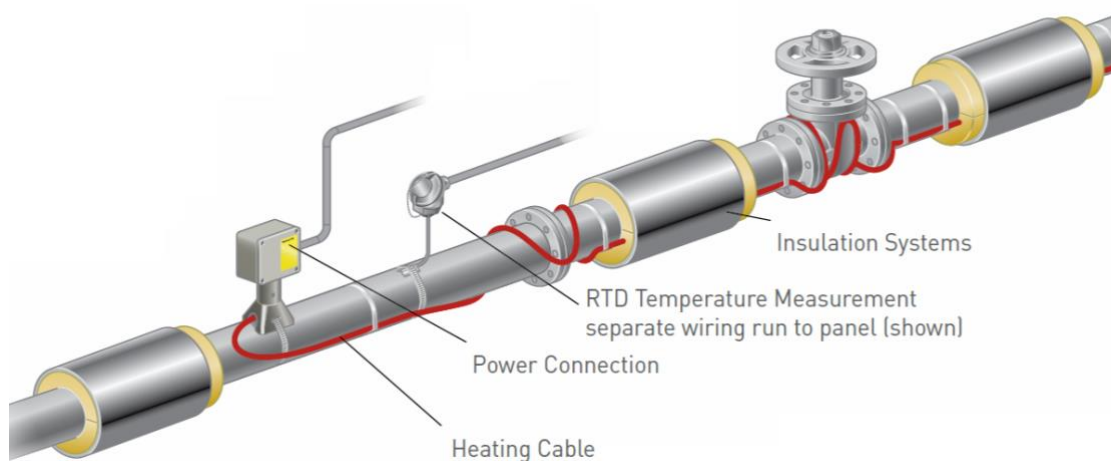
1 1 F 15 2



## 10. APPROVALS / CERTIFICATIONS

Certification	Certification n°.	Certification	Certification n°.
	IECEX BAS 16.0054U		MRE0000004
	Baseefa16ATEX0058U		

## 11. TYPICAL INSTALLATION







# TRACELEC

HEATING SOLUTIONS

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