

# 10.1 Ex-heating element

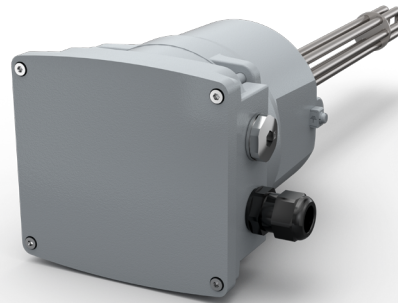
## Model Ex-Screw-in heating element Model Ex-Flanged heating element

### APPLICATION

- Ex-Screw-in- or flanged heating element are used for heating up liquids, gases or air within potentially explosive atmospheres for zone 1 and or zone 21 and 22

### DESIGN

- tubular heating elements made of stainless steel
- steel-nipple G 1½ or G 2
- steel-flange DIN EN 1092-1, PN 16
- flameproof enclosure, protection type IP 66
- temperature class T6 / thermostat 0 till 70 °C and limiter 80 °C
  - up to 70 °C medium temperature: distance between sealing surface and flameproof enclosure 38 to 44 mm
- temperature class T5 to T1, please contact us!
  - over 70 °C medium temperature: distance between sealing surface and flameproof enclosure 185 mm



### EXPLOSION-PROOF DESIGN

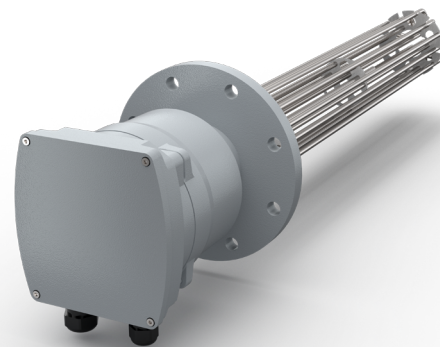
- Flameproof enclosure and increased safety
- Ex II 2G Ex db eb or db IIC T6 to T1 Gb according to EN 60079-0. -1 and -7
- EC type examination certificate IExU 15 ATEX 1019 X

### POWER DESIGN

- The specific surface loading is based on the listed guideline
- In case of doubt, when heating oil, ask your oil suppliers for the specific surface load

### ELECTRICAL CONNECTION

- up to 3 000 Watt at 230 V single-phase current, thermostat / limiter switches directly
- over 3 000 Watt at 3 x 400 V three-phase current, contactor necessary

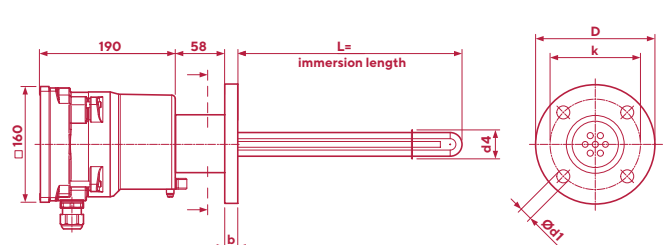
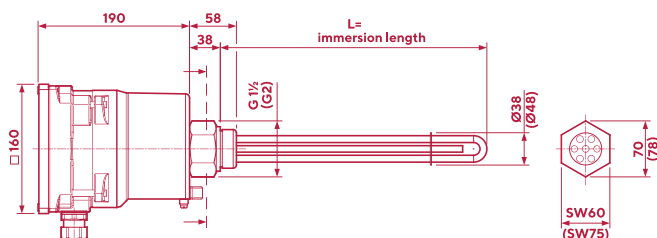


### GUIDELINES

	SURFACE LOAD (WATT/CM <sup>2</sup> )
Viscous oil, gearboxoil, tar, paraffin, etc.	0.8
Hydraulic oil, thin oil, diphyl, etc.	1.5
Hardening oil, heat transfer oil, glycerine	2.3

### ALTERNATIVE DESIGN

- other immersion length and unheated areas
- other voltage and power
- other material for nipple or flange
- other material for tubular heating elements



# 10.1 Ex-heating element

## Model Ex-Screw-in heating element Model Ex-Flanged heating element

### ATTENTION! Safety Note

For safe operation of the heater in hazardous areas, a protection system that has been tested for function and reliability is required. Depending on the application, the protection system consists of a temperature monitoring device (usually included in delivery), level or flow monitoring and corresponding tripping unit.

### ORDER INFORMATION

- |                         |                       |                                     |           |
|-------------------------|-----------------------|-------------------------------------|-----------|
| • article-no.           | • ambient temperature | • temperature class T6 to T1        | • voltage |
| • medium                | • operating pressure  | • material nipple or flange         | • power   |
| • operating temperature | • Ex-zone             | • material tubular heating elements |           |

### TECHNICAL DATA

FLANGE (DN)	IMMERSION LENGTH (APPROX. MM)	POWER (APPROX. WATT)	ARTICLE NO. SPECIFIC SURFACE LOAD 0.8 W/CM <sup>2</sup>
40	1 250	1 000	10019011
50	880	1 000	10019021
50	1 250	1 500	10019031
80	1 250	2 000	10019041
80	800	2 000	10019051
80	1 250	3 000	10019061

### TECHNICAL DATA

FLANGE (DN)	IMMERSION LENGTH (APPROX. MM)	POWER (APPROX. WATT)	ARTICLE NO. SPECIFIC SURFACE LOAD 1.5 W/CM <sup>2</sup>	IMMERSION LENGTH (APPROX. MM)	POWER (APPROX. WATT)	ARTICLE NO. SPECIFIC SURFACE LOAD 2.3 W/CM <sup>2</sup>
40	700	1 000	10019071	500	1 000	10019131
50	700	1 500	10019081	500	1 500	10019141
80	700	2 000	10019091	500	2 000	10019151
80	700	3 000	10019101	500	3 000	10019161
80	700	3 000*	10019111	500	3 000*	10019171
100	700	6 000*	10019121	500	6 000*	10019181

\*Due to the high power, only available in three-phase current.

### DIMENSIONS

Nominal size	DN	40	50	80	100	mm
Heating elements		2	3	6	12	quantity
Outer Ø	D	150	165	200	220	mm
Thickness	b	16	18	20	20	mm
Hole circle Ø	k	110	125	160	180	mm
Drillings		4	4	8	8	quantity
Drilling Ø	d1	18	18	18	18	mm
Distance plate Ø	d4	36	48	78	98	mm

# 10.3 Ex-room heating element

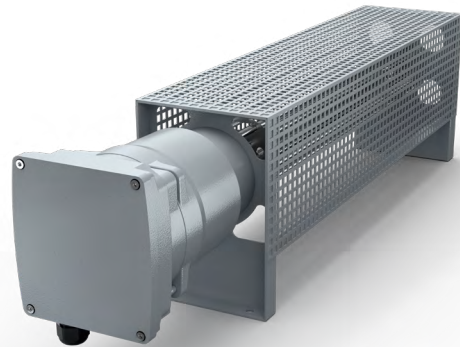
## Model Ex-room heating element

### APPLICATION

- Ex-Screw-in- or flanged heating element are used for heating up room air or frost protection in hazardous areas of petro-chemistry, chemical and pharmaceutical industry, the oil and gas supply as well as the paint industry.

### DESIGN

- painted steel protection cage with footrests
- 6 or 12 tubular heating elements  $\varnothing$  8.4 mm
- flameproof enclosure, protection type IP 66
- temperature controller for indirectly controlling the room temperature via the heating element surface temperature
- temperature limiter controls the max. permitted surface temperature, temperature class T2 of 300 °C, T3 of 200°C, T4 of 135 °C



### EXPLOSION-PROOF DESIGN

- Flameproof enclosure and increased safety
- Ex II 2G Ex db eb or db IIC T2, T3 or T4 Gb according to EN60079-0
- EC type examination certificate IExU 15 ATEX 1019 X

### ELECTRICAL CONNECTION

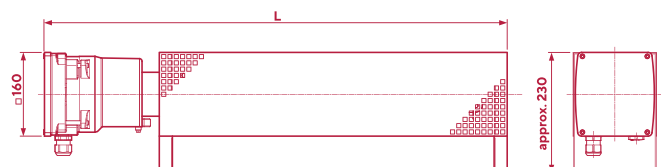
- at 230 V single-phase current
- temperature control with Ex-room temperature controller, we ask for your inquiry

### TECHNICAL DATA

TEMPERATURE-CLASS	LENGTH (APPROX. MM)	POWER (APPROX. WATT)	ARTICLE NO.
T2	1450	1.500	10032011
T2	1450	3.000	10032021
T3	900	500	10030011
T3	1225	750	10030021
T3	1450	1.000	10030031
T3	1225	1.500	10030041
T3	1450	2.000	10030051
T3	2025	3.000	10030061
T4	1450	500	10031011
T4	1225	750	10031021
T4	1450	1.000	10031031

### INSTALLATION

- horizontal installation with the footrests
- do not cover the heating element (heat build-up)



# 10.5 Ex-finned tube heating element

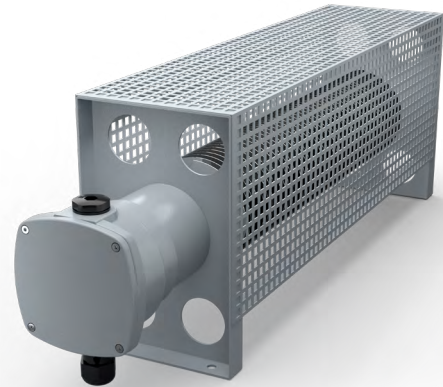
## Model Ex-finned tube heating element

### APPLICATION

- Ex-Screw-in- or flanged heating element are used for heating up room air or frost protection in hazardous areas of petro-chemistry, chemical and pharmaceutical industry, the oil and gas supply as well as the paint industry.

### DESIGN

- painted steel protection cage with footrests
- ceramic heating elements
- flameproof enclosure, protection type IP 66
- the heating elements are so designed that the respective temperature class even in the event of an error (accidental covering) is not exceeded



### EXPLOSION-PROOF DESIGN

- Flameproof enclosure and increased safety
- Ex II 2G Ex db eb or db IIC T2, T3 or T4 Gb according to EN 60079-0
- EC type examination certificate IBEExU 15 ATEX 1019 X

### ELECTRICAL CONNECTION

- at 230 V single-phase current
- temperature control with Ex-room temperature controller, we ask for your inquiry

### TECHNICAL DATA

TEMPERATURE-CLASS	LENGTH (APPROX. MM)	POWER (APPROX. WATT)	CURRENT (APPROX. AMPERE)	ARTICLE NO.
T2	740	850 - 610	7,7	10050021
T2	1235	1.600 - 1.280	16,0	10050041
T2	1840	2.500 - 2.000	25,0	10050061
T3	740	500 - 360	3,8	10050091
T3	1235	1.000 - 780	7,8	10050111
T3	1840	1.500 - 1.145	11,0	10050121
T4	740	250 - 200	1,4	10050131
T4	1235	450 - 360	3,0	10050141
T4	1840	700 - 575	4,5	10050151

### ALTERNATIVE DESIGN

- painted steel, but without protection cage
- stainless-steel, only without protection cage available

### INSTALLATION

- horizontal installation with the footrests
- do not cover the heating element (heat build-up)

