

## At a Glance

### Applications



Freeze prevention



Open area

- › Parking garages entrances, exits
- › Helicopter landing sites
- › Concrete ramps
- › Stairs and footpaths

### Advantages

- › Highly robust
- › Suited for hardest installing conditions
- › Flexible mounting
- › Radially and longitudinally waterproof
- › Outer jacket is strongly grouted with protective braid

### Approvals

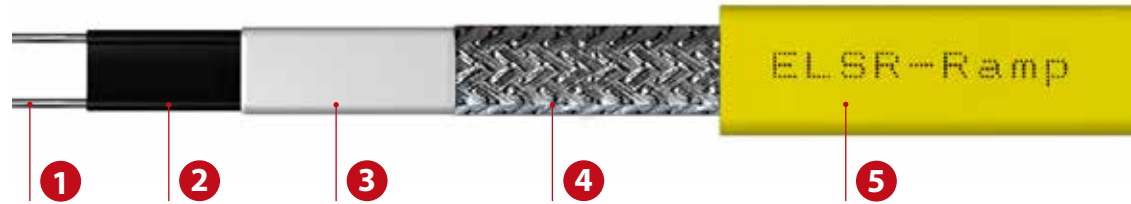


### Note

- › Not suited for use in asphalt

# Type ELSR-Ramp

## up to 100 °C



<b>1 Bus wire</b>	Nickel plated copper
<b>2 Self-regulating heating element</b>	
<b>3 Insulation</b>	
<b>4 Protection</b>	Protective braid (Cu, tin plated)
<b>5 Outer jacket</b>	TPE pressure-grouted with protective braid

## Checklist ELSR-Ramp

### Power Connection & End Termination

ELVB-SRV-Ramp	Connection set, shrink-fit	0911124
EL-ECRA	Silicone termination cap, glued, transparent	09112RA

### Junction Boxes

ELAK-5	122 x 120 x 90 mm, polyester, 3 breakouts M25, IP 66	0920013
ELAK-5.1	130 x 130 x 75 mm, polycarbonate, breakouts 9x M20/M25, IP 66	0920002

### Temperature Sensors

Sensor Set	Sensor set for ELSR-Ramp	TBA000202
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## Technical Information

<b>Maximum ambient temperature, energized</b>	80 °C
<b>Maximum ambient temperature, de-energized</b>	100 °C
<b>Nominal voltage</b>	230 V
<b>Bending radius, min.</b>	50 mm
<b>Installation temperature, min.</b>	- 20 °C

### Heating circuit lengths on the following conditions

- › 230 V nominal voltage
- › Delayed action circuit breakers (C-characteristic) with 80 % maximum load
- › Maximum 10 % line voltage drop on heating cable bus wire
- › Power connection to one heater end

Switch-on temperature (°C)	Nominal cutout value (A)	Heating circuit length (m) for	
		ELSR-Ramp	
-10	10	18.0	
	16	28.0	
	20	36.0	
	25	45.0	
	32	55.0	

Type	Nominal output	Dimensions approx. (mm)	Weight approx. (g/m)	Part No.
ELSR-Ramp	50 W/m at 10 °C	17,2 x 9,5	253	B02RAMPO
ELSR-Ramp	110 W/m at 5 °C in concrete	17,2 x 9,5	253	B02RAMPO

Heating circuit lengths may vary in specific installation situations. Please contact our engineers for more details.

### Electrical protection

Maximum heating circuit length

- › According to local standards and regulations.
- › Take into account the supply lead conductor size and max. permitted voltage drop.
- › A higher voltage drop can occur at start-up of heating.

Power at start-up

- › According to local standards and regulations.
- › To determine the installed power with the electrical system designer, the nominal current of the series connected fuse or the current value at the system start-up temperature must be taken into account (e.g. 32 A for 55 m ELSR-Ramp (-10 °C).
- › Residual current device (RCD) 30 mA required, max. 500 m heating cable per RCD.

Remark

- › For the use of standard control cabinets, the maximum heating circuit length of 55 m at 32 A per heating circuit must not be exceeded.