

## **ELECTRICAL UNDERFLOOR HEATING**

### **GENERAL INSTRUCTIONS**

Make sure you read the whole instruction manual! It is also necessary to have the commissioning record! The record shall only be filled in by a company authorized to provide such assembly in order to observe the guarantee conditions! A ten-year guarantee is provided for the product. Damaged cables shall be repaired and defective products shall be replaced by the manufacturer in case of defects. Make sure you measure cable resistance values carefully before the cable is covered by a floor! The warranty does not cover preparatory work or putting the floor back into its original condition. Make sure you are acquainted with all local standards, regulations and other circumstances important for trouble-free installation. Use a 30 mA circuit breaker to provide electrical safety and protection from earth-leakage current. The heating shall be installed with the circuit at a minimum contact distance of 3 mm, to allow for safe disconnection from the system (This shall not apply to thermostats with an internal switch). The manufacturer shall not be held responsible for any defects resulting from violation the instructions specified in this instruction manual. Please observe all the instructions in this document as well as those shown in the "Commissioning record!"

### **ASSEMBLY INSTRUCTIONS**

The floor heating can be installed under different flooring materials. However, it shall always be installed in solid filler (concrete, adhesive, etc.) with a minimum thickness of 5 mm! The heat resistance of the floor structure shall not exceed 0.15m<sup>2</sup>K/W. Do not install the heating equipment under furniture, heat sources or other equipment standing on the floor if there is no possibility to dissipate the heat. The substrate under the heating equipment shall be level, clean, dry, free of sharp edges or objects. Do not install the heating equipment over expansion joints! Special attention should be paid to the connection between the supply and heating cable. Never bend the cable, or pull it while aligning it! Install the heating equipment in the filler (grout, adhesive, etc.) to fix it and secure it against damage. Never shorten the heating cable, cross it or install it closer than the permitted spacing given by fixing the cable on the substrate mat. Make sure the cable is not damaged by follow-up construction work such as drilling holes, etc.

The mat can be fixed to the floor with an adhesive, anchors (never with a cable!), with an adhesive tape on both sides, etc. (A self-adhesive mat may be used). Never step on the laid cables!

If you have a thermostat with a floor sensor, remember to prepare the installation pipe for the thermostat sensor! Place the sensor at a sufficient distance from the wall, locating it exactly between the two cables laid in parallel! Never locate it near the heating cable!

### **CAUTION**

Use only approved thermostats!

- 1) Thermostats with a floor sensor limited to 30°C
- 2) Thermostats with a floor sensor limited to 35°C

It is recommended to install the sensor in an assembly pipe, which is part of the supply. Such installation will allow replacement of a defective temperature sensor without damaging the floor. Seal the pipe thoroughly and locate it between the two parallel heating cables so that the sensor is as close as possible to the floor surface (To allow the best temperature control). Never put it near the heating cable!

If a damaged cable needs to be repaired, experts can use a connection set. All electrical connections shall be performed by a person having technical qualifications and all regulations and standards shall be observed.

**TECHNICAL DATA**

Q160

Nominal voltage	AC 230V
Power output	up to 160 W/m <sup>2</sup>
Circuit breaker	30mA
Min. bending radius	30 mm
Min. cable spacing	70 mm
Max. exposure temp.	+90°C
Min. installation temp.	+ 5°C
Conductor cross-section of cold lead cable	3 x 0,75 mm <sup>2</sup>
Length of cold lead cable	2,5 m
Approvals	CE

Below listed floor covering materials can be used with lowest thermal conductivity:

Tiles/marble/granite                      max. thickness 30 mm                      λ = 1,0 W/Mk

**SIZE OF UNDERFLOOR HEATING SYSTEMS**

<u>160W/m<sup>2</sup> max.</u>	<u>Dimension</u>	<u>Watt</u>	<u>Ω +10%/-5%</u>
Q-160-1,0	50 x 200 cm	160 W	335 Ω
Q-160-1,5	50 x 300 cm	240 W	220 Ω
Q-160-2,0	50 x 400 cm	320 W	165 Ω
Q-160-3,0	50 x 600 cm	475 W	111 Ω
Q-160-5,0	50 x 1000 cm	805 W	66 Ω
Q-160-7,0	50 x 1400 cm	1.140 W	46 Ω
Q-160-10,0	50 x 2000 cm	1.600 W	33 Ω

Translation of layer-description to drafts on separate page (6 layers)

- 1) Tile glue + floor covering (e.g. floor tiles)
- 2) Waterproofing layer (e.g. jointing compound): optional for shower areas
- 3) Heating mat + primer (optional) + filler (min. 5 mm)
- 4) Sub-floor
- 5) Insulation
- 6) Bearing construction (e.g. concrete)