

Moisture and temperature sensor for surface snow melting

PRODUCT OVERVIEW



Ground sensor for combined measurement of temperature and moisture in outdoor areas with foot or vehicle traffic. Robust version made of brass, fully encapsulated.

Very low installation height, so particularly well suited to staircases, terraces, etc.

One accessory available - brass ground sleeve for installation of E650C-G flush with the surface in an outdoor area (travel lane, etc.) with a protective cover made of aluminum for covering ground sleeve during installation.

PRODUCT SPECIFICATIONS

E650C-G: Ø 68 mm, H 31 mm

E650C-G-HOUSING: Ø 68 mm, H 67 mm

E650C-G	
Cable connection	To the side
Connection cable	4 x 0.5 mm ² length 20 m
Temperature sensor	NTC
Temperature range	-30°C to 75°C
Temperature range for moisture measurement	-20°C to 30°C
Load capacity	20 kN (based on DIN EN 60598-2-12)

Sensor installation

When choosing the sensor's installation location, unfavourable circumstances such as aisles, shady areas, warm air outlets in underground parking lots etc. need to be avoided. Ideally the combined moisture and temperature sensor should be installed in a place where the critical criteria "moisture and low temperature" causing the formation of ice are most likely to occur first. Mount the sensor within the area to be monitored and heated.

Arrange the sensor in such a way that the draining melt water runs onto the sensor's measuring surface. This ensures that moisture is detected as long as there is any. It is important that the sensor surface lies horizontally and is level with the surrounding surface material.

In the following sections you can find illustrations showing the different circumstances during sensor mounting.

The sensor can be mounted in a ground sleeve E650C-G-HOUSING. E650C-G-HOUSING is included in the package of E650C-G sensor but also available as a separate spare part accessory to be ordered separately. E650C-G-HOUSING contains both the

metal sleeve (housingpart) and the lid to close the housing during installation. When the openarea is built, this ground sleeve is placed into the surface without the sensor in such a way that there will be an even surface after installation of the sensor.

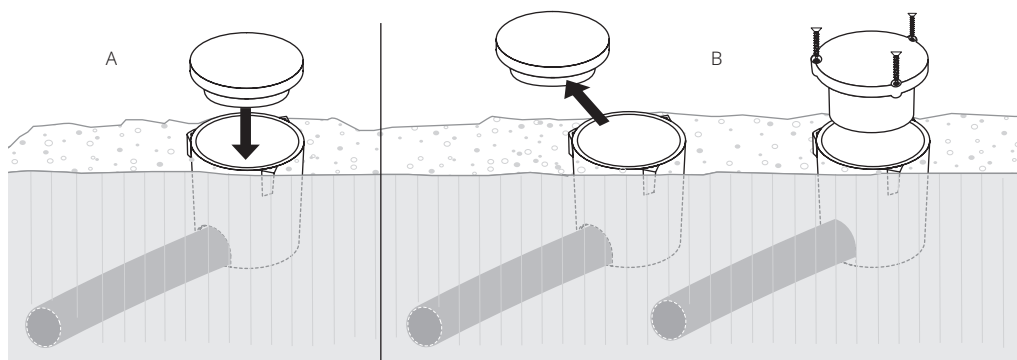
Especially in case of surfaces which need a high processing temperature, such as poured asphalt (>75°C), the fitting of a ground sleeve should be well provided for. In order to avoid that the ground sleeve sinks into a soft ground later (e.g. in a sand bed for stone paving), it is recommended to create a firm foundation for the sleeve (e.g. by putting a concrete support underneath).

A protective conduit needs to be used for the sensor cable. This is beneficial both during a new installation and in case of a replacement. Depending on the weight and material of the surface either a plastic conduit or a steel pipe DN20 can be used. Make sure that the openings of the empty conduit and the ground socket are securely closed during the construction works.

To make sure that the ice and snow detection system works properly, take care that the sensor is surrounded by heating cable and that the minimum heating time is long enough so that melt water can moisten the sensor.

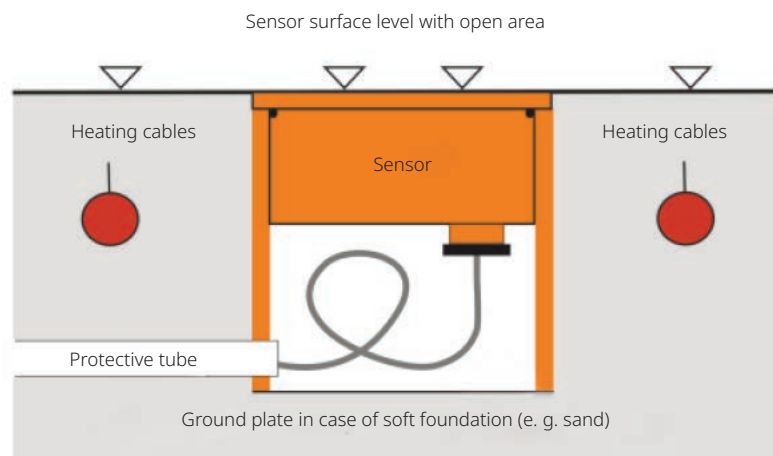
Installation of the housing and the sensor in the ground

When choosing a suitable place to place the housing and sensor in the ground, take into account the instructions above. First place the housing in the ground (along with the protective pipe leading to the controller; the protective pipe is not included) and cover the top of the housing with the cover. If the cover seems too loose, you can use gaffer tape to affix the cover to the housing. The protective tube should be 20 mm or less in diameter, the remaining space between the protective tube and the hole in the housing should be covered with silicone or adhesive or gaffertape. When the surrounding area is ready, remove the cover and place the sensor in the housing, securing it with 3 screws (included). The sensor cable should go through the protective tube and should be connected to the controller at the other end.



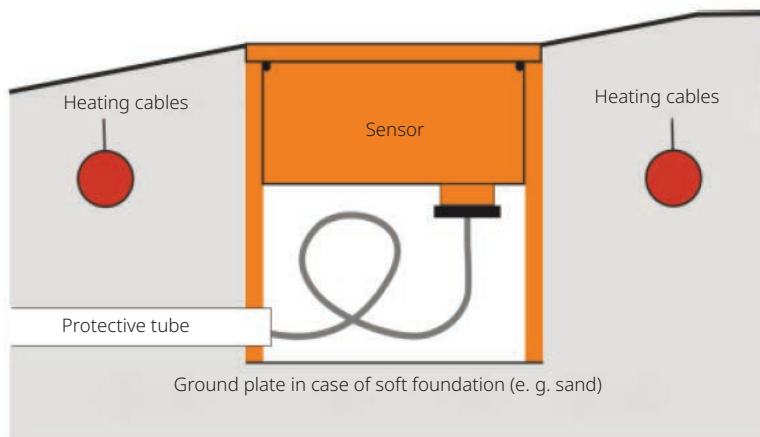
Installation in horizontal flat open areas

The sensor needs to be installed inside the area to be monitored and heated in such a way that the sensor surface is level with the surrounding surface and the sensor surface remains free. The sensor must not stick out of the open area but can rather be a few mm lower so that melting water is collected.



Installation in open areas with a slope

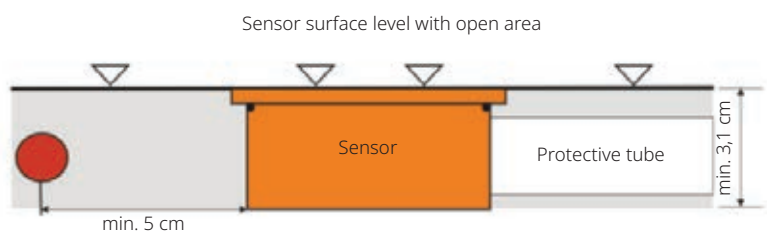
In case of a slope, make sure that the sensor surface lies horizontally in order to be able to collect snow or melt water. If the sensor surface does not lie horizontally, this may lead to errors in detecting moisture.



Installation in open areas with low construction height

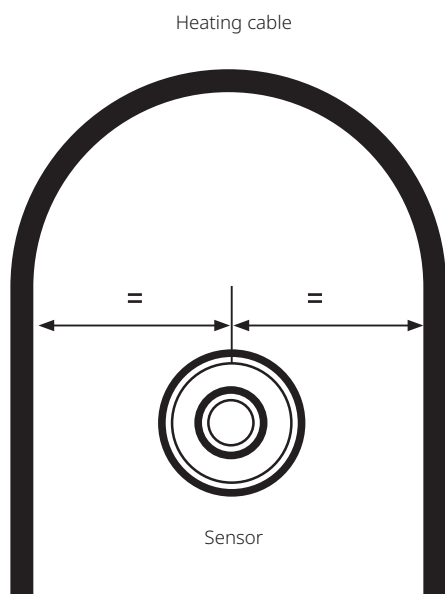
If the area only allows for a low construction height, a sensor, which has a sensor cable at the side of the sensor casing can be used. Its height is only 31 mm. Take care not to damage the sensor when constructing the open surface area, e.g. by an excessive asphalt processing temperature ($>75^{\circ}\text{C}$) or by mechanical load due to the use of compactors. Use a suitable protective conduit (DN20 in plastic or steel) to ease installation and protect the sensor cable.

Sensor installation in open areas with minimum construction height.



Installation in driveways

In driveways (e.g. an entrance to an underground parking lot) the sensor should ideally be mounted mid-way between the heating cable runs.



E650C-G Sensor extension

If necessary, the sensor cable may be extended. Maximum extension length for E650C-R sensor is 140 meters (with 1 mm² wire). Maximum extension lengths for E650C-G sensor are 110 meters (with 1 mm² wire) and 130 meters (with 1.5 mm² wire). Provided total values are including already the length of the cable that is attached to the sensor in the box.

ORDERING INFORMATION

Product Name	Product Description	Reference Number	EAN
E650C-G	Moisture / temperature sensor for surface snow melting, 20 m, with housing and protective cover	1244-022794	5414506024661
E650C-G-HOUSING	Spare housing and protective cover for surface snow melting sensor	1244-022796	5414506024685
Eluxant 650c-Modbus	Controller for surface snow melting and roof and gutter applications with Modbus	1244-022835	5414506025002
SM-TF130-DI	External module for the ice rain feature and panel alarm digital input	1244-022836	5414506025019

Europe, Middle East, Africa, India

Tel +32 16 213 511
Fax +32 16 213 604
info@chemelex.com

Asia Pacific

Tel +86 21 2412 1688
infoAPAC@chemelex.com

chemelex
excellence is everything

Raychem Tracer Pyrotenax Nuheat