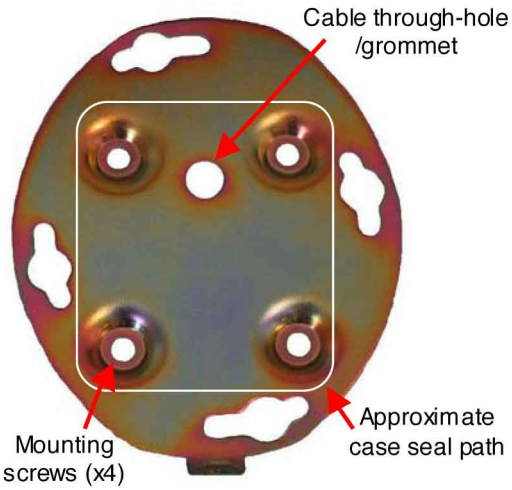
HELIX 100 Technical Tip No 7.

PRODUCT: HELIX 100 NETWORK AND HELIX 100 STANDALONE
SUBJECT: WEATHERPROOFING AND HARSH ENVIRONMENTS
DATE: 4TH NOVEMBER 2007
REVISION: 2

Weatherproofing

The Helix 100 is rated IP65. This is an Ingress Protection rating – for more information see http://en.wikipedia.org/wiki/IP_Code. However some precautions should be observed during installation to ensure that the Helix 100 preserves its IP rating.

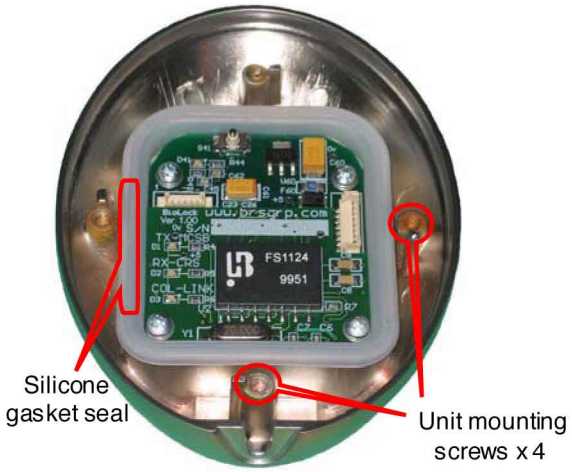
Firstly, the incoming cable to the Helix 100 should be sealed as it passes through the backplate (see photo). For this purpose, a black rubber grommet is included with each Helix 100 sold. Ensure that the grommet is installed as per the assembly instructions included in the Helix 100 packaging (and that it is not cut or otherwise damaged).



Secondly the mounting screw holes must be filled. If the mounting holes have been accurately drilled, and the countersunk mounting screws sufficiently tight, then the resulting metal-metal seal may be adequate. If in doubt, or in harsh environments, adding a modest quantity of curing silicone sealant is recommended. Note that the sealant types that release acetic acid fumes as they cure are NOT recommended (they can be distinguished by the smell of vinegar).

Thirdly, the silicone-rubber gasket must make contact around the entire seal area. The following points should be observed: The backplate once fastened to the wall should not be warped (this can happen with rough or uneven surfaces such as brick or stone once the mounting screws are tightened). If warping is likely, then suitable packing material should be used behind the backplate, the unit should be repositioned, or a flat substrate inserted. The unit mounting screws should be tight against their stops (not loose). The "push and twist" mounting action should be quite difficult and require some force to energise the silicone gasket seal and ensure weatherproofing. Once mounted, the clearance between the unit and the wall should be small but visible. The Helix 100 metal shell should not be pressing against the wall it is mounted on (potentially a problem with uneven walls or mountings).

Silicone grease may be added in a thin smear over the seal area (top) of the silicone gasket to aid both weatherproofing and the ease of installation. Be careful not to pick up debris such as dirt, hairs or dust on the seal or grease as this may degrade the seal.



Note that good installation practice is to place the Helix 100 unit to avoid excessive sun/rain/snow/ice to aid reliability of finger-presence detection. If precipitation does fall on the Helix 100, wipe the water/snow/ice away before attempting a finger read. Raindrops in particular may cause false finger detection (due to their conductivity, which is used to detect the presence of a finger). In this case, a drop of water may be bridging across the silicone gasket around the edge of the sensor. Wipe carefully around the edge of the sensor and the unit should function normally. If conductive liquids have been applied to a Helix 100 (eg salt spray, acid rain), the residual conductivity may disable finger detection. In this case the unit may need a fresh-water rinse and drying out prior to use.

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It is recommended to mount the Helix 100 out of direct rain, or use shrouds gables or overhangs for shelter.

Fingers that are dripping wet (as opposed to moist) will probably not successfully verify, as the conductive water of the water drops will disable the sub-surface epidermal sensing mechanism of the sensor. Dripping wet fingers should be wiped before placing on the sensor.

Harsh temperatures

The Helix 100 is rated from –20º to +50º Celsius (-4º to 122º Fahrenheit). At low temperatures, an ice or snow film may form. Generally it may be wiped away and a finger verified as normal. *Note that as with any metallic object at low temperatures a danger exists of skin sticking and freezing to the Helix 100 – General Lock shall bear no liability for such incidents and users should satisfy themselves as to the safety of such low-temperature use.*

Operation at high temperatures may cause minor burns. Users should ensure that the Helix 100 surface is not at a dangerous temperature prior to verifying.

Note that mounting in direct sunlight may cause very high internal temperatures and hence premature failure. The Helix 100 should be mounted out of direct sunlight where possible.

Dust/mechanical abrasion

The Helix 100 is rated IP65, and as such are impervious to dust if the above precautions (under “weatherproofing”) are observed.

The sensor surface is predominantly silica, with a similar hardness to sand/dust. Slight dust build-up should not cause harm. Violent dust/sandstorms (that can cause abrasion to glass windows) may cause abrasion and eventual failure. Dust/sand storms may cause the metallic shell surface coating to be degraded (with no effect on operation).

The sensor is rated to a minimum of 1 million normal finger placements. Abnormal use, such as wiping with abrasives or scratching the sensor with a sharp or pointed object may cause sensor failure and is not covered under warranty.

Liquids/Solvents

Non-water-based solvents should not be used with the Helix 100. Water-based disinfectants and cleaning solutions have been used in Helix 100 applications, but are excluded from the General Lock warranty. Conductive solutions may impair finger-detection.

Corrosion

The Helix 100 has a painted zinc-aluminium diecast shell. The backplate is yellow-chrome plated steel. The sensor outer ring is nickel-plated.

Helix 100 installation in corrosive (e.g. marine) or similar environments is not warranted against corrosion. Operation in such environments may be possible with suitable galvanic protection.

FURTHER INFORMATION:

info@GeneralLock.com

General Lock

866-407-7597