

## TECHNICAL TIPS

**PRODUCT:** BioLock Network and BioLock+ Standalone

**Subject:** Weatherproofing and harsh environments

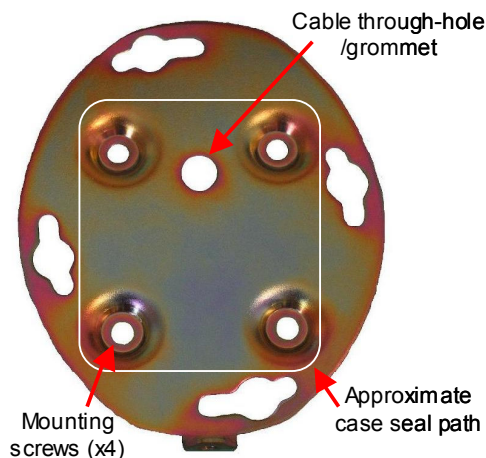
**Date:** 4<sup>th</sup> November 2007

**Revision:** 2

### ***Weatherproofing***

BioLocks are rated IP65. This is an Ingress Protection rating – for more information see [http://en.wikipedia.org/wiki/IP\\_Code](http://en.wikipedia.org/wiki/IP_Code). However some precautions should be observed during installation to ensure that BioLocks preserve their IP rating.

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

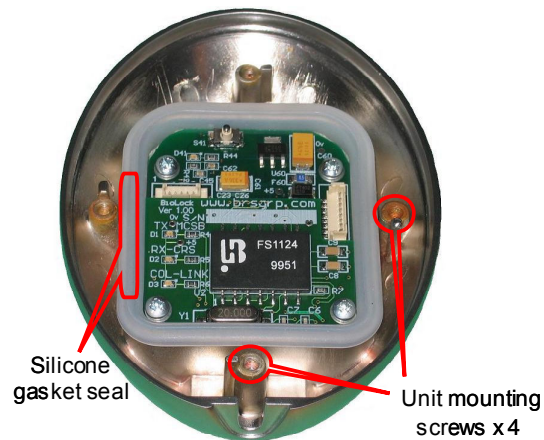


**Secondly** the mounting screw holes must be filled. If the mounting holes have been accurately drilled, and the countersunk mounting screws sufficiently tight, then the resulting metal-metal seal may be adequate. If in doubt, or in harsh environments, adding a modest quantity of curing silicone sealant 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:

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- 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 re-positioned, 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 weatherproofness.
- Once mounted, the clearance between the unit and the wall should be small but visible. The BioLock 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 weatherproofness 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 BioLock unit to avoid excessive sun/rain/snow/ice to aid reliability of finger-presence detection. If precipitation does fall on the BioLock, 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 BioLock (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.

It is recommended to mount BioLocks 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.

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### ***Harsh temperatures***

BioLocks are rated from –20° to +50° Celsius (-4° to 122° 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 BioLock – BRS 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 BioLock 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. BioLocks should be mounted out of direct sunlight where possible.

### ***Dust/mechanical abrasion***

BioLocks are 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 BioLocks. Water-based disinfectants and cleaning solutions have been used in BioLock applications, but are excluded from the BRS warranty. Conductive solutions may impair finger-detection.

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## **Corrosion**

BioLocks have a painted zinc-aluminium diecast shell. The backplate is yellow-chrome plated steel. The sensor outer ring is nickel-plated.

BioLock 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:**

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*Bio Recognition Systems Pty Ltd is a 100% Australian owned and operated hardware and software developer and manufacturer. Located in Lane Cove, Sydney, Bio Recognition Systems Pty Ltd began by offering its customers software and hardware solutions in 1999. Its leading edge BioMetric technology harnesses the power of the newest technology in fingerprint recognition.*

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