

# TECH • INFO

## IP-65 Ingress Protection: How to Handle A720 & A733 RTUs

Beginning with the A720 addIT and now followed by the A733 addWAVE Adcon provides transceiver enclosures which protect “against foreign objects and water” at classification called IP-65 protection. This classification provides improved ruggedness and durability for the internal electronics & backup power supply but at the same time requires the user to pay special attention to maintain this protection. Let us first take a brief look at what IP-65 stands for and then look at handling issues.

The IP codes and the testing procedures are defined in the norms **IEC 60529** and **CEN-ELEC EN 60 529**, “Degrees of protection provided by enclosures (“IP” Code)”.

The IP-code number is composed according to the following scheme:

- “IP” stands for “Ingress Protection”
- the first number describes the protection against foreign objects
- the second number describes the protection against water
- additional letters A,B,C,D are optional to describe protection against human contact, while letters K,M,S refer to water and define specific testing procedures

Thus the “65” in IP-65 stands for

- 6:** dust tight (foreign objects)
- 5:** protected against water jets from all directions (water)

In order to maintain this protection we would like to direct your attention towards the handling of the A720 & A733 cases & Binder connectors. To maintain the full IP-65 integrity both sensor connectors & the integrated gasket on the A720/A733 case must be used properly. It is simple to attaching the Binder connectors to a hand tight position; each Binder port on the A720/A733 must have either sensors or cap inserted.

More recently we have isolated a number of instances when leaks have occurred into the A720/A733 case. The primary cause of these problems was the improper replacement of the enclosure’s cover. If the cover was opened and either:

- a) the lid was attached to the bottom part of the box first and tightened unevenly, or
- b) the lid was replaced with dirt or other material between slot and key,

then the integrated gasket can not seal properly and the internal components may become exposed under extreme conditions.

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The abnormal sensor readings generally occur under extremely humid/wet weather conditions in conjunction with drastic changes of temperature. The drastic change in temperature inside the A720/A733 casing can cause a small amount of water to penetrate the improperly sealed lid. Water condenses on the I/O port pins and causes the extreme readings. Once the connectors dry up the sensor values return to normal. Examples of this phenomenon are a) air temperature values of -20° C on a sunny day or b) relative humidity values of 100% on a rather hot and dry day, etc.

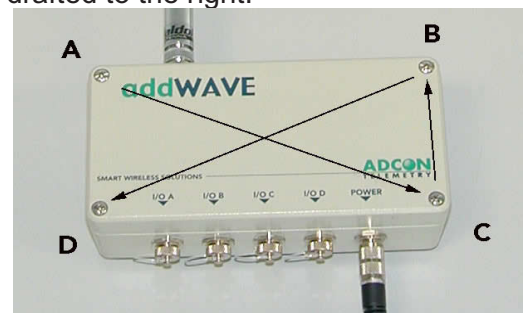
Please note that if this occurs it will most likely effect port I/O A first in the A733 or either port I/O A or I/O B in the A720. It may effect port I/O A first in the A733 because the vapor condenses on the antenna connector inside the addWAVE first. A water droplet forms on the antenna connector and then typically drips down onto I/O A.

## Recommendation:

There are small precautions that need to be observed but they can have a big effect! If you experience this problem or have to open your addWAVE case for any reason it is of the utmost importance to follow the guidelines as outlined below to maintain your IP-65 class protection:

- gently clean the rubber seal with a soft, damp cloth (water only! no chemicals please!)
- clean the key on the top of the lower part of the case to remove dirt or obstructions
- carefully replace the lid onto the case matching the slot/key (this is done best with the addWAVE flat on a steady surface)
- it is strongly recommended to lubricate the thread of the top screws prior to closing the case to enhance the sealing process. The lubricant best suited for lubrication is graphic machine oil.
- tighten the bolts using the following procedure as drafted to the right:

SLIGHTLY fasten bolts A > C > B > D. Check the gap between lid and box to be fairly even. In a second round tighten again in the same order, A > C > B > D. Do not tighten the screws too tight as this may cause damage to either the seal or the thread. Ideally use a torque screwdriver to tighten the screws to a value of 200Nm.



Please do not remove the gasket from the box with a screwdriver or any other sharp object as this may cause permanent damage to the gasket and subsequently to the device itself! Remember, if this phenomenon is observed check the stations seal immediately; do not wait until the station delivers normal readings! Check the station using the procedure outlined above. Moisture left in the case for extended periods may cause permanent damage. If corrosion is identified inside the case contact Adcon or your Adcon supplier.

Any questions concerning this issue? Please send an email to [support@adcon.at](mailto:support@adcon.at).

Best regards,  
your Adcon Support Team

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