

Device placement guide

Controlant Saga

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1. Introduction

In the following sections, you will find some commonly used placement methods of the Controlant Saga and Saga-P devices. This is a collection of practices, as reported by our customers.

The device placement depends on multiple factors, including:

- the shipment requirements: shipment temperatures, transportation mode, etc.
- the packaging material
- the use of a thermal cover
- use or lack of void fill, etc.

If you are already using Controlant's monitoring solutions, please always refer to your standard operating procedures and work instructions to learn your organization's internal guidelines.

If you are a prospective customer, welcome! You may use this collection of existing practices as a starting point for further conversation with your Controlant implementation team.

2. One device, one box

Some customers might need to use one device within a cardboard box, and they do so with several different methods. Some of these methods are detailed in this section.

2.1. Saga device

Some of our customers opt for placing the Saga device directly in the packaging box.

You may put the device into either an empty, a partially full, or a fully packed box. In all cases, make sure to pack the device in a way that prevents it from moving around during transportation.

- Put the device in the box under void fill.
- Use a Controlant Saga Device Box or a doculope (packing list envelope) and stick the adhesive on the packaging wall.

You may ship a shipment box packed in such a way as a standalone shipment or a part of a palletized shipment.



NOTE

When you place the Saga device within a box, you lose the ability to read the display during shipment.

2.2. Saga-P device

If the temperature within your shipment box is out of the standard operating temperature range of the Saga device (-20°C to +50°C), always use a Saga-P device.

- Ensure that the end of the probe is placed and attached close to the payload, not touching the packaging wall.
- Secure the device (using a Controlant Saga Device Box or a doculope) on the outside of the box, making sure that the probe does not protrude from the packaging.
- Make sure to follow the probe handling guidelines closely. See [Handling the Saga-P device](#).

**WARNING**

We do not recommend shipping standalone boxes with the devices attached to the outside of the packaging, as improper handling might damage the device, which could affect its monitoring capabilities.

3. Boxes stacked on a pallet

Most often, our customers opt to monitor the shipment of palletized boxes with the Saga devices.



CAUTION

When shipping partial pallets, secure the device and the product boxes (e.g., with pallet wrap) to ensure that the product boxes do not become displaced during shipment. This might move or damage the device, which could affect its monitoring capabilities.

In case you are preparing to double stack the pallets, make sure that you place the device on the side of the pallet to avoid damaging the device.

3.1. Saga device

Depending on the pallet layout, you may place a Saga device in several ways.

- Wedge the device between the product boxes on the top middle of the pallet. Make sure not to damage the product boxes.



NOTE

You will lose the ability to read the display during shipment

- Use the Saga Device Box or a doculope to attach the device to the top or the side of the pallet. Do not double-stack the pallets if you attach the device to the top.
- You may place the device between the boxes on the pallet and the outer pallet wrap.



WARNING

Make sure not to damage the device while applying wraps, straps, or other securing solutions.

3.2. Saga-P device

Depending on the pallet layout, you may place a Saga-P device in several ways. When choosing the Saga-P device's placement on the pallet, consider that the temperature sensor is located at the tip of the probe.

- Use the Saga Device Box or a doculope to attach the device to the top and place the probe down the side of the pallet. Do not double-stack the pallets if you attach the device to the top.
- Use the Saga Device Box or a doculope to attach the device to the side of the pallet and place the end of the probe inside a box or between the product boxes.
- Avoid the edges and corner guards of the pallet.
- Ensure that the probe/device connection is not bent over the edge of the pallet.
- You may place the device between the boxes on the pallet and the outer pallet wrap.



WARNING

Make sure not to damage the device while applying wraps, straps, or other securing solutions.

4. Kegs, drums

Some of our customers ship their products using kegs or drums — as palletized shipments. These use cases require the use of Saga.

- Use the Saga Device Box or a doculope to attach the Saga device to the side of the palletized shipment.
- If you are not double-stacking the pallets, you may also put the device on the top of the keg or drum.
- Make sure not to damage the device while applying wraps, straps, or other securing solutions.
- A shipment of steel drums or other high-density materials might hinder the network connection of the devices. If you are double-stacking the pallets of such shipments, we recommend placing the devices on the top pallet.

5. Shipment with a thermal cover

Most of our customers use some kind of thermal cover, at least in part of their distribution, to protect the shipment from extreme hot or cold temperatures.

There is a wide variety of thermal covers available on the market: some are made of materials (e.g., aluminum or other metals) that hinder the network connectivity of electronic devices. Please check the datasheet of the thermal cover you are using to make sure that the material does not affect mobile network connectivity.



NOTE

As low connectivity affects the device's battery lifetime, we recommend using Saga-P devices with most thermal covers.

5.1. Saga device

In some cases, the thermal cover material does not affect mobile network connectivity, and you may use the Saga device as usual without modifying its placement.

5.2. Saga-P device

By choosing to use the Saga-P device, you can ensure the best connectivity and battery performance, thus creating optimal circumstances for real-time monitoring while using a thermal cover.

With the probe under the thermal cover, the display of the device remains visible, and the connectivity is unaffected.

- Place the device into a Controlant Saga Device Box or a doculope.
- Secure the probe close to the product: down the side of the pallet, between product boxes, or inside the product box.
- Ensure that the probe/device connection is not bent over the edge of the pallet.
- Avoid the edges and corner guards of the pallet.
- Apply the thermal cover and attach the device on the outside by using the adhesive on the Controlant Saga Device Box or the doculope.

6. Loaded into shipping containers

Controlant devices are capable of monitoring shipments that are transported in various different ways. The devices are attached to the goods in any of the ways detailed above, then start their journey toward their destination by air, road, or ocean.

When it comes to monitoring a container, a reefer, or a specialty container, some of our customers choose to attach a device to one or two pallets, while others prefer to add a device to each unit that makes up the shipment.



POINTS TO CONSIDER WHEN PLACING CONTROLANT DEVICES INTO A SHIPPING CONTAINER

- Cellular connectivity is limited inside metal shipping containers. Placing the devices higher up and closer to doors helps them connect more easily to the network.
- When monitoring one container with two or more devices, most of our customers place them on opposite ends of the container (i.e., some on the driver's side, and some closest to the door).
- If the container has double-stacked pallets, always place the device on an upper pallet or on the top of the upper pallet.