# \*Cover page\*

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# About this Tutorial

In this tutorial, you will learn how to create a conventional survey and connect to a Focus 30/35 total station.

This tutorial will take about 10-20 minutes to complete.

# Using a Total Station with Origin Software

To Connect to a total station with Origin, you will need to start a conventional survey, with a survey style set up for the model on instrument. The survey style defines the total station and how you are going to use it. The functionality available in Origin depends on the model and firmware version of the connected instrument.

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# What You Will Need

* **Origin Field Software:** Origin Max or Origin Total Station
* **Device**:
	+ Computer or data collector
	+ Focus 30 or 35 Total Station

# Step 1: Create a Project and Job

**Note**: If you have a project folder in Trimble Connect, open the project and create a new job.

1. In the **Projects** screen, tap **New**.
2. Fill in the project details:

**Name** the project “*Connecting to a Total Station* ”

(Optional) Provide a **Description** *“start a conventional survey with a total station”*

1. Tap **Enter** and **Create**
2. In the **New job: Connecting to a Total Station** screen, use **Create from template**:

**Job name** - *“Focus 35”*

**Template** - *Metric Scale Only*

Tap **Coord. Sys.**

 Tap **Select from Library**

 **System** - *United States/State Plane 1983*

 **Zone** - *Colorado North 0501*

**Project height** - *1524m*; **Tip:** If you know the project height in US Feet, type height XX sft, and it will automatically adjust to meters.

**Units (Dist.)** - *Meters*

**Feature Library** - *GlobalFeatures*

Leave all of the other properties to the default (or empty) value.

1. Tap **Accept**.

The properties for that job will be carried over.

1. Once you have opened the project, you are brought to the **Map** screen and you can see the data in the map view.

# Step 2: Select and Create a Survey Style

1. Tap
2. Scroll down to **Settings** and tap **Survey styles.**

In the **Survey styles** screen, you will see a list of previously used survey styles and the date it was last modified.

1. At the bottom of the screen, tap **New** to create a new survey style.

The **Style details** screen will appear and there is a location to provide a **Style name** and **Style type**.

1. Change the **Style name** to *Focus35* (name this style name based on your type of total station) and the **Style type** to **Conventional**

Tap **Enter** and **Accept**

1. The **Focus35** page will appear, where you can configure settings for the survey style.
2. Tap **Instrument.** This is where you will define the instrument and change the instrument settings.
3. Change the following settings to fit your total station. This tutorial uses the Focus35:

**Manufacturer** to **Spectra Geospatial**

**Model** to **FOCUS 30/35**.

We will accept the other default settings.

Tap **Accept.**

1. You will be brought back to the **Focus35** screen.

Tap **Store** and **Esc.**

1. Tap and then **Settings.**
2. Tap **Connections** where you will set up the connection between your controller radio settings to connect to the conventional instrument.
3. Navigate to the **Radio settings** tab and change the following settings to fit your settings:

**Radio channel** to **10** (or whichever radio channel you need to use).

**Network ID** to 100 (or whichever network ID you need to use).

1. Tap **Options** and you will be brought to the **Radio settings** page.

Change the **Controller port** to **Internal radio**

Tap **Accept**

1. Navigate to the **Auto-connect** tab and Check **GNSS Receiver** and **Focus 30/35**.
2. Tap **Accept** and **Esc** to return to the **Map** screen.
3. From **Map** screen, tap **Measure**

Tap **Focus35** survey style
**Tip:** If there is only one survey style it is automatically selected for you.

Tap **Station setup**

1. Fill in the information to complete a **Station setup**

**Note:** Origin will automatically start looking and connect to the Focus 35 total station.

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# Step 3: Level the Total Station

1. Tap the **instrument icon** of the **Total station** at the top of the screen and the **Instrument functions** screen will appear.

**Note**: This may automatically appear, if not then use the total station icon.

1. Tap **Level** and the **Electronic level** screen will appear.
2. Level the total station to an acceptable level.



# Step 4: Start the Survey

1. Tap and tap **Measure.**

Tap **Measure topo** and Origin will automatically connect to the Focus 35, if it is not already connected.

1. From the map screen, tap the **instrument icon** of the **Total Station** at the top of the screen to view the various **Instrument functions.**

Refer to the [Origin User Guide](https://survey.help.spectrageospatial.com/Origin-PDFs/2021.10/en/SG_General_Survey.pdf) to learn more about the different instrument functions.

1. Tap the target icon in the top of the screen, where you can access the target form and define target details.

 

1. If you have not already set this target up before, tap an empty target square with a + in the middle to add a new one.
2. A new **Target** screen will appear. Change the following settings to fit your prism:

**Target height** - *1.2m*

**Prism type** - *Spectra Geospatial 360* (change to your prism).

**Display name** - *360 prism*

Tap **Enter** and **Accept**

1. Back on the **Targets** page, select the prism you just created.
2. From the map, tap **Store** to store the TRK measurement.
3. Continue taking measurements for your survey by changing the code and tapping **Store**.

You have completed this tutorial.