THANK YOU FOR CHOOSING ROBOTIQ

This step-by-step guide will allow you to **install** and **use** your **FT 300-S Force Torque Sensor** on Universal Robots with a CB3.1 controller.

1.WHAT IS SUPPLIED?

Standard upon delivery of a Universal Robots kit (FTS-300-S-UR-KIT)	
FT 300-S Force Torque Sensor	FTS-300-S-SEN-001
Mechanical Coupling	FTS-300-S-CPL-014
Device cable	CBL-COM-2073-10-HF
USB to RS485 Adapter	ACC-ADT-USB-RS485
Required hardware	

2.TOOLS NEEDED

2 mm slotted screwdriver　　**3 mm hex key**　　**4 mm hex key**

3.GET THE LATEST

Visit: **robotiq.com/support**
Downloading the URCAP

1. **Browse by product > Select product > FT 300-S Force Torque Sensor > Universal Robots > Software > Force Copilot software > URCap (UCS-X.X.X.)**
2. Select **DOWNLOAD ZIP**.
3. **Decompress** the zip file on a USB stick.

4.MOUNTING

ℹ For easier mounting, move the robot tool flange to make it point upwards.

1. **Place** the provided dowel pin in the robot tool flange hole.
2. **Mount** the mechanical coupling (FTS-300-S-CPL-014) on your robot arm. Align marked hole #1 with the dowel pin.

Use hole #1 for Dowel pin
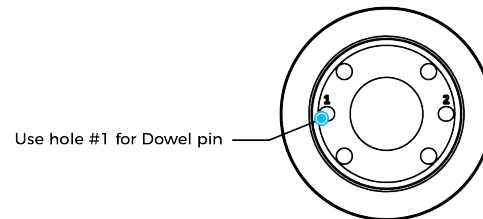
Bottom view - Mechanical coupling

3. **Secure** by inserting the M6 screws and tooth lock washers.
4. **Mount** the Force Torque Sensor on the mechanical coupling.
5. **Secure** by inserting the M4 screws and the Belleville washers (with the convex side upward) in a cross pattern to properly compress the O-ring.
6. **Plug** the device cable into the sensor's pigtail and attach the cable along the robot arm using a cable routing system.

M4 screws and
Belleville washers

FT300-S
Force Torque Sensor

M6 screws and
tooth lock washers

Mechanical coupling
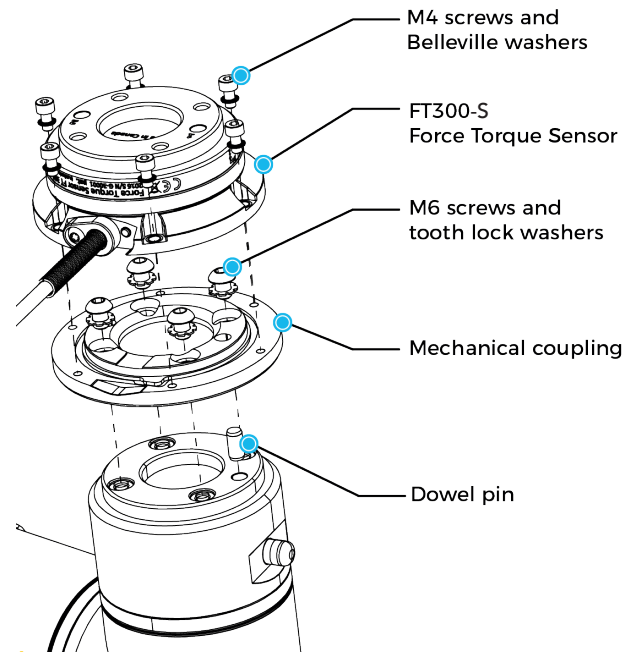
Dowel pin

⚠ **BEFORE OPERATING THE FORCE SENSOR, PLEASE READ THE INSTRUCTION MANUAL.**

⚠ The Force Torque Sensor must be aligned with the robot arm using the dowel pin. This ensures that the feature will work correctly.

⚠ The IP rating of the FT 300-S Force Torque Sensor is **IP65**. It is strongly recommend to cover the sensor and the robot when it is used with an application that requires a higher rating.
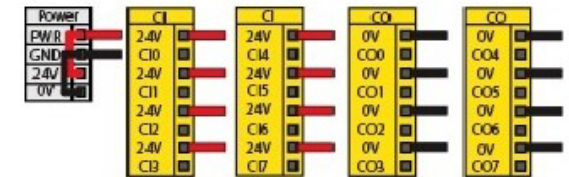
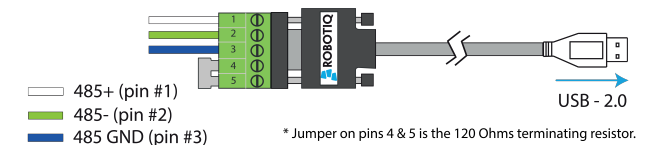⚠ **LEAVE ENOUGH EXCESS CABLE TO ALLOW FULL ROBOT MOVEMENT.**

5.WIRING

The red (24V) and black (0V) wire of the device cable (CBL-COM-2073-10-HF) provide power to the sensor.

1. **Connect** the red wire to a 24V pin.
2. **Connect** the black wire to a 0V pin.

3. **Connect** the white (1), green (2) and blue (3) wires to the USB converter (ACC-ADT-USB-RS485) as shown. **Do not connect** the gray wire.

485+ (pin #1)
485- (pin #2)
485 GND (pin #3)

USB - 2.0

* Jumper on pins 4 & 5 is the 120 Ohms terminating resistor.

4. **Connect** the USB converter to the UR controller.

6. SOFTWARE INSTALLATION

1. Have a USB stick that contains the **.urcap file** (see step 3).
2. Insert the USB stick in the robot's teach pendant.
3. Tap Setup Robot.
4. Tap URCaps.
5. Tap the + sign.
6. Open **Robotiq_Copilot-X.X.X.urcap.**
7. Tap the Restart button to restart PolyScope and activate the URCap.

7. CALIBRATION

1. In PolyScope, go to Program Robot.
2. Go to the Installation tab and select Copilot.
3. Tap the Calibration tab.
4. Tap the Start calibration wizard button.
5. Follow the calibration steps.
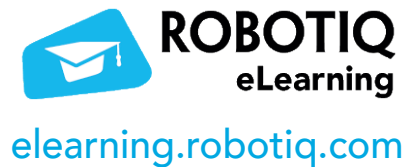6. Save the installation file.

⚠ **MAKE SURE THERE ARE NO EXTERNAL FORCES APPLIED TO THE SENSOR DURING THE CALIBRATION PROCESS.**

8. DASHBOARD

Once the calibration has been performed, force and moment values are streamed directly in the Dashboard of the Sensor URCap interface.

1. Go to Program Robot.
2. Go to the Installation tab.
3. Tap Copilot.
4. Tap the Dashboard button.
5. Force and moment values will be displayed in real time.

ROBOTIQ

FT 300-S FORCE TORQUE SENSOR

QUICK START GUIDE

For installation on CB-Series Universal Robots

ROBOTIQ eLearning

elearning.robotiq.com

New product has a one (1) year warranty.
Refer to your product instruction manual for details.

robotiq.com/support

X-990106-C