Application Note

FESTO

YJKP - Adjustment force sensor

Step by step description to adjust the force sensor of the YJKP

YJKP

100205

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1 Components/Software used

Type/Name	Version Software/Firmware	Date of manufacture
Servo press kit YJKP	General	--
Application software YJKP (GSAY-A4-F0-Z4-1.3.3)	V1.3.3	--
Firmware controller (CECC-X)	V3.4.6	--
Firmware motor controller (CMMP-AS)	V4.0.1501.2.4	--

Table 1.1: 1 Components/Software used

2 Application description

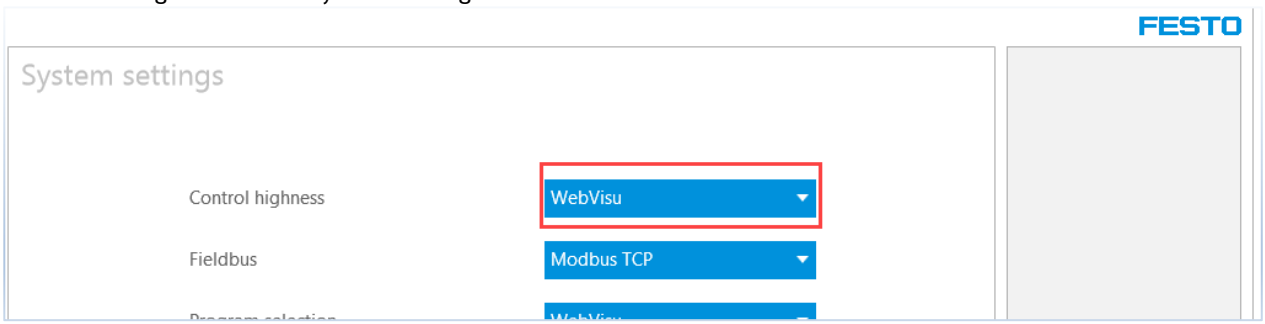
This application note shows step by step how to use the adjustment functionality of the YJKP both with IO control (WebVisu) and via host.

It is used to compare the characteristics of the force sensor with reference values or to reset them to factory settings.
It’s not necessarily needed to adjust the sensor to have a fully functional YJKP.

3 Prerequisites

3.1 IO control / WebVisu

The control highness in the system settings is set to WebVisu.

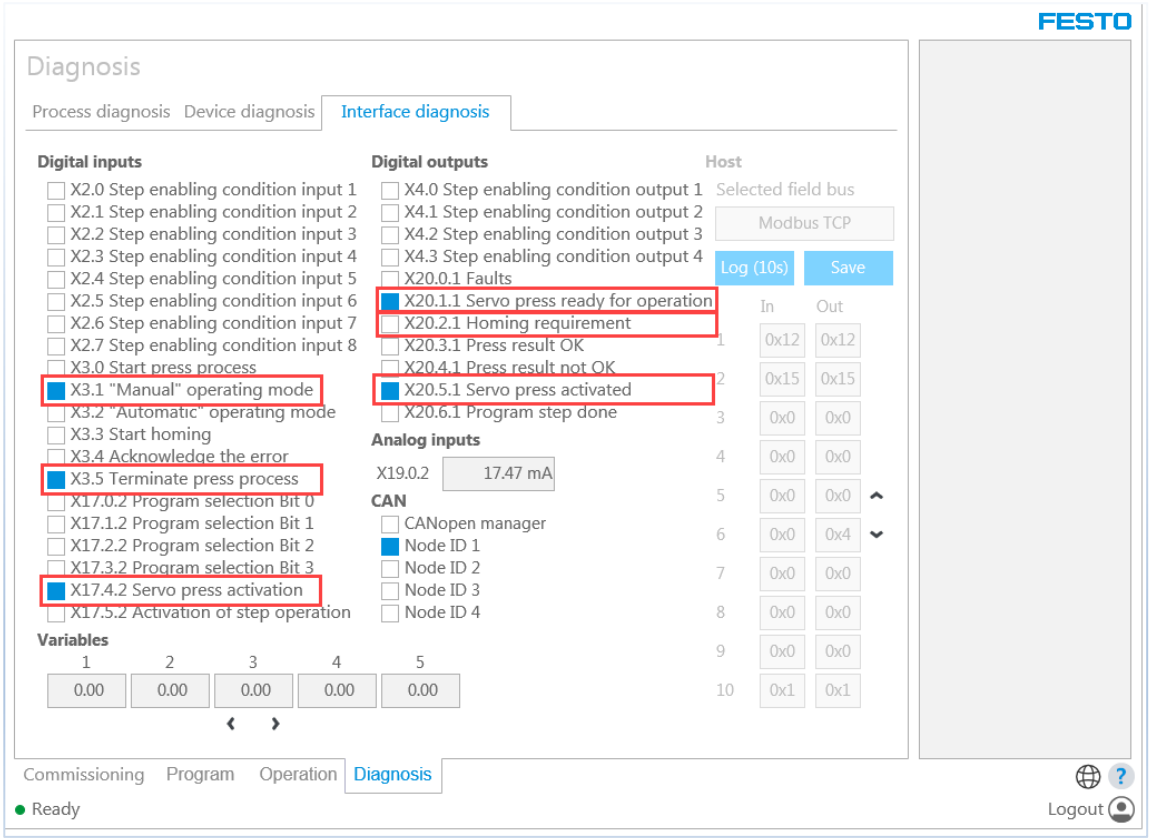


Required inputs:

- Manual mode (X3.1)
- Terminate press process (X3.5)
- Servo press activation (X17.4.2)

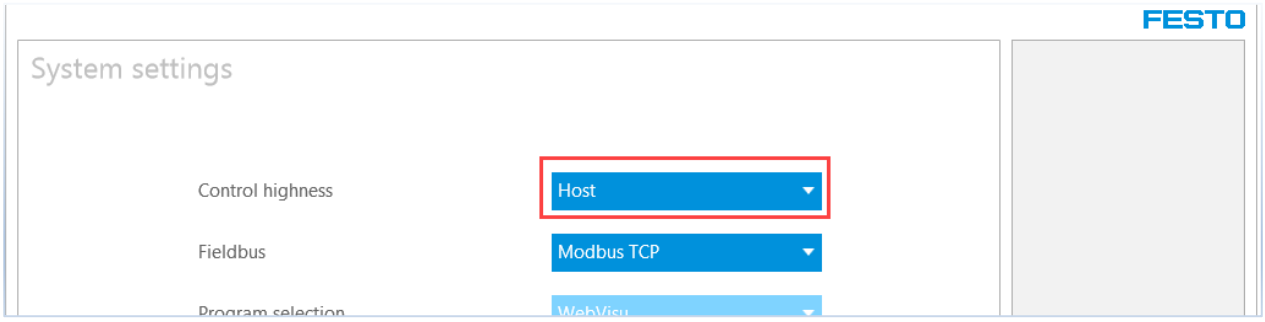
Required outputs:

- Servo press ready for operation (X20.1.1)
- Servo press activated (X20.5.1)
- **NOT** Homing required (X20.2.1)



3.2 Host control

The control highness in the system settings is set to Host.



Two function blocks are needed.

1. FB_Connect

   Required inputs:
   - xEnable := true;
   - enTargetComMode := 0;

   Required outputs:
   - xActive = true;
   - enActualComMode = 0;
   - xConnected = true;

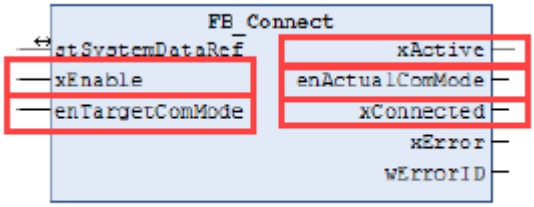


Figure 3-7: FB_Connect

2. FB_Manual

Required inputs:

- xEnable := true;
- xEnableSystem := true;
- xAbort := true;

Required outputs:

- xActive = true;
- xSystemEnabled = true;
- xSystemHomed = true;
- xInOperation = false;

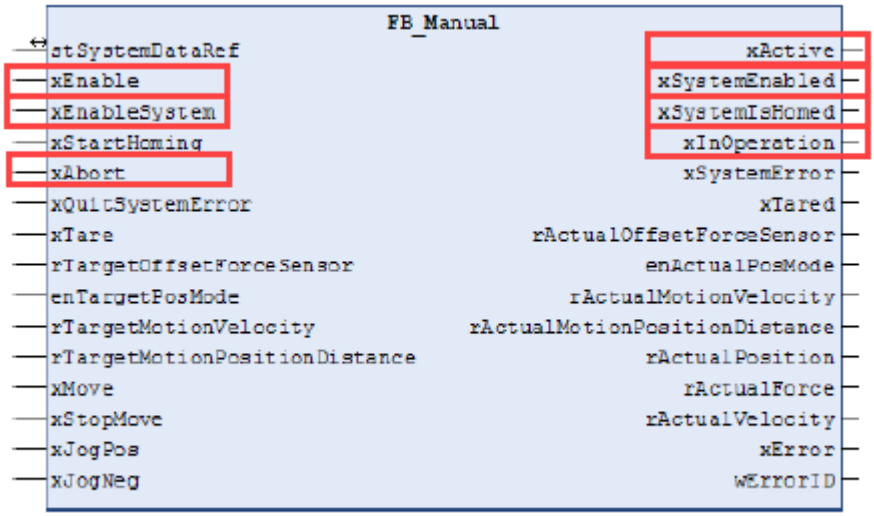
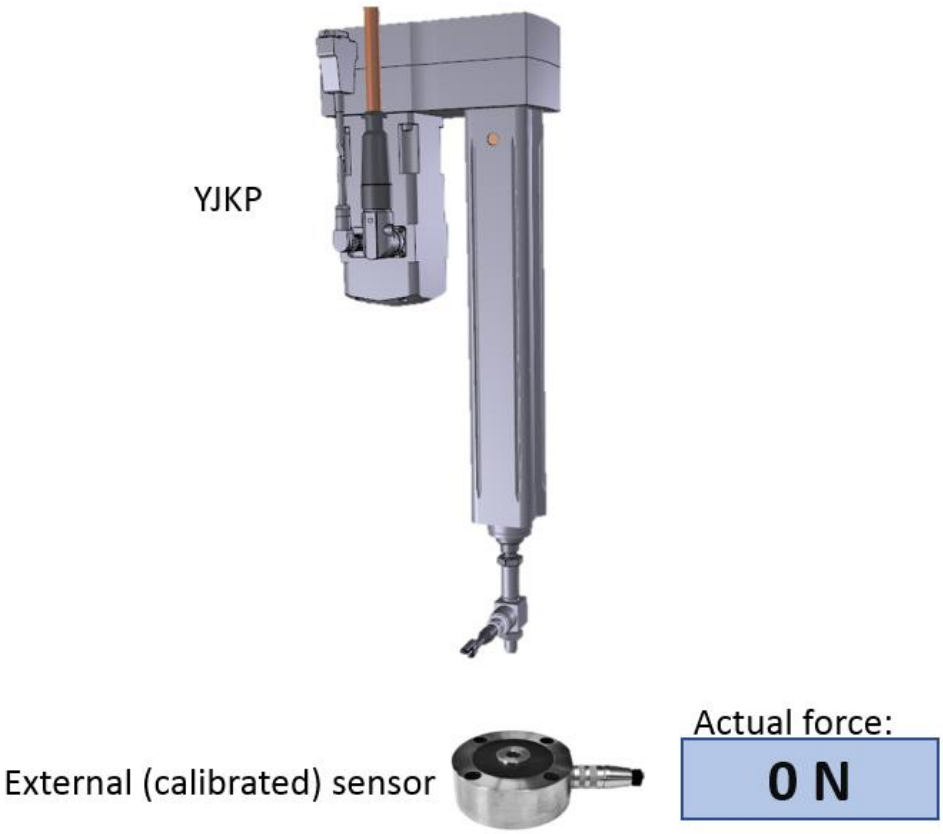


Table 3-30: FB_Manual

3.3 Additional hardware and setup

To adjust the sensor of the YJKP you'll need an additional external (calibrated) sensor with the possibility to display or read its actual force value.

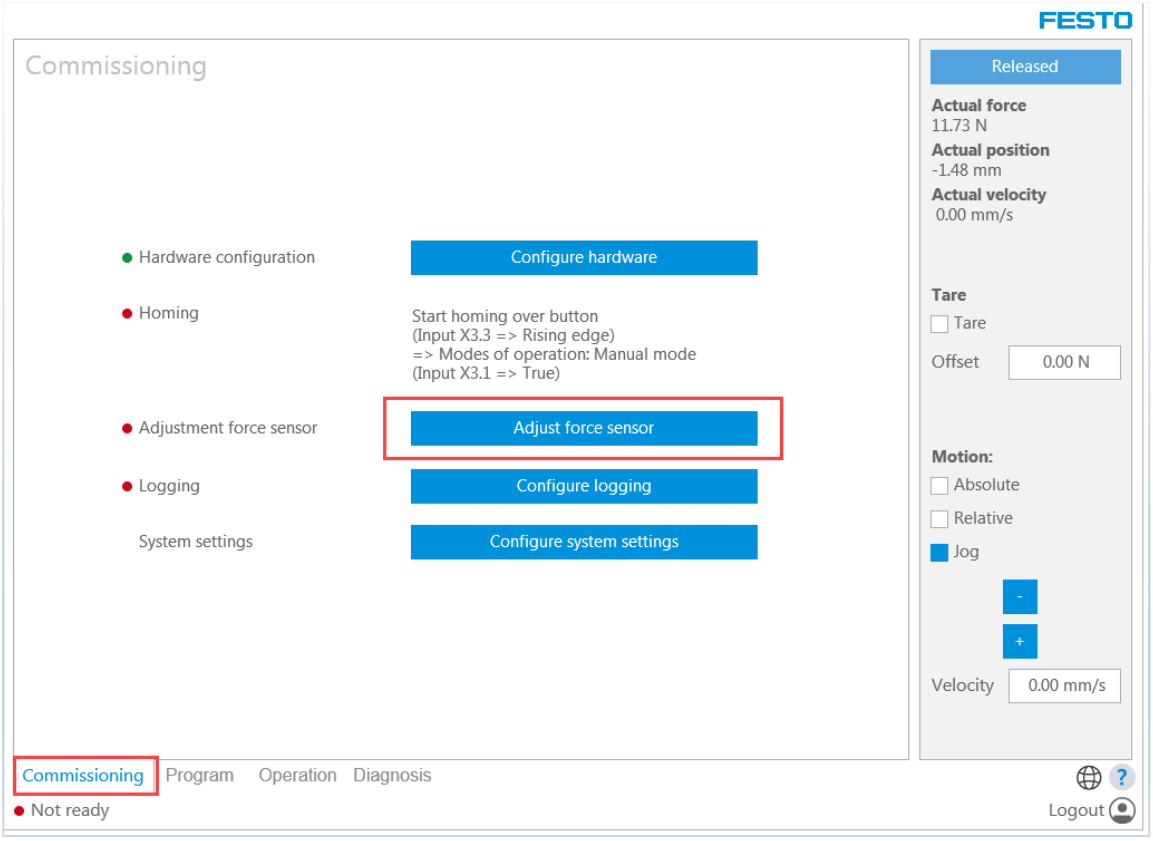


4 Adjusting the force sensor

1. Open the webvisu of the YJKP, login and go to the commissioning tab.

   In this case the status of “Adjust force sensor” is red.
   This only indicates, that default values are loaded.
   It’s not a must to do the adjustment. The YJKP will also work with default values and status “red”.

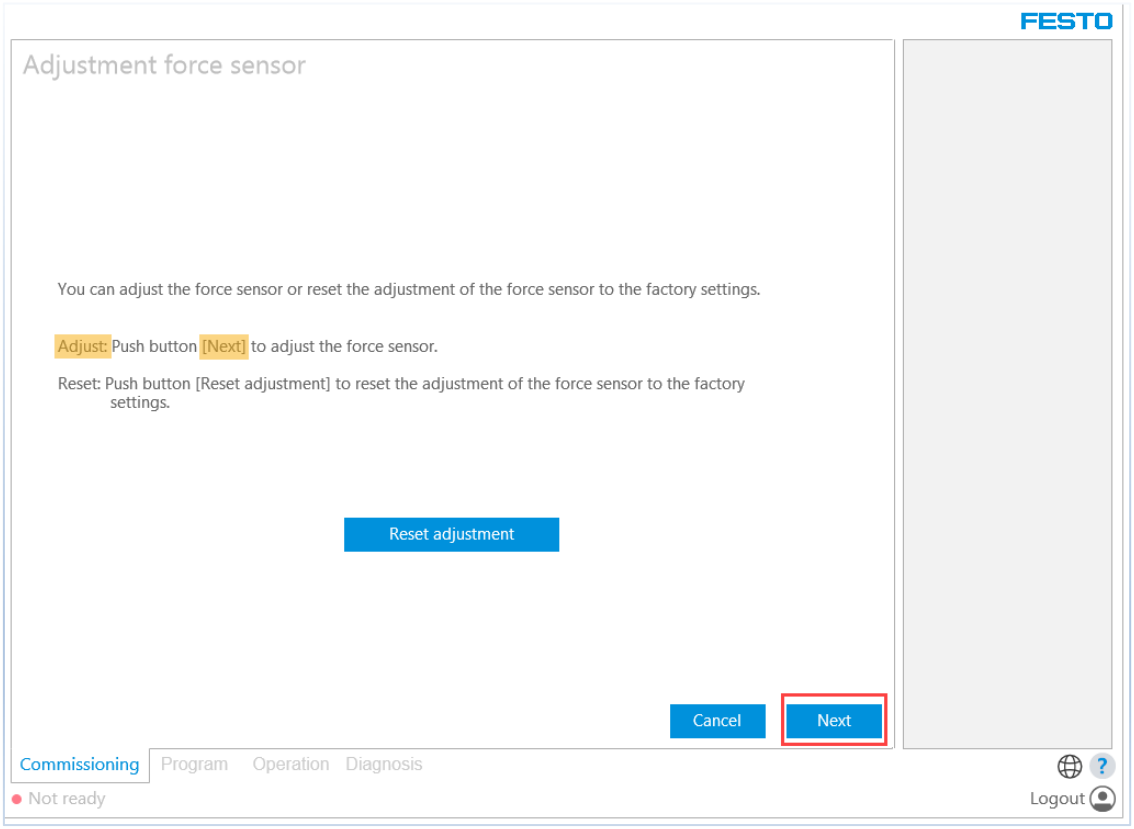
2. Start the adjustment of the force sensor with “Adjust force sensor”.



3. The adjustment of the force sensor is done with a two point adjustment.
   This means you need two different force values, which are optimally as far apart as possible.

   Example in this application note:
   Value 1: 25N
   Value 2: 730N

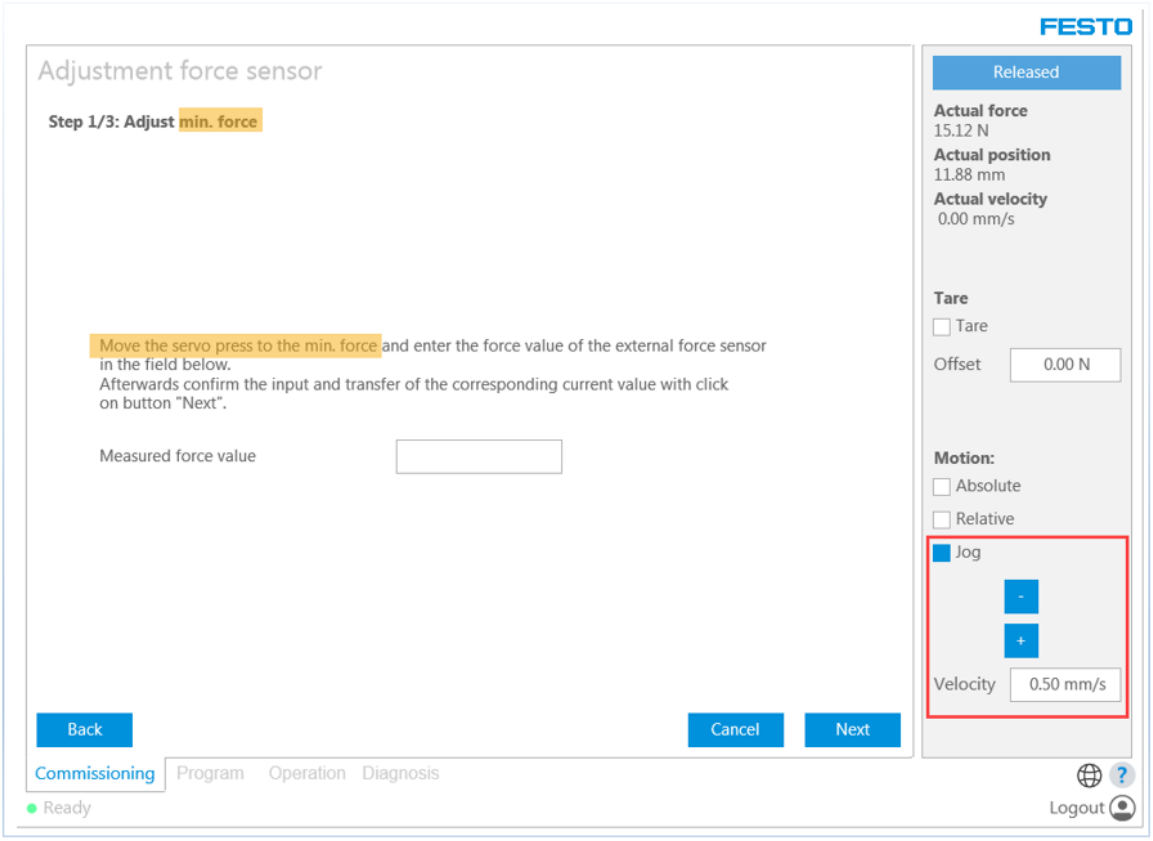
4. To start a new adjustment, go over this screen with “Next”.



5. Step 1/3:
In this step you first have to apply a small force value to the YJKP.

Use the jogging functionality to move the YJKP on the external sensor. By changing the velocity you can fine-tune your desired value.

Min. force in that case doesn’t mean the minimum value of the force range of the YJKP, but just the lower force value of the two force values required for the adjustment.



Using a host PLC, you can jog the YJKP with the FB_manual and the following inputs:

- enTargetPosMode := 0;
- rTargetMotionVelocity := ›0;
- xJogPos or xJogNeg := true;

outputs:

- enActualPosMode = 0;
- rActualMotionVelocity = rTargetMotionVelocity;

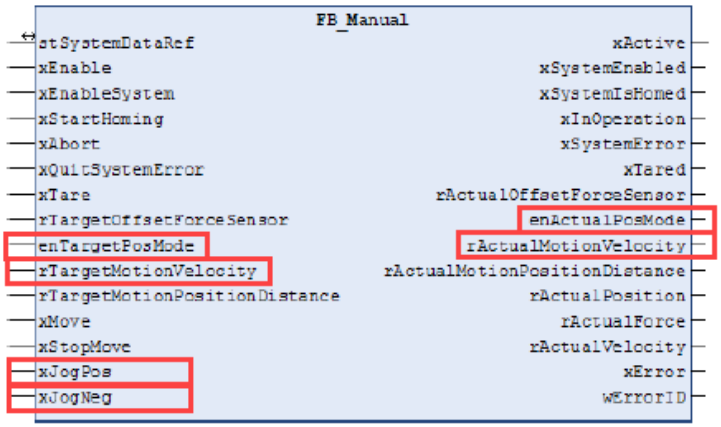
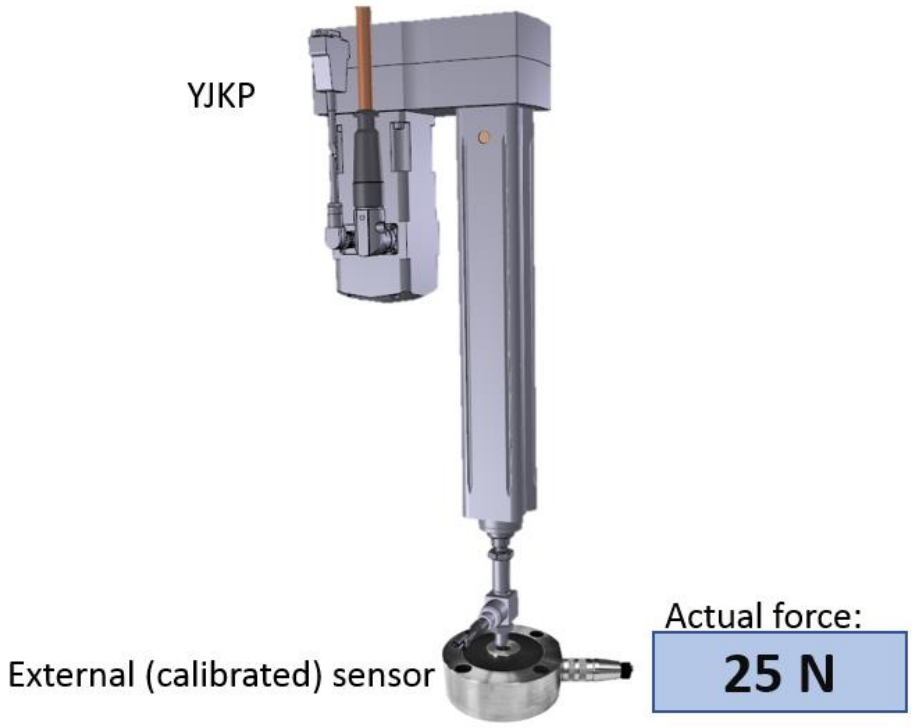
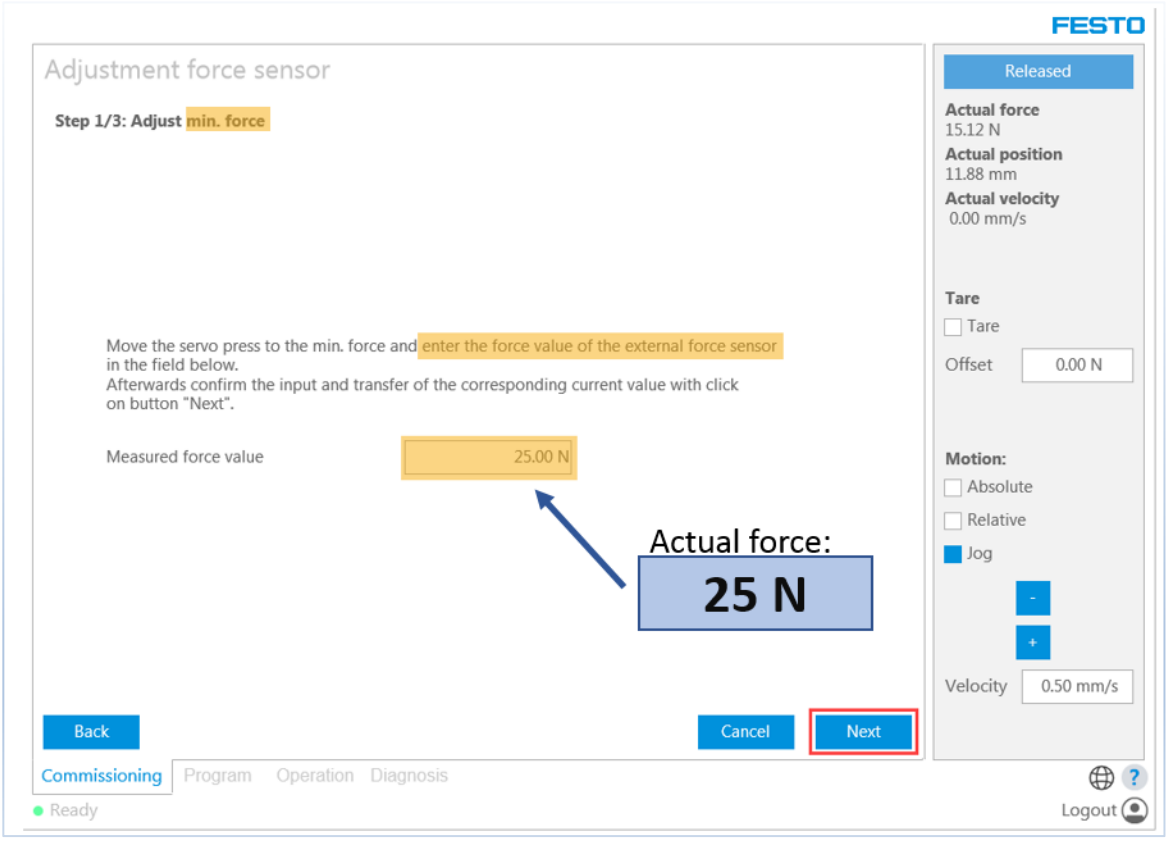


Table 3-30: FB_Manual

6. Use the jogging functionality to move the YJKP on the external sensor.
   Apply a small force to the external sensor and read the value.
   Example: 25N



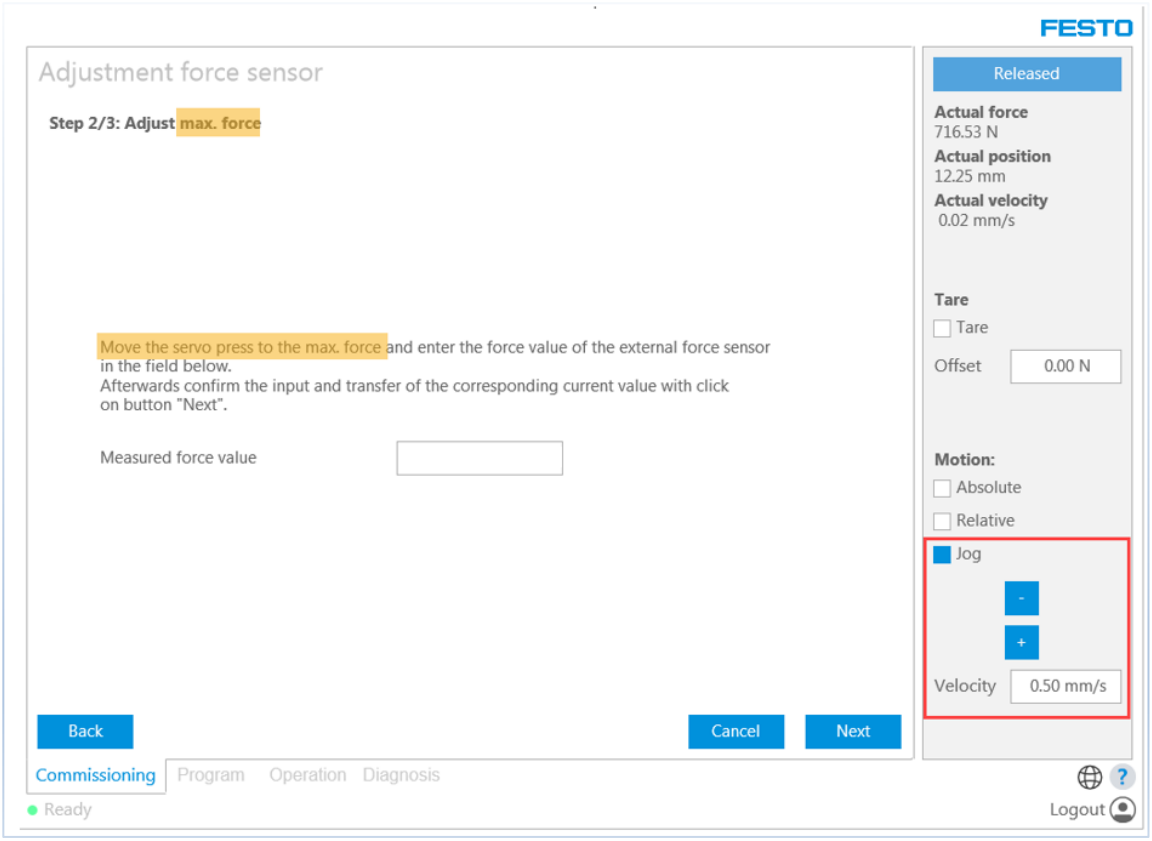
7. Enter the force value of the external force sensor in the marked field.
   The actual force value in the WebVisu has no meaning at this point.
   Proceed with “Next”.



8. Step 2/3:
   In the second step you have to apply a high force value to the YJKP.

   Use the jogging functionality to move the YJKP on the external sensor. By changing the velocity you can fine-tune your desired value.

   Max. force in that case doesn't mean the maximum value of the force range of the YJKP, but just the higher force value of the two force values required for the adjustment.



Using a host PLC, you can jog the YJKP with the FB_manual and the following inputs:

- enTargetPosMode := 0;
- rTargetMotionVelocity := ›0;
- xJogPos or xJogNeg := true;

outputs:

- enActualPosMode = 0;
- rActualMotionVelocity = rTargetMotionVelocity;

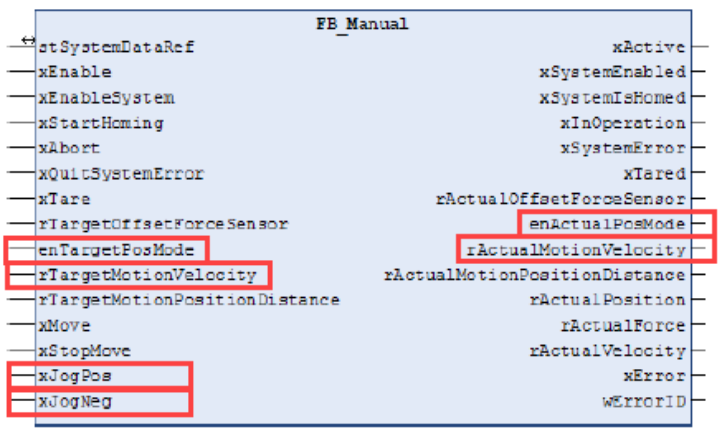
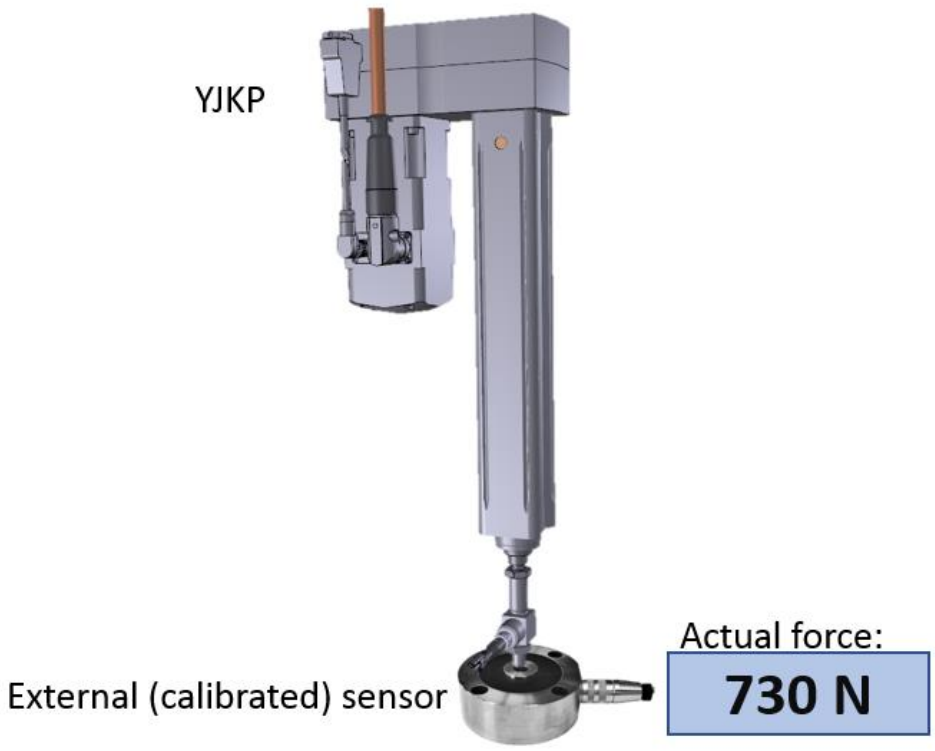
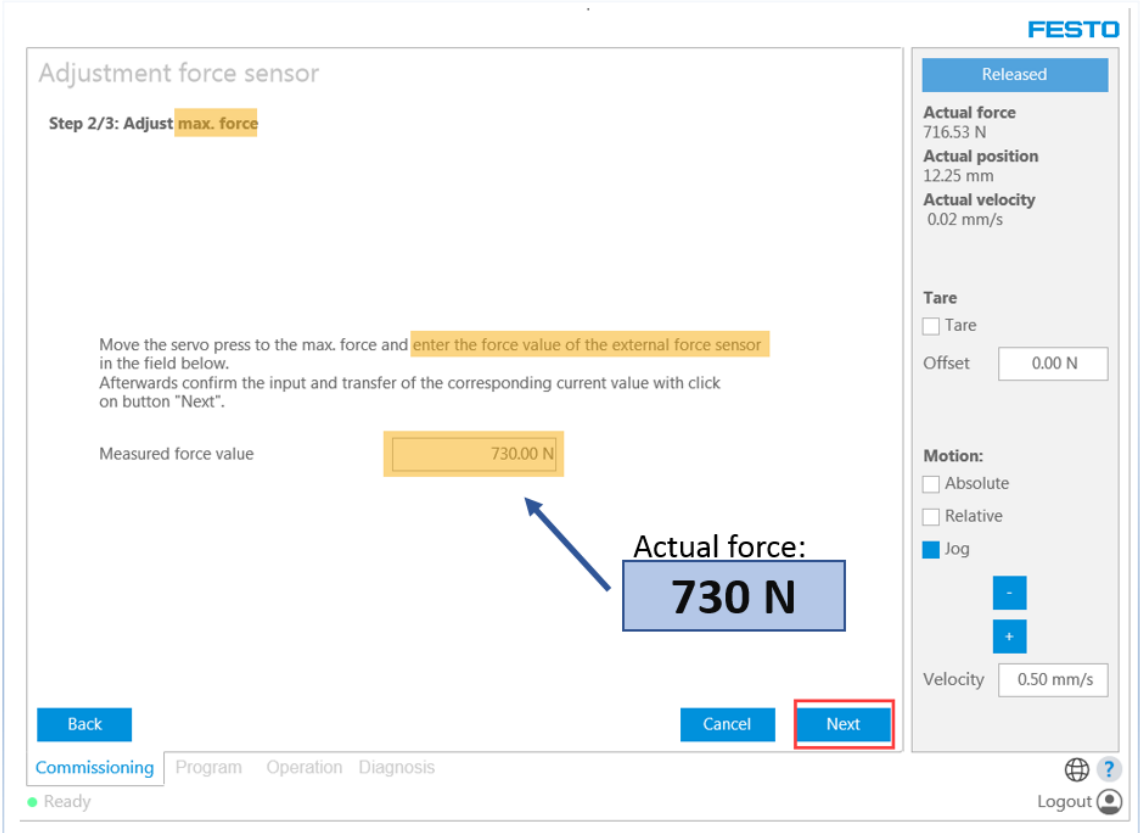


Table 3-30: FB_Manual

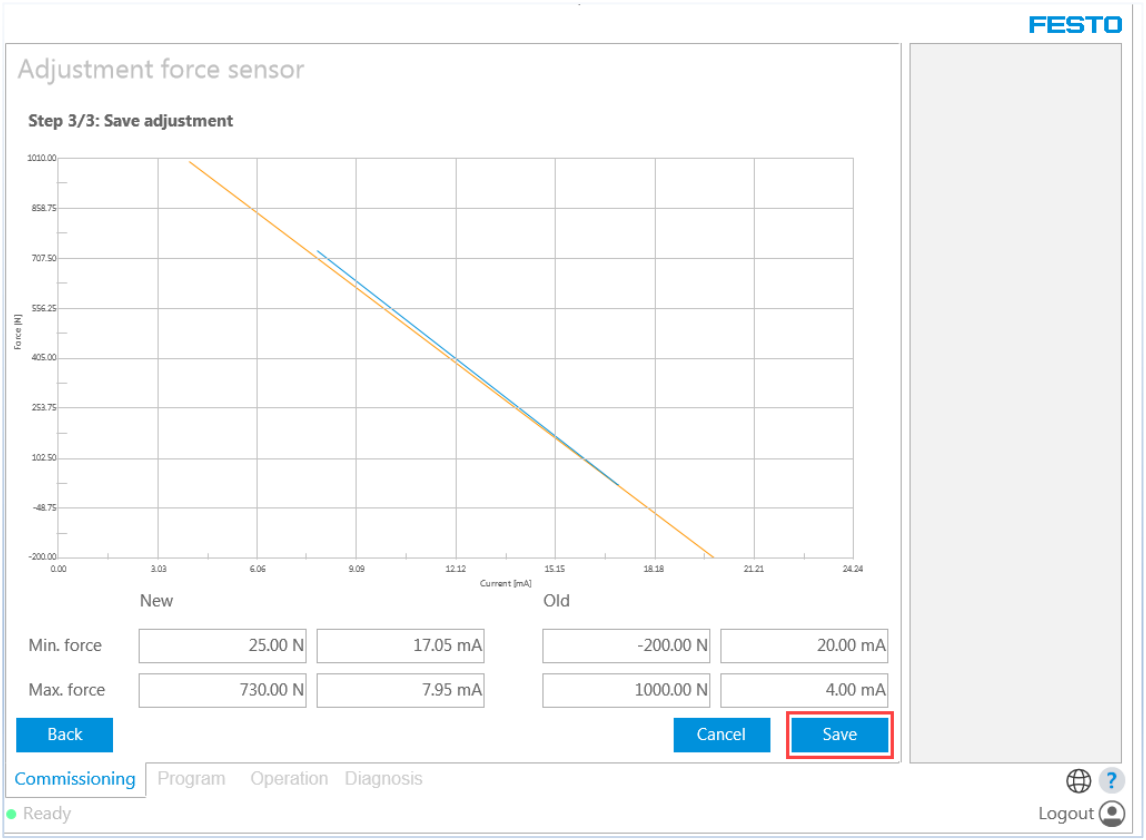
9. Use the jogging functionality to move the YJKP on the external sensor.
   Apply a high force to the external sensor and read the value.
   Example: 730N



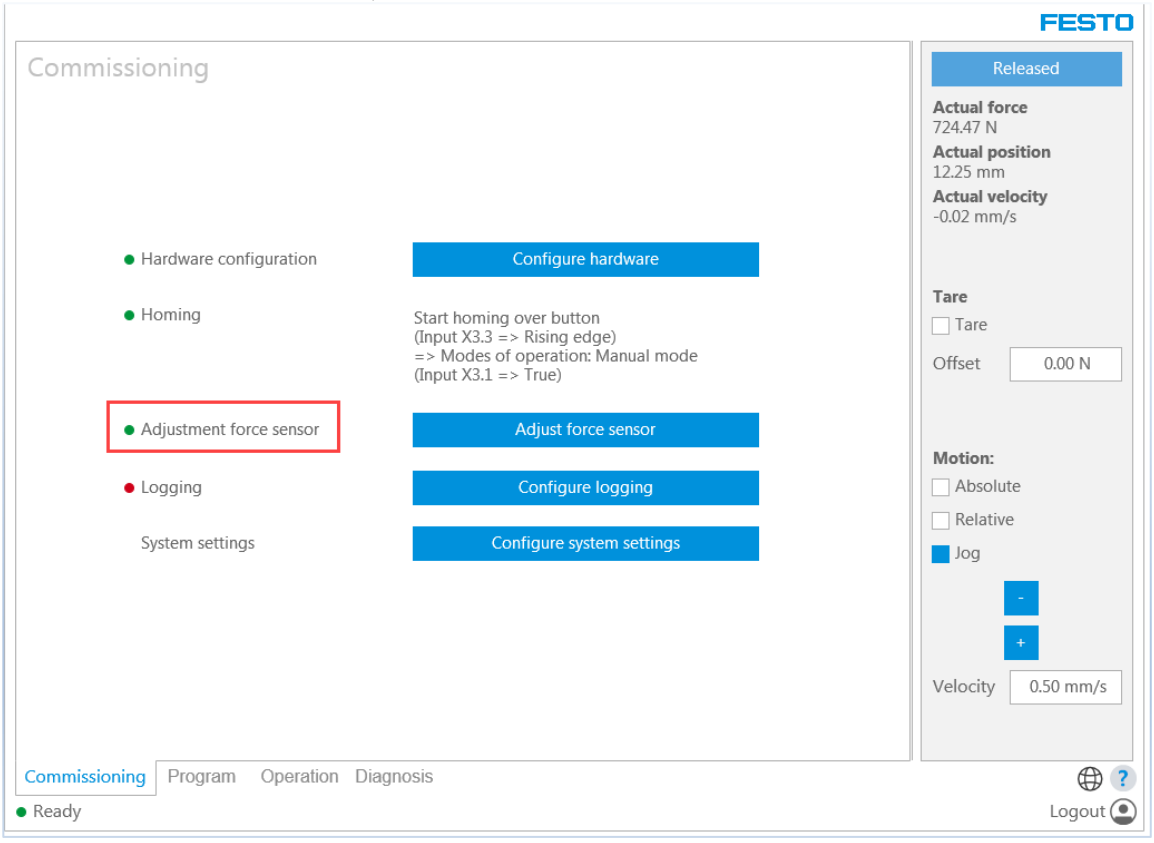
10. Enter the force value of the external force sensor in the marked field.
    The actual force value in the WebVisu has no meaning at this point.
    Proceed with “Next”.



11. Step 3/3:
    In the last step you'll see a summary of the entered values and the new graph in comparison to the old values.
    Finish the adjustment with "Save".



12. As soon as an adjustment is saved, the status "Adjustment force sensor" turns to green.
    There is no check for reasonability of the entered values.



13. It’s possible to reset the adjustment and load the default values again.
    Just enter again the adjust force sensor function and press the button “Reset adjustment”.
    It will directly jump into step 3/3, where you can save the default values.