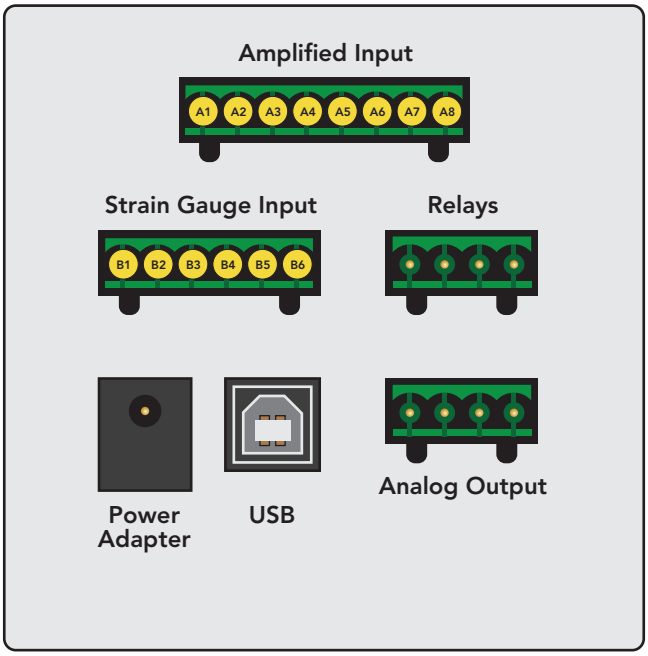
FUTEK
ADVANCED SENSOR TECHNOLOGY, INC.

IPM650 Profile Setup Guide



AMPLIFIED INPUT

PIN	SYMBOL	DESCRIPTION
A1	G	Ground
A2	G	Ground
A3	24V OUT	24VDC Output
A4	5V OUT	5VDC Output
A5	–V	–V and –mA Amplified Input Connections
A6	+V	+V and +mA Amplified Input Connections
A7	PLEAD	n/a
A8	PLAG	n/a

STRAIN GAUGE INPUT

PIN	SYMBOL	DESCRIPTION
B1	G	Ground
B2	TEDS	TEDS Data
B3	–S	–Signal
B4	+S	+Signal
B5	–E	–Excitation
B6	+E	+Excitation

NOTE

The IPM650 is set to recognize TEDS automatically upon startup if this function is available.

This function must be enabled under the TEDS DATA menu.

For more information on TEDS see section 5.11 of the IPM650 manual.

More information on setting up and editing a sensor profile can be found in section 5.4 of the IPM650 manual.

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CREATING A SENSOR PROFILE

1. Connect the sensor cable to the IPM650 and turn on the IPM650 by pressing the POWER button in the lower right corner.
   - **a.** During the power up of the IPM650 an internal auto calibration will be performed.
   - **b.** Next, a screen showing the current selected channel, serial number, sensor type, and sensor sensitivity will briefly be displayed.
   - **c.** The normal operating screen will now be displayed with the updated peak, tracking, valley, selected channel, gross/tare mode, and sampling rate (samples per second).
2. Press the red MENU button to enter into the IPM650 main menu.
   - **a.** The menu mode is controlled by the red arrow keys and red command words.
3. Using the red Enter button select SENSOR PROFILE.
4. Using the red down arrow key followed by the red Enter button select NEW CHANNEL.
5. Using the red left and right arrow keys followed by the red Enter button set the number for the sensor channel to be created.
   - **a.** Channel 01 is a calibrated reference channel, set in the IPM650 at the factory, and cannot be overwritten or selected during a sensor profile setup.
6. Using the red Enter button select SENSOR CONFIGURATION.
   - **a.** Each step in this menu must be completed before moving on to the next step.
7. Using the red left and right arrow keys followed by the red Enter button set the sensor type.
   - a. Sensor type is usually listed on the sensor calibration certificate by output and can be:
     - FULL BRIDGE for mV/V output sensors.
     - VOLTAGE OUTPUT for amplified voltage output sensors.
     - CURRENT OUTPUT for amplified current output sensors.

     * For more information on sensor type see section 5.4.3 of the IPM650 manual.
8. Using the red down arrow key followed by the red Enter button select DIRECTION.
9. Using the red left and right arrow keys followed by the red Enter button set the sensor direction type.
   - **a.** UNI-DIRECTION is used for sensors with one direction of output such as compression only.
   - **b.** BI-DIRECTION is used for sensors with two directions of output such as compression and tension.

   * For more information on sensor direction see section 5.4.3.1 of the IPM650 manual.
10. Using the red down arrow key followed by the red Enter button select UNIT SELECTION.
11. Using the red up and down arrow keys followed by the red Enter button select the type of output to be measured by the sensor.
12. Using the red left and right arrow keys followed by the red Enter button select the engineering units to correspond with the measured output of the sensor.

    * For more information on selectable engineering units see section 5.4.3.2 of the IPM650 manual.
13. Using the red down arrow key followed by the red Enter button select SENSOR CAPACITY.
14. Using the red left and red right arrow keys select the digit to be changed. Using the red up and down arrow keys set the value for the selected digit that corresponds to the sensors full capacity. Use the red ENTER button to save the value.
    - **a.** The decimal place can be set by first changing the decimal to a number and then changing another selected digit into a decimal.
    - **b.** The sensor's full capacity is usually listed on the sensor calibration certificate.
15. Setup SENSITIVITY (+)
    - **a.** Using the red down arrow key followed by the red Enter button select SENSITIVITY (+).
      - The sensitivity (+) will be the positive mV/V output for bridge type sensors and the maximum positive voltage output for amplified sensors.
      - The output of the sensor is usually listed on the sensor calibration certificate.
      - For current output sensors, +/- Sensitivity is not available. CALIBRATION must be used for current output sensors. See step 19 below.

      * For more information on sensitivity see section 5.4.3.4 of the IPM650 manual.
    - **b.** Using the red left and red right arrow keys select the digit to be changed. Using the red up and red down arrow keys set the value for the selected digit that corresponds to the sensors sensitivity (+) and use the red ENTER button to save the value.
      - The decimal place can be set by first changing the decimal to a number and then changing another selected digit into a decimal.
16. Setup SENSITIVITY (–)
    - **a.** Using the red down arrow key followed by the red Enter button select SENSITIVITY (–).
      - SENSITIVITY (–) can only be selected if BI- DIRECTIONAL was selected earlier.
      - The sensitivity (–) will be the negative mV/V output for bridge type sensors and the maximum negative voltage output for amplified sensors.
      - The output of the sensor is usually listed on the sensor calibration certificate.
      - For current output sensors, +/- Sensitivity is not available. Calibration must be used for current output sensors.

b. Using the red left and red right arrow keys select the digit to be changed. Using the red up and red down arrow keys set the value for the selected digit that corresponds to the sensors sensitivity (–) and use the red ENTER button to save the value.

- The decimal place can be set by first changing the decimal to a number and then changing another selected digit into a decimal.

17. Using the red down arrow key followed by the red Enter button select CALIBRATION if a live calibration, where a load is to be placed on the sensor, is desired. Otherwise, CALIBRATION can be skipped by pressing the red down arrow key.
    a. Press the red Enter button to select Zero load (+) and proceed to the input screen.
    b. With no load on the sensor, press the red Enter button to capture the Zero load (+) reading.
    c. Press the red down arrow key followed by the red Enter button to select FullScale (+) and proceed to the input screen.
    d. With the full load on the sensor, which results in the full positive output, press the red Enter button to capture the FullScale (+) reading.
    e. Press the red down arrow key followed by the red Enter button to select Zero load (-) and proceed to the input screen.
        - The direction must be set to Bi-Directional for a – input in CALIBRATION.
    f. With no load on the sensor, press the red Enter button to capture the Zero load (-) reading.
    g. Press the red down arrow key followed by the red Enter button to select FullScale (–) and proceed to the input screen.
        - The direction must be set to Bi-Directional for a – input in CALIBRATION.
    h. With the full load on the sensor, which results in the full negative output, press the red Enter button to capture the FullScale (-) reading.
18. Using the red down arrow key followed by the red Enter button select SERIAL NUMBER.
19. Using the red left and red right arrow keys select the digit to be changed. Using the red up and red down arrow keys set the value for the selected digit that corresponds to the sensor's serial number. Use the red ENTER button to save the value.
20. Press the red Back button to exit the NEW CHANNEL setup and return to the SENSOR PROFILE menu.
21. Using the red down arrow key followed by the red ENTER button select SAVE CHANGES to save and create current sensor profile.
22. Press the red Back button to exit the SENSOR PROFILE menu and return to the IPM650 main menu.
23. Press the red Back button to exit the IPM650 menu and return to the normal operation screen.
24. The normal operating screen will now be displayed with the current peak reading, sensor output, valley reading, selected channel, gross or tare mode, and samples per second (sps).

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