Two and Four Channel Data Readout

6572/6572F • 6574/6574F

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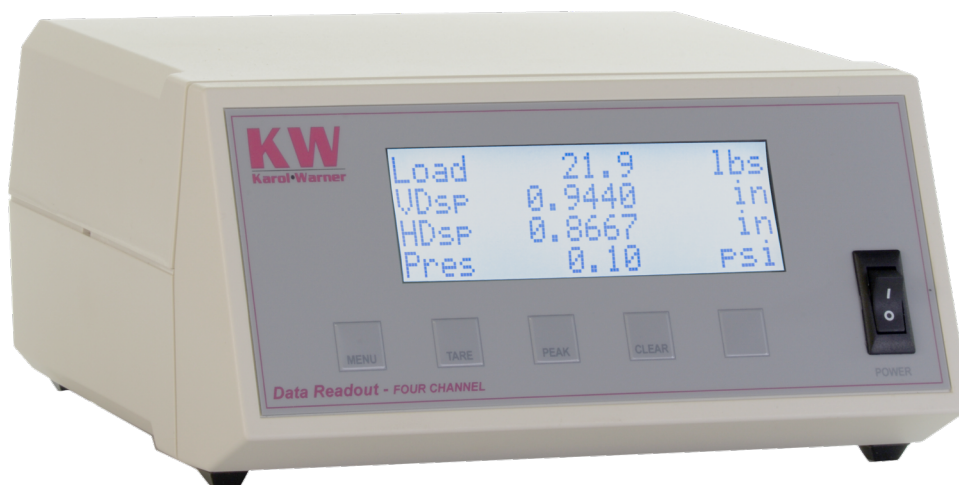
6574

TABLE OF CONTENTS

SAFETY

The buyer is responsible for ensuring that users are properly trained, that they are aware of all the information and instructions in this document, and that they are aware of the potential risks of operating the machine. The manufacturer will not be held responsible for any damage to people and/or property caused by non-compliance with any instructions in this manual.

⚠ **WARNING: Read all safety warning instructions. Failure to follow the warnings and instructions may result in electric shock, fire, and/or serious injury. Keep these instructions for later use.**

⚠ **DANGER: Electric Shock Hazard. Touching some of the internal components can cause serious personal injury or death. Disconnect the power supply before removing covers or performing maintenance on the machine.**

⚠ **WARNING: Electric Shock Hazard. Improper use of the grounding can result in electric shock. Do not plug the machine into an outlet until it is properly installed and grounded.**

⚠ **WARNING: The supply voltage must correspond to that stated on the identification plate and in the technical specifications. NEVER use any other type of power supply.**

⚠ **WARNING: Remove plug from the mains immediately if the cable is damaged or cut.**

This Data Readout Box must be grounded, the plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Only replace the internal power fuse with a fuse of the same type and rating as supplied.

Calibrating the Data Readout may require removing the cover to access internal jumpers or switches. Always turn off power and disconnect plug from wall outlet and the back of the readout box before removing the cover.

SPECIFICATIONS

Power Requirements: 115V/50-60Hz, or 230V/50-60Hz

Fuse: 0.5 Amp, 250V. Located inside the readout box.

Sensor Excitation: 5.0 or 10.0 Volts DC

Sensor Output Range: +/- 33 mV to 0-5 V

Data Conversion Rate, each channel:

7.5 conversions per second at 60Hz line frequency rejection.

6.25 conversions per second at 50Hz line frequency rejection.

FRONT PANEL CONTROLS

There may be one or more "spare" or "hidden" keys depending on the number of channels . Some of these may be active only during certain Menu or other functions. Their function will be listed on the display, over the corresponding key.

Power Switch: Turns readout box on/off.

MENU: Allows access to user selectable options. The menu key may temporarily change the function of the other keys as described below. To change a desired option, press **MENU** to step through the available options.

TARE: Used to remove initial offsets from data and display a value of zero. Each channel can be zeroed individually. When the **TARE** button is pressed, the display will show **TARE CHANNEL?** and the bottom line of the display will show channel names over the keys. Press the key corresponding to the desired channel. The display will return to normal with the selected channel reading zero. Repeat for each channel as required.

PEAK: Displays the maximum measured value of the selected channel and values of all other channels when that value occurred. When a peak is detected, the readings of all channels are saved and can be viewed by pressing the **PEAK** key. While the peak is being displayed, data is continuously read, and the peak values of all channels are updated and shown on the display. Press **PEAK** key to return to normal data display. The peak data is saved until a new peak occurs or the peak is cleared.

CLEAR: Used to reset or clear a desired function such as the peak reading or the tare on a selected channel. To clear the current data, press the **CLEAR** key, the display will show **CLEAR?** and prompt you to select **TARE** or **PEAK**, press the key under the channel you which to clear. To exit, press **MENU**.

BACK PANEL CONNECTIONS

Each model has an AC Power receptacle for the Power Cord and a Mini USB port for connection to the user's computer.

Depending on model ordered, the box will have two or four input connections. The channels are numbered from left to right and are labeled for Load, Displacement, or Pressure depending on calibration.

GETDATA VERSION 5.5 SOFTWARE

The included GetData version 5.5 software captures and displays data on a PC and can export files into a spreadsheet program such as Excel. The software can be downloaded to the users' computer via the USB Flash Drive that was sent with the Data Readout Box.

Plug in the included flash drive to access the GetData55.exe software file, Drivers, Instruction Manual, Serial Port Information, Sensor Connection Drawing, and Calibration Instructions. If you purchased your Data Readout with a Load Cell or Displacement Transducer these units were calibrated together before shipping.

IMPORTING GETDATA FILES TO MICROSOFT EXCEL

GetData creates files in plain text, comma delimited for compatibility with Excel. To convert the files, use the following procedure after the tests are completed.

1. Open the file with Excel, the "Text Import Wizard" will start.

2. Select "Delimited"

Decide what row to begin importing data. Since the first two lines contain header information and are not in the same format as the data, select row 3, or another row of your choosing.

3. Set the delimiter to comma (,) and click "Next"

4. Select "General Format" and click "Finish"

5. Save the file in Excel format. To do this, select File > Save As and select "Excel Workbook" using the default format. The file will be saved with the .xlsx extension.

SETUP AND OPERATION

Unpack the readout box and set in desired location. Plug in the power cord to the back of the box. Next attach the load cell, LVDT, or pressure sensor connectors to the green connection ports on the back of the unit. Make sure that the load cell is plugged into the port labeled **LOAD**, LVDT into the labeled **DSPL** port. Pressure sensor will be labeled **PRES**. Plug the power cord into a grounded three prong outlet. Turn power switch to the on (up) position. Screen will show either two or four channels depending on model purchased.

Install the GetData software to the computer. See installation guide that was shipped with the readout box for instructions.

CALIBRATION

When the data readout is purchased with a load cell, displacement transducer, or pore pressure transducer, these are calibrated to specific channels. On the back of the readout box, these connections will be labeled **LOAD, DSPL,** or **PRES**.

If it is necessary to replace an existing load cell or transducer, the readout box will need to be recalibrated to these devices. Please refer to Appendix A for full calibration instructions.

There are two Calibration data sets stored in the readout box memory. These are labeled CAL1 and CAL2. The CAL1 setting is in English units and CAL2 is Metric units. To change the displayed unit of measurement: Press MENU then press the key below CAL1 or CAL2, press Menu to exit.

APPENDIX A CALIBRATION INSTRUCTIONS

Calibrating through Front Panel controls

1. The key sequence to access the front panel calibration:

    a) Press and hold the **TARE** key.

    b) Press and release the **CLEAR** key.

    c) Release the **TARE** key.

    d) At the prompt "Calibration?" repeat previous steps.

2. SELECT the desired calibration, **CAL1** or **CAL2**.

3. Chose the desired channel.

4. Edit the **NAME** label. Examples are Load, **CH_2**, etc. Four characters maximum and do not start the name with a number (0-9).

5. Press **MENU**.

6. Edit the **UNITS** label. Examples are lbs, kPa, etc. Three characters maximum.

7. Press **MENU**.

8. Apply a low (normally zero) input to the transducer and press **NEW** (the **CLEAR** key) to read the conversion counts (**LOW READ**). Make note of the input to the transducer (engineering units) to use as the low scale below.

    Alternately, enter a new calculated low 'count'. Use the tare key to shift the cursor and the Peak key to increment the number at that position.

9. Press **MENU**.

10. Apply a high (full scale) input and press **NEW** (the **CLEAR** key) to read the **HIGH READ**. Make note of the input to the transducer (engineering units) to use as the high scale below. Alternately, enter a new calculated high 'count'.

11. Press **MENU**.

12. Select the decimal point location.

13. Press **MENU**.

14. Enter the **LOW SCALE** in engineering units noted in step 8 or determined from the manufacturer's data.

15. Press **MENU**

16. Enter the **HIGH SCALE** in engineering units noted in step 10 or determined from the manufacturer data.

17. Press **MENU**

18. Enter an **OFFSET** in engineering units. Usually this is zero.

19. Press **MENU**

20. Select a new channel and repeat steps 3-19 or Press **MENU** to exit.

21. Press **YES** to write the calibration to permanent memory or **NO** to use the calibration until power to the unit is removed.

22. If an alternate calibration is desired select it now and repeat steps 3-19.

23. Press **MENU** to exit the calibration function.

24. After returning the readout to normal operation, observe the value of the calibrated channel with no input applied to the transducer. If the display shows a large non-zero value, the **OFFSET** parameter may be adjusted to provide a zero reading. This will usually be required only when calculated calibration factors are used.

Front panel calibration detailed instructions

The readout is calibrated by taking the coordinates of two points along the line of the input versus output characteristic for the desired channel/transducer combination. The input is the applied stimulus (load, pressure, etc.) and the 'output' in this case is the numerical result,of the analog-to-digital conversion (the low or high 'read'). This output is scaled using the low and high input values to define the coordinates.

1. The key sequence to access the front panel calibration:

    a) Press and hold the **TARE** key.

    b) Press and release the **CLEAR** key.

    c) Release the **TARE** key.

    d) At the prompt "Calibration?" repeat steps 1-3.

2. The display will show (on the four channel):

SELECT
MENU = DONE
CAL1 CAL2

2a. for the two channel: **SELECT**
OUT CAL1 CAL2

3. This is the entry and exit point from the calibration function. Pressing **MENU** here will exit the calibration and prompt you to save or ignore the calibration as discussed below. Press **TARE** or **PEAK** to select the desired calibration.

4. The readout will prompt **CHANNEL?**

   The channels are listed by name on the bottom line of the display; one over each key under the display. Press the key below the desired channel or press **MENU** to exit.

5. After selecting the channel the display prompts **XXXX NAME** where xxxx is the current channel name label. The label is repeated at the bottom of the display with a flashing cursor. Use the **TARE** key to advance the cursor to the right. It will wrap around to the beginning if stepped off the end. Use the **PEAK** key to increment the character at the cursor position or press the **CLEAR** key to decrement the character. Use **TARE** to move the position and **PEAK** or **CLEAR** to change the characters. The characters available are 0-9, a-z, A-Z, - , % , / , * , ^, space, and _ (underscore). Blank spaces are allowed at the beginning or end of a label but should be avoided within the label (GETDATA will ignore the part of the label before the space). Instead of the space character use the underscore (CH_1 is better than CH 1) Note also that the software forbids digits 0-9 as the first character in a label.

6. Press **MENU** to accept the changes. Pressing **MENU** will advance to the next function. If any change is not required, pressing **MENU** will skip the function and leave the setting unchanged.

7. The display will show **XXXX UNITS** where xxxx is the new channel name label. At the bottom of the display is the current units label with a flashing cursor. Use the same procedure as changing the name label to set the desired units label.

8. Press **MENU** to accept the label.

9. The display will show **XXXX LOW READ** where xxxx is the channel name. The last line of the display will show a 7 digit number with a flashing cursor. This is the stored value of the converter output (the 'counts'). On the far right, over the last key is the word **NEW**. The sensor should have low or zero input applied. Press **NEW** to read the new low calibration factor. The number displayed will be updated. **NEW** may pressed repeatedly. Note the exact input applied as this will be entered as the new **LOW SCALE**. Usually this value is zero.

   To manually enter a count, press the **TARE** key to move the cursor. Press the **PEAK** key to Increment the number. If the cursor is on the leading (blank) position pressing the PEAK key will change the sign. **THE LOW AND HIGH COUNTS MUST BE POSITIVE ALWAYS**. Manually entering a reading is used if you are changing sensors and wish to use a previous calibration or you are entering a calibration factor that was calculated from published sensitivity data.

10. Pressing **MENU** will advance to the next function. The display will show **XXXX HIGH READ** and the high 'counts' at the lower left of the display.

11. Apply a high or full load to the sensor and press **NEW** to read the counts. Note the exact applied input for scaling the reading. This value will be entered as the **HIGH SCALE**. To Manually enter a count, press the TARE key to move the cursor. Press the **PEAK** key to Increment the number. If the cursor is on the leading (blank) position pressing the **PEAK** key will change the sign. **THE LOW AND HIGH COUNTS MUST BE POSITIVE ALWAYS**.

12. Press **MENU**. The Display will show **XXXX DECIMAL PLC** At the bottom is a row of X's as place holders (XXXXX . X) with the blinking cursor on the decimal point. Use the **PEAK** key to move the decimal point. It will wrap around to the front automatically. Position the decimal point for the desired number of decimal places for the displayed data. Up to five decimal places can be shown. To display data as a whole number (no decimal point), position the decimal point at the rightmost end of the row. For example; to display linear displacement to 0.0001 inches, position the decimal place as shown : **XX . XXXX**

13. Press **MENU**. The display will show **XXXX LOW SCALE** and a number at the lower left. Enter the scaling value noted when the **LOW** reading was taken. Use the **TARE** and **PEAK** keys as above. When the cursor is on the decimal point, pressing **PEAK** will move the decimal point. This will allow adding decimal places for entering the correct scaling value. For example, if the low input is 0.00012, this is the value that should be entered here. Data will be displayed according to the decimal place selection made in step 12.

14. Press **MENU**. The display will show **XXXX HIGH SCALE** and the high scaling number at the lower left. Enter the scaling value noted when the **HIGH** reading was taken. Use the **TARE** and **PEAK** keys as above. When the cursor is on the decimal point, pressing **PEAK** will move the decimal point. This will allow adding decimal places for entering the correct scaling value. For example, if the full scale input is 5.00082, this is the number that should be entered here. Data will be displayed according to the decimal place selection made in step 12.

15. Press **MENU**. The display will show **XXXX OFFSET** Enter an offset in engineering units. Usually this will be zero. The offset is used to correct for zero errors in the transducer if calculated calibration factors were entered, or to allow setting the zero on a channel where the tare is disabled. It is best to leave (or set) this value at zero and complete the calibration. Observe the displayed offset for the channel under zero input conditions while the readout is operating normally. Re-enter the calibration function and advance to the **OFFSET** display. Enter the offset value that was displayed, with the sign of the offset entry opposite that which is shown on the display. This will zero the channel.

16. Press **MENU**. The readout will prompt **CHANNEL?** And the list of channels. Select another channel or **MENU** to exit.

17. The display should show **'WRITE TO MEMORY?'**. The memory referred to is permanent memory. The calibration is already active in temporary memory and will be in effect until power is lost or removed. Press **YES** to save the new calibration permanently or **NO** to keep the calibration in temporary memory (until power off).

18. The display will show (on the four channel):
    SELECT
    MENU = DONE
    CAL1 CAL2
    or for the two channel: **SELECT**
    OUT CAL1 CAL2

19. Select the other calibration or press **MENU** to exit and return to normal operation.

20. Please contact Karol Warner technical support with any questions. kwtechnical@karolwarner.com