ABB

TOTALFLOW

# Keypad general navigation and setup for calibrating transducers

Totalflow Technical Bulletin
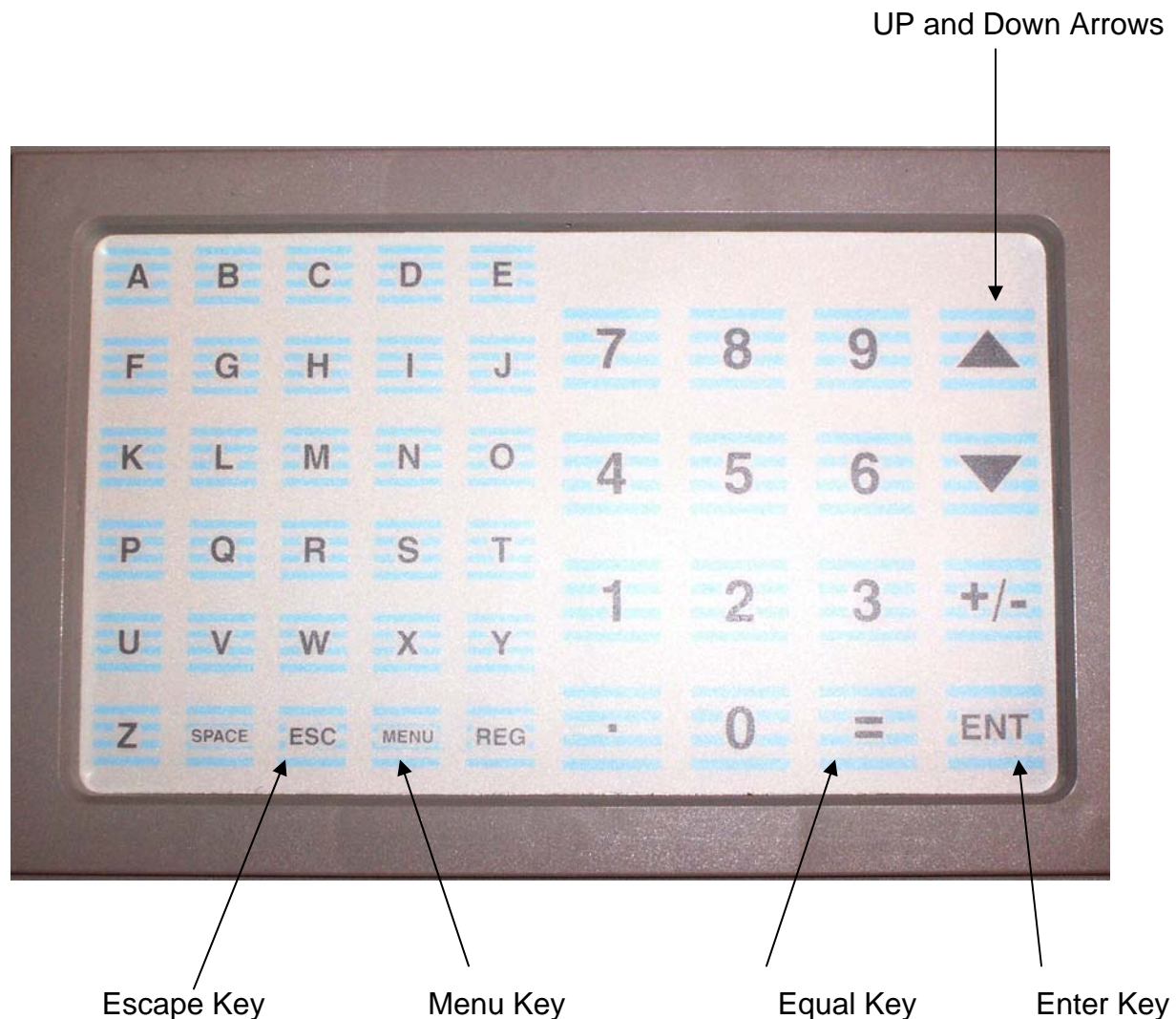Version 1.0, Revision AA (19 December 2006)

ABB

**Purpose**

The purpose of this document is to 1) provide an overview of the keypad's layout and functionality and 2) describe how to program the XSeries product to utilize the keypad as an input device to calibrate an internal transducer or external multivariable.

**Description**

<div align="center">

**Keypad overview**

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UP and Down Arrows



Escape Key          Menu Key          Equal Key          Enter Key

To scroll through the available display groups press the Escape (ESC) key. Use the up or down key to select a group. Once the appropriate group is displayed, press the Enter (ENT) key. Next, use the up or down key to select the item within the selected group.

To select a value using the direct method press the "menu" key. The display will show "enter group.item". At this level you can either enter the group and item number (i.e. 2.1 "enter" displays the ID on a standard display configuration) or press the "esc" key twice to view the groups. Using the up or down arrow, select which group then press the Enter (ENT) key. Now use the up or down arrow key to find the desired display item.

**Navigation step-by-step:**

Select display item by using the navigation feature
- Press the escape (esc) key
- Use the up or down arrow to select the display group
- Press the Enter (ENT) key
- Use the up or down arrow to select the display item
- Use the steps provided below to change the value of the selected display item

Select display item using the direct entry method
- Press the "menu" key
- The display will show "enter group.item"
- Enter value x.y where x=group and y=display item (the groups and display items can be viewed from the "display" group within the "entry" menu using PCCU)
- Press the Enter (ENT) key
- The item should now be displayed on the XFC or XRC's display
- Use the steps provided below to change the value of the selected display item

To change the value of a display item
- Once the item is selected and displayed, press the Equal (=) key
- Enter the new value (using the decimal point key where needed) using the keypad
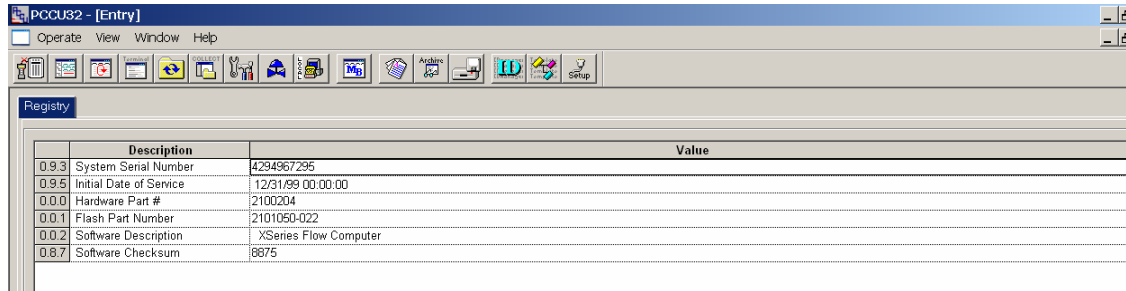- Press the Enter (ENT) key

Example: To change orifice plate size, browse to the orifice plate size display and press the Equal (=) key. Next, insert the new plate size and press the Enter (ENT) key.

### Keypad setup for calibration functions

**Step 1**: Ensure that the flow computer being programmed has Flash Part Number 2101050-010 or higher installed. Also you should use PCCU32 Version 4.57 or newer software.

**Step 2:** Connect to the flow computer using PCCU and go to the click on the Registry button.

Look for Flash Part Number. This is where the flash version can be found.

<table>
<thead>
<tr><th colspan="3">Registry</th></tr>
<tr><th></th><th>Description</th><th>Value</th></tr>
</thead>
<tbody>
<tr><td>0.9.3</td><td>System Serial Number</td><td>4294967295</td></tr>
<tr><td>0.9.5</td><td>Initial Date of Service</td><td>12/31/99 00:00:00</td></tr>
<tr><td>0.0.0</td><td>Hardware Part #</td><td>2100204</td></tr>
<tr><td>0.0.1</td><td>Flash Part Number</td><td>2101050-022</td></tr>
<tr><td>0.0.2</td><td>Software Description</td><td>XSeries Flow Computer</td></tr>
<tr><td>0.8.7</td><td>Software Checksum</td><td>8875</td></tr>
</tbody>
</table>

If the version of flash is older, it is recommended that the Flash be updated to the newest version. These updates can be found on Totalflow's website at ***www.abb.com/totalflow*** *and click on Continuing Service after the sale, then Firmware downloads and choosing the appropriate device. Follow Technical Bulletin 99 for upgrading flash.*
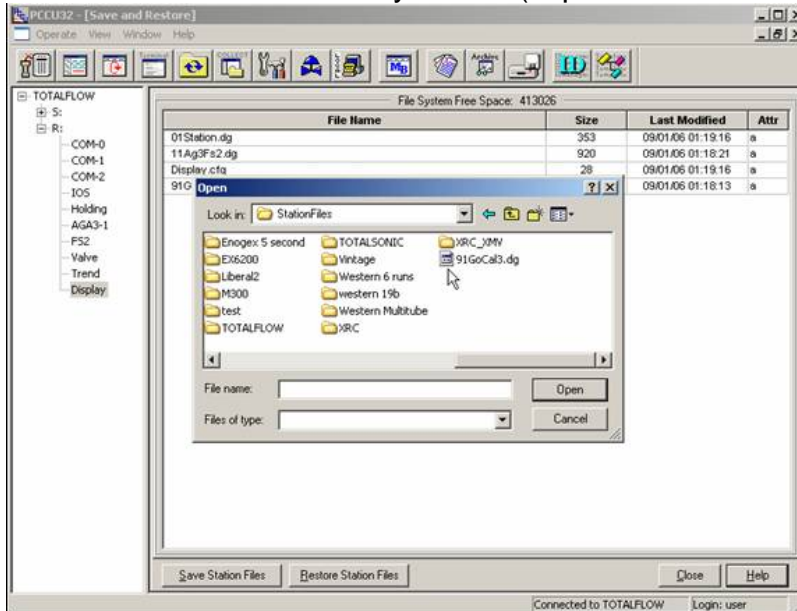
**Step 3:** Contact Technical Support at 1-800-442-3097 option #2 and ask for the appropriate display group files for the required application.  A custom *display group* file will be needed to perform calibration functions via the keypad.
(There are currently six different calibration display groups available, depending on the range of the multivariable and the number of calibration points.  They include 100" x 100# (3 and 5 point calibration), 250"x 1500# (3 and 5 point calibration) and 400" x 1500# (3 and 5 point calibration).

For convenience it is recommended that the appropriate .dg file(s) be downloaded to the following folder on your PC:
.dg files = c:\pccu32\stationfiles
This location will be used later within this document to retrieve the downloaded file(s) to restore to the flow computer.

**Step 4:** Click on the Save and Restore button on the toolbar (it is a yellow folder with 2 blue arrows in it).



**Step 5:** Under the R drive, right Click on Display Folder for Download File Option: Browse to find the 3 or 5 point calibration (the screen shot below the example "91gocal3.dg" was used which is a 3 point calibration for 100"/100# range) that you downloaded and stored on your PC (c:\pccu32\stationfiles), highlight and select "open":

Using the new Keypad Calibration Screens:

**Step 1:** Press the Down Arrow.  If the security switch is turned on, the display will prompt for the 4 digit security code.  When arriving at the 91GoCal5.dg (the name may be different depending on which calibration file used) display, press the Enter (ENT) key.

**Step 2:** Start with the "as found" checks to verify that the unit does or does not need a calibration performed. Use the Up/Down Arrow keys to get to the Check SP.  To enter a value press the Equal key (=).  Insert the value, then press the Enter key.

**Step 3:** If the "as found" checks are within tolerance then calibration may not be required and you can scroll down to the Check DP.

**Step 4:** If calibration is required enter a value by pressing the Equal key (=).  Insert the value, then press the Enter key.  The display will advance to the next item.

**Step 5:** When finished, use the Up/Down Arrows to go to the "ESC, ESC to Exit" display and press ESC twice to get out of Hold.

***Please note the following for Keypad Calibrations:

- Measurement tube is placed in hold during calibration.
- All standard calibration events are logged.
- Static Pressure must be entered in the same units as the transducer. Transducer in PSIA – must enter Static Pressure in PSIA for calibration. Transducer in PSIG – must enter Static Pressure in PSIG for calibration.
- The Data High Limit parameter under the Item Setup Tab for the calibration displays must be set to the range of the transducer for the real time plot to be accurate.

**Important Note:** Before leaving the site, make sure to perform a "Save" and "restore" function from the "save and restore" option in PCCU.  The save function saves all the changes made to perform keypad calibrations to your PC.  The restore function copies the saved files from the PC to the safe area of the Flow Computer's memory in the unlikely event there is a complete power failure including lithium backup battery.  This area is sometimes called the S: drive.