2000 MKIII SERIES

2000USB
Software User Guide

Reliability, Guaranteed

Logitech Electronics Limited
e: sales@logitechelectronics.com
t: +44 (0)1952 820444
Design and Manufacture of Electronic Systems and Instrumentation. Supply of Sensors and Transducers
www.logitechelectronics.com
Lane End | Church Aston | Newport | Shropshire | TF10 9JJ | UK

2000 Series MK3 instruments can optionally be supplied with a micro-USB port, to enable the unit to be configured and monitored with a PC. The software requires Microsoft Windows (Windows 7 onwards, 32/64) and is available to download free of charge from our website.

Installation

After downloading the software, unzip the folder and run the installer to perform the installation. On Windows 10 upwards no additional drivers are required. For Windows 7, the USB driver must also be installed, which can be found in the "Drivers" folder of the installation directory. Right click on the .inf file and select "install" from the pop-up menu to perform the driver installation.

Connection Tab

On starting the software, it will automatically connect to the 2000 Series instrument, provided that there is a single 2000 Series instrument connected to the PC. It will also connect automatically if a 2000 Series instrument is connected to a USB port while the software is running. This will bypass the Connection tab and display the Readings tab instead. In the case of multiple units being connected to the PC, the Connection tab will instead be displayed, from which the user can select the unit they wish to connect to.

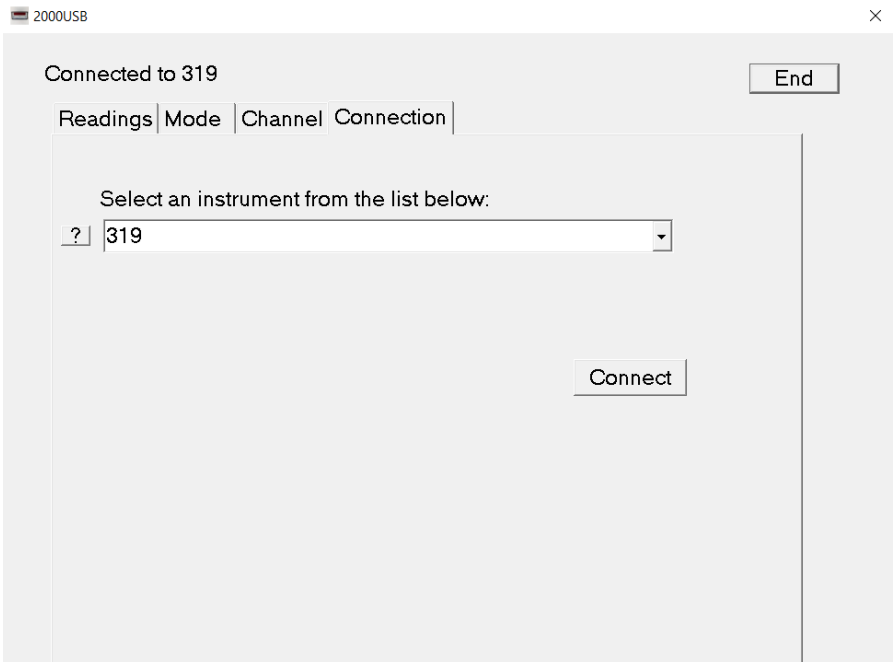

Figure 1: Connection Tab

The instrument's serial number will be displayed as default, in order to identify the unit. This dialog can also be used to define an alternative name for the unit, which will then replace the serial number. To do so, select the unit from the drop-down list, then edit the name of the unit in the box.

To connect to the selected instrument, press the “Connect” button. Clicking on the drop-down arrow while already connected to an instrument will cause the connection to be closed. To reconnect, select the instrument and press the connect button.

Readings

Upon connection, the readings tab will be opened. In this, the current scaled rate for each of the 2000 Series four modes can be observed. The update time for each for the displayed rates is determined by the configured update time for the mode that is active on the unit’s main display. The active mode can also be selected in the software, refer to the mode section for details.

For a mode to display a rate result, it needs to have a non-zero scaling factor configured in the mode settings. Refer to the mode section for further information on configuring the unit. Modes without a valid scaling factor will be disabled in the dialog. All displayed rates are scaled according to the given modes configured scaling factor.

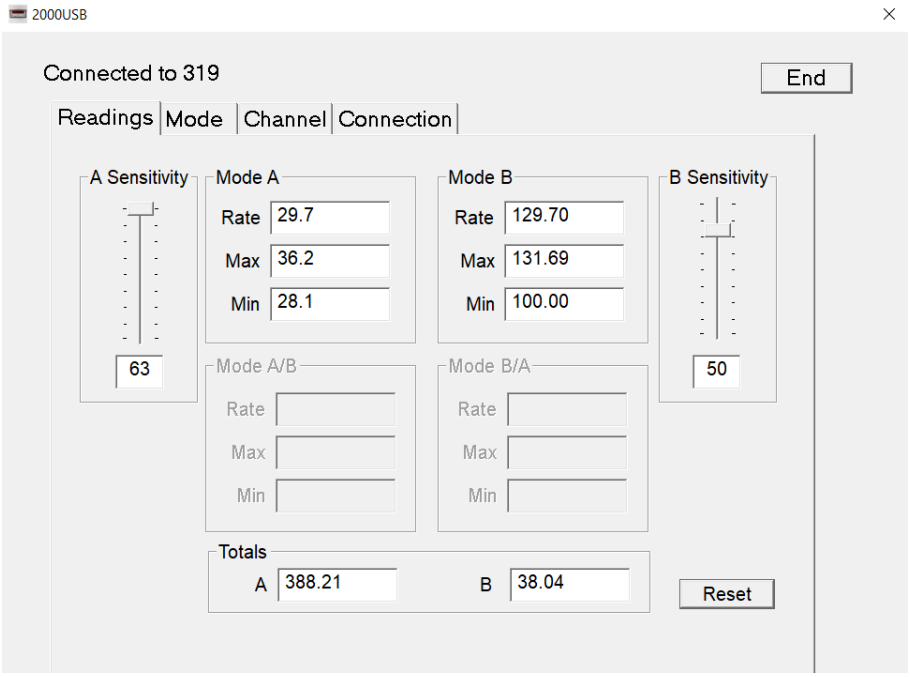

Figure 2: Readings Tab

For each mode the all-time maximum and minimum observed values are also displayed. These values can be reset by pressing the “Reset” button in the dialog. These values may be useful for fault-finding on a system by observing the range of values during a given process.

The readings dialog also allows the sensitivity for both the A and B channels to be set. For the sensitivity slider to be enabled, at least one mode involving that channel must have a valid scaling factor. Otherwise, the slider will be disabled. Moving the slider upwards will increase the sensitivity of the channel’s input, to a maximum setting of 63. Moving the slider down will reduce the sensitivity. The current rate for all configured modes will continue to be displayed as the sensitivity value is altered, providing a live readout with which to adjust the sensitivity to the required level. Refer to the instruments manual for guidance on setting the sensitivity value.

The scaled total pulse count for each channel will also be displayed on the readings tab, provided the channel's total scale setting has a non-zero value. See the channel section for more information on the total scale setting. As with the maximum and minimum rates, the total is reset by pressing the "Reset" button on the readings tab. If the total scaling factor has not been set, the total count box will be disabled for that channel.

Readings will display to the number of display decimal places configured for the mode in question. Within the readings tab the scaled values will be displayed using the full 8 digits supported by the 2000 Series, although the standard 2000 Series display can only display 7 digits. In some cases, the display may therefore read "high", while the value can still be observed within the readings dialog. If the 8 digits have been exceeded, the result will instead be displayed as "high" as on the main display.

Mode Tab

The Mode tab allows access to all of the unit's mode settings. The modes are defined as Frequency A, Frequency B, Ratio A/B and Ratio B/A. For more information on these modes refer to the instruments operating manual.

If the units lock is active, settings cannot be changed until the lock is cleared. This can be done by clicking on the "Locked" checkbox to remove the tick.

Within the main Mode tab, there is an additional tabbed menu, with a tab for each of the available modes on the instrument. Each mode has an individual set of factors, which can be viewed and altered from within this dialog. On first moving to the mode dialog, the settings for the mode currently active on the main display (shown in the Active Mode box) will be displayed. Settings for other modes can be viewed and altered by selecting the relevant mode's tab.

For guidance on the function of each of these settings and the available options, please refer to the instruments operating manual. Each of the available settings can also be configured on the instrument via its display and front panel touch buttons in the usual way. However, while connected via USB with the 2000USB software, it is not possible to enter the set menu or to change modes from the display. Attempting to do so will result in "USB" being shown on the display, which will then revert to run mode.

The settings available within the dialog will depend on the features available on the connected instrument (e.g. alarms, analogue output, digital output). Only settings supported by the instrument will be displayed.

Settings are limited to the number of digits available on the instrument's display. In the case of a standard 2000 series instrument, this will be either 7 digits or 6 digits, depending on whether the 7th display has been selected to be digit or sign. Some instruments (such as the 3000 Series) support negative values for individual settings without requiring a dedicated sign digit. In this case, when entering negative values, the number of available digits is still reduced by one in order to display the negative sign.

Values entered beyond the range of the display's discrimination will automatically be rounded in order to fit within the available digits. When changing from unsigned to signed operation, settings will automatically be rounded to fit within the remaining 6 digits.

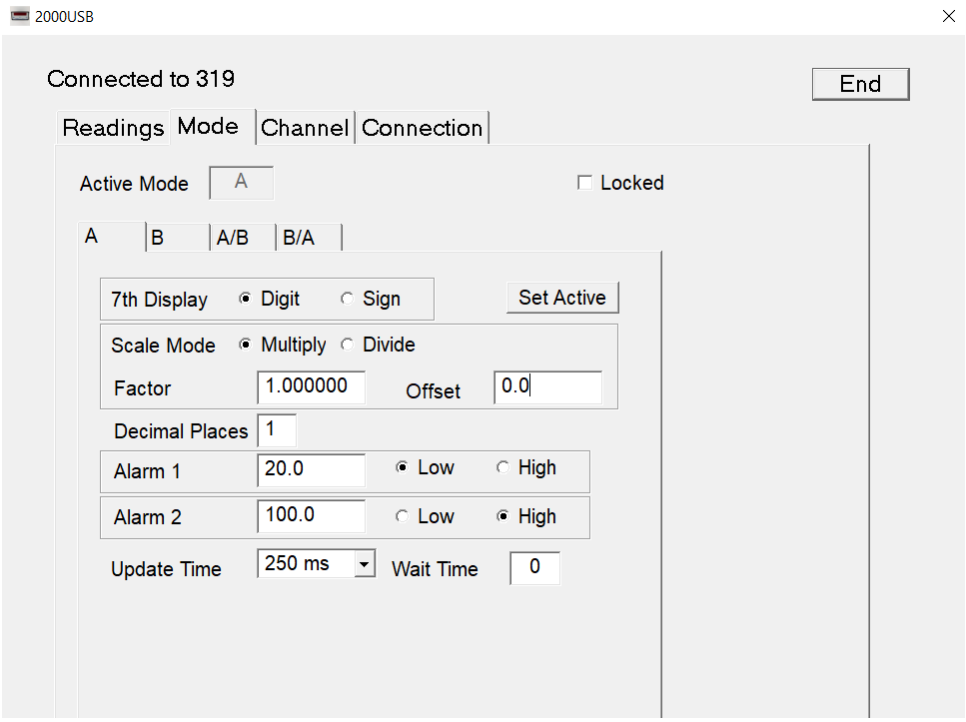

Figure 3: Mode Tab

While scaling factors always use the full discrimination of the display, other factors are limited to the configured number of decimal places. For example, high and low alarms are always limited to the number of decimal places selected for the display of the scaled frequency or ratio. Reducing the number of decimal places to which the scaled frequency is displayed, will result in the related factors being automatically rounded to the new number of decimal places. Refer to the instrument's manual for information on which settings have a limited number of decimal places and which of the settings defines this limit.

To send the updated settings to the instrument simply click on any other tab (another mode or one of the other main tabs e.g. readings).

The active mode on the display can also be changed within the mode tabs dialog. Select the tab for the mode that is to be displayed, then press the "Set Active" button. The display will update to show that the mode has changed, then display the result for the new mode instead. The update time (time over which the scaled frequency/rate is calculated) is determined for all active modes by the update time of the mode currently active on the display (active mode).

Channel Tab

On the channels tab, settings that relate to the A or B channel instead of a frequency mode can be configured. This includes the input type (standard, high sensitivity or reed switch) and total scaling factor. Where a digital output is available, this can also be configured here. The analogue output mode (for units fitted with this option) is set within this dialog. Only one analogue output type can be selected on the unit, but the output, reference and fullscale values will be determined by the active mode. Refer to the instrument's manual for details on the function and options for each of the channel settings.

Whether the unit will multiply or divide the total pulse count by the total scaling factor, will be determined by the Scale Mode setting for the corresponding frequency mode (e.g. for Channel A refer

to the Frequency A Scale Mode setting). If a non-zero total scale factor is set on a channel, the total count readout for that channel will be enabled on the Readings tab. The total scaling factor is limited by the number of available digits on the display. For a standard 2000 Series instrument this will be 7 digits as the scaled total is always positive. The number of decimal places to which the scaled total is displayed is also set in this dialog.

As with the mode settings, in order to send the updated settings to the instrument, simply click on any other tab.

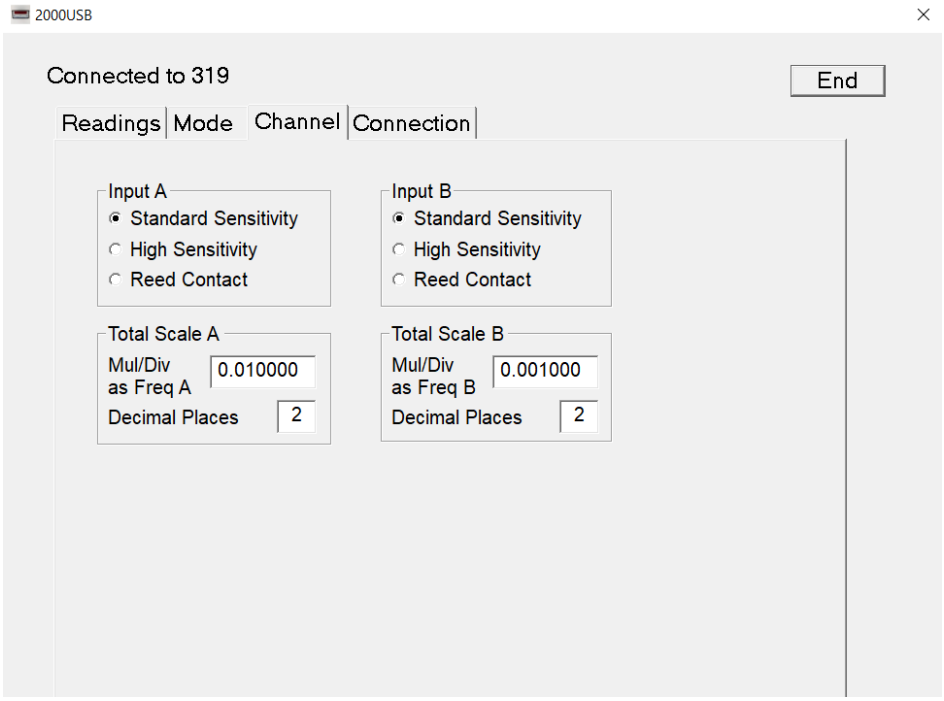

Figure 4: Channel Tab

Data Logging

The 2000 Series USB also provides a data logging function. To start data logging, connect with DTR and RTS set. Send 0x28 to begin logging and 0x26 to stop. The data will be output in comma separated format, for each mode that has a valid scaling factor (e.g. Freq A, Freq B). The update rate is determined by the configured update time for the active mode on the display. While logging, the ability to change modes, settings and all other USB functionality is disabled. Ensure that the stop command is sent to the unit prior to disconnecting the USB. For a version of the USB software with integrated logging functionality please contact our sales office.