

BETA LaserMike

A Brand of NDC Technologies

AccuNet (Continuous) Operator's Manual

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Section 1

Introduction

Introduction

The AccuNet (Continuous) measurement system consists of a PC running Windows XP - Windows 10, an optional Pencom Design relay module, an optional Measurement Computing USB-1024HLS IO module, an optional Measurement Computing USB-QUAD08 quadrature encoder device (or legacy USB-4301 high performance counter) for length input, an optional printer, PC software described herein, and up to four Beta LaserMike Accuscan laser gauges.

Installation

In order to communicate with the optional Measurement Computing IO or length input modules, the AccuNet software requires the installation of the Measurement Computing InstaCal software. Please see the associated sections at the end of this manual.

To install the AccuNet software, run the installation program named AccuNet Install.exe provided on the security dongle. A folder will be created on the C: drive named C:\AccuNet and the executable file (AccuNet.exe), a PDF of the manual (AccuNet (Continuous).pdf), and a file named cbw32.dll will be copied to that folder. Also, a shortcut to the executable file will be placed on the Windows desktop.

For full operation, AccuNet requires the supplied security dongle to be installed in an available USB port on the PC. Alternatively, AccuNet can be registered for a trial period or registered against the legacy serial number (e.g. ANxxx) provided at time of original purchase. If the security dongle is not installed or an unlock code has not been entered, the software will still run to allow for all screens to be viewed. However, communications with the gauge(s) will be disabled.

To run AccuNet, use the shortcut on the Windows desktop, click Run on the Windows Start Menu and select C:\AccuNet\AccuNet.exe, or double click C:\AccuNet\AccuNet.exe from within Windows Explorer.

Running AccuNet for the First Time

The first time AccuNet is run, the software is configured for one active gauge with communications set to Serial and the COM port set to OFF.

Be sure to go to System Setup to select the correct number of gauges connected and Configure Communications to specify the type of communication and parameters for each connected gauge. Refer to the Accuscan Instruction Handbook for configuring communications on the gauges.

Trial or Legacy Registration

Insert security dongle into a USB port and restart software or...

If you have NOT purchased and received a security dongle, you may register for a 30 day trial or (for legacy users) you may register against the serial number provided at time of original purchase. To register, complete the form below and click OK. A file named AccuNet.rgs will be created in the AccuNet folder. Attach the AccuNet.rgs file to an e-mail and send to register@badgerware.net. An e-mail response containing your unlock code will be sent within 24 hours (usually much less!).

If you have a legacy license, enter the serial number (e.g. ANxxx) printed on the CD or provided via e-mail. If you are registering for a 30 day trial, enter TRIAL as the serial number.

To unlock the software for full use, click Menu->Unlock and enter the unlock code when prompted.

Registration info

Name:	Joe Customer
Company:	ABC Corp.
Address:	8001 Technology Blvd.
Address:	Dayton, OH 45424
Address:	
Address:	
E-mail:	joe@abccorp.com
Phone:	937.555.1212
Fax:	937.555.1213
Product:	AccuNet Version 2.10
Serial No:	AN001
Lock No:	4126 7933 2126 7344

OK Cancel

For full operation, AccuNet requires the supplied security dongle to be installed in an available USB port on the PC. Alternatively, AccuNet can be registered for a trial period or registered against the legacy serial number (e.g. ANxxx) provided at time of original purchase. If the security dongle is not installed or an unlock code has not been entered, the software will still run to allow for all screens to be viewed. However, communications with the gauge(s) will be disabled.

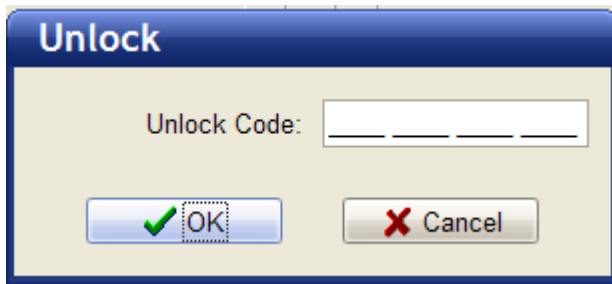
To register, complete the form and click OK. A file named AccuNet.rgs will be created in the AccuNet folder. Attach the AccuNet.rgs file to an e-mail and send to register@badgerware.net. An e-mail response containing the unlock code (for that particular computer) will be sent within 24 hours. The actual response time will usually be much less than 24 hours depending on what time of day (E.S.T.) the registration is received.

If registering against a legacy license, enter the serial number provided at time of original purchase. If registering for a 30 day trial, enter TRIAL as the serial number

Click Cancel to postpone registration and close the form without creating the AccuNet.rgs file.

To redisplay the form without having to restart the program, click Registration on the AccuNet Menu.

Unlock Code Entry

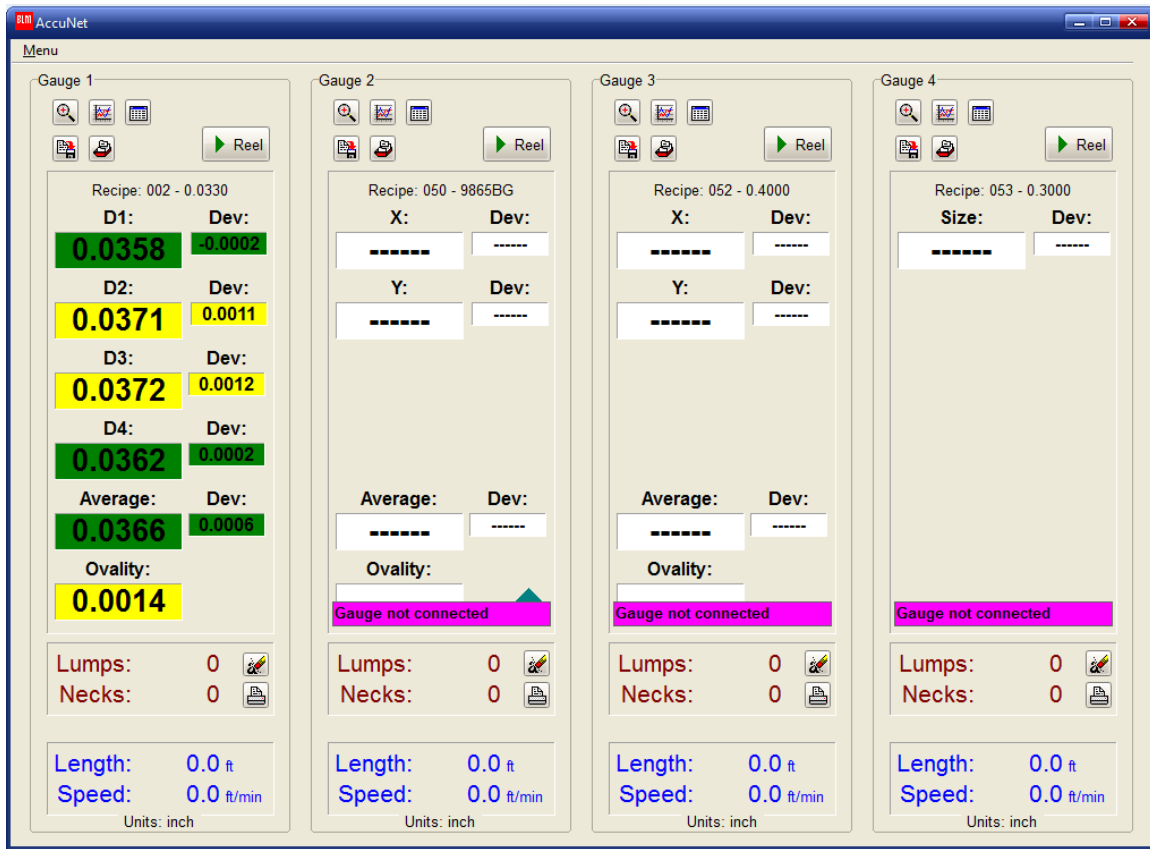


To display the Unlock window, click Unlock on the AccuNet Menu. To unlock the software, enter the unlock code received in the registration e-mail response and click OK.

Click cancel to close the window without attempting to unlock.

Section 2

AccuNet Main Window



The AccuNet Main Window that is displayed varies depending on several configuration settings (e.g. Number of Gauges, Gauge Type, and Product Type). In all cases, there is a section within the window that will display data for each active gauge.

At the top of each data section, a configurable label identifying the gauge (or production line) is displayed. The labels can be changed by double clicking within the inner panels on each tab on the Configure Communications window.

Within each data section, measurements are displayed. Measurements within limits are displayed in green. Measurements outside the warning limits but within the reject limits are displayed in yellow. Measurements outside the reject limits are displayed in red.

If a gauge error (e.g. No Part, Obscured, Dirty, Gauge not connected) occurs, a purple error box will be displayed at the bottom of the data section and measurements for that gauge will stop. Measurements for the remaining gauges will continue. Most gauge errors are transmitted to the PC from the Accuscan (e.g. No Part, Obscured, Dirty) and need to be addressed locally at the gauge head. "Gauge not connected" indicates that communications between the Accuscan and the AccuNet software have been lost. That condition would most likely occur if power to the Accuscan was lost or the serial or Ethernet cable between the Accuscan and the PC was disconnected. If that occurs, resolve the communications issue and then double click the error box, click Go, or restart the software.

If Scan Processing is set to Flaw Detection and the flaw detection Mode is set to Absolute or Relative within the recipe, Lump and Neck count values will be displayed along with Clear and Print buttons.

If Length Input Module is set to Installed, length and line speed values will be displayed at the bottom of each data section. **Note:** Click within the Length and Speed panel to clear the length and speed data.

Tool Buttons

Tool Buttons are located along the top left of the Main Window and along the top of each data section.

Zoom	Click Zoom to display an enlarged view of the data section.
Trend Chart	Click Trend Chart to display a trend chart of the X, Y, and Average diameters in the data section.
SPC	Click SPC to display the SPC data window for the X, Y, Average, and Ovality values in the data section.
Recipe	The currently selected recipe is displayed at the top of each data section. Click the Recipe button located at the top of the data section to select or modify the recipe for that gauge.
Start/Stop Reel	When Measurement Mode is set to Continuous for a gauge, a Start / Stop Reel button will be displayed above the data section for that gauge. Click Start Reel at the start of a reel to clear data and turn on data logging and SPC data collection. Click Stop Reel at the end of a reel to turn off data logging and SPC data collection and generate printed reports.
Go	When Measurement Mode is set to Part for a gauge, a Go button will be displayed above the data section for that gauge. Click Go to capture an individual measurement. Note: Pressing the F1 key will also initiate a Go for Gauge 1, F2 for Gauge 2, F3 for Gauge 3, and F4 for Gauge 4.
Exit	Click Exit to exit from AccuNet.

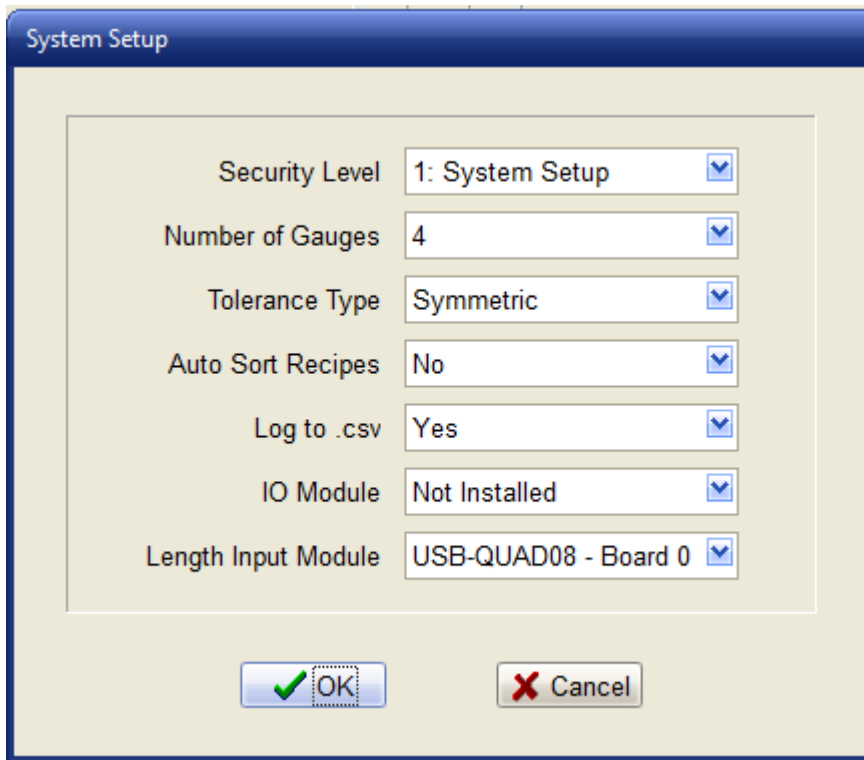
Menu

To access the AccuNet Menu, click Menu in the upper left hand corner of the Main Window.

System Setup	Click System Setup to display the System Setup window.
Gauge Setup	Click Gauge Setup to display the Gauge Setup window.
Security	Click Security to enable or disable security. The current level of security is displayed in parentheses to the right of the Security label on the Menu.
Comms	Click Communications to display the Configure Communications window.
I/O Setup	Click I/O Setup to display the I/O Setup window.
Header Setup	Click Header Setup to display the Header Setup window.
Exit	Click Exit to exit from AccuNet.
About	Click About to display the AccuNet version information.

Section 3

System Setup



Click System Setup on the Menu to display the System Setup window.

Security Level

Security Level specifies the level of security when the software is locked.

- | | |
|----------------------------|--|
| 1. System Setup | The user can view but not modify the System and Communications setup. |
| 2. Gauge Setup | The user can view but not modify the System, Communications, and Gauge setup. |
| 3. Recipe Setup | The user can view but not modify the System, Communications, and Gauge setup. The user can view and change recipes but not modify recipe settings. |
| 4. Recipe Selection | The user can view but not modify the System, Communications, and Gauge setup. The user can view but not change or modify recipe settings. |

Number of Gauges

Number of Gauges specifies the number of Accuscan gauges connected. The choices are 1, 2, 3, and 4.

Tolerance Type

Tolerance Type specifies how the tolerance settings are entered within the recipes. The choices are Symmetric or Split.

Auto Sort Recipes

Auto Sort Recipes specifies whether recipes will appear in the drop down selection box as originally entered or if the order is to be automatically sorted based on recipe name / part number.

Log to .csv

Log to .csv specifies whether logged data should be saved to a comma separated file (which can be loaded into Excel) or directly to an Excel formatted file. When logging data at higher rates (e.g. Data Logging Interval < 5 seconds), Log to .csv should be set to YES.

IO Module

IO Module specifies whether the optional USB-1024HLS IO module is installed or not. When setting to Installed, be sure to also specify the board number that was assigned by the Measurement Computing InstaCal software. When set to Not Installed, the IO Setup selection on the AccuNet Menu is hidden.

Length Input Module

Length Input Module specifies whether an optional Measurement Computing length input module is installed or not and which type (USB-QUAD08 or the legacy USB-4301). When setting to installed, be sure to specify both the type and the board number that was assigned by the Measurement Computing InstaCal software. When set to Not Installed, the length and line speed values are not displayed with the data and length related configuration settings are hidden.

Section 4

Gauge Setup

Gauge Setup

Gauge 1 Gauge 2 Gauge 3 Gauge 4

Gauge Type: Quad Plane

Measurement Mode: Continuous

Auto Name Log File: Yes

Data Logging Interval: 50.0 ft

SPC Sample Interval: 50.0

Print on Reel End: Yes

Minimum Line Speed: 5.0 ft/min

Length Units: feet

Pulses/foot: 60

Send Offset(s): No

Scan Processing: Flaw Detection

Query Rate: 500 msec

Samples to Average: 20

Units & Resolution: X.1234 in

☐ Fixed Res Gauge

☐ AS1000 Series

OK Cancel

Click Gauge Setup on the Menu to display the Gauge Setup window. Gauge settings are configurable for each active gauge.

Gauge Type

Gauge Type specifies the type of gauge connected. The choices are Single Plane, Dual Plane, or Quad Plane.

Product Type

Product Type specifies the type of product to be measured with a Dual Plane gauge. The choices are Round or Profile. When Round is selected, tolerance configuration is provided for Diameter and Ovality. When Profile is selected, tolerance configuration is provided for each axis of the gauge.

Send Offset(s)

Send Offsets specifies whether the programmed recipe offset values are to be transmitted to the gauge or applied within the AccuNet software.

Note: Not all Beta LaserMike gauges have the ability to support offsets locally. For gauges that do not have that ability, set Send Offsets to No so that the AccuNet software applies any offset to the measurement value coming from the gauge.

Scan Processing

Scan Processing specifies the setting for the software option switch on the gauge. The choices are Normal, STAC Logic, and Flaw Detection. The setting of this parameter is transmitted to the gauge via code {z} or database cell 28 for a quad plane gauge.

When set to Normal, measurements are calculated by taking a running average per the setting of the Samples to Avg parameter.

STAC Logic is used for measuring the outer dimensions of products that are stranded, twisted, armored, or corrugated. When set to STAC Logic, STAC Logic configuration parameters are displayed within the Recipe Setup window.

Flaw Detection is used to detect faults in the measured product. The gauge analyzes the measurements taken after each scan and compares them to high and low limits entered by the user. When set to Flaw Detection, Flaw Detection configuration parameters are displayed within the Recipe Setup window.

Note: Not all Beta LaserMike gauges have the ability to support STAC Logic and/or Flaw Detection. For those that do, it is only available if purchased with the gauge.

Query Rate

Query Rate specifies the rate at which the gauge will be queried for data. It can be set from 50 msec to 1000 msec.

Samples to Average

Samples to Average specifies the number of scans for the gauge to average. The setting of this parameter is transmitted to the Accuscan.

Units & Resolution

Units & Resolution specifies the measurement units and displayed resolution. The choices are X.12 mm, X.123 in, X.123 mm, X.1234 in, X.1234 mm, X.12345 in, and X.123 μ m. The setting of this parameter is transmitted to the Accuscan. The specified units are displayed at the bottom of each data section on the Main Window.

Note: AccuNet was designed to work with the AS1000, AS4000, AS5000, and AS6000 series of gauges which allow for programmable resolution. However, AccuNet will also work with fixed resolution LD gauges or even an analog gauge connected to a PrecisionPro 2000 configured for LD/MFG mode. When

connected to a gauge with fixed resolution, the AccuNet software will properly set the units of the connected gauge, but it is up to the user to select a Units & Resolution setting that matches the fixed resolution of the gauge.

Fixed Res Gauge

Check the Fixed Res Gauge box to indicate that an LD gauge with fixed resolution is connected.

AS1000

Check the AS1000 Series box to indicate that an AS1000 series gauge is connected. The AS1000 series gauges have a different units and resolution coding than the AS4000, AS5000, and AS6000 series gauges.

Measurement Mode

Measurement Mode specifies whether measurement data is to be updated continuously or only upon triggering via a Go button. The choices are Continuous or Part. When Continuous is selected, a Start/Stop Reel button will be displayed above the data section for the gauge. When Part is selected, a Go button will be displayed above the data section for the gauge.

Auto Name Log File

Auto Name specifies whether log files are to be named automatically (per Gauge / Line Name, Recipe / Part Number, date, and time) or if the operator is to be prompted to enter the name of the log file when data logging is turned on. **Note:** When set to name automatically, a Folder button is displayed. Click the Folder button to select the local or network folder where log files are to be saved.

Data Logging Interval

Data Logging Interval specifies the interval (in seconds or length) between writes to the log file when Data Logging is active.

Note: Set to 0 seconds to log every reading.

Note: When Measurement Mode is set to Part, this setting will be ignored. When Data Logging is active, data will be logged with each click of the Go button.

SPC Sample Interval

SPC Sample Interval specifies the interval (in seconds or length) between SPC samples when SPC is active.

Note: Set to 0 seconds to sample every reading.

Note: When Measurement Mode is set to Part, this setting will be ignored. When SPC is active, an SPC sample will be collected with each click of the Go button.

Print on Reel End

Print on Reel End specifies whether printed reports are to be automatically printed when the Stop Reel button is clicked. If a printer is not connected, this parameter should be set to No.

Minimum Line Speed

Minimum Line Speed specifies the minimum allowable line speed for data logging and SPC updates. If the measured line speed falls below this value, data logging and SPC updates will be suspended as long as the condition exists. “Line speed too slow” will be displayed on the Main, Zoom, and SPC windows for the affected gauge/line as an indication of the condition. **Note:** Setting the Minimum Line Speed value to 0.0 will disable this feature.

Length Units

Length Units specifies the units for length. The choices are feet and meters.

Pulses/Length

Pulses/Length specifies the number of pulses generated per unit length of product movement sent to the length input module by the connected length encoder. **Note:** If left at the default value of 0, no updates to Length or Speed will occur.

Quadrature Mode

Quadrature Mode specifies the encoder counting mode. The choices are OFF (a non-quadrature or pulse encoder is connected), X1 (one count per quadrature cycle), X2 (two counts per quadrature cycle), and X4 (four counts per quadrature cycle).

Section 5

Recipe Setup

Click the Recipe button located at the top of the data section to select or modify the recipe for that gauge.

The Recipe Setup window will vary depending on the settings of the Tolerance Type, Gauge Type, Product Type, and Scan Processing parameters.

Symmetric

Recipe Selection & Setup: Gauge 1

Recipe: 045 - 9865BG

Search:

Part Number: 9865BG

Diameter Tolerance Checking

Nominal	0.0200
Warning	0.0025
Reject	0.0050
Offset	0.0000

Ovality Tolerance Checking

Warning	0.0025
Reject	0.0050

STAC Logic

STAC Mode	Yes
Measurement Period	0.1
Form Factor	0.5000
X Source	Maximum
Y Source	Maximum

OK Save Cancel

Recipe Select the recipe to load or modify.

Search As a shortcut, enter a recipe name (or part number) and click the Search button to load a recipe without having to look for it in the drop down list above. **Note:** The search text must be an exact match of the stored recipe name.

Name	Enter an optional name, part number, or other identifier for the recipe.
	Note: The default label for this parameter is “Name”, but it can be changed by clicking on the label and entering a new label. In the above example, it has been changed to “Part Number”.

Diameter Tolerance Checking

Nominal	Enter the Nominal diameter.
Warning	Enter the Warning Tolerance for diameter. The Warning Tolerance is added to and subtracted from the Nominal to determine the Upper and Lower Warning Limits.
Reject	Enter the Reject Tolerance for diameter. The Reject Tolerance is added to and subtracted from the Nominal to determine the Upper and Lower Reject Limits.
Offset	Enter an optional offset to be added to the diameter measurement from the gauge. The offset may be added because of a change in product size between the measurement and the final size, such as shrinkage due to cooling. The offset can be positive or negative. Note: Depending on the setting of Send Offsets within Gauge Setup, the offset is either applied locally at the gauge or applied within the AccuNet software.
	When an recipe with a non-zero offset value is selected for a gauge,  will be displayed within the gauge window for that gauge.

Ovality Tolerance Checking

Nominal	Enter the Nominal Ovality.
Warning	Enter the Warning Tolerance for Ovality. The Warning Tolerance is added to the Nominal to determine the Upper Warning Limit.
Reject	Enter the Reject Tolerance. The Reject Tolerance is added to the Nominal to determine the Upper Reject Limits.

STAC Logic

STAC Mode	Set STAC Mode to Yes to display all of the STAC Logic configuration parameters and configure the gauge to operate in STAC Logic mode. Set STAC Mode to No, to configure the gauge for normal diameter averaging mode.
Meas Period	Enter the Measurement Period. The Measurement Period is used to set the STAC measurement time on the gauge. See the gauge’s Operator’s Manual for more details.

Form Factor	Enter the Form Factor. Form Factor is used to set the STAC form factor parameter of the gauge. See the gauge's Operator's Manual for more details.
Source	Select the source for each dimension: Mean, Maximum, or Minimum.
OK	Click OK to save any changes and load the selected recipe.

Flaw Detection

Mode	Select the mode for flaw detection. When set to Off, flaw detection will be disabled. When set to Absolute, the Lump Threshold is added to the Nominal to determine the High Limit and the Neck Threshold is subtracted from the Nominal to determine the Low Limit. When set to Relative, the Lump Threshold is added to the current measured size to determine the High Limit and the Neck Threshold is subtracted from the current measured size to determine the Low Limit. Flaw Mode is transmitted to the gauge.
Threshold Type	Select the type of thresholds to be used. When set to Combined, the gauge uses the same thresholds for both flaw detection and tolerance checking. When set to Separate, the gauge uses separate thresholds for flaw detection and tolerance checking. When set to Ribbon, the gauge uses separate thresholds for each dimension.
Thresholds	Depending on the setting of Threshold Type, entry for various thresholds is provided. Note: The Nominal and Reject Tolerance values (and, if enabled, STAC Logic values or Flaw Detection values) are transmitted to the gauge when a new recipe is selected and/or whenever communications with a gauge are established.
Min Alarm Time	Enter the minimum alarm on time. When alarming via the optional IO module, this is the amount of time an alarm will stay active after a flaw has been detected.
Save	Click Save to save any changes to the selected recipe.
Cancel	Click Cancel to discard any changes to the selected recipe.

Split

Recipe Selection & Setup: Gauge 1

Recipe: 045 - 9865BG

Search: 

Name: 9865BG

Diameter Tolerance Checking

+ Reject	0.0050
+ Warning	0.0025
Nominal	0.0200
- Warning	0.0025
- Reject	0.0050
Offset	0.0000

STAC Logic

STAC Mode	Yes
Measurement Period	0.1
Form Factor	0.5000
X Source	Maximum
Y Source	Maximum

Ovality Tolerance Checking

+ Reject	0.0050
+ Warning	0.0025

OK Save Cancel

The only difference between the Recipe Setup window when Tolerance Type is set to Split instead of Symmetric is the Diameter Tolerance Checking section.

+ Reject Enter the Upper Reject Tolerance for diameter. The Upper Reject Tolerance is added to the Nominal to determine the Upper Reject Limit.

+ Warning Enter the Upper Warning Tolerance for diameter. The Upper Warning Tolerance is added to the Nominal to determine the Upper Warning Limit.

Nominal Enter the Nominal diameter.

- Warning** Enter the Lower Warning Tolerance for diameter. The Lower Warning Tolerance is subtracted from the Nominal to determine the Lower Warning Limit.

- Reject** Enter the Lower Reject Tolerance for diameter. The Lower Reject Tolerance is subtracted from the Nominal to determine the Lower Reject Limit.

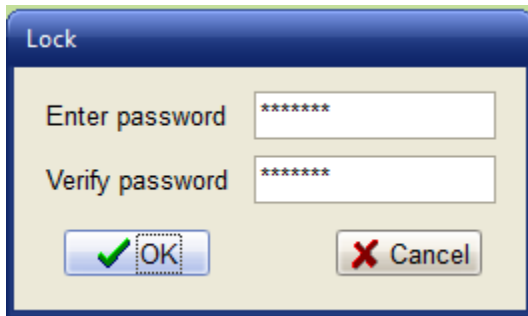
Section 6

Security

The AccuNet software has four levels of security. The security level is specified on the System Setup window.

Security status is saved to disk and retrieved each time AccuNet is run.

Enabling Security

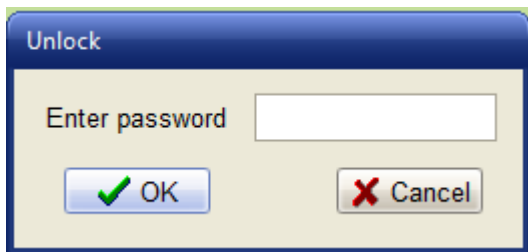


When Security is disabled, click Security on the Menu to display the Lock prompt.

To enable Security, enter a password (up to 8 alphanumeric characters), verify the password, and click OK.

To exit from the Lock prompt without enabling Security, click Cancel.

Disabling Security



When Security is enabled, click Security on the Menu to display the Unlock prompt.

To disable Security, enter the same password used to enable Security and click OK.

To exit from the Lock prompt without disabling Security, click Cancel.

Section 7 Configure Communications

The screenshot shows the 'Configure Communications' window for Gauge 1. The 'Ethernet' radio button is selected, and the IP address is set to 192.168.10.201. The 'Serial' section is also visible with settings for COM Port (Off), Baud Rate (9600), Data Bits (7), and Parity (none).

Click Communications on the Menu to display the Configure Communications window. Communications settings are configurable for each active gauge.

The displayed settings are for the PC. These settings must match those of the Accuscan.

Communications with each active gauge can be via an Ethernet or serial connection. Click the Ethernet radio button to select Ethernet or click the Serial radio button for serial.

Ethernet

IP Address Specifies the IP address of the connected Accuscan.

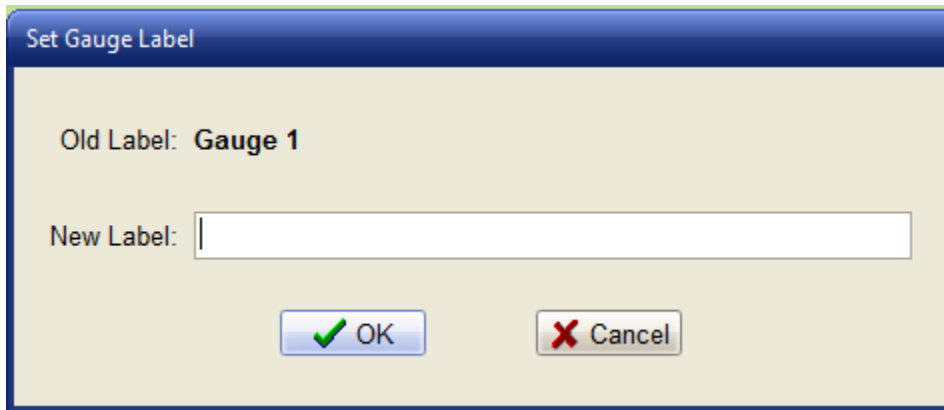
Serial

COM Port Specifies the COM Port of the PC to which the Accuscan is connected.

Baud Rate	Specifies the baud rate of the serial communication between the PC and the Accuscan (1200, 2400, 4800, 9600, 19200, 38400, 5600, 115200).
Parity	Specifies the parity for the serial communication between the PC and the Accuscan (none, odd, or even).
Data Bits	Specifies the number of data bits for the serial communication between the PC and the Accuscan (7 or 8).
Stop Bits	Specifies the number of stop bits for the serial communication between the PC and the Accuscan (1 or 2).
OK	Click OK to accept changes.
Cancel	Click Cancel to discard changes.

Set Gauge Label

The label that identifies a gauge (or production line) that is displayed throughout the AccuNet software can be changed. Double click within an inner panel on each tab to display the Set Gauge Label window.



Old Label	The current label is displayed.
New Label	Enter the new label.
OK	Click OK to accept the new label.
Cancel	Click Cancel to discard changes and maintain the current label.

Section 8

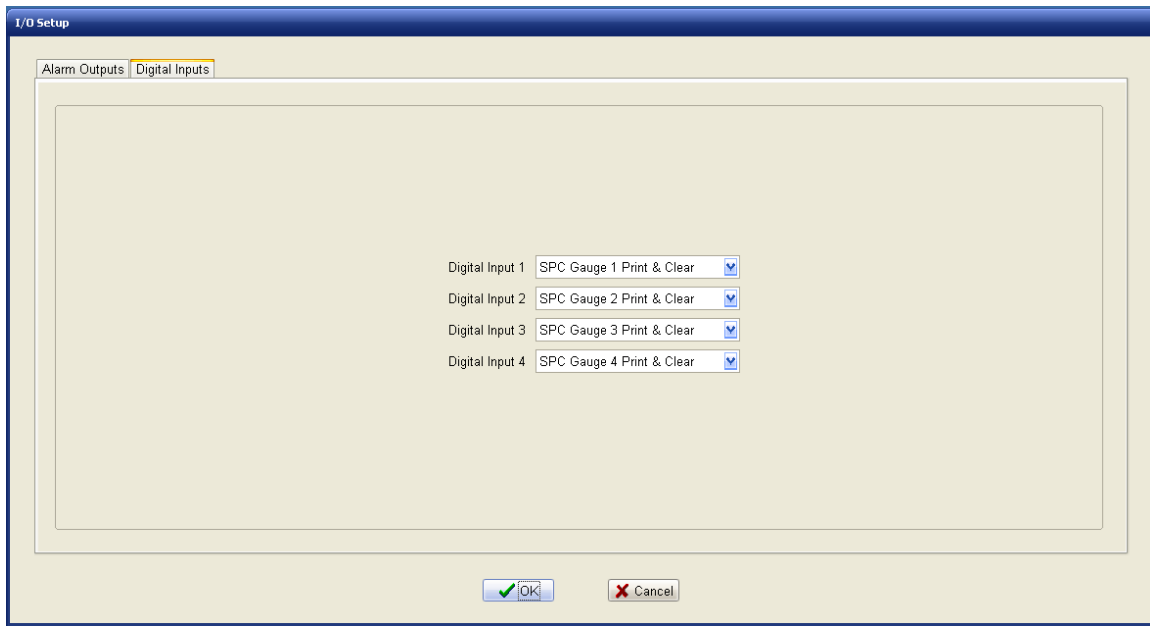
I/O Setup

Click I/O Setup on the Menu to display the I/O Setup window. Alarm outputs and digital inputs are provided via the Measurement Computing USB-1024HLS module.

Alarm Output	Setting
Alarm Output 1	Reject: Gauge 1 - Dim 1
Alarm Output 2	Reject: Gauge 1 - Dim 2
Alarm Output 3	Reject: Gauge 1 - Dim 3
Alarm Output 4	Reject: Gauge 1 - Dim 4
Alarm Output 5	Reject: Gauge 1 - Average
Alarm Output 6	Reject: Gauge 1 - Ovality
Alarm Output 7	Scanning Flaw: Gauge 1 - Lump
Alarm Output 8	Scanning Flaw: Gauge 1 - Neck
Alarm Output 9	Scanning Flaw: Gauge 1 - Either
Alarm Output 10	Error: Gauge 1
Alarm Output 11	Reject: Gauge 2 - Dim 1
Alarm Output 12	Reject: Gauge 2 - Dim 2
Alarm Output 13	Reject: Gauge 2 - Dim 3
Alarm Output 14	Reject: Gauge 2 - Dim 4
Alarm Output 15	Reject: Gauge 3 - Average
Alarm Output 16	Reject: Gauge 2 - Ovality
Alarm Output 17	Scanning Flaw: Gauge 2 - Lump
Alarm Output 18	Scanning Flaw: Gauge 2 - Neck
Alarm Output 19	Scanning Flaw: Gauge 2 - Either
Alarm Output 20	Error: Gauge 2

Click the Alarm Outputs tab to display the Alarm Outputs setup panel. There are 20 configurable alarm outputs. The choices for each are Reject: Gauge 1 – Dim 1 through Gauge 4 – Ovality, Over Reject: Gauge 1 – Dim 1 through Gauge 4 – Ovality, Under Reject: Gauge 1 – Dim 1 through Gauge 4 – Average, Warning: Gauge 1 – Dim 1 through Gauge 4 - Ovality, Over Warning: Gauge 1 – Dim 1 through Gauge 4 – Ovality, Under Warning: Gauge 1 – Dim 1 through Gauge 4 – Average, Error: Gauge 1 through Gauge 4, Error: Any Gauge, Scanning Flaw: Gauge 1 – Lump through Gauge 4 – Lump, Scanning Flaw: Gauge 1 – Neck through Gauge 4 – Neck, and Scanning Flaw: Gauge 1 – Either through Gauge 4 - Either.

Depending on the Gauge Type, Dim 1 will be either Size, X or D1. Dim 2 will be with Y or D2.



Click the Digital Inputs tab to display the Digital Inputs setup panel. There are 4 configurable digital inputs. The choices for each are SPC On/Off: Gauge 1 through Gauge 4, SPC Clear: Gauge 1 through Gauge 4, SPC Print: Gauge 1 through Gauge 4, SPC Print & Clear: Gauge 1 through Gauge 4, Pause SPC and Data Logging for Gauge 1 through Gauge 4 and Reel Stop & then Start: Gauge 1 through Gauge 4.

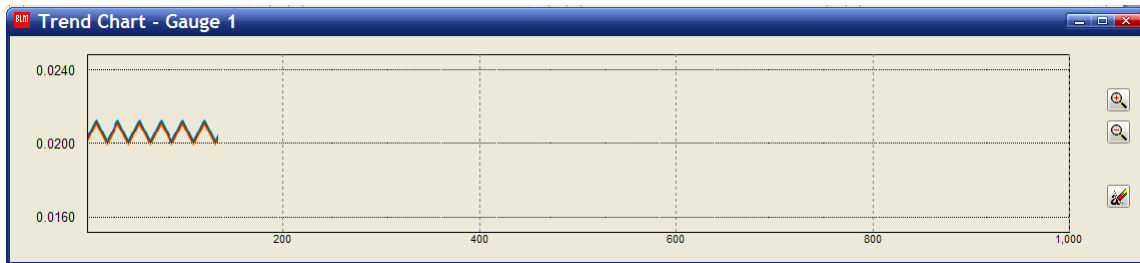
The Pause SPC and Data Logging selections configure the software to suspend SPC and data logging updates for the specified gauge as long as the input is triggered. Once the input is deactivated, updates will resume. "Paused" will be displayed on the Main, Zoom, and SPC windows for the specified gauge as an indication of the condition.

OK Click OK to accept changes to the I/O Setup.

Cancel Click Cancel to discard changes to the I/O Setup.

Section 9

Trend Charts



Click Trend Chart from a data section on the Main Window to display a trend chart for the diameters in that data section.

+ Reject Limit The Upper Reject Limit for the gauge is displayed at the top of the left hand axis and is indicated by a dotted line across the top of the chart. The upper limit of the chart is equal to the Nominal plus 120% of the upper reject tolerance value.

Nominal The Nominal for the gauge is displayed in the center of the left hand axis and is indicated by a dotted line across the center of the chart.

- Reject Limit The Lower Reject Limit is displayed at the bottom of the left hand axis and is indicated by a dotted line across the bottom of the chart. The lower limit of the chart is equal to the nominal minus 120% of the lower reject tolerance value.

Data Points The range of currently displayed data points is displayed along the bottom axis. Click the + button at the right of the chart to increase the number of displayed data points. Click the – button at the right of the chart to decrease the number of displayed data points.

Clear Click Clear to clear the trend data displayed on the chart. Trend data is automatically cleared whenever a new recipe is loaded for the gauge.

Scroll Right click within the chart and drag left or right to scroll through the data.

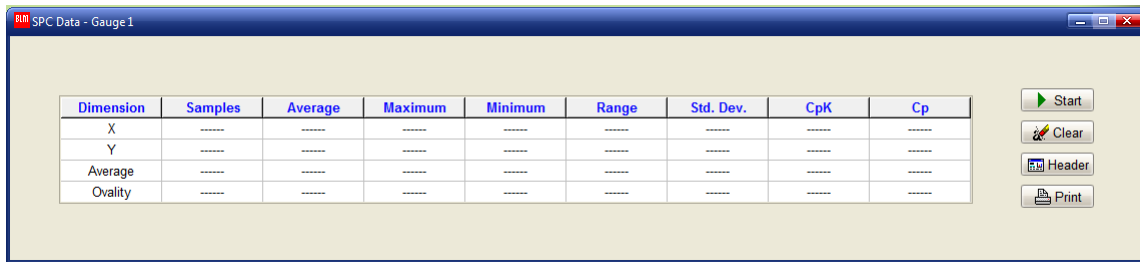
Point ID To display the strand number, diameter, date, and time for a point on the chart, left click on that point within the chart.

The trend chart will display a maximum of 15,000 data points. When the maximum is reached, points 5001 through 15000 are copied to points 1 through 10,000. Data then continues to be collected starting at point 10,001.

Note: When Product Type is set to Profile, the X size is plotted against the left hand axis and the Y size is plotted against the right hand axis.

Section 10

SPC Data



Click SPC from a data section on the Main Window to display the SPC Data window for the diameter and ovality values in that data section. A table containing the SPC data is displayed.

- Dimension** The dimension label is displayed.
- Samples** The number of samples collected for the data value is displayed.
- Average** The average of all samples collected for the data value is displayed.
- Maximum** The maximum value of all samples collected for the data value is displayed.
- Minimum** The minimum value of all samples collected for the data value is displayed.
- Range** The difference between the Maximum and Minimum for the data valued is displayed.
- Std. Dev.** The standard deviation of all samples collected for the data value is displayed.
- CpK** The CpK of all samples collected for the data value is displayed.

$$Cpk = \text{the smaller of:}$$

$$(Upper\ Limit - Average) / (3 * Std\ Dev) \text{ or }$$

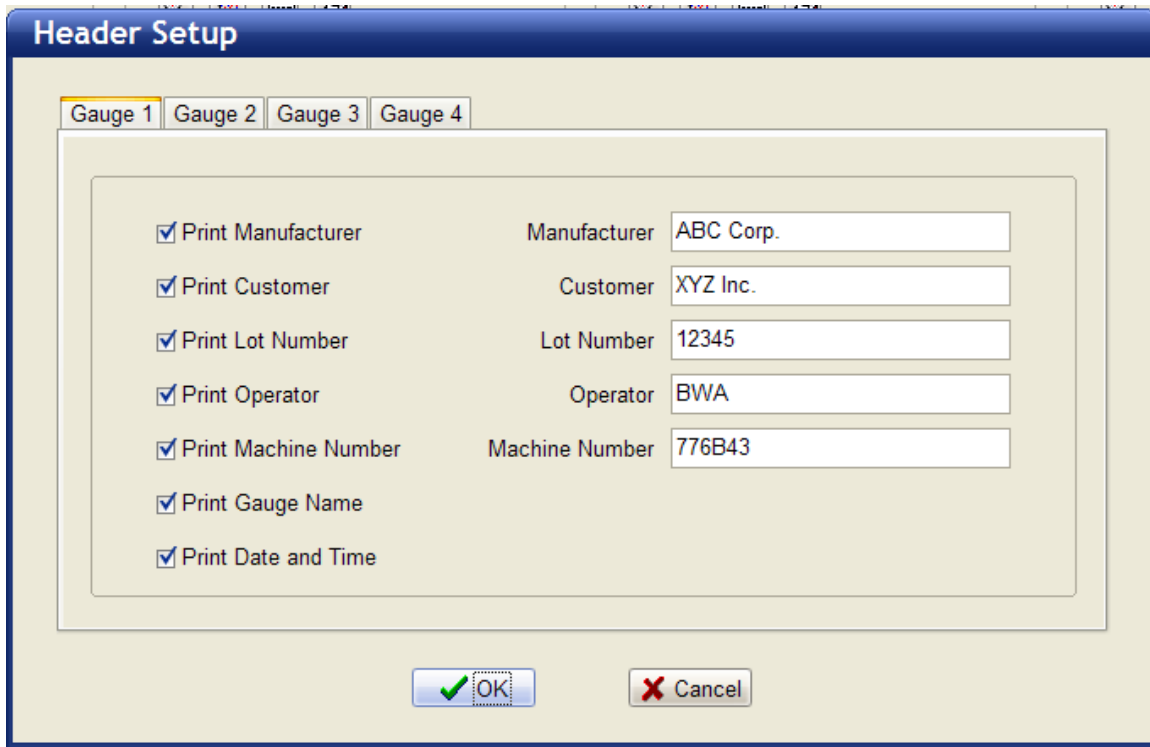
$$(Average - Lower\ Limit) / (3 * Std\ Dev)$$
- Cp** The Cp of all samples collected for the data value is displayed.

$$Cp = (Upper\ Limit - Lower\ Limit) / (6 * Std\ Dev)$$

 For Ovality:
$$CpK = Cp = (Upper\ Limit - Average) / (3 * Std\ Dev)$$
- Start/Stop** Click Start/Stop to start or stop SPC data collection for the gauge. SPC data is collected per the setting of the SPC Sample Interval.
- Clear** Click Clear to clear SPC data for the gauge.
- Header** Click Header to display the Header Setup window.
- Print** Click Print to print a summary report for the gauge.

Section 11

Header Setup



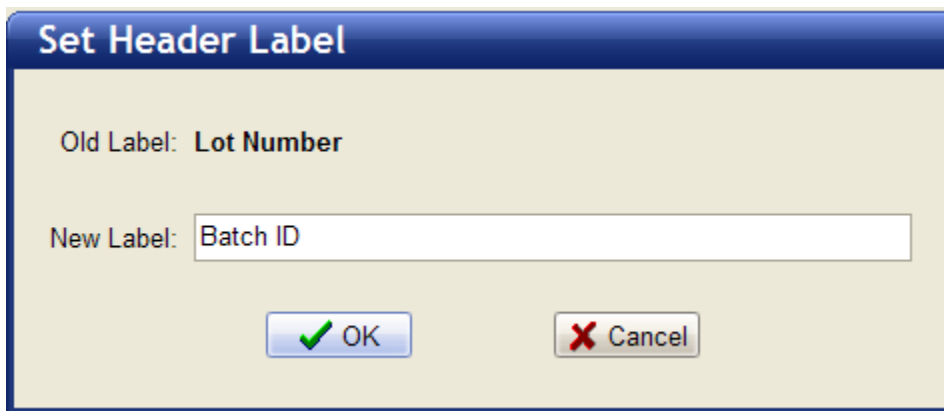
Click Header Setup from the Menu on the Main Window or the Header button on an SPC Data window to display the Header Setup window. Header settings are configurable for each active gauge.

Print Manufacturer	Check Print Manufacturer to print the manufacturer name on the SPC summary report.
Print Customer	Check Print Customer to print the customer name on the SPC summary report.
Print Lot Number	Check Print Lot Number to print the lot number on the SPC summary report.
Print Operator	Check Print Operator to print the operator name or number on the SPC summary report.
Print Machine Number	Check Print Machine Number to print the machine number on the SPC summary report.
Print Gauge Name	Check Print Gauge Name to print the gauge or production line name on the SPC summary report.

Print Date and Time	Check Print Date and Time to print the date and time on the SPC summary report.
Manufacturer	Enter the manufacturer name.
Customer	Enter the customer name.
Lot Number	Enter the lot number.
Operator	Enter the operator name or number.
Machine Number	Enter the machine number.
OK	Click OK to accept changes.
Cancel	Click Cancel to discard changes.

Set Header Label

The Lot Number, Operator, and Machine Number labels are user configurable. On the Header Setup window, click the text of the label to be changed to display the Set Header Label window.

A screenshot of a software dialog box titled "Set Header Label". The dialog has a blue header bar with the title in white. The main area has a light beige background. It contains two labels: "Old Label:" followed by the text "Lot Number", and "New Label:" followed by a text input field containing "Batch ID". At the bottom, there are two buttons: "OK" with a green checkmark icon and "Cancel" with a red X icon.

Old Label	The current label is displayed.
New Label	Enter the new label.
OK	Click OK to accept the new label.
Cancel	Click Cancel to discard changes and maintain the current label.

Section 12

SPC Summary Reports

The Header settings described above determine the format of the header printed at the top of the report.

The general format of the summary report is:

Beta LaserMike AccuNet – Summary Report

ABC Corp.

Customer: XYZ International

Lot Number: 18623

Operator: Smith

Machine Number: 278

Gauge 1

Printed: 09/28/2007 5:30:35 PM

Diameter Upper Spec: 6.178

Diameter Lower Spec: 6.158

Ovality Upper Spec: 0.020

Dimension	Samples	Average	Maximum	Minimum	Range	Std Dev	CpK	Cp
X	472	6.158	6.167	6.154	0.013	0.032	0.03	1.03
Y	472	6.152	6.155	6.149	0.006	0.031	0.04	1.02
Average	472	6.153	6.155	6.146	0.009	0.033	0.03	1.01
Ovality	472	0.012	0.019	0.001	0.018	0.036	0.02	0.99

Units: mm

Sample Interval: 5.0 sec

Section 13

Flaw Reports

The Header settings described above determine the format of the header printed at the top of the report.

The general format of the summary report is:

Beta LaserMike AccuNet – Flaw Report

ABC Corp.

Customer: XYZ International

Lot Number: 18623

Operator: Smith

Machine Number: 278

Gauge 1

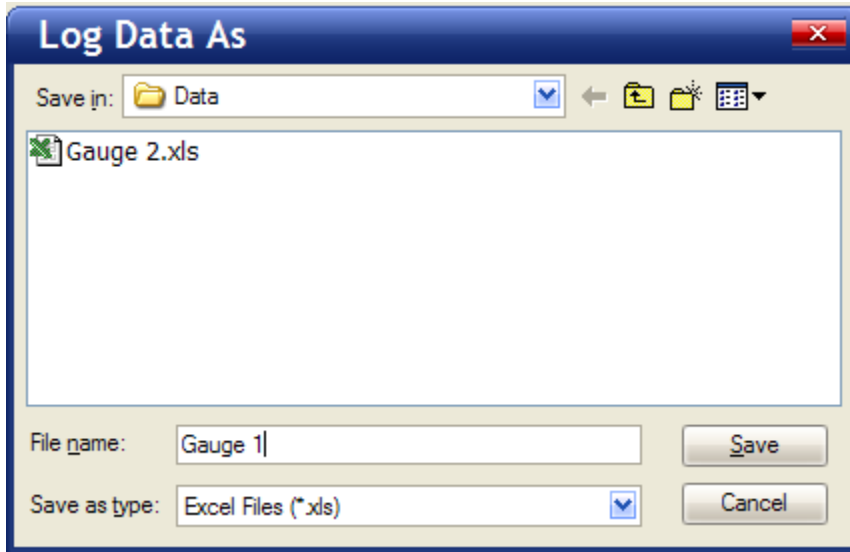
Printed: 04/09/2012 2:50:35 PM

Total Lumps:	3
Total Necks:	1

02:43:21 PM	Lump	247.7 ft
02:47:54 PM	Lump	1003.2 ft
02:48:32 PM	Neck	1250,2 ft
02:49:42 PM	Lump	1513.4 ft

Section 14 Data Logging

Click Log Data from a data section on the Main Window to display the Log Data As dialog window.



Data can be saved to any local or network folder. Specify the location and filename and click Save to begin logging data.

Data is written to the log file per the setting of the Data Logging Interval or with each click of the Go button when the Measurement Mode is Part. The general format of the data file is:

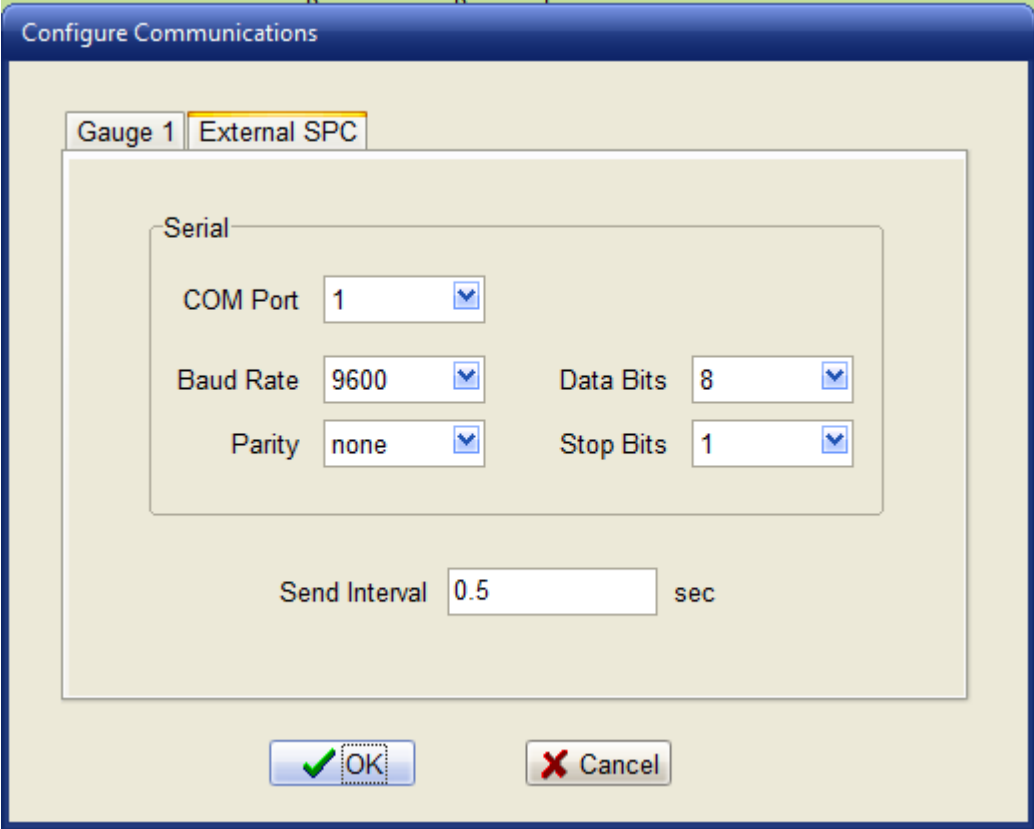
Date	Time	X	X Dev	Y	Y Dev	Avgerage	Avg Dev	Ovality
07-Sep-2008	02:22:35 pm	0.0368	0.0068	0.0367	0.0067	0.0368	0.0068	0.0001
07-Sep-2008	02:22:40 pm	0.0371	0.0071	0.0364	0.0064	0.0368	0.0068	0.0007
07-Sep-2008	02:22:45 pm	0.0329	0.0029	0.0374	0.0074	0.0352	0.0052	0.0045

Note: When Length Input Module is set to Installed, the current length will also be written to the file.

Section 15

External SPC

AccuNet can be configured to transmit data to external SPC software (e.g. WinSPC). Transmission can be via an actual COM port (or USB to DB9 adapter) or via a virtual COM port to pass data from AccuNet to external SPC software running on the same PC.

The image shows a 'Configure Communications' dialog box. At the top, there are two tabs: 'Gauge 1' and 'External SPC', with 'External SPC' being the active tab. Inside the dialog, there is a 'Serial' section containing five dropdown menus: 'COM Port' (set to 1), 'Baud Rate' (set to 9600), 'Parity' (set to none), 'Data Bits' (set to 8), and 'Stop Bits' (set to 1). Below these, there is a 'Send Interval' field set to 0.5, followed by the unit 'sec'. At the bottom of the dialog, there are two buttons: 'OK' (with a green checkmark icon) and 'Cancel' (with a red X icon).

Click Communications from the Menu and then the External SPC tab to display the configuration parameters for transmission to the external SPC software.

Select the COM Port, Baud Rate, Parity, Data Bits, and Stop Bits for communication with the external SPC software. **Note:** If using a virtual COM Port pair, the Baud Rate, Parity, Data Bits, and Stop Bits settings likely do not matter.

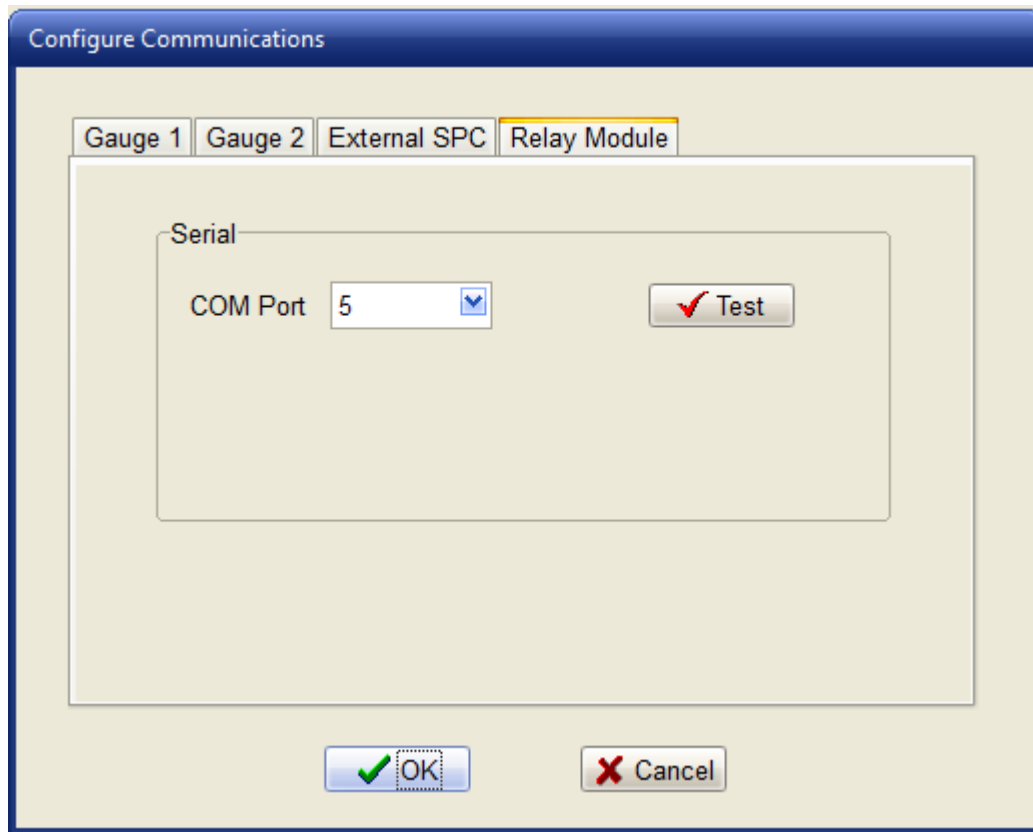
Specify the interval in seconds at which data is to be transmitted to the external SPC software. The send interval should be at least as long as the rate at which the gauges are queried for data.

AccuNet will transmit all displayed data values (excluding deviation) for all active gauges with each value separated by a comma. The string will be terminated by a carriage return.

For example: 0.7500,0.0012,0.7513,0.0001<cr> for two gauges with average and ovality displayed for each.

Section 16 Pencom Design Relay Module

A tab is provided on the Configure Communications window to select the COM port for an optional Pencom Design relay module. Select the COM port to which the relay module is connected.



The relay will be triggered whenever a reject condition exists for any displayed dimension for any active gauge.

Click the Test button to display the Test Relay window.



Buttons are provided to turn the relay on and off.

Section 17 USB-1024 HLS IO Module Instructions

Install the MCC DAQ Software

1. Insert the MCC DAQ Software CD in your CD drive and wait for the installation program to start. If the installation program does not start automatically, use Windows Explorer to browse to the root of the CD and double-click **Install.exe**. The MCC DAQ dialog box will open.
2. The default is all software packages are selected for installation if the requirements for the package are met. Installation of TracerDAQ, Universal Library for LabVIEW, and the Hardware Manuals is not required. Clear those checkboxes. Installation of **InstaCal** is required. Make sure that checkbox is selected.
3. Click **Install** and follow the instructions on the installation dialog boxes.
4. Restart the computer when prompted.

Connect the Module

Connect a USB cable between the module and the computer and let it be detected. A **Found new hardware** message will display as the device is detected by Windows. A **New Hardware Wizard** will run and install the required drivers.

Run InstaCal to Configure the Board Number of the Module

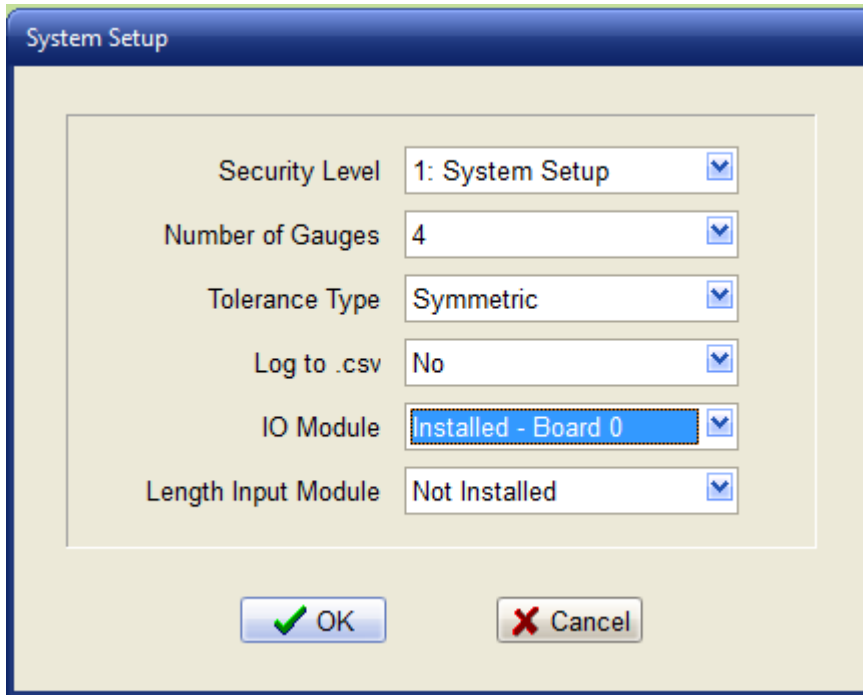
1. Close any application that uses the module (e.g. AccuNet). Only one application that calls the driver can be running at a time.
2. Select **Start->All Programs->Measurement Computing->InstalCal**.

Note: If Error 308 displays, you need Administrative rights on the computer to add hardware and save configuration changes in InstaCal.

3. Right-click **PC Board List** and select **Add Board...** from the pop-up menu.
4. Click the **USB** tab on the **Board Selection List** dialog box.
5. Select **USB-1024HLS**.
6. Specify the **Board Number**. Each Measurement Computing board (e.g. IO module and Length Input module) installed on the computer must have a unique Board Number.
7. Click **Add**.
8. Exit InstaCal.

Specify the Board Number of the Module within AccuNet

1. Run AccuNet.
2. Click **System Setup** on the Menu to display the System Setup window.



3. Specify the **Board Number** of the module as configured above.
4. Click Ok.

Specify Alarm Outputs and Digital Inputs within AccuNet

1. Click **IO Setup** on the Menu to display the IO Setup window.
2. Select the **Alarm Outputs** tab.
3. Specify the event to trigger the alarm. Up to 20 alarm outputs can be configured to trigger on different events.
4. Select the **Digital Inputs** tab.
5. Specify the action to be triggered by the digital input. Up to 4 inputs can be configured.

USB-1024HLS IO Module LED

The LED on the front of the housing indicates the communication status of the module. It uses up to 5 mA of current and cannot be disabled.

LED Illumination	Indication
Steady green	The module is connected to a computer or external USB hub
Blinks continuously	Data is being transferred
Blinks three times	Initial communication is established between the module and the computer

USB-1024HLS IO Module Pin Out

All connections are made to screw terminals on each side of the module.

Pin	Signal Name	Pin	Signal Name
1	Alarm Output 17	21	Alarm Output 1
2	Alarm Output 18	22	Alarm Output 2
3	Alarm Output 19	23	Alarm Output 3
4	Alarm Output 20	24	Alarm Output 4
5	Digital Input 1	25	Alarm Output 5
6	Digital Input 2	26	Alarm Output 6
7	Digital Input 3	27	Alarm Output 7
8	Digital Input 4	28	Alarm Output 8
9	GND	29	GND
10	USB +5V	30	USB +5V
11	Digital Inputs Pull-Up	31	GND
12	GND	32	Alarm Output 9
13	N/C	33	Alarm Output 10
14	N/C	34	Alarm Output 11
15	GND	35	Alarm Output 12
16	N/C	36	Alarm Output 13
17	GND	37	Alarm Output 14
18	N/C	38	Alarm Output 15
19	GND	39	Alarm Output 16
20	N/C	40	GND

The USB +5V connections (Pins 10 and 30) draw power from the USB connector. They are **outputs**. Do not connect to an external power supply or you may damage the module and possibly the computer.

Connecting to an Alarm Output

The alarm outputs are high-drive TTL, capable of sourcing 15mA and sinking 64 mA. A low output will be 0.55 V max. A high output will be 2.4 V min. Output pins transition from low to high when an alarm is triggered.

The maximum allowed current draw for a typical desktop computer or self-powered USB hub is 500 mA. When sourcing 15 mA, there shouldn't be a problem even if all 20 outputs are used.

However, when sinking the maximum of 64 mA per output, you can only use up to 6 outputs. To sink current with all 20 outputs at any one time, you can sink a maximum of 21 mA per output.

The maximum allowed current draw for a typical notebook computer or bus-powered USB hub is 100 mA. Since the USB-1024HLS would use a significant portion of that available current, it would leave little or no current for outputs. **For that reason, the USB-1024HLS is not supported for direct use with a notebook computer.** To overcome that limitation, an external self-powered USB hub can be used to supply the proper current level required for full output capability as noted above.

In some instances (e.g. as inputs to a PLC), the outputs can be wired directly. However, in many cases (e.g. when controlling a light stack), the outputs of the module will need to be wired into an external relay that will be used to make or break the circuit controlling the light.

Output Example

Alarm Output 1 configured to trigger the yellow light on a light stack when Gauge 1 – Average is outside the Warning limits.

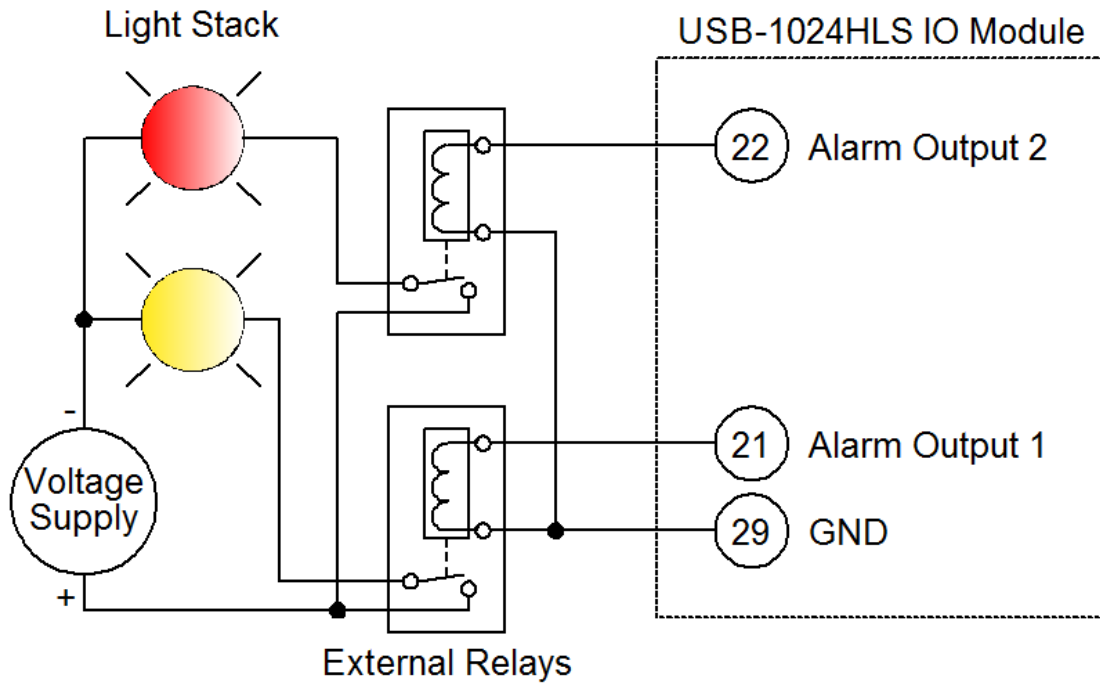
Alarm Output 2 configured to trigger the red light on a light stack when Gauge 1 – Average is outside the Reject limits.

I/O Setup

Alarm Outputs | Digital Inputs

Alarm Output 1	Warning: Gauge 1 - Average	Alarm Output 11	None
Alarm Output 2	Reject: Gauge 1 - Average	Alarm Output 12	None
Alarm Output 3	None	Alarm Output 13	None
Alarm Output 4	None	Alarm Output 14	None
Alarm Output 5	None	Alarm Output 15	None
Alarm Output 6	None	Alarm Output 16	None
Alarm Output 7	None	Alarm Output 17	None
Alarm Output 8	None	Alarm Output 18	None
Alarm Output 9	None	Alarm Output 19	None
Alarm Output 10	None	Alarm Output 20	None

OK Cancel



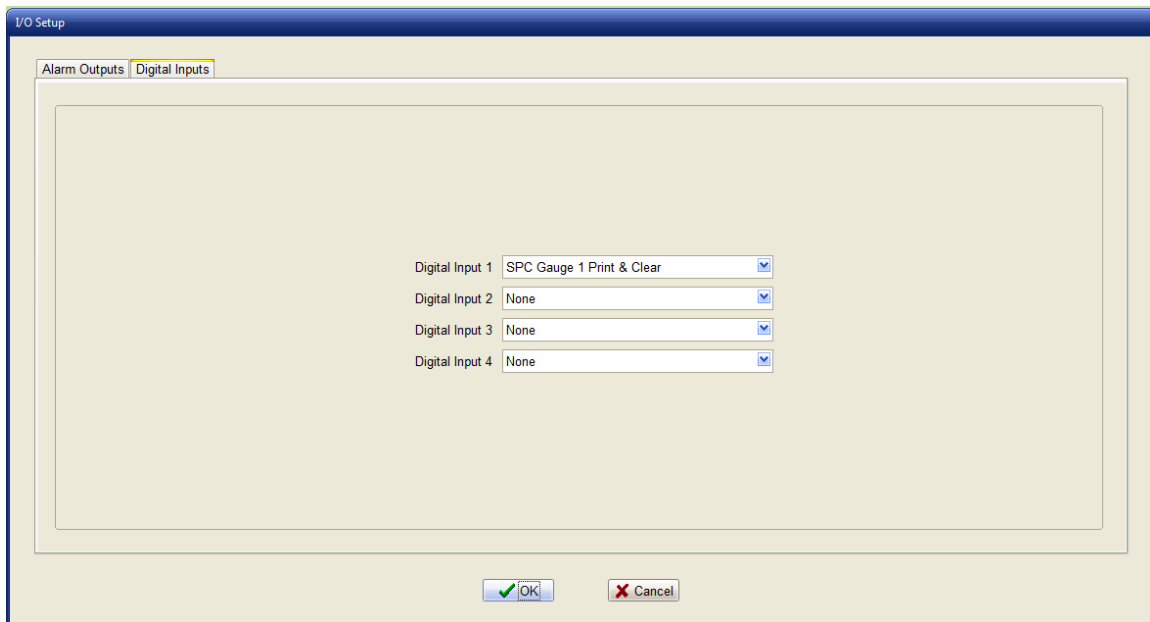
Notes: When the outputs of the IO module transition from low to high, they energize the coils of the external relays. When the relays close, they make the circuit supplying the voltage to the lights. Be sure to select a voltage supply appropriate for the light stack and external relays rated for 5 VDC coil voltage and load voltage and current that match the supply and light stack.

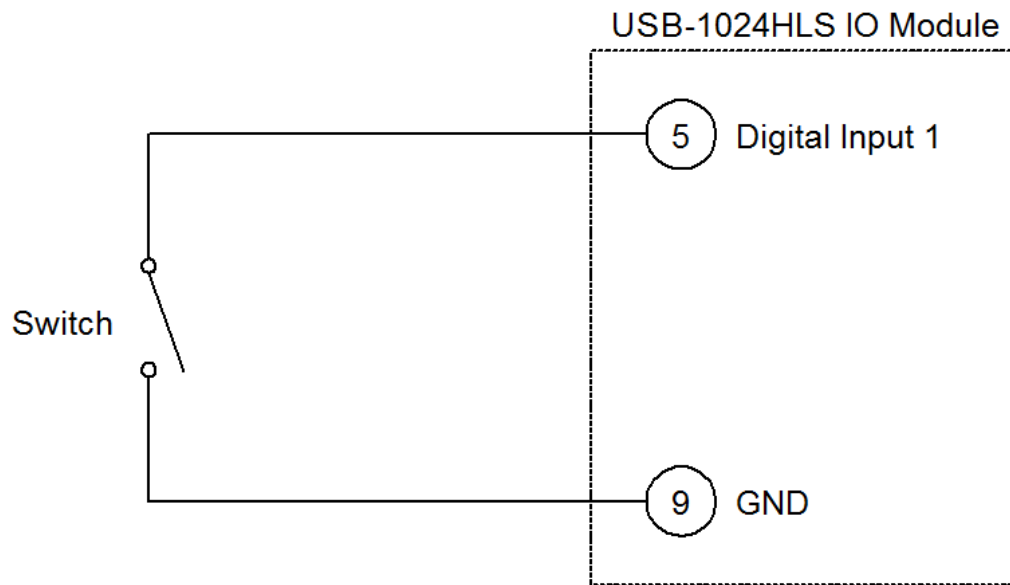
Connecting a Digital Input

The digital inputs on the USB-1024HLS IO module will detect the state of any TTL level input. The inputs on the module are pulled high through internal 47K resistors by connecting pin 11 to pin 10 (Connection should already be provided before shipment from Beta LaserMike). To trigger an input, switch it low. To register high, the input voltage must be a minimum of 2.0 V and an absolute max of 5.5 V. To register Low, the input voltage must be 0.8V or less with an absolute minimum of -0.5V.

Input Example

Digital Input 1 configured for SPC Gauge 1 Print & Clear.





Notes: When the external switch momentarily closes, it pulls the input low which triggers the SPC Summary Report for Gauge 1 to be printed and then clears the SPC data for Gauge 1.

Section 18 USB-QUAD08 Length Input Module Instructions

Install the MCC DAQ Software

1. Insert the MCC DAQ Software CD in your CD drive and wait for the installation program to start. If the installation program does not start automatically, use Windows Explorer to browse to the root of the CD and double-click **Install.exe**. The MCC DAQ dialog box will open.
2. The default is all software packages are selected for installation if the requirements for the package are met. Installation of TracerDAQ, Universal Library for LabVIEW, and the Hardware Manuals is not required. Clear those checkboxes. Installation of **InstaCal** is required. Make sure that checkbox is selected.
3. Click **Install** and follow the instructions on the installation dialog boxes.
4. Restart the computer when prompted.

Connect the Module

Connect a USB cable between the module and the computer and let it be detected. A **Found new hardware** message will display as the device is detected by Windows. A **New Hardware Wizard** will run and install the required drivers.

Run InstaCal to Configure the Board Number of the Module

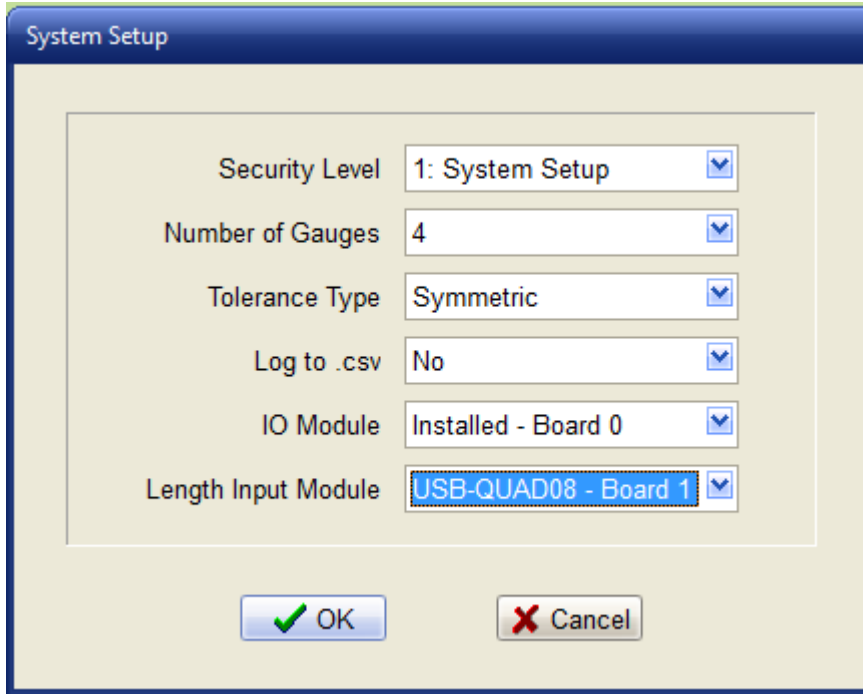
1. Close any application that uses the module (e.g. AccuNet). Only one application that calls the driver can be running at a time.
2. Select **Start->All Programs->Measurement Computing->InstalCal**.

Note: If Error 308 displays, you need Administrative rights on the computer to add hardware and save configuration changes in InstaCal.

3. Right-click **PC Board List** and select **Add Board...** from the pop-up menu.
4. Click the **USB** tab on the **Board Selection List** dialog box.
5. Select **USB-QUAD08**.
6. Specify the **Board Number**. Each Measurement Computing board (e.g. IO module and Length Input module) installed on the computer must have a unique Board Number.
7. Click **Add**.
8. Exit InstaCal.

Specify the Board Number of the Module within AccuNet

1. Run AccuNet.
2. Click **System Setup** on the Menu to display the System Setup window.



3. Specify the **Board Number** of the module as configured above.
4. Click Ok.

Specify Pulses/foot (or Pulses/meter) and Quadrature Mode in Gauge Setup

1. Click **Gauge Setup** on the Menu to display the Gauge Setup window.
2. Select the appropriate **Gauge** tab.
3. Enter the Pulses/Length value specifying the number of pulses generated per unit length of product movement sent to the length input module by the connected length encoder. **Note:** If left at the default value of 0, no updates to Length or Speed will occur.
4. Select the Quadrature Mode. The choices are OFF (a non-quadrature or pulse encoder is connected), X1 (one count per quadrature cycle), X2 (two counts per quadrature cycle), and X4 (four counts per quadrature cycle).

USB-QUAD08 Length Input Module LED Indicators

The Power LED will blink during device detection and initialization and then remain on. When first powered on, a momentary delay may occur before the Power LED begins to blink or become solid.

The Status LED indicates the USB is configured and blinks to indicate USB traffic. If the Status LED turns on but then turns off, the computer has lost communication with the module. To restore communication, disconnect the USB cable from the computer and then reconnect it. This should restore communication and the LED should turn on and remain on.

The Channel LEDs indicate whether a specific channel is receiving a valid input signal from an encoder.

Connecting to a Length Encoder

All connections are made to screw terminals on each side of the module. The +5V terminals draw power from the USB connector. They are **outputs**. **Do not connect to an external power supply or you may damage the module and possibly the computer.**

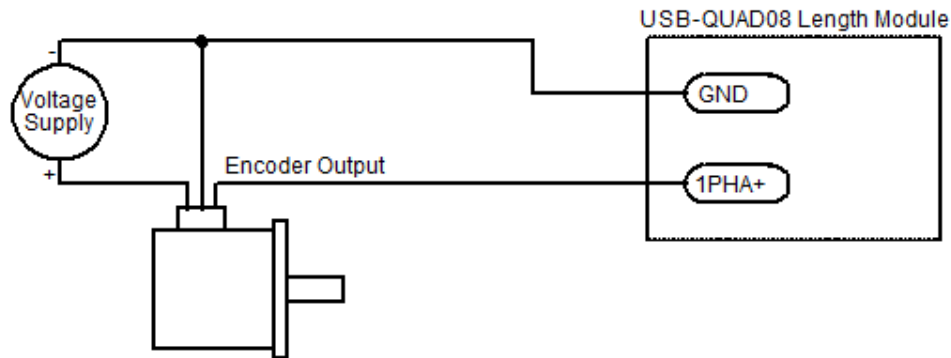
The maximum allowed current draw for a typical notebook computer or bus-powered USB hub is 100 mA. The typical current requirement for the USB-QUAD08 is 225 mA. **Therefore, the USB-QUAD08 is not supported for direct use with a notebook computer.** To overcome that limitation, an external self-powered USB hub can be used to supply the proper current level required.

The frequency is limited to 10 MHz, max. The input voltage range is ± 12 V.

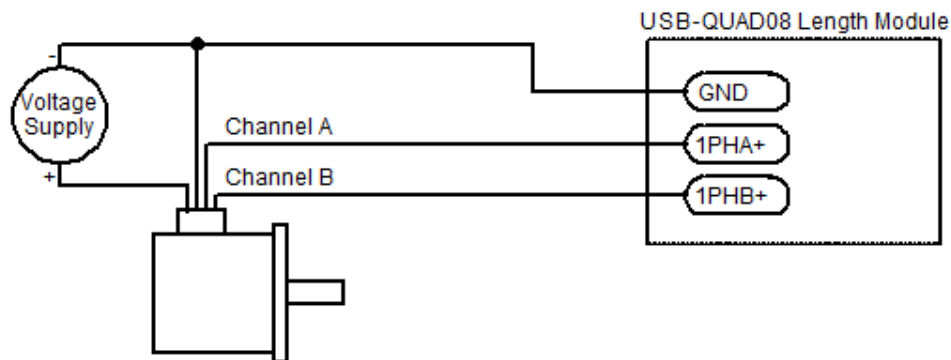
Note: The USB-QUAD08 supports connection of an external supply to provide power to each of the connected encoders. However, due to current limitations, it is recommended that the external supply be connected directly to the encoder.

AccuNet supports two wire (pulse), single ended quadrature, and differential quadrature encoders. Connect to channel 1 (1PHA+, etc.) for Gauge 1. Connect to channel 2 (2PHA+, etc.) for Gauge 2. Connect to channel 3 (3PHA+, etc.) for Gauge 3. Connect to channel 4 (4PHA+, etc.) for Gauge 4.

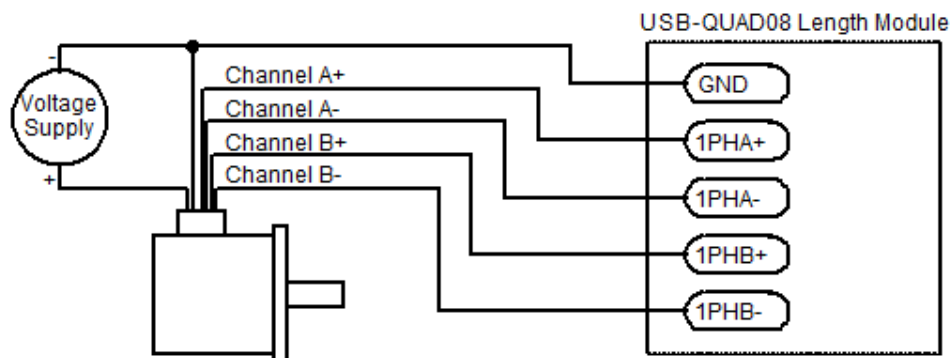
Two Wire (Pulse) Encoder Connection



Single Ended Quadrature Encoder Connection



Differential Quadrature Encoder Connection



Section 19 USB-4301 Length Input Module Instructions

Install the MCC DAQ Software

1. Insert the MCC DAQ Software CD in your CD drive and wait for the installation program to start. If the installation program does not start automatically, use Windows Explorer to browse to the root of the CD and double-click **Install.exe**. The MCC DAQ dialog box will open.
2. The default is all software packages are selected for installation if the requirements for the package are met. Installation of TracerDAQ, Universal Library for LabVIEW, and the Hardware Manuals is not required. Clear those checkboxes. Installation of **InstaCal** is required. Make sure that checkbox is selected.
3. Click **Install** and follow the instructions on the installation dialog boxes.
4. Restart the computer when prompted.

Connect the Module

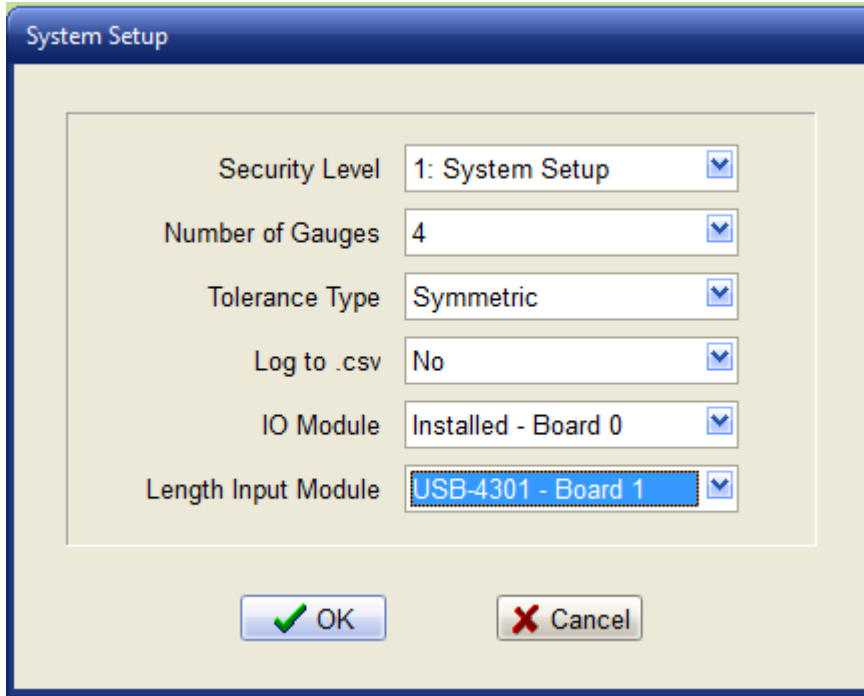
Connect a USB cable between the module and the computer and let it be detected. A **Found new hardware** message will display as the device is detected by Windows. A **New Hardware Wizard** will run and install the required drivers.

Run InstaCal to Configure the Board Number of the Module

1. Close any application that uses the module (e.g. AccuNet). Only one application that calls the driver can be running at a time.
2. Select **Start->All Programs->Measurement Computing->InstalCal**.
Note: If Error 308 displays, you need Administrative rights on the computer to add hardware and save configuration changes in InstaCal.
3. Right-click **PC Board List** and select **Add Board...** from the pop-up menu.
4. Click the **USB** tab on the **Board Selection List** dialog box.
5. Select **USB-4301**.
6. Specify the **Board Number**. Each Measurement Computing board (e.g. IO module and Length Input module) installed on the computer must have a unique Board Number.
7. Click **Add**.
8. Exit InstaCal.

Specify the Board Number of the Module within AccuNet

1. Run AccuNet.
2. Click **System Setup** on the Menu to display the System Setup window.



3. Specify the **Board Number** of the module as configured above.
4. Click Ok.

Specify Pulses/foot or Pulses/meter in Gauge Setup

1. Click **Gauge Setup** on the Menu to display the Gauge Setup window.
2. Select the appropriate **Gauge** tab.
3. Enter the Pulses/Length value specifying the number of pulses generated per unit length of product movement sent to the length input module by the connected length encoder. **Note:** If left at the default value of 0, no updates to Length or Speed will occur.

USB-4301 Length Input Module LED Indicators

The Power LED will blink during device detection and initialization and then remain on. When first powered on, a momentary delay may occur before the Power LED begins to blink or become solid.

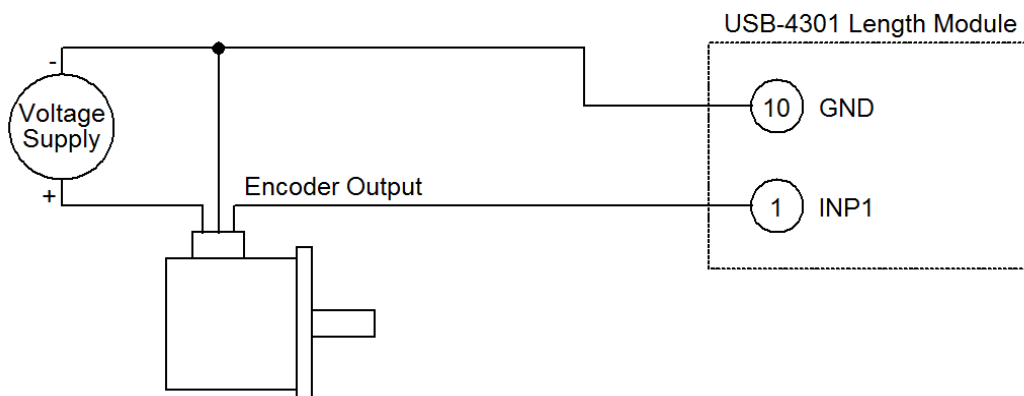
The Status LED indicates the USB is configured and blinks to indicate USB traffic. If the Status LED turns on but then turns off, the computer has lost communication with the module. To restore communication, disconnect the USB cable from the computer and then reconnect it. This should restore communication and the LED should turn on and remain on.

Connecting to a Length Encoder

All connections are made to screw terminals on each side of the module. The +5V terminals draw power from the USB connector. They are **outputs**. Do not connect to an external power supply or you may damage the module and possibly the computer.

The maximum allowed current draw for a typical notebook computer or bus-powered USB hub is 100 mA. The typical current requirement for the USB-4301 with no additional load is 100 mA. Therefore, the USB-4301 can be used when connected directly to a notebook computer. However, it is recommended that an external self-powered USB hub be used to supply the proper current level required.

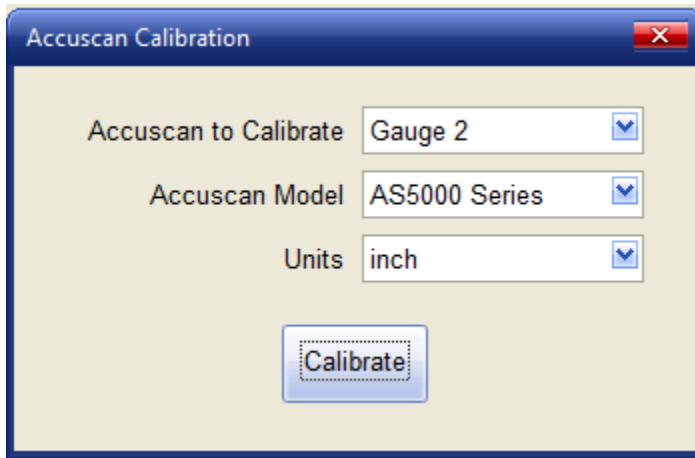
AccuNet supports two wire pulse encoders only (Quadrature or two wire with direction encoders are not supported). Only two connections are made for each input channel. Connect to INP1 (Pin 1) and GND (Pin 10) for Gauge 1. Connect to INP2 (Pin 4) and GND (Pin 20) for Gauge 2. Connect to INP3 (Pin 29) and GND (Pin 38) for Gauge 3. Connect to INP4 (Pin 32) and GND (Pin 48) for Gauge 4.



The frequency is limited to 20 MHz, max. The input voltage range is 0 - 5 V.

Section 20

Accuscan Calibration



Click Calibration on the Menu to display the Accuscan Calibration window.

Accuscan to Calibrate Select the name or gauge number of the Accuscan to calibrate.

Accuscan Model Select the model of the Accuscan to calibrate. AccuNet allows for calibration of AS4000, AS5000, and AS6000 series gauges. Other models of Accuscans cannot be calibrated via AccuNet.

Units Select the measurement units for Accuscan calibration.

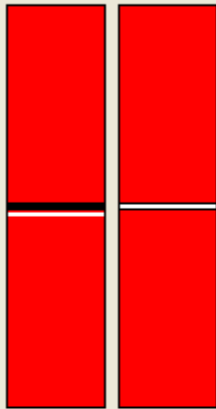
Calibrate Click Calibrate to display the Calibrate window.

Calibrate

Calibrate Gauge 2...

1) Place the LARGE calibration pin in the gate of the Accuscan and center it.

X Y



2) Enter the LARGE pin size and click the OK button.

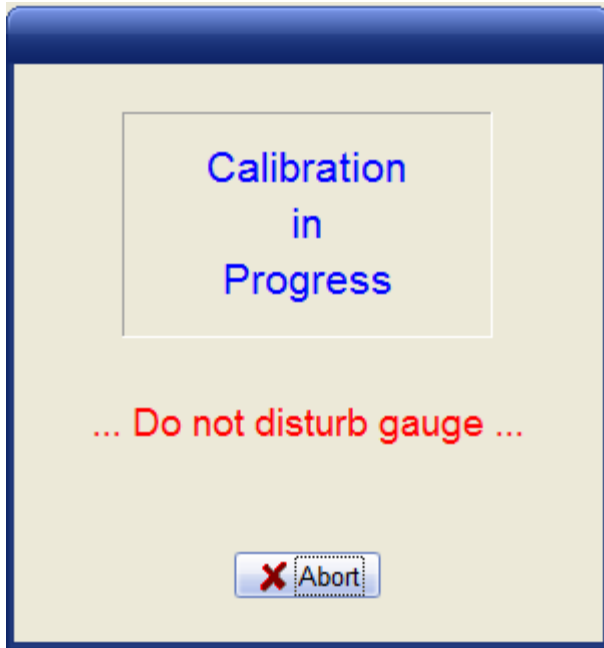
LARGE Pin Size:

0.4026 inch

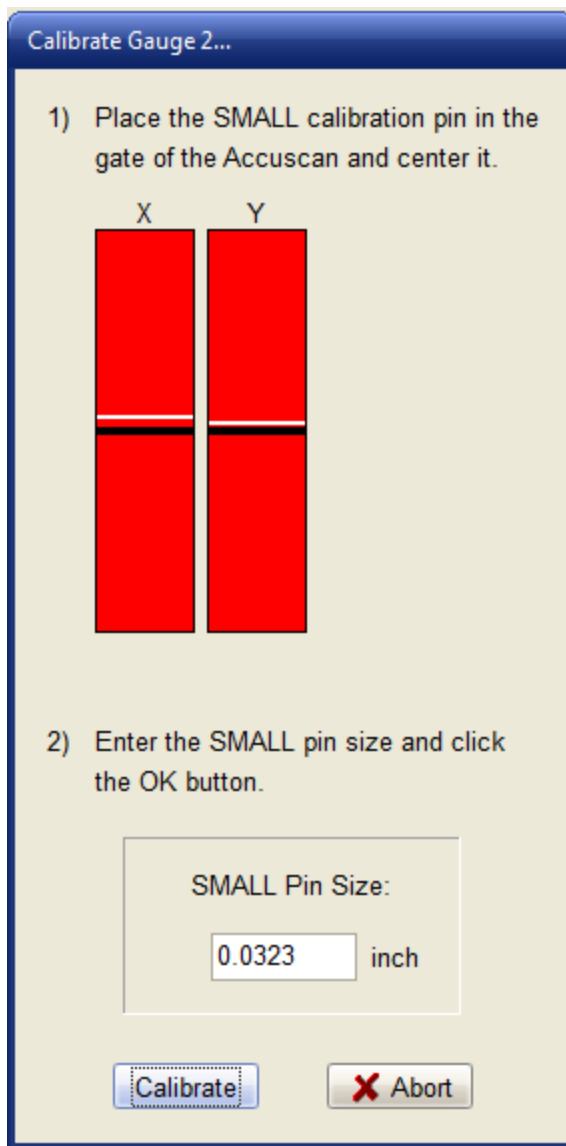
Calibrate X Abort

To begin calibration:

1. Place the LARGE calibration pin in the gate of the Accuscan and center it.
2. Enter the LARGE pin size and click the Calibrate button.

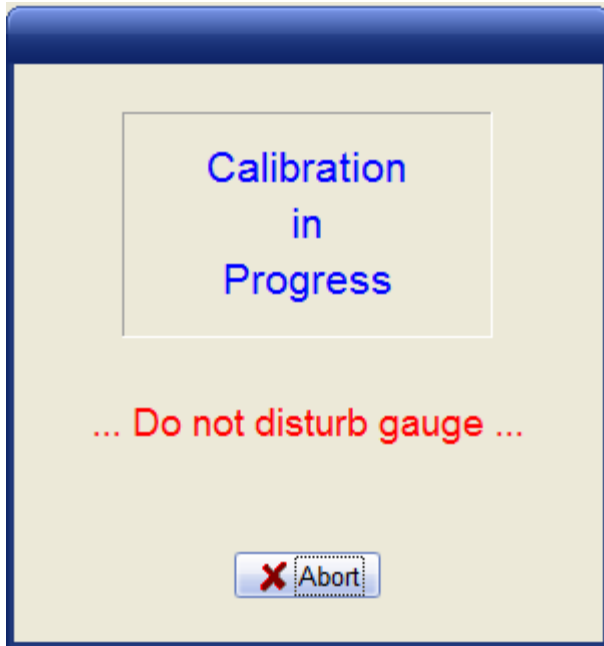


The Calibration in Progress window is displayed while the Accuscan is calibrating to the LARGE pin.

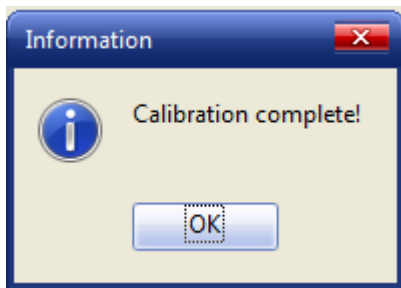


To calibrate to the SMALL pin:

1. Place the SMALL calibration pin in the gate of the Accuscan and center it.
2. Enter the Small pin size and click the Calibrate button.



The Calibration in Progress window is displayed again while the gauge is calibrating to the SMALL pin.



The Calibration complete! message will be displayed at the completion of calibrating to the SMALL pin. Click Ok to exit.