

MTConnections Release2



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Overview (Release 2)

MTConnections is a software package that connects METTLER TOLEDO's terminals – like the JAGXTREME, LYNX, or PANTHER – to PCs, making real-time and recorded weight data easily available to your applications.

Package Options

MTConnections has four package options: MTConnections Entry, MTConnections Enterprise, MTConnections Extreme and MTConnections Extreme Enterprise. The installation CD-ROM allows you to select which package you wish to download to your PC.

MTConnections Entry and MTConnections Enterprise share a common download and can be installed and run without registration (as a demo mode) for a limited time.

MTConnections Extreme and MTConnections Extreme Enterprise must be registered to run. They have no demo mode.

The package differences are described below:

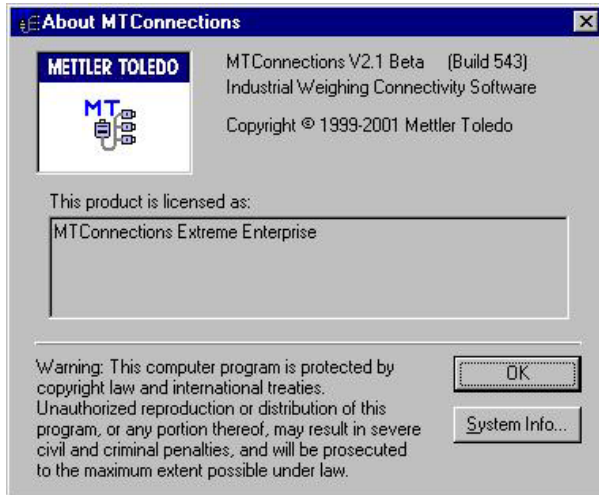
MTConnections Entry (0917-0304): supports MTWeight, MTRecordedWeight, and MTRecordTemplate controls on a single PC (allows only local connections); has demo mode

MTConnections Enterprise (0917-0305): same as MTConnections Entry except supports multiple applications across a LAN (DCOM) with access to its single MTScaleServer (allows remote or local connections); has demo mode

MTConnections Extreme (0917-0306): same as MTConnections Entry with controls added for the JAGXTREME terminal specifically – MTJagBASIC, MTScaleDiag, MTSmartCellDiag, and MTPredictFailure; has demo mode of Entry package

MTConnections Extreme Enterprise (0917-0307): same as MTConnections Enterprise with controls added for the JAGXTREME terminal specifically – MTJagBASIC, MTScaleDiag, MTSmartCellDiag, and MTPredictFailure; has demo mode of Entry package

The package installed or registered can be determined by accessing the About MTConnections window (found under the Help menu of the MTConnections Configurator).

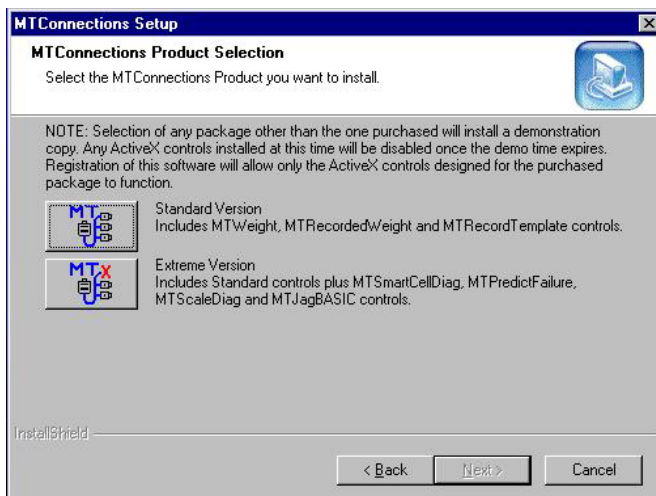


About MTConnections Window – registration information

Installation Instructions

Insert the CD-ROM into your CD-ROM drive and follow these steps:
Start Menu method.

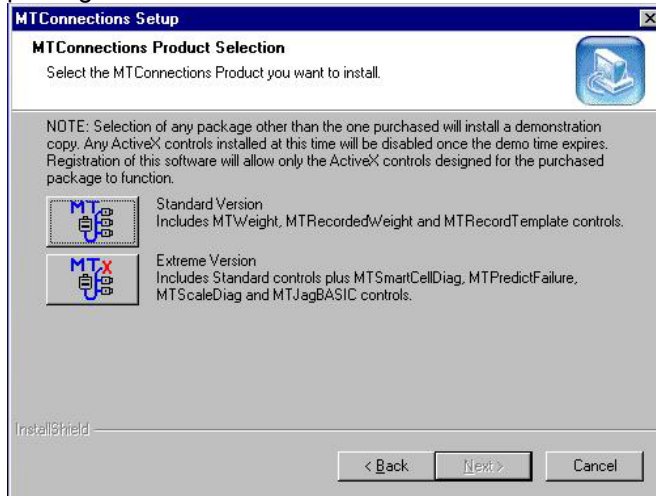
1. Click on the Start menu and choose Run.
2. Type D:\setup.exe and press Enter. (If your CD-ROM drive is not drive D, substitute the correct drive letter. For example, if your CD-ROM drive is actually drive E, then type E:\setup.exe.)
3. Follow the directions provided on-screen during the installation. Make certain to select the installation from the package that was purchased. Select Standard Version for the Entry or Enterprise packages. Select Extreme Version for the Extreme or Extreme Enterprise packages.



Setup selection window

Windows Explorer method.

1. Start Windows Explorer.
2. Select the CD-ROM drive.
3. Find the Setup.exe file in the file list and double-click on it.
4. Follow the directions provided on-screen during the installation. Make certain to select the installation for the package that was purchased. Select Standard Version for the Entry or Enterprise packages. Select Extreme Version for the Extreme or Extreme Enterprise packages.



Setup selection window.

Registration Instructions

To register your copy of MTConnections, click on the Register button and record the two product code numbers. **DO NOT** click on UNLOCK to exit. Use the UNLOCK LATER button to leave the registration window and return later to enter the registration key.

To receive your registration key, contact the registration support email address below with the following information:

1. The MTConnections package part number (Example: 0917-0304).
2. The serial number from the label on the CD-ROM case (Example 1234567-1QY).
3. The two product code numbers recorded from the registration step.

Registration support will provide a registration key which you must type into the registration box, then (and ONLY THEN) click on UNLOCK to complete your software registration. The registration process can be interrupted then completed at any time, if necessary, by exiting with the UNLOCK LATER button and returning to the registration screen when ready.

Registration support email address: mtconnections@mt.com

MTConnections Major Components

MTConnections software has four major components:

[MTScaleServer](#)

[Configuration File](#)

[MTConnections Configurator](#)

[ActiveX Controls](#)

MTScaleServer

The scale server uses a configuration file to determine what type of scale protocols should be used for its active channel connections. The configuration file is setup by running the [MTConnections Configurator](#). It can support up to 32 scale channels, using either Serial com ports or Ethernet network hardware.

Once the connection configuration has been setup, it handles all of the communication tasks for the configured channels, making the data available to user applications via its [ActiveX controls](#). The MTScaleServer begins to run as soon as an instance of its ActiveX control starts running and requires data. The server runs until all instances of the controls have relinquished their connections to the server, at which time it stops running.

Configuration File

The configuration file is used by the [MTScaleServer](#) to establish communication with the scales. This file (.scl extension) contains all of the setup information that is saved from the [MTConnection Configurator](#) selections.

MTConnections Configurator

MTConnections Configurator is the setup utility that runs when a user clicks on the MTConnections icon. This tool permits the user to configure the serial com port and Ethernet connections for each scale channel. It also provides a window to monitor information from each channel as a debug utility. Finally, it allows the user to enable a comma-delimited log file of the recorded data if required by the application.

[Configuring a Channel](#)

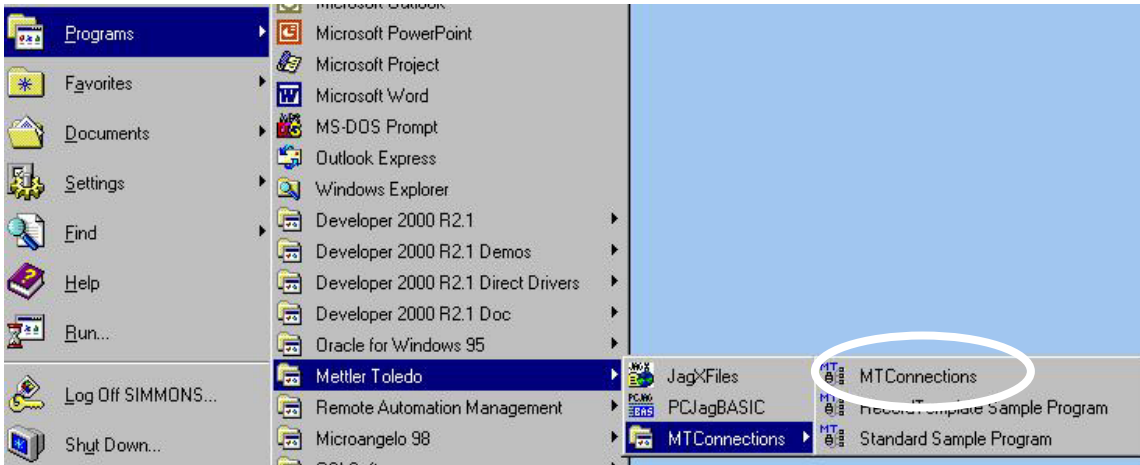
[Monitoring a Channel](#)

[Enabling a Log File](#)

Configuring a Channel

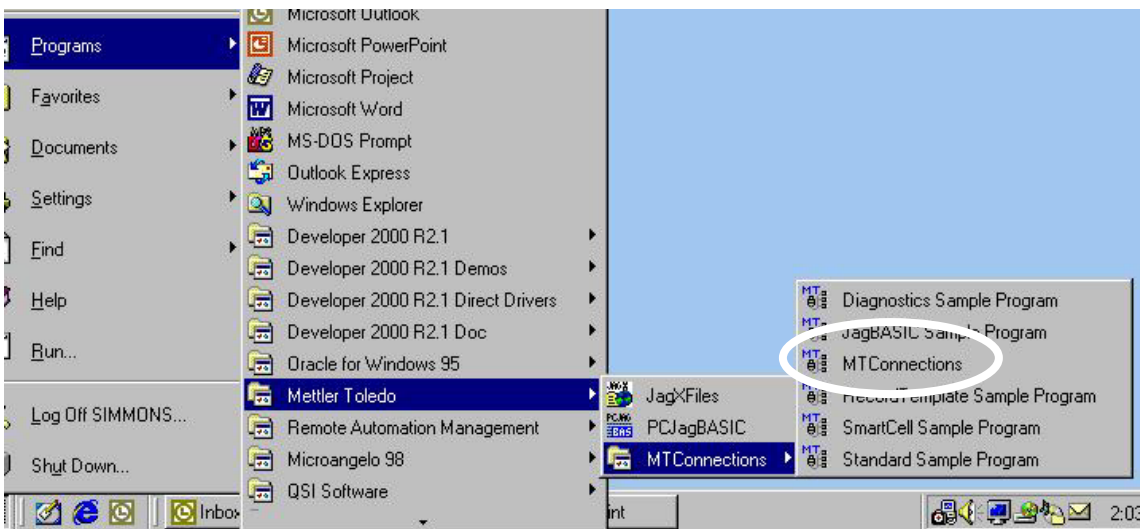
Follow these steps to configure a new channel or change a channel's configuration.

1. Start the MTConnections Configurator.



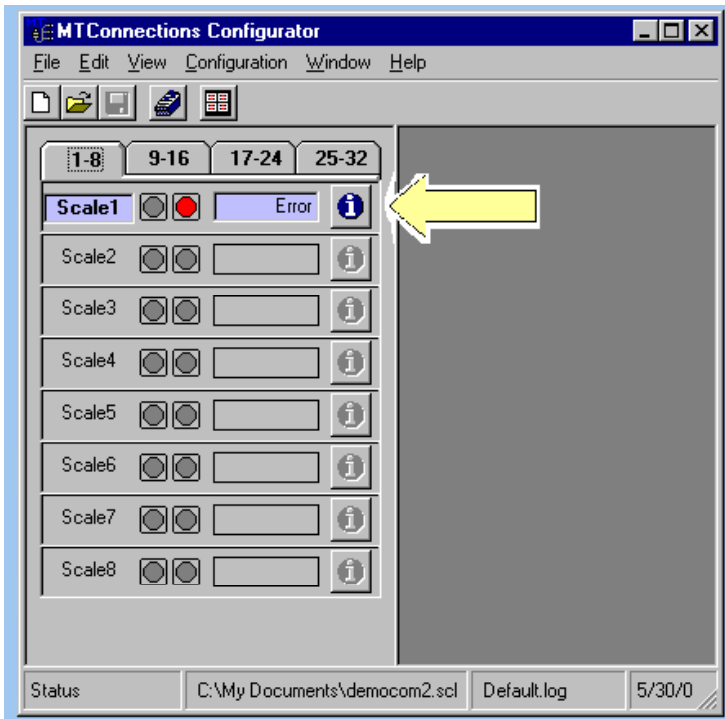
Entry or Enterprise version

OR



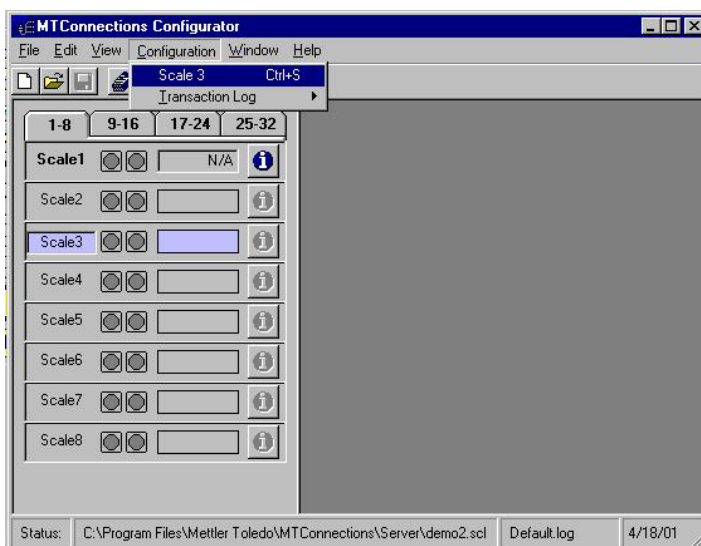
Extreme or Extreme Enterprise version

2. Right-click on the channel you wish to configure.

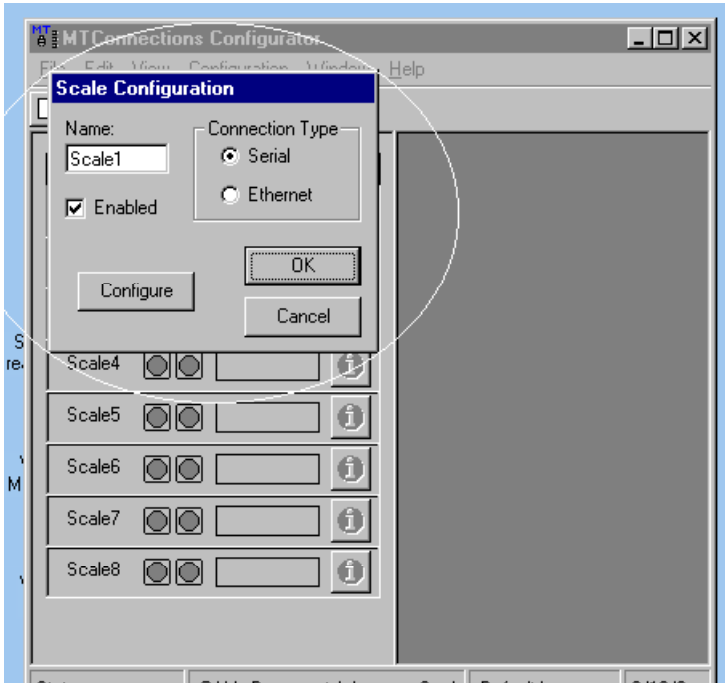


OR

Click on the channel you wish to configure then select it from the Configuration Menu to view.

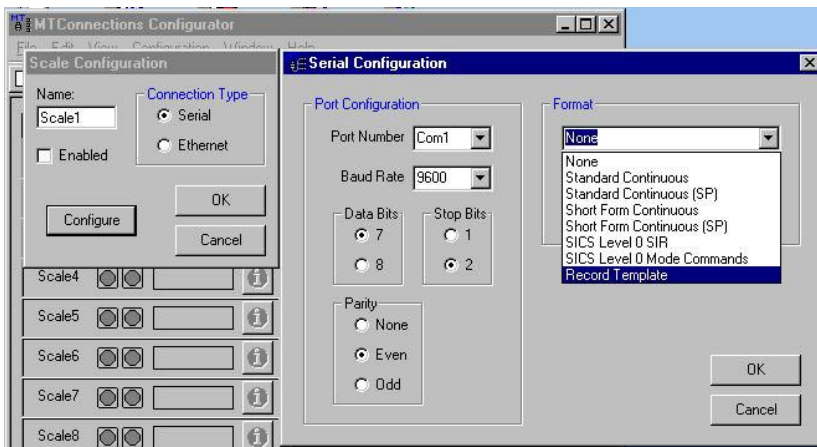


3. A Scale Configuration dialog box will appear.



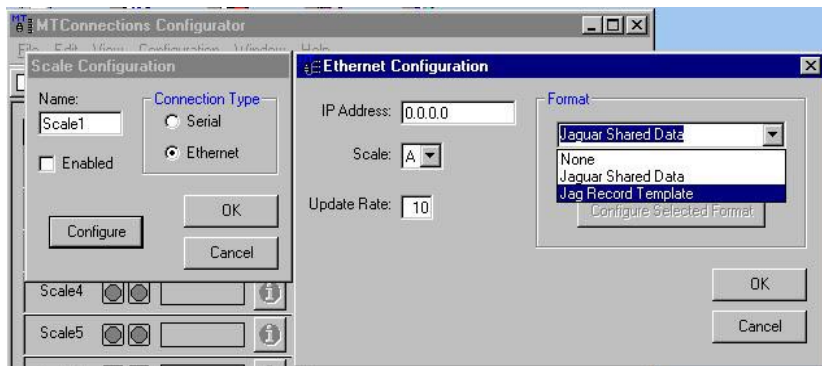
The Enabled box must be checked for the channel and its data to be active. The Scale Alias name can be changed in its text box. Select whether Serial data (com port) or Ethernet connections will be used, then click the Configure button to bring up the selected communication protocol dialog.

If Serial is selected, a Serial Configuration dialog box will appear:



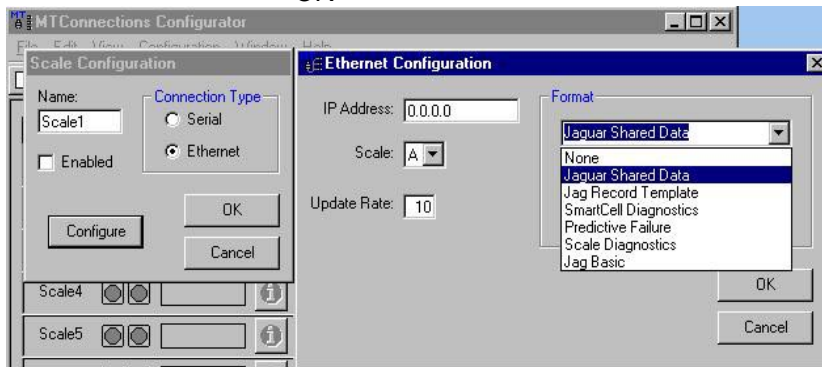
Select the port number to match the com port of the PC that is physically connected to the scale terminal. Match the baud rate, data bits, stop bits, and parity of the scale terminal. Select the format of the protocol being sent by the scale terminal and check the CTPZ box if bi-directional commands for Clear, Tare, Print and Zero are required by the application and supported by the scale terminal. For a description of the protocols, see the [Selecting a Serial Protocol](#) section. Once the selections are complete, click OK to return to the Scale Configuration dialog box.

If Ethernet is selected, an Ethernet Configuration dialog box will appear.



Entry or Enterprise

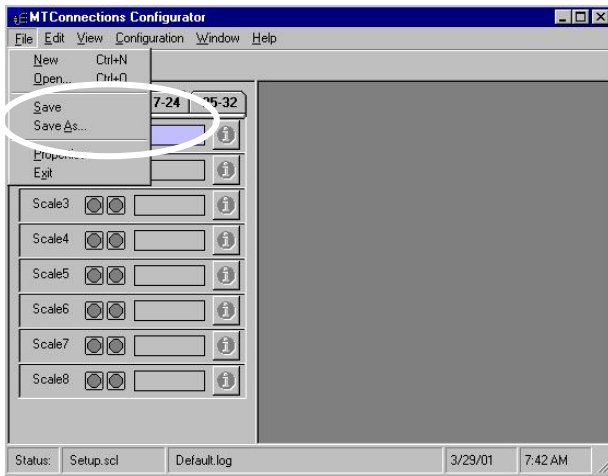
OR



Extreme or Extreme Enterprise

Select the protocol from the Format drop-down box and enable CTPZ if bi-directional commands for Clear, Tare, Print and Zero are required by the application. For a description of the protocols, see the [Selecting an Ethernet Protocol](#) section. Enter the IP address of the scale terminal in the IP Address box. Select the scale that should be used for the data from the Scale drop-down box and enter an appropriate update rate for the data (in times per second) in the Update Rate box.

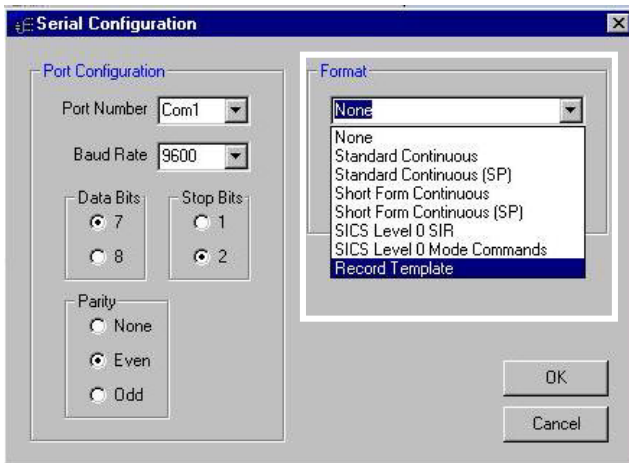
Once the selections are complete, click OK to return to the Scale Configuration dialog box. Remember to save your configuration file. You may wish to rename it. If so, use the Save As selection.



Once you have set up and saved your configuration file, you do not need to run the MTConnections Configurator again. The MTScaleServer uses the file created when it runs.

Selecting a Serial Protocol

If a serial connection is configured, the following window is used to select one of the available protocols.

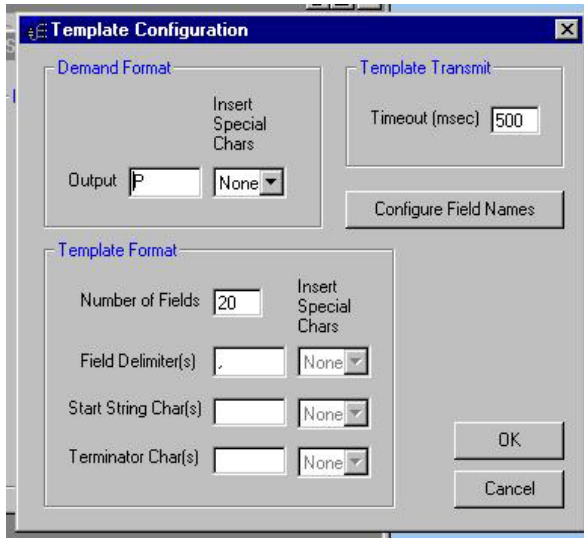


Standard Continuous, Standard Continuous (SP), Short Form Continuous, and Short Form Continuous (SP) are all continuous outputs based on METTLER TOLEDO's continuous output string standard. These protocols provide weight information at a timed interval without requiring any request from the device on the receiving end. These protocols require no other configuration.

SICS Level 0 SIR and SICS Level 0 Mode Commands are based on METTLER TOLEDO's SICS host communication protocol. The SIR protocol uses the SIR command to have the scale send weight data without any additional host commands. (The scale continues to provide weight data until a new command is received.)

The Mode Commands protocol uses specific host commands from the SICS level 0 set to poll for specific weight information. (MTConnections controls the request for weight information). This request is done immediately after new data is received from the indicator; therefore, the polling rate is dependent on the response of the indicator. Both of these protocols only send one "live" weight. If tare is used, the net weight will be reported; otherwise, gross weight is sent. These protocols require no other configuration.

The Record Template protocol is used with devices that do not support a host or continuous protocol. This protocol allows the user to collect data from a demand print output or any transactional output string that has a fixed format. The user configures the protocol by defining the template format – the number of expected fields, a field separation string (or character), a start of message string, and an end of message string. The output string (demand format) for the “print” command to the indicator or device can also be defined by the user. If the Record Template protocol is selected, the Configure Selected Format button is enabled. If you click on this button, the Template Configuration window is displayed.



The Template Transmit timeout is used to define the period MTConnections should wait before indicating a data transmission error. If it does not receive the correct number of fields or the terminator string (end of message string) AND the timeout occurs, a communication error is indicated.

Default values for the template format are as follows:

Number of fields = 20

Field Delimiter = comma

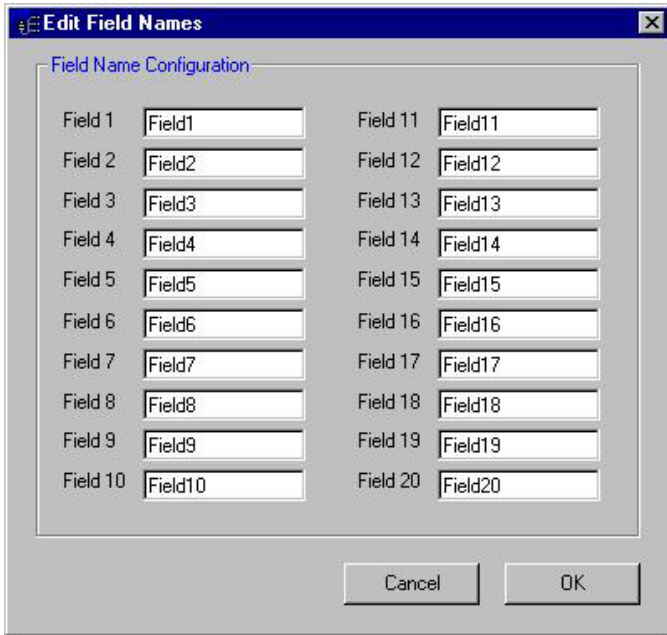
Start string = none

Terminator string = none

Output string = P

Timeout = 500 msec

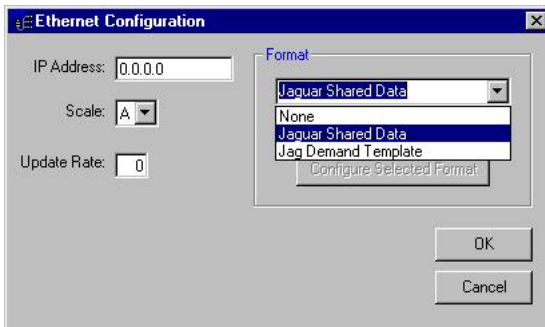
If you click on the Configure Field Names button, the Edit Field Names window appears.



This window allows the user to assign a name to the field data for display purposes.

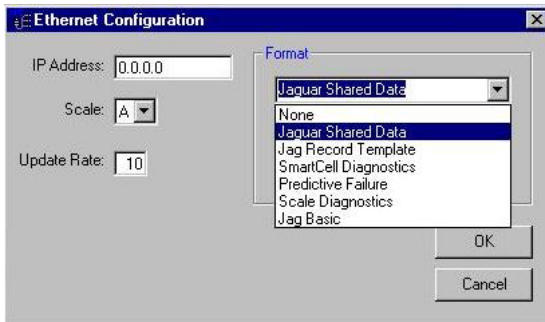
Selecting an Ethernet Protocol

If an Ethernet connection is configured, the one of the following windows is used to select one of the available protocols.



Entry or Enterprise

OR



Extreme or Extreme Enterprise

There are two protocols supported by the Entry and Enterprise packages:

- Jaguar Shared Data
- Jag Record Template

Four additional protocols are supported by the Extreme and Extreme Enterprise packages:

- SmartCell Diagnostics
- Predictive Failure
- Scale Diagnostics
- JagBasic

1. The Jaguar Shared Data protocol is used to receive the same data provided by a serial, standard continuous connection. It provides the gross, tare, and net weights along with some scale status information.
2. The Jag Record Template protocol is like the serial Record Template protocol except it uses an Ethernet print server from the JAGXTREME terminal instead of a serial com port connection. This protocol allows the user to collect data from a demand print output by defining the template format – the number of expected fields, a field separation string (or character), a start of message string, and an end of message string. The output string (demand format) for the “print” command to the indicator is pre-selected for the JAGXTREME terminal and cannot be changed by the user. The JAGXTREME terminal must have “A” revision software or later to support this protocol.

If the Jag Record Template protocol is selected, the Configure Selected Format button is enabled. If you click on this button, the Template Configuration window is displayed:

The screenshot shows the 'Template Configuration' dialog box. It has a title bar with a close button. The dialog is divided into three main sections: 'Demand Format', 'Template Transmit', and 'Template Format'.
- 'Demand Format': Includes an 'Output' field with 'I' and a dropdown menu set to 'BS', and an 'Insert Special Chars' checkbox.
- 'Template Transmit': Includes a 'Timeout (msec)' field set to '500' and a 'Configure Field Names' button.
- 'Template Format': Includes a 'Number of Fields' field set to '20', an 'Insert Special Chars' checkbox, and three rows of 'Field Delimiter(s)', 'Start String Char(s)', and 'Terminator Char(s)', each with a text input field and a dropdown menu set to 'None'.
At the bottom right are 'OK' and 'Cancel' buttons.

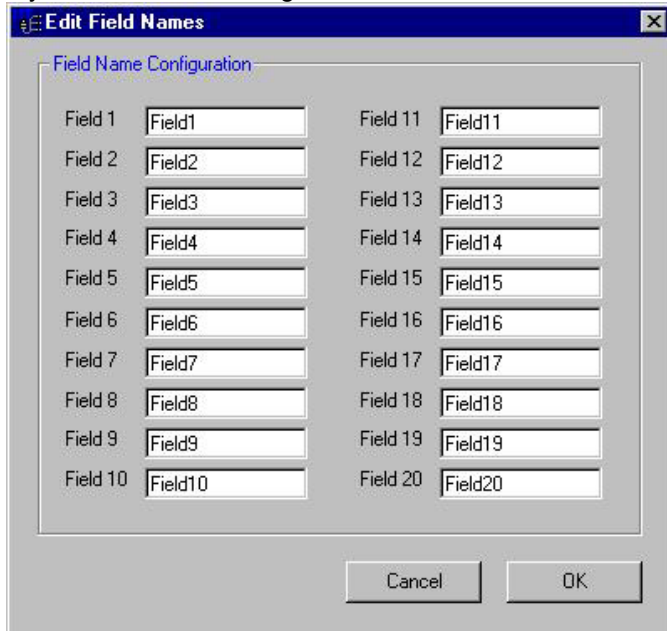
The Template Transmit timeout is used to define the period MTConnections should wait before indicating a data transmission error. If it does not receive the correct number of fields or the terminator string (end of message string) AND the timeout occurs, a communication error is indicated.

Default values for the template format are as follows:

- Number of fields = 20
- Field delimiter = comma
- Start string = none

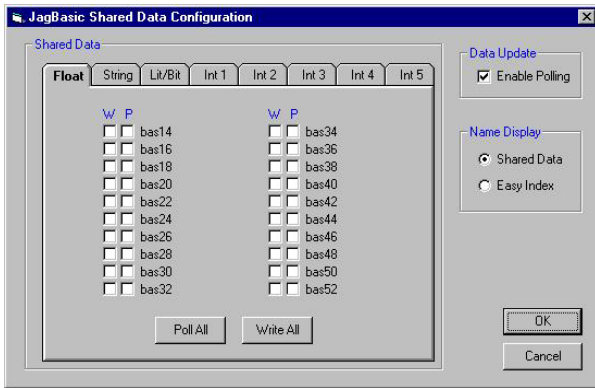
Terminator string = none
Output string = backspace
Timeout = 500 msec

If you click on the Configure Field Names button, the Edit Field Names window appears:



This window allows the user to assign a name to the field data for display purposes.

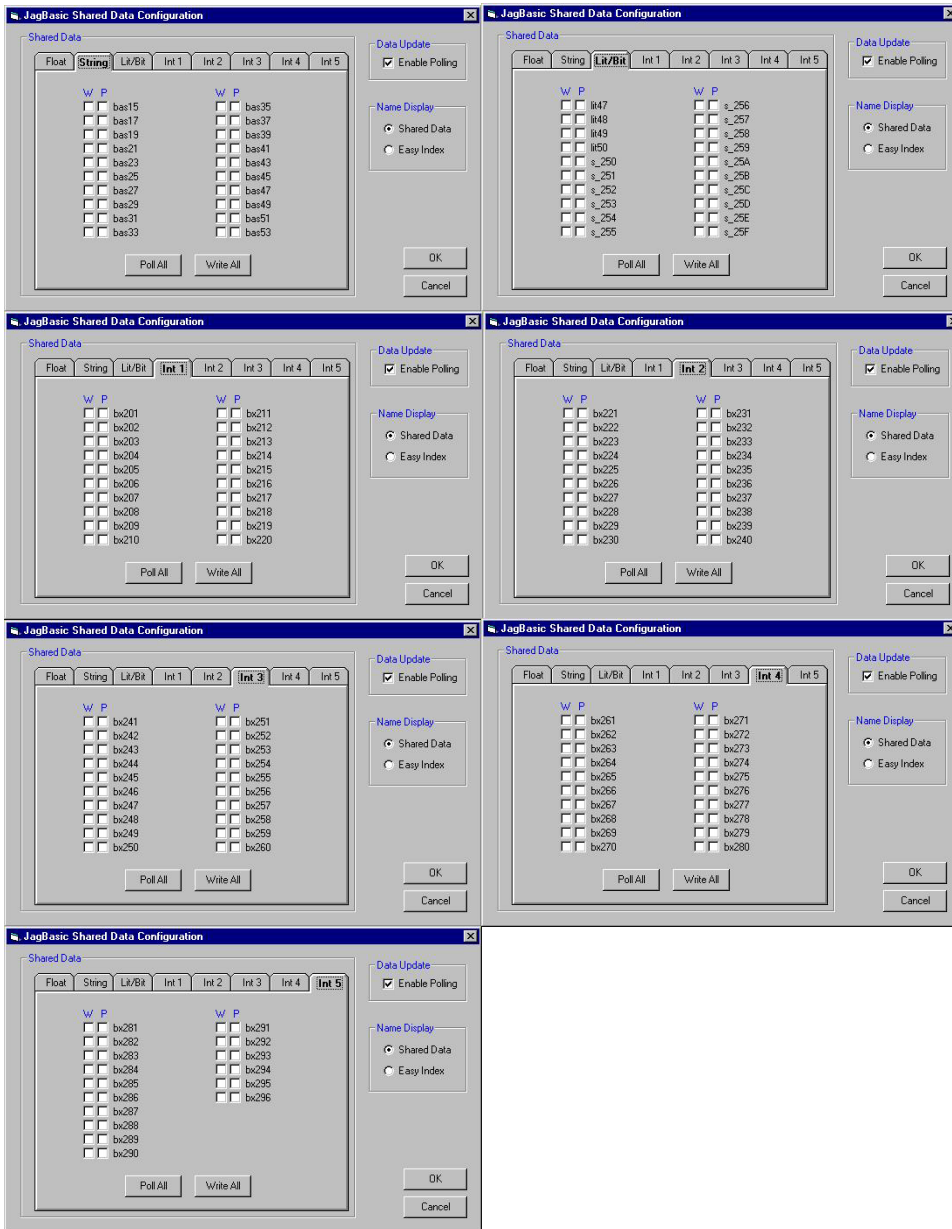
3. The SmartCell Diagnostics protocol allows the user to gather diagnostic information from a POWERCELL or RAAD box installation. This includes individual cell count data. No other configuration of the protocol is needed for the configuration tool.
4. The Predictive Failure protocol allows the user to access predictive failure data like zero drift, overload, or symmetry check data. No other configuration of the protocol is needed for the configuration tool.
5. The Scale Diagnostics protocol allows the user to access general scale diagnostic information. This is available for ANY scale type and includes information on scale calibration values and scale error messages.
6. The JagBASIC protocol allows the user to access and control JagBASIC data. There are several pre-defined values to use for bi-directional communication between PC and JagBASIC applications. This protocol also allows generic shared data read and write access. If the JagBASIC protocol is selected, the Configure Selected Format button is enabled. If you click on this button, the first JagBASIC Configuration window is displayed:



Floating Point Selections

The Shared Data box contains eight tabbed selections that allow the user to choose the polled and/or write values. These include up to 20 floating point, 20 short string, 4 long string, 16 bit-level, and 96 integer values. The Name Display box allows the user to select which associated name is displayed beside the value – the Shared Data name or the Easy Index name (the one that is used for programming on the PC side). The Enable Polling checkbox (under Data Update) must be selected if the values should be automatically read or “polled” at the rate specified in the protocol update rate.

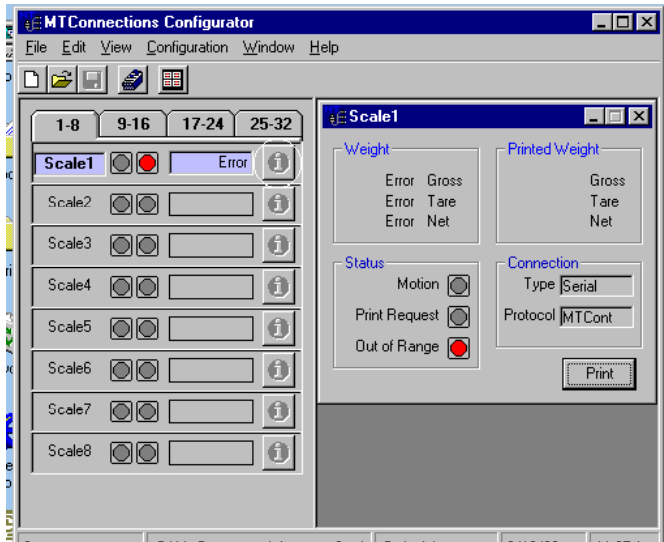
Clicking on any of the other tabs displays the other selections.



The PollAll and WriteAll buttons select (or deselect) all the values on that particular tab. It is important to note that selecting every value in the JagBASIC protocol for polling will create a large amount of network traffic between the PC and the JAGXTREME terminal. The best performance possible is one update every 1.5 seconds with a single JAGXTREME terminal on the network. It is recommended to select a few critical real-time values for polling and read other values using the shared data read on an as-needed (event) basis. This scenario will limit the burden on the network and the JAGXTREME terminal.

Monitoring a Channel

You can monitor the data from a configured scale channel by clicking on the Information (i) button at the right of the channel's status information. A scale window will appear in the right-hand frame for the selected scale channel.



ActiveX Controls

There are three ActiveX controls for the Entry and Enterprise versions of MTConnections: [MTWeight](#), [MTRecordedWeight](#) and [MTRecordTemplate](#).

MTWeight is a “real-time” version of the scale data that provides gross, tare, and net weight data along with other scale status information. It requires a channel configured with the Standard Continuous, SICS, or Jaguar Shared Data protocols to function properly.

MTRecordedWeight is a recorded or printed version of the scale data that provides the last recorded gross, tare, and net weight values. It requires a channel configured with the Standard Continuous, SICS, or Jaguar Shared Data protocols to function properly.

MTRecordTemplate is a recorded or printed version of a custom demand string that can provide any data separated by a definable field separation character. The values supplied will depend on the output data available from the connected device. It requires a channel configured with the Record Template or Jag Record Template protocols to function properly.

The Extreme and Extreme Enterprise versions of MTConnections have four additional ActiveX controls: [MTJagBasic](#), [MTScaleDiag](#), [MTSmartCellDiag](#), and [MTPredictFailure](#).

MTJagBasic is a multipurpose control that provides access to specific shared data variables used to pass data to and from a JagBASIC application. It also provides generic shared data read and write access to any shared data variable. It requires a channel configured with the JagBASIC protocol to function properly.

MTScaleDiag is a diagnostic control that provides generic scale diagnostic data. It is available for any type of scale interface in the JAGXTREME terminal and requires a channel configured with the Scale Diagnostics protocol to function properly.

MTSmartCellDiag is a diagnostic control that provides cell specific diagnostic information. It is available for POWERCELL or RAAD box scales and requires a channel configured with the SmartCell Diagnostics protocol to function properly.

MTPredictFailure is a diagnostic control that provides the predictive failure information from a JAGXTREME terminal. It requires a channel configured with the Predictive Failure protocol to function properly.

MTWeight



MTWeight

Using the MTWeight Control

The MTWeight control accesses data through the Standard Continuous, SICS, or Jaguar Shared Data protocols. The following properties, methods, and events are valid for the MTWeight control.

AtZero	Property	Weight value is at zero
BackColor	Property	Determines control's background color
BorderStyle	Property	Determines control's border style
ClearTare	Method	Issues command to scale to clear the tare weight value
CommLossError	Property	Communication has been lost to scale
Connection	Property	MTConnections channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
DisplayGross	Property	Makes Gross Weight visible
DisplayNet	Property	Makes Net Weight visible
DisplayTare	Property	Makes Tare Weight visible
Enabled	Property	MTConnections communication channel is enabled
ForeColor	Property	Determines control's foreground color
GrossWeight	Property	GrossWeight value
Height	Property	Set or return the height of control
InMotion	Property	Scale is in motion (weight unstable)
InNetMode	Property	Scale is in net mode (tare value has been stored)
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NetWeight	Property	Net Weight value
NewTareWeight	Event	Tare Weight value has changed
NewWeight	Event	Weight value has changed
OutOfRangeError	Property	Scale is out of weighing range (under zero / over capacity)
RecordWeight	Method	Issues command to "record" weight (may be print command)
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
Size	Property	Controls visible size (small, medium, or large)
StatusChange	Event	Scale status has changed
Tare	Method	Issues command to tare scale
TareWeight	Property	Tare Weight value
Top	Property	Set or return the location of the top edge of the control
Units	Property	Weight units value (string)
Width	Property	Set or return the width of the control object
Zero	Method	Issues command to zero scale

AtZero property

The AtZero property is used to determine if the scale is currently at zero. It is considered to be in the true state when the scale's weight value is equal to gross zero. This property should be used in conjunction with the StatusChange event to determine the zero status of the scale.

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

ClearTare method

The ClearTare method is used to issue a "clear" command to the scale. This will cause the tare value to be reset to zero and return the scale to a gross weight mode.

CommLossError property

The CommLossError property is a status value that indicates a communication loss to the scale. This property should be used in conjunction with the StatusChange event to determine if valid weight data is available from the control.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

DisplayGross property

The DisplayGross property is used to select the visibility of the gross weight value. A true state will allow the gross weight value to be visible for the control. The default is set to false.

DisplayNet property

The DisplayNet property is used to select the visibility of the net weight value. A true state will allow the net weight value to be visible for the control. The default is set to true.

DisplayTare property

The DisplayTare property is used to select the visibility of the tare weight value. A true state will allow the tare weight value to be visible for the control. The default is set to false.

Enabled property

The Enabled property is used to determine if the MTConnection communication channel is enabled. A true state will allow the control to receive data and issue commands through its connection. The default is set to true.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

GrossWeight property

The GrossWeight property is the gross weight value for the control. This value is displayed with the Units value if the DisplayGross property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

Height property

The Height property is used to set or return the height of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

InMotion property

The InMotion property is a status value that indicates the stability condition reported by the scale. If the scale reports that its weight is “in motion” as defined by the scale terminal’s motion/stability settings, the InMotion property’s value will be true (1) and the weight considered unstable. This property should be used conjunction with the StatusChange event to determine if valid weight data is available from the control.

InNetMode property

The InNetMode property is a status value that indicates the current weighing mode reported by the scale. If any value is stored in the tare value, the scale is considered in net mode and the InNetMode property’s value will be true (1). If the tare value is zero, then the scale is considered in gross mode and the InNetMode property’s value will be false (0). This property should be used conjunction with the StatusChange event to determine if valid weight data is available from the control.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NetWeight property

The NetWeight property is the net weight value for the control. This value is displayed with the Units value if the DisplayNet property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

NewTareWeight event

The NewTareWeight event occurs when the stored tare weight value has changed.

NewWeight event

The NewWeight event occurs when any weight value changes.

OutOfRangeError property

The OutOfRangeError property is used to determine if the weight values associated with the control are valid. This status property is true if the weight value is either over the scale capacity or under the zero capacity of the scale, and therefore, not valid. This property should be used conjunction with the StatusChange event to determine if valid weight data is available from the control.

RecordWeight method

The RecordWeight method is used to issue a “print” command to the scale.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnection channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnection channel for the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale"X", with the "X" replaced by the connection channel number.

Size property

The Size property is used to set or return the size selection for the visible elements of the control. Three size selections are available (small, medium, large); the default size is set to small.

StatusChange event

The StatusChange event occurs when any of the scale status (AtZero, CommLossError, InMotion, InNetMode, or OutOfRangeError) properties change. This event should be used in conjunction with the scale status properties to determine which scale status condition has changed.

Tare method

The Tare method is used to issue a "tare" command to the scale. This will cause the tare value to be set and the scale to switch to net weight mode, as long as the scale determines that it can perform the tare command (tare is enabled, scale is not in motion, etc.)

TareWeight property

The TareWeight property is the tare weight value for the control. This value is displayed with the Units value if the DisplayTare property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Units property

The Units property is the scale weight units value for the control. This string value is displayed with the GrossWeight, TareWeight, or NetWeight properties.

Width property

The Width property is used to set or return the width of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

Zero method

The Zero method is used to issue a zero command to the scale. The scale may ignore this command if the weight value falls outside of its acceptable zero range or the weight value is not stable.

MTRecordedWeight



MTRecordedWeight

Using the MTRecordedWeight Control

The MTRecordedWeight control accesses data through the Standard Continuous, SICS, or Jaguar Shared Data protocols. The following properties, methods, and events are valid for the MTRecordedWeight control.

BackColor	Property	Determines control's background color
BorderStyle	Property	Determines control's border style
Connection	Property	MTConnection channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
DisplayGross	Property	Makes Gross Weight visible
DisplayNet	Property	Makes Net Weight visible
DisplayTare	Property	Makes Tare Weight visible
Enabled	Property	MTConnections communication channel is enabled
ForeColor	Property	Determines control's foreground color
GrossWeight	Property	GrossWeight value
Height	Property	Set or return the height of control
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NetWeight	Property	Net Weight value
NewDataReady	Event	Recorded data has changed
RecordWeight	Method	Issues command to "record" weight (may be print command)
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
Size	Property	Controls visible size (small, medium, or large)
TareWeight	Property	Tare Weight value
Top	Property	Set or return the location of the top edge of the control
Units	Property	Weight units value (string)
Width	Property	Set or return the width of the control object

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

DisplayGross property

The DisplayGross property is used to select the visibility of the gross weight value. A true state will allow the gross weight value to be visible for the control. The default is set to false.

DisplayNet property

The DisplayNet property is used to select the visibility of the net weight value. A true state will allow the net weight value to be visible for the control. The default is set to true.

DisplayTare property

The DisplayTare property is used to select the visibility of the tare weight value. A true state will allow the tare weight value to be visible for the control. The default is set to false.

Enabled property

The Enabled property is used to determine if the MTConnection communication channel is enabled. A true state will allow the control to receive data and issue commands through its connection. The default is set to true.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

GrossWeight property

The GrossWeight property is the gross weight value for the control. This value is displayed with the Units value if the DisplayGross property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

Height property

The Height property is used to set or return the height of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NetWeight property

The NetWeight property is the net weight value for the control. This value is displayed with the Units value if the DisplayNet property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

NewDataReady event

The NewDataReady event occurs when a new recorded weight transaction is available.

RecordWeight method

The RecordWeight method is used to issue a “print” command to the scale.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnection channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnections channel for the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control’s scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale“X”, with the “X” replaced by the connection channel number.

Size property

The Size property is used to set or return the size selection for the visible elements of the control. Three size selections are available (small, medium, large); the default size is set to small.

TareWeight property

The TareWeight property is the tare weight value for the control. This value is displayed with the Units value if the DisplayTare property is set to true. The value is a variant so it may be used as a string for a text or as a number for numeric expression in your code. This value may also be set to Error if communications are lost or No License if the software is not registered.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Units property

The Units property is the scale weight units value for the control. This string value is displayed with the GrossWeight, TareWeight, or NetWeight properties.

Width property

The Width property is used to set or return the width of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

MTRRecordTemplate



MTRRecordTemplate

Using the MTRRecordTemplate Control

The MTRRecordTemplate control accesses data through the Record Template or the Jag Record Template protocols. The following properties, methods, and events are valid for the MTRRecordTemplate control.

BackColor	Property	Determines control's background color
BorderStyle	Property	Determines control's border style
Connection	Property	MTConnection channel used for controls values
ClearRecord	Method	Clears data from fields
DisplayAlias	Property	Makes Scale Alias visible
Enabled	Property	MTConnections communication channel is enabled
FieldData(X)	Property	Field "X" data
FieldName(X)	Property	Field "X" name
ForeColor	Property	Determines control's foreground color
Height	Property	Set or return the height of control
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NewDataReady	Event	Recorded data has changed
RecordWeight	Method	Issues command to "record" weight (may be print command)
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
Size	Property	Controls visible size (small, medium, or large)
TimeoutError	Event	Timeout period has expired – valid data for every field has not been received
Top	Property	Set or return the location of the top edge of the control
Width	Property	Set or return the width of the control object

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

ClearRecord method

The ClearRecord method is used to clear the data contained in the FieldData(x) property values. This can be used in conjunction with the TimeoutError event to provide error handling and recovery.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

Enabled property

The Enabled property is used to determine if the MTConnection communication channel is enabled. A true state will allow the control to receive data and issue commands through its connection. The default is set to true.

FieldData(X) property

The FieldData (X) property is used to access the data from a specific field number. If the value of Field #1 is required, then MTRecordTemplate1.FieldData(1) would be used to access it.

FieldName(X) property

The FieldName (X) property is used to access the name of a specific field number. If the name assigned to Field #1 is required, then MTRecordTemplate1.FieldName(1) would be used to access it.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

Height property

The Height property is used to set or return the height of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NewDataReady event

The NewDataReady event occurs when a new recorded weight transaction is available.

RecordWeight method

The RecordWeight method is used to issue a "print" command to the scale.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnections channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnection channel for the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale"X", with the "X" replaced by the connection channel number.

Size property

The Size property is used to set or return the size selection for the visible elements of the control. Three size selections are available (small, medium, large); the default size is set to small.

TimeoutError event

The Timeout event occurs when the appropriate amount of field data or the termination string is not received within the timeout period specified in the protocol setup.

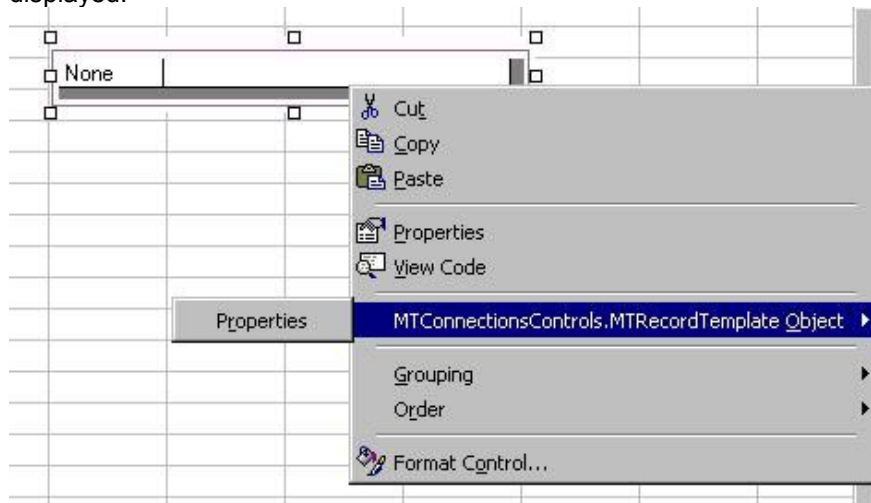
Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

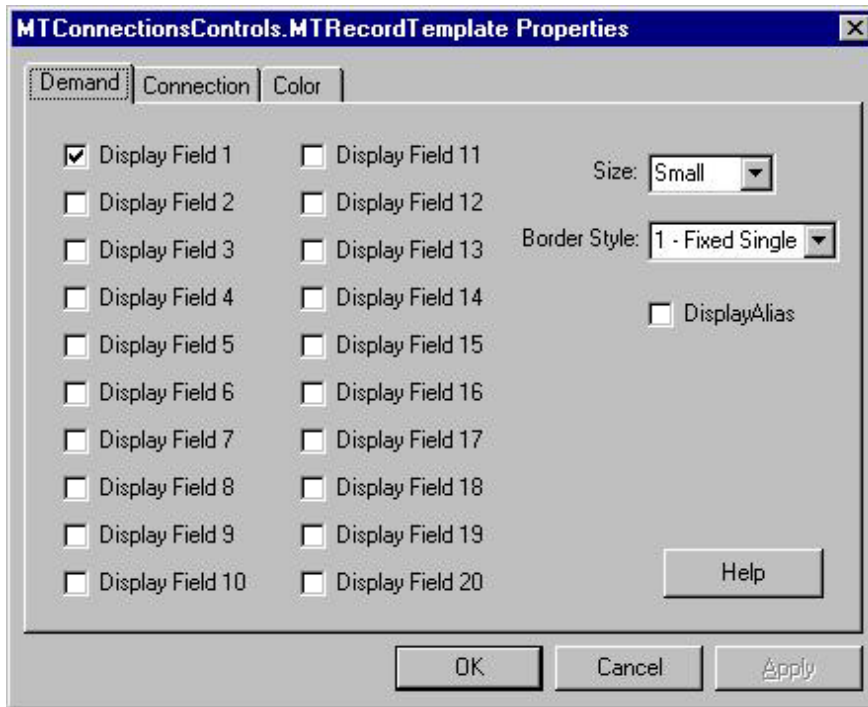
Width property

The Width property is used to set or return the width of the control. This is handled automatically by the Size property and should not be changed from its default under normal circumstances.

In addition, there are display field properties available through the MTRRecordTemplate object properties page. To access this, right click on the control. You should see the following window displayed:



Select Properties and the following will be displayed.



You should be able to select which fields to display for this instance of control. Both Field ID and value will be shown for each selected field.

MTJagBasic



MTJagBasic

Using the MTJagBasic Control

The MTJagBasic control accesses data through the JagBASIC protocol. The following properties, methods, and events are valid for the MTJagBasic control. There are no size controls if control visibility is true because of the amount of possible data.

BackColor	Property	Determines control's background color
BitValue(x)	Property	Bit level values
BorderStyle	Property	Determines control's border style
ConfigChanged	Event	Configuration for the control (its setup) has changed
CommLossError	Property	Communication has been lost to scale
Connection	Property	MTConnections channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
ForeColor	Property	Determines control's foreground color
FPValue(x)	Property	Floating point values
Height	Property	Set or return the height of control
IntValue(x)	Property	Integer values
JBCommand	Property	Command word sent to JagBASIC
JBEvent(x)	Event	Events triggered by JagBASIC
JBStatus	Property	Status word sent by JagBASIC
Left	Property	Set or return the position of the left edge of the control

LSTRValue(x)	Property	Long string (40 char) values
Name	Property	Instance of control's name
NewDataReady	Event	Data value(s) have changed
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
SDRead	Method	Command to read specific shared data variable
SDWrite	Method	Command to write specific shared data variable
SSTRValue(x)	Property	Short string (4 char) values
TimeoutError	Event	Communication loss has occurred
Top	Property	Set or return the location of the top edge of the control
UpdateValues	Method	Command to update all values
Visibility	Property	Set or return the display of all control data
Width	Property	Set or return the width of the control object
WriteAccess	Property	Requests write access for instance of control – only one control may have write access
WriteAccessEnabled	Property	Indicates status of write access for the control

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BitValue(x) property

The BitValue(x) property is used to set or return the bit level data from the s_250 through s_25F shared data variables. "x" is replaced with the corresponding integer for the required shared data:

1	S_250	5	S_254	9	S_258	13	S_25C
2	S_251	6	S_255	10	S_259	14	S_25D
3	S_252	7	S_256	11	S_25A	15	S_25E
4	S_253	8	S_257	12	S_25B	16	S_25F

To set the s_25E bit from a PC application, you would use the following syntax:

```
MTJagBasic1.BitValue(15) = 1
```

The control can return (or read) these values at any time as long as the protocol has been setup to poll for these values. To set (or write) data to these values, the control must have WriteAccessEnabled true and the protocol must be set up to write to it. These shared data variables may also be used for JBEvent(x) events.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

ConfigChanged property

The ConfigChanged property is used to determine if the setup from the protocol for the control has changed. This would indicate that the data property values available to set or read are now different. Values that were once available may no longer be present or additional values may have been added.

CommLossError property

The CommLossError property is a status value that indicates a communication loss to the scale. This property should be used conjunction with the StatusChange event to determine if valid weight data is available from the control.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

FPValue(x) property

The FPValue(x) property is used to set or return the floating point data from the bas 14, bas 16, bas18, etc. shared data variables. “x” is replaced with the corresponding integer for the required shared data:

1	Bas14	6	Bas24	11	Bas34	16	Bas44
2	Bas16	7	Bas26	12	Bas36	17	Bas46
3	Bas18	8	Bas28	13	Bas38	18	Bas48
4	Bas20	9	Bas30	14	Bas40	19	Bas50
5	Bas22	10	Bas32	15	Bas42	20	Bas52

To set the bas24 value from a PC application, you would use the following syntax:
MTJagBasic1.FPValue(6) = 21.5678

The control can return (or read) these values at any time as long as the protocol has been setup to poll for these values. To set (or write) data to these values, the control must have WriteAccessEnabled true, and the protocol must be set up to write to it.

Height property

The Height property is used to return the height of the control.

IntValue(x) property

The IntValue(x) property is used to set or return the floating point data from the bx201 – bx296 shared data variables. “x” is replaced with the corresponding integer for the required shared data:

1	Bx201	6	Bx206	11	Bx211	16	Bx216
2	Bx202	7	Bx207	12	Bx212	17	Bx217
3	Bx203	8	Bx208	13	Bx213
4	Bx204	9	Bx209	14	Bx214	95	Bx295
5	Bx205	10	Bx210	15	Bx215	96	Bx296

To set the bx248 value from a PC application, you would use the following syntax:
MTJagBasic1.IntValue(48) = 250

The control can return (or read) these values at any time as long as the protocol has been setup to poll for these values. To set (or write) data to these values, the control must have WriteAccessEnabled true, and the protocol must be set up to write to it.

JBCommand property

The JBCommand property is used to issue commands from the PC to JagBASIC. This passes the JBCommand property's integer value to the shared data variable bx297. A structure of different commands based on the integer values can then be supported through this command implementation. This value can be set or read at any time. To issue a command from a PC application, you would use the following syntax: MTJagBasic.JBCommand = 2

The JagBASIC application would then need to trap for this value from the bx297 shared data variable to follow the appropriate “programmed” action.

JBEvent(x) event

The JBEvent(x) event occurs when the bit level shared data variables (s_250 through s_25F) are set to 1. “x” is replaced with the corresponding integer for the event from the shared data:

1	S_250	5	S_254	9	S_258	13	S_25C
2	S_251	6	S_255	10	S_259	14	S_25D
3	S_252	7	S_256	11	S_25A	15	S_25E
4	S_253	8	S_257	12	S_25B	16	S_25F

If a JagBASIC programmer set the s_25E bit, you would have the MTJagBasic1.JBEvent(15) trigger, and any code in its subroutine would be run. Note that these shared data variables are also used with the BitValue(x) properties, so selection of application function must be made.

JBStatus property

The JBStatus property is used to return the integer value of the bx298 shared data variable. A structure of different status conditions based on the integer values can then be supported through this status implementation. To read the status from a PC application, you would use the following syntax: X = MTJagBasic.JBStatus

The PC application would then need to select a case for this value to follow the appropriate “programmed” action.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

LSTRValue(x) property

The LSTRValue(x) property is used to set or return the long string data from the lit47, lit48, lit49 and lit50 shared data variables. These strings may be up to 40 characters long. “x” is replaced with the corresponding integer for the required shared data:

1	Lit47	2	Lit48	3	Lit49	4	Lit50
---	-------	---	-------	---	-------	---	-------

To set the lit49 value from a PC application, you would use the following syntax:
MTJagBasic1.LSTRValue(3) = “My name is Joe”

The control can return (or read) these values at any time as long as the protocol has been setup to poll for these values. To set (or write) data to these values, the control must have WriteAccessEnabled true, and the protocol must be set up to write to it.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NewDataReady event

The NewDataReady event occurs when new values are available.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnections channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnections channel for the control (Enterprise versions only). The connection property should be used to determine the channel, and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale "X", with the "X" replaced by the connection channel number.

SDRead method

The SDRead method is used when a specific shared data variable value needs to be returned (or read). This command requires the shared data name, type, and length be passed as arguments. Its syntax is as follows: Text1.text = MTJagBasic1.SDRead(SDName\$, SDType%, Len%, result)

The shared data name must be a valid string name from the published shared data list for your version of the JAGXTREME terminal.

The type must be an integer value that corresponds with the shared data variable's type:

- 0 = bit level (JB_Bit)
- 1 = integer (JB_Integer)
- 2 = long (JB_Long)
- 3 = float (JB_Float)
- 4 = double (JB_Double)
- 5 = string (JB_String)

The length must be an integer that corresponds with the data length of the expected shared data. The result is an integer value that indicates the status of the shared data read function:

- 0 = RW_SUCCESS
- 1 = INVALID_TAG
- 2 = READ_FAILURE
- 5 = WRONG_DATA_TYPE

Data from the SDRead method is returned in the data type required by the shared data type chosen.

SDWrite method

The SDWrite method is used when a specific shared data variable value needs to be set (or written). This command requires the shared data name and the data value to be set passed as arguments. Its syntax is as follows: MTJagBasic1.SDWrite(SDName\$, a\$)

The shared data name must be a valid string name from the published shared data list for your version of the JAGXTREME terminal.

The data to be written must match the data type for the shared data variable selected.

The result is an integer value that indicates the status of the shared data read function:

- 0 = RW_SUCCESS
- 1 = INVALID_TAG
- 3 = WRITE_FAILURE
- 4 = WRITE_NOT_ALLOWED
- 5 = WRONG_DATA_TYPE

SSTRValue(x) property

The SSTRValue(x) property is used to set or return the short string data from the bas13, bas15, bas17, and other shared data variables. “x” is replaced with the corresponding integer for the required shared data:

1	Bas15	6	Bas25	11	Bas35	16	Bas45
2	Bas17	7	Bas27	12	Bas37	17	Bas47
3	Bas19	8	Bas29	13	Bas39	18	Bas49
4	Bas21	9	Bas31	14	Bas41	19	Bas51
5	Bas23	10	Bas33	15	Bas43	20	Bas53

To set the bas29 value from a PC application, you would use the following syntax:

```
MTJagBasic1.SSTRValue(8) = "AaBb"
```

The control can return (or read) these values at any time as long as the protocol has been setup to poll for these values. To set (or write) data to these values, the control must have WriteAccessEnabled true, and the protocol must be set up to write to it.

TimeoutError event

The Timeout event occurs when communication with the scale has been lost.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

UpdateValues method

The UpdateValues method is used to update all of the polled values associated with the control.

Visibility property

The Visibility property is used to set or return the control's display state. If visibility is true or set true, the control (all of its values) will be visible during runtime. If it is false, then the control (all of its values) will not be displayed during runtime.

Width property

The Width property is used to return the width of the control.

WriteAccess property

The WriteAccess property is used to set the request to have write access to the data values for the instance of the control. Only one control may have write access to the data at a time. If write access must be shared, then the controls must pass write access control from one to another. This property is used in conjunction with the WriteAccessEnabled property.

WriteAccessEnabled property

The WriteAccessEnabled property is used to return the status of write access to the data values for the instance of the control. If this is true, then the instance of the control has write access privileges and can set any of the data values selected in the setup of the protocol as write-enabled.

MTScaleDiag



MTScaleDiag

Using the MTScaleDiag Control

The MTScaleDiag control accesses data through the Scale Diagnostics protocol. The following properties, methods, and events are valid for the MTScaleDiag control. The size of the control is fixed because of the amount of possible data.

BackColor	Property	Determines control's background color
BorderStyle	Property	Determines control's border style
CaptureCountsError	Event	UpdateValues method failed to capture counts
ConfigChanged	Event	Configuration for the control (its setup) has changed
CommLossError	Event	Communication has been lost to scale
Connection	Property	MTConnections channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
DisplayCalHighCount	Property	Makes CalHighCount visible
DisplayCalHighWeight	Property	Makes CalHighWeight visible
DisplayCalMidCount	Property	Makes CalMidCount visible
DisplayCalMidWeight	Property	Makes CalMidWeight visible
DisplayCalZeroCount	Property	Makes CalZeroCount visible
DisplayCurrentCount	Property	Makes CurrentCount visible
DisplayCurrentZeroCount	Property	Makes CurrentZeroCount visible
DisplayScaleImpactCounter	Property	Makes ScaleImpactCounter visible
DisplayScaleOverloadCounter	Property	Makes ScaleOverloadCounter visible
DisplayScaleZeroCounter	Property	Makes ScaleZeroCounter visible
DisplayScaleZeroFailCounter	Property	Makes ScaleZeroFailCounter visible
DisplayWeighmentCounter	Property	Makes WeighmentCounter visible
ForeColor	Property	Determines control's foreground color
Height	Property	Set or return the height of control
LastScaleError (n)	Property	String message of last error for specified scale (1-4)
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NewDataReady	Event	Data value(s) have changed
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
ScaleCalHighCounts (n)	Property	Calibrated high span count value for specified scale (1-4)
ScaleCalHighWeight (n)	Property	Calibrated high weight value for specified scale (1-4)
ScaleCalMidCounts (n)	Property	Calibrated mid span count value for specified scale (1-4)
ScaleCalMidWeight (n)	Property	Calibrated mid span weight value for specified scale (1-4)
ScaleCalZeroCounts (n)	Property	Calibrated zero count value for specified scale (1-4)
ScaleCriticalError (n)	Property	Flag to indicate scale weight invalid for specified scale (1-4)
ScaleCurrentCounts (n)	Property	Current count value for specified scale (1-4)
ScaleCurrentZeroCounts (n)	Property	Current zero count value for specified scale (1-4)
ScaleErrorCounter (n)	Property	Number of errors since reset or calibration for specified scale (1-4)
ScaleImpactCounter (n)	Property	Number of impacts since reset or calibration for specified scale (1-4)
ScaleOverloadCounter (n)	Property	Number of overload weighments since reset or calibration for specified scale (1-4)
ScaleZeroCounter (n)	Property	Number of times scale was zeroed since reset or calibration for specified scale (1-4)
ScaleZeroFailCounter (n)	Property	Number of times zero attempt failed since reset or calibration for specified scale (1-4)

Top	Property	Set or return the location of the top edge of the control
UpdateValues	Method	Command to update all values
Visibility	Property	Set or return the display of all control data
WeighmentCounter (n)	Property	
Width	Property	Set or return the width of the control object

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

CaptureCountsError event

The CaptureCountsError event triggers when an error occurs during the UpdateValues function.

ConfigChanged property

The ConfigChanged property is used to determine if the setup from the protocol for the control has changed. This would indicate that the data property values available to set or read are now different. Values that were once available may no longer be present or additional values may have been added.

CommLossError event

The CommLossError event triggers when communication is lost to the scale.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

DisplayCalHighCount property

The DisplayCalHighCount property is used to select the visibility of the scale calibrated high count value. A true state will allow the high count to be visible for the control. The default is set to false.

DisplayCalHighWeight property

The DisplayCalHighWeight property is used to select the visibility of the scale calibrated high weight value. A true state will allow the high weight to be visible for the control. The default is set to false.

DisplayCalMidCount property

The DisplayCalMidCount property is used to select the visibility of the scale calibrated mid count value. A true state will allow the mid count to be visible for the control. The default is set to false.

DisplayCalMidWeight property

The DisplayCalMidWeight property is used to select the visibility of the scale calibrated mid weight value. A true state will allow the mid weight to be visible for the control. The default is set to false.

DisplayCalZeroCount property

The **DisplayCalZeroCount** property is used to select the visibility of the scale calibrated zero count value. A true state will allow the calibrated zero count to be visible for the control. The default is set to true.

DisplayCurrentCount property

The **DisplayCurrentCount** property is used to select the visibility of the scale current count value. A true state will allow the current count to be visible for the control. The default is set to false.

DisplayCurrentZeroCount property

The **DisplayCurrentZeroCount** property is used to select the visibility of the scale current zero count value. A true state will allow the current zero count to be visible for the control. The default is set to true.

DisplayScaleImpactCounter property

The **DisplayScaleImpactCounter** property is used to select the visibility of the scale impact counter. A true state will allow the impact counter to be visible for the control. The default is set to false.

DisplayScaleOverloadCounter property

The **DisplayAlias** property is used to select the visibility of the scale overload counter. A true state will allow the overload counter to be visible for the control. The default is set to false.

DisplayScaleZeroCounter property

The **DisplayScaleZeroCounter** property is used to select the visibility of the scale zero counter. A true state will allow the zero counter to be visible for the control. The default is set to false.

DisplayScaleZeroFailCounter property

The **DisplayScaleZeroFailCounter** property is used to select the visibility of the scale zero failure counter. A true state will allow the zero failure counter to be visible for the control. The default is set to false.

DisplayWeighmentCounter property

The **DisplayWeighmentCounter** property is used to select the visibility of the scale weighment counter. A true state will allow the weighment counter to be visible for the control. The default is set to false.

ForeColor property

The **ForeColor** property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

Height property

The **Height** property is used to return the height of the control.

LastSaleError (n) property

The **LastScaleError (n)** property is used return a string message that contains the time, date and last error reported for the scale specified by (n).

Left property

The **Left** property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The **Name** property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NewDataReady event

The **NewDataReady** event occurs when new values are available.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnection channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnection channel for the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel, and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale"X", with the "X" replaced by the connection channel number.

ScaleCalHighCounts (n) property

The ScaleCalHighCounts (n) property is used to return the value of the control's calibrated high count value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleCalHighWeight (n) property

The ScaleCalHighWeight (n) property is used to return the value of the control's calibrated high weight value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a double.

ScaleCalMidCounts (n) property

The ScaleCalMidCounts (n) property is used to return the value of the control's calibrated mid count value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleCalMidWeight (n) property

The ScaleCalMidWeight (n) property is used to return the value of the control's calibrated mid weight value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a double.

ScaleCalZeroCounts (n) property

The ScaleCalZeroCounts (n) property is used to return the value of the control's calibrated zero count value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleCriticalError (n) property

The ScaleCriticalError (n) property is used to return the value of the Boolean flag to indicate that the scale is in error condition for the scale specified by (n), where (n) may be 1, 2, 3, or 4.

ScaleCurrentCounts (n) property

The ScaleCurrentCounts (n) property is used to return the value of the control's current count value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleCurrentZeroCounts (n) property

The ScaleCurrentZeroCounts (n) property is used to return the value of the control's current zero count value for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleErrorCounter (n) property

The ScaleErrorCounter (n) property is used to return the value of the control's number of errors since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a double.

ScaleImpactCounter (n) property

The ScaleImpactCounter (n) property is used to return the value of the control's number of scale impact weighments since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleOverloadCounter (n) property

The ScaleOverloadCounter (n) property is used to return the value of the control's number of scale overload weighments since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleZeroCounter (n) property

The ScaleZeroCounter (n) property is used to return the value of the control's number of scale zero commands since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

ScaleZeroFailCounter (n) property

The ScaleZeroFailCounter (n) property is used to return the value of the control's number of failed scale zero commands since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

UpdateValues method

The UpdateValues method is used to update all of the polled values associated with the control.

Visibility property

The Visibility property is used to set or return the control's display state. If visibility is true or set true, the control (all of its values) will be visible during runtime. If it is false, then the control (all of its values) will not be displayed during runtime.

WeighmentCounter (n) property

The WeighmentCounter (n) property is used to return the value of the control's number of scale weighments since reset or calibration for the scale specified by (n), where (n) may be 1, 2, 3, or 4. The value returned is a long integer.

Width property

The Width property is used to return the width of the control.

MTSmartCellDiag



MTSmartCellDiag

Using the MTSmartCellDiag Control

The MTSmartCellDiag control accesses data through the SmartCell Diagnostics protocol. The following properties, methods, and events are valid for the MTSmartCellDiag control. The size of the control is fixed because of the amount of possible data.

BackColor	Property	Determines control's background color
BorderStyle	Property	Determines control's border style
CaptureCountsError	Event	UpdateValues method failed to capture counts
CellCalSpanCounts (n)	Property	Calibrated span counts for each cell (1-24)
CellCalZeroCounts (n)	Property	Calibrated zero counts for each cell (1-24)
CellCounts (n)	Property	Last recorded counts for each cell (1-24)
CellCurrentZeroCounts (n)	Property	Current zero counts for each cell (1-24)
CellErrorCounts (n)	Property	Number of errors for each cell (1-24)
CellErrorNumber (n)	Property	Error message number for each cell (1-24)
CellOverloadCounts (n)	Property	Overload error counts for each cell (1-24)
CellOverloadStatus (n)	Property	Status of overload state for each cell (1-24)
ConfigChanged	Event	Configuration for the control (its setup) has changed
CommLossError	Event	Communication has been lost to scale
Connection	Property	MTConnections channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
DisplayCalSpanCount	Property	Makes CalSpanCount visible
DisplayCalZeroCellCount	Property	Makes CalZeroCellCount visible
DisplayCellCounts	Property	Makes CellCounts visible
DisplayCellErrorCount	Property	Makes CellErrorCount visible
DisplayCellErrorNumber	Property	Makes CellErrorNumber visible
DisplayCellOverloadCount	Property	Makes CellOverloadCount visible
DisplayCellOverloadStatus	Property	Makes CellOverloadStatus visible
DisplayCurrentZeroCellCount	Property	Makes CurrentZeroCellCount visible
ForeColor	Property	Determines control's foreground color
Height	Property	Set or return the height of control
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NewDataReady	Event	Data value(s) have changed
NumberActiveCells	Property	Number of active cells in the JAGXTREME
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ScaleAlias	Property	Scale Alias (name) value
Top	Property	Set or return the location of the top edge of the control
UpdateValues	Method	Command to update all values
Visibility	Property	Set or return the display of all control data
Width	Property	Set or return the width of the control object

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

CaptureCountsError event

The CaptureCountsError event triggers when an error occurs during the UpdateValues function.

CellCalSpanCounts (n) property

The CellCalSpanCounts (n) property is used to return the value of the control's calibrated span count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellCalZeroCounts (n) property

The CellCalZeroCounts (n) property is used to return the value of the control's calibrated zero count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellCounts (n) property

The CellCounts (n) property is used to return the value of the control's last recorded count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellCurrentZeroCounts (n) property

The CellCurrentZeroCounts (n) property is used to return the value of the control's current zero count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellErrorCounts (n) property

The CellErrorCounts (n) property is used to return the value of the control's number of errors for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellErrorNumber (n) property

The CellErrorNumber (n) property is used to return the value of the control's error message number for the cell specified by (n), where (n) may be 1-24. The value returned is a string.

CellOverloadCounts (n) property

The CellOverloadCounts (n) property is used to return the value of the control's overload error count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellOverloadStatus (n) property

The CellOverloadStatus (n) property is used to return the value of the control's overload status for the cell specified by (n), where (n) may be 1-24. The value returned is Boolean.

ConfigChanged property

The ConfigChanged property is used to determine if the setup from the protocol for the control has changed. This would indicate that the data property values available to set or read are now different. Values that were once available may no longer be present or additional values may have been added.

CommLossError event

The CommLossError event triggers when communication is lost to the scale.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

DisplayCalSpanCellCount property

The DisplayCalSpanCellCount property is used to select the visibility of the cell calibrated span count value. A true state will allow the calibrated span cell count to be visible for the control. The default is set to false.

DisplayCalZeroCellCount property

The DisplayCalZeroCellCount property is used to select the visibility of the cell calibrated zero count value. A true state will allow the calibrated zero cell count to be visible for the control. The default is set to false.

DisplayCellCounts property

The DisplayCellCounts property is used to select the visibility of the cells' current count value. A true state will allow the current count to be visible for the control. The default is set to true.

DisplayCellErrorCount property

The DisplayCellErrorCount property is used to select the visibility of the cell error count value. A true state will allow the cell error count to be visible for the control. The default is set to false.

DisplayCellErrorNumber property

The DisplayCellErrorNumber property is used to select the visibility of the cell error message number value. A true state will allow the error message to be visible for the control. The default is set to false.

DisplayCellOverloadCount property

The DisplayCellOverloadCount property is used to select the visibility of the cell overload error count value. A true state will allow the overload error count to be visible for the control. The default is set to false.

DisplayCellOverloadStatus property

The DisplayCellOverloadStatus property is used to select the visibility of the cell overload status value. A true state will allow the overload status to be visible for the control. The default is set to false.

DisplayCurrentZeroCellCount property

The DisplayCurrentZeroCellCount property is used to select the visibility of the cell current zero count value. A true state will allow the current zero cell count to be visible for the control. The default is set to false.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

Height property

The Height property is used to return the height of the control.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NewDataReady event

The NewDataReady event occurs when new values are available.

NumberActiveCells property

The NumberActiveCells property is used to return the number of active cells in the JAGXTREME terminal. The value is an integer between 1-24.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnection channel used for the weight values of the control (Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnection channel for the control (Enterprise versions only). The Connection property should be used to determine the channel and the RemoteConnection property should be enabled.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale"X", with the "X" replaced by the connection channel number.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

UpdateValues method

The UpdateValues method is used to update all of the polled values associated with the control.

Visibility property

The Visibility property is used to set or return the control's display state. If visibility is true or set true, the control (all of its values) will be visible during runtime. If it is false, the control (all of its values) will not be displayed during runtime.

Width property

The Width property is used to return the width of the control.

MTPredictFailure



MTPredictFailure

Using the MTPredictFailure Control

The MTPredictFailure control accesses data through the Predictive Failure protocol. The following properties, methods, and events are valid for the MTPredictFailure control. The size of the control is fixed because of the amount of possible data.

BackColor	Property	Determines control's background color
BadCell (n)	Property	Flag to indicate bad cell for each cell (1-24)
BorderStyle	Property	Determines control's border style
CellSymFailCounter (n)	Property	Symmetry failure counter for each cell (1-24)
CellZeroDriftCounter (n)	Property	Zero drift counter for each cell (1-24)
CellZeroDriftStatus (n)	Property	Zero drift status indications for each cell (1-24)
ConfigChanged	Event	Configuration for the control (its setup) has changed
CommLossError	Event	Communication has been lost to scale
Connection	Property	MTPredictFailure channel used for controls values
DisplayAlias	Property	Makes Scale Alias visible
DisplayCellData	Property	Makes CellData visible
DisplayCellSymFailCounter	Property	Makes CellSymFailCounter visible
DisplayCellZeroDriftCounter	Property	Makes CellZeroDriftCounter visible
DisplayCellZeroDriftStatus	Property	Makes CellZeroDriftStatus visible
DisplayScaleData	Property	Makes ScaleData visible
EstimatingWeightStatus (n)	Property	Status of run flat mode for each cell (1-24)
ForeColor	Property	Determines control's foreground color
Height	Property	Set or return the height of control
Left	Property	Set or return the position of the left edge of the control
Name	Property	Instance of control's name
NewDataReady	Event	Data value(s) have changed
RemoteConnection	Property	Enables connection to a remote server
RemoteServerName	Property	Name of remote server for remote connection
ReplacementCell (n)	Property	Flag to indicate replacement cell for each cell (1-24)
ResetPredFailure	Method	Resets predictive failure counts & cell values
ScaleAlias	Property	Scale Alias (name) value
SymmetryFailure (n)	Property	Indication of symmetry failure for each cell (1-24)
Top	Property	Set or return the location of the top edge of the control
UpdateValues	Method	Command to update all values
Visibility	Property	Set or return the display of all control data
Width	Property	Set or return the width of the control object

BackColor property

The BackColor property is used to set or return the control's background color. This uses the color palette or hex value. The default value is the window background color.

BadCell (n) property

The BadCell (n) property is used to return the value of the control's bad cell status value for the cell specified by (n), where (n) may be 1-24. The value returned is a byte to indicate cell number.

BorderStyle property

The BorderStyle property is used to set or return the value of the border style of the control. There are two valid values: 0 = no border or 1 = Fixed_Single border. If the value is set to a fixed single border, the control will display a fixed, single-line box around the visible objects of the control. The default value is set at 1.

CellSymFailCounter (n) property

The CellSymFailCounter (n) property is used to return the value of the control's symmetry failure count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellZeroDriftCounter (n) property

The CellZeroDriftCounter (n) property is used to return the value of the control's zero drift count value for the cell specified by (n), where (n) may be 1-24. The value returned is a long integer.

CellZeroDriftStatus (n) property

The CellZeroDriftStatus (n) property is used to return the value of the control's zero drift status value for the cell specified by (n), where (n) may be 1-24. The value returned is a string.

ConfigChanged property

The ConfigChanged property is used to determine if the setup from the protocol for the control has changed. This would indicate that the data property values available to set or read are now different. Values that were once available may no longer be present or additional values may have been added.

CommLossError event

The CommLossError event triggers when communication is lost to the scale.

Connection property

The Connection property is used to set and return the value of the MTConnection channel used for the weight values of the control. The Connection property should be a value between 1 and 32. The default connection value is set at 1.

DisplayAlias property

The DisplayAlias property is used to select the visibility of the scale alias name. A true state will allow the alias to be visible for the control. The default is set to true.

DisplayCellData property

The DisplayCellData property is used to select the visibility of the cell data. A true state will allow the cell data to be visible for the control. The default is set to true.

DisplayCellSymFailCounter property

The DisplayCellSymFailCounter property is used to select the visibility of the cell symmetry failure counter. A true state will allow it to be visible for the control. The default is set to false.

DisplayCellZeroDriftCounter property

The DisplayCellZeroDriftCounter property is used to select the visibility of the cell zero drift counter. A true state will allow it to be visible for the control. The default is set to true.

DisplayCellZeroDriftStatus property

The DisplayCellZeroDriftStatus property is used to select the visibility of the cell zero drift status. A true state will allow it to be visible for the control. The default is set to false.

DisplayScaleData property

The DisplayScaleData property is used to select the visibility of the scale data. A true state will allow it to be visible for the control. The default is set to true.

ForeColor property

The ForeColor property is used to set or return the control's foreground color of its visible objects. This uses the color palette or hex value. The default value is the window text color.

Height property

The Height property is used to return the height of the control.

Left property

The Left property is used to set or return the left position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

Name property

The Name property is used to set the name of the instance of the control. The default is the control name followed by the numeric instance – example: MTWeight1

NewDataReady event

The NewDataReady event occurs when new values are available.

RemoteConnection property

The RemoteConnection property is used to enable the use of remote server connections of the MTConnection channel used for the weight values of the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and a server name must be specified in the RemoteServerName property to direct the connection to the proper location.

RemoteServerName property

The RemoteServerName property is used to set or return the name of the remote server used for the connection of the MTConnection channel for the control (Enterprise and Extreme Enterprise versions only). The Connection property should be used to determine the channel and the RemoteConnection property should be enabled.

ReplacementCell (n) property

The ReplacementCell (n) property is used to return the value of the control's replacement cell value for the cell specified by (n), where (n) may be 1-24. The value returned is a byte to indicate cell number.

ResetPredFailure method

The ResetPredFailure method is used to reset all the predictive failure counts and cell values associated with the control.

ScaleAlias property

The ScaleAlias property is used to set or return the value of the control's scale name. This property default value comes from the server but is persisted from the control. The server default value for the ScaleAlias property is Scale"X", with the "X" replaced by the connection channel number.

SymmetryFailure (n) property

The SymmetryFailure (n) property is used to return the value of the control's symmetry failure status for the cell specified by (n), where (n) may be 1-24. The value returned is a string.

Top property

The Top property is used to set or return the top position of the placement of the control. This is usually handled automatically when the control is positioned on the container.

UpdateValues method

The UpdateValues method is used to update all of the polled values associated with the control.

Visibility property

The Visibility property is used to set or return the control's display state. If visibility is true or set true, the control (all of its values) will be visible during runtime. If it is false, then the control (all of its values) will not be displayed during runtime.

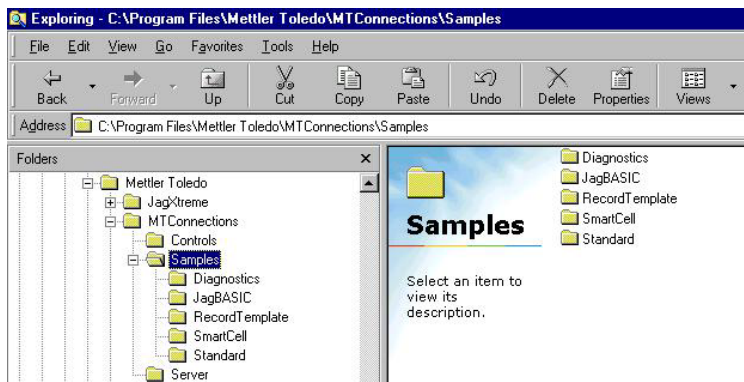
Width property

The Width property is used to return the width of the control.

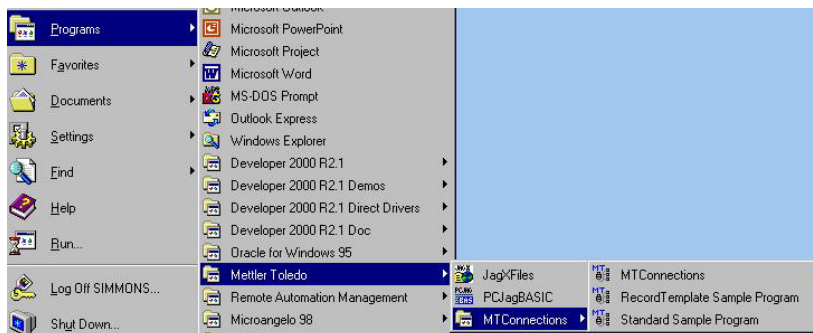
Sample Projects

The MTConnections software comes with up to five separate sample applications to use for testing and debug purposes. The MTConnections Entry and Enterprise packages have two samples: Standard Sample Program and RecordTemplate Sample Program. The Extreme and Extreme Enterprise packages have three additional samples: Diagnostics Sample Program, JagBASIC Sample Program and SmartCell Sample Program.

If selected during the installation process, these applications and their source code are loaded into the subdirectory location chosen for MTConnections in a folder called Samples.

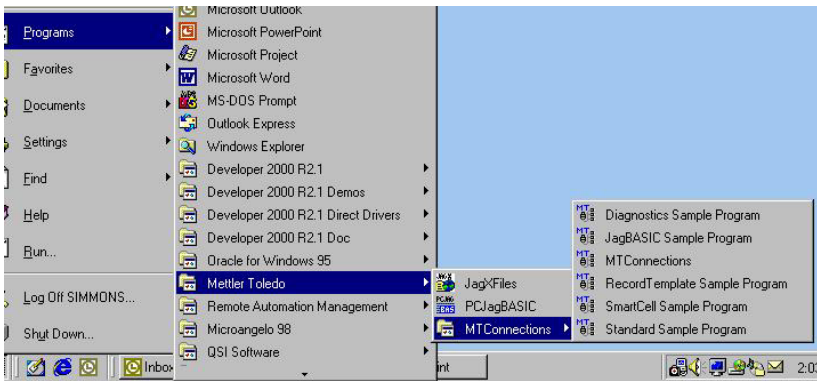


The application executables can be found in the Programs Menu in the same location as the MTConnections Configuration tool.



Entry or Enterprise

OR



Extreme or Extreme Enterprise

The samples use the following configurations for their data channel setup in MTCConnections.

Channel	Use
1	MTweight Control Scale #1
2	Open
3	MTRecordTemplate Control
4	Open
5	MTPredictFailure Control
6	MTScaleDiagnostic Control
7	MTSmartCellDiagnostics Control
8	MTJagBasic Control

In order for the sample to function properly, you must setup the correct channel configuration to match the expected selections. Each of the channels should have "CTPZ" enabled, since the print mechanism may be used to acquire data for the controls. A warning message is displayed when the sample program is started if the configuration is not correct for the Diagnostics Sample Program, JagBASIC Sample Program and SmartCell Sample Program.

If you plan to use only one of the samples, only that channel must be configured but it must be in the location noted in the chart above. For example, if you wish to use the RecordTemplate Sample Program, you would only need to configure channel three for the RecordTemplate protocol (either Serial or Ethernet).

Standard Sample Program

The Standard Sample Program uses the MTWeight and MTRecordedWeight controls with channel 1.

MTConnections Controls Sample Form

MTWeight

Water	N/A	Gross
	N/A	Tare
	N/A	Net

InNetMode
 AtZero
 InMotion
 OutOfRange
 CommLoss

Tare Value:

MTRecordedWeight

Water	Gross
	Tare
	Net

FloatingValues

Gross: *vgross*
Tare: *vtare*
Net: *vnet*
Units: *vunits*

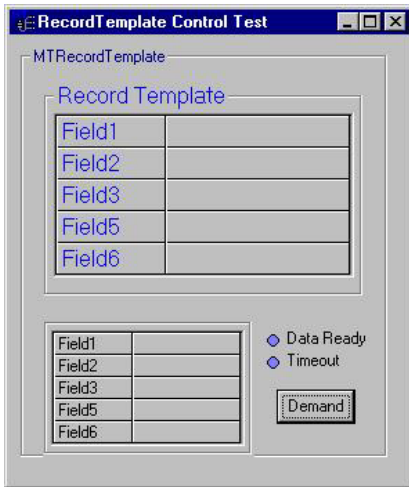
Water

N/A	Gross
N/A	Tare
N/A	Net

Make sure to set up channel 1 for an appropriate protocol for the MTWeight control. The Clear, Tare, Print, and Zero buttons will only work if CTPZ has been enabled in both the protocol setup and the indicator.

RecordTemplate Sample Program

The RecordTemplate Sample Program uses the MTRRecordTemplate control with channel number 3.

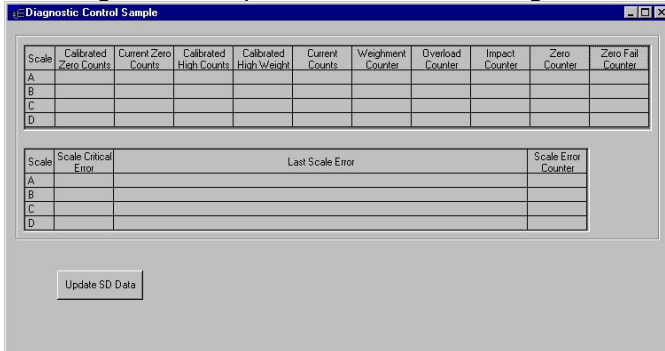


Make sure to set up channel 3 for an appropriate protocol for the MTRRecordTemplate control. While you may set up the protocol for any number of fields, only five will be displayed by the sample. Note also that field4 is not displayed (to illustrate that only select data from the parsed input need be used). If less than six fields are configured, only the number of fields selected will have data. It is recommended that time be sent as part of the data if possible, since it will always change when requested.

If certain fields appear blank, be certain that extra control characters like carriage return or line feed have not been unintentionally sent in the input data string.

Diagnostics Sample Program

The Diagnostic Sample uses channel 6 configured for the Scale Diagnostics protocol.



The MTScaleDiagnostic control has a single button to update the data.

SmartCell Sample Program

The SmartCell Sample uses two channels. Channel 5 should be configured for the Predictive Failure protocol and channel 7 should be configured for the SmartCell diagnostic protocol.

Cell	Zero Drift Counts	Zero Drift Status	Symmetry Fail Counts	S scale	Estimating Weight	Symmetry Failure	Bad Cell	Replacement Cell
A								
B								
C								
D								

Reset Predictive Failure Data Update PF Data

Cell	Calibrated Zero Count	Current Zero Count	Calibrated Span Count	Current Count	Error Counts	Error Number	Overload Counts	Overload Status

Update Cell Data

The MTPredictFailure control has two buttons, one to update the data and one to reset the scale's predictive failure data. MTSmartCellDiagnostics also has a single button to update the data. The control resizes itself each time data is requested. The test form size is designed for a 4-6 cell configuration

JagBASIC Sample Program

This control's channel may be configured for any JagBASIC data items available. The data may be polled or simply updated manually. Polling at 1-2 per second is recommended for the demo. A few (5-10) items may be polled easily at 10/sec. All 156 items may be polled as fast as 1.5 per second. Write only items are not polled but are displayed on the control. This sample form is very large and will take up almost the entire screen (800 x 600).

Name	Data	Tag Type	Length	Polled?	Write?
Command		Integer	2	Yes	Yes
Status		Integer	2	Yes	No
FPValue 1		Float	4	Yes	Yes
FPValue 2		Float	4	Yes	Yes
FPValue 3		Float	4	Yes	Yes
SSTRValue 1		String	4	Yes	Yes
SSTRValue 2		String	4	Yes	Yes
LSTRValue 1		String	40	Yes	Yes
LSTRValue 2		String	40	Yes	Yes
BitValue 1		Bit	1	Yes	Yes
BitValue 2		Bit	1	Yes	Yes
BitValue 3		Bit	1	Yes	Yes
BitValue 4		Bit	1	Yes	Yes
IntValue 1		Integer	2	Yes	Yes
IntValue 2		Integer	2	Yes	Yes
IntValue 21		Integer	2	Yes	Yes

Shared Data Read Select

Boolean
 Integer
 Long
 Float
 Double
 String

Length: Name:

Data:

Write Access

Enable Write

Toggle Visible

Write Command, Write Int 1, Write Bit 1, Write LSTR 1, Write FP 2, Read Command, Read Status, Read Int 1, Read Bit 1, Read LSTR 1, Read FP 2

The first two items in the control's list are the command and status registers. These are not removable. The sample has several preset read and write buttons on the bottom of the form for test. The data items must be enabled in the configuration for these to work. Two text boxes for displaying/entering their data are to the right.

A data item may also be written using the JagBASIC control's grid directly. Double-click on a data cell that is write-enabled to enter the data.

Any shared data may be read using the Shared Data Read Select in the upper right corner of the sample. A data type, length and shared data name are required to read the data. Length suggestion is made for you when the data type is selected.

The Write Access check box enables/disables a request for all write access for the control. You will not get write access if another instance of the JagBASIC control already has it.

Events can be demonstrated through the bit-level shared data. Setting shared data items "s_250" through "s_25f" trigger the control's events 1 to 16 respectively. Try setting any of these variables with a JagBASIC program and see what happens. Alternatively set "s_250" to 1 using its write button.

Sample Program Code

Standard Sample Program

Function desired	Code required
Clear command	Private Sub cmdClear_Click() MTWeight1.ClearTare

	End Sub
Print command	Private Sub cmdPrint_Click() MTWeight1.RecordWeight End Sub
Tare command	Private Sub cmdTare_Click() MTWeight1.Tare End Sub
Tare value command	Private Sub cmdSetTare_Click() On Error GoTo SKIP: MTWeight1.Tare (Val(txtTare.Text)) Exit Sub SKIP: MTWeight1.Tare End Sub
Zero command	Private Sub cmdZero_Click() MTWeight1.Zero End Sub
Update recorded weight values	Private Sub RecPrint_Click() MTRecordedWeight1.RecordWeight End Sub
Update weight values (to another display)	Private Sub MTWeight1_NewWeight() Vgross.Caption = MTWeight1.GrossWeight Vnet.Caption = MTWeight1.NetWeight Vtare.Caption = MTWeight1.TareWeight End Sub
Update status values (to another display)	Private Sub MTWeight1_StatusChange() AtZero.Value = MTWeight1.AtZero InNetMode.Value = MTWeight1.InNetMode InMotion.Value = MTWeight1.InMotion OutOfRange.Value = MTWeight1.OutOfRangeError CommLoss.Value = MTWeight1.CommLossError Vunits.Caption = MTWeight1.Units End Sub

Other Examples

Using Excel

Quick guide to using ActiveX controls in Excel:

1. The VBA tools must be installed for Excel. If this was not done during the original installation, it must be done to be able to use the control toolbox and VBA in Excel. It will not appear otherwise!
2. Start Excel.
3. If the control toolbox is not visible, turn it on by using the View menu. Go to the Toolbars sub-menu and select the Control Toolbox. It should have a check beside it if it is selected.

4. A toolbar with several control buttons should appear: a ruler, triangle and pencil (design mode button); a finger pointing to a page (properties button); a magnifying glass over a page (view code button) and some others including a hammer and wrench with dots (the MORE Controls button). These are the standard controls and tool buttons from VBA in Excel.
5. Use the design mode button to switch to design mode. It should change appearance when you click on it. The tool tip should read "Exit Design mode" now because it will exit design mode if you click on it again.
6. Once you are in design mode, click on the "More Controls" button (hammer and wrench).
7. A list of all of the ActiveX controls registered to the PC will appear. You should be able to scroll through the list and find the MTConnections controls (listed after Microsoft unfortunately, so you have to scroll down far).
8. Once you have selected a control to add (double-click), the list box should disappear and your mouse cursor should change to a PLUS symbol. You should now be able to drag and drop a copy of the selected control into the spreadsheet. A copy of the control should then appear in the spreadsheet. (It should have box handles to indicate that you are still in design mode and the control has focus.)
9. When the control has focus, you should be able to click on the properties button (the finger pointing to the page), and the properties for the selected control should appear. You can also right-click on the copy of the control and select Properties from the menu. Right-click is usually better because it will show ALL property pages, not just those exposed to the VBA programming.
10. The Property page can be used to format the display properties of the viewable portion of the control. It includes sizing, border, color and alias labeling. It also has the channel connection configuration selection which tells the control which MTConnections channel to use for its data. This is important because you may be using multiple copies (instances) of the same type of control but using data from different MTConnections channels.

11. The code page (magnifying glass over a page) is used to write commands back (by using command button “click” events) to the indicator through the MTConnections control. For example, to add a TARE button, you would do the following:
 - a. Drop a command button on the spreadsheet. (Click on the button control, then drag and drop.)
 - b. The new command button should appear and have focus. If not, click once on it to get focus on the button.
 - c. Click on the Code View button.
 - d. The display window should switch to a VBA code view, and the cursor should appear in the command button code area. It should probably read something like “Private Sub CommandButton1_Click()” and the cursor should be inside this code area.
 - e. You can now write code to execute the required command. To write the TARE command, you type “MTWeight1.Tare”. “MTWeight1” instructs the code what control to use and the “.Tare” indicates that the Tare method of that control should be used. This is standard VB syntax for code written for any ActiveX control.
 - f. To return to the Excel spreadsheet, click on the Excel button on the toolbar under the menu bar.

12. Once you have added all the controls and code that you wish to use, exit the design mode by clicking on the Design Mode button again. The ActiveX controls should now be “live,” and you should receive data. Be patient. This sometimes takes awhile because it may need to start up the MTConnections’ server or other applications. If you do not receive data, check your MTConnections configuration to make certain that you are receiving data from the indicator.

Revision History

Release 2.0 of MTConnections changed the following:

1. Machnm1.exe is no longer used in security due to problems with Windows 2000 and NT operation.
2. Installation options were added to support the Extreme and Extreme Enterprise packages.
3. The source code for sample applications is now provided.
4. Two additional packages are supported (Extreme and Extreme Enterprise) with new controls specifically for them: MTJagBasic, MTScaleDiag, MTSmartCellDiag, and MTPredictFailure.
5. An additional control was added to the Entry and Enterprise packages: MTRRecordTemplate.