Mettler Toledo Serial Driver Help

Table of Contents

Table of Contents 2
Mettler Toledo Serial Driver Help 3
Overview 4
Device Setup 5
Options 6
Data Types Description 7
Address Descriptions 8
Error Descriptions 9
Address Validation 9
Device address '<address>' contains a syntax error 9
Address '<address>' is out of range for the specified device or register 9
Data Type '<type>' is not valid for device address '<address>' 9
Device address '<address>' is Read Only 10
Serial Communications 10
Communications error on '<channel name>' [<error mask>] 10
COMn does not exist 10
COMn is in use by another application 10
Error opening COMn 11
Unable to set comm parameters on COMn 11
Device Specific Messages 11
Device '<device name>' has not sent any unsolicited updates within the currently configured data freshness tolerance period. Data associated with this device will be considered invalid 11
Index 12

Mettler Toledo Serial Driver Help

Help version 1.030

CONTENTS

Overview
What is the Mettler Toledo Serial Driver?

Device Setup
How do I configure a device for use with this driver?

Data Types Description
What data types does this driver support?

Address Descriptions
How do I reference a data location in a Mettler Toledo Serial device?

Error Descriptions
What error messages does the Mettler Toledo Serial Driver produce?

Overview

The Mettler Toledo Serial Driver provides an easy and reliable way to connect Mettler Toledo Serial devices to OPC Client applications, including HMI, SCADA, Historian, MES, ERP and countless custom applications. It can be used with all Mettler Toledo scales that support Continuous Output and Continuous Extended Output.

Device Setup

Supported Devices

Supported Devices	Standard Continuous	Extended Continuous
IND780	X	X
IND560	X	
IND560x	X	
IND131/331	X	X
IND310	X	
IND690	X	
IND226	X	
IND135	X	X
Panther	X	
Lynx	X	
Jaguar / JagXtreme	X	

Communication Protocol

Continuous Output Mode Protocol.

Supported Communication Parameters

Baud Rate: 1200, 2400, 9600, 19200
Parity: Odd, Even, None
Data Bits: 8
Stop Bits: 1, 2

Note: The configuration parameters listed above may not be supported in every device.

Device IDs

The Mettler Toledo Serial Driver's supported Device ID range is 0 to 9. An ID of 0 places the driver in Standard Continuous Mode, whereas an ID in the range of 1 to 9 places the driver in Extended Continuous Mode. Descriptions of the modes are as follows:

- **Standard Continuous Mode:** In this mode, the scale terminal sends data from one scale to a single device per channel in the OPC Server. The Device ID in the server project must be set to 0. The Communications Mode in the terminal must be set to Continuous Output Mode.
- **Extended Continuous Mode:** In this mode, the scale terminal sends data from multiple scales to multiple devices per channel in the OPC Server. The Device ID for each device in the server project must match the address set in the Communications Connection settings for each corresponding scale connected to the terminal. The Device ID in the server project must be set within the range of 1 to 9. The Communications Mode in the terminal must be set to Continuous Extended Output Mode.

Note: More than one device may be assigned the same Device ID, although it is not recommended. When doing so, however, the Checksum and Data Freshness options must be set the same.

Maximum Number of Channels and Devices

The maximum number of channels supported by this driver is 100. The maximum number of devices supported per channel is 10.

Use Modem

This parameter is invalid. Modems are not supported.

Ethernet Encapsulation Mode

The Mettler Toledo Serial Driver supports Ethernet Encapsulation, which allows the driver to communicate with serial devices attached to an Ethernet network through the use of a terminal server or device server. It may be enabled through the Communications dialog in Channel Properties. Descriptions of the parameters are as follows:

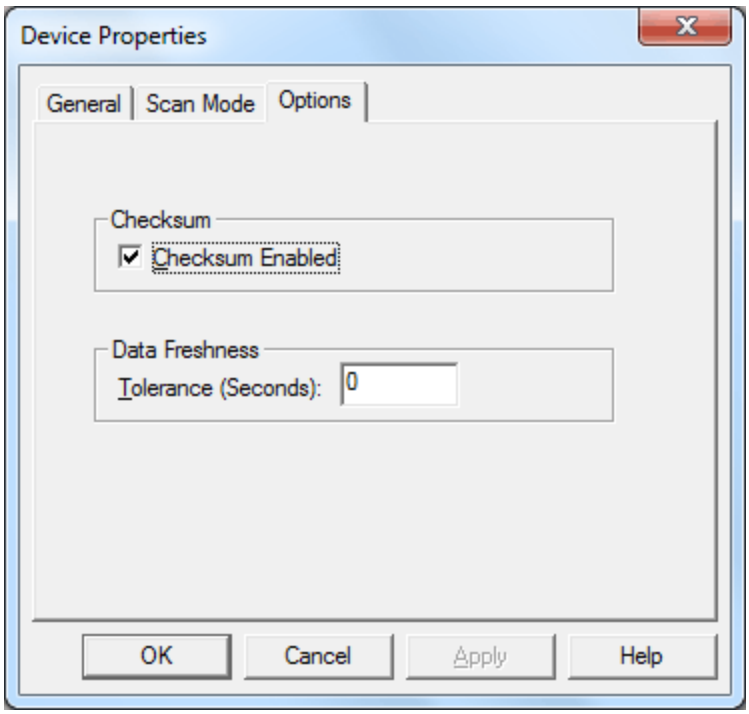
- **Mode:** This parameter specifies whether the driver will act as a master or slave device. Solicited is master mode. Unsolicited is slave mode. The default setting is Unsolicited.

  Note: This parameter will be disabled if Ethernet Encapsulation is enabled.
- **Port Number:** This parameter specifies the port number that the devices on the local Ethernet network will use. Options include 10001 or 2101. The default setting is 2101.

- **Protocol:** This parameter specifies the protocol that the driver will use when listening for unsolicited requests. Options include User Datagram Protocol (UDP) or Transfer Control Protocol (TCP/IP). The default setting is TCP/IP.

Note: For more information, refer to the server's help documentation.

Options



Descriptions of the parameters are as follows:

- **Checksum Enabled:** When checked, this option enables checksums when the hardware is configured to send a checksum with its message packets. This should match the configuration of the terminal.
- **Tolerance:** This parameter specifies the amount of time in seconds that the driver will wait between data packets from the device before setting the tag quality to Bad. Setting the value to zero will disable the parameter. The default setting is 0.

Data Types Description

The following data types are supported by the Mettler Toledo Serial Driver.

Data Type	Description
Boolean	Single bit
String	ASCII text string
Float	32 bit floating point value

Note: Each tag used in the driver has a fixed data type. Thus, it is recommended that the driver be allowed to use the default data type for each tag defined.

Address Descriptions

The Mettler Toledo Serial Driver's addresses are specified by the name of the item that will be addressed. The available addresses are described below.

Item	Data Type	Access	Description
Clear	Boolean	Write Only	Clears the scale to gross weight.
Expand	Boolean	Read Only	Expanded data flag.
GrossWeight	Float	Read Only	The gross weight.
Motion	Boolean	Read Only	Scale in motion flag.
NetWeight	Float	Read Only	The net weight.
OutOfRange	Boolean	Read Only	Out of range flag.
Print	Boolean	Write Only	Initiates a print command.
PrintRequested	Boolean	Read Only	Print request flag.
Tare	Float	Write Only	Tares the scale/causes a push-button tare. Writing a value to this tag will tare the scale to that value.*
TareWeight	Float	Read Only	The tare weight.
Units	String	Read Only	The weight units.
Zero	Boolean	Write Only	Sets the scale to zero.
ZeroNotCaptured	Boolean	Read Only	Zero not captured flag.

*A tare weight of zero will tare the scale to the current gross weight.

Error Descriptions

The following error/warning messages may be generated. Click on the link for a description of the message.

Address Validation Error Messages

Device address '<address>' contains a syntax error
Address '<address>' is out of range for the specified device or register
Data Type '<type>' is not valid for device address '<address>'
Device address '<address>' is Read Only

Serial Communications

Communications error on '<channel name>' [<error mask>]
COMn does not exist
COMn is in use by another application
Error opening COMn
Unable to set comm parameters on COMn

Device Specific Messages

Device '<device name>' has not sent any unsolicited updates within the currently configured data freshness tolerance period. Data associated with this device will be considered invalid

Address Validation

The following error/warning messages may be generated. Click on the link for a description of the message.

Address Validation Error Messages

Device address '<address>' contains a syntax error
Address '<address>' is out of range for the specified device or register
Data Type '<type>' is not valid for device address '<address>'
Device address '<address>' is Read Only

Device address '<address>' contains a syntax error

Error Type:
Warning

Possible Cause:
An invalid tag address has been specified in a dynamic request.

Solution:
Re-enter the address in the client application.

Address '<address>' is out of range for the specified device or register

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically references a location that is beyond the device's range of supported locations.

Solution:
Verify the address is correct; if it is not, re-enter it in the client application.

Data Type '<type>' is not valid for device address '<address>'

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically has been assigned an invalid data type.

Solution:
Modify the requested data type in the client application.

Device address '<address>' is Read Only

Error Type:
Warning

Possible Cause:
A tag address that has been specified statically has a requested access mode that is not compatible with what the device supports for that address.

Solution:
Change the access mode in the client application.

Serial Communications

The following error/warning messages may be generated. Click on the link for a description of the message.

Serial Communications
Communications error on '<channel name>' [<error mask>]
COMn does not exist
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Communications error on '<channel name>' [<error mask>]

Error Type:
Serious

Error Mask Definitions:
B = Hardware break detected.
F = Framing error.
E = I/O error.
O = Character buffer overrun.
R = RX buffer overrun.
P = Received byte parity error.
T = TX buffer full.

Possible Cause:
1. The serial connection between the device and the Host PC is bad.
2. The communications parameters for the serial connection are incorrect.

Solution:
1. Verify the cabling between the PC and the device.
2. Verify that the specified communications parameters match those of the device.

COMn does not exist

Error Type:
Fatal

Possible Cause:
The specified COM port is not present on the target computer.

Solution:
Verify that the proper COM port has been selected.

COMn is in use by another application

Error Type:
Fatal

Possible Cause:
The serial port assigned to a device is being used by another application.

Solution:

Verify that the correct port has been assigned to the channel.

Error opening COMn

Error Type:
Fatal

Possible Cause:
The specified COM port could not be opened due to an internal hardware or software problem on the target computer.

Solution:
Verify that the COM port is functional and may be accessed by other Windows applications.

Unable to set comm parameters on COMn

Error Type:
Fatal

Possible Cause:
The serial parameters for the specified COM port are not valid.

Solution:
Verify the serial parameters and make any necessary changes.

Device Specific Messages

The following error/warning messages may be generated. Click on the link for a description of the message.

Device Specific Messages
Device '<device name>' has not sent any unsolicited updates within the currently configured data freshness tolerance period. Data associated with this device will be considered invalid

Device '<device name>' has not sent any unsolicited updates within the currently configured data freshness tolerance period. Data associated with this device will be considered invalid

Error Type:
Warning

Possible Cause:
The driver has not received any unsolicited updates from the device in the currently configured data freshness tolerance period. The device may be powered off, disconnected or not configured to send updates.

Solution:
Check the device, device communication settings and communication cable.

Index

A

Address '<address>' is out of range for the specified device or register 9
Address Descriptions 8
Address Validation 9

C

Communications error on '<channel name>' [<error mask>] 10
COMn does not exist 10
COMn is in use by another application 10

D

Data Type '<type>' is not valid for device address '<address>' 9
Data Types Description 7
Device '<device name>' has not sent any unsolicited updates within the currently configured data freshness tolerance period. Data associated with this device will be considered invalid 11
Device address '<address>' contains a syntax error 9
Device address '<address>' is Read Only 10
Device Setup 5
Device Specific Messages 11

E

Error Descriptions 9
Error opening COMn 11

H

Help Contents 3

O

Options 6
Overview 4

S

Serial Communications **10**

U

Unable to set comm parameters on COMn **11**