

Fisher ROC Plus Serial Driver Help

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Fisher ROC Plus Serial Driver Help

Help version 1.023

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Overview

The Fisher ROC Plus Serial Driver provides an easy and reliable way to connect Fisher ROC Plus Serial controllers to OPC Client applications, including HMI, SCADA, Historian, MES, ERP and countless custom applications. This driver is intended for use with the following ROC Plus protocol devices: ROC809 and ROC827.

Note: For more information on the Opcodes available in the ROC Plus protocol, as well as point types and parameters, refer to the device's ROC Plus Protocol User Manual.

Device Setup

Supported Devices

ROC809
ROC827

Supported Protocol

ROC Plus

Maximum Number of Channels and Devices

The maximum number of supported channels is 100. The maximum number of devices per channel is 255.

Ethernet Encapsulation

This driver supports Ethernet Encapsulation, which allows the driver to communicate with serial devices attached to an Ethernet network using a Serial-to-Ethernet server. Ethernet Encapsulation mode may be enabled through the Communications tab in Channel Properties. For more information, refer to "Ethernet Encapsulation" in the OPC Server's help documentation.

Device Setup Dialogs

General dialogs in the device setup process are described in the OPC server help. Device setup dialogs that are specific to the Fisher Plus ROC Serial driver are described in the following topics.

[Tag Import Settings](#)

[More Tag Import Settings](#)

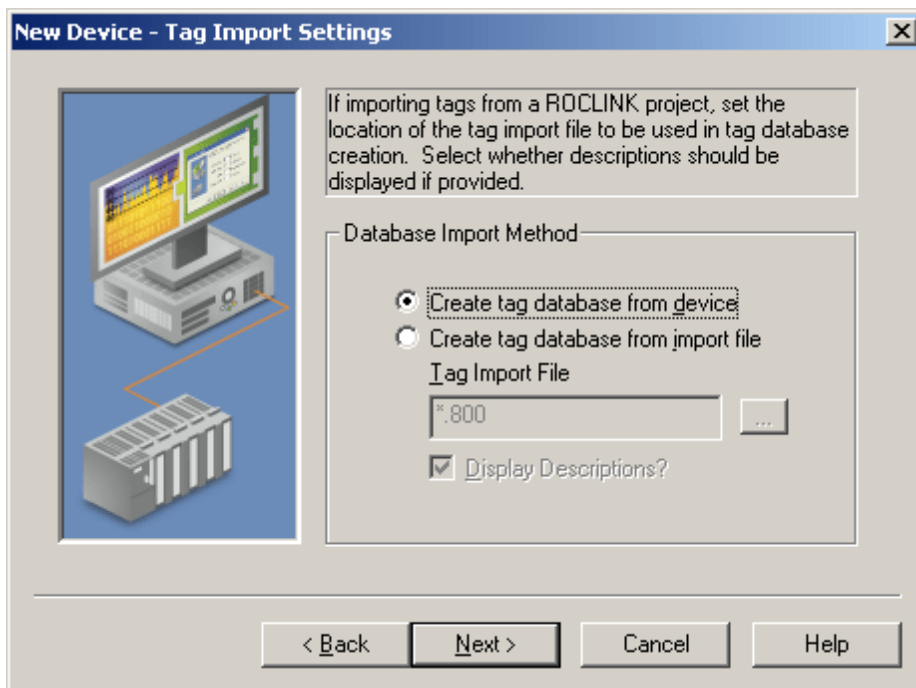
[Address Specification](#)

[Operator Identification](#)

[Time Synchronization](#)

Tag Import Settings

To view or change the Tag Import settings after the device has been added, right-click on the device and then select **Properties** | **Tag Import Settings**.



Users have the option to create an OPC tag database based on either the device's configuration file or a ROCLINK 800 project file. Descriptions of the parameters are as follows:

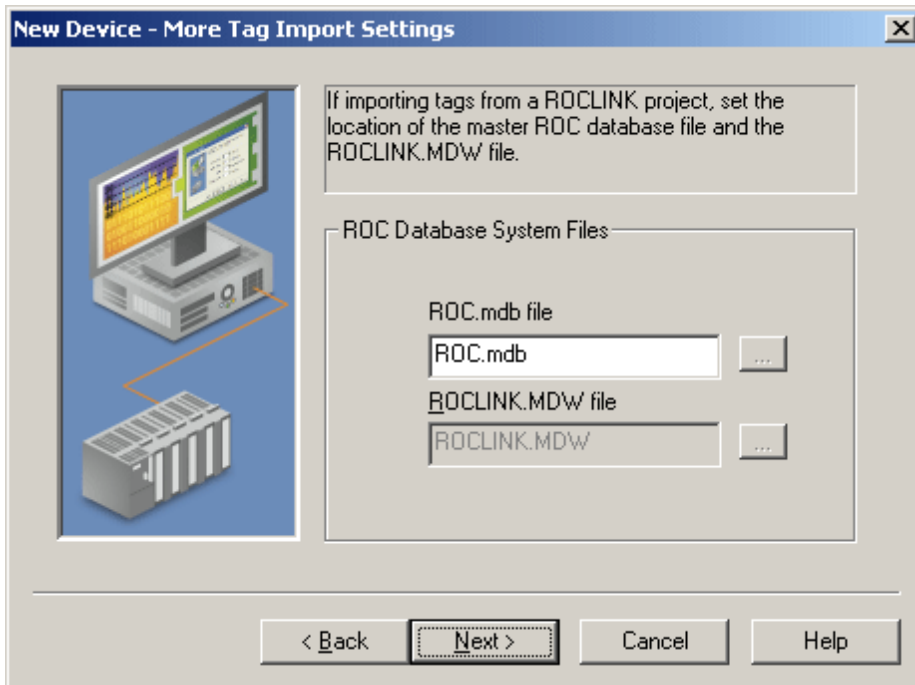
- **Create tag database from device:** This parameter specifies that the driver will automatically create a set of OPC tags based on the device's configuration file.

- **Create tag database from import file:** This parameter specifies that the driver will automatically create a set of OPC tags based on a project file created in ROCLINK 800. Use the browse button (...) to locate the file (*.800) to be imported.
- **Display Descriptions?:** When checked, the tags will include descriptions from the ROCLINK 800 master database.

See Also: [More Tag Import Settings](#) and [Automatic Tag Database Generation](#).

More Tag Import Settings

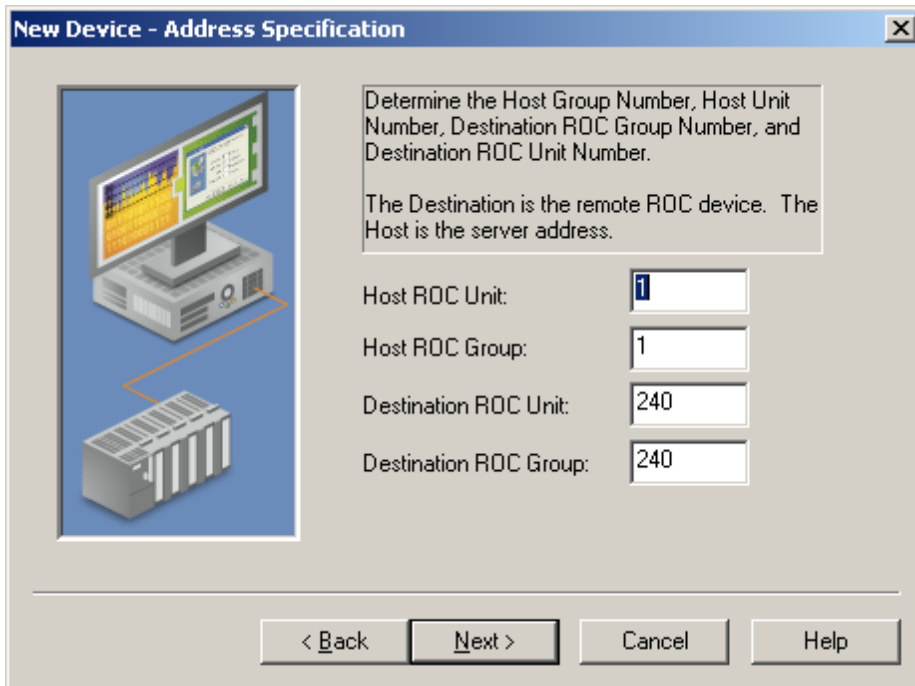
To view or change the Tag Import Settings after the device has been added, right-click on the device and then select **Properties | More Tag Import Settings**.



To create a tag database from an import file, use the browse button (...) to locate the ROC.mdb and ROCLINK.MDW files. These files are provided with the ROCLINK 800 application.

Address Specification

To view or change the Address Specification settings after the device has been added, right-click on the device and then select **Properties | Address Specification**.



New Device - Address Specification

Determine the Host Group Number, Host Unit Number, Destination ROC Group Number, and Destination ROC Unit Number.

The Destination is the remote ROC device. The Host is the server address.

Host ROC Unit:

Host ROC Group:

Destination ROC Unit:

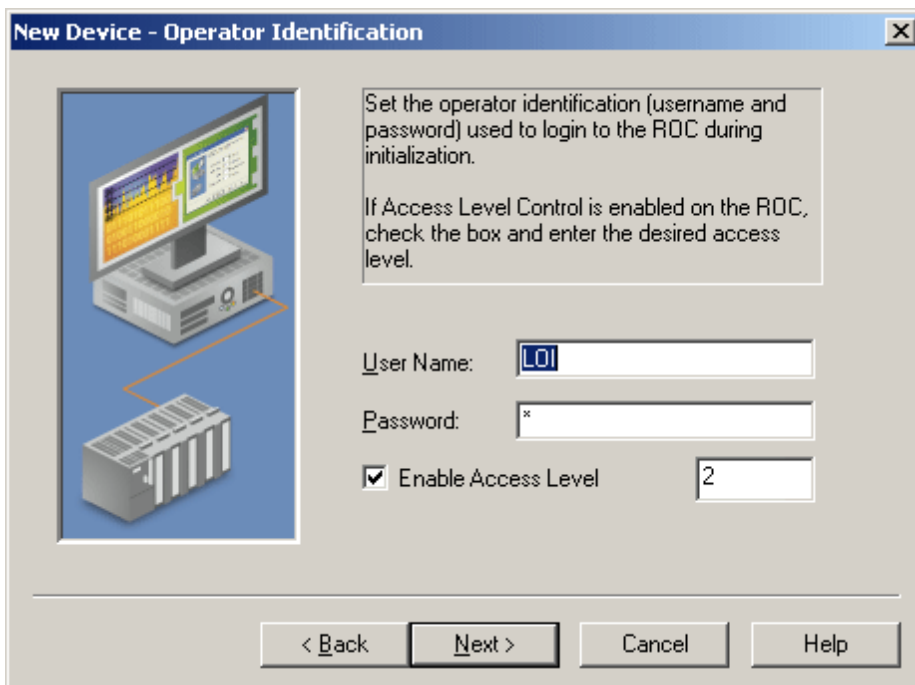
Destination ROC Group:

< Back Next > Cancel Help

Enter the **Host ROC Unit**, **Host ROC Group**, **Destination ROC Unit** and **Destination ROC Group** values. The valid range for these fields is 1 through 255.

Operator Identification

To view or change the Operator Identification settings after the device has been added, right-click on the device and then select **Properties | Operator Identification**.



New Device - Operator Identification

Set the operator identification (username and password) used to login to the ROC during initialization.

If Access Level Control is enabled on the ROC, check the box and enter the desired access level.

User Name:

Password:

Enable Access Level

< Back Next > Cancel Help

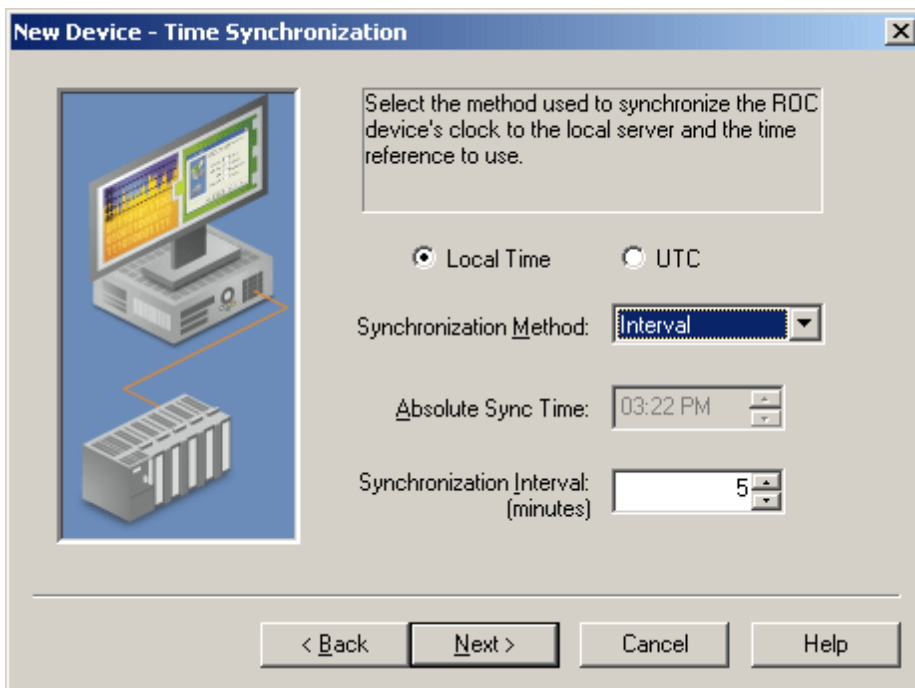
This dialog is used to specify the operator identification values User Name and Password, which will be used when logging into the ROC Plus device during initialization. Descriptions of the parameters are as follows:

- **User Name:** This parameter defines the User Name. Enter three characters (as set in the device). Three characters are required.

- **Password:** This parameter defines the Operator Password. Enter four numeric characters between 0000 and 9999.
- **Enable Access Level:** When checked, this parameter specifies that the ROC Plus device has defined access levels. Enter the access level (0 to 5).

Time Synchronization

To view or change the Time Synchronization settings after the device has been added, right-click on the device and then select **Properties | Time Synchronization**.



Descriptions of the parameters are as follows:

- **Local Time or UTC:** This parameter specifies Local time (local to the PC on which the OPC server is installed) or Universal time (UTC: Coordinated Universal Time).
- **Synchronization Method:** This parameter specifies the method of synchronization: Disabled, Absolute or Interval. Synchronization adjusts the ROC device clock.

When **Disabled** is selected, the driver will not perform time synchronization. When **Absolute** is selected, the driver will perform time synchronization once daily at the time specified in **Absolute Sync Time**. When **Interval** is selected, the driver will perform time synchronization every x minutes. The default setting is Disabled.

- **Absolute Sync Time:** This parameter specifies the time at which the driver will perform time synchronization each day.
- **Synchronization Interval:** This parameter specifies the synchronization interval in minutes. The driver will perform time synchronization every x minutes.

Modem Setup

This driver supports modem functionality. For more information, please refer to the topic "Modem Support" in the OPC Server Help documentation.

Data Types Description

| Data Types | Description |
|----------------------|---|
| Boolean | Single bit |
| Char | Signed 8 bit value bit 0 is the low bit bit 6 is the high bit bit 7 is the sign bit |
| Byte | Unsigned 8 bit value bit 0 is the low bit bit 7 is the high bit |
| Short | Signed 16 bit value bit 0 is the low bit bit 14 is the high bit bit 15 is the sign |
| Word | Unsigned 16 bit value bit 0 is the low bit bit 15 is the high bit |
| Word HOURMINUTE | Point Type 100, parameters 3-5 are HOURMINUTE. This driver represents this data type as Word. Length: 2 Bytes. Time is listed as a decimal based number. The first two digits represent the hour and the last two digits represent the minute. Range: 9999, 0-23 for 2 MS Digits; 0-59 for 2 LS Digits Special Meanings: 9999 = Disabled |
| Long | Signed 32 bit value bit 0 is the low bit bit 30 is the high bit bit 31 is the sign |
| DWord | Unsigned 32 bit value bit 0 is the low bit bit 31 is the high |
| Float | 32 bit floating point value bit 0 is the low bit bit 31 is the high bit |
| DWord TLP | 32 bit value: Point 'T'ype, 'L'ogical or Point Number, and 'P'arameter Number.* Uses three bytes. The top byte goes unused. <ul style="list-style-type: none"> • The type refers to the point type number.** • The location/logical number refers to individual points. • The parameter is a number assigned to each piece of data contained in a given point type. |
| DWord TLP Example | 557158: BIN = 00001000 10000000 01100110. 01100110 = Point Type 102, 10000000 = Location 128, 00001000 = Parameter 8. The resulting TLP is 102-128.8 |
| String | ASCII string padded with spaces. |
| Date | The number of seconds since Jan 1 1970 @ 00:00:00. |
| Date Example | Date format:YYYY-MM-DDTHH:MM:SS.000. 2000-01-01T12:30:45.000 |

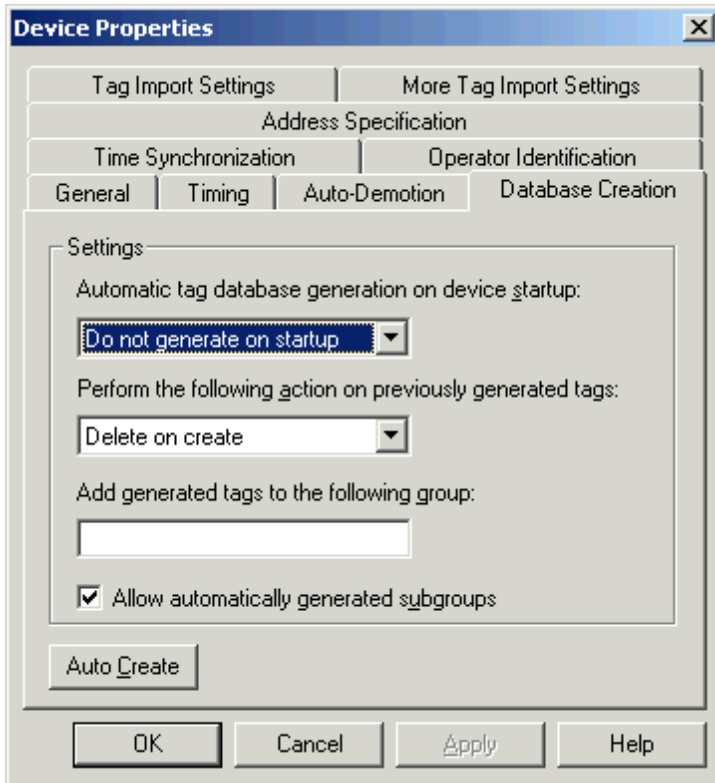
*For more information, refer to [Logical/Location Details](#).

**For more information, refer to [ROC Plus Point Types](#).

Automatic Tag Database Generation

This driver makes use of the OPC server's Automatic Tag Database Generation feature. When enabled, this feature will build a list of OPC tags within the OPC server that correspond to the device's data points. Automatic Tag Database Generation is configured by the settings on the Database Creation tab in Device Properties.

Note: For more information on specific tabs in Database Creation, click **Help**.



Note: For more information on importing tags from a ROCLINK project, refer to [Tag Import Settings](#) and [More Tag Import Settings](#).

Address Descriptions

Overview of ROC Addressing Format

ROC addresses are divided first by Point Type, then Logical Address and finally Parameter Index within the Point Type. Some parameters are further broken out into individual bits. The general format is as follows:

T-L.P

where "T" is the Point Type, "L" is the Logical Address and "P" is the Parameter Index.

Parameters that are further broken out into individual bits are addressed as follows:

T-L.P:B

where B is the bit offset.

Note: For example, the address 1-50.3:2 indicates the following:

| | |
|----|-----------------|
| 1 | Point Type |
| 50 | Logical Address |
| 3 | Parameter |
| 2 | Bit Offset |

Additional Explanations

The following topics provide a further explanation of ROC addressing. For a detailed listing of all point types' access, data type, length and description, refer to the device's ROC Plus Protocol User Manual.

- [Logical / Location Details](#)
- [ROC Plus Point Types](#)
- [Binary Field \(BIN\) Example](#)

Logical / Location Details

Within each point type, individual points are referenced by a Location or a Logical Number. The Location used by ROC Plus Protocol for point types 101 to 109 is based on a physical input or output (I/O) module and point location. All other point types use a logical number and are simply numbered in sequence.

Note: The "L" in the TLP references scheme.

Physical Point Numbers 1 to 160

For point types 101 through 109, there are location numbers for the field I/O. For the diagnostic inputs, the scheme is as follows:

- Location Numbers 16 to 160 are assigned to field I/O. For example, if there was an I/O module in slot 1 with 4 points on it, they would be points 16 through 19.
- Location Numbers 0 to 15 are assigned to the system I/O. For example, the five diagnostic points in a ROC800-Series would be 0 through 4.

Logical Point Numbers 0 to 127

For all other point types (except 101-109), the logical number is 0 to x, where x is one less than the total number of points that exist for that point type. For example, the 16 PIDs would be logical numbers 0 through 15.

Note: For a detailed listing of all point types' access, data type, length and description, refer to the device's ROC Plus Protocol User Manual.

ROC Plus Point Types

For a detailed listing of all point types' parameters, access, data type, length and description, refer to the device's ROC Plus Protocol User Manual.

| Point Type | Description |
|------------|------------------|
| 85 | HART |
| 91 | System Variables |

| | |
|-----|--|
| 92 | Logon Parameters |
| 95 | Communication Ports |
| 96 | FST Parameters |
| 97 | FST Register Tags |
| 98 | Soft Point Parameters |
| 99 | Configurable Opcode Table |
| 100 | Power Control Parameters |
| 101 | Discrete Inputs |
| 102 | Discrete Outputs |
| 103 | Analog Inputs |
| 104 | Analog Outputs |
| 105 | Pulse Inputs |
| 106 | RTD |
| 107 | Thermocouple |
| 108 | Multi-Variable Sensor |
| 109 | System Analog Inputs |
| 110 | PID Control Parameters |
| 111 | Sampler/Odorizer Parameters |
| 112 | Station Parameters |
| 113 | Orifice Meter Run Configuration |
| 114 | Orifice Meter Run Values |
| 115 | Turbine Meter Run Configuration |
| 116 | Turbine Meter Run Values |
| 117 | Modbus Configuration Parameters |
| 118 | Modbus Register to TLP Mapping |
| 119 | Modbus Event, Alarm and History Table |
| 120 | Modbus Master Modem Configuration |
| 121 | Modbus Master Table |
| 122 | DS800 Configuration |
| 123 | Security -- Group Configuration |
| 124 | History Segment Configuration |
| 125 | History Segment 0 Point Configuration |
| 126 | History Segment 1 Point Configuration |
| 127 | History Segment 2 Point Configuration |
| 128 | History Segment 3 Point Configuration |
| 129 | History Segment 4 Point Configuration |
| 130 | History Segment 5 Point Configuration |
| 131 | History Segment 6 Point Configuration |
| 132 | History Segment 7 Point Configuration |
| 133 | History Segment 8 Point Configuration |
| 134 | History Segment 9 Point Configuration |
| 135 | History Segment 10 Point Configuration |
| 136 | ROC Clock |
| 137 | Internet Configuration Parameters |
| 138 | User C++ Host Parameters |
| 139 | Smart I/O Module Information |
| 140 | Alternating Current Input / Output |
| 141 | Advanced Pulse Module |

Binary Field (BIN) Example

The table below shows an example alarm code from an Analog Input Point Type. This is used to demonstrate how a binary parameter is returned. A "1" in any bit indicates that it is active or enabled.

| | Response Code | Bit |
|-----------|---------------|-----|
| Low Alarm | 0 | 0 |

| | | |
|-------------------------|---|---|
| Low Low Alarm | 0 | 1 |
| High Alarm | 0 | 2 |
| High High Alarm | 0 | 3 |
| Rate Alarm | 0 | 4 |
| Not Used | 0 | 5 |
| Point Fail Alarm | 0 | 6 |
| Scanning Disabled Alarm | 1 | 7 |

Error Descriptions

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

Address Validation

[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>' contains a syntax error](#)
[Device address '<address>' is Read Only](#)
[Missing address](#)

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 Status Messages

[Device '<device name>' is not responding](#)

Device Specific Messages

[Device '<device>' responded with error. \(Tag '<tag address>'\)-Details: '<error code>'](#)
[Failed to obtain data block for PointType = <point type>, Logical Address = <address>, Starting Parameter = <starting parameter>, Ending Parameter <ending parameter> for device '<device>'. Error = <ROC error code>](#)
[Failed to write data for PointType = '<point type>', Logical Address = '<address>', Parameter = '<parameter>' for device '<device>'. Error = '<error code>'](#)
[ROC initialization error: Unable to read general configuration](#)
[ROC initialization error: Unable to retrieve I/O map](#)
[The username or password supplied was not accepted. Error = 6](#)
[The username or password supplied was not accepted. Error = 63](#)
[Write request rejected on Read Only item reference '<channel name>' '<device name>' '<address>'](#)

Automatic Tag Database Generation Error Messages

[Error importing CSV tag record <record number>: Address '<Address>' is out of range for the specified device or register](#)
[Unable to generate a tag database for device '<device>'. Reason: Auto tag generation](#)
[Unable to generate a tag database for device '<device>'. Reason: Failed to open recordset](#)
[Unable to generate a tag database for device '<device>'. Reason: Input file is corrupt](#)
[Unable to generate a tag database for device '<device>'. Reason: Input file not found](#)
[Unable to generate a tag database for device '<device>'. Reason: Low memory resources](#)

See Also: [ROC Plus Error Codes](#)

Address Validation

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

Address Validation

[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>' contains a syntax error](#)
[Device address '<address>' is Read Only](#)
[Missing address](#)

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 range of supported locations for the device.

Solution:

Verify that 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>' contains a syntax error

Error Type:

Warning

Possible Cause:

A tag address that has been specified statically contains one or more invalid characters.

Solution:

Re-enter the address 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 server application.

Missing address

Error Type:

Warning

Possible Cause:

A tag address that has been specified statically has no length.

Solution:

Re-enter the address in the server 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](#)

[COMn is in use by another application](#)

[Error opening COMn](#)

[Unable to set comm parameters on COMn](#)

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 communication parameters for the serial connection are incorrect.

Solution:

1. Verify the cabling between the PC and the device.
2. Verify that the specified communication 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 in the Channel Properties.

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 Status Messages

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

Device Status Messages

[Device '<device name>' is not responding](#)

Device '<device name>' is not responding

Error Type:

Serious

Possible Cause:

1. The connection between the device and the Host PC is intermittent.
2. The communication parameters for the serial connection are incorrect.

Solution:

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

Device Specific Messages

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

Device Specific Messages

[Failed to obtain data block for PointType = <point type>, Logical Address = <address>, Starting Parameter = <starting parameter>, Ending Parameter <ending parameter> for device '<device>'. Error = <ROC error code>](#)

[Failed to write data for PointType = '<point type>', Logical Address = '<address>', Parameter = '<parameter>' for device '<device>'. Error = '<error code>'](#)

[ROC initialization error: Unable to read general configuration](#)

[ROC initialization error: Unable to retrieve I/O map](#)

[Device '<device>' responded with error. \(Tag '<tag address>'\)-Details: '<error code>'](#)

[The username or password supplied was not accepted. Error = 6](#)

[The username or password supplied was not accepted. Error = 63](#)

[Write request rejected on Read Only item reference '<channel name>' '<device name>' '<address>'](#)

Device '<device>' responded with error. (Tag '<tag address>')-Details: '<error code>'

Error Type:

Serious

Possible Cause:

1. The connection between the device and the Host PC is intermittent.
2. The communication parameters for the serial connection are incorrect.
3. The value written is out of range.
4. The write was performed while in an incorrect setup area.

Solution:

1. Check the cabling between the PC and the device.
2. Verify that the specified communication parameters match those of the device.

See Also:

[Device Setup](#)

Failed to obtain data block for PointType = <point type>, Logical Address = <address>, Starting Parameter = <starting parameter>, Ending Parameter <ending parameter> for device '<device>'. Error = <ROC error code>

Error Type:

Serious

Possible Cause:

1. Invalid tag address for point in block.
2. Device not responding.

Solution:

1. Consult the ROC error code reference for further information regarding <error code>.
2. Verify the cabling between the PC and the device.
3. Confirm that all tags within this block exist on the device.

See Also:

[ROC Plus Error Codes](#)

Failed to write data for PointType = '<point type>', Logical Address = '<address>', Parameter = '<parameter>' for device '<device>'. Error = '<error code>'

Error Type:

Serious

Possible Cause:

1. The address is incorrect.
2. The unit does not support the particular address point.
3. The privileges for the logged-in user do not permit this operation.

Solution:

1. Consult the ROC error code reference for further information regarding <error code>.
2. Correct the address.
3. Confirm that the address is supported by the controller in use.
4. Supply an operator identification with sufficient privileges.

See Also:

[ROC Plus Error Codes](#)

ROC initialization error: Unable to read general configuration

Error Type:

Serious

Possible Cause:

The driver may not be receiving a response from the device.

Solution:

1. Ensure the device is physically connected and powered on.
2. Check that the COM port is working and configured properly at the channel level (in the OPC server).
3. Check the device-level Operator Identification and Address Specification settings and verify that they are correct.

See Also:

[Operator Identification](#)
[Address Specification](#)

ROC initialization error: Unable to retrieve I/O map

Error Type:

Serious

Possible Cause:

Access to the I/O Map has been restricted for the current user.

Solution:

Check the Operator Identification settings (username, password, access level) and verify that they are correct.

See Also:

[Operator Identification](#)

The username or password supplied was not accepted. Error = 6

Error Type:

Serious

Possible Cause:

An access level has been enabled on the device but not in the driver.

Solution:

Check the Operator Identification settings and make sure the Enable Access Level checkbox is checked.

See Also:

[Operator Identification](#)

The username or password supplied was not accepted. Error = 63

Error Type:

Serious

Possible Cause:

The access level that has been enabled on the device is lower than the operator's access level.

Solution:

Check the Operator Identification settings and make sure the operator's access level is less than or equal to the access level enabled in the device.

See Also:

[Operator Identification](#)

Write request rejected on Read Only item reference '<channel name>' '<device name>' '<address>'

Error Type:

Warning

Possible Cause:

The driver was attempting to write to a Read Only datum in the ROC controller.

Solution:

1. Do not attempt to write to Read Only points.
2. In some situations, the Automatic Tag Generation process will identify Read Only datum as Read/Write, based on the configuration that the driver retrieved from the ROC controller and the ROC specification. Nonetheless, the ROC controller itself is the final authority on whether a datum is writable.

Note:

For more information, refer to the controller's documentation.

Automatic Tag Database Generation Error Messages

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

Automatic Tag Database Generation Error Messages

[Error importing CSV tag record <record number>: Address '<Address>' is out of range for the specified device or register](#)

[Unable to generate a tag database for device '<device>'. Reason: Auto tag generation](#)

[Unable to generate a tag database for device '<device>'. Reason: Failed to open recordset](#)

[Unable to generate a tag database for device '<device>'. Reason: Input file is corrupt](#)

[Unable to generate a tag database for device '<device>'. Reason: Input file not found](#)

[Unable to generate a tag database for device '<device>'. Reason: Low memory resources](#)

Error importing CSV tag record <record number>: Address '<Address>' is out of range for the specified device or register

Error Type:

Warning

Possible Cause:

An imported tag address specifies a location that is beyond the range of supported locations for the device.

Solution:

Verify that the address is correct; if it is not, re-enter it in the file being imported.

Unable to generate a tag database for device '<device>'. Reason: Auto tag generation

Error Type:

Serious

Possible Cause:

1. The connection between the device and the Host PC is intermittent.
2. The communication parameters for the serial connection are incorrect.

Solution:

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

Unable to generate a tag database for device '<device>'. Reason: Failed to open recordset

Error Type:

Warning

Possible Cause:

1. The project file is corrupt or does not exist.
2. Locations for the ROC.MDB and/or ROCLINK.MDW files have been specified incorrectly.

Solution:

In the OPC server project, right-click on the device and then select Properties from the context menu. In the Device Properties dialog, click on the Tag Import Settings and More Tag Import Settings tabs, and check the name of the project file that will be imported.

See Also:

[Tag Import Settings](#)

[More Tag Import Settings](#)

[Automatic Tag Database Generation](#)

Unable to generate a tag database for device '<device>'. Reason: Input file is corrupt

Error Type:

Warning

Possible Cause:

The Automatic Tag Generation import file is corrupt.

Solution:

In the OPC server project, right-click on the device and then select Properties from the context menu. In the Device Properties dialog, click on the Tag Import Settings and More Tag Import Settings tabs. Review the settings and check the import file. If necessary, re-export the project file from within ROCLINK800.

See Also:

[Tag Import Settings](#)

[More Tag Import Settings](#)

[Automatic Tag Database Generation](#)

Unable to generate a tag database for device '<device>'. Reason: Input file not found

Error Type:

Warning

Possible Cause:

The Automatic Tag Generation import file cannot be found.

Solution:

In the OPC server project, right-click on the device and then select Properties from the context menu. In the Device Properties dialog, click on the Tag Import Settings and More Tag Import Settings tabs, and check the name of the project file that will be imported.

See Also:

[Tag Import Settings](#)

[More Tag Import Settings](#)

[Automatic Tag Database Generation](#)

Unable to generate a tag database for device '<device>'. Reason: Low memory resources

Error Type:

Warning

Possible Cause:

The memory required for Automatic Tag Generation could not be allocated. The process is aborted.

Solution:

Close any unused applications and/or increase the amount of virtual memory. Then, try again.

ROC Plus Error Codes

Note regarding Opcode 255: Opcode 255 is an error message indicator that returns an error code.

| Error Code | Description |
|------------|--|
| 1 | Invalid Opcode request. |
| 2 | Invalid parameter number. |
| 3 | Invalid logical number. |
| 4 | Invalid point type. |
| 5 | Received too many data bytes. |
| 6 | Received too few data bytes. |
| 12 | Obsolete (reserved, but not used). |
| 13 | Outside valid address range. |
| 14 | Invalid history request. |
| 16 | Invalid event entry. |
| 17 | Requested too many alarms. |
| 18 | Requested too many events. |
| 19 | Write to Read Only parameter. Exception for Opcode 166, which can have multiple parameters. Some of these may be Read Only and some may not. |
| 20 | Security error. |
| 21 | Invalid security logon. |
| 22 | Invalid store and forward path. |
| 24 | History configuration in progress. |
| 25 | Invalid parameter range. |
| 29 | Invalid 1 day history index request. |
| 30 | Invalid history point. |
| 31 | Invalid Min/Max request. |
| 32 | Invalid TLP. |
| 33 | Invalid time. |

| | |
|-------|----------------------------------|
| 34 | Illegal Modbus range. |
| 63 | Requested access level too high. |
| 65535 | Device not responding. |

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