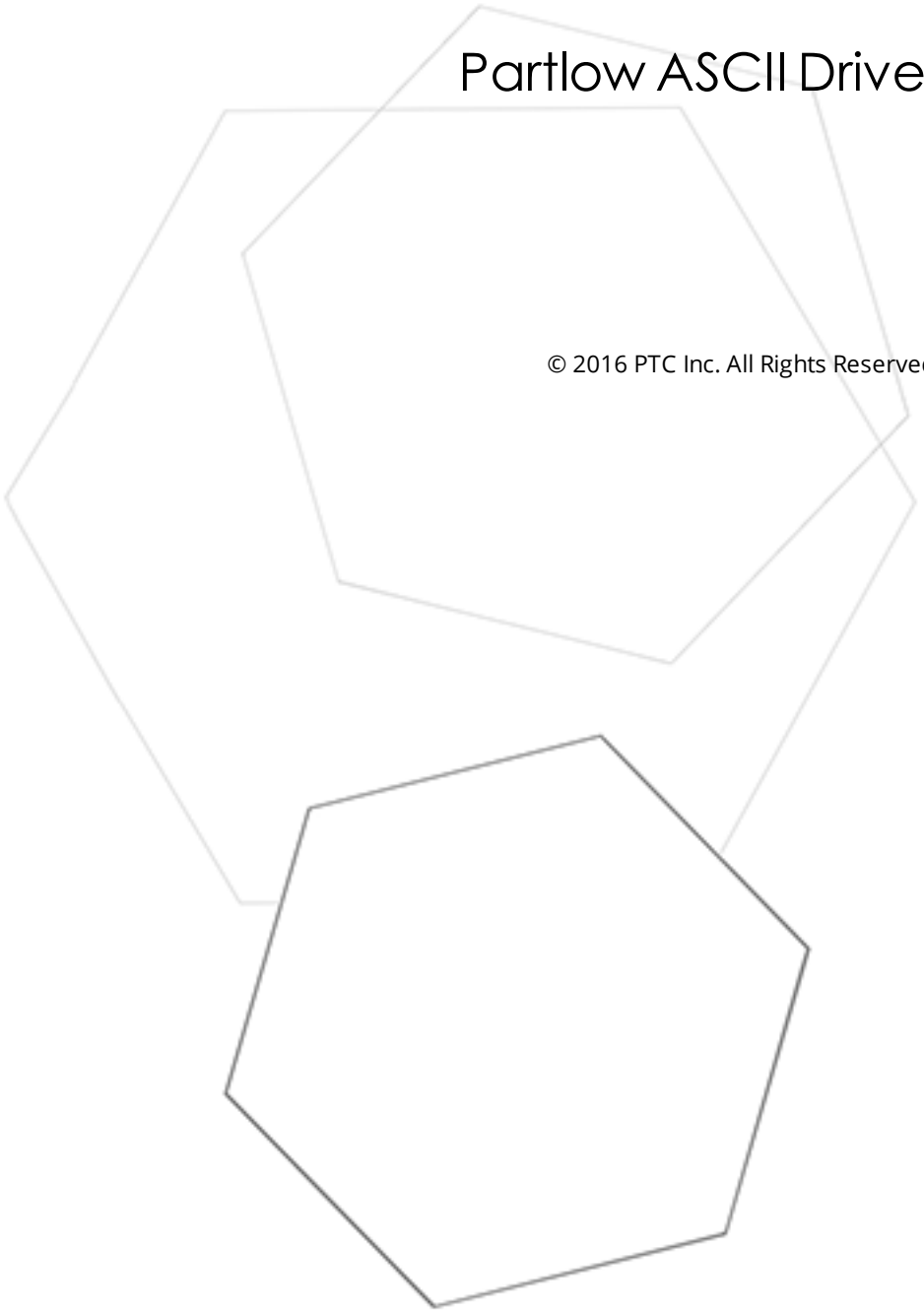
Partlow ASCII Driver



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Partlow ASCII Driver

Help version 1.011

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Overview

The Partlow ASCII Driver provides an easy and reliable way to connect Partlow ASCII devices to OPC Client applications, including HMI, SCADA, Historian, MES, ERP and countless custom applications. It is intended for use with Partlow ASCII devices.

Device Setup

Supported Devices
Partlow ASCII Devices

Communication Protocol
Partlow ASCII

Supported Communication Parameters*
Baud Rate: 300, 600, 1200, 2400, 9600, 19200, or 38400
Parity: None, Even, or Odd
Data Bits: 5, 6, 7 or 8
Stop Bits: 1 or 2

*Not all devices support the listed configurations.

Ethernet Encapsulation
This driver supports Ethernet Encapsulation. Ethernet Encapsulation allows the driver to communicate with serial devices attached to an Ethernet network using a terminal server. Ethernet Encapsulation mode is invoked by selecting it from the COM ID property on the Channel Properties property group. More help on Ethernet Encapsulation can be found in the main OPC Server help file.

Device IDs
0–99

Flow Control
When using an RS232/RS485 converter, the type of flow control that is required will depend upon the needs of the converter. Some converters do not require any flow control and others will require RTS flow. Consult the converter's documentation in order to determine its flow requirements. We recommend using an RS485 converter that provides automatic flow control.

Note: When using the manufacturer's supplied communications cable, it is sometimes necessary to choose a flow control property of **RTS** or **RTS Always** under the Channel Properties.

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 Type	Description
DWord	Unsigned 32 bit value bit 0 is the low bit bit 31 is the high bit
Long	Signed 32 bit value bit 0 is the low bit bit 30 is the high bit bit 31 is the sign bit
Float	32 bit floating point value.

Address Descriptions

The Partlow ASCII protocol supports the following addresses. The default data types are shown in **bold**.

Address Range*	Data Type	Access**
000-999	Long, DWord, Float	Read/Write

*See the address list below.

**The actual address in the device may be Read Only. In this case, the device rejects the write and a message is posted to the event log. Address ranges 100 to 199 will be treated as write-only; any attempt to read from this range will echo back the last value written to the address.

Command/Parameter Codes

C/P Code	Description	Value/Range
0XX	Status Inquiry	See Status Word Notes
001	Status Word 1	See Status Word Notes
003	Status Word 2	See Status Word Notes
002	Status Word 3	See Status Word Notes
004	Error Status	0 Error Condition N Error Number
005	Engineering Units	0 = C 1 = F 2 = Units

1xxProcedure

C/P Code	Description	Value/Range
101	Set Mode	0=Off 1 = Control (or Operate) 2 = Manual (Stand-By)
102	Set Keypad Lock	0 = Unlocked 1 = Locked
103	Set Enable	See Appendix 4, Page 32
104	Set Local/Remote*	0 = Local 1 = Remote
105	Initiate Profile**	Continue N Profile Number 1 to 8
106	Set Run/Hold***	0 Hold 1 Run

*Invalid command if remote setpoint is not selected in Program Mode.

**Invalid command if a profile is being executed or the unit is not a profiler.

*** Invalid command if a profile is not being executed or the unit is not a profiler.

2xx Read Only Parameters

C/P Code	Description	Value/Range
201	Proc	Process Value-Filtered
202	inPS	Input Select

C/P Code	Description	Value/Range
	isil	Input Select, Input 1 (for MRC7700 only)
203	icor	Input Correction
	icil	Input Correction, input 1 (for MRC7700 only)
204	outi	Output 1
205	out2	Output 2
206	out3	Output 3
	ALl	Alarm 1 (for MRC7000, 7700 only)
207	AL2	Alarm 2 (for MRC7000, 7700 only)
208	dPoS	Decimal Position
209	Euu	Engineering Units Upper Value
210	EuL	Engineering Units Lower Value
211	rSP	Remote Setpoint (not applicable for MIC6000)
212	rSPu	Remote Setpoint Upper Value (N/A MIC6000)
213	RSPL	Remote Setpoint Lower Value (N/A MIC6000)
214	rrH	Remote Run/Hold (for MIC6000, MRC7000, 7700 only)
215	Crt	Chart Rotation Time (for MRC7000, 7700 only)
216	Cru	Chart Range Upper Value (for MRC7000, 7700 only)
217	CrL	Chart Range Lower Value (for MRC7000, 7700 only)
218	PENS	Pen Select (for MRC7700 only)
219	rHC	RH Correction (for MRC7700 only)
220	iSi2	Input Select Input 2 (for MRC 7700 only)
221	iCi2	Input Correction Input 2 (for MRC 7700 only)

3XX Read/Write Parameters

C/P Code	Description	Value/Range
301	SPrd	Spread/Second Output Pos. (for MIC2000, 6000)
	sop	Spread/Seconds Output Pos. (for MIC8000, 8200, MRC7000, 7700 only)
302	PAL	Process Alarm
	PAL1	Process Alarm (for MRC7000, 7700)
303	dAL	Deviation Alarm
	dALl	Deviation Alarm (for MRC7000, 7700 only)
304	dbAL	Deviation Alarm
	bALl	Deviation Alarm (for MRC7000, 7700 only)

C/P Code	Description	Value/Range
305	PAL2	Process Alarm 2 (for MRC7000, 7700 only)
306	dAL2	Deviation Alarm 2 (for MRC7000, 7700 only)
307	bAL2	Deviation Band Alarm 2 (for MRC7000, 7700 only)
308	Pbl	1st Out Band Width
309	Pb2	2nd Out Band Width
310	rSEt	Manual Reset
311	ArSt ArSl	Auto Reset Auto Reset, Output 1 (for MIC8000, 8200, MRC7000, 7700 only)
312	rAtE rt1	Rate Rate, Output 1 (for MIC8000, 8200, MRC7000, 7700 only)
313	Cti	Cycle Time-1st Output
314	Ct2	Cycle Time-2nd Output
315	SENS	P.P.Sensitivity
316	FoP	First Out Position
317	ol PL olul	Output 1 Percent Upper Limit Output 1 Percent Upper Limit (for MIC8000, 8200, MRC7000, 7700 only)
318	ol LL	Output 1 Percent Lower Limit (for MIC8000, 8200, MRC7000, 7700 only)
319	o2PL o2uL	Output 2 Percent Upper Limit Output 2 Percent Upper Limit (for MIC8000, 8200, MRC7000, 7700 only)
320	o2LL	Output 2 Percent Lower Limit (for MIC8000, 8200, MRC7000, 7700 only)
321	diSP	Display Select
322	HySt HyCo	Hysteresis Hysteresis (for MRC7000, 7700 only)
323	HyAo	Hysteresis For Alarm Outputs
324	SPL SPUL	Setpoint Upper Limit Setpoint Upper Limit (for MIC8000, 8200, MRC7000, 7700 only)
325	SPLL	Setpoint Lower Limit
326	AtFr	Automatic Transfer
327	-	Not Assigned
328	-	Not Assigned
329	SPrr	Setpoint Ramp Rate (for MIC2000, 8000, 8200only)
330	PFF	Process Filter Factor
331	P1EC	Proportional Output 1 Action on Error (for MIC8000, 8200, MRC7000, 7700 only)
332	P2EC	Proportional Output 2 Action on Error (for MIC8000, 8200,

C/P Code	Description	Value/Range
		MRC7000, 7700 only)
333	ArS2	Auto Reset-Output 2
334	rt2	Rate Output 2
335	baro	Barometric Pressure
336	CCon	Communication Configuration

4XXREAD/WRITE-SOMETIMES PARAMETERS*

C/P Code	Description	Value/Range
401	SP	Setpoint
402	Pol	Percent Output 1
403	Po2	Percent Output 2
404	SP2	Setpoint 2 (8200 only)

*See conditions below.

5xx READ/WRITE-SOMETIMES PARAMETERS

C/P Code	Description	Value/Range
501	rtr	Ramp Time Remaining
502	Str	Soak Time Remaining
503	Pn	Profile Number
504	Sn	Segment Number
505*	PLCT	Profile Loop Count
506	Ptb	Profile Time Base
507	PiA	Profile Interrupt Action

*For Profile Continue Only.

Conditions Under Which Write is Permitted

C/P Code	Description
401	Remote Setpoint Not Active
402	Operating in Manual Mode
403	Operating in Manual Mode
404	No Profile Active
501	No Profile Active
502	No Profile Active
503	No Profile Active
504	No Profile Active
505	No Profile Active
506	No Profile Active
507	No Profile Active

Note 1: Parameters that do not apply to a particular instrument will be considered invalid.

Note 2: This Profile Loop Count applies to the profile status or Profile Continue Mode and not the value stored in the profile data table accessible by Profile Entry mode.

6xx Read/Write Profile Data Parameters

C/P Code	Description	Value/Range
601	Pn	Profile Number
602	nS	Number of Segments
603	PLCT	Profile Loop Count
604	dhru	Deviation Hold After Ramp Up For Pen 1
605	dhrd	Deviation Hold After Ramp Down For Pen 1
606	dhru	Deviation Hold After Ramp Up For Pen 2
607	dhrd	Deviation Hold After Ramp Down For Pen 2
608	PEnd	Profile End Control
609	*	Segment Number
610	rt	Ramp Time
611	SP	Setpoint (For Pen 1 on 7XXX)
612	SP	Setpoint For Pen 2**
613	El	Event Output 2 During Ramp 0 = Off 1 = On
614	E2	Event Output 2 During Ramp 0 = Off 1 = On
615	E3	Event Output 3 During Ramp 0 =Off 1 =On
616	St	Soak Time
617	El	Event Output 1 During Soak 0 =Off 1 =On
618	E2	Event Output 2 During Soak 0 =Off 1 =On
619	E3	Event Output 3 During Soak 0 = Off 1 = On
620**	E4	Event Output 4 During Ramp 0 = Off 1 = On
621**	E5	Event Output 5 During Ramp 0 = Off 1 = On
622**	E6	Event Output 6 During Ramp 0 = Off 1 = On
623**	E4	Event Output 4 During Soak 0 = Off 1 = On
624**	E5	Event Output 5 During Soak 0 = Off 1 = On
625**	E6	Event Output 6 During Soak 0 = Off 1 = On

*The Profile Number and Segment Number parameter values specify to which profile and segment subsequent data, via commands 602 thru 625 apply. None of the above codes or parameters apply to profile status or the Profile Continue mode. They only apply to sending or retrieving profile data as ft is stored via the Profile Entry mode.

**MRC 7XXX instruments only.

7xx and 8xx Commands Apply to the Total Access Communications Option Only

C/P Code	Description	Value/Range
701	-	Tab Number Verification
702	-	Matrix Number
703	-	Matrix Number
704	-	Matrix Number
705	dPoS	Decimal Position
706	inPS	Input Select
707	icor	Input Correction
708	PENS	Pen Select

C/P Code	Description	Value/Range
709	rHC	Relative Humidity
710	outl	Output 1
711	ol PL olul	Output 1 (percent upper limit) Output 1 (percent upper limit)
712	ol LL	Output 1 (percent lower limit)
713	out2	Output 2
714	o2PL o2uL	Output 2 (percent upper limit) Output 2 (percent upper limit)
715	o2LL	Output 2 (percent lower limit)
716	out3 ALl	Output 3 Alarm 1
717	AL2	Alarm 2
718	diSP	Display Select
719	Euu	Engineering Units Upper
720	EuL	Engineering Units Lower
721	HySt HyCo	Hysteresis, Control outputs Hysteresis, Control outputs
722	HyAo	Hysteresis, Alarm Outputs
723	rSP SPC	Remote Setpoint Setpoint Configuration
724	rSPu	Remote Setpoint Upper Value
725	RSPL	Remote Setpoint Lower Value
726	SPL SPUL	Setpoint Limit Setpoint Upper Limit
727	SPLL	Setpoint Lower Limit
728	AtFr	Auto Transfer
729	FSCN	Fast Scan
730	Prnd	Process Value Rounding
731	dFF	Display Filter Factor
732	PFF	Process Filter Factor
733	Pout	Process Output
734	Pou	Process Output Upper Value
735	PoL	Process Output Lower Value
736	Cru	Chart Range Upper
737	CrL	Chart Range Lower
738	PorA	Percent Output Relay Actuation
739	POAP	Percent Output Actuation Point
740	Pl EC	Percent Output 1 on error condition
741	P2EC	Percent Output 1 on error condition

C/P Code	Description	Value/Range
742	PAEC	Pen Action on Error Condition
743	SPrr	Setpoint Ramp Rate
744	rLyA	Relay A Assignment
745	rlyb	Relay A Assignment
746	rLyC	Relay C Assignment
747	rlyd	Relay D Assignment
748	rLyE	Relay E Assignment
749	rLyF	Relay F Assignment
750	rlyg	Relay G Assignment
751	rlyh	Relay H Assignment
752	CurA	Current Output A Assignment
753	Curb	Current Output B Assignment
754	CurC	Current Output C Assignment
755	Curd	Current Output D Assignment
756	Colr CoAr	Current Output 1 range Current Output A range
757	Co2r Cobr	Current Output 2 range Current Output B range
758	CoCr	Current Output C Range
759	Codr	Current Output D Range
760	Ptb	Profile Time Base
761	PiA	Profile Interrupt Action
762	rrh	Remote Run Hold
763	PPC	Pen Profile Configuration
764	Crt	Chart Rotation Time
765	Coo	Chart Operation in OFF mode
766	SPrd SoP	Spread Spread
767	PAL PALL	Process Alarm Process Alarm Pen 1
768	dAL dALl	Deviation Alarm Deviation Alarm Pen 1
769	dbAL bALl	Deviation Band Alarm Deviation Band Alarm 1
770	PAL2	Process Alarm 2
771	dAL2	Deviation Alarm 2
772	bAL2	Deviation Band Alarm 2
773	Pbl	lst Out Bandwidth
774	Pb2	2nd Out Bandwidth

C/P Code	Description	Value/Range
775	rSEt	Manual Reset
776	ArSt ArSl	Auto Reset Auto Reset Output 1
777	ArS2	Auto Reset Output 2
778	rAtE rtl	Rate Rate Output 1
779	rt2	Rate Output 2
780	Ctl	Cycle Time 1st Output
781	Ct2	Cycle Time 2nd Output
782	SENS	Position Prop. Sensitivity
783	FoP	First Output Position
784	baro	Barometric Pressure
785	isil	Input Select for Input 1
786	icil	Input Correction for Input 1
787	iSi2	Input Select for Input 2
788	iCi2	Input Correction for Input 2
789	AduL	Autotune Deviation Upper Limit
790	ADLL	Autotune Deviation Lower Limit
791	ASUL	Autotune Setpoint Upper Limit
792	ASLL	Autotune Setpoint Lower Limit
793	CrC	Control Response Criteria
794	CAC	Control Algorithm
795	AAo	Autotune Abort Option
796	AtL	Autotune Time Limit
797	ASo	Autotune Selection Option
798	SET ENABLE	*
799	SET LOCAL/REMOTE	2 0=Local, 1=Remote**
899	-	PRG CHK SUM Program Parameter Checksum

*Command 798, Set Enable is transmitted and received as a decimal number from 000 to 255.

**Command 799 is transmitted as a single byte 0 or 1.

Status Word Notes

C/P Code	Description	Value/Range
001 Status Word 1	7	1= Error Exist 0= No Errors
	6	1= Alarm 1 On
	5	1= Alarm 2 On
	4	1= Remote Setpoint 0= Local Setpoint
	3	1= In Off Mode 0= In Control Mode
	2	1= In Manual
	1	1= Profiling
	0	1= Run 0= Hold

C/P Code	Description	Value/Range
002 Status Word 2	7	1= Keypad locked
	6	1= Setpoint2* 0= Setpoint1
	5	1= Event6 On**
	4	1= Event5 On**
	3	1= Event4 On**
	2	1= Event3 On
	1	1= Event2 On
	0	1= Event1 On
003 Status Word 3	7	1= Test Mode Enabled
	6	1= Calibration Mode Enabled
	5	1= Program Mode Enabled
	4	1= Tune Mode Enabled
	3	1= Stand-By Mode Enabled
	2	1= Profile Continue Mode Enabled for (6000, 73XX, 773X, 776X) = Setpoint Select Mode Enabled for (2000, and all other 7XXX, 8000, 8200)
	1	1= Profile Entry Mode Enabled for (6000, 73XX, 773X, 776X) = Setpoint Changes Enabled for 8000, 8200
	0	1= Setpoint Changes Enabled for (2000, 6000, 7XXX) = Autotune Enabled for 8000,8200

Error Descriptions

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

Address Validation

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

Serial Communications

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

Device Status Messages

Device '<device name>' is not responding
Unable to write to '<address>' on device '<device name>'

Device Specific Messages

Read request rejected for tag '<tag address>' on device '<device name'>. Deactivating tag
Write request rejected for tag '<tag address>' on device '<device name>'

Missing address

Error Type:
Warning

Possible Cause:
A tag address that has been specified dynamically has no length.

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

Device address '<address>' contains a syntax error

Error Type:
Warning

Possible Cause:
A tag address that has been specified dynamically contains one or more invalid characters.

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 dynamically references a location that is beyond the range of supported locations for the device.

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

Device address '<address>' is not supported by model '<model name>'

Error Type:
Warning

Possible Cause:
A tag address that has been specified dynamically references a location that is valid for the communications protocol but not supported by the target device.

Solution:
Verify that the address is correct; if it is not, re-enter it in the client application. Also verify that the selected model name for the device is correct.

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

Error Type:
Warning

Possible Cause:
A tag address that has been specified dynamically 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 dynamically 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.

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.

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.

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.

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.

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.

Device '<device name>' is not responding

Error Type:

Serious

Possible Cause:

1. The serial connection between the device and the host PC is broken.
2. The communication parameters for the serial connection are incorrect.
3. The named device may have been assigned an incorrect Network ID.
4. The response from the device took longer to receive than the amount of time specified in the "Request Timeout" device property.

Solution:

1. Verify the cabling between the PC and the device.
2. Verify that the specified communication parameters match those of the device.
3. Verify that the Network ID given to the named device matches that of the actual device.
4. Increase the Request Timeout property so that the entire response can be handled.

Unable to write to '<address>' on device '<device name>'

Error Type:

Serious

Possible Cause:

1. The serial connection between the device and the host PC is broken.
2. The communication parameters for the serial connection are incorrect.
3. The named device may have been assigned an incorrect Network ID.

Solution:

1. Verify the cabling between the PC and the device.
2. Verify that the specified communication parameters match those of the device.
3. Verify that the Network ID given to the named device matches that of the actual device.

Read request rejected for tag '<tag address>' on device '<device name'>. Deactivating tag

Error Type:
Warning

Possible Cause:
The device does not support the tag address.

Solution:
Verify that the requested address exists within the device.

Write request rejected for tag '<tag address>' on device '<device name>'

Error Type:
Warning

Possible Cause:

1. The device does not support the tag address.
2. The address is a Read Only address in the controller.
3. The device mode does not allow modifications to be made via a serial link.

Solution:

1. Verify that the requested address exists within the device.
2. Verify that the devices address is writeable.
3. Verify that the current mode of the device allows for serial link modifications.

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