InTouch® Compact Edition OMETH Configuration Guide

Invensys Systems, Inc.

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Welcome

This guide explains how to configure the OMETH driver for InTouch Compact Edition.

This guide assumes you know how to use Microsoft Windows, including navigating menus, moving between applications and moving objects on the screen. If you need help with these tasks, see the Microsoft online help.

You can view this document online or you can print it, in part or entirely, by using the print feature in Adobe Acrobat Reader.

Documentation Conventions

This documentation uses the following conventions:

Convention	Used for
Initial Capitals	Paths and file names.
Bold	Menus, commands, dialog box names, and dialog box options.
`Monospace`	Code samples and display text.

Technical Support

Wonderware Technical Support offers a variety of support options to answer any questions on Wonderware products and their implementation.

Before you contact Technical Support, refer to the relevant section(s) in this documentation for a possible solution to the problem. If you need to contact Technical Support for help, have the following information ready:

- The type and version of the operating system you are using.
- Details of how to recreate the problem.
- The exact wording of the error messages you saw.
- Any relevant output listing from the Log Viewer or any other diagnostic applications.
- Details of what you did to try to solve the problem(s) and your results.
- If known, the Wonderware Technical Support case number assigned to your problem, if this is an ongoing problem.

Chapter 1

About the OMETH Driver

This section explains the concepts of the OMETH driver and identifies all hardware and software components required to implement communication between InTouch Compact Edition and compatible PLCs.

About OMETH Driver

The OMETH driver enables communication between InTouch Compact Edition and Omron devices using FINS commands with CS1 or CV modes.

Device Specifications

To establish communication with the OMETH driver, your target PLC must meet the following specifications:

- Manufacturer: Omron
- Compatible Equipment:
  - CS1, CJ1, and CJ1 series using CS1 mode
  - CV, CVM1, and CVM1D series using CV mode
  - Omron PLC programmer software: SYSMAC

Network Specifications

To communicate with the target device, the network must meet the following specifications:

- Device communication port: Selectable
- Physical Protocol: Ethernet or RS-232
- Logic protocol: FINS - UDP (Ethernet), FINS - Hostlink (Serial)
- Cable wiring: Ethernet cable or RS-232 cable

Chapter 2

Configuring the OMETH Driver

This section explains how to configure the OMETH driver by completing the following tasks:

- Select the PLC driver
- Configure the connection type
- Configure other PLC-specific settings
- Configure advanced settings
- Associate an InTouch Access Name with the configured driver

You configure the OMETH driver from the **Driver Configuration** dialog box. In an InTouch compact application, you access this dialog box from the WindowMaker **Special**, **InTouch Compact Edition Application**, **IO Driver Configuration** menu.

For more information about configuring connection settings, see the documentation of your PLC hardware manufacturer.

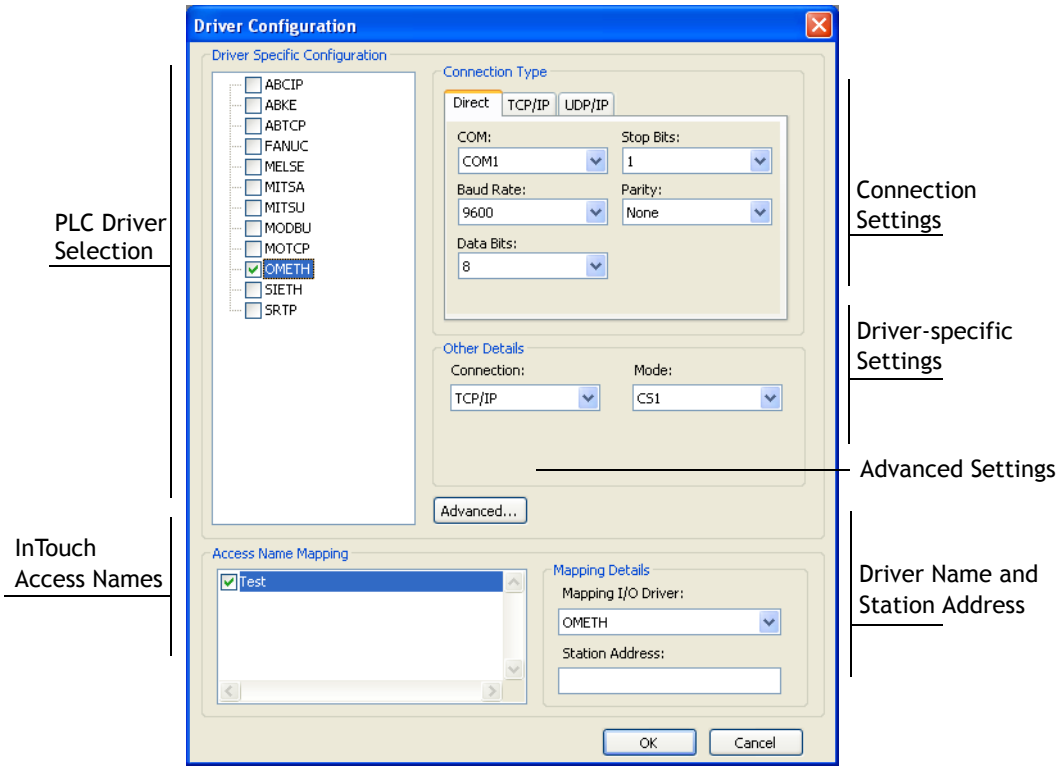
Note For each driver, you can configure only one set of parameters.

Selecting the PLC Driver

Before you configure the PLC driver, you need to select it in the **Driver Configuration** dialog box. You can select more than one PLC driver to configure. All selected PLC drivers can be associated with InTouch Access Names.

To select the PLC driver

1 In WindowMaker on the **Special** menu, point to **InTouch Compact Edition Application** and then click **IO Driver Configuration**. The **Driver Configuration** dialog box appears.



2 From the list in the left pane, select the check box next to the PLC driver you want to configure.

The selected PLC driver appears in the **Mapping I/O Driver** list in the **Mapping Details** area of the **Driver Configuration** dialog box. You can associate it with an InTouch Access Name. For more information, refer to Associating a PLC Driver with an Access Name on page 24.

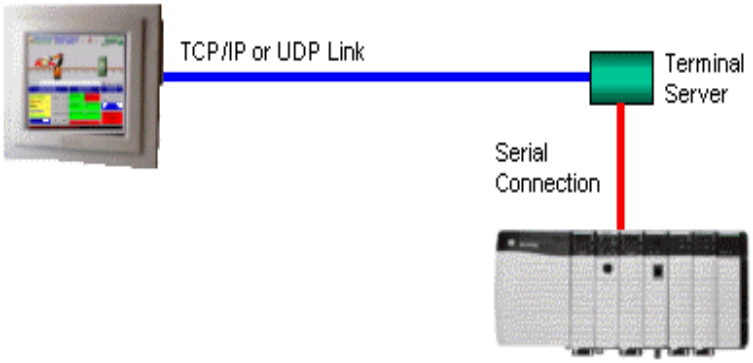
You can now configure the connection settings, advanced settings, and other PLC-specific settings.

Configuring the Connection Type

You need to configure the connection type that the Wonderware Compact Panel uses to communicate with a PLC.

The serial driver allows the use of TCP/IP or UDP/IP encapsulation. The encapsulation mode provides communication with serial devices connected to terminal servers on Ethernet or wireless networks. A terminal server converts TCP/IP or UDP/IP messages on Ethernet or wireless networks to serial data. After the message is converted to a serial form, you can connect standard devices that support serial communications to the terminal server.

The following diagram provides an example of this solution.



Note See the manufacturer documentation to configure gateway for TCP/IP and UDP/IP mode.

You can configure one of the following connection types:

- Direct serial
- TCP/IP
- UDP/IP

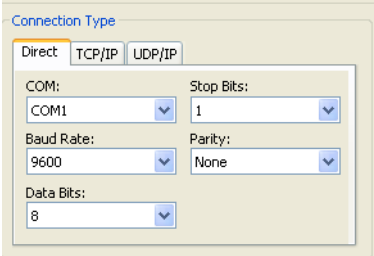
Configuring a Serial Connection

If the panel is directly connected to the PLC, you configure a serial connection by setting the connection type to direct and configuring the station address corresponding to the direct connection type. You can configure the following settings:

- COM port
- Stop bits
- Baud rate
- Parity
- Data bits

To configure a serial connection

1. In the **Driver Configuration** dialog box, select the driver you want to configure.
2. In the **Connection Type** area, click the **Direct** tab.



3. Assign values to the following settings:
   - In the **COM** list, select the serial communication port.
   - In the **Stop Bits** list, select the number of stop bits.
   - In the **Baud Rate** list, select the communication speed.
   - In the **Parity** list, select the parity.
   - In the **Data Bits** list, select the number of bits per character or code word.

Configuring a TCP/IP Connection

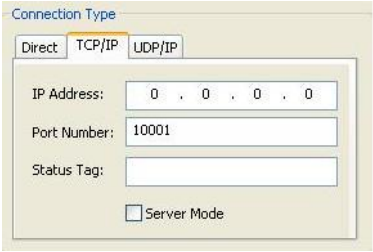
If the panel uses a TCP/IP connection to communicate with the PLC, you need to configure the following TCP/IP settings:

- IP address
- Port number
- Status tag
- Server mode

Note When **Server mode** is enabled, the OMETH driver listens to the TCP/IP port specified instead of trying to establish a connection (the driver is a TCP/IP server). The remote PLC/Device is responsible for connecting to the Wonderware Compact Panel and after the TCP/IP connection has been made, all data is sent through it. When **Server mode** is enabled, the IP Address field is not used because the driver does not try to connect with the PLC.

To configure a TCP/IP connection

1. In the **Driver Configuration** dialog box, select the driver you want to configure.
2. In the **Connection Type** area, click the **TCP/IP** tab.



3. Configure the following settings:
   - In the **IP Address** box, type the IP address of the terminal server that is used to support serial connection.
   - In the **TCP Port Number** box, type the port number assigned to the terminal server that is used to support serial connection.
   - In the **Status Tag** box, type the name of an InTouch discrete tag. The tag value is set to True if the TCP/IP connection is established, otherwise False.
   - Select **Server Mode**, if the remote PLC is responsible for connecting to the Wonderware Compact Panel.

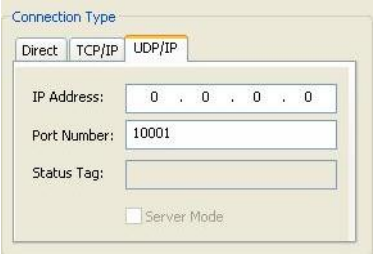
Configuring a UDP/IP Connection

If the Wonderware Compact Panel uses a UDP/IP connection to communicate with the PLC, you need to configure UDP/IP settings. You can configure the following settings:

- IP address
- Port number

To configure a UDP/IP connection

1. In the **Driver Configuration** dialog box, select the driver you want to configure.
2. In the **Connection Type** area, click the **UDP/IP** tab.



3. Configure the following settings:
   - In the **IP Address** box, type the IP address of the terminal server that supports a serial connection.
   - In the **UDP Port Number** box, type the port number assigned to the terminal server that supports a serial connection.
4. Click **OK**.

Configuring PLC-specific Settings

This section explains how to configure settings that are specific to the OMETH Driver. You configure these settings in the **Other Details** area in the **Driver Configuration** dialog box.

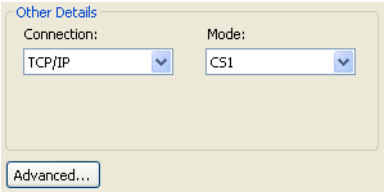
The following table lists the settings specific to the OMETH driver:

Setting	Purpose
Connection	Communication protocol • TCP/IP if the panel uses TCP/IP • Serial if the panel uses a serial connection
Mode	FINS communication mode. • CS1 Mode: CS1, CJ1, CJ1 and compatibles • CV Mode: CV, CVM1 and CVM1D and compatibles

Note For more information about configuring OMETH driver-specific settings, see the documentation of your PLC hardware manufacturer.

To configure the OMETH-specific settings

1. In the **Driver Configuration** dialog box, select the driver you want to configure.



2. In the **Other Details** area, assign values to the following settings:
   - **Connection** - Specify communication type
   - **Mode** - Specify FINS communication mode
3. Click **OK**.

Configuring Advanced Settings for Serial Connection

This section explains how to configure advanced settings for a OMETH driver using a serial connection. You can configure the following:

- Time-out settings
- Protocol settings
- Hand Shake Settings
- Buffer Length settings
- Enabling / Disabling IR/DTR

  Depending on the PLC driver you select, one or more of these settings might be disabled.

Note For more information about configuring advanced settings, see the documentation of your PLC hardware manufacturer.

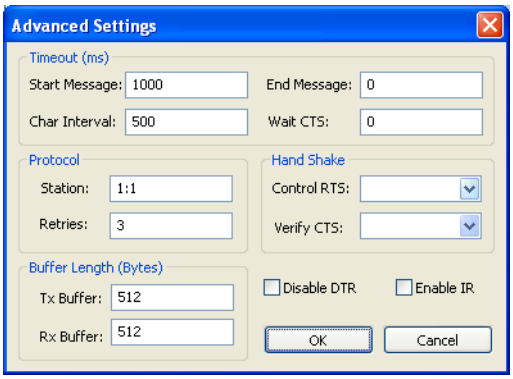
Configuring Time-out Settings

You can configure the following time-out settings:

- Start Message
- End Message
- Interval between characters
- Clear to Send wait

To configure time-out settings

1. In the **Driver Specific Configuration** dialog box, select the driver you want to configure.
2. Click **Advanced**. The **Advanced Settings** dialog box appears.



3 In the **Timeout** area, assign values to the following settings:
   - **Start Message** - Time-out period in milliseconds for the message to start.
   - **End Message** - Time-out period in milliseconds for the message to end.
   - **Char Interval** - Time-out period in milliseconds between each character.
   - **Wait CTS** - Time-out period in milliseconds for the Clear to Send wait.
4 Click **OK**.

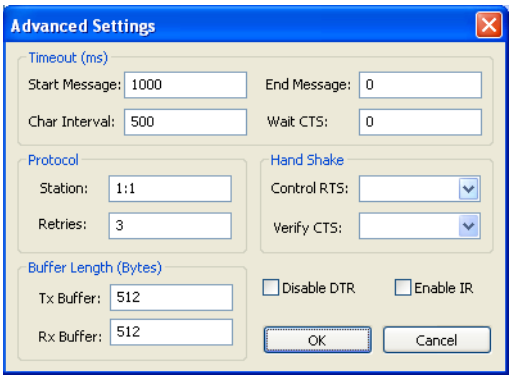
Configuring Protocol Settings

You can configure the following protocol settings:

- Station slave address
- Number of retries

To configure Protocol settings

1 In the **Driver Specifc Configuration** dialog box, select the driver you want to configure.
2 Click **Advanced**. The **Advanced Settings** dialog box appears.



3 In the **Protocol** area, assign values to the following settings:
   - **Station** - Specify the slave network address. SubNet: This value is the computer subnet address. Node (Optional parameter): This is the computer node address, which must be the same as the last number of your computer's IP address. If this field is blank, the driver assumes the subnet is 0 and the node number is the last used node number of the computer's IP address.

- **Retries** - Specify how many times the driver attempts to execute the same communication command before reporting a communication error.

4 Click **OK**.

Configuring Handshake Settings

You can configure the following Hand Shake settings:

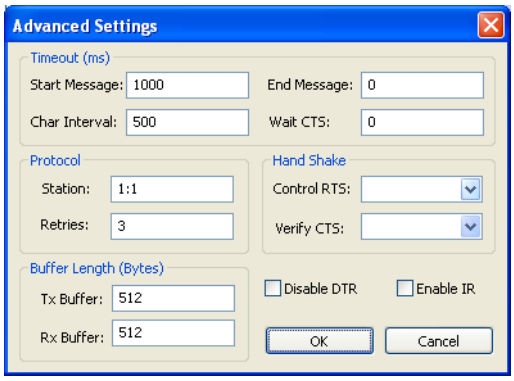
- Request to Send control
- Clear to Send verification

Hand Shake settings determine how the PLC driver communicates with the PLC over a communication channel after the physical establishment of the channel and before the normal information transfer.

To configure Hand Shake settings

1 In the **Driver Specific Configuration** dialog box, select the driver you want to configure.

2 Click **Advanced**. The **Advanced Settings** dialog box appears.



3 In the **Hand Shake** area, assign values to the following settings:

- **Control RTS** - Specify whether to use the Request to Send control.
- **Verify CTS** - Specify whether to use the Clear to Send type of verification.

4 Click **OK**.

Configuring Buffer Length Setting

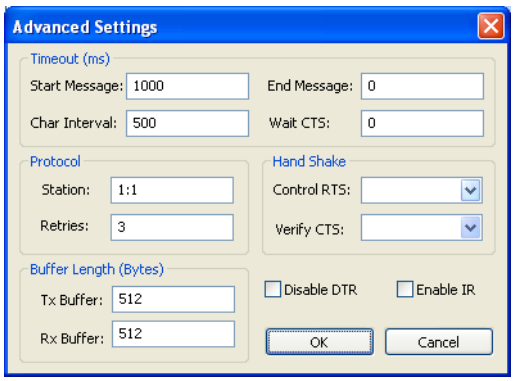
You can configure the following Buffer Length settings:

- Transmission Buffer (Tx) Length
- Reception Buffer (Rx) Length

The Buffer Length settings determine the number of bytes allocated from memory as a temporary buffer. The driver stores data in the temporary buffer while communicating with the PLC.

To configure Buffer Length settings

1. In the **Driver Specific Configuration** dialog box, select the driver you want to configure.
2. Click **Advanced**. The **Advanced Settings** dialog box appears.



3. In the **Buffer Length (Bytes)** area, assign values to the following settings:
   - **Tx Buffer** - Transmission buffer size in bytes.
   - **Rx Buffer** - Reception buffer size in bytes.
4. Click **OK**.

Disabling and Enabling DTR and IR Settings

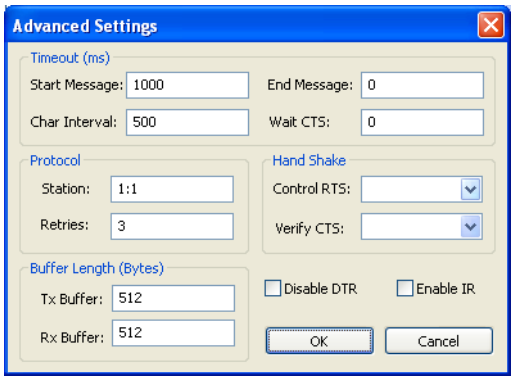
You can enable or disable the DTR and IR settings.

Setting DTR (Data Terminal Ready) means that the panel sends an additional signal to the PLC to indicate that the panel is ready to receive data.

Setting IR means that an infrared interface is used instead of a standard serial port to communicate with the device.

To enable or disable DTR and IR Settings

1. In the **Driver Specific Configuration** dialog box, select the driver you want to configure.
2. Click **Advanced**. The **Advanced Settings** dialog box appears.



3. Assign values to the following settings:
   - Select or clear the **Disable DTR** check box.
   - Select or clear the **Enable IR** check box.
4. Click **OK**.

Configuring Advanced Settings for TCP/ IP or UDP/IP Connection

This section explains how to configure advanced settings for a OMETH driver using TCP/IP or a UDP/IP connection. You can configure the following:

- Time-out settings
- Protocol settings
- Buffer Length settings

Depending on the PLC driver you select, one or more of these settings might be disabled.

Note For more information about configuring advanced settings, see the documentation of your PLC hardware manufacturer.

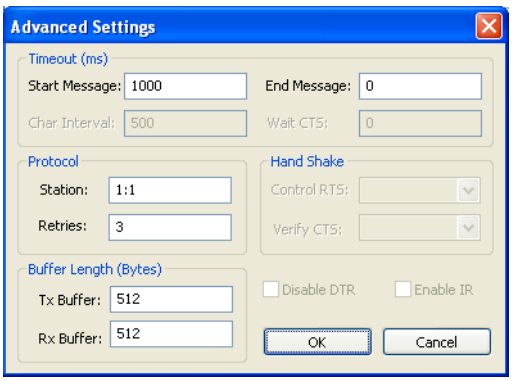
Configuring Time-out Settings

You can configure the following time-out settings:

- Start Message
- End Message

To configure time-out settings

1. In the **Driver Specific Configuration** dialog box, select the driver you want to configure.
2. Click **Advanced**. The **Advanced Settings** dialog box appears.



3. In the **Timeout** area, assign values to the following settings:
   - **Start Message** - Time-out period in milliseconds for the message to start.
   - **End Message** - Time-out period in milliseconds for the message to end.

4 Click **OK**.

Configuring Protocol Settings

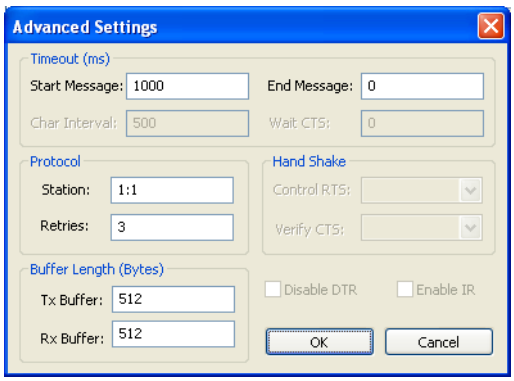
You can configure the following protocol settings:

- Station slave address
- Number of retries

To configure Protocol settings

1 In the **Driver Specific Configuration** dialog box, select the driver you want to configure.

2 Click **Advanced.** The **Advanced Settings** dialog box appears.



3 In the **Protocol** area, assign values to the following settings:

- **Station** - Specify the slave network address. SubNet: This value is the computer subnet address. Node (Optional parameter): This is the computer node address, which must be the same as the last number of your computer's IP address. If this field is blank, the driver will assume subnet as 0 and node number will be the last used node number of the computer's IP address.
- **Retries** - Specify how many times the driver attempts to execute the same communication command before reporting a communication error.

4 Click **OK**.

Configuring Buffer Settings

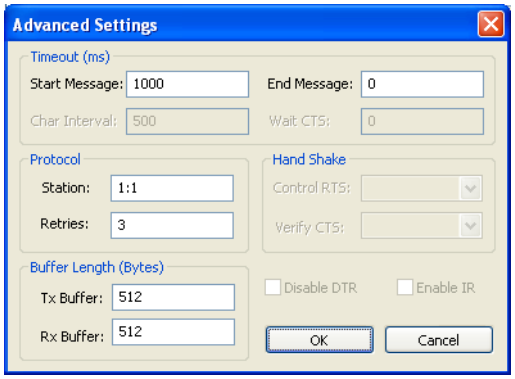
You can configure the following Buffer Length settings:

- Transmission Buffer (Tx) Length
- Reception Buffer (Rx) Length

The Buffer Length settings determine the number of bytes allocated as temporary memory. The driver uses temporary memory to communicate with the PLC.

To configure Buffer Length settings

1. In the **Driver Configuration** dialog box, select the driver you want to configure.
2. Click **Advanced**. The **Advanced Settings** dialog box appears.



3. In the **Buffer Length** (bytes) area, assign values to the following settings:
   - **Tx Buffer** - Transmission buffer size in bytes.
   - **Rx Buffer** - Reception buffer size in bytes.
4. Click **OK**.

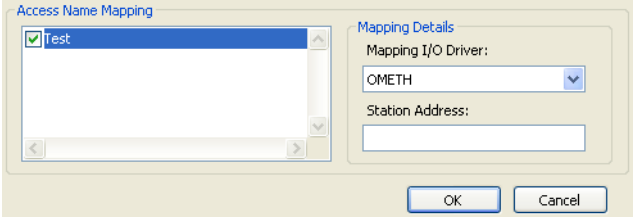
Associating a PLC Driver with an Access Name

After configuring the PLC driver, you need to associate it with an existing InTouch Access Name. For more information about creating an InTouch Access Name, see the *InTouch HMI Data Management Guide*.

When you associate a PLC driver with an Access Name, you also need to specify a station address. The station address is used by the OMETH driver to specify slave network addresses of PLCs.

To associate a PLC driver with an Access Name

1. Open the **Driver Configuration** dialog box.
2. In the **Access Name Mapping** area, locate the InTouch Access Name you want to associate.



Note If no Access Names appear in the list, you need to define an Access Name in WindowMaker first.

3. Select the Access Name you want to associate.
4. In the **Mapping I/O Driver** list, select the configured driver.
5. In the **Station Address** box, type the station address.

   When you move the mouse pointer over the **Station Address** box, a tooltip shows the required syntax for the station address.

   For a TCP/IP and UDP/IP connection, the station address uses the following format:

   <IP Address>:<Port Number>:<SubNet>:<Node Address>

   where:

   - *IP_Address*: The IP address of the device on your network.
   - *Port_Number*: The port number is the communication port.
   - *SubNet*: The subnet address is the device's subnet address according to the FINS protocol.

- *Node*: The node address is the device's node number according to the FINS protocol. If you do not specify a value, the Studio automatically inserts the last-used node number.

For a serial connection, the station address uses the following format:

<Subnet Address>:<Node Number>:<Unit ID>

where:

- *Subnet Address*: The subnet address is the device's subnet address according to the FINS protocol.
- *Port_Number*: The node number is the device's node number according to the FINS protocol.
- *Unit ID*: Unit ID is the ID number used for PC interface, as defined in the PLC program. If you do not specify a value, then the studio automatically inserts the default 0.

Important This is not the Unit ID that is configured in the hardware settings.

6 Click **OK**.

Chapter 3

Troubleshooting the OMETH Driver

You can detect communication errors between an InTouch Compact Edition application and the PLC by using the following item names:

Item name	Purpose
SysReadStatus	Receives error code for a failed read operation from the PLC
SysWriteStatus	Receives error code for a failed write operation to the PLC
SysReadCompleted	Indicates if the read operation from the PLC completes (TRUE) or not (FALSE)
SysWriteCompleted	Indicates if the write operation to the PLC completes (TRUE) or not (FALSE)

Note You can associate only one InTouch tag with each item name.

To troubleshoot communication problems

1. In WindowMaker, configure a set of I/O tags to associate with the error item names:
   - An I/O discrete tag to point at the item name SysReadCompleted.

- An I/O discrete tag to point at the item name SysWriteCompleted.
- An I/O integer tag to point at the item name SysReadStatus.
- An I/O integer tag to point at the item name SysWriteStatus.

2. Configure animation display links for the I/O tags, such as:
   - Fill color animations for the I/O tags associated with the SysReadCompleted and SysWriteCompleted items.
   - Analog value display links for the I/O tags associated with the SysReadStatus and SysWriteStatus items.
3. At run time, if a read or write error occurs between the InTouch Compact Edition and the PLC, the fill color animation indicates a problem. The value next to the fill color animation shows the error code.

Find the OMETH error codes in the following table. The table also includes typical problems associated with an error code and possible solutions.

Error Code	Description	Possible Causes	Procedure to Solve
0	OK	Communication without problems	Not applicable
1	Invalid or unsupported item name	Item name specified is either invalid or unsupported	Check your item names for unsupported or invalid items
2	Invalid or unsupported item name	Item name specified is either invalid or unsupported	Check your item names for unsupported or invalid items
3	Invalid station address	Station address specified for this driver is invalid	Check the I/O Driver Configuration and specify a valid station address
4	Invalid number of stop bits	The number of stop bits specified is invalid	Specify the correct number of stop bits
5	Invalid parity	The parity specified is invalid	Specify the correct parity
6	Invalid irq	Internal error	Contact Technical Support and send your published application

Error Code	Description	Possible Causes	Procedure to Solve
7	Serial port already in use	Some other program is using the selected serial port	Choose another serial port or close the program using the current one
8	Invalid buffer size	Buffer received has an invalid size	Check if the equipment that you are communicating with supports the same protocol as the I/O Server
9	Out of memory	There is not enough memory for the I/O Server	Check the amount of RAM memory available for your system
10	Tx buffer empty	Internal error	Contact Technical Support and send your published application
11	Tx buffer full	Internal error	Contact Technical Support and send your published application
12	Rx buffer empty	Internal error	Contact Technical Support and send your published application
13	Rx buffer full	Internal error	Contact Technical Support and send your published application
14	Time out waiting CTS	CTS signal was not received, could not send request	Check the cable and also if the communication line is busy
15	Time out waiting for a start message	Response was not received from the device	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration
16	Time out waiting for a message to finish	Started receiving a response but the communication was suspended	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration
17	Time out between rx char	Response was not received from the device	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration

Error Code	Description	Possible Causes	Procedure to Solve
18	Time out between tx char	Started receiving a response but the communication was suspended	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration
19	No carrier detected	Started receiving a response but the communication was suspended	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration
21	Invalid block size	Internal error when generating the protocol block sizes	Contact Technical Support and send your published application
23	Invalid answer	Problems with the communication medium	Check the I/O driver configuration.
32	Time out waiting for a tx message to finish	Started receiving a response but the communication was suspended	Check the cable connection and also make sure that the I/O Server settings match the PLC configuration
33	Invalid driver configuration file	Internal error	Contact Technical support and send your published application
34	Invalid or unsupported item name	Item name specified is either invalid or unsupported	Check your item names for unsupported or invalid items
35	Driver API not initialized	Internal error	Contact Technical Support and send your published application
36	Invalid or unsupported item name	Item name specified is either invalid or unsupported	Check your item names for unsupported or invalid items
37	Invalid or unsupported item name	Item name specified is either invalid or unsupported	Check your item names for unsupported or invalid items
38	Invalid station address	Station address specified for this driver is invalid	Check the I/O Driver Configuration and specify a valid station address
39	Invalid block size	Internal error when generating the protocol block sizes	Contact Technical Support and send your published application

Error Code	Description	Possible Causes	Procedure to Solve
-15	Time out start message	• Disconnected cables • PLC is turned off, in stop mode, or in error mode • Wrong station number • Wrong RTS/CTS control settings	• Check cable wiring. • Check the PLC state – it must be RUN. • Check the station number. • Check the I/O Driver Configuration.
-17	Time out between rx char	• PLC in stop mode or in error mode • Wrong station number • Wrong parity • Wrong RTS/CTS configuration settings	• Check cable wiring. • Check the PLC state – it must be RUN. • Check the station number. • Check the I/O Driver Configuration.

Appendix

OMETH Driver Item References

This section lists all item names supported for the following Omron PLC models:

- CS1-Series
- CV500
- CV1000 and CV2000
- CCVM1

If an “OUT OF RANGE” item is used in the InTouch Compact Application, the quality for that item is shown as 0 or BAD. It is also possible that the quality of one or more valid items goes to 0 or BAD due to an “OUT OF RANGE” item being used.

Invalid values in items (with/without suffixes) can return unpredictable results. You should ensure that valid values are written for each data type. For example, 0 to 65535 is the valid value range for 'word' type of data.

The OMETH driver supports float values with 4 bytes with up to 7 digits. Therefore, the valid range for float values is 3.4E +/- 38 (7 digits). Values outside this range result in an invalid value written to the tag. Furthermore, values with more than 7 digits of precision are rounded at the seventh digit.

The OMETH driver supports valid BCD values from 0 to 9999 and valid LBCD values from 0 to 99999999. Invalid BCD values (e.g.: 1010 in binary base) result in an invalid value written to the tag.

Note The OMETH driver does not support DBCS, only ANSI characters.

Suffixes Supported

The following table lists all suffixes.

Description	Suffix	Supported by InTouch Compact Edition
Unsigned	u	Yes
Signed	s	Yes
BCD	b	Yes
ASCII string (High-order byte)	d	No
ASCII string (Low-order byte)	e	No
ASCII string (Both bytes)	c	Yes
Floating point	f	Yes
Long	l	Yes
BCD long	m	Yes
Short	@Short	Yes
Word	@Word	Yes
BCD	@BCD	Yes
Long	@Long	Yes
DWord	@DWord	Yes
LBCD	@LBCD	Yes
Floating point	@Float	Yes

Supported Data Types and Value Ranges

The following table lists all the data types and its value ranges supported by the OMETH driver.

Data Type	Minimum	Maximum
Word	0	65535
Short	-32768	32767
BCD (16 bit)	0	9999
Long (32 bit)	-2147483648	2147483647
LBCD (32 bit)	0	99999999

Default value range for integer tag type is an unsigned integer.

OMRON Driver Item Reference for CS1-Series

The following table lists all item names supported for the CS1-series.

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
Auxiliary words**	A	0 to 959	Integer	Yes	Yes
Auxiliary bits**	A	0:0– 959:15	Discrete		Yes
Holding words	H	0 – 511	Integer	Yes	Yes
Holding bits	H	0:0– 511:15	Discrete		Yes
Work words	W	0 – 511	Integer	Yes	Yes
Work bits	W	0:0– 511:15	Discrete		Yes
CIO words	CIO	0 – 6143	Integer	Yes	Yes
CIO bits	CIO	0:0– 6143:15	Discrete		Yes
Counter	PVC	0 to 4095	Integer	Yes	Yes
Timer	PVT	0 to 4095	Integer	Yes	Yes
Data registers	DR	0 to 15	Integer		No
Index registers	IR	0 to 15	Long		No
Counter completion	C	0 to 4095	Discrete		No

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
Timer completion	T	0 to 4095	Discrete		No
Extended data	E	0 – 32767	Integer		No
Data words	D	0 – 32767	Integer	Yes	Yes
Data bits	D	0:0– 32767:15	Discrete		Yes
Expansion data A	EA	0-32767	Integer	Yes	Yes
Expansion data B	EB	0-32767	Integer	Yes	Yes
Expansion data C	EC	0-32767	Integer	Yes	Yes
Expansion data D	ED	0-32767	Integer	Yes	Yes
Expansion data E	EE	0-32767	Integer	Yes	Yes
Expansion data F	EF	0-32767	Integer	Yes	Yes
Expansion data G	EG	0-32767	Integer	Yes	Yes
Expansion data H	EH	0-32767	Integer	Yes	Yes
Expansion data I	EI	0-32767	Integer	Yes	Yes
Expansion data J	EJ	0-32767	Integer	Yes	Yes
Expansion data K	EK	0-32767	Integer	Yes	Yes
Expansion data L	EL	0-32767	Integer	Yes	Yes
Expansion data M	EM	0-32767	Integer	Yes	Yes

** Poke is not allowed in the address range of 0 – 447 or 0:0–447:15.

Default value range for integer tag type is unsigned integer.

Note For timer present value (PVC) and counter present value (PVT) the supported suffixes are @short, @word, @BCD, u, s, b, d, e, and, c.

OMRON Driver Item Reference for CV500-Series

The following table lists all item names supported for the CV500-series.

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
CIO words	CIO	0 – 2555	Integer	Yes	Yes
CIO bits	CIO	0:0– 2555:15	Discrete		Yes
Bus link words	G	0 – 255	Integer		No
Bus link bits	G	0:0– 255:15	Discrete		No
Auxiliary words	A	0 – 511	Integer	Yes	Yes
Auxiliary bits	A	0:0– 511:15	Discrete		Yes
Transition*	TN	0 – 511	Integer		No
Step flag status*	ST	0 – 511	Integer		No
IR register	IR	0 – 2	Integer	Yes (only b)	No
DR registers	DR	0 – 2	Integer		No
Timer present value	PVT	0 to 511	Integer	Yes	Yes
Counter present value	PVC	0 to 511	Integer	Yes	Yes
Data memory words	D	0 – 8191	Integer	Yes	Yes
Data memory bits	D	0:0– 8191:15	Discrete		Yes
Counter completion flag*	C	0 – 4095	Discrete		No
Timer completion flag*	T	0 – 4095	Discrete		No

* Address range depends on CPU type used.

Default value range for integer tag type is unsigned integer.

Note For timer present value (PVC) and counter present value (PVT) the supported suffixes are @short, @word, @BCD, u, s, b, d, e, and, c.

OMRON Driver Item Reference for CV1000-Series and CV2000-Series

The following table lists all item names supported for the CV1000-series and CV2000-series.

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
CIO words	CIO	0 to 2555	Integer		Yes
CIO bits	CIO	0:0 to 2555:15	Discrete		Yes
Bus link words	G	0 to 255	Integer		No
Bus link bits	G	0 to 255:15	Discrete		No
Auxiliary words	A	0 to 511	Integer		Yes
Auxiliary bits	A	0:0 to 511:15	Discrete		Yes
Transition	TN	0 to 1023	Integer		No
Step flag status	ST	0 to 1023	Integer		No
IR registers*	IR	0 to 2	Integer		No
DR registers*	DR	0 to 2	Integer		No
Timer present value	PVT	0 to 1023	Integer	Yes	Yes
Counter present value	PVC	0 to 1023	Integer	Yes	Yes
Data memory words	D	0 to 24575	Integer		Yes
Data memory bits	D	0:0–24575:15	Discrete		Yes
Expansion data	E	0 to 32765	Integer		No
Expansion data A*	EA	0 to 32765	Integer		Yes
Expansion data B*	EB	0 to 32765	Integer		Yes
Expansion data C*	EC	0 to 32765	Integer		Yes

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
Expansion data D*	ED	0 to 32765	Integer		Yes
Expansion data E*	EE	0 to 32765	Integer		Yes
Expansion data F*	EF	0 to 32765	Integer		Yes
Expansion data G*	EG	0 to 32765	Integer		Yes
Expansion data H*	EH	0 to 32765	Integer		Yes
Timer completion flag	T	0 to 1023	Discrete		No
Counter completion flag	C	0 to 1023	Discrete		No

* Address range depends on CPU type used.

Default value range for integer tag type is an unsigned integer.

Note For timer present value (PVC) and counter present value (PVT) the supported suffixes are @short, @word, @BCD, u, s, b, d, e, and, c.

OMRON Driver Item Reference for CVM1-Series

The following table lists all item names supported for the CVM1-Series.

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
CIO words	CIO	0 to 2555	Integer	Yes	Yes
CIO bits	CIO	0:0 to 2555:15	Discrete		Yes
Bus link words	G	0 to 255	Integer		No
Bus link bits	G	0 to 255:15	Discrete		No
Auxiliary words	A	0 to 511	Integer	Yes	Yes
Auxiliary bits	A	0:0 to 511:15	Discrete		Yes
IR registers*	IR	0 to 2	Integer		No
DR registers*	DR	0 to 2	Integer		No
Timer present value	PVT	0 to 1023	Integer	Yes	Yes
Counter present value	PVC	0 to 1023	Integer	Yes	Yes
Data memory words	D	0 to 24575	Integer	Yes	Yes
Data memory bits	D	0:0– 24575:15	Discrete		Yes
Expansion data	E	0 to 32765	Integer	Yes	No
Expansion data A*	EA	0 to 32765	Integer	Yes	Yes
Expansion data B*	EB	0 to 32765	Integer	Yes	Yes
Expansion data C*	EC	0 to 32765	Integer	Yes	Yes
Expansion data D*	ED	0 to 32765	Integer	Yes	Yes
Expansion data E*	EE	0 to 32765	Integer	Yes	Yes

Memory Area	Item Name	Address Range	Tag Type	Supported Suffixes	Supported by InTouch Compact Edition
Expansion data F*	EF	0 to 32765	Integer	Yes	Yes
Expansion data G*	EG	0 to 32765	Integer	Yes	Yes
Expansion data H*	EH	0 to 32765	Integer	Yes	Yes
Timer completion flag	T	0 to 1023	Discrete		No
Counter completion flag	C	0 to 1023	Discrete		No

* Address range depends on CPU type used.

Default value range for integer tag type is an unsigned integer.

Note For timer present value (PVC) and counter present value (PVT) the supported suffixes are @short, @word, @BCD, u, s, b, d, e, and, c.

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