

# **Moeller SUCOMA Communication Server**

for Microsoft Windows  
and InTouch Applications

**User Manual  
Ver 1.x Rev 1.5  
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# Moeller SUCOMA Communication Server

## Overview

The Moeller **KMSUCOMA Communication Server** (hereafter referred to as the “KMSUCOMA Server” or “KMSUCOMA” or “Server”) is a Microsoft Windows 32-bit application program that acts as a communication protocol server and allows other Windows application programs to access the data from Moeller SUCOS PS306 or PS316 Programmable Controller (PC). The Server is intended for serial communication with controller through the serial interface RS485 port 2 on the PLC. Connection to the host computer is through the serial communication port of the host via the RS485/RS232 converter. Any Microsoft Windows program that is capable of acting as a **DDE**, **FastDDE** or **SuiteLink Client** may use the KMSUCOMA Server.

## Communication Protocols

**Dynamic Data Exchange (DDE)** is a communication protocol developed by Microsoft to allow applications in the Windows environment to send/receive data and instructions to/from each other. It implements a client-server relationship between two concurrently running applications. The server application provides the data and accepts requests from any other application interested in its data. Requesting applications are called clients. Some applications such as Wonderware InTouch and Microsoft Excel can simultaneously be both a client and a server.

**FastDDE** provides a means of packing many proprietary Wonderware DDE messages into a single Microsoft DDE message. This packing improves efficiency and performance by reducing the total number of DDE transactions required between a client and a server. Although Wonderware's FastDDE has extended the usefulness of DDE for our industry, this extension is being pushed to its performance constraints in distributed environments. The KMSUCOMA Server supports the FastDDE Version 3 - an extension to Wonderware's proprietary FastDDE Version 2. This extension supports the transfer of Value Time Quality (VTQ) information. The original DDE and FastDDE Version 2 formats are still supported, providing full backward compatibility with older DDE clients. FastDDE Version 3 works on Windows 9x systems as well as Windows NT systems.

**NetDDE** extends the standard Windows DDE functionality to include communication over local area networks and through serial ports. Network extensions are available to allow DDE links between applications running on different computers connected via networks or modems. For example, NetDDE supports DDE between applications running on IBM compatible computers connected via LAN or modem and DDE-aware applications running on non-PC based platforms under operating environments such as VMS and UNIX.

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**SuiteLink** uses a TCP/IP based protocol and is designed by Wonderware specifically to meet industrial needs such as data integrity, high-throughput, and easier diagnostics. This protocol standard is only supported on Microsoft Windows NT 4.0 or higher. SuiteLink is not a replacement for DDE, FastDDE, or NetDDE. The protocol used between a client and a server depends on your network connections and configurations. SuiteLink was designed to be the industrial data network distribution standard and provides the following features:

- Value Time Quality (VTQ) places a time stamp and quality indicator on all data values delivered to VTQ-aware clients.
- Extensive diagnostics of the data throughput, server loading, computer resource consumption, and network transport are made accessible through the Microsoft Windows NT operating system Performance Monitor. This feature is critical for the scheme and maintenance of distributed industrial networks.
- Consistent high data volumes can be maintained between applications regardless if the applications are on a single node or distributed over a large node count.
- The network transport protocol is TCP/IP using Microsoft's standard WinSock interface.

The Suite Link, FastDDE (Version 3) and DDE support for KMSUCOMA Server is implemented by **Wonderware I/O Server Toolkit** ver. 7,2,1,6.

## Accessing a Remote DDE Item from KMSUCOMA

The communication protocol addresses an element of data in a conversation that uses a three-part naming convention that includes the **application name**, **topic name** and **item name**. The following briefly describes each portion of this naming convention:

### **application name**

The name of the Windows program (server) that will be accessing the data element. In the case of data coming from or going to Moeller SUCOS PS306 or PS316 Controller via this Server, the application portion of the address is **KMSUCOMA**.

### **topic name**

Meaningful names are configured in the Server to identify specific devices. These names are then used as the topic name in all conversations to that device. For example, **PLC1**.

**Note!** You can define multiple topic names for the same device (PLC) to poll different items at different rates.

### **item name**

A specific data element within the specified topic. For example, when using this Server, items can be individual points (Markers, Inputs, Outputs, Analog Inputs, Analog Outputs) in the KM SUCOS PS306 or PS316 Controller. The term "point" is used interchangeably with the term "item" in this User Manual. For more information on item names, see the **Item Names** section later in this manual.

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# Installing the KMSUCOMA Server

## Installing the Server

The KMSUCOMA Server installation package can be supplied:

1. As a self-extracting archive 11005xxx.EXE if downloaded from Klinkmann's web site (the xxx is the current (latest) version of the Server).
2. From installation on CD.
3. On two or three distribution disks (floppies).

To **install** the KMSUCOMA Server from the self-extracting archive, run the 11005xxx.EXE and proceed as directed by the KMSUCOMA Server Setup program.

To **install** the KMSUCOMA Server from CD or distribution disks, on MS Windows (NT, 2000, XP or 95 (98)):

1. Insert the CD with Klinkmann Software into CD drive or insert the KMSUCOMA Server Disk1 into a floppy drive A: or B:.
2. Select the **Run** command under the **Start** menu.
3. Run STARTUP.EXE if installing from CD or SETUP.EXE if installing from distribution disks (floppies).
4. If installing from CD: select "Protocol Servers (DDE, SuiteLink, OPC)", find "Moeller SUCOMA SL and DDE Server" and click on "Setup...".
5. Proceed as directed by the KMSUCOMA Server Setup program.

When installation is finished, the subdirectory specified as a folder where to install the KMSUCOMA Server files will contain the following files:

**KMSUCOMA.EXE**      The KMSUCOMA Server Program. This is a Microsoft Windows 32-bit application program.

**KMSUCOMA.HLP**      The KMSUCOMA Server Help file.

**KMSUCOMA.CFG**      An example configuration file.

**LICENSE.TXT**        Klinkmann Automation software license file.

To **uninstall** the KMSUCOMA Server, start Control Panel, select "Add/Remove Programs" and select the "KMSUCOMA SL and DDE Server" from the list of available software products. Click on "Add/Remove..." and proceed as directed by the UninstallShield program.

### Notes:

1. *The KMSUCOMA Server is developed with Wonderware I/O Server Toolkit (ver 7,2,1,6) and needs the **Wonderware FS2000 Common Components** to be installed on computer where the KMSUCOMA Server is running. The Wonderware FS2000 Common Components are installed automatically when any of Wonderware FS2000 Components (e.g. InTouch or some Wonderware I/O server) is installed.*

2. If KMSUCOMA Server will run on PC where Wonderware FS2000 Common Components are not installed then a special **I/O Server Infrastructure installation package** can be obtained from Klinkmann Automation (see **Installing the I/O Server Infrastructure** section below). This I/O Server Infrastructure installation package contains the minimum set of software needed to run the KMSUCOMA Server version and these infrastructure files must be install prior to executing the KMSUCOMA Server.
3. The HASP key is needed for full time running of KMSUCOMA Server. The HASP Driver setup is performed during the Server setup. Without HASP Driver installed the KMSUCOMA Server will run only 1 hour (with all features enabled).

## Installing the I/O Server Infrastructure

The I/O Server Infrastructure installation package can be supplied:

1. As a self-extracting archive (IOServerInfrastructure.exe) if downloaded from Klinkmann's web site.
2. On one distribution disk (floppy).

To **install** the I/O Server Infrastructure from the self-extracting archive, run the IOServerInfrastructure.exe and proceed as directed by the I/O Server Infrastructure Setup program.

To **install** the I/O Server Infrastructure from the distribution disk, on MS Windows (NT or 95):

1. Insert the I/O Server Infrastructure disk into a floppy drive A: or B:.
2. Select the **Run** command under the **Start** menu.
3. Type "A:SETUP" or "B:SETUP".
4. Click on **OK**.
5. Proceed as directed by the I/O Server Infrastructure Setup program.

To **uninstall** the I/O Server Infrastructure, start Control Panel, select "Add/Remove Programs" and select the "IO Server Infrastructure" from the list of available software products. Click on "Add/Remove..." and proceed as directed by the UnInstallShield program.

**Note:** The I/O Server Infrastructure installation will be rejected if Wonderware FS2000 Common Components are already installed on same computer.

## Configuring the KMSUCOMA Server

After the KMSUCOMA Server is initially installed, a little of configuration is required. Configuring the Server automatically creates a **KMSUCOMA.CFG** file which holds all of the topic (controller) definitions entered, as well as the communication port configurations. This file will be placed automatically in the same directory in which **KMSUCOMA** is located unless the path where the configuration file will be placed is a specified via the `/Configure/Server Settings...` command.

To perform the required configurations, start up the KMSUCOMA program. If the Server starts up as an icon, double-click on the icon to open the Server's main window. The following will appear:

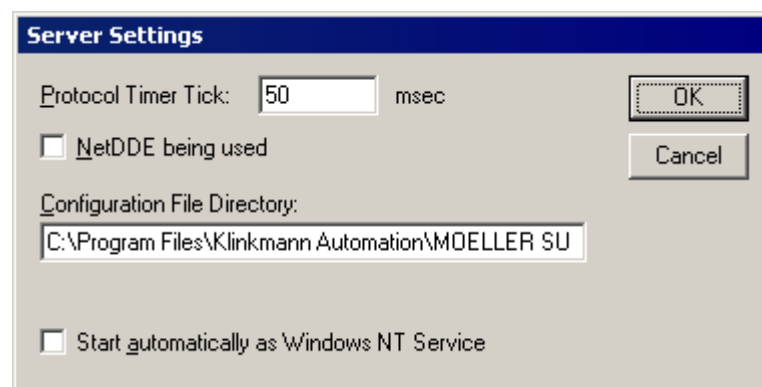


To access the commands used for the various configurations, open the */Configure* menu.

## Server Settings Command

A number of parameters that control the internal operation of the Server can be set. In most cases, the default settings for these parameters provide a good performance and do not require changing. However, they can be changed to fine-tune the Server for a specific environment.

To change the Server's internal parameters, invoke the *Configure/Server Settings...* command. The "Server Settings" dialog box will appear:



The following describes each field in this dialog box:

### Protocol Timer Tick

This field is used to change the frequency at which the Server checks for work to do (at this frequency the Server tries to send one data request to PLC and receive one reply from PLC. If the send/response cycle is too long then more than one activation of Server is necessary to process it. If computer is very busy or some other MS Windows application is taking over the computer then the Server is activated rarely than setting in the **Protocol Timer Tick**.

**Note:** The default value is 50 milliseconds. The minimum value is 10 milliseconds.

### NetDDE being used

Select this option if you are networking using NetDDE.

### Configuration File Directory

This field is used to specify the path (disk drive and directory) in which KMSUCOMA will save its current configuration file. The KMSUCOMA Server will use this path to load the configuration file the next time it is started.

**Note:** Only the "path" may be modified with this field. The configuration file is always named **KMSUCOMA.CFG**.

**Note:** There is no limit to the number of configuration files created, although each must be in a separate directory. When using the KMSUCOMA Server with **InTouch**, it is good practice to place the configuration file in the application directory.

### Start automatically as Windows NT Service

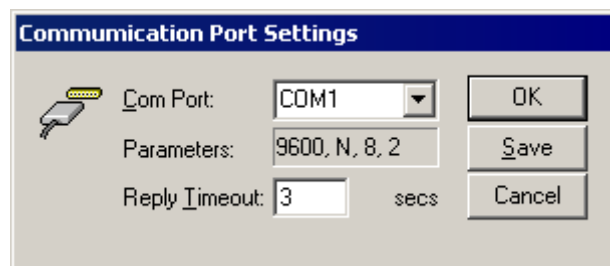
Enabling this option will cause the KMSUCOMA Server to start as a Windows NT service.

Windows NT offers the capability of running applications even when a user is not logged on to the system. This is valuable when systems must operate in an unattended mode. Enabling this option and rebooting the system will cause the Server to run as a Windows NT service. However, to view configuration information or to reconfigure the Server, the user must log on to the system. Any Server related problems that may arise such as missing adapter cards, licensing failures or device drivers not loading will not be visible to the user until a log on is performed. Disabling this option and rebooting the system will cause the Server to run as a Windows NT application program once again.

Once all entries have been made, click on **OK**.

## Com Port Settings Command

This command is used to configure the communication port that will be used to communicate with the KM PS306 or PS316 Controller. Invoke the `/Configure/Com Port Settings...` command. The "Communication Port Settings" dialog box will appear.



Select the **Com Port** and examine the characteristics of the selected Port. To select a necessary Com Port, click on the combo box button and make your choice from the list box.

The **Reply Timeout** field is used to enter the amount of time (in seconds) the Controller using the selected communication port will be given to reply to commands from the Server.

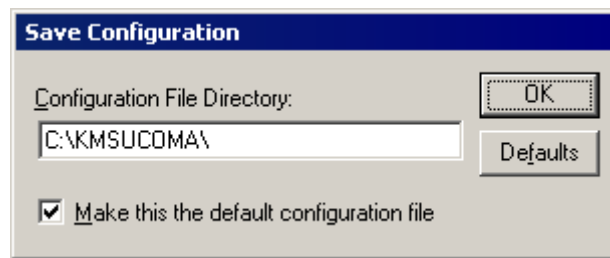
**Note.** The default value of 3 seconds should be sufficient for most configurations.

The following other communication parameters are used: *Baud Rate - 9600, No Parity, 8 Data Bits, 2 Stop Bits*. These parameters cannot be changed.

Once Reply Timeout is entered, select **OK** to process the configuration for the communication port.

## Saving KMSUCOMA Configuration File

If the configuration file does not currently exist, or a new configuration path has been specified, the Server will display the "Save Configuration" dialog box:



This dialog box displays the path where the Server is going to save the current configuration file. The path may be changed if necessary. Also, the path can optionally be recorded in the **WIN.INI** file by selecting the "**M**ake this the default configuration file" option. Doing so it will allow the KMSUCOMA Server to find the configuration file automatically each time it is started.

## Configuration File Location

When the KMSUCOMA Server starts up, it first attempts to locate its configuration file by first checking the **WIN.INI** file for a path that was previously specified. If the path is not present in the **WIN.INI** file, the Server will assume that the current working directory is to be used.

To start the Server from an application directory configuration file other than the default configuration file a special switch (**/d:**) is used. For example, invoke the **File/Run** command in **File Manager** or **Program Manager** and enter the following:

**KMSUCOMA /d:c:\directoryname**

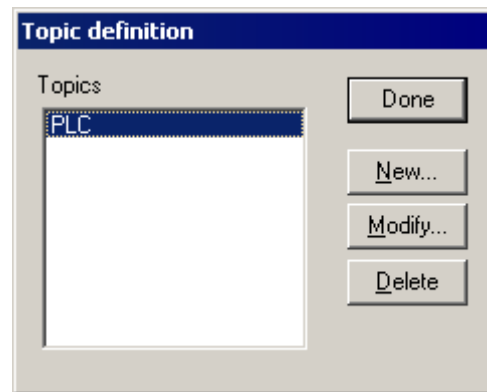
**Note:** *There is no limit to the number of configuration files that may be created, although each must be in a separate directory.*

## Topic Definition Command

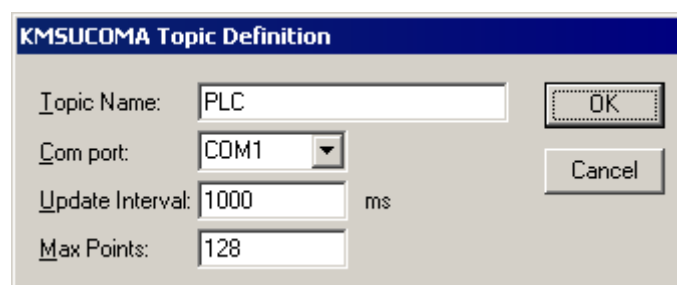
The user provides each connected Moeller SUCOS PS306 or PS316 Programmable Controller with an arbitrary name that is used as the Topic Name for all references to this Controller.

The following steps are taken to define the Topic attached to the Controller:

1. Invoke the Configure/Topic Definition... The "Topic definition" dialog box will appear:



- To modify an existing topic, select the topic name and click on **Modify**. To define a new topic, click on **New**. The "KMSUCOMA Topic Definition" dialog box will appear:



- Enter the **Topic Name**.

**Note:** If using *InTouch* the same Topic Name is to be entered in the "Add Access Name" dialog box described in the *Using the KMSUCOMA Server with InTouch* section.

- Click on the **Com port** button to associate a topic with the communication port.  
**Note:** Additional topics may be associated with the same communication port later.
- Set the **Update Interval** field to indicate the frequency the items/points on this topic will be read (polled). Default value is 1000 milliseconds.
- Set the **Max Points** for topic (Controller). (Set the number of really used (polled) items/points or little higher). Default value is 128.
- When all entries have been made, click on **OK** to process the configuration for this topic.

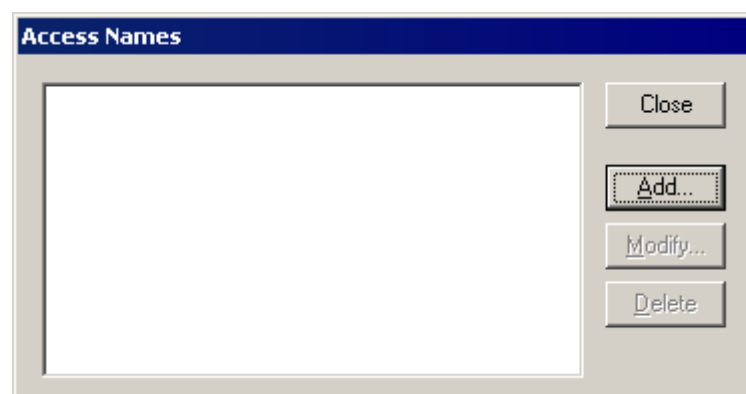
## Using the KMSUCOMA Server with InTouch

To access to items on the Moeller SUCOS PS306 or PS316 PLC from InTouch, the Access Names and Tag names should be defined in **WindowMaker**.

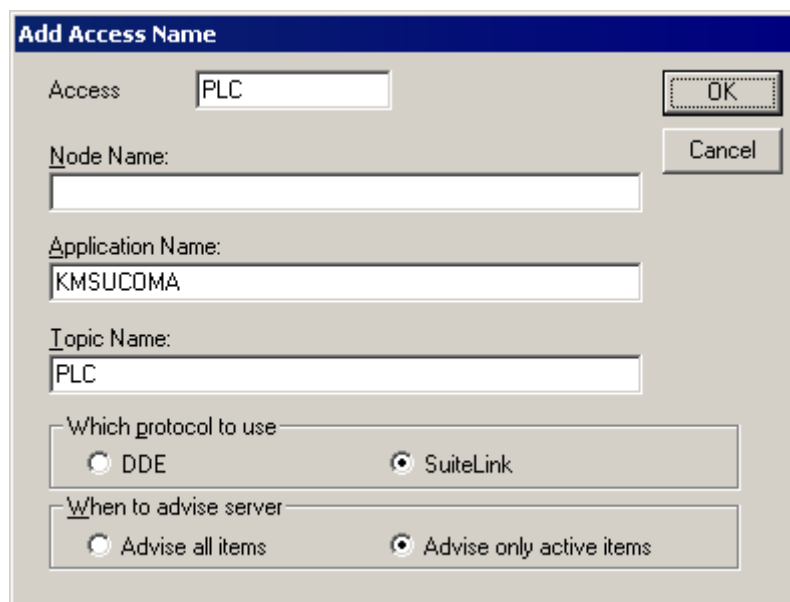
### Defining the Access Names

InTouch uses **Access Names** to reference real-time I/O data. Each Access Name equates to an I/O address, which can contain a **Node**, **Application**, and **Topic**. In a distributed application, I/O references can be set up as global addresses to a network I/O Server or local addresses to a local I/O Server.

To define the Access Names in WindowMaker node invoke the */Special/Access Names...* command. The "Access Names" dialog box will appear.



Click on **Add...**. The "Add Access Name" Dialog Box will appear:



**Note:** If **Add** is selected, this dialog box will be blank when it initially appears. Data has been entered here to illustrate the entries that are made.

The following fields are required entries when entering an Access Name Definition:

### Access Name

In the Access Name box type the name you want InTouch to use to this Access Name. (For simplicity, use the same name that you will use for the **Topic Name** here.)

### Node Name

If the data resides in a network I/O Server, in the Node Name box, type the remote node's name.

### Application Name

In the Application Name box, type the actual program name for the I/O Server program from which the data values will be acquired. In case the values are coming from the KMSUCOMA Server the KMSUCOMA is used. Do not enter the .exe extension portion of the program name.

### Topic Name

Enter the name defined for the topic in the KMSUCOMA Server to identify the topic the KMSUCOMA Server will be accessing.

The Topic Name is an application-specific sub-group of data elements. In the case of data coming from a KMSUCOMA Server program, the topic name is the exact same name configured for the topic in the KMSUCOMA Server.

**Note:** *This will usually be the same as the "Access Name", although, if desired, they may be different. However, it must be the same name used when the topics were configured in section **Configuring the KMSUCOMA Server**.*

### Which protocol to use

Select the protocol (DDE or Suite Link) that you are using.

### When to advise server

Select **Advise all items** if you want the Server program to poll for all data whether or not it is in visible windows, alarmed, logged, trended or used in a script. Selecting this option will impact performance, therefore its use is not recommended.

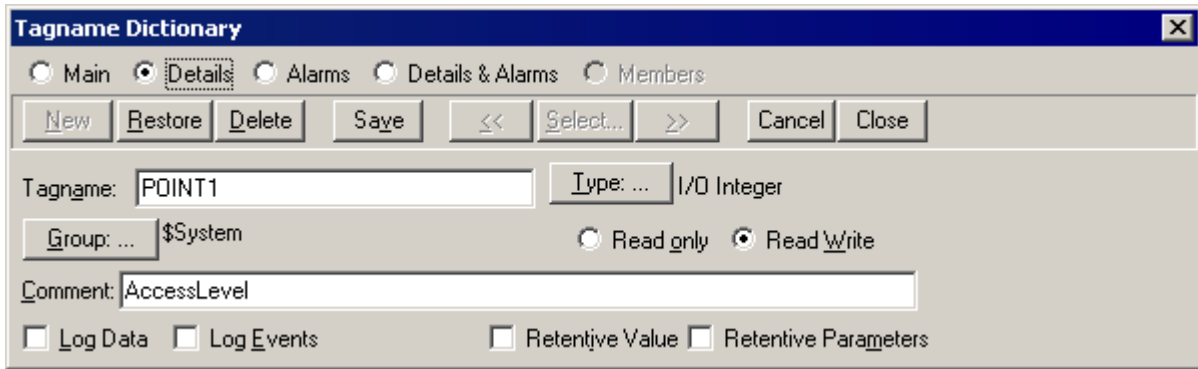
Select **Advise only active items** if you want the Server program to poll only points in visible windows and points that are alarmed, logged, trended or used in any script.

Click **OK** to accept the new Access Name and close the "Add Access Name" dialog box. The "Access Names" dialog box will reappear displaying the new Access Name selected in the list.

Click **Close** to close the "Access Names" dialog box.

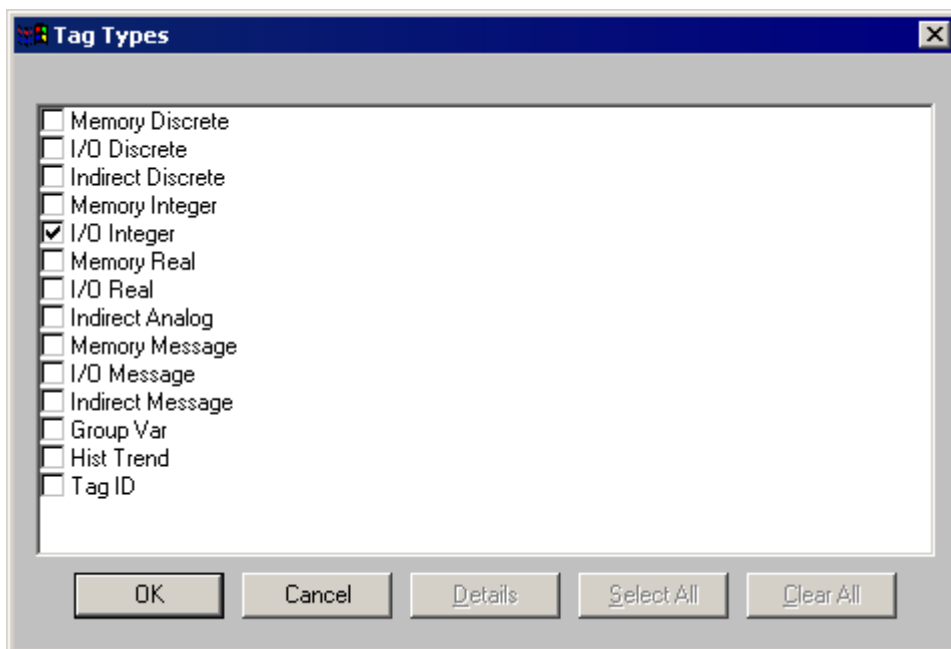
## Defining the Tag names

To define the Tag names associated with the new "Access Name", invoke the */Special/Tagname Dictionary...* command (in **WindowMaker**). The "Tagname Dictionary" dialog box will appear:



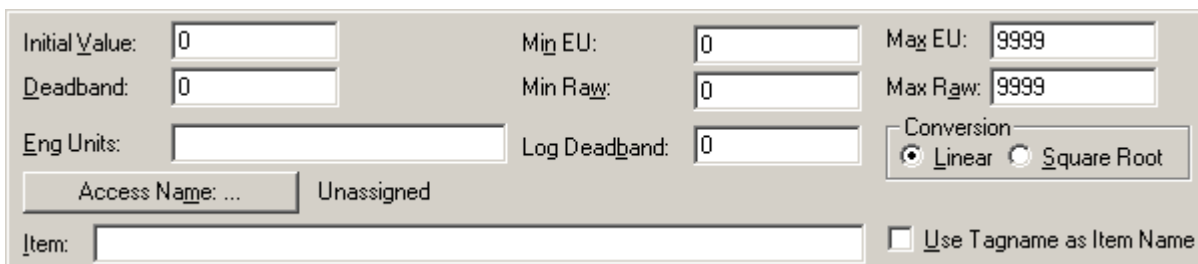
Click on **New** and enter the **Tagname**. (The tagname defined here is the name **InTouch** will use. The KMSUCOMA Server does not see this name.)

Select the tag type by clicking on the **Type:...** button. The "Tag Types" dialog box will appear:

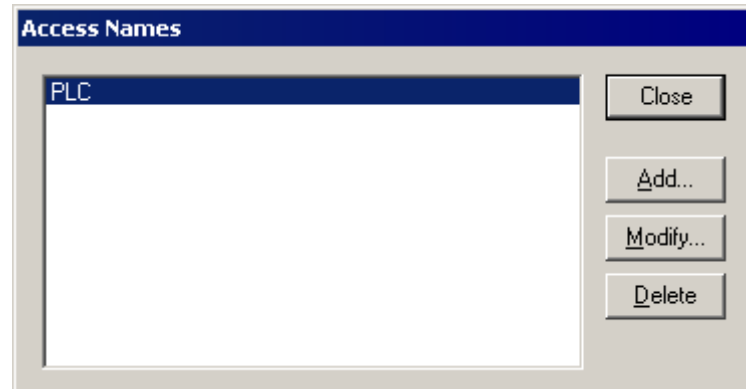


To access KMSUCOMA items, the type must be **I/O Discrete** or **I/O Integer**. Select the Tag type.

The "Details" dialog box for the tag name will appear:



Select the Access name for KMSUCOMA Server by clicking on the **Access Name:...** button. The "Access Names" dialog box will appear:



Select the appropriate Access Name and click on **Close**. (If the Access Name has not been defined as previously described, click on **Add** and define the Access Name now.)

The "Details" dialog box will appear displaying the selected Access Name:

For integers fill in the **Min EU**, **Max EU**, **Min Raw** and **Max Raw** fields. These fields control the range of values that will be accepted from the Server and how the values are scaled. If no scaling is desired, **Min EU** should be equal to **Min Raw** and **Max EU** equal to **Max Raw**.

Enter the KMSUCOMA item name to be associated with this tagname in the **Item:** field in the "Details" box:

(Refer to the **Item Names** section below for complete details.)

Where applicable, the **Use Tagname as Item Name** option may be selected to automatically enter the tag name in this field. **Note:** *The tag name can only be used if it follows the conventions listed in the **Item Names** section.*

Once all entries have been made, click on the **Save** button (in the top dialog box) to accept the new tag name. To define additional tag names click on the **New** button. To return to the **WindowMaker** main screen, select **Close**.

## Monitoring the Status of Communication with InTouch

**InTouch** supports built-in topic names called **DDEStatus** and **IOStatus** that are used to monitor the status of communications between the Server and InTouch. For more information on the built-in topic names DDEStatus and IOStatus, see your online "InTouch User's Guide".

The status of communication between the Server and InTouch can be read into **Excel** by entering the following DDE reference formula in a cell on a spreadsheet (in following examples **PLC** is the Topic Name configured for KMSUCOMA Server):

```
=view|DDEStatus!PLC
```

or

```
=view|IOStatus!PLC
```

## Notes on Using Microsoft Excel

Data from the KMSUCOMA topic (PLC) may be accessed from Excel spreadsheets. To do so, enter a formula like the following into a cell on the spreadsheet.

```
=KMSUCOMA|topic!item
```

Sometimes, Excel requires the **topic** and/or **item** to be surrounded by apostrophes.

In the formula, **topic** must be replaced with one of the valid topic names defined during the Server configuration process. Replace **item** with one of the valid item names described in the **Item Names** section.

## Reading Values into Excel Spreadsheets

Values may be read directly into Excel spreadsheets by entering a DDE formatted formula into a cell, as shown in the following examples:

```
=KMSUCOMA|'topic-31!'MW16'
```

```
=KMSUCOMA|'rack5!'IB2.0'
```

```
=KMSUCOMA|'tank-2!'Q8.5'
```

***Note:** Refer to the Microsoft Excel manual for complete details on entering Remote Reference formulas for cells.*

## Writing Values to KMSUCOMA Points

Values may be written to the Server from Microsoft Excel by creating an Excel macro that uses the **POKE** command. The proper command is entered in Excel as follows:

```
channel=INITIATE("KMSUCOMA","topicname")
```

```
=POKE(channel,"itemname", Data_Reference)
```

**=TERMINATE (channel)**  
**=RETURN()**

The following describes each of the above **POKE** macro statements:

**channel=INITIATE("KMSUCOMA","topicname")**

Opens a channel to a specific topic name (defined in the Server) in an application with name KMSUCOMA (the executable name less the .EXE) and assigns the number of that opened channel to **channel**.

**Note:** By using the **channel=INITIATE** statement the word **channel** must be used in the **=POKE** statement instead of the actual cell reference. The "**applicationname**" and "**topicname**" portions of the formula must be enclosed in quotation marks.

**=POKE(channel,"itemname", Data\_Reference)**

**POKEs** the value contained in the **Data\_Reference** to the specified item name (actual location in the Moeller SUCOS PS306 or PS316 PLC) via the **channel** number returned by the previously executed **INITIATE** function. **Data\_Reference** is the row/column ID of the cell containing the data value. For "**itemname**", use some of the valid item names described in the **Item Names** section.

**=TERMINATE(channel)**

Closes the channel at the end of the macro. Some applications have a limited number of channels. Therefore they should be closed when finished. **Channel** is the channel number returned by the previously executed **INITIATE** function.

**=RETURN()**

Marks the end of the macro.

The following is an example of Excel macro used to poke value from cell B2 to topic **PLC** item **MW16**:

```
PokeMacro -Ctrl a
=INITIATE("KMSUCOMA","PLC")
=POKE(A2," MW16",B2)
=ON.TIME(NOW()+0.01,"TerminateDDEChannel")
=RETURN()
```

```
TerminateDDEChannel
=TERMINATE(A2)
=RETURN()
```

**Note:** Refer to the Microsoft Excel manual for complete details on entering Remote Reference formulas for cells.

## Monitoring the Status of Communication with PLC

For each topic, there is a built-in discrete item, which indicates the state of communication with the PLC. The discrete item (**STATUS**) is set to **0** when communication fails and set to **1** when communication is successful.

From **InTouch** the state of communication system may be read by defining an I/O Discrete tagname and associating it with the topic configured for the PLC and using **STATUS** as the item name.

From **Excel**, the status of the communication may be read by entering the following formula in a cell:

**=KMSUCOMA|topic!STATUS**

## Item(Point) Naming

Within the KMSUCOMA Server, item/point naming depends on naming conventions of memory areas for Moeller SUCOS PS306 and PS316 Programmable Controllers. The following lists are the item/point names supported by the KMSUCOMA DDE Server:

Register Type	Format	Range	DDE Type
Flag Word	<b>MWn</b>	n=0 to 2172	Integer
Flag Byte	<b>MBn.b</b>	n=0 to 2172 b=0 or 8	Integer
Input Word	<b>IWn</b>	n=0 to 63	Integer
Input Byte	<b>IBn.b</b>	n= 0 to 63, b=0 or 8	Integer
Output Word	<b>QWn</b>	n=0 to 63	Integer
Output Byte	<b>QBn.b</b>	n=0 to 63, b=0 or 8	Integer

On/Off Type	Format	Range	DDE Type
Flag Bit	<b>Mn.b</b>	n=0 to 2172 b=0 to 15	Discrete
Input Bit	<b>In.b</b>	n=0 to 63 b=0 to 15	Discrete
Output Bit	<b>Qn.b</b>	n=0 to 63 b=0 to 15	Discrete

In **Format** column “n” is word register address and “b” - bit address in the word. Bit address (0 or 8) in the byte item name is used to identify is it a low or high byte.

The word register contains two byte registers or 16 bits, for example, MW0 contains bytes MB0.0 and MB0.8 as well as bits M0.0 to M0.15. MB0.0 is the least significant (low) byte, MB0.8 - the most significant (high) byte, M0.0 is the least significant bit and M0.15 - the

most significant bit. M0.7 is the most significant bit of byte MB0.0 and M0.8 - the least significant bit of byte MB0.8.

Word :	MW0				MW1			
Byte :	MB0.0		MB0.8		MB1.0		MB1.8	
Bit :	M0.0	.....	M0.15	M1.0	.....	M1.15		

**Notes:**

1. For Flag Words MW0...MW124 corresponding byte addresses are \$4080...\$4179 (hexadecimal), for Flag Words MW125...MW2172 corresponding byte addresses are \$4200... \$51FF (hexadecimal).
2. For Input Words IW0...IW63 corresponding byte addresses are \$4000...\$407F (hexadecimal).
3. For Output Words QW0...QW63 corresponding byte addresses are \$4180...\$41FF (hexadecimal).

The **Analog Input** and **Analog Output** item/point naming depends on naming conventions for *Symbolic Addresses* of Parallel Bus Peripherals. The following lists are the Analog Input and Analog Output item/point names.

Register Type	Format	Range	DDE Type
Analog Input Word	<b>IAn.b</b>	n=0 to 8 b=0 to 3	Integer
Analog Input Low Byte	<b>IAn.bL</b>	n= 0 to 8 b=0 to 3	Integer
Analog Input High Byte	<b>IAn.bH</b>	n= 0 to 8 b=0 to 3	Integer
Analog Output Word	<b>QAn.b</b>	n=0 to 8 b=0	Integer
Analog Output Low Byte	<b>QBn.bL</b>	n=0 to 8 b=0	Integer
Analog Output High Byte	<b>QBn.bH</b>	n=0 to 8 b=0	Integer

The KMSUCOMA symbolic addresses for Analog Inputs and Outputs correspond to the following addresses of Parallel Bus Peripherals:

Analog Input Symbolic Address	Parallel Bus Peripheral Address	Slave		Analog Input Symbolic Address	Parallel Bus Peripheral Address	Slave
IA0.0	PP195B113.0			IA5.0	PP192B65.0	5
IA0.1	PP195B114.0			IA5.1	PP192B66.0	5
IA0.2	PP195B115.0			IA5.2	PP192B67.0	5
IA0.3	PP195B116.0			IA5.3	PP192B68.0	5
IA1.0	PP192B1.0	1		IA6.0	PP192B81.0	6
IA1.1	PP192B2.0	1		IA6.1	PP192B82.0	6
IA1.2	PP192B3.0	1		IA6.2	PP192B83.0	6
IA1.3	PP192B4.0	1		IA6.3	PP192B84.0	6
IA2.0	PP192B17.0	2		IA7.0	PP192B97.0	7
IA2.1	PP192B18.0	2		IA7.1	PP192B98.0	7
IA2.2	PP192B19.0	2		IA7.2	PP192B99.0	7
IA2.3	PP192B20.0	2		IA7.3	PP192B100.0	7
IA3.0	PP192B33.0	3		IA8.0	PP192B113.0	8
IA3.1	PP192B34.0	3		IA8.1	PP192B114.0	8
IA3.2	PP192B35.0	3		IA8.2	PP192B115.0	8
IA3.3	PP192B36.0	3		IA8.3	PP192B116.0	8
IA4.0	PP192B49.0	4				
IA4.1	PP192B50.0	4				
IA4.2	PP192B51.0	4				
IA4.3	PP192B52.0	4				

Analog Output Symbolic Address	Parallel Bus Peripheral Address	Slave		Analog Output Symbolic Address	Parallel Bus Peripheral Address	Slave
QA0.0	PP195B121.0			QA5.0	PP192B73.0	5
QA1.0	PP192B9.0	1		QA6.0	PP192B89.0	6
QA2.0	PP192B25.0	2		QA7.0	PP192B105.0	7
QA3.0	PP192B41.0	3		QA8.0	PP192B121.0	8
QA4.0	PP192B57.0	4				

The Parallel Bus Peripheral Addresses for Analog Input or Analog Output bytes are given in the following example:

	Symbolic Address	Parallel Bus Peripheral Address
Word	IA0.0	PP195B113.0
Low Byte	IA0.0L	PP195B113.0
High Byte	IA0.0H	PP195B113.8

Value range of Analog Words is 0 ... 4095, Analog High Bytes value range - 0 ... 15.

## Item/Point Naming Examples

The following examples show the correct format for item/point names:

MW0 - Flag Word, address 0;

IB62.8 - High Byte of Input Word address 62;

Q2.13 - Bit number 13 of Output Word address 2;

IA8.3 - Analog Input Word address PP192B116.0;

QA0.0H - Analog Output Byte address PP195B121.8.

# Troubleshooting

## WIN.INI entries

The first time you run the KMSUCOMA Server configuration, most of the items in the following list will automatically appear in the WIN.INI file, located in the MS Windows system directory (e.g. C:\WINNT). It is an ASCII file and can be altered manually if you wish with any text editor, e.g., MS Windows Notepad (*do not use a program that formats text, such as MS Word or Write unless the file is saved as a DOS text*). The following is a typical entry for the KMSUCOMA Server:

```
[KMSUCOMA]
WinIconic=0
WinFullScreen=0
WinTop=112
WinLeft=0
WinWidth=200
WinHeight=168
ProtocolTimer=10
ConfigurationFile=C:\KMSUCOMA\
DumpScreen=1
ShowSend=0
ShowReceive=0
ShowErrors=1
```

## Troubleshooting menu

The following debugging choices are appended to the Server's System Menu (the menu that appears when you click on the Server icon in the upper left hand corner of the Server's window):

- Suspend Protocol/Resume Protocol** - these choices permit you to turn protocol processing on and off, what means that you can suspend access to PLC(s).
- Show Send** - if checked then all outgoing user data logged in hexadecimal format.
- Show Receive** - if checked then all incoming user data logged in hexadecimal format.
- Show Errors** - if checked then all information about errors logged.
- Verbose** - if checked then additional debugging information is logged.
- Dump** - all information about ports, topics, messages and data items logged. This can be use to find out how many messages are actually sent to the PLC(s).
- Dump Screen** - if checked then information about active messages are displayed on the KMSUCOMA main window. This also can be used to find out how many messages are actually sent to the PLC(s).

All debug information (except **Dump Screen**) is displayed by the Wonderware Logger, which must be active for these commands to work.

**Note:** *If you check **Show Send** and/or **Show Receive** and/or **Verbose**, debug output grows very fast and it is possible that computer can become very slow.*

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KLINKMANN AUTOMATION  
KMSUCOMA Server  
Revision History

Sep 94	Rev 1.0	Release 1.0
Feb 95	Rev 1.1	Grammatical errors corrected
Oct 96	Rev 1.2	Modification of manual contents Chapters: Files on the KMSUCOMA Distribution Disk Installing the KMSUCOMA DDE Server
Aug 97	Rev 1.3	Minor changes. Manual file name changed.
Mar 2002	Rev 1.4	Installation from CD information added.
Jun 2004	Rev 1.5	32-bit SuiteLink and DDE version created.