

## OmniServer Description

OmniServer is a software package that runs on Windows 2000/XP/Vista/Win7. It receives information from the PC's COM port (user selectable) and relays this information to other programs (Wonderware, RSView) via DDE, Fast DDE, NetDDE, and OPC. The OmniServer Program resides in the Windows start-up directory. It usually is installed on the same computer that has the HMI Software (Wonderware, RSView). It can be installed on a separate computer that is networked to the computer with the HMI Software using NetDDE or OPC.

A RS-232 to RS-485 converter is supplied to allow Omniserver to communicate from the computers COM port to the PyroGuard CXL Console. The converter plugs directly into the computers DB-25 COM port and uses the computers power to operate the converter. A two individually shielded twisted pair wire (4 wires total) must be run from the converter at the computer to the PyroGuard CXL Console. The maximum distance between the converter and console is approximately 3000 feet. Terminal Blocks on the converter and the PyroGuard console allow for easy connection between the two. A 5-pin terminal block is installed inside the CXL console at port connector P3 (MMI) located on the IO Rack Backboard. Note XMT+, and XMT- should be connected to one shielded pair of wires and RCV+ and RCV- should be connected to the other shielded pair of wires. Connect RCV- to Terminal #1 on the 5-pin connector at P3, RCV+ to Terminal #2, XMT+ to Terminal #4, XMT- to Terminal #5, and shield ground to Terminal #3. The CXL console also needs to be configured for communication with OmniServer. This can be accomplished by setting the fourth dipswitch on dipswitch connector S1 to the ON position for each I/O Rack in the console. The S1 dipswitch is located on the IO Rack Backboard.

Each I/O Card sends its number and current status condition to OmniServer beginning with I/O Card #1 to the last I/O Card in the console and then repeats the process over again. OmniServer receives the I/O Card status and updates all Active DDE/OPC Items for that particular card. This information is accessed from HMI Software such as Wonderware by making active the DDE/OPC Item Name followed by the I/O Card Number. For Example, if you would like to know if I/O Card #3 is Online, then you would call DDE/OPC Item "CardOnline3". If its value is set to 1 then the card is online, if the value is set to 0 then the card is offline.

There are a total of three commands that can be sent to the console via DDE. These include Master Reset, Horn Mute, and Test All Sensors. This is accomplished by writing (Poking) a value of 1 to these DDE/OPC Items. For Example, if you want to make the console perform a Master Reset you would set DDE Item "MReset" to 1. OmniServer returns the DDE/OPC Item value back to 0 after performing the command.

It is important that OmniServer's configuration not be changed. The COM port response time and Write Delay time is integral the communication between OmniServer and the PyroGuard console. The only setting that the customer may want to change is the COM port in which the PC is using to communicate with the PyroGuard console. Under DEVICE CONFIGURATION menu the COM Port should be set at 38400 baud, 8 bit, No parity, 1000 MSec Reply Timeout, No Flow Control. Under TOPIC DEFINITION menu, the topic name should be set to "Clarkes", and the write delay set to 25 Msecs and 10 MSecs for the Update Interval. Note TOPIC DEFINITION is where the customer can configure which device (COM Port) the PC will use to communicate with the PyroGuard CXL console via the RS-485 to RS-232 converter.

Each DDE/OPC Item listed in the OmniServer PyroCXL protocol is active (1) only when the PyroGuard console is actually receiving the input. For example, the SA1Alarm Item will only be active while sensors for that input are seeing sparks and will return to inactive (0) when the sensors stop seeing sparks. However the alarm relay for that zone OZA1Relay will remain latched until a Master Reset is performed at the console. Likewise a Valve #1 trouble condition (V1Trouble) will remain active only while the valve trouble input at the PyroGuard console remains active. However the trouble LED will remain on (OZTrouble) until a Master Reset is performed at the console. This is necessary to keep in mind while programming your HMI Software to avoid an operator miss seeing an input go active and then inactive. Note that the PyroGuard console and CX Software time/date stamps events and stores every event for easy access.

After installing OmniServer onto your Windows system, it is necessary to install the PyroGuard CXL Protocol and OmniServer configuration files located on the supplied PyroGuard OmniServer Protocol CD on your Windows system. This should be installed into the OmniServer folder created when you installed OmniServer. You can install the protocol by running the "Setup.exe" file on the CD. The only protocol necessary to communicate with the PyroGuard CXL console is the PyroCXL protocol. All other protocols including Barcode, ModbusA, ModbusR, and Scale can be deleted although it is not necessary. If the PyroCXL protocol is not listed, make sure the "PyroCXL.dpd" file is installed in either the "Documents and Settings/All User/Software Toolbox/OmniServer" for Windows 2000/XP or "Users/All Users/Software Toolbox/OmniServer" folder for Vista or Windows 7.

## **TROUBLE SHOOTING**

When the PyroGuard console receives excess noise on the Receive communication line it will turn off its receive communication chips. This will be recognized by a user being unable to send any commands (Master Reset, Horn Reset, and Test all Sensors) to the CXL console from the HMI Software and the DDE/OPC Item "DDETxTrouble1" being set to 1. This can be corrected by performing a Master Reset at the console, or from the PyroGuard CX Software (Alt-M). This will reset the receive communication chips and allow the HMI Software to send commands to the CXL Console.

If your HMI Software is not receiving information it could be the result of the HMI software not initiating a DDE/OPC conversation with OmniServer. OmniServer will not begin communicating with the HMI Software until the HMI initiates the conversation. Also, as long as the DDE/OPC Item "Status" is set to 1, the console is communicating with OmniServer properly. If any other programs are using the COM port that is assigned to OmniServer, it can cause conflicts with OmniServer and not allow Omniserver to receive this information. Windows HyperTerminal can also be use to see if data is being received through the COM port. Note, HyperTerminal COM port settings must match that of OmniServers as explained earlier. Follow the directions in the "OmniServer Troubleshooting2.7.pdf" document for step by step directions to troubleshoot communication issues.

## OmniServer Protocol Listing

Item Type	DDE/OPC Item Name	Description
Discrete (R)	DDETxTrouble(C#)	Trouble with I/O Card DDE Transmission Line
Discrete (R)	CardOnline(C#)	I/O Card is Online and Operational
Discrete (R)	OZArmed(C#)	1st Zone on I/O Card is Armed
Discrete (R)	EZArmed(C#)	2nd Zone on I/O Card is Armed
Discrete (R)	BatteryPower(C#)	I/O Card is using Battery Power
Discrete (R)	OZTrouble(C#)	1st Zone on I/O Card has Trouble Condition
Discrete (R)	EZTrouble(C#)	2nd Zone on I/O Card has Trouble Condition
Discrete (R)	OZFlow(C#)	1st Zone on I/O Card has Water Flowing
Discrete (R)	EZFlow(C#)	2nd Zone on I/O Card has Water Flowing
Discrete (R)	SA1Alarm(C#)	Sensor Area 1 in Spark Alarm on I/O Card
Discrete (R)	SA2Alarm(C#)	Sensor Area 2 in Spark Alarm on I/O Card
Discrete (R)	SA3Alarm(C#)	Sensor Area 3 in Spark Alarm on I/O Card
Discrete (R)	SA4Alarm(C#)	Sensor Area 4 in Spark Alarm on I/O Card
Discrete (R)	SA1Trouble(C#)	Sensor Area 1 in Trouble on I/O Card
Discrete (R)	SA2Trouble(C#)	Sensor Area 2 in Trouble on I/O Card
Discrete (R)	SA3Trouble(C#)	Sensor Area 3 in Trouble on I/O Card
Discrete (R)	SA4Trouble(C#)	Sensor Area 4 in Trouble on I/O Card
Discrete (R)	V1Output(C#)	Valve Circuit #1 is activated on I/O Card
Discrete (R)	V2Output(C#)	Valve Circuit #2 is activated on I/O Card
Discrete (R)	V1Trouble(C#)	Valve Circuit #1 is in Trouble on I/O Card
Discrete (R)	V2Trouble(C#)	Valve Circuit #2 is in Trouble on I/O Card
Discrete (R)	PS1Input(C#)	I/O Card Water Pressure Switch #1 input
Discrete (R)	PS2Input(C#)	I/O Card Water Pressure Switch #2 input
Discrete (R)	PS3Input(C#)	I/O Card Water Pressure Switch #3 input
Discrete (R)	PS4Input(C#)	I/O Card Water Pressure Switch #4 input
Discrete (R)	OZA1Relay(C#)	I/O Card 1st Zone First Spark Alarm Relay
Discrete (R)	EZA1Relay(C#)	I/O Card 2nd Zone First Spark Alarm Relay
Discrete (R)	OZA2Relay(C#)	I/O Card 1st Zone Secondary Alarm Relay
Discrete (R)	EZA2Relay(C#)	I/O Card 2nd Zone Secondary Alarm Relay
Discrete (R)	OZA1Trouble(C#)	I/O Card 1st Zone First Spark Relay Trouble
Discrete (R)	EZA1Trouble(C#)	I/O Card 2nd Zone First Spark Relay Trouble
Discrete (R)	OZA2Trouble(C#)	I/O Card 1st Zone Secondary Relay Trouble
Discrete (R)	EZA2Trouble(C#)	I/O Card 2nd Zone Secondary Relay Trouble
Discrete (R)	Status	CXL Console is communicating properly
Discrete (W)	MReset	Initiate Master Reset command on Console
Discrete (W)	TASensors	Initiate Test all Sensors on Console
Discrete (W)	HornMute	Initiate a Horn Reset on Console

Notes: (R) = Read Only (W) = Write Only (C#) = I/O Card Number  
 All DDE Items active with a 1 (On) and inactive with 0 (Off)

DDE Server Name: OSRVDDE ; FactorySuite Server Name: OSRVPOLL ; **Topic Name: Clarkes**  
 OPC Server Name: "SWToolbox.OmniServer" or "DSSI.OmniServer.2".