

# General Specifications

## STARDOM FCN/FCJ OPC Server for Windows



GS 34P02Q61-01E

### ■ GENERAL

FCN/FCJ OPC Server for Windows (hereinafter referred to as simply FCN/FCJ OPC Server) is software that supports interfaces compliant with the OPC (OLE for Process Control) DA 2.05a (Data Access standard ver.2.05a) and A&E 1.10 (Alarms and Events standard ver.1.10), and it runs on a generic Windows-based computer. FCN/FCJ OPC Server supplies data in FCNs and FCJs to OPC clients upon request via an OPC DA 2.05a interface, thus allowing easy access from OPC clients to data inside FCNs and FCJs.

### ■ FEATURES

#### ● Uses of FCN/FCJ OPC Server

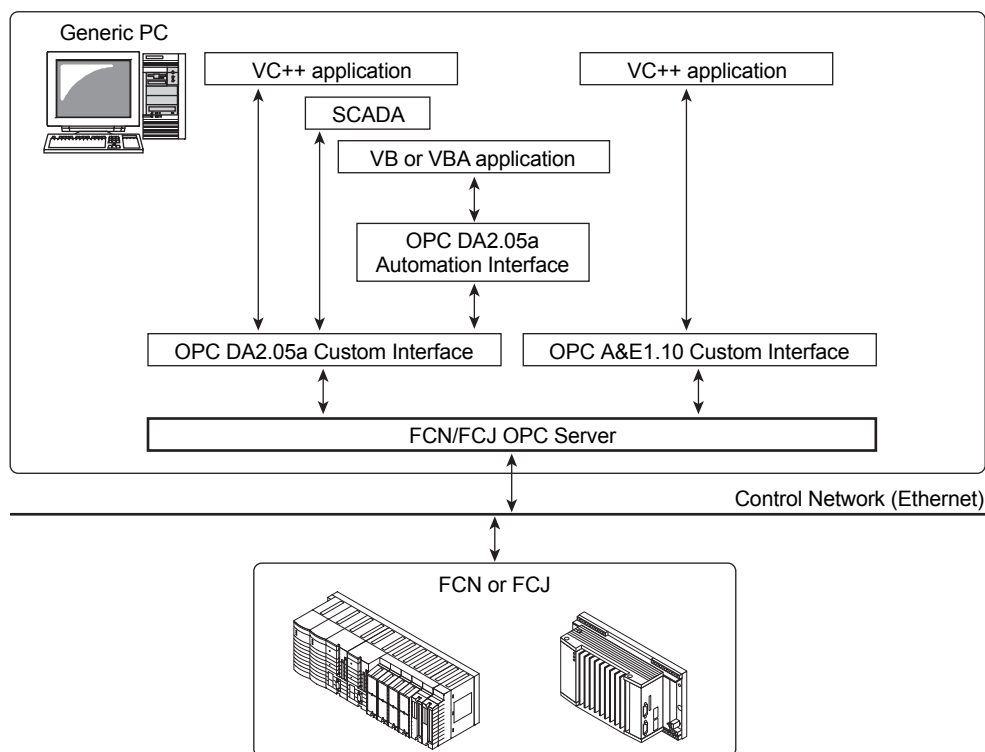
OPC interfaces provided by FCN/FCJ OPC Server can be used by a broad range of OPC client applications including:

- Various applications available in the market and compliant with the standards of OPC Foundation, such as SCADA
- User applications written in Microsoft Visual Basic or Visual C++

#### ● Compliance with Standard OPC Specifications

FCN/FCJ OPC Server supports an interface compliant with the standard OPC DA (Data Access) and A&E (Alarms and Events) interface specifications provided by OPC Foundation.

### ■ FUNCTION CONFIGURATION



F01E.ai

Figure Function Configuration

## ■ FUNCTION SPECIFICATIONS

The table below outlines the capability of FCN/FCJ OPC Server.

**Table Capability of FCN/FCJ OPC Server**

Item	Specification
Connectable clients	Up to 100
Accessible data	Data residing in FCN/FCJ (*1)
Accessible data type	Specified data types only (details are described later).
Data access (DA)	Compliant with OPC Foundation's Data Access Custom Interface standard ver. 2.05a.
Message access (A&E)	Compliant with OPC Foundation's Alarms and Events Custom Interface standard ver. 1.10. Message notification and filter (*5)
Connectable FCNs and FCJs	Up to 100
Access to duplexed-CPU FCN	Possible (*2)
Prerequisite for access	The FCN/FCJ must be running. (*3)
Duplexed network	Supported (*4)

\*1: These are control application parameters whose OPC attributes are turned ON, and internal parameters for PAS POU operation mode/tuning elements and the like.

\*2: Communication retries will occur during a switching of the control right between the CPUs.

\*3: An item can be defined for a group object only when the corresponding FCN/FCJ is running.

\*4: Making the network dual-redundant requires the optional Duplexed Network Program for FCN/FCJ (see GS 34P02Q62-01E for details).

\*5: "Ack" and "area browse" are unsupported.

### ● Application Capacity

For an OPC client to access FCN/FCJ OPC Server, group objects need to be defined. In each group, multiple item IDs can be set, as shown below.

**Table Application Capacity**

OPC Server Function	Item	Specification
DA	Group objects	Up to 1,000
	Item IDs	Up to 10,000 per group object; up to 100,000 in total
	Data update interval	1,000 to 3,600,000 milliseconds (1 second to 1 hour)
A&E	Event objects (Event subscription objects)	1,000

### ● Accessible Data Types

Data residing in FCNs and FCJs, opened by FCN/FCJ OPC Server, accessible for OPC clients are limited to data of one of the data types shown in the following tables. Data types are broadly categorized into four types:

- Basic data types
- Data types of a system flag
- Data types of an application portfolio
- Data types of a device label parameter

**Table Basic Data Types**

Data Type of Control Application's Parameter		Data Type in OPC
Data Type	Member Name	
BOOL	-	VT_BOOL
SINT	-	VT_I1
INT	-	VT_I2
DINT	-	VT_I4
USINT	-	VT_UI1
UINT	-	VT_UI2
UDINT	-	VT_UI4
REAL	-	VT_R4
LREAL	-	VT_R8
TIME	-	VT_UI4
BYTE	-	VT_UI1
WORD	-	VT_UI2
DWORD	-	VT_UI4
STRING	-	VT_BSTR

\*1: For all data types, array(up to 2KB) data items are also accessible.

**Table Data Types of System Flag**

Data Type of Control Application's Parameter		Data Type in OPC
Data Type	Member Name	
SD_FErrTab	-	VT_UI4
SD_FTaskName	-	VT_BSTR
SD_FVerStr	-	VT_BSTR
SD_FPrjName	-	VT_BSTR
SD_FRevShort	-	VT_BSTR
SD_FRevLong	-	VT_BSTR
SD_FNodeType	-	VT_BSTR
SD_FSerialNumber	-	VT_BSTR
SD_FManu_Date	-	VT_BSTR
SD_FErrInfoStr	-	VT_BSTR
SD_FRAS_Info	SoftStatus (*1)	VT_UI2
	HardStatus	VT_UI2
	SramErr	VT_UI2
	CpuTemp	VT_UI2
	MemErrCnt	VT_UI4
	MemErrAdd	VT_UI4
	SramErrCnt	VT_UI4
	DownStatus	VT_UI4
	DownCode	VT_UI4
	TotalTime	VT_UI4
	ActiveTime	VT_UI4
	RestartFlag	VT_BOOL
	CtrlPriority	VT_I2

\*1: This data member is accessed if the data member name is omitted in access.

**Table Data Types of Application Portfolio**

Data Type of Control Application's Parameter		Data Type in OPC
Data Type	Member Name	
CDATA_REAL	R4Value (*1)	VT_R4
	SH	VT_R4
	SL	VT_R4
	Unit	VT_BSTR
CDATA_INT	Value (*1)	VT_I2
	Status	VT_UI4
CDATA_DINT	Value (*1)	VT_I4
	Status	VT_UI4
CDATA_BOOL	Value (*1)	VT_BOOL
	Status	VT_UI4
	Cinfo	VT_UI4
SUM_DEF	SUM (*1)	VT_UI4
	DP	VT_UI2
	Status	VT_UI4
	Unit	VT_BSTR
NSUM_DEF	SUM (*1)	VT_R8
	DP	VT_UI2
	Status	VT_UI4

\*1: This data member is accessed if the data member name is omitted in access.

**Table Data Types of Device Label Parameter**

Data Type of Control Application's Parameter		Data Type in OPC
Data Type	Member Name	
Dtag_I_Anlg Dtag_O_Anlg	Value (*1)	VT_UI2
	SH	VT_R4
	SL	VT_R4
	Unit	VT_BSTR
Dtag_I_Temp	Value (*1)	VT_R4
	SH	VT_R4
	SL	VT_R4
	Unit	VT_BSTR
Dtag_I_Pcnt	Value (*1)	VT_R4
	SH	VT_R4
	SL	VT_R4
	Unit	VT_BSTR
Dtag_I_PulsL	Value (*1)	VT_UI2
	SH	VT_R4
	SL	VT_R4
	Unit	VT_BSTR
	PRate	VT_R4
Dtag_I_Sts Dtag_O_Sts	Value (*1)	VT_UI2
	Status	VT_UI2
Dtag_I_PushB	Value (*1)	VT_UI2
	Status	VT_UI2

\*1: This data member is accessed if the data member name is omitted when accessing.

## ■ OPC DA 2.05A SPECIFICATIONS

### ● Interfaces

FCN/FCJ OPC Server provides the following OPC DA 2.05a-compliant interfaces.

**Table Interfaces Provided by FCN/FCJ OPC Server**

Object	Interface	Remarks
Server object	IOPCCommon	Version1.0
	IOPCServer	
	IOPCItemProperties	Only the standard properties are supported.
	IOPCBrowseServerAddressSpace	
	IConnectionPointContainer	
	IOPCShutdown	Client side
Group object	IOPCGroupStateMgt	
	IOPCSyncIO	
	IOPCAsyncIO2	
	IOPCItemMgt	
	IConnectionPointContainer	
	IOPCDataCallback	Client side

### ● Item IDs

Item IDs are to be defined in the following syntax:

*Node identifiers!* *DataInstanceName*[(n)].*[MemberName]*

where brackets are optional and each parameter is as shown below.

#### Node identifiers

Identification name of the FCN/FCJ node to be accessed.

!

Character (an exclamation mark) separating the host ID from the data instance name.

#### DataInstanceName

Name of the parameter in the control application; for an array parameter, specify the desired data position in (n) where n is the array element number.

.

Character (a period) separating the data instance name from the data member name.

#### MemberName

Specify the data member name when accessing a member in a structure variable. When the member name is omitted, the interface regards the default member name as specified.

### ● Others

- Access path designations: Not supported.
- DeadBand: Not supported.

## ■ OPC A&E 1.10 SPECIFICATIONS

Parts of OPC Alarms and Events Custom Interface Standard Version 1.10 are supported by FCN/FCJ OPC Server for Windows.

### ● OPC A&E Custom Interface

OPC A&E Custom Interface supports the following interfaces for client applications made by Visual C++.

**Table OPC A&E Custom Interface**

Object	Interface	Remarks
OPCEventServer	IOPCCommon	
	IOPCEventServer	(*1)
	IConnectionPointContainer	
	IConnectionPoint	
OPCEventSubscription	IOPCEventSubscriptionMgt	
	IConnectionPointContainer	
	IConnectionPoint	
OPCEventSink	IOPCEventSink	
OPCShutdown	IOPCShutdown	

\*1: "Ack" and "area browse" are unsupported.

### ● Alarms and Events

FCN/FCJ OPC Server notifies OPC Client of messages via OPC A&E, such as alarms detected by FCN/FCJ and alarms generated by control applications.

**Table Event Category defined on FCN/FCJ OPC Server**

Event Category Code	Event Category Description	Event Type
SDCS_AE_CTG_SYSALARM (101)	System alarm	Simple
SDCS_AE_CTG_SYSEVENT (102)	System event	Simple
SDCS_AE_CTG_APALARM (103)	Application alarm	Simple
SDCS_AE_CTG_APEVENT (104)	Application event	Simple
SDCS_AE_CTG_PRCALRM (105)	Process alarm	Condition
OPC_SERVER_ERROR (109)	Internal or source connection error	Simple

## ■ IT SECURITY SUPPORT

FCN/FCJ OPC Server supports IT security compliant with other Yokogawa system products security policy.

Note: The IT Security is not available either for Domain Management or for Combination Management in CENTUM VP.

## ■ SYSTEM REQUIREMENTS

Table System Requirements to Run FCN/FCJ OPC Server

Item	Specification	
PC	PC/AT compatible PC	
CPU	Windows 7 (32 bit)	1 GHz or higher 32 bit (x86) or 64 bit (x64) processor
	Windows 10 (64 bit) Windows 7 (64 bit) Windows Server 2008 R2 (64 bit)	2 GHz or higher 64 bit (x64) processor
RAM	2 GB or more	
Hard disk	20 GB or more free space is required.	
Ethernet adapter	A 10Base5, 10Base-T, or 100Base-TX adapter that is supported by the operating system specified at the bottom of this table is required.	
DVD-ROM drive	A DVD-ROM drive that is supported by the operating system specified at the bottom of this table is required.	
OS	Windows 10 Enterprise 2016 LTSC (64 bit) Windows 10 IoT Enterprise 2016 LTSC (64 bit) Windows 7 Professional SP1 (32 bit/64 bit) Windows Server 2008 R2 Standard Edition SP1 (64 bit)	

## ■ INSTALLABLE YOKOGAWA SYSTEM PRODUCTS ON THE SAME PC

Name	Description
The System Integration OPC Station (SIOS)	CENTUM VP R5.01 or later
VDS	R8.10

If you have any questions, please contact our sales representative.

## ■ SOFTWARE AND LICENSE

### ● Software Medium

Programs and help for FCN/FCJ OPC Server for Windows are supplied on a DVD-ROM (Model NT203AJ).

### ● License

An order ID sheet with the order ID and password entries comes with each FCN/FCJ OPC Server for Windows License. Access the specified Web site of Yokogawa and enter the order ID and password. Then, the corresponding key code required for software installation will be given.

## ■ MODEL AND SUFFIX CODES

	Description	
<b>Model</b>	NT781AJ	FCN/FCJ OPC Server for Windows (media: Model NT203AJ)
<b>Suffix Codes</b>	-L	License
	W	Issued at Web
	1	Always 1
	1	Always 1
	A	Standard

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## ■ ORDERING INFORMATION

Specify the model and suffix codes.

## ■ TRADEMARKS

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