General Specifications

Model NT356AJ
SYSMAC Driver

$TARDEM **VDS**

GS 34P02G06-01E

■ GENERAL

The optional SYSMAC Driver provides Versatile Data Server Software (VDS) system with the functionality to connect to SYSMAC Series programmable logic controllers from OMRON Corporation.

■ SYSTEM REQUIREMENTS

The system requirements follow those required for VDS specified in VDS Versatile Database Server Software, GS 34P02A02-01E.

Note that the runtime version of SYSMAC Driver does not allow the user to make or modify settings and only allows the monitoring.

■ FUNCTION OVERVIEW

SYSMAC Driver implements FinsGateway, middleware supplied by OMROM Corporation, to communicate with the SYSMAC Series controllers. "Fins" in FinsGateway is an acronym of factory interface network service, which stipulates the common protocol to be followed between different types of OMRON's factory automation (FA) networks. FinsGateway uses this Fins protocol to achieve intercommunication between OMRON's different FA networks. Accordingly, SYSMAC Driver provides connectivity to a variety of OMRON's FA networks that are supported by FinsGateway.

■ FUNCTION SPECIFICATIONS

● Interface

Communication interface: Any interfaces that are supported by FinsGateway, such as a serial, Ethernet, Control Link, and SYSMACLINK interfaces

Access to device memory: Access to contiguous bits or contiguous words

Asynchronous data receptions: Possible for only FinsGateway CPU unit (*1)

Number of SYSMAC units that can be connected: Up to 32 (up to 31 when carrying out asynchronous data receptions)

*1: A virtual CPU unit existing inside FinsGateway is called FinsGateway CPU unit. SYSMAC Series controllers on the same network can read and write values in the CIO variable area and DM variable area that reside inside the FinsGateway CPU unit.

● CPU Unit Models Supported

Micro PLCs: CPM1A, CPM1, CPM2A, CPM2C, SRM1

Small-scale PLCs: CQM1, CQM1H

Medium-scale PLCs: CS1H, CS1G, CS1D, C200HS, C200HX, C200HG, C200HE

Large-scale PLCs: CVM1, CVM1D, CV500, CV1000, CV2000, C1000H, C2000H

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● **Communication Specifications**

Network name		Ethernet	Controller Link	SYSMACLINK
Supported Models		CS1W-ETN01, CV500-ETN01, CS1W-ETN11, CS1W-ETN21 (*1), CS1W-ETN21D (*1)	CS1W-CLK21, CS1W-CLK11, CS1W-CLK12, CQM1H-CLK21, CVM1-CLK21 (*1), C200HW-CLK21 (*1)	CS1W-SLK21, CS1W-SLK11, C200HW-SLK23, C200HW-SLK24, C200HW-SLK13, C200HW-SLK14, CV500-SLK21, CVM1-SLK11
Types of communication	Message communication	X		X
	Data link			X
	Remote I/O			
Maximum transmission rate		10/100 Mbps	2 Mbps Communication cycle: Approx. 34 ms (with 32 units wired, for data link of 2K + 2K words)	2 Mbps
Total transmission distance		2.5 km	1 km with twisted pair wires (*2) 20 km with fiber-optic cables	1 km with coaxial cables 10 km with fiber-optic cables
Maximum number of units that can be connected (*3)		100	32	62
Communication medium		Coaxial cables, twisted pair wires	Dedicated cable (twisted pair wires) or fiber-optic cables	5C-2V coaxial cables or H-PCF 2-conductor fiber-optic cables
Data link capacity (per network)			32,000 channels	2,966 channels (918 channels for C200HS and C200H)

*1:   Twisted-pair wires only allowed.
*2:   At the transmission rate of 500 Kbps.
*3:   Indicates the maximum number of units that can be connected to each network, and does not mean that the VDS can communicate with all these units. The maximum number of units with which the VDS can communicate is shown as "Number of SYSMAC units that can be connected" under "Interface" in the previous page.

Communication interface
    Supported models:
       Units: CPM2C-CIF01/11, CQM1H-SCB41, CS1W-SCU21, CV500-LK201, C500-LK203, C500-LK201-V1
       Communication boards: C200HW-COM02-V1, C200HW-COM03-V1, C200HW-COM04-V1, C200HW-COM05-V1,
                C200H-COM06-V1
    Communication protocol:
       SYSWAY: Protocol supported by the SYSMAC C Series and CV Series (e.g., command string of "@00RD"), the
                protocol often referred to as supervisory link-C mode
       SYSWAY-CV: Protocol supported by the SYSMAC CV Series (e.g., command string of "@00FA"), the protocol
                often referred to as supervisory link-FINS
       CompoWay/F: Protocol implemented by OMRON's control devices
    Transmission speed:1200 to 115,200 bps (*1)
    Bit configurations:
       Start bit: 1
       Data bits: 7 or 8
       Parity bit: None, even, or odd
       Stop bits: 1 or 2

    Note: Specify the port number of the port used, number of times to retry, and time-out period

    *1:   Although the speed can be set within this range, the actual transmission speed is limited by the specifications of the
            communication module used.

● **Correspondences between Devices in SYSMAC Units and Tag Objects**

The device tag objects that can be assigned to SYSMAC devices whose values can be acquired using the SYSMAC I/O driver supplied by SYSMAC Driver, are shown below.

SYSMAC C Series

I/O Area Type	Data Type	Address	Device Objects That Can Be Assigned
Contact area: Input/output relays Auxiliary internal relays Special auxiliary relays	On/off statuses	00000 to 51115	DI, DO, DR
	Current value of a single channel	000 to 511	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Link relays	On/off statuses	LR0000 to LR6315	DI, DO, DR
	Current value of a single channel	LR00 to LR63	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Lock-up relays	On/off statuses	HR0000 to HR9915	DI, DO, DR
	Current value of a single channel	HR00 to HR99	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Auxiliary memory relays	On/off statuses	AR0000 to AR2715	DI, DO, DR
	Current value of a single channel	AR00 to AR27	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Data memory	Current value of a single channel	DM0000 to DM9999	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Extended data memory	Current value of a single channel	EM0000 to EM6143	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD

Note: An I/O area with forcible on/off actions cannot be specified.
Note: An asynchronous communication type cannot be specified.
Note: An asynchronous trigger cannot be specified for a BD tag.
Note: Specify the extended data memory switching in supplemental information for the I/O address.

SYSMAC CV Series

I/O Area Type	Data Type	Address	Device Objects That Can Be Assigned
Relay area	On/off statuses	000000 to 255515 G00000 to G25515 A00000 to A51115	DI, DO, DR
	Current value of a single channel	000 to 2555 G000 to G255 A000 to A511	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
	Current value of a single channel	AR00 to AR27	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Data memory	Current value of a single channel	D00000 to D24575	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Extended data memory	Current value of a single channel	E00000 to E32765	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD

Note: An I/O area with forcible on/off actions cannot be specified.
Note: An asynchronous communication type cannot be specified.
Note: An asynchronous trigger cannot be specified for a BD tag.
Note: Specify the extended data memory switching in supplemental information for the I/O address.

SYSMAC CS1 Series

I/O Area Type	Data Type	Address	Device Objects That Can Be Assigned
Channel I/O	On/off statuses	000000 to 614315	DI, DO, DR
	Current value of a single channel	0000 to 6143	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Auxiliary internal relays	On/off statuses	W00000 to W51115	DI, DO, DR
	Current value of a single channel	W000 to W511	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Lock-up relays	On/off statuses	H00000 to H51115	DI, DO, DR
	Current value of a single channel	H000 to H511	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Auxiliary special relays	On/off statuses	A00000 to A95915	DI, DO, DR
	Current value of a single channel	A000 to A959	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Data memory	On/off statuses	D0000000 to D3276715	DI, DO, DR
	Current value of a single channel	D00000 to D32767	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD
Extended data memory	On/off statuses	En_0000000 to En_3276715 (n = 0 to C)	DI, DO, DR
	Current value of a single channel	En_00000 to En_32767 (n = 0 to C) E00000 to E32767	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD

Note: An I/O area with forcible on/off actions cannot be specified.
Note: An asynchronous communication type cannot be specified.
Note: An asynchronous trigger cannot be specified for a BD tag.
Note: For extended data memory, addresses' Exxxx can only be assigned when specifying a current bank and En_xxxx (where n is the bank number) can only be assigned when specifying a bank. When specifying a current bank, relay access is not allowed.

FinsGateway CPU Unit

I/O Area Type	Data Type	Address	Device Objects That Can Be Assigned
Channel I/O	On/off statuses	CIO0000000 to CIO3276715	DI, DO, DR
	Current value of a single channel	CIO00000 to CIO32767	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD (asynchronous communication type allowed for AI, AR, and TXT objects).
Data memory	On/off statuses	DM0000000 to DM3276715	DI, DO, DR
	Current value of a single channel	DM00000 to DM32767	AI, AO, AR, XAI, XAO, XAR, TXT, XTXT, BD (asynchronous communication type allowed for AI, AR, and TXT objects).

■ MODEL AND SUFFIX CODE

Model	Suffix Code	Description
NT356AJ	-LW11A	SYSMAC Driver

■ ORDERING INFORMATION
Specify the model and suffix codes.

■ RELATED DOCUMENT
• VDS, GS 34P02A02-01E

■ REMARKS
Part of the descriptions about FinsGateway and names of variable areas are transcribed from the documentation of OMRON.

■ TRADEMARKS
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