MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

YOKOGAWA

AFV10D-S41101 S2

DUPLEXED FIELD CONTROL UNIT

Used with the applicable CENTUM VP configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Yokogawa GS 33K50E30-50E, pp. 1–4

General Specifications

GS 33K50E30-50E

Models AFV10S, AFV10D
Field Control Unit
Duplexed Field Control Unit
(for Vnet/IP and FIO, 19-inch Rack Mountable Type)

[Release 5]

■ GENERAL

This GS covers the hardware specifications of the Field Control Unit (FCU) which is the core of the control function of the Field Control Station (FCS).

■ HARDWARE SPECIFICATIONS

For the installation specifications and the environmental conditions common to the systems, refer to "Vnet/IP System Overview (Vnet/IP Edition)" (GS 33K01A10-50E).

Processor
VR5432 (133 MHz)

Main Memory Capacity
32 Mbyte

Memory Protection During Power Failure
Battery
Battery Back-up for Main Memory: Max. 72 hours
Battery Recharge Time: Min. 48 hours

FCU Status Contact Output
2 terminals (NC, C)
Contact Points open during FCU failure
Contact Rating: 30 V DC, max. 0.3 A

Communication Interface
Vnet/IP Interface: Dual-redundant

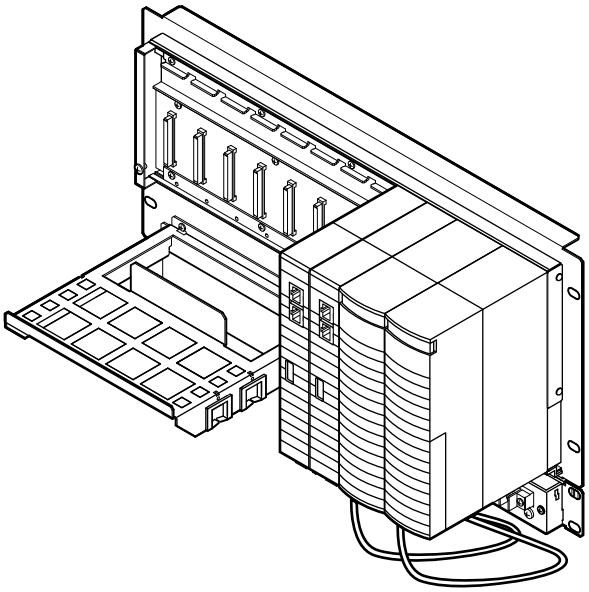
For more details, refer to "Integrated Production Control System CENTUM VP System Overview (Vnet/IP Edition)" (GS 33K01A10-50E).

No. of Node Units Connectable
Max. 14/FCU
The total number of ESB Bus Node Units and ER Bus Node Units that can be connected to FCU are 14 or less. (ESB Bus Node Units: 9 or less)
LFS1500 allows up to 3 nodes, and can be expanded to 14 if LFS1550 Application capacity Expansion Package (for AFV10☐) is added.
To connect a node unit to the FCU, a Node Unit Expansion License (Option code: /NDEL) is required for the node unit.

Module configuration
Power Supply Module (PW481 or PW482 or PW484): Two modules in case of a dual-redundant configuration.
Processor Module (CP451): Two modules in case of a dual-redundant configuration.
I/O Modules(*1): Max. 8

*1: Non-standard components.

ESB Bus Node Units Connection
When connecting an ESB Bus Node Unit to FCU, install ESB Bus Coupler Module (EC401) on FCU.
EC401 must be installed in slot 7 and slot 8.
For the dual-redundant configuration of the processor modules, EC401 must be installed in both slot 7 and slot 8.
In case ESB Bus has a single configuration, EC401 must be installed in slot 7 and keep slot 8 empty.



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[19-inch Rack Mountable Type FCU]

ER Bus Node Units Connection
When connecting an ER Bus Node Unit to FCU, install ER Bus Interface Master Module (EB401) on FCU.
To make single configuration, EB401 must be installed in an odd-number slot, and keep empty the right side of the installed EB401.
See "ER Bus Interface Master Module (for FIO)" (GS 33K50F40-50E) for further information.

Power Supply
Voltage: 100-120 V AC, Frequency: 50/60 Hz
Voltage: 220-240 V AC, Frequency: 50/60 Hz
Voltage: 24 V DC
Specify with Suffix Codes.

Power Consumption
100-120 V AC: 200 VA
220-240 V AC: 230 VA
24 V DC: 5.5 A

Weight
Approx. 7 kg (AFV10S)
Approx. 8 kg (AFV10D)

Mounting
19-inch Rack Mounting:
Rack mount (8 x M5 screws)
Insulation bush (accessory)

Connection
Power Supply: M4 screw terminal connection
Grounding: M4 screw terminal connection
Contact Output: M4 screw terminal connection
Network: Connect UTP cable (CAT5e or better) to Layer 2 switch.

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GS 33K50E30-50E
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3rd Edition Sep. 1, 2012 (YK)

Regulatory Compliance

For the detailed information of following standards, see “System Overview (Vnet/IP Edition)” (GS 33K01A10-50E).

Safety Standards
- [CSA] (for 100-120 V AC power supply)
- [CE Marking] (for 100-120 V AC and 220-240 V AC power supply)

EMC Conformity Standards
- [CE Marking] (for 100-120 V AC, 220-240 V AC and 24 V DC power supply)
- [C-Tick Marking] (for 220-240 V AC and 24 V DC power supply)
- [KC Marking] (for 100-120 V AC, 220-240 V AC and 24 V DC power supply)

Standards for Hazardous Location Equipment
- [FM Non-Incendive] (for 100-120 V AC, 220-240 V AC and 24 V DC power supply)
- [Type n] (for 24 V DC power supply)

System Configuration

The FCS consists of the FCU and Node Units, and the ESB bus or the ER bus to connect them together.

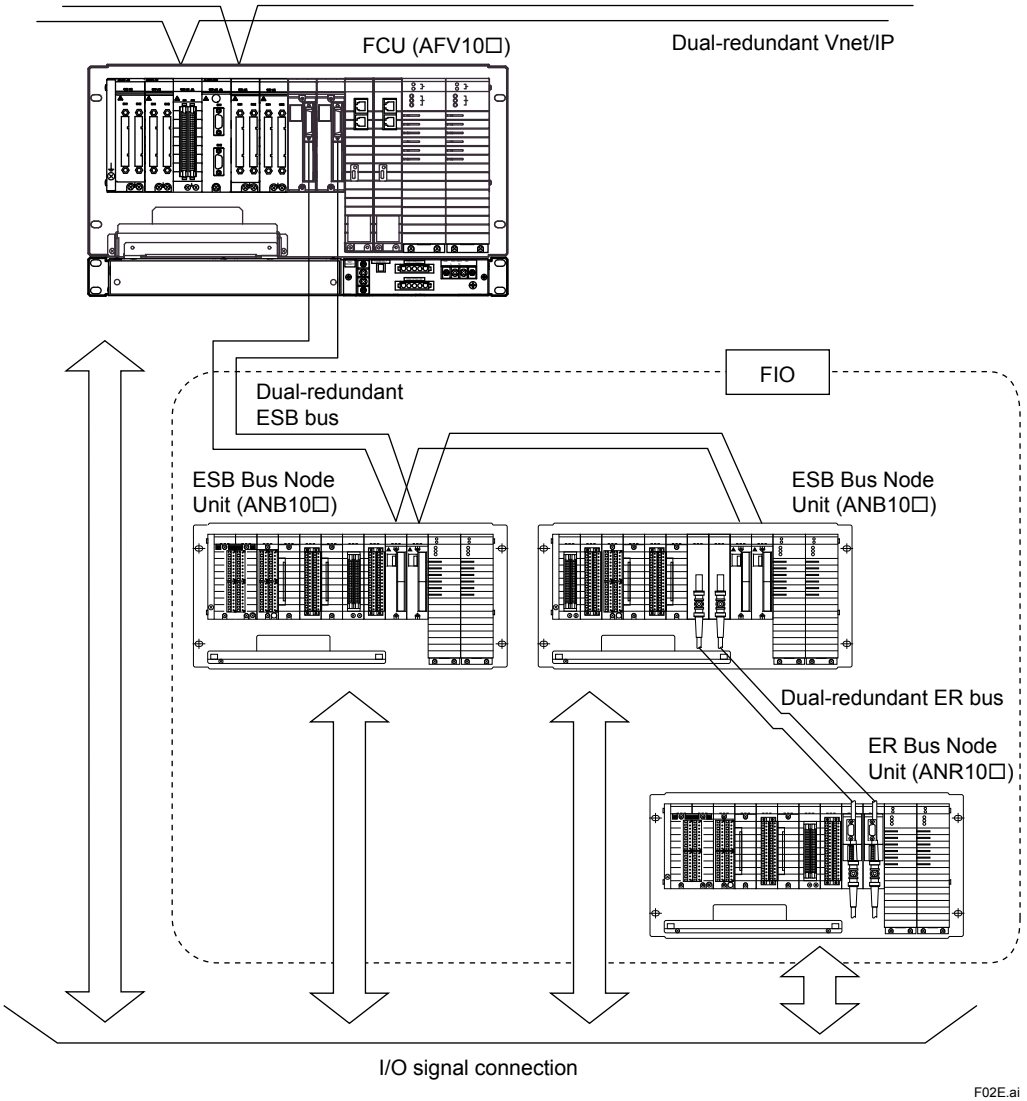


Figure System Configuration

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■ LIMITATIONS OF INSTALLATION AND NOTICES FOR INSTALLATION

For installing I/O modules in AFV10S and AFV10D, the quantity and allocation are limited.

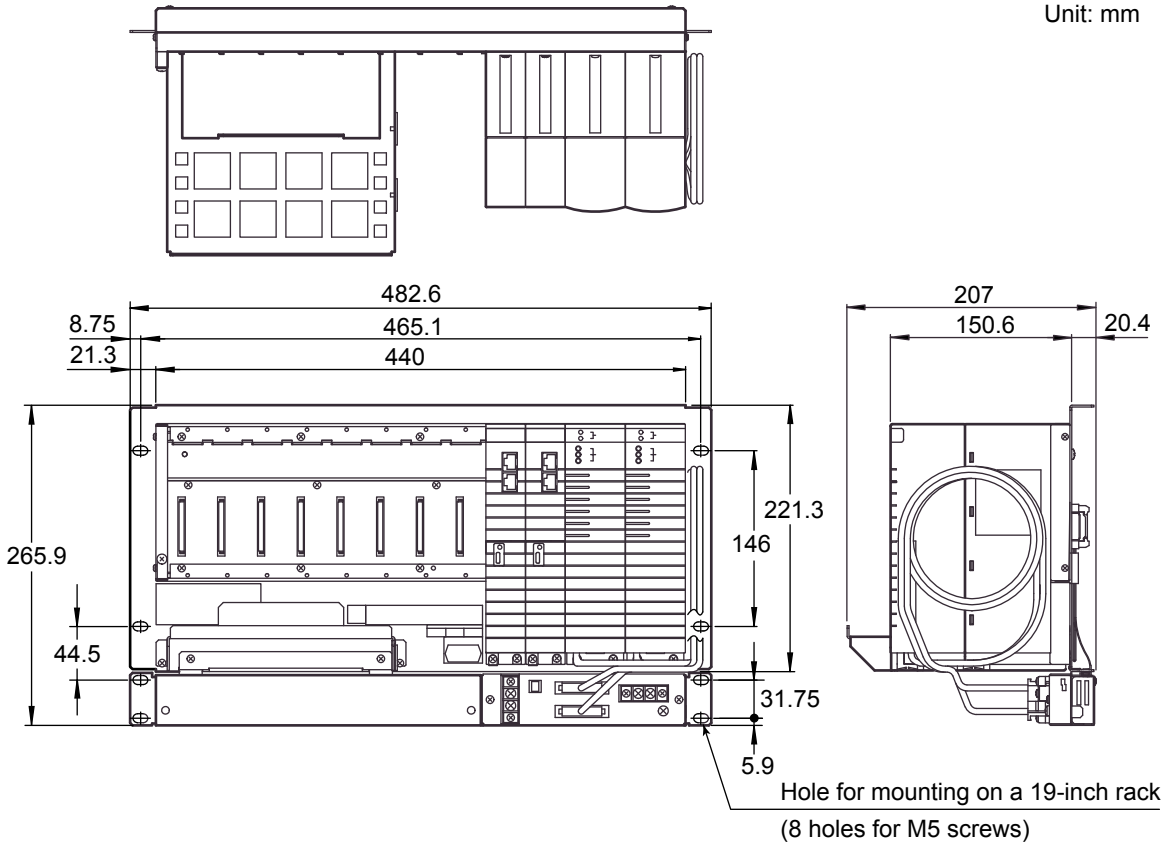
Also, when installing a node unit to the dedicated cabinet, there are limitations of installation under the ambient operating temperature conditions.

When modules with built-in barriers are installed in AFV10☐, an insulating partition kit (Part No. T9083ND) must be installed.

For details, please refer to “FIO System Overview (for Vnet/IP)” (GS 33K50F10-50E) and “Installation Guidance” (TI 33K01J10-50E).

■ EXTERNAL DIMENSIONS

Unit: mm



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■ SOFTWARE REQUIREMENT

For AFV10S and AFV10D, the Control Function for Field Control Station (LFS1500) is required. Specify these control functions with suffix codes.

The number of the connectable node units and the application capacity can be expanded if the Node Expansion Package (LFS1550) is purchased.

For the specifications of LFS1500 and LFS1550, refer to GS 33K15C20-50E.

■ REQUIREMENTS FOR USING SEM (SEQUENCE OF EVENTS MANAGER)

To use SEM for Vnet/IP, AFV10☐ should be style 2 or later. (Style No. is indicated on the component tag)

For details, refer to ”SEM Sequence of Events Manager (for Vnet/IP and FIO)” (GS 33K30D10-50E).

■ ACCESSORIES AND SPARE PARTS

The spare parts listed below are provided with the FCU.

Parts Names	Parts Numbers	Description	Quantity	Remarks
Insulating bush	S9049PM	-	8	Accessory

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■ MODELS AND SUFFIX CODES

Field Control Unit

		Description
Model	AFV10S	Field Control Unit (for Vnet/IP and FIO, for 19-inch Rack Mountable)
Suffix Codes	-S	Standard type
	3	Dual-Redundant Vnet/IP, Single power supply
	4	Dual-Redundant Vnet/IP, Dual-Redundant power supply
	1	Always 1
	1	100–120 V AC power supply
	2	220–240 V AC power supply
	4	24 V DC power supply
	0	Basic type
	1	With ISA Standard G3 option
	1	LFS1500 Control Function for Field Control Station (for Vnet/IP and FIO)
Option Code	/ATDOC	Explosion Protection Manual (*1)

*1: Select the option code "/ATDOC" to follow the ATEX Directive for use in potentially explosive atmospheres.

Duplexed Field Control Unit

		Description
Model	AFV10D	Duplexed Field Control Unit (for Vnet/IP and FIO, for 19-inch Rack Mountable)
Suffix Codes	-S	Standard type
	4	Dual-Redundant Vnet/IP, Dual-Redundant power supply
	1	Always 1
	1	100–120 V AC power supply
	2	220–240 V AC power supply
	4	24 V DC power supply
	0	Basic type
	1	With ISA Standard G3 option
	1	LFS1500 Control Function for Field Control Station (for Vnet/IP and FIO)
Option Code	/ATDOC	Explosion Protection Manual (*1)

*1: Select the option code "/ATDOC" to follow the ATEX Directive for use in potentially explosive atmospheres.

Insulating Partition Kit

		Description
Part No.	T9083ND	Insulating Partition Kit

Configuration of Insulating Partition Kit

		Description
Part No.	T9083NE	Insulating Partition
	T9083NG	Insulating Partition for V net
	Y9306LB	2 screws for T9083NG

■ ORDERING INFORMATION

Specify model and suffix codes.

■ TRADEMARK

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