General Specifications

GS 33K50F30-50E

Models ANB11S, ANB11D
Optical ESB Bus Node Unit
(for AFV30☐/AFV40☐)

[Release 5]

■ GENERAL

*This node unit collects and relays I/O signals from a remote location to a FCU. It is equipped with a function to convert field analog I/O signals and contact I/O signals to optical signals and transmit them to the FCU in a remote location via the optical ESB bus, as well as a function to supply power to the I/O modules. Also, this unit can transmit the environmental conditions of the cabinet via the optical ESB bus using the optional HKU (*1) interface and centrally monitor the environmental conditions of the connected cabinet on the FCU.*

*1: HKU stands for House Keeping Unit.

■ STANDARD SPECIFICATIONS

For the installation specifications and environmental conditions that are common to the systems, refer to "FIO System Overview (for Vnet/IP) (GS33K50F10-50E)."

● Number of Connectable Node Units

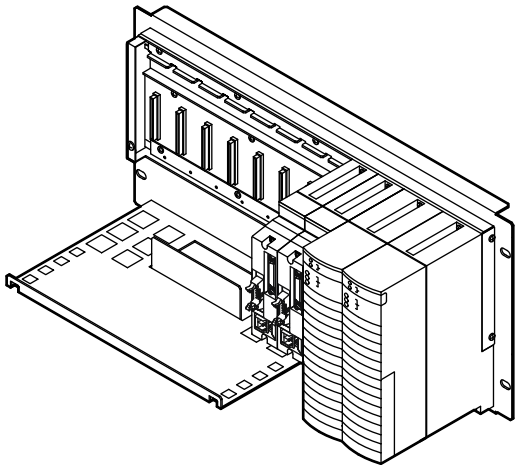
Model	Node Expansion Packge (LFS1750)	Maximum total Number of Connectable ESB Bus Node Units and Optical ESB Bus Node Units per FCU (*1)
AFV30☐ AFV40☐	Unavailable	Max. 3
	For 10 nodes	Max. 9
	For 14 nodes/for node expansion	Max. 13

*1: ESB Bus Node Unit (ANB10☐)/Optical ESB Bus Nod Unit (ANB11☐)

● Connection of Optical ESB Bus Node Unit

This node unit is connected with Optical ESB Bus Repeater Master Module (ANT401 or ANT411) installed in the FCU (AFV30☐/AFV40☐), ESB Bus Node Unit (ANB10☐), and Unit for Optical ESB Bus Repeater Module (ANT10U) via the optical ESB bus.

To connect this node unit to the FCU via the optical ESB Bus, install ESB Bus Coupler Module (EC401 or EC402) in the FCU. And also install Optical ESB Bus Repeater Master Module (ANT401 or ANT411) in the FCU, ESB Bus Node Unit (ANB10☐), and Unit for Optical ESB Bus Repeater Module (ANT10U) depending on the connected system configuration. ESB Bus Coupler Module installs in slot 7 and 8 of the FCU. In a single configuration, install it in slot 7 and leave slot 8 empty.



F01E.ai

Install a pair of Optical ESB Bus Repeater Master Module in slots 1 to 6 of the FCU in order from right to left according to the number of branches. In a single configuration, install it in an odd-numbered slot of the FCU from slot No. 5 and leave the slot on the right (e.g. slot No. 6) empty. For details, see the "Optical ESB Bus Repeater Module" (GS 33K50F51-50E/GS 33K50F52-50E).

● HKU Interface (Option)

When option code /HU1A or /HU1B is specified, the environmental information of the cabinet can be transmitted to FCU via optical ESB bus. The FCU can monitor the connected cabinet's environmental conditions and display HKU's operating status on HIS. System alarms can also be displayed.

● 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

● Electric Power Consumption

100-120 V AC: 200 VA, 120 W
220-240 V AC: 230 VA, 120 W
24 V DC: 5.5 A, 120 W

● Weight

10 kg (incl. 8 I/O Modules)

● Mounting Type

19-inch Rack Mount (M5x4 screws)
Insulation bush (accessory).

YOKOGAWA

Yokogawa Electric Corporation
2-9-32, Nakacho, Musashino-shi, Tokyo, 180-8750 Japan
Tel.: 81-422-52-5634 Fax.: 81-422-52-9802

GS 33K50F30-50E

5th Edition Apr. 1, 2013(YK)

● Regulatory Compliance

For the detailed information of following standards, see “Integrated Production Control System CENTUM VP System Overview (for Vnet/IP) (GS33K01A10-50E).”

Safety Standards

[CSA] (for 100-120 V AC power supply)

[CE Marking] (for 100-120 V AC, 220-240 V AC, and 24 V DC 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

[CSA Non-Incendive] (for 100-120 V AC and 24 V DC power supply)

[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)

● Module Configurations

Power Supply Module (PW481 or PW482 or PW484):
Two modules in case of a dual-redundant configuration.
Power supply to the I/O modules, and supply power to the transmitters.
The power supply terminals use M4 screws.
Optical ESB Bus Repeater Slave Module for 5 km (ANT502) (*1):
Two modules in case of a dual-redundant configuration.
Optical ESB Bus Repeater Slave Module for 5 km to 50 km (ANT512) (*1):
Two modules in case of a dual-redundant configuration
I/O Modules (*2): Max. 8

*1: Select either from the module for 5 km or the module for 5 km to 50 km depending on the extension distance.
*2: Non-standard components.

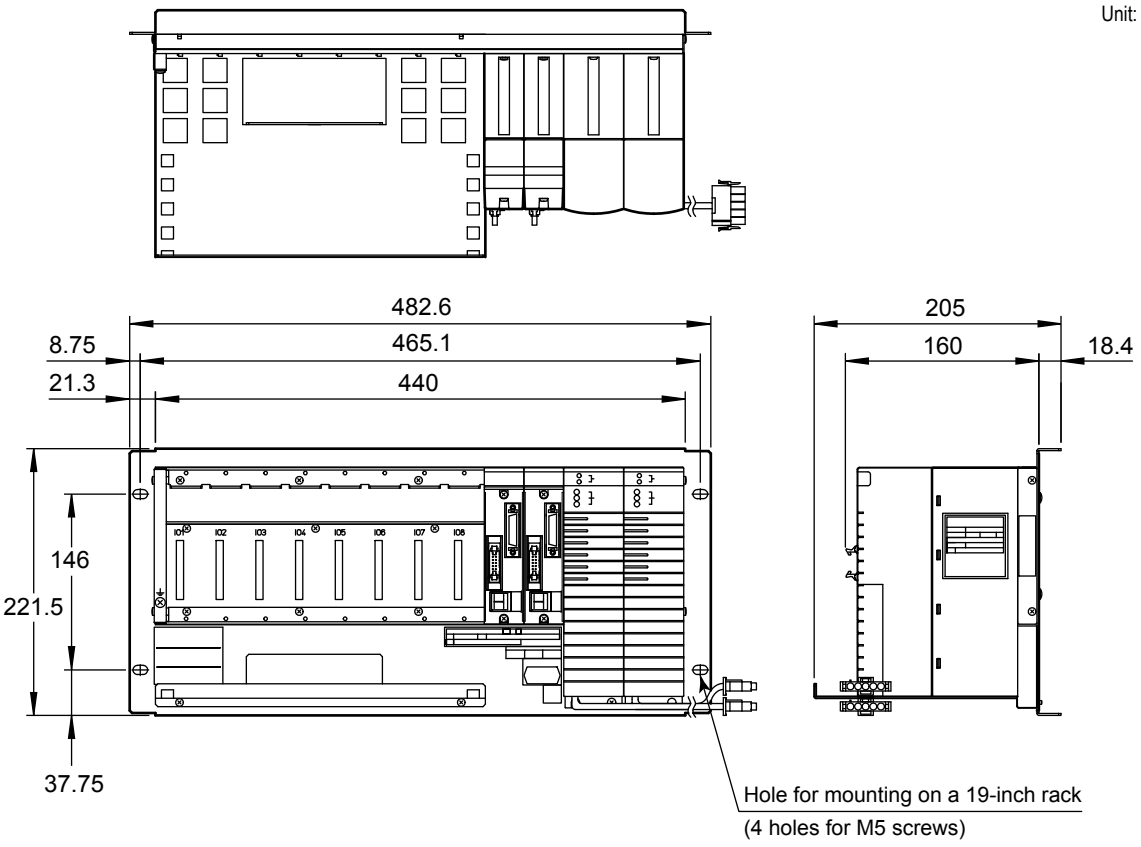
■ LIMITATIONS OF INSTALLATION AND NOTICES FOR INSTALLATION

For installing I/O modules in node unit, 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 any node unit, an insulating partition (Part No. T9083NA) 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



F02E.ai

■ Models and Suffix Codes

Node Unit for Single ESB Bus with Optical Repeater

		Description
Model	ANB11S	Node Unit for Single ESB Bus with Optical Repeater (for AFV30□/AFV40□)
Suffix Codes	-1	Single power supply, for 5 km optical repeater(*1)
	-2	Dual-redundant power supply, for 5 km optical repeater(*1)
	-3	Single power supply, for 50 km optical repeater (*1)
	-4	Dual-redundant power supply, for 50 km optical repeater (*1)
	1	100 - 120 V AC power supply (*2)
	2	220 - 240 V AC power supply (*2)
	4	24 V DC power supply (*2)
	5	Basic type with no explosion protection
	6	With ISA standard G3 option, temperature (-20 ˚C to 70 ˚C) option, and no explosion protection
	E	Basic type with explosion protection
	F	With ISA standard G3 option, temperature (-20 ˚C to 70 ˚C) option, and explosion protection
Option Codes	/BU1A	Connector unit for ESB Bus
	/BU1B	Connector unit with terminator for ESB Bus
	/HU1A	Connector unit for ESB Bus with HKU I/F (*3)
	/HU1B	Connector unit with terminator for ESB Bus with HKU I/F (*3)
	/NDEL	Software license for node expansion (*4)
	/ATDOC	Explosion Protection Manual (*5)

*1: Models of Optical ESB Bus Repeater Slave Modules for 5 km and for 5km to 50 km are ANT502 and ANT512, respectively.
*2: To meet the safety standards and EMC standards, the unit must be installed in a keyed metallic cabinet.
*3: Monitoring of temperatures and fans in the cabinet to be installed needs to be specified.
*4: To connect this node unit to AFV30□/AFV40□ via the optical ESB bus, specify /NDEL.
*5: Select the option code "/ATDOC" to follow the ATEX Directive for use in potentially explosive atmospheres.

Node Unit for Dual-Redundant ESB Bus with Optical Repeater

		Description
Model	ANB11D	Node Unit for Dual-Redundant ESB Bus with Optical Repeater (for AFV30□/AFV40□)
Suffix Codes	-2	Dual-redundant power supply, for 5 km optical repeater (*1)
	-4	Dual-redundant power supply, for 50 km optical repeater (*1)
	1	100 - 120 V AC power supply (*2)
	2	220 - 240 V AC power supply (*2)
	4	24 V DC power supply (*2)
	5	Basic type with no explosion protection
	6	With ISA standard G3 option, temperature (-20 ˚C to 70 ˚C) option, and no explosion protection
	E	Basic type with explosion protection
	F	With ISA standard G3 option, temperature (-20 ˚C to 70 ˚C) option, and explosion protection
Option Codes	/BU2A	Connector unit for ESB Bus
	/BU2B	Connector unit with terminator for ESB Bus
	/HU2A	Connector unit for ESB Bus with HKU I/F (*3)
	/HU2B	Connector unit with terminator for ESB Bus with HKU I/F (*3)
	/NDEL	Software license for node expansion (*4)
	/ATDOC	Explosion Protection Manual (*5)

*1: Models of Optical ESB Bus Repeater Slave Modules for 5 km and for 5 km to 50 km are ANT502 and ANT512, respectively.
*2: To meet the safety standards and EMC standards, the unit must be installed in a keyed metallic cabinet.
*3: Monitoring of temperatures and fans in the cabinet to be installed needs to be specified.
*4: To connect this node unit to AFV30□/AFV40□ via the optical ESB bus, specify /NDEL.
*5: Select the option code "/ATDOC" to follow the ATEX Directive for use in potentially explosive atmospheres.

Dummy Cover

	Description	
Model	ADCV01	Dummy Cover (for I/O Module)
	ADCV02	Dummy Cover (for Power Supply Module)

■ STANDARD ACCESSORIES

Parts Names	Parts Numbers	Description	Quantity	Remarks
Insulating bush	S9049PM	-	4	Accessory

■ ORDERING INFORMATION

Specify model and suffix codes.
For selecting the right products for explosion protection, please refer to TI 33Q01J30-01E without fail.

■ TRADEMARKS

- CENTUM and Vnet/IP are registered trademarks of Yokogawa Electric Corporation.
- Other product and company names appearing in this document are trademarks or registered trademarks of their respective holders.