

General Specifications

GS 33J60F30-01EN

ANB11S, ANB11D
Optical ESB Bus Node Units
(for N-IO/FIO)



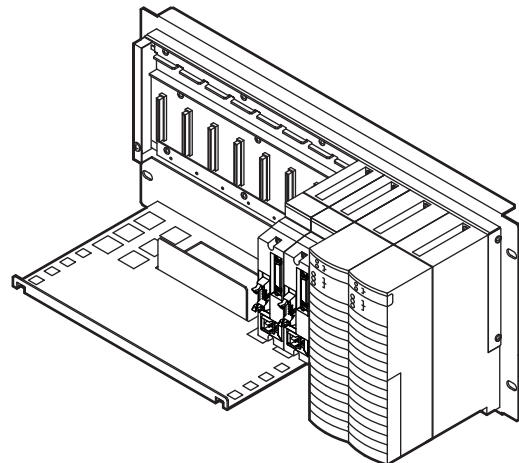
[Release 6]

■ 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.

AFV30□, AFV40□, A2FV50□, A2FV70□, ACB51, ANB10□, ANB11□, and ANT10U can also be constructed by combining the Base Plate and each module. Refer to "FIO System Overview" (GS 33J60A10-01EN), "N-IO System Overview" (GS 33J62A10-01EN) and "Field Control Unit" (GS 33J64E10-01EN).

*1: HKU stands for House Keeping Unit.



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■ STANDARD SPECIFICATIONS

For the installation specifications and environmental conditions that are common to the systems, refer to "N-IO System Overview" (GS 33J62A10-01EN) and "FIO System Overview" (GS 33J60A10-01EN).

● Number of Connectable Node Units

Field Control Unit	Software licence	Total Number of ESB Bus Node Units (ANB10□) and Optical ESB Bus Node Units (ANB11□) Connected per FCU
A2FV50□	Control Function for Field Control Station (VP6F1800)	Max. 8
A2FV70□	Control Function for Field Control Station (VP6F1900)	Max. 8
AFV30□ AFV40□ (*1)	Control Function for Field Control Station (VP6F1700)	Max. 13

*1: Up to 11 node units per 1 cabinet can be installed in AFV40□.

● 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 (A2FV50□/A2FV70□/AFV30□/AFV40□), ESB Bus Node Unit (ANB10□), and Unit for Optical ESB Bus Repeater Module (ANT10U) via the optical ESB bus.

Equally, it is connected with N-ESB Bus Module (A2EN501) via the Optical ESB Bus. In this case the Suffix Code of N-ESB Bus Module (A2EN501) selects the Optical ESB for downlink.

● HKU Interface (Option)

When option code /HU1A or /HU1B of ANB11□ is specified or ANB11□ is specified for option code for ACB51, 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.

Applicable FCU is A2FV70□, AFV30□, and AFV40□ for monitoring the environmental information of the cabinet.

A2FV70□ is available only when updating existing RIO system with A2CUKT3.

AFV30□ is available only when installing to RITTAL cabinet TS8 with ACUKT1.

● 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

Approx. 10 kg (incl. 8 I/O Modules)

● Mounting Type

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

● 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.

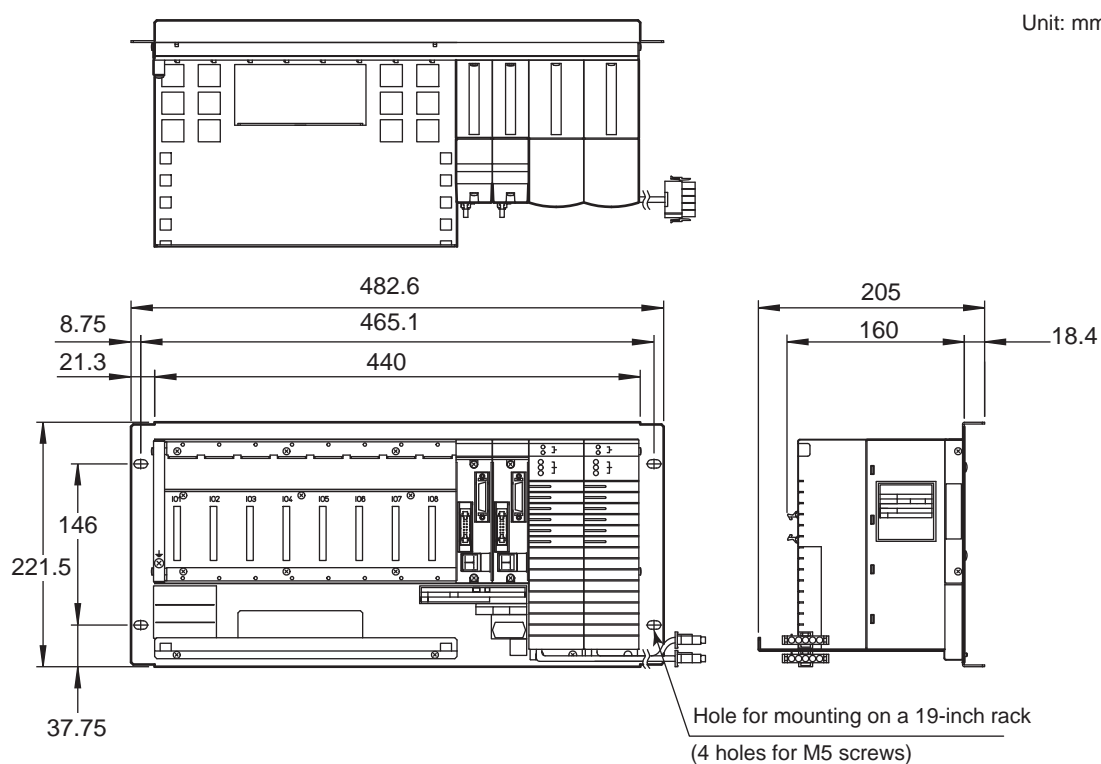
When ANB10□ is used with A2FV50□ or A2FV70□, only communication modules (ALR111, ALR121, ALE111, ALF111, ALP121, and A2LP131) can be mounted.

■ 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 the GS "N-IO System Overview" (GS 33J62A10-01EN) and "FIO System Overview" (GS 33J60A10-01EN) and "Installation Guidance" (TI 33K01J10-50E).

■ EXTERNAL DIMENSIONS



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Nominal tolerances :

Nominal tolerance is ± 0.8 mm for the dimensions of 0.5 mm or more and 120 mm or less, and the combined nominal tolerance is ± 1.5 mm.

The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

■ 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 N-IO/FIO)
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)
	-A	Single power supply, for 5 km optical repeater (for ANT401-□E, -□F) (*1)
	-B	Dual-redundant power supply, for 5 km optical repeater (for ANT401-□E, -□F, and A2EN501-□□1) (*1)
	-C	Single power supply, for 50 km optical repeater (for ANT411-□E, -□F) (*1)
	-D	Dual-redundant power supply, for 50 km optical repeater (for ANT411-□E, -□F, and A2EN501-□□2) (*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)
	/ATDOC	Explosion Protection Manual (*4)

*1: Models of Optical ESB Bus Repeater Slave Modules for 5 km and for 5km to 50 km are ANT502 and ANT512, respectively. When ANB11S is connected via Optical ESB bus, the master side must be paired with one of the slave sides as described below.

- ANT401-□0 or -□3 for master side and ANB11S-1□□ or -2□□ for slave side
- ANT411-□0 or -□3 for master side and ANB11S-3□□ or -4□□ for slave side
- ANT401-□E or -□F for master side and ANB11S-A□□ for slave side
- ANT401-□E, -□F, or A2EN501-□□1 for master side and ANB11S-B□□ for slave side
- ANT411-□E or -□F for master side and ANB11S-C□□ for slave side
- ANT411-□E, -□F, or A2EN501-□□2 for master side and ANB11S-D□□ for slave side

*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: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation 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 N-IO/FIO)
Suffix Codes	-2	Dual-redundant power supply, for 5 km optical repeater (for ANT401-□0, -□3) (*1)
	-4	Dual-redundant power supply, for 50 km optical repeater (for ANT411-□0, -□3) (*1)
	-B	Dual-redundant power supply, for 5 km optical repeater (for ANT401-□E, -□F, and A2EN501-□□1) (*1)
	-D	Dual-redundant power supply, for 50 km optical repeater (for ANT411-□E, -□F, and A2EN501-□□2) (*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)
	/ATDOC	Explosion Protection Manual (*4)

*1: Models of Optical ESB Bus Repeater Slave Modules for 5 km and for 5 km to 50 km are ANT502 and ANT512, respectively. When ANB11D is connected via Optical ESB bus, the master side must be paired with one of the slave sides as described below.

- ANT401-□0 or -□3 for master side and ANB11D-2□□ for slave side
- ANT411-□0 or -□3 for master side and ANB11D-4□□ for slave side
- ANT401-□E, -□F, or A2EN501-□□1 for master side and ANB11D-B□□ for slave side
- ANT411-□E, -□F, or A2EN501-□□2 for master side and ANB11D-D□□ for slave side

*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: Select the option code "/ATDOC" to follow the ATEX Directive and UKEX Regulation 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	Quantity	Remarks
Insulating bush	S9049PM	4	Accessory

■ APPLICABLE STANDARDS

Refer to the GS "Integrated Production Control System CENTUM VP System Overview (GS 33J01A10-01EN)."

■ ORDERING INFORMATION

Specify model and suffix codes.

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

■ TRADEMARK ACKNOWLEDGMENT

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