

# General Specifications

GS 33J60E20-01EN

Models AFV40S, AFV40D  
Field Control Unit  
Duplexed Field Control Unit  
(for FIO, with Cabinet)



[Release 6]

## ■ 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).

## ■ STANDARD SPECIFICATIONS

For the installation specifications and environmental conditions that are common to the systems, refer to "Integrated Production Control System CENTUM VP System Overview" (GS 33J01A10-01EN).

### ● Memory Protection During Power Failure

Battery  
Battery Backup for Main Memory: Max. 72 hours  
Battery Recharge Time: Min. 48 hours

### ● READY Contact Output

3 terminals (NC, NO and C)  
Contact Points open or close during FCU failure  
Contact Rating:  
Rated voltage: 250 V AC, max. 30 V DC  
Rated current: Max. 2 A  
Rated power supply: Max. 125 VA

### ● Communication Interface

Vnet/IP Interface: Dual-redundant  
ESB Bus Interface: Dual-redundant or single  
(Always dual-redundant for AFV40D)

For more details, refer to the GS "Integrated Production Control System CENTUM VP System Overview" (GS 33J01A10-01EN).

### ● House Keeping (HK) Function

A House Keeping Unit (HKU) is standard hardware component provided with the type of FCU. With the HK function is able to monitor the environmental conditions of the connected cabinets via HK bus and/or optical ESB bus, and display HKU's operating status on HIS.

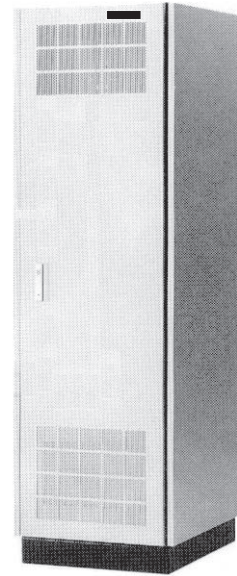
System alarms can also be displayed.

Cable: HK Bus cable (AKBHKU)  
Units that can be connected HKU of AFV40□: HKU of ACUKT1, ACUKT2, ACB51, or XL-Cabinet.

Maximum number of connectable cabinets: 9/FCU (AFV40□)

Total maximum length of cable: 100 m (\*1)

\*1: The each section connected in a daisy chain with HK bus.



### ● Equipment in Cabinet

FCU: 1  
Power Distribution Board with Built-in HKU: 1  
(Dual or single power supply)  
Power Supply Bus Unit, Vertical Type (AEPV7D): 2  
(1 at front and 1 at rear)  
Node Fan Unit (ANFAN) (\*1): Max. 4  
(2 at front and 2 at rear)  
Door Fan Unit (AIP601): 4  
(2 for front doors and 2 for rear doors)  
\*1: Specify the option code.

### ● Module Configuration in FCU

Power Supply Module (PW481, PW482, or PW484):  
2 modules in case of a dual-redundant configuration.  
Processor Module (CP471 or CP461):  
2 modules for dual-redundant configuration.  
A dual-redundant configuration is enabled by using 2 identical modules with same model code (CP471 or CP461).  
ESB Bus Coupler Module (EC401 or EC402):  
2 modules in case of a dual-redundant configuration.  
I/O Modules (\*1): Max. 6

\*1: Non-standard components.

● **Installation Restrictions**

To install Optical ESB Bus Node Units (ANB11□) or ESB Bus Node Units (ANB10□) in a remote location, use the Optical ESB Bus Repeater Master Module (ANT401 or ANT411) to connect them with an optical fiber cable. To install Optical ESB Bus Repeater Master Modules in the FCU, install a pair of modules in slots 1 to 6 from right to left according to the number of branches. In a single configuration, install the individual modules in slots 1, 3, and 5 in order from right to left. For details, see "Optical ESB Bus Repeater Module" (GS 33J60F51-01EN/GS 33J60F52-01EN).

For the restrictions and notes for installing I/O modules, see "FIO System Overview" (GS 33J60A10-01EN).

● **No. of Node Units Connectable with FCU**

Max. 13/FCU

The total number of ESB Bus Node Units (ANB10□) or Optical ESB Bus Node Units (ANB11□) that can be connected to FCU are 13 or less.

● **No. of Units installable in Cabinet**

FCU: Max. 1/cabinet (front)

Unit (\*1): Max. 11/cabinet (5 at front and 6 at rear)

\*1: ESB Bus Node Unit (ANB10□), and Unit for Optical ESB Bus Repeater Module (ANT10U)

● **No. of Node Fan Units installable in Cabinet**

The required number of Node Fan Units (ANFAN) varies depending on the total number of units (\*1) that are installed in the cabinet. The required number of Node Fan Units needs to be specified as an option.

The total No. of units (*1)	The required No. of Node Fan Units
0 - 4	1
5 - 9	2
10	3
11	4

\*1: ESB Bus Node Unit (ANB10□), and Unit for Optical ESB Bus Repeater Module (ANT10U)

● **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 the Suffix Code.

● **Power Consumption**

100-120 V AC: 2500 VA (at max. node installation)

220-240 V AC: 2860 VA (at max. node installation)

24 V DC: 71A (at max. node installation)

● **Weight**

Approx. 240kg (excluding node)

Approx. 360 kg (at max. node installation)

● **Connection**

Power Supply: M6 screw terminal connection (dual power system possible)

Grounding: M8 screw terminal connection

READY Contact Output: M4 screw terminal connection

● **Paint Color**

Main body: Frosty white (Munsell No. 2.5 Y 8.4/1.2)

Channel base: Spring black (Munsell No.

3.3PB2.5/0.5)

● **Channel Base Option Specification**

Channel base with hole for cable: (Option Code:/CH)

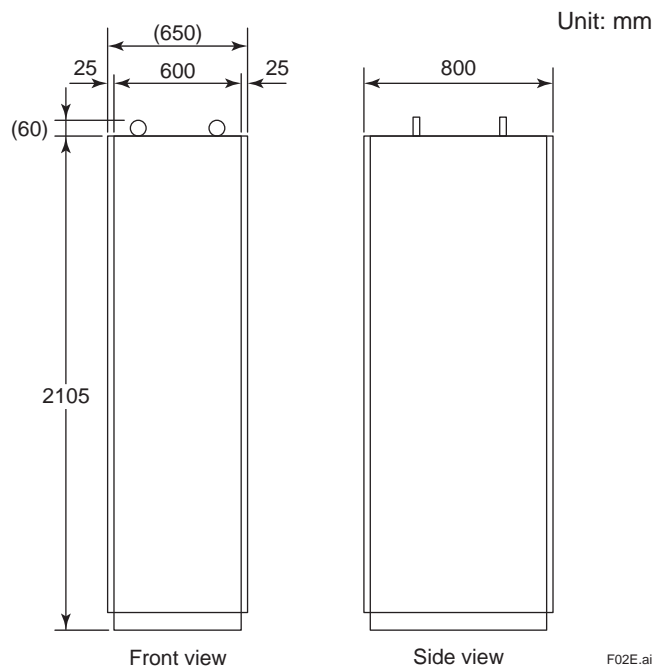
A hole for cables, 300 (length) by 40(width) mm is

opened at the rear of the channel base (with filler plate at time of delivery).

● **IP Protection Rating**

IP20

## EXTERNAL DIMENSIONS



**Nominal Tolerances :**

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

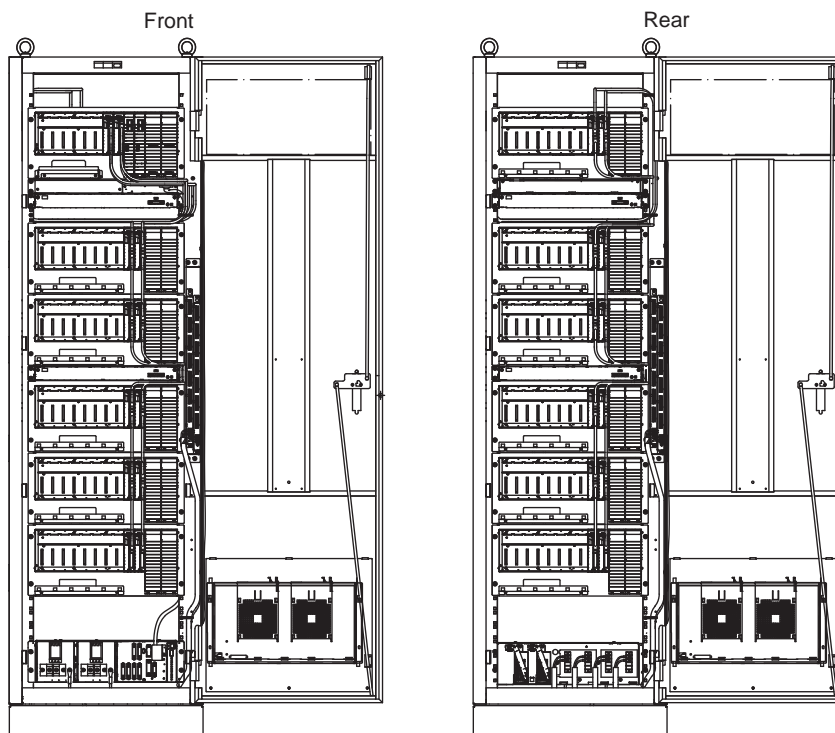
The nominal tolerance is in accordance with JEM 1459 for the dimensions over 120 mm.

## HARDWARE CONFIGURATION

When installing ESB Bus Node Units in the cabinet using ESB Coupler Module (EC401), up to 9/FCU (AFV40□) can be installed

When installing ESB Bus Node Units in the cabinet using the ESB Coupler Module (EC402), up to 11/FCU (AFV40□) can be installed.

Up to 5 node units can be installed at the front of the cabinet, and up to 6 node units at the rear.



Example of node installation position and configuration in cabinet (when using EC402)