GENERAL

The ACB51 I/O Expansion Cabinet is used to install an ESB Bus Node Unit, Optical ESB Bus Node Unit, and Unit for Optical ESB Bus Repeater Module. It can be installed beside a Field Control Unit (AFV40□) or separately. Node units and other units can be installed at the front and rear of the cabinet.

HARDWARE 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)."

Installable Units
- ESB Bus Node Unit: ANB10□
- Optical ESB Bus Node Unit: ANB11□
- Unit for Optical ESB Bus Repeater Module: ANT10U

Maximum Number of Units that can be Installed in Cabinet
The maximum number of installable units is 12 (6 at the front and 6 at the rear).

Number of Node Fan Units to be Installed
The required number of node fan units varies depending on the total number of ESB bus node units, optical ESB bus node units, and units for the optical ESB bus repeater module to be installed in the cabinet.

<table>
<thead>
<tr>
<th>Total Number of Units (*1)</th>
<th>Number of Node Fan Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4</td>
<td>0 (*2)</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>6 - 10</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

*1: ESB Bus Node Units, Optical ESB Bus Node Units, and Units for Optical ESB Bus Repeater Module
*2: The option does not need to be specified.

Function of House Keeping Unit (HKU)
A House Keeping Unit (HKU) is standard hardware component provided with ACB51. Temperatures and fans in the cabinet can be monitored on HIS by connecting AFV40□ and ETBC to the HK bus (AKBHKU or optical ESB bus).

Cable: HK Bus cable (AKBHKU)
Units that can be connected HKU of AFV40□: HKU of ACUKT1, ACUKT2, AFV40□, ACB51, or XL-Cabinet.
Maximum number of connectable cabinets (*1): 9/FCU
Total maximum length of cable: 100 m (*2)

*1: The maximum number of connectable ETBC units is 6/FCU
*2: The each section connected in a daisy chain with HK bus.

Fan Alarm Contact Output
Three terminals (NC, NO, C)
Contact Rating:
- Rated voltage: 250 V AC/30 V DC or less
- Rated current: 2 A
- Rated power: 125 VA or less

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 code
● Power Consumption
100-120 V AC: 2500 VA  
(when the maximum number of nodes is installed)
220-240 V AC: 2860 VA  
(when the maximum number of nodes is installed)
24 V DC: 71 A  
(when the maximum number of nodes is installed)

● Weight
Approx. 380 kg (when the maximum number of nodes is installed)

● Connection
Power Supply: M6 screw terminal connection (Dual power supply is also possible) 
Grounding: M8 bolt terminal connection 
Contact Output: M4 screw terminal connection

● Paint Color
Basic Color: Frosty white (Munsell No. 2.5Y8.4/1.2) 
Channel Base: Spring black (Munsell No. 3.3PB2.5/0.5)

● Channel Base with Hole for Cable: (Option Code: /CH)
A hole for cables measuring 300 mm in length by 40 mm in width is opened at the rear of the channel base 
(with a filler plate at the time of delivery).

● IP Protection Rating
IP20

## EXTERNAL DIMENSIONS

![Diagram of external dimensions](F02E.ai)

Nominal Tolerances:
When the reference dimension is over 0.5 mm and equal or less than 120 mm, its nominal tolerance is ± 0.8 mm, while its combination of nominal tolerance is ± 1.5 mm.
When the reference dimension is over 120 mm, its nominal tolerance is in accordance with JEM 1459.
**Unit Installation Example**

![Diagram showing unit installation example](image)

- **Rittal TS8 front (for single door)**
- **Rittal TS8 rear (for double doors)**
- **YCB301**
- **ANB10**
- **AFV30**
- **YCB301**
- **ANB11**
- **HK Bus**
- **2 m**
- **Node fan unit**
- **Power supply bus unit, Vertical type**
- **Power distribution board with Built-in HKU**
- **Door fan unit**

*Figure: Example of ACB51-H12/0/1-D2A/8-D2C/2-FAN*

**HK Bus Connection Example**

![Diagram showing HK bus connection example](image)

- **ACUKT1-C**
- **ACUKT1-L**
- **ACUKT1-R**
- **AFV30/HKU**
- **ANB10/HKU**
- **ANB11/HU**
- **ESB Bus**
- **Optical ESB Bus (Max. 50 km)**
- **HK Bus Transmission Distance: Max. 100 m**

*Figures: Example of HK Bus connection*
## Models and Suffix Codes

### I/O Expansion Cabinet (for AFV30□/AFV40□)

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>Suffix Codes</th>
<th>Option Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I/O Expansion Cabinet (for AFV30□/AFV40□)</td>
<td>ACB51</td>
<td>-H</td>
<td>/1-S1D, /1-S1E, /1-S2D, /1-S2E, /1-D2D, /1-D2E, /3-S1F, /3-S2F, /3-D2F, /3-T1A, /3-T2A, /3-FAN</td>
</tr>
<tr>
<td>With HKU</td>
<td></td>
<td></td>
<td>/1-FAN, /2-FAN, /3-FAN, /4-FAN, /CH, /CE, /ATDOC</td>
</tr>
<tr>
<td>Front/Rear for node unit mounting</td>
<td>1</td>
<td>/1-S1D</td>
<td>*Note: Install units in the cabinet from the upper front space in the following order: ANB11□, ANB10□, and ANT10U. The connector units for ESB bus and ESB Bus Cables (YCB301) between the node units in the cabinet are all installed. However, the ESB bus cable between the ANT10U and node unit is not connected. Note: To perform communication between cabinets, the HKUs of the cabinets must be connected with the HK Bus Cable (AKBHKU). (However, an HK bus cable is not required to connect cabinets via the optical ESB bus.) Note: If the terminal board is installed but the power supply or the like is not needed, select ACB41-S3000. Note: The existing ACB51□ for CENTUM VP R5 can be used with CENTUM VP R6.01 or later.</td>
</tr>
<tr>
<td>Rear: 19-inch rack equipment mounting (*3)</td>
<td>2</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>Single power system</td>
<td>1</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>Dual power system</td>
<td>2</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>100-120 V AC power supply</td>
<td>1</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>220-240 V AC power supply</td>
<td>2</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>24 V DC power supply</td>
<td>4</td>
<td>/1-S1D</td>
<td></td>
</tr>
<tr>
<td>Always 2 (R6.01 or later)</td>
<td>2</td>
<td>/1-S1D</td>
<td></td>
</tr>
</tbody>
</table>

*1: Specify the number of units (1 to 9) in □ as needed. The maximum number of units (ANB11□, ANB10□, and ANT10U) that can be installed in the cabinet is 9. To connect to ANB10□ and ANT10U in this cabinet from the ESB Bus Coupler Module (EC402) in FCU of another cabinet via the ESB bus, it is possible to connect only to the ESB bus on either the upper or lower side of the ESB bus connector of EC402. To install different types of units in the same cabinet, only the following combinations of units can be installed.

- /1-S1D, /3-S1F, /3-T1A
- /1-S2D, /3-S2F, /3-T2A
- /1-D2D, /3-D2F, /3-T2A
- /1-S1D
- /3-S1F
- /3-T1A
- /1-S2D
- /3-S2F
- /3-T2A
- /1-D2D
- /3-D2F
- /3-T2A

*2: The node fan unit should be specified as follows depending on the total number of units (ANB11□, ANB10□, and ANT10U) that are to be installed in the cabinet.

- 0 to 4 units: Do not specify
- 5 units: /1-FAN
- 6 to 10 units: /2-FAN

*3: If /CH is specified, ACB51 does not comply with CE Marking, RCM, EAC Marking, and KC Marking.

*4: Select the option code “/ATDOC” to follow the ATEX Directive for use in potentially explosive atmospheres.
Side Panel for Cabinet

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACB2P</td>
<td>Side Panels for Cabinet</td>
</tr>
</tbody>
</table>

Note: 2 panels are necessary when attaching to both sides of the cabinet.

- **RELATED PRODUCTS**
  Model AKT211 Connection Kit for Cabinet

- **APPLICABLE STANDARDS**
  Refer to the GS “Integrated Production Control System CENTUM VP System Overview (GS 33J01A10-01EN).”

- **ORDERING INFORMATION**
  Specify models, suffix codes, and option codes when ordering.

- **TRADEMARKS**
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