■ LIMITATIONS AND PRECAUTIONS FOR INSTALLATION

● Limitations of Installation of Modules Imposed by Capacity of Power Supply to Transmitters

Installation of modules in any one of Node Units (ANB10☐ and ANB11☐) and Field Control Units (AFV30☐, AFV40☐, and AFV10☐) imposes a limitation on the total number of modules considering the power supply.

ANB10☐ and ANB11☐:

For application to non-hazardous area
Σ (factor B for each module to be installed) ≤ 100 (*1)
For application to hazardous area
ANB10☐-☐☐E, ☐☐G and ANB11☐-☐☐E:
Σ (factor B for each module to be installed) ≤ 88
ANB10☐-☐☐F and ANB11☐-☐☐F:
Σ (factor B for each module to be installed) ≤ 80 (*1)

AFV30S and AFV40S (*2):

For application to non-hazardous area or hazardous area
Σ (factor A for each module to be installed) +
Σ (factor B for each module to be installed) ≤ 85

AFV30D and AFV40D (*2):

For application to non-hazardous area
Σ (factor A for each module to be installed) ≤ 20 and
Σ (factor A for each module to be installed) +
Σ (factor B for each module to be installed) ≤ 65

AFV30D:

For application to hazardous area
Σ (factor A for each module to be installed) ≤ 5 and
Σ (factor A for each module to be installed) +
Σ (factor B for each module to be installed) ≤ 65

*1: Mount a node (-20 to 70 °C optional temperature environment) under the condition, and a condition of “Limitations of Installation under the Ambient Operating Temperature Conditions” described later.
*2: AFV40☐ is prohibited to use in hazardous area.

Table Factor for Each Module

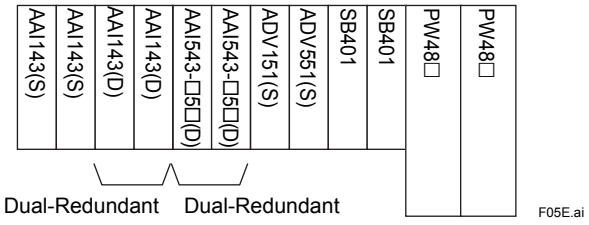
	Model	Factor	
		Single	Each Pair in Dual-redundant Configuration
A	ADV869 (ST5)	3	-
	ADV169 (ST6)	3	-
	ADV569 (ST7)	3	-
	AAV544	3	3
	AGP813	3	6
B	AAI841	17	26
	AAB841(MAC2/VM2)	9	17
	AAI141	16	16
	AAI143	22	24
	AAI543-☐5☐, -☐E☐ (standard response)	21	25
	AAI543-☐6☐, -☐F☐ (fast response)	21	29
	AAP135	16	25
	AAP849	9	17
	AAI135	15	19
	AAI835	15	22
	AAB141	1	2
	AAB842	11	20
	ASI133	22	33
	ASI533	17	26
	AST143	5	10
	ASR133	3	6
	ASD143	6	12
	ASD533	25	38
	Others	0	0

When all channels are connected in 4-wire connection (example: Barrier connection); however, refer to the next table.

Table Factor when all channels are connected in 4-wire connection

	Model	Factor	
		Single	Each Pair in Dual-redundant Configuration
B	AAI841-S☐☐	10	19
	AAI841-H☐☐	10	20
	AAI141-S☐☐	0	0
	AAI141-H☐☐	1	1
	AAI143	4	7
	AAI135-S☐☐	4	8
	AAI135-H☐☐	6	11
	AAI835-S☐☐	8	16
	AAI835-H☐☐	11	22

Example: When installing modules in an ANB10D as follows where “(S)” indicates Single and “(D)” indicates Dual-Redundant.



The total sum of the factors for this installation plan is less than 100 as shown below, hence, the acceptance of this plan is ensured:

∑ (factor for each module to be installed)
= 22 + 22 + 24 + 25 + 0 + 0 = 93 < 100

Example: When installing modules in an AFV30D as follows.

*1: A dual-redundant configuration is enabled by using 2 identical modules with same model code (CP461 or CP471).

∑ (factor A for each module to be installed) + (factor B for each module to be installed)
= (3 + 3 + 3) + (24 + 29 + 0)
= 9 + 53
= 62 < 65

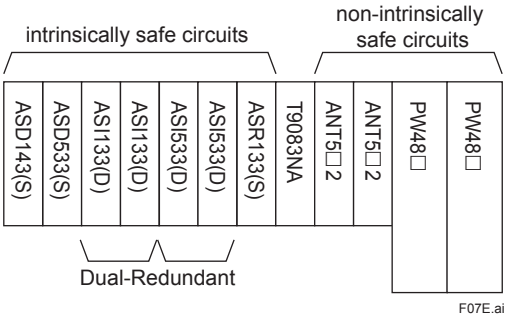
● Restriction on Installation of Modules with Built-in Barrier

Please keep a distance of 50 mm or more between the intrinsically safe area and the non-intrinsically safe area.

Modules with built-in barriers should be installed in an area separate from the area of other modules in one node unit. In case of ANB10□ and ANB11□, an insulating partition (Part No. T9083NA) must be installed between the area of Modules with Built-in Barrier and the area of other Modules.

In case of AFV30□, an insulating partition kit (Part No. T9083ND) must be installed to keep a distance between the intrinsically safe area and the non-intrinsically safe area.

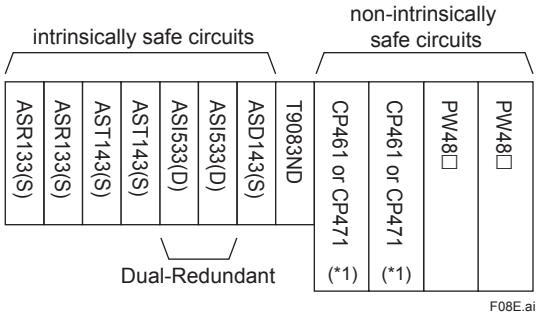
Example: When isolating the two areas in an ANB11D as follows where “(S)” indicates Single and “(D)” indicates Dual-Redundant.



The total sum of the factors for this installation plan is less than 100 as shown below, hence, the acceptance of this plan is ensured:

∑ (factor for each module to be installed)
= 6 + 25 + 33 + 26 + 3 = 93 < 100

Example: When installing modules in AFV10D and AFV30□ as follows.

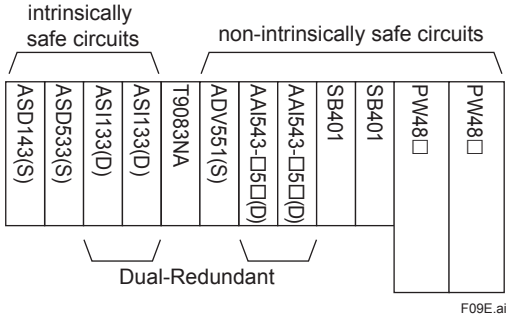


*1: A dual-redundant configuration is enabled by using 2 identical modules with same model code (CP461 or CP471).

The total sum of the factors for this installation plan is less than 65 as shown below, hence, the acceptance of this plan is ensured:

∑ (factor module to be installed)
= 3 + 3 + 5 + 5 + 26 + 6 = 48 < 65

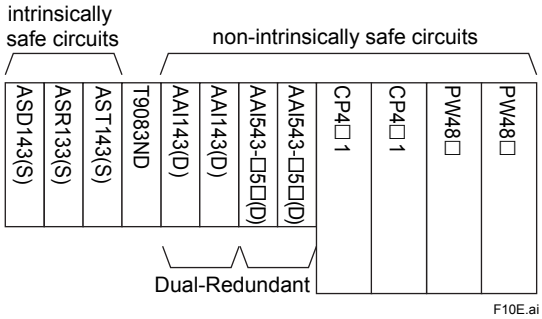
Example: When installing modules in an ANB10D as follows where “(S)” indicates Single and “(D)” indicates Dual-Redundant.



The total sum of the factors for this installation plan is less than 100 as shown below, hence, the acceptance of this plan is ensured:

∑ (factor for each module to be installed)
= 6 + 25 + 33 + 0 + 25 = 89 < 100

Example: When installing modules in AFV30□ as follows.



The total sum of the factors for this installation plan is less than 65 as shown below, hence, the acceptance of this plan is ensured:

∑ (factor module to be installed)
= 6 + 3 + 5 + 24 + 25 = 63 < 65