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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by the Institute of Electrical Installation Engineers of Japan (IEIEJ)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS C 8364** : 1995 is replaced with this Standard.

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Busways

Introduction

This Japanese Industrial Standard was established in 1962 through 6-time revisions and became what to this day. The last revision was made in 1995, and the revision of this time is made to correspond to the current status of products as well as to harmonize with the development of technology and the amendment of technical standards of electric equipment and applicable laws and regulations on the Fire Service Law, etc. after that.

1 Scope

This Standard specifies busways and their accessories of AC 1 000 V or under (frequency of 1 000 Hz or under) or of DC 1 500 V or under except for the trolley busways.

Accessories here refer to the end closure, feed-in box and branching connector.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS A 1304 *Method of fire resistance test for structural parts of buildings*

JIS C 0920 *Degrees of protection provided by enclosures (IP Code)*

JIS C 1302 *Insulation resistance testers*

JIS C 1602 *Thermocouples*

JIS C 2110 *Testing methods for electric strength of solid insulating materials*

JIS C 3005 *Test methods for rubber or plastic insulated wires and cables*

JIS C 60695-2-10 *Fire hazard testing—Glow-wire apparatus and common test procedure*

JIS C 60695-2-11 *Fire hazard testing—Glow-wire flammability test method for end-products*

JIS K 7113 *Testing method for tensile properties of plastics*

JIS Z 8703 *Standard atmospheric conditions for testing*

JIS Z 8721 *Colour specification—Specification according to their three attributes*

3 Terms and definitions

For the purposes of this Standard, the following definitions apply.

3.1 busway

an assembly that bare conductors are supported by or covered with insulating material, and mounted in a duct

3.2 duct

a box in which bare conductors or insulated conductors are mounted

3.3 bare conductor busway

a busway in which bare conductors are supported by insulating material

3.4 insulated conductor busway

a busway in which bare conductors are covered with insulating material

3.5 fireproof busway

a busway having fireproof property

3.6 feeder busway

a busway not having a branching function

3.7 plug-in busway

a busway having a plug-in socket capable of branching by using a plug-in device

3.8 straight

a busway of straight type

3.9 tap-off busway

a busway having a tap for connection to the bolt-on device, apparatus, wire and the like either at the end or in the middle part of the busway

3.10 elbow

a busway bent at any angles

3.11 offset

a zigzagged busway

3.12 tee

a busway capable of connecting in three directions

3.13 cross

a busway capable of connecting in four directions

3.14 reducer

a busway capable of connecting busways of different rated currents to each other

3.15 expansion busway

a busway which is so constructed that the displacement caused by thermal shrinkage/thermal expansion can be absorbed

3.16 transposition busway

a busway in which conductor positions are interchanged

It aims to equalize the impedance of each phase or to change the phase alignment.

3.17 end closure

a fitting which closes the end of the busway

3.18 feed-in box

a fitting which connects the busway to the power source

3.19 branching connector

common name of the plug-in device and the bolt-on device

3.20 plug-in device

a device plugged into the plug-in socket on a plug-in busway to make connect with the conductors in busway by using clips, etc.

3.21 plug-in breaker

a plug-in device equipped with a circuit breaker

3.22 plug-in switch

a plug-in device equipped with a switch

3.23 plug-in box

a plug-in device not having an internal switching mechanism but equipped with only a fuse and holder, or wire connecting terminal

3.24 bolt-on device

a device connected to the tap of tap-off busway by tightening with a bolt

3.25 bolt-on breaker

a bolt-on device equipped with a circuit breaker

3.26 bolt-on switch

a bolt-on device equipped with a switch

3.27 bolt-on box

a bolt-on device not having an internal switching mechanism but equipped with only a fuse and holder, or wire connecting terminal

3.28 handle-operated mechanism

a mechanism through which the operation of the plug-in breaker, plug-in switch, bolt-on breaker or bolt-on switch is made by a handle without opening and closing of the cover

3.29 cover-operated mechanism

a mechanism that the operation of the switch is made by closing and opening the cover of the plug-in switch or bolt-on switch

3.30 clearance

shortest distance of the space between two insulated bare live parts

3.31 creepage distance

shortest distance along the surface of the insulating material between two conductive parts

3.32 rated short-time withstand current

limit of short-time current in which abnormalities are not recognized under the specified circuit condition even if the busway is energized for a specified time

4 Classification and ratings

The classification and ratings of busway shall be as given in table 1.

Table 1 Classification and ratings

Classification							Rated current A	Rated voltage V	Rated short-time withstand current A		
Name		Type				Number of poles					
Busway	Feeder busway	—	Indoor use	Insulated conductor	Ventilation type		2	60	300	5 000	
	Straight					3	100	300 ^{a)}	7 500		
	Elbow			Bare conductor	Non-ventilation type	4	200	600	10 000		
	Offset						300	750 ^{a)}	14 000		
	Tee	Outdoor use	Insulated conductor	Ventilation type		400	1 000	18 000			
	Cross						600	1 500 ^{a)}	22 000		
	Reducer			Bare conductor	Non-ventilation type		800		25 000		
							1 000		30 000		
	Expansion busway	Fireproof type	Indoor use	Insulated conductor	Non-ventilation type		1 200		35 000		
									1 500		42 000
	Tap-off busway								1 600		50 000
									2 000		60 000
	Transposition busway								2 500		65 000
									3 000		75 000
	Plug-in busway	—	Indoor use	Insulated conductor	Ventilation type		3 500		85 000		
									4 000		90 000
	Bare conductor					Non-ventilation type		4 500		100 000	
								5 000		125 000	
								5 500		150 000	
								6 000		200 000	
Accessory	End closure		—				—	—	—	—	
	Feed-in box		—				—	—	300 300 ^{a)} 600 750 ^{a)} 1 000 1 500 ^{a)}	—	
	Plug-in device ^{b)}	Plug-in breaker, Bolt-on breaker	Handle-operated Internal-switch operated			2	—	—	—		
						3					
	Bolt-on device ^{b)}	Bolt-on breaker				4					
		Plug-in switch, Bolt-on switch	Handle-operated Cover-operated Internal-switch operated		Cartridge fuse Plug fuse	2	—	—	—		
						3					
		Plug-in box, Bolt-on box	With fuse		Cartridge fuse Plug fuse	4	—	—	—		
		Without fuse		—							
Notes ^{a)} It refers to DC voltage.											
^{b)} The rated current and rated voltage for plug-in devices and bolt-on devices shall be those of the incorporated circuit breaker, etc.											

5 Use conditions

5.1 Standard use conditions

5.1.1 General requirements

The standard use conditions refer to the use conditions corresponding to either **5.1.2** or **5.1.3**.

5.1.2 Use conditions for indoor busway

- a) **Ambient temperature** The ambient temperature shall be $-5\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$, and the average of the ambient temperature measured through 24 h shall be $35\text{ }^{\circ}\text{C}$ or under.
- b) **Humidity** The relative humidity shall be not more than 85 % at highest temperature of $40\text{ }^{\circ}\text{C}$. However, for example, the humidity may be 90 % at such a low temperature as $20\text{ }^{\circ}\text{C}$.
- c) **Altitude** The altitude at a use location shall be 2 000 m or under.
- d) **State of air pollution** The pollution due to dust, smoke, corrosive or combustible gas, steam and salinity in the surrounding air shall be such a degree of negligible.

5.1.3 Use conditions for outdoor busway

- a) **Ambient temperature** The ambient temperature shall be $-25\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$, and the average of the ambient temperature measured through 24 h shall be $35\text{ }^{\circ}\text{C}$ or under.
- b) **Humidity** The relative humidity shall be in such a degree that occurrence of condensation does not affect the inside of a busway.
- c) **Altitude** The altitude at a use location shall be 2 000 m or under.
- d) **State of air pollution** The pollution due to dust, smoke, corrosive or combustible gas, steam and salinity in the surrounding air shall be such a degree of negligible.
- e) **Ice and snow, rain water and direct sunlight** Ice and snow shall be such a degree of negligible. Rain water, temperature change and direct sunlight shall be permissible.

5.2 Specific use conditions

The case corresponding to any of the following shall be taken as the specific use conditions, and the case of use under this shall be agreed between the parties concerned with delivery.

- a) When ambient temperature, humidity, condensation and altitude exceed the specification of **5.1**
- b) When the fluctuation of temperature and/or humidity occurs with the speed at which condensation is exceptionally produced inside a busway