

Multi branch selector
(BSSV) for VRV 5 heat
recovery
Air Conditioning
Technical Data
BS-A14AV1B



BS4A14AJV1B
BS6A14AJV1B
BS8A14AJV1B
BS10A14AJV1B
BS12A14AJV1B

TABLE OF CONTENTS

BS-A14AV1B

1	Features	4
	BS-A14AV1B	4
2	Specifications	5
3	Options	7
4	Pressure drops	8
	Pressure drop for one BSSV unit to one extraction fan configuration	8
5	Dimensional drawings	14
6	Centre of gravity	17
7	Piping diagrams	20
8	Wiring diagrams	21
	Wiring Diagrams - Single Phase	21
9	Sound data	24
	Sound Power Spectrum	24
	Sound Pressure Spectrum	26
	Sound Pressure Spectrum – Maximum	28
	Sound Pressure Spectrum – Transient	30
10	Installation	32
	Installation Method	32
	Refrigerant Charge Information	33

1 Features

1 - 1 BS-A14AV1B

- › Unique range of multi BS boxes allowing efficient 3-pipe heat recovery
- › No limitation on room size, thanks to Shīrudo Technology
- › Faster installation thanks to Refrigerant Flow Through reducing the number of brazing points and joint kits
- › Easy servicing in false ceilings thanks to sliding down PCB
- › Quick on-site settings, indication of service parameters and easy read out of errors thanks to 7 segment display
- › Up to 16kW capacity available per port
- › Connect up to 250 class unit (28kW) by combining 2 ports
- › No limit on unused ports allowing phased installation
- › Faster installation thanks to open port connection
- › Allows multi tenant applications
- › Connectable to VRV 5 heat recovery units



2 Specifications

1 - 1 BS-A14AV1B

Technical specifications				BS4A14AV1B	BS6A14AV1B	BS8A14AV1B	BS10A14AV1B	BS12A14AV1B
Maximum capacity index of connectable indoor units				400	600	750		
Maximum capacity index of connectable indoor units per branch				140				
Number of branches				4	6	8	10	12
Maximum number of connectable indoor units				20	30	40	50	60
Maximum number of connectable indoor units per branch				5				
Casing	Material			Galvanised steel plate				
Dimensions	Unit	Height	mm	291				
		Width	mm	600	1,000		1,400	
		Depth	mm	845				
	Packed unit	Height	mm	320	475			
		Width	mm	970	1,370		1,770	
		Depth	mm	1,160				
Weight	Unit	kg		40.0	56.0	65.0	83.0	89.0
	Packed unit	kg		50	83	95	114	123
Packing	Material			Carton				
	Weight			kg	6	7		9
Packing 2	Material			Wood				
	Weight			kg	7	20		23
Packing 3	Material			Plastic				
	Weight			kg	0			
PED				art. 4.3				
Operation range	Temper- ature around casing	Min.	°CDB	15				
		Max.	°CDB	32				
	Humidity around casing	Max.	%	80				
Sound pressure level	Nom.	dBA		36.0 (1)	37.0 (1)		38.0 (1)	
Sound power level	Nom.	dBA		49.1 (2)	51.5 (2)		52.5 (2)	
Refrigerant	Type			R-32				
	GWP			675.0				
Piping connections	Outdoor unit or Refrigerant Flow Through	Liquid	Type	Brazing connection				
			OD	mm	9.5 (3) / 12.7 (3) / 15.9			
		Gas	Type	Brazing connection				
			OD	mm	15.9 (3) / 19.1 (3) / 22.2 (3) / 28.6			
	Indoor unit	Dis-charge gas	Type	Brazing connection				
			OD	mm	12.7 (3) / 15.9 (3) / 19.1 (3) / 22.2			
		Liquid	Type	Brazing connection				
			OD	mm	6.4 (4) / 9.5 (5)			
Piping connections	Indoor unit	Gas	Type	Brazing connection				
			OD	mm	9.5 (6) / 12.7 (7) / 15.9 (5)			
BS units connected	Maximum allowed amount of BS units			4				
in Refrigerant Flow	Maximum total number of ports of BS units			16				
Through	Maximum total capacity index of indoor units			750				
Drain pipe				VP20 (I.D. 20/O.D. 26)				
Sound absorbing thermal insulation				Polyethylene foam				
BS box system safety requirements	Duct connection diameter on unit			mm	160.0			
	Duct connection positions			Left/Right				
Safety devices	Item	01		PC board fuse				

Standard accessories: Installation and operation manual; Quantity: 1;

Standard accessories: General safety precautions; Quantity: 1;

Standard accessories: Drain hose; Quantity: 1;

Standard accessories: Clamp for drain hose; Quantity: 1;

Standard accessories: Sealing pad (small); Quantity: 1;

Standard accessories: Sealing pad (large); Quantity: 1;

Standard accessories: Sealing material; Quantity: 1;

Standard accessories: Insulation tube for stopper pipes; Quantity: 5;

Standard accessories: Tie-wraps; Quantity: 11;

Standard accessories: Stopper pipes; Quantity: 5;

Standard accessories: Accessory pipe; Quantity: 14;

Standard accessories: Duct closing plate; Quantity: 1;

2 Specifications

1 - 1 BS-A14AV1B

2

Electrical specifications			BS4A14AV1B	BS6A14AV1B	BS8A14AV1B	BS10A14AV1B	BS12A14AV1B
Power supply	Phase		1~				
	Frequency		50				
	Voltage		220-240				
	Voltage range	Min.	220				
		Max.	240				
	Minimum circuit amps (MCA)	A	0.5	0.6	0.8	1.0	1.1
	Maximum fuse amps (MFA)	A	6				

(1)Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |

(2)Sound power level is an absolute value that a sound source generates. |

(3)Accessory pipe required |

(4)When connecting indoor units smaller or equal to 80 class (no need to cut the outlet pipe) |

(5)When connecting indoor units larger or equal to 100 class (the outlet pipe needs to be cut) |

(6)When connecting indoor units smaller or equal to 32 class (no need to cut the outlet pipe) |

(7)When connecting indoor units between 40 & 80 class (the outlet pipe needs to be cut) |

(8)MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |

(9)MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |

(10)Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |

(11)Instead of a fuse, use a circuit breaker

3 Options

3 - 1 Options

BS-A14AV1B

Available options for ·BS*A14A· models

Nr.	Item	BS4A14AJV1B	BS6A14AJV1B	BS8A14AJV1B	BS10A14AJV1B	BS12A14AJV1B
1	Joint kit	EKBSJK				
2	Drain up kit	K-KDU303KVE				
3	Duct connection kit	EKBSDCK				

Notes

- 1 All options are kits

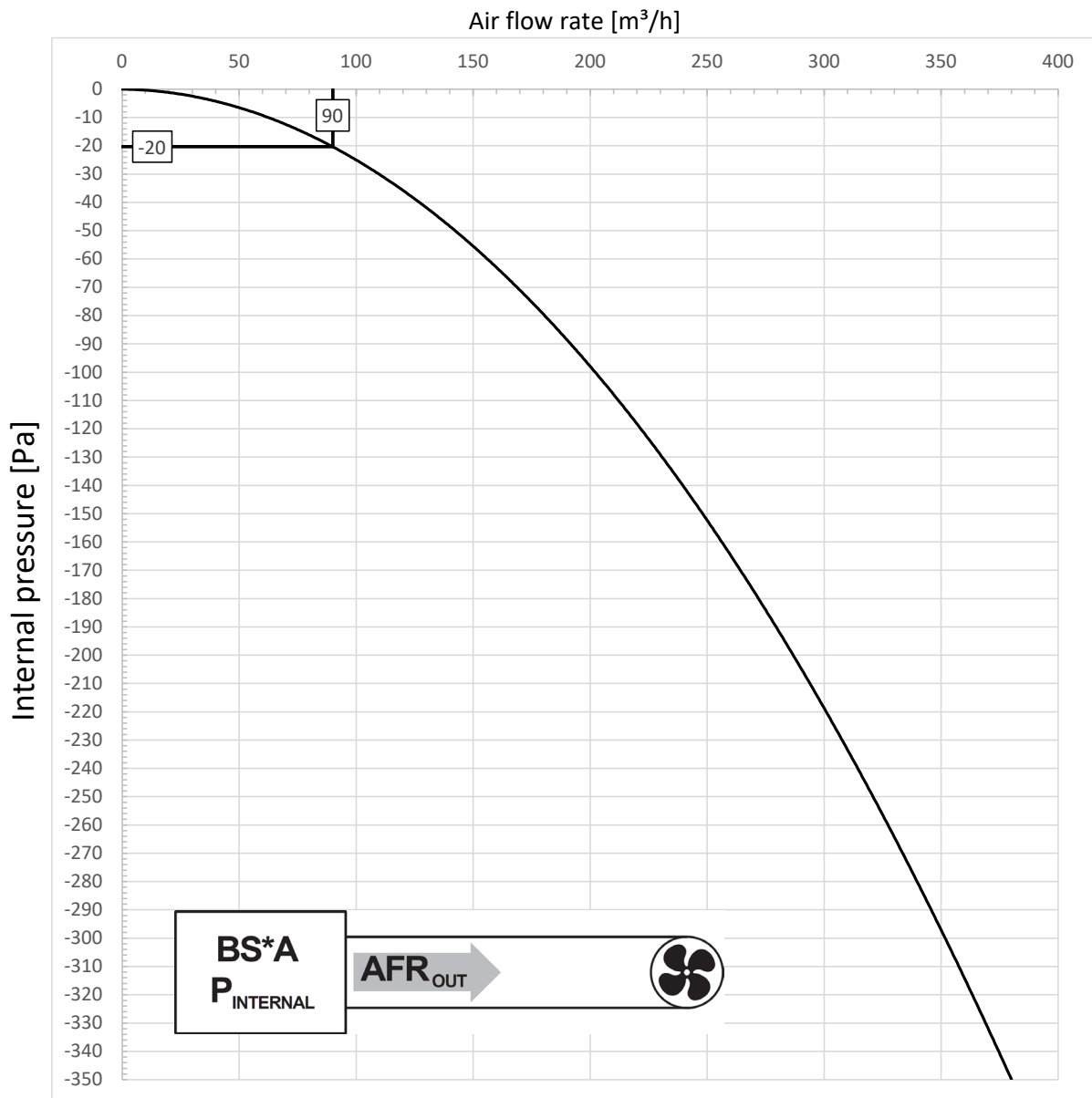
4D140352

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS4A14AV1B

Internal pressure inside the ·BS· unit ·(P_{internal})· in function of the air flow rate exiting the ·BS· unit ·(AFR_{OUT})·



AFR_{OUT} Air flow rate [m^3/h]

P_{internal} Internal pressure [Pa]

Notes

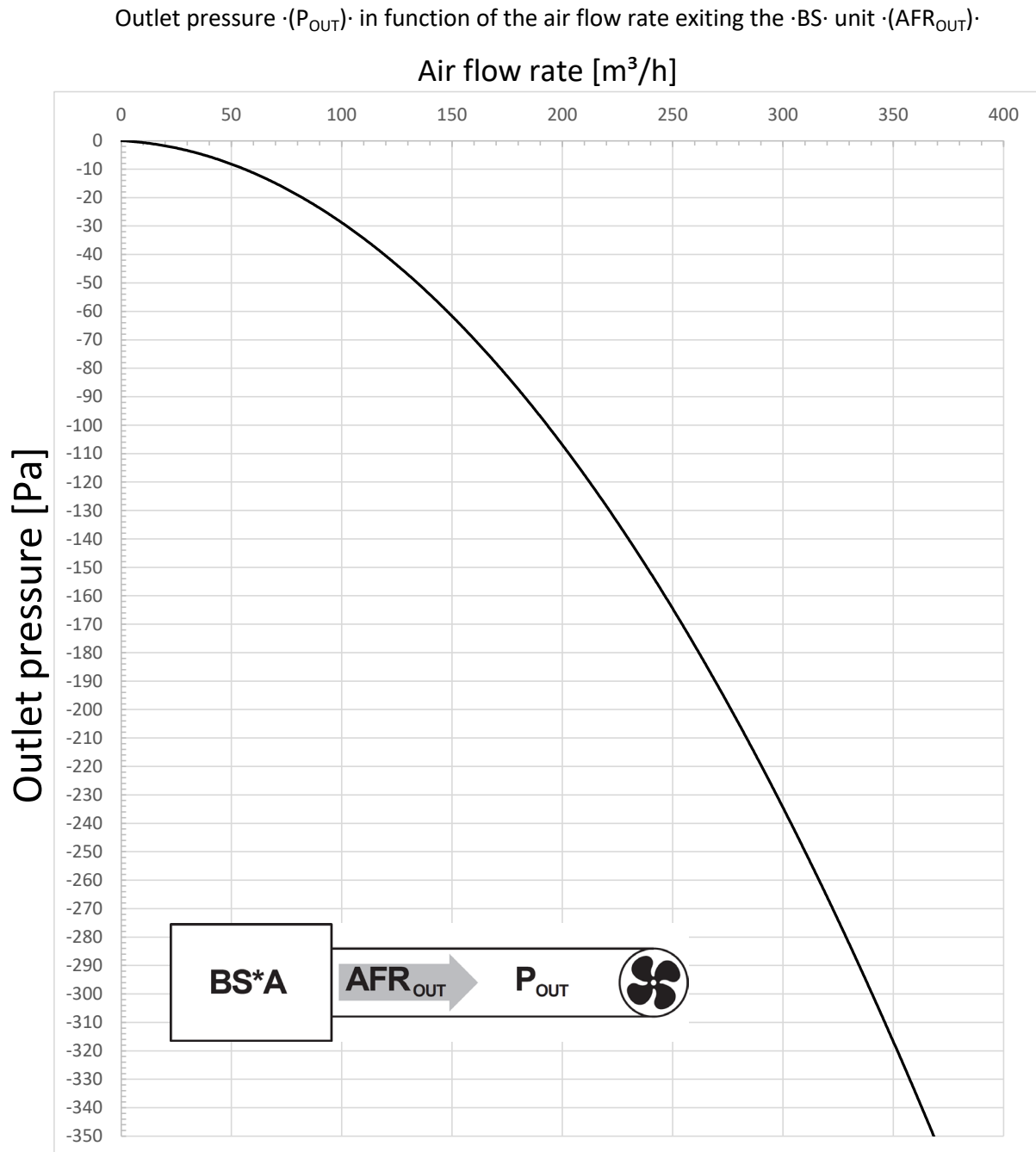
1. Pressure curves are only valid for one ·BS· unit to one extraction fan configurations.
2. In case multiple ·BS· units are combined in one duct network, refer to ·VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>)· to calculate the necessary static pressure of the fan.
3. An internal pressure of ·20· Pa below the surrounding pressure is the minimum according to ·IEC 60335-2-40:2018·.

4D140671

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS4A14AV1B


 AFR_{OUT} Air flow rate [m^3/h]

 P_{OUT} Outlet pressure [Pa]

Notes

1. Pressure curves are only valid for one BS unit to one extraction fan configurations.
2. In case multiple BS units are combined in one duct network, refer to VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>) to calculate the necessary static pressure of the fan.

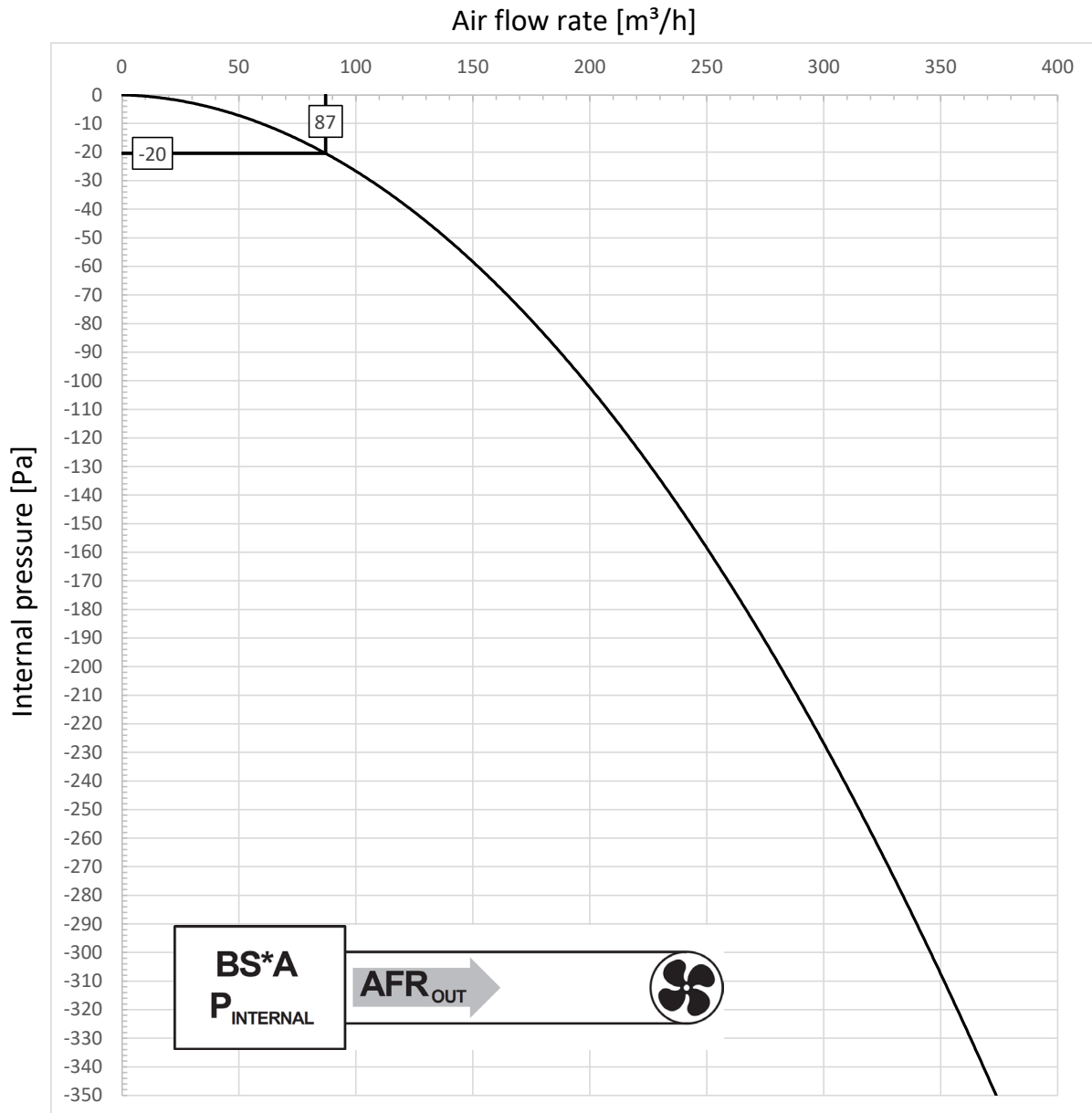
4D140671

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS6-8A14AV1B

Internal pressure inside the ·BS· unit (P_{internal}) in function of the air flow rate exiting the ·BS· unit (AFR_{OUT}).



AFR_{OUT} Air flow rate [m^3/h]
 P_{internal} Internal pressure [Pa]

Notes

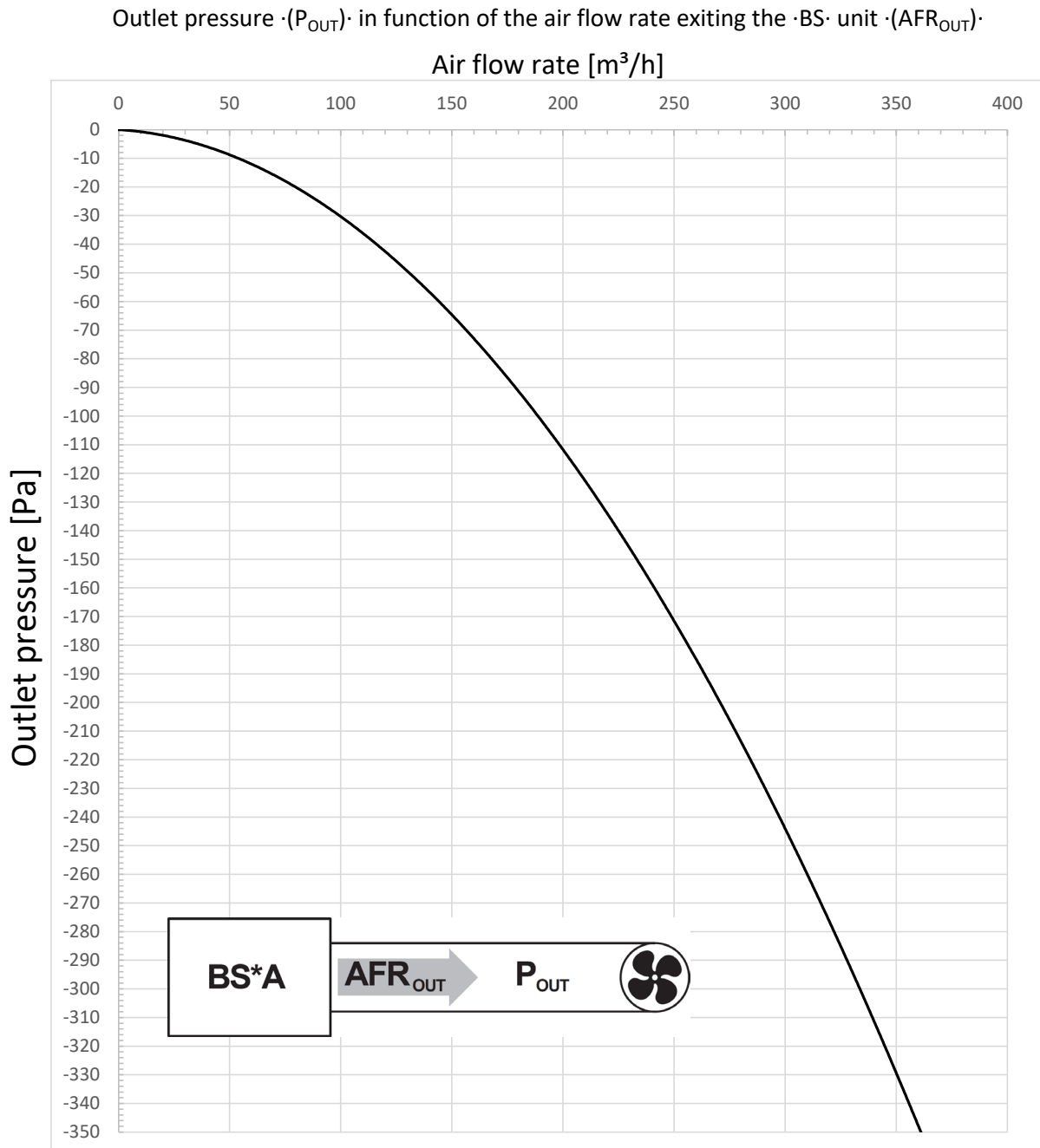
1. Pressure curves are only valid for one ·BS· unit to one extraction fan configurations.
2. In case multiple ·BS· units are combined in one duct network, refer to ·VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>)· to calculate the necessary static pressure of the fan.
3. An internal pressure of ·20· Pa below the surrounding pressure is the minimum according to ·IEC 60335-2-40:2018·.

4D140672

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS6-8A14AV1B


 AFR_{OUT} Air flow rate [m^3/h]

 P_{OUT} Outlet pressure [Pa]

Notes

1. Pressure curves are only valid for one ·BS· unit to one extraction fan configurations.
2. In case multiple ·BS· units are combined in one duct network, refer to ·VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>)· to calculate the necessary static pressure of the fan.

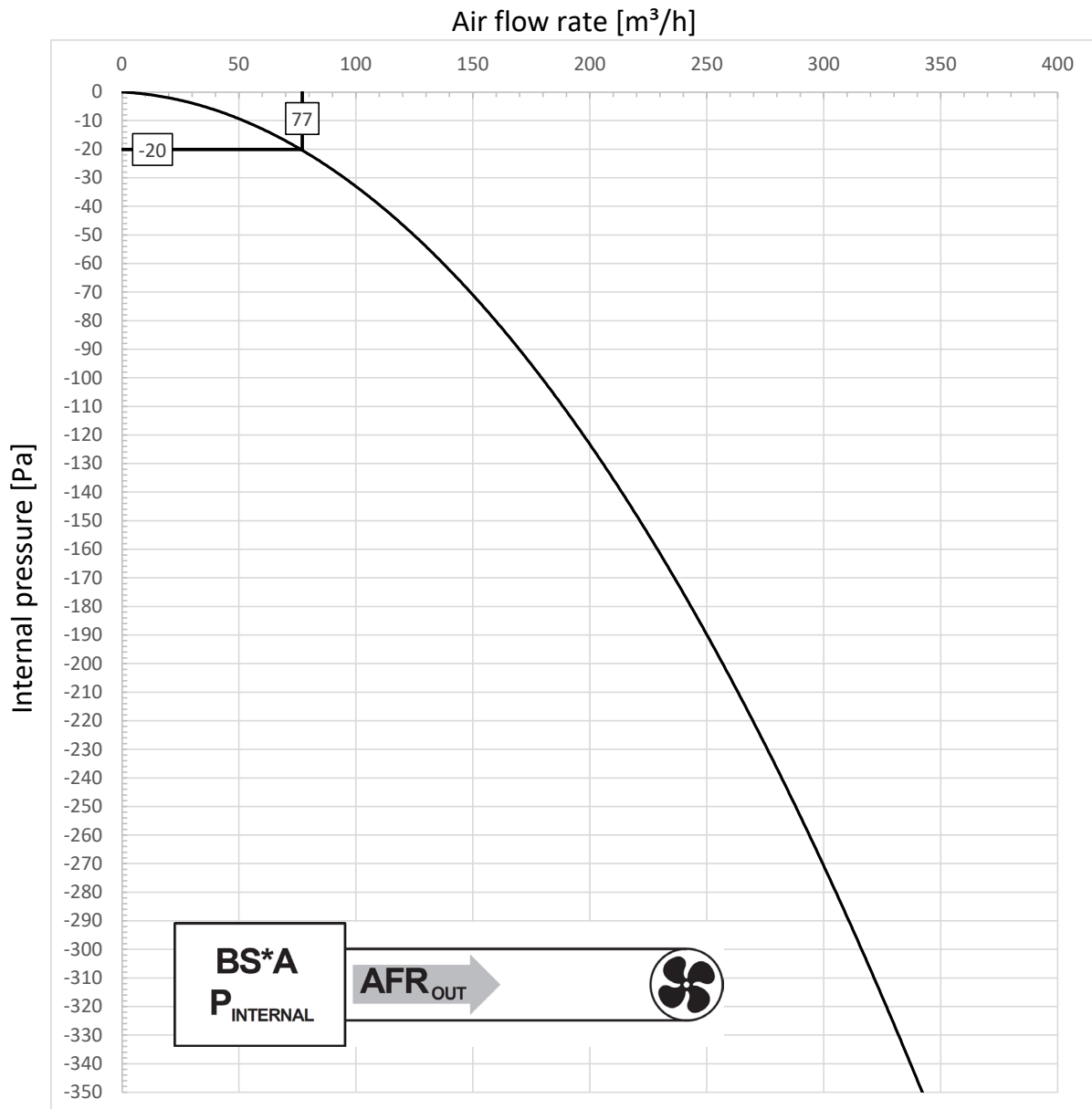
4D140672

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS10-12A14AV1B

Internal pressure inside the ·BS· unit ·(P_{internal})· in function of the air flow rate exiting the ·BS· unit ·(AFR_{OUT})·



AFR_{OUT} Air flow rate [m^3/h]
 P_{internal} Internal pressure [Pa]

Notes

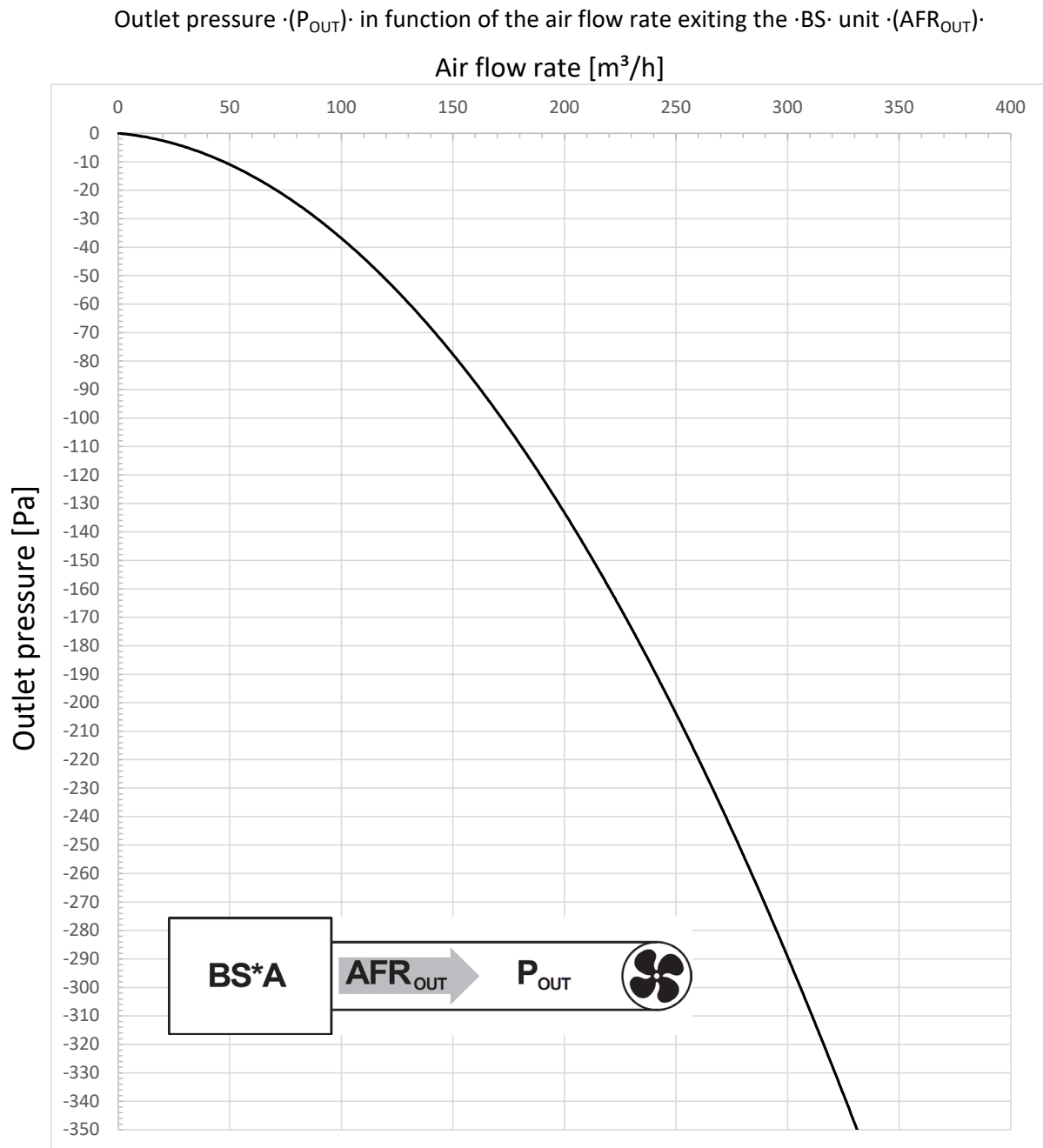
1. Pressure curves are only valid for one ·BS· unit to one extraction fan configurations.
2. In case multiple ·BS· units are combined in one duct network, refer to ·VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>)· to calculate the necessary static pressure of the fan.
3. An internal pressure of ·20· Pa below the surrounding pressure is the minimum according to ·IEC 60335-2-40:2018·

4D140673

4 Pressure drops

4 - 1 Pressure drop for one BSSV unit to one extraction fan configuration

BS10-12A14AV1B



AFR_{OUT} Air flow rate [m^3/h]

P_{OUT} Outlet pressure [Pa]

Notes

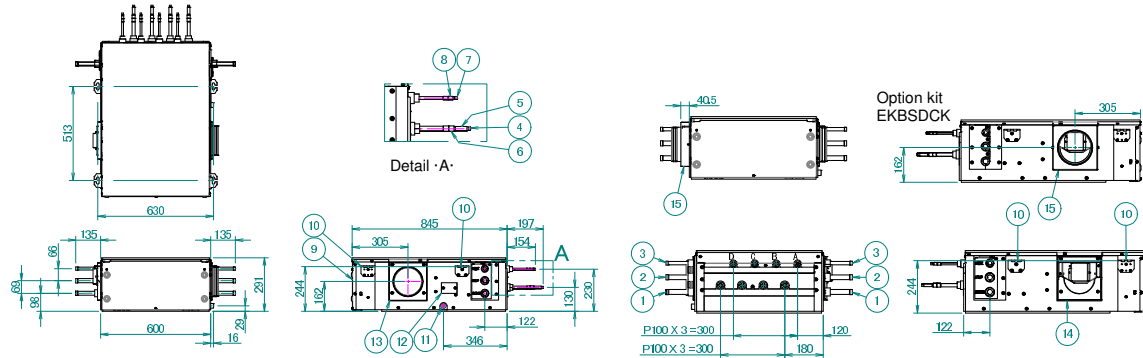
1. Pressure curves are only valid for one ·BS· unit to one extraction fan configurations.
2. In case multiple ·BS· units are combined in one duct network, refer to ·VRV Xpress Selection Software (<https://vrvxpress.daikin.eu>)· to calculate the necessary static pressure of the fan.

4D140673

5 Dimensional drawings

5 - 1 Dimensional Drawings

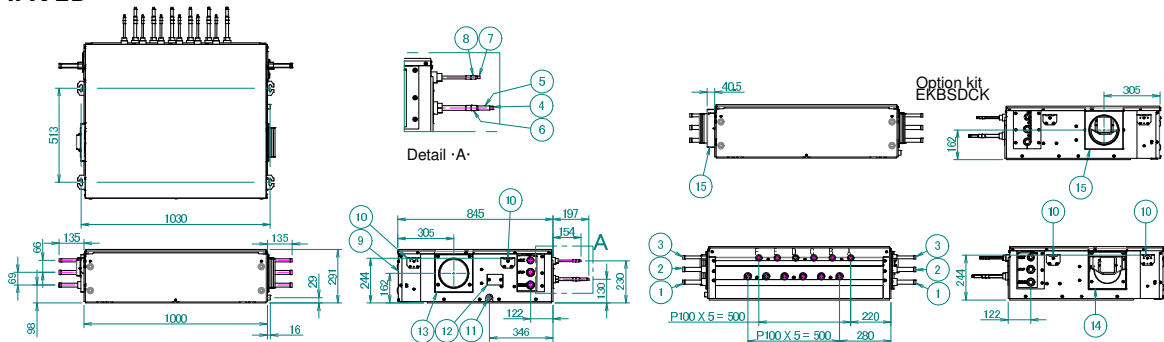
BS4A14AV1B



Item	Name	Description
1	Outdoor unit suction gas pipe connection port	Ø ·22.2· brazing connection
2	Outdoor unit HP/LP gas pipe connection port	Ø ·22.2· brazing connection
3	Outdoor unit liquid pipe connection port	Ø ·15.9· brazing connection
4	Indoor unit gas pipe connection port	Ø ·9.52· brazing connection
5	Indoor unit gas pipe connection port	Ø ·12.7· brazing connection
6	Indoor unit gas pipe connection port	Ø ·15.9· brazing connection
7	Indoor unit liquid pipe connection port	Ø ·6.35· brazing connection
8	Indoor unit liquid pipe connection port	Ø ·9.52· brazing connection
9	Control box	
10	Suspension bracket	M8~M10
11	Drain socket	VP20 (OD Ø26, ID Ø20)
12	Inspection hole	
13	Duct connection	Diameter ·Ø160·
14	Damper	
15	Duct connection kit	Diameter ·Ø160·

3D139835

BS6A14AV1B



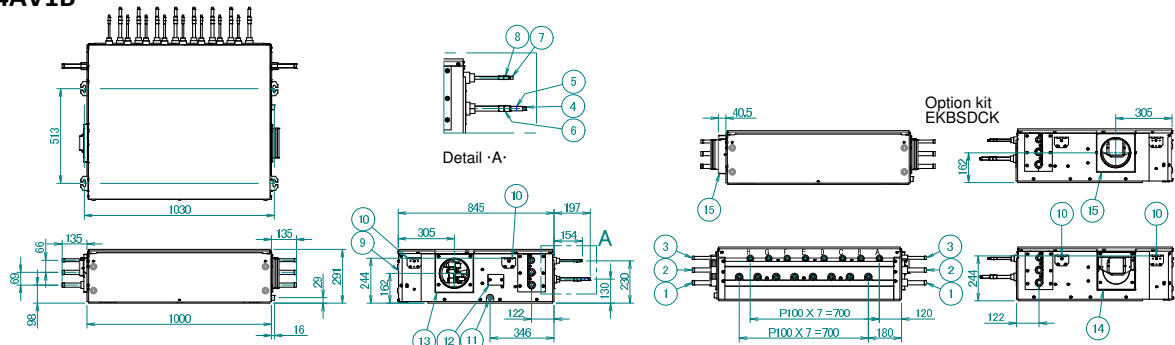
Item	Name	Description
1	Outdoor unit suction gas pipe connection port	Ø ·22.2· brazing connection
2	Outdoor unit HP/LP gas pipe connection port	Ø ·22.2· brazing connection
3	Outdoor unit liquid pipe connection port	Ø ·15.9· brazing connection
4	Indoor unit gas pipe connection port	Ø ·9.52· brazing connection
5	Indoor unit gas pipe connection port	Ø ·12.7· brazing connection
6	Indoor unit gas pipe connection port	Ø ·15.9· brazing connection
7	Indoor unit liquid pipe connection port	Ø ·6.35· brazing connection
8	Indoor unit liquid pipe connection port	Ø ·9.52· brazing connection
9	Control box	
10	Suspension bracket	M8~M10
11	Drain socket	VP20 (OD Ø26, ID Ø20)
12	Inspection hole	
13	Duct connection	Diameter ·Ø160·
14	Damper	
15	Duct connection kit	Diameter ·Ø160·

3D139836

5 Dimensional drawings

5 - 1 Dimensional Drawings

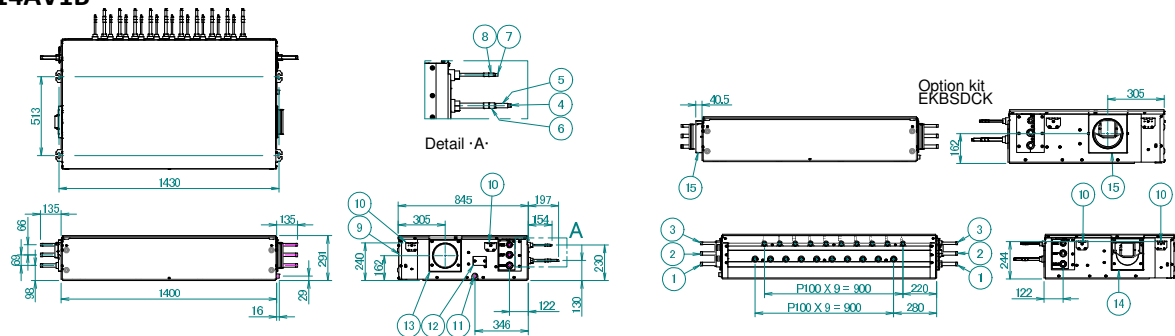
BS8A14AV1B



Item	Name	Description
1	Outdoor unit suction gas pipe connection port	Ø · 22.2 · brazing connection
2	Outdoor unit HP/LP gas pipe connection port	Ø · 22.2 · brazing connection
3	Outdoor unit liquid pipe connection port	Ø · 15.9 · brazing connection
4	Indoor unit gas pipe connection port	Ø · 9.52 · brazing connection
5	Indoor unit gas pipe connection port	Ø · 12.7 · brazing connection
6	Indoor unit gas pipe connection port	Ø · 15.9 · brazing connection
7	Indoor unit liquid pipe connection port	Ø · 6.35 · brazing connection
8	Indoor unit liquid pipe connection port	Ø · 9.52 · brazing connection
9	Control box	
10	Suspension bracket	M8~M10
11	Drain socket	VP20 (OD Ø26, ID Ø20)
12	Inspection hole	
13	Duct connection	Diameter · Ø160 ·
14	Damper	
15	Duct connection kit	Diameter · Ø160 ·

3D139837

BS10A14AV1B



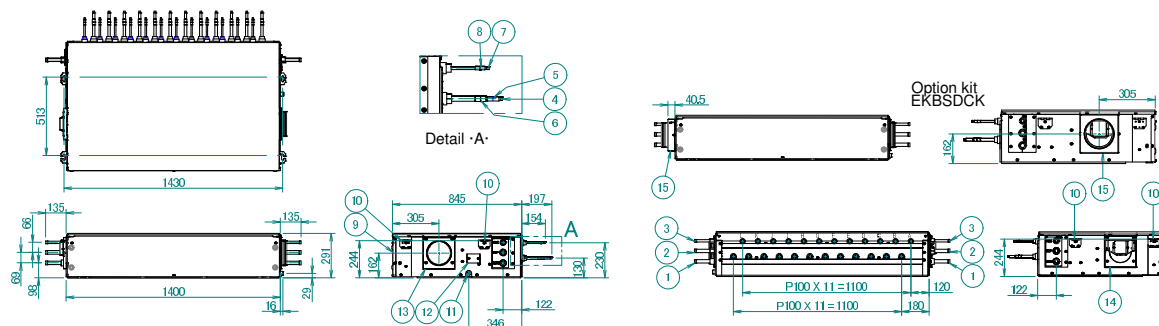
Item	Name	Description
1	Outdoor unit suction gas pipe connection port	Ø · 22.2 · brazing connection
2	Outdoor unit HP/LP gas pipe connection port	Ø · 22.2 · brazing connection
3	Outdoor unit liquid pipe connection port	Ø · 15.9 · brazing connection
4	Indoor unit gas pipe connection port	Ø · 9.52 · brazing connection
5	Indoor unit gas pipe connection port	Ø · 12.7 · brazing connection
6	Indoor unit gas pipe connection port	Ø · 15.9 · brazing connection
7	Indoor unit liquid pipe connection port	Ø · 6.35 · brazing connection
8	Indoor unit liquid pipe connection port	Ø · 9.52 · brazing connection
9	Control box	
10	Suspension bracket	M8~M10
11	Drain socket	VP20 (OD Ø26, ID Ø20)
12	Inspection hole	
13	Duct connection	Diameter · Ø160 ·
14	Damper	
15	Duct connection kit	Diameter · Ø160 ·

3D139838

5 Dimensional drawings

5 - 1 Dimensional Drawings

BS12A14AV1B



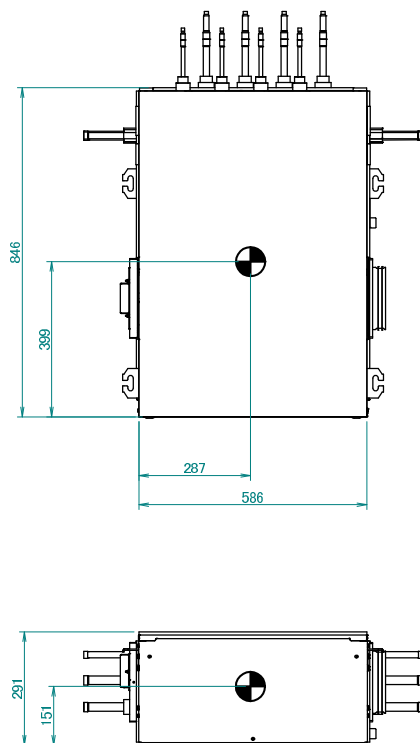
Item	Name	Description
1	Outdoor unit suction gas pipe connection port	Ø ·22.2· brazing connection
2	Outdoor unit HP/LP gas pipe connection port	Ø ·22.2· brazing connection
3	Outdoor unit liquid pipe connection port	Ø ·15.9· brazing connection
4	Indoor unit gas pipe connection port	Ø ·9.52· brazing connection
5	Indoor unit gas pipe connection port	Ø ·12.7· brazing connection
6	Indoor unit gas pipe connection port	Ø ·15.9· brazing connection
7	Indoor unit liquid pipe connection port	Ø ·6.35· brazing connection
8	Indoor unit liquid pipe connection port	Ø ·9.52· brazing connection
9	Control box	
10	Suspension bracket	M8~M10
11	Drain socket	VP20 (OD Ø26, ID Ø20)
12	Inspection hole	
13	Duct connection	Diameter ·Ø160·
14	Damper	
15	Duct connection kit	Diameter ·Ø160·

3D139839

6 Centre of gravity

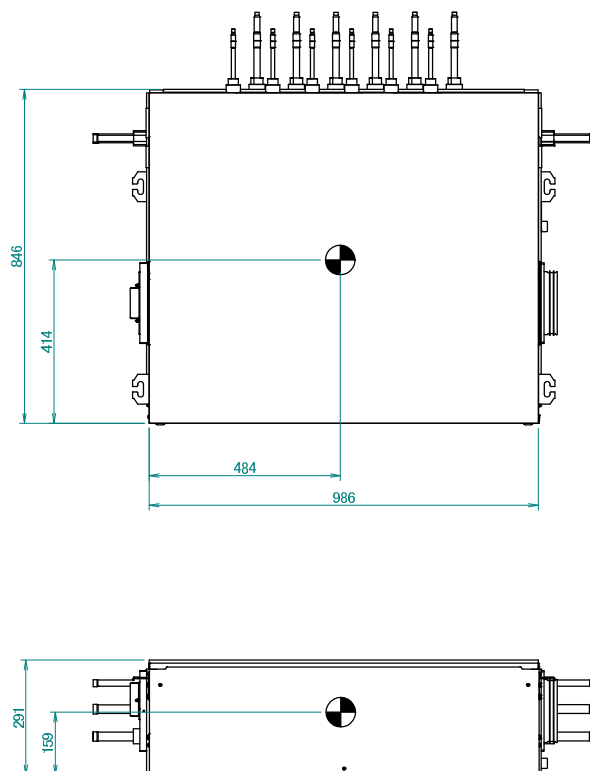
6 - 1 Centre of Gravity

BS4A14AV1B



3D140341A

BS6A14AV1B

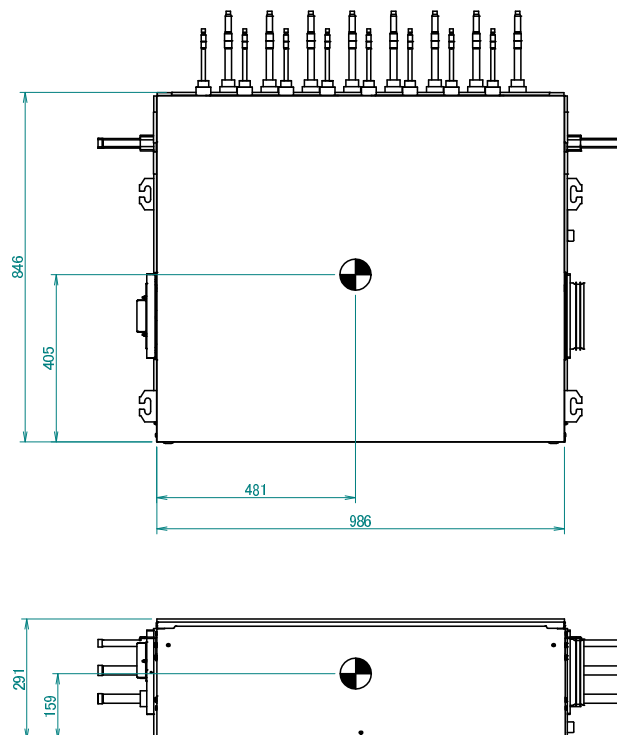


3D140342A

6 Centre of gravity

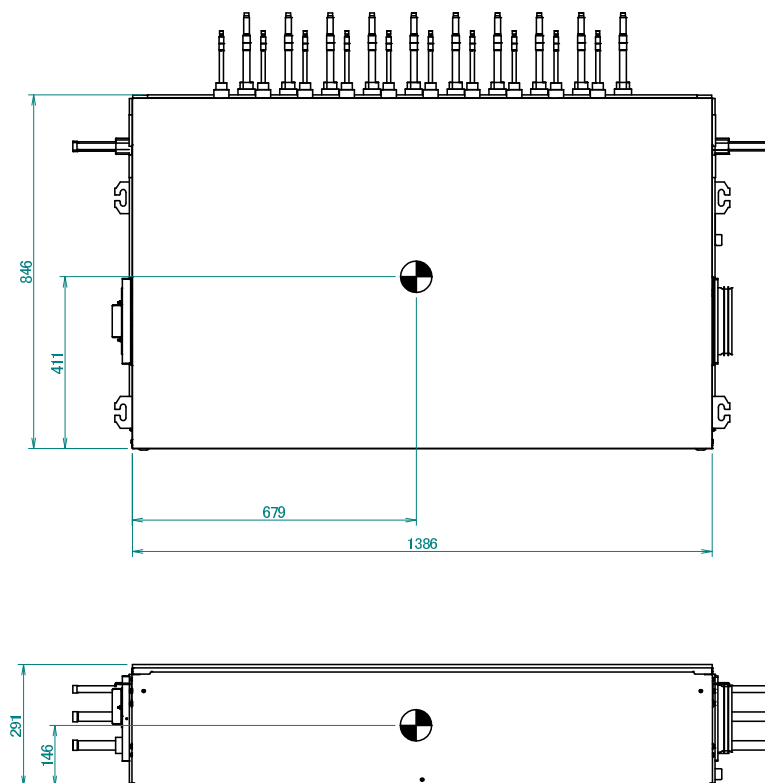
6 - 1 Centre of Gravity

BS8A14AV1B



3D140343A

BS10A14AV1B

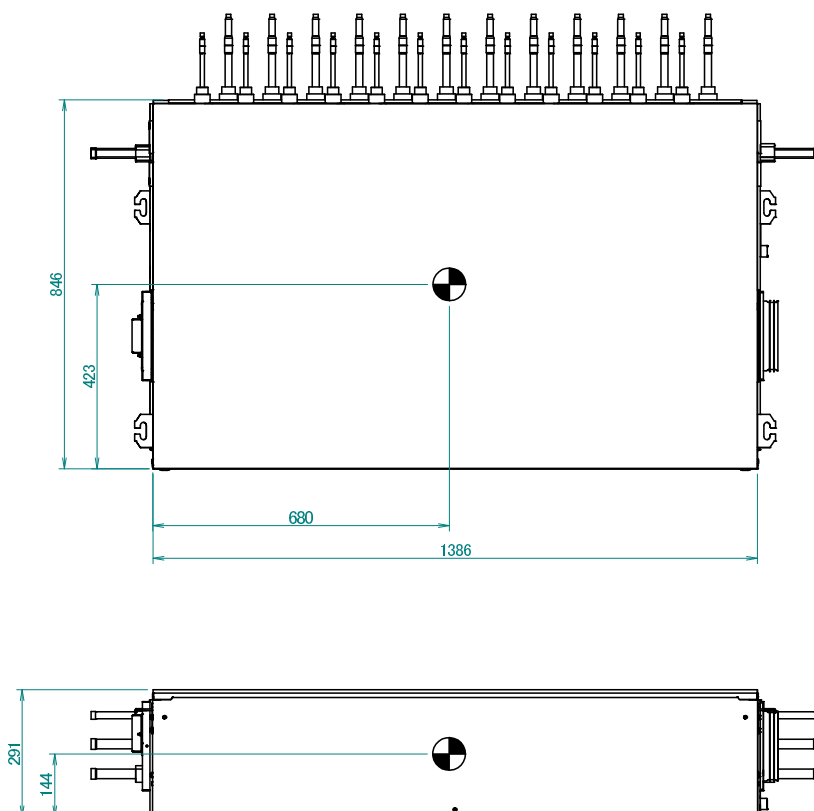


3D140344

6 Centre of gravity

6 - 1 Centre of Gravity

BS12A14AV1B

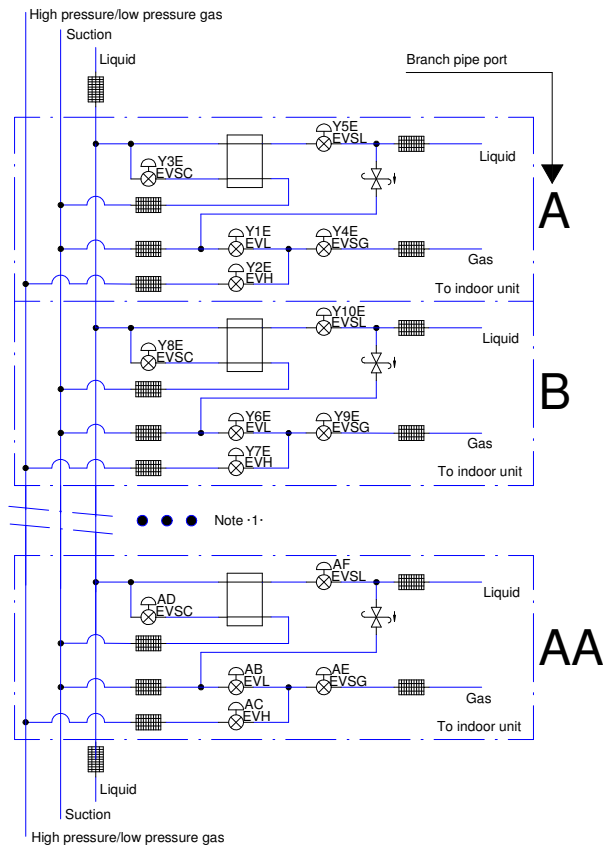


3D140345

7 Piping diagrams

7 - 1 Piping Diagrams

BS-A14AV1B



Note -1-

This pattern is repeated $\cdot AG \cdot$ times in total.

	BS4	BS6	BS8	BS10	BS12
AA	D	F	H	J	L
AB	Y16E	Y26E	Y36E	Y46E	Y56E
AC	Y17E	Y27E	Y37E	Y47E	Y57E
AD	Y18E	Y28E	Y38E	Y48E	Y58E
AE	Y19E	Y29E	Y39E	Y49E	Y59E
AF	Y20E	Y30E	Y40E	Y50E	Y60E
AG	4	6	8	10	12

 Electronic expansion valve

 Filter

Pressure relief valve

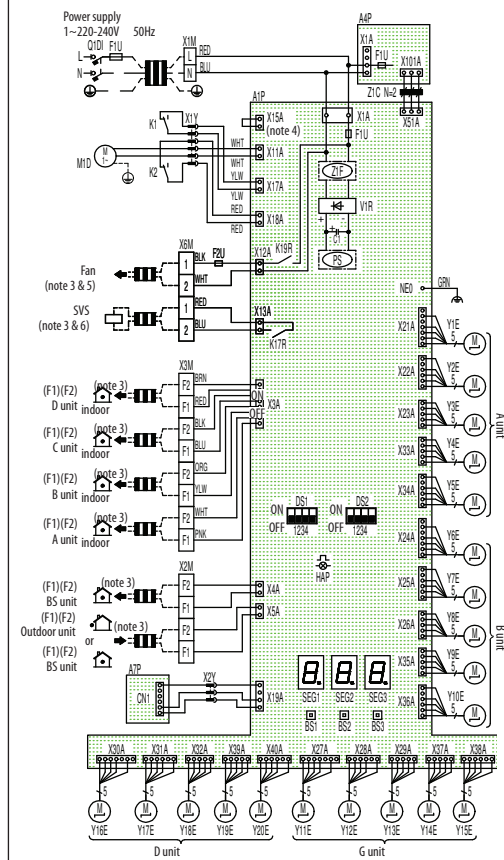
 Double tube heat exchanger

3D136282

8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

BS4A14AV1B Wiring diagram



A1P	Printed circuit board (control)	Y1E	Electronic expansion valve coil (EVL-1)
A4P	Printed circuit board (back up)	Y2E	Electronic expansion valve coil (EVH-1)
A7P	Printed circuit board (gas sensor)	Y3E	Electronic expansion valve coil (EVSC-1)
BS1~3 (A*P)	Push button switch (mode, set, return)	Y4E	Electronic expansion valve coil (EVSG-1)
C1	Capacitor	Y5E	Electronic expansion valve coil (EVL-1)
DS*	Dip switch	Y6E	Electronic expansion valve coil (EVL-2)
F1U	Field fuse (field supply)	Y7E	Electronic expansion valve coil (EVH-2)
F1U (A*P)	Fuse (T, 3.15A, 250V)	Y8E	Electronic expansion valve coil (EVSC-2)
F2U	Fuse (1A, 250V)	Y9E	Electronic expansion valve coil (EVSG-2)
HAP	Flashing lamp (service monitor-green)	Y10E	Electronic expansion valve coil (EVL-2)
K*	Contact	Y11E	Electronic expansion valve coil (EVL-3)
M1D	Motor (damper)	Y12E	Electronic expansion valve coil (EVH-3)
PS	Switching power supply	Y13E	Electronic expansion valve coil (EVSC-3)
Q1DI	Earth leakage circuit breaker (30mA) (field supply)	Y14E	Electronic expansion valve coil (EVSG-3)
SEG1~3 (A*P)	7-Segment display	Y15E	Electronic expansion valve coil (EVL-3)
V1R	Diode bridge	Y16E	Electronic expansion valve coil (EVL-4)
X1M	Terminal strip (power)	Y17E	Electronic expansion valve coil (EVH-4)
X2M, X3M	Terminal strip (transmission)	Y18E	Electronic expansion valve coil (EVSC-4)
X6M	Terminal strip (external output)	Y19E	Electronic expansion valve coil (EVSG-4)
X*Y	Connector	Y20E	Electronic expansion valve coil (EVL-4)
Z1C	Noise filter (ferrite core)	Optional accessories	
Z1F	Noise filter	X15A	Connector (drain-up kit abnormal signal)

NOTES

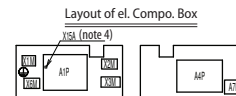
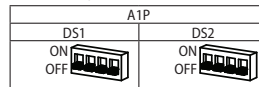
1. This wiring diagram is for BS unit only.
2. The marks in this diagram indicate:

terminal block,

C

 connector, field wiring, earth terminal
3. For wiring for the terminal block X2M~X6M, refer to the installation manual attached to the product.
4. As for X15A (A1P), remove the short circuit connector and connect the air conditioner stop signal (optional product) when using the drain-up kit (optional product).
For details, please refer to the operation manual attached to the kit.
5. The capacity of the contact is 220~240V AC - 0.5A.
6. Digital output: Max 220~240V AC - 0.5A. Refer to installation manual for how to use this output.
7. The factory setting of dip switches (DS1, DS2) are as follows.

For the setting method of dip switches (DS1~2) and push buttons (BS1~3), refer to "the installation manual".



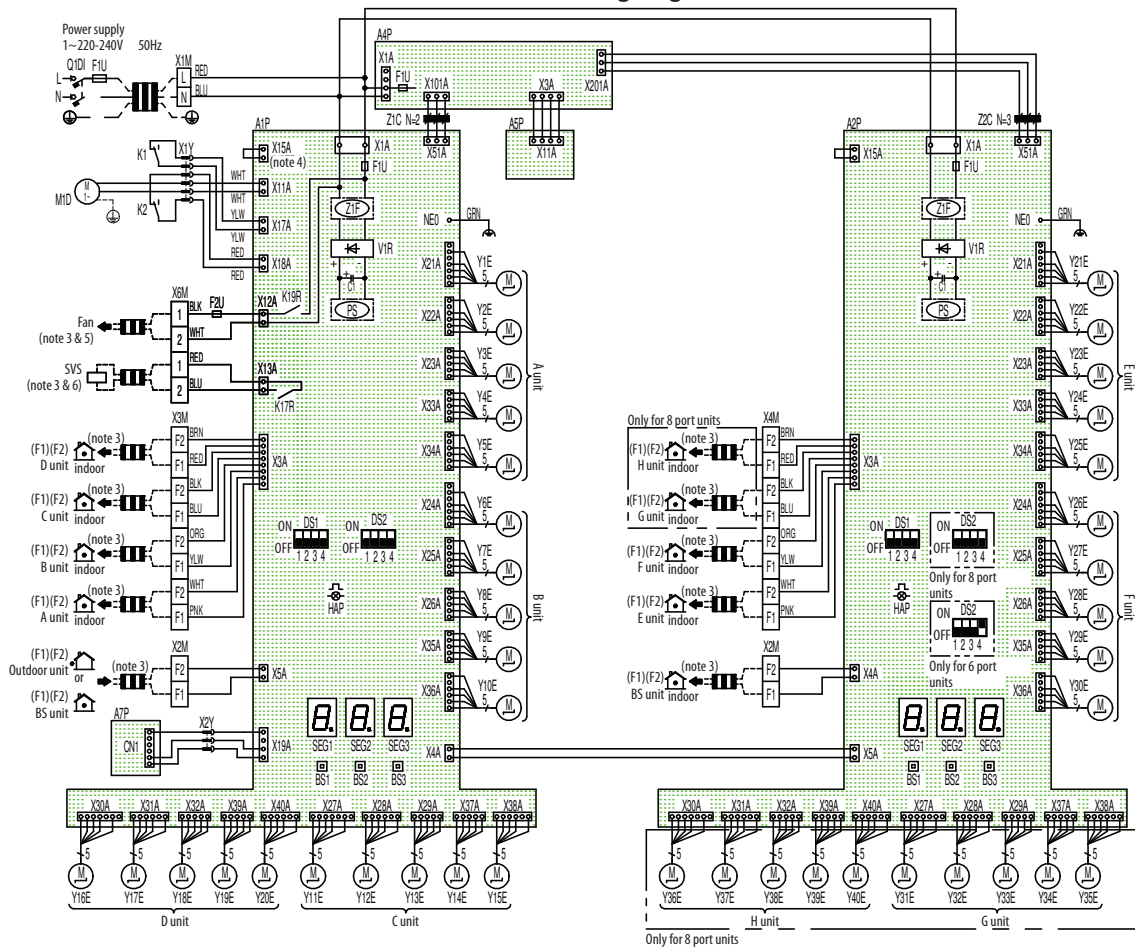
2D139831

8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

BS6-8A14AV1B

Wiring diagram



A1P, A2P	Printed circuit board (control)	A unit
A4P	Printed circuit board (back up)	
A5P	Printed circuit board (capacitor)	
A7P	Printed circuit board (gas sensor)	
BS1~3 (A*P)	Push button switch (mode, set, return)	
C1	Capacitor	
DS*	Dip switch	
F1U	Field fuse (field supply)	
F1U (A*P)	Fuse (T, 3.15A, 250V)	
F2U	Fuse (1A, 250V)	
HAP	Flashing lamp (service monitor-green)	
K*	Contact	
M1D	Motor (damper)	
PS	Switching power supply	
Q1DI	Earth leakage circuit breaker (30mA) (field supply)	
SEG1~3 (A*P)	7-Segment display	B unit
V1R	Diode bridge	
X1M	Terminal strip (power)	
X2M~X4M	Terminal strip (transmission)	
X6M	Terminal strip (external output)	
X*Y	Connector	
Z*C	Noise filter (ferrite core)	
Z1F	Noise filter	
Y1E	Electronic expansion valve coil (EVL-1)	
Y2E	Electronic expansion valve coil (EVH-1)	
Y3E	Electronic expansion valve coil (EVSC-1)	
Y4E	Electronic expansion valve coil (EVSG-1)	
Y5E	Electronic expansion valve coil (EVL-1)	
Y6E	Electronic expansion valve coil (EVL-2)	
Y7E	Electronic expansion valve coil (EVH-2)	
Y8E	Electronic expansion valve coil (EVSC-2)	
Y9E	Electronic expansion valve coil (EVSG-2)	
Y10E	Electronic expansion valve coil (EVL-2)	C unit
Y11E	Electronic expansion valve coil (EVL-3)	
Y12E	Electronic expansion valve coil (EVH-3)	
Y13E	Electronic expansion valve coil (EVSC-3)	
Y14E	Electronic expansion valve coil (EVSG-3)	
Y15E	Electronic expansion valve coil (EVL-3)	

Y16E	Electronic expansion valve coil (EVL-4)	D unit
Y17E	Electronic expansion valve coil (EVH-4)	
Y18E	Electronic expansion valve coil (EVS-4)	
Y19E	Electronic expansion valve coil (EVS-4)	
Y20E	Electronic expansion valve coil (EVL-4)	
Y21E	Electronic expansion valve coil (EVL-1)	E unit
Y22E	Electronic expansion valve coil (EVH-1)	
Y23E	Electronic expansion valve coil (EVS-1)	
Y24E	Electronic expansion valve coil (EVS-1)	
Y25E	Electronic expansion valve coil (EVS-1)	
Y26E	Electronic expansion valve coil (EVL-2)	F unit
Y27E	Electronic expansion valve coil (EVH-2)	
Y28E	Electronic expansion valve coil (EVS-2)	
Y29E	Electronic expansion valve coil (EVS-2)	
Y30E	Electronic expansion valve coil (EVS-2)	

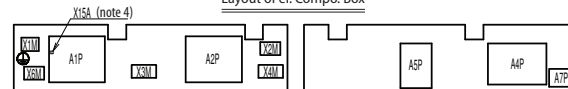
Y31E	Electronic expansion valve coil (EVL-3)	G unit
Y32E	Electronic expansion valve coil (EVH-3)	
Y33E	Electronic expansion valve coil (EVS-3)	
Y34E	Electronic expansion valve coil (EVS-3)	
Y35E	Electronic expansion valve coil (EVS-3)	
Y36E	Electronic expansion valve coil (EVL-4)	H unit
Y37E	Electronic expansion valve coil (EVH-4)	
Y38E	Electronic expansion valve coil (EVS-4)	
Y39E	Electronic expansion valve coil (EVS-4)	
Y40E	Electronic expansion valve coil (EVS-4)	
Optional accessories		
X15A	Connector (drain-up kit abnormal signal)	

NOTES

1. This wiring diagram is for B5 unit only.
2. The marks in this diagram indicate:
 terminal block,  connector,  field wiring,  earth terminal
3. For wiring for the terminal block X2M~X6M, refer to the installation manual attached to the product.
4. As for X15A (A1P), remove the short circuit connector and connect the air conditioner stop signal (optional product) when using the drain-up kit (optional product).
 For details, please refer to the operation manual attached to the kit.
5. The capacity of the contact is 220~240V AC - 0.5A.
6. Digital output: Max 220~240V AC - 0.5A. Refer to installation manual for how to use this output.
7. The factory setting of dip switches (DS1,DS2) are as follows.
 For the setting method of dip switches (DS1~2) and push buttons (BS1~3), refer to "the installation manual".

	A1P		A2P	
	DS1	DS2	DS1	DS2
B58A14AJV1B	ON OFF 	ON OFF 	ON OFF 	ON OFF 
B56A14AJV1B	ON OFF 	ON OFF 	ON OFF 	ON OFF 

Layout of el. Compo. Box



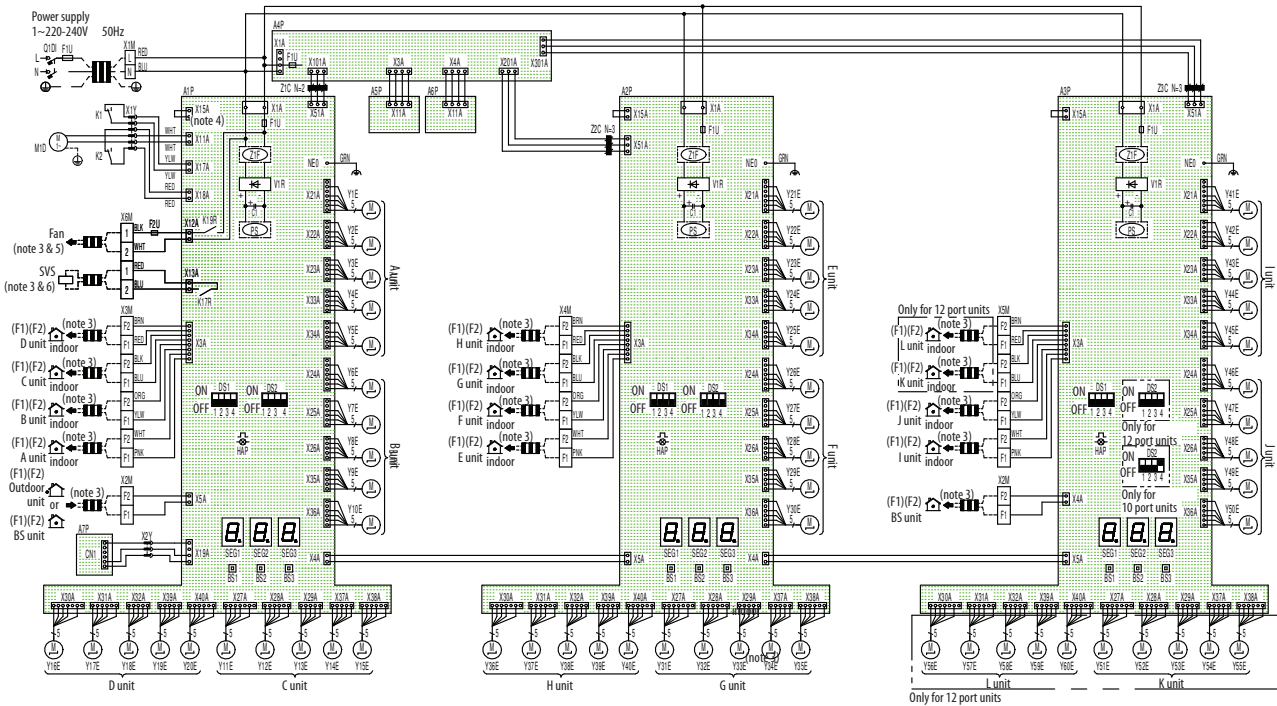
2D139832

8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

BS10-12A14AV1B

Wiring diagram



A1P, A2P, A3P	Printed circuit board (control)
A4P	Printed circuit board (back up)
A5P, A6P	Printed circuit board (capacitor)
A7P	Printed circuit board (gas sensor)
BS1~3 (A*P)	Push button switch (mode, set, return)
C1	Capacitor
DS*	Dip switch
F1U	Field fuse (field supply)
F1U (A*P)	Fuse (T, 3.15A, 250V)
F2U	Fuse (1A, 250V)
HAP	Flashing lamp (service monitor-green)
K*	Contact
M1D	Motor (damper)
PS	Switching power supply
Q1D1	Earth leakage circuit breaker (30mA) (field supply)
SEG1~3 (A*P)	7-Segment display
V1R	Diode bridge
X1M	Terminal strip (power)
X2M~X5M	Terminal strip (transmission)
X6M	Terminal strip (external output)
X*Y	Connector
Z*F	Noise filter (ferrite core)
Z1F	Noise filter
Y1E	Electronic expansion valve coil (EVL-1)
Y2E	Electronic expansion valve coil (EVH-1)
Y3E	Electronic expansion valve coil (EVSC-1)
Y4E	Electronic expansion valve coil (EVSG-1)
Y5E	Electronic expansion valve coil (EVL-1)
Y6E	Electronic expansion valve coil (EVL-2)
Y7E	Electronic expansion valve coil (EVH-2)
Y8E	Electronic expansion valve coil (EVSC-2)
Y9E	Electronic expansion valve coil (EVSG-2)
Y10E	Electronic expansion valve coil (EVL-2)
Y11E	Electronic expansion valve coil (EVL-3)
Y12E	Electronic expansion valve coil (EVH-3)
Y13E	Electronic expansion valve coil (EVSC-3)
Y14E	Electronic expansion valve coil (EVSG-3)
Y15E	Electronic expansion valve coil (EVL-3)
Y16E	Electronic expansion valve coil (EVL-4)
Y17E	Electronic expansion valve coil (EVH-4)
Y18E	Electronic expansion valve coil (EVSC-4)
Y19E	Electronic expansion valve coil (EVSG-4)
Y20E	Electronic expansion valve coil (EVL-4)

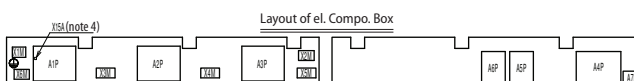
Y21E	Electronic expansion valve coil (EVL-1)
Y22E	Electronic expansion valve coil (EVH-1)
Y23E	Electronic expansion valve coil (EVSC-1)
Y24E	Electronic expansion valve coil (EVSG-1)
Y25E	Electronic expansion valve coil (EVL-1)
Y26E	Electronic expansion valve coil (EVL-2)
Y27E	Electronic expansion valve coil (EVH-2)
Y28E	Electronic expansion valve coil (EVSC-2)
Y29E	Electronic expansion valve coil (EVSG-2)
Y30E	Electronic expansion valve coil (EVL-2)
Y31E	Electronic expansion valve coil (EVL-3)
Y32E	Electronic expansion valve coil (EVH-3)
Y33E	Electronic expansion valve coil (EVSC-3)
Y34E	Electronic expansion valve coil (EVSG-3)
Y35E	Electronic expansion valve coil (EVL-3)
Y36E	Electronic expansion valve coil (EVL-4)
Y37E	Electronic expansion valve coil (EVH-4)
Y38E	Electronic expansion valve coil (EVSC-4)
Y39E	Electronic expansion valve coil (EVSG-4)
Y40E	Electronic expansion valve coil (EVL-4)

Y41E	Electronic expansion valve coil (EVL-1)
Y42E	Electronic expansion valve coil (EVH-1)
Y43E	Electronic expansion valve coil (EVSC-1)
Y44E	Electronic expansion valve coil (EVSG-1)
Y45E	Electronic expansion valve coil (EVL-1)
Y46E	Electronic expansion valve coil (EVL-2)
Y47E	Electronic expansion valve coil (EVH-2)
Y48E	Electronic expansion valve coil (EVSC-2)
Y49E	Electronic expansion valve coil (EVSG-2)
Y50E	Electronic expansion valve coil (EVL-2)
Y51E	Electronic expansion valve coil (EVL-3)
Y52E	Electronic expansion valve coil (EVH-3)
Y53E	Electronic expansion valve coil (EVSC-3)
Y54E	Electronic expansion valve coil (EVSG-3)
Y55E	Electronic expansion valve coil (EVL-3)
Y56E	Electronic expansion valve coil (EVL-4)
Y57E	Electronic expansion valve coil (EVH-4)
Y58E	Electronic expansion valve coil (EVSC-4)
Y59E	Electronic expansion valve coil (EVSG-4)
Y60E	Electronic expansion valve coil (EVL-4)
Optional accessories	
X15A	Connector (drain-up kit abnormal signal)

NOTES

- This wiring diagram is for BS unit only.
- The marks in this diagram indicate:
 □ □ □ □ terminal block, □ □ □ □ connector, - - - - - field wiring, ⊕ earth terminal
- For wiring for the terminal block X2M~X6M, refer to the installation manual attached to the product.
- As for X15A (A1P), remove the short circuit connector and connect the air conditioner stop signal (optional product) when using the drain-up kit (optional product).
 For details, please refer to the operation manual attached to the kit.
- The capacity of the contact is 220~240V AC - 0.5A.
- Digital output: Max 220~240V AC - 0.5A. Refer to installation manual for how to use this output.
- The factory setting of dip switches (DS1, DS2) are as follows.
 For the setting method of dip switches (DS1~2) and push buttons (BS1~3), refer to "the installation manual".

	A1P, A2P		A3P	
	DS1	DS2	DS1	DS2
BS12A14AV1B	ON OFF	ON OFF	ON OFF	ON OFF
BS10A14AV1B	ON OFF	ON OFF	ON OFF	ON OFF

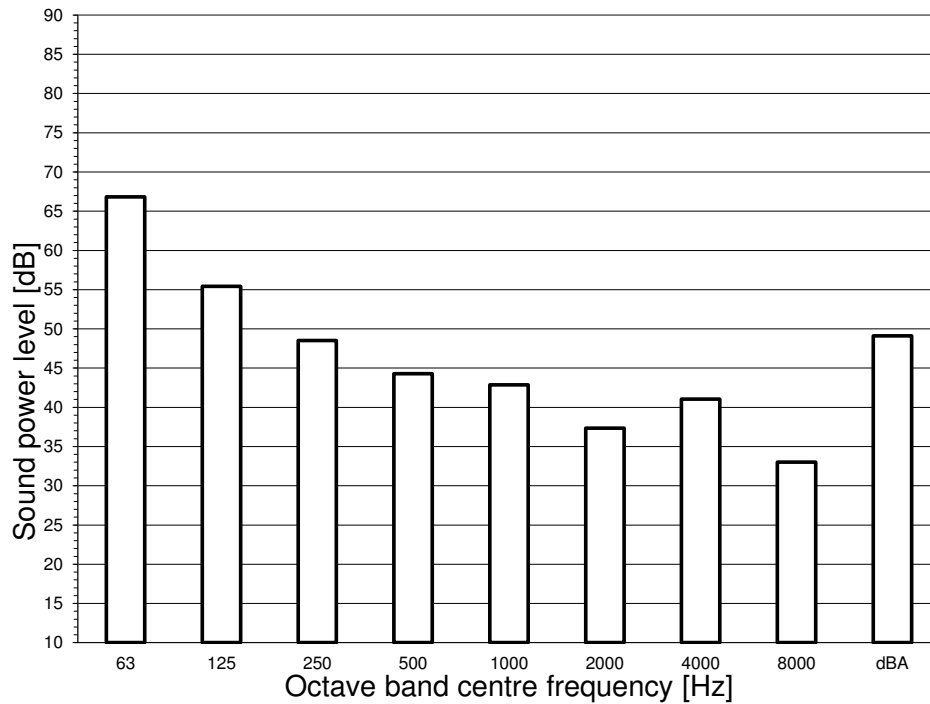


1D139833

9 Sound data

9 - 1 Sound Power Spectrum

BS4A14AV1B

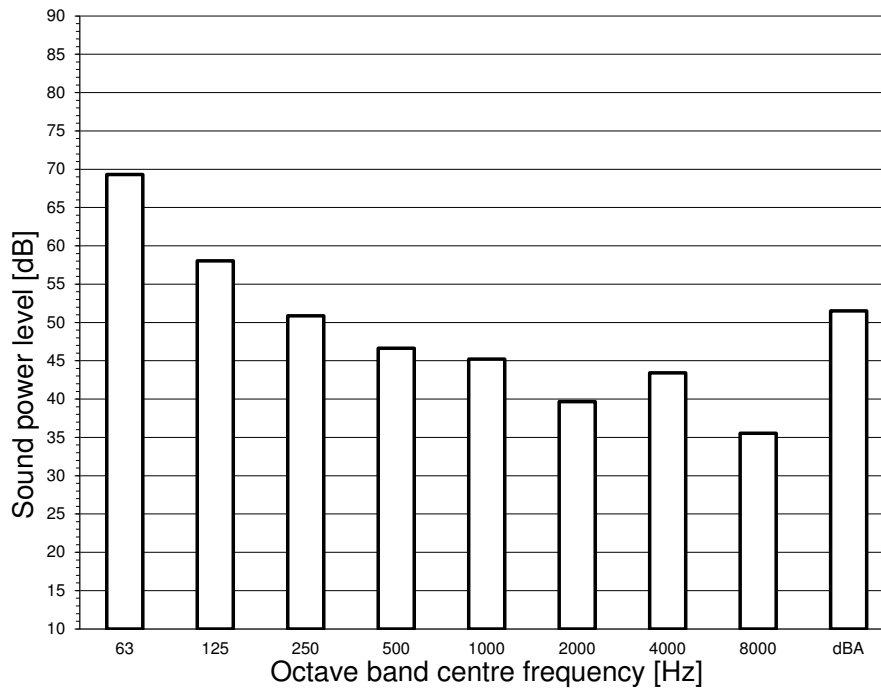


Notes

- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = 10^{-12} W/m².
- Measured according to ISO 3744

4D694499

BS6-8A14AV1B



Notes

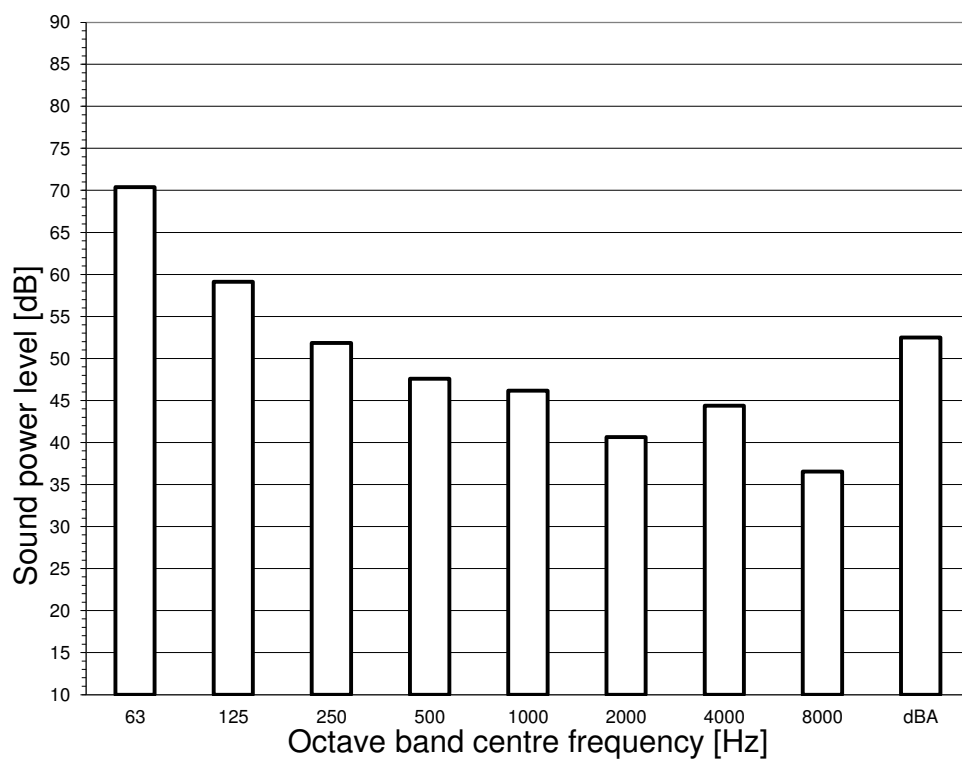
- dBA = A-weighted sound power level (A scale according to IE)
- Reference acoustic intensity 0dB = 10^{-12} W/m².
- Measured according to ISO 3744

4D694500

9 Sound data

9 - 1 Sound Power Spectrum

BS10-12A14AV1B



Notes

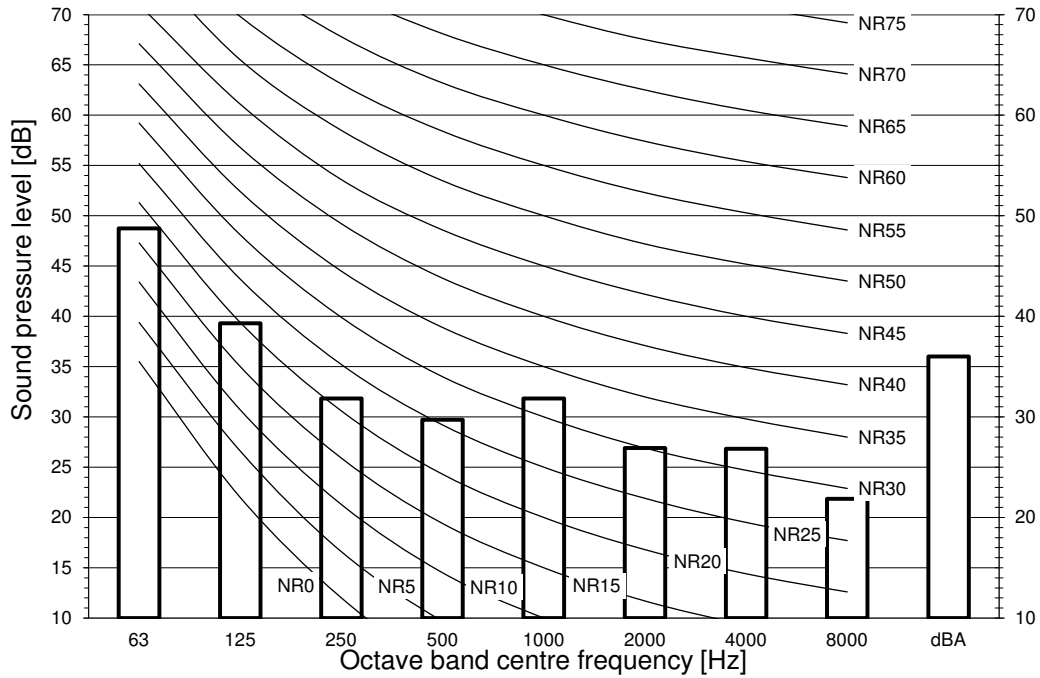
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity $0\text{dB} = 10^{-12} \text{ W/m}^2$.
- Measured according to ISO 3744

4D694501

9 Sound data

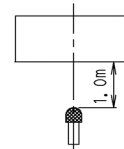
9 - 2 Sound Pressure Spectrum

BS4A14AV1B



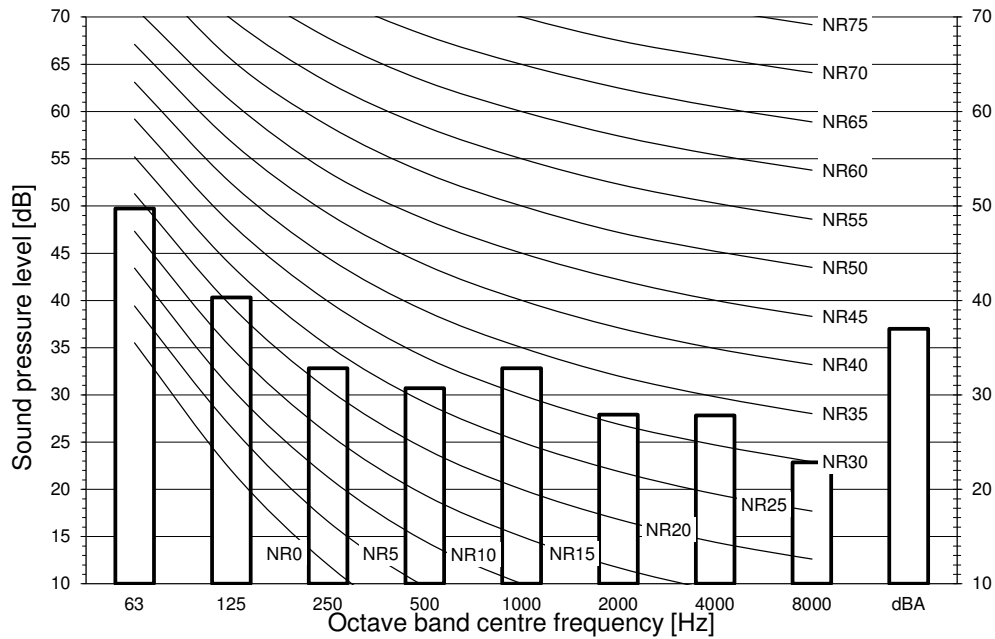
Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



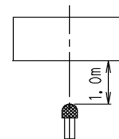
4D694508

BS6-8A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

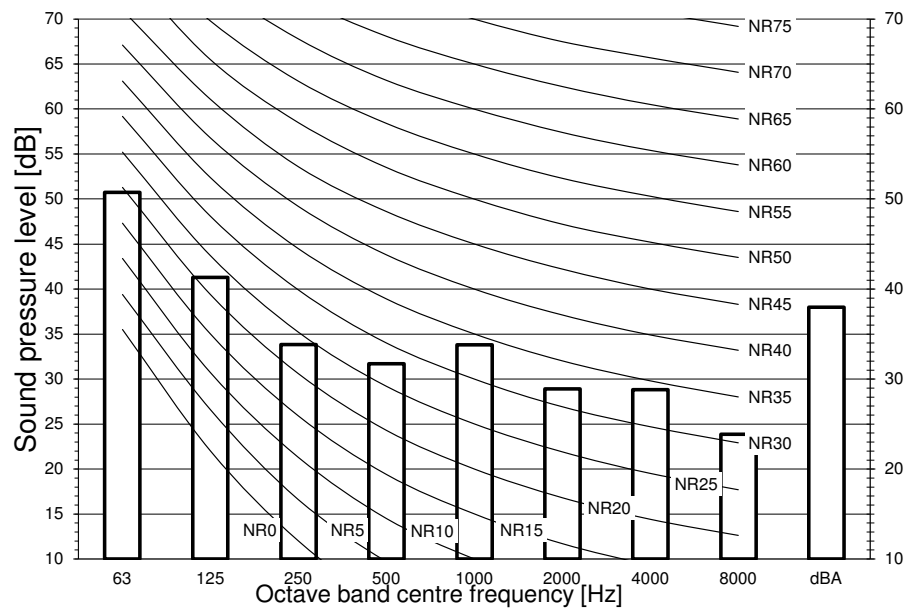


4D694509

9 Sound data

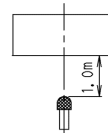
9 - 2 Sound Pressure Spectrum

BS10-12A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

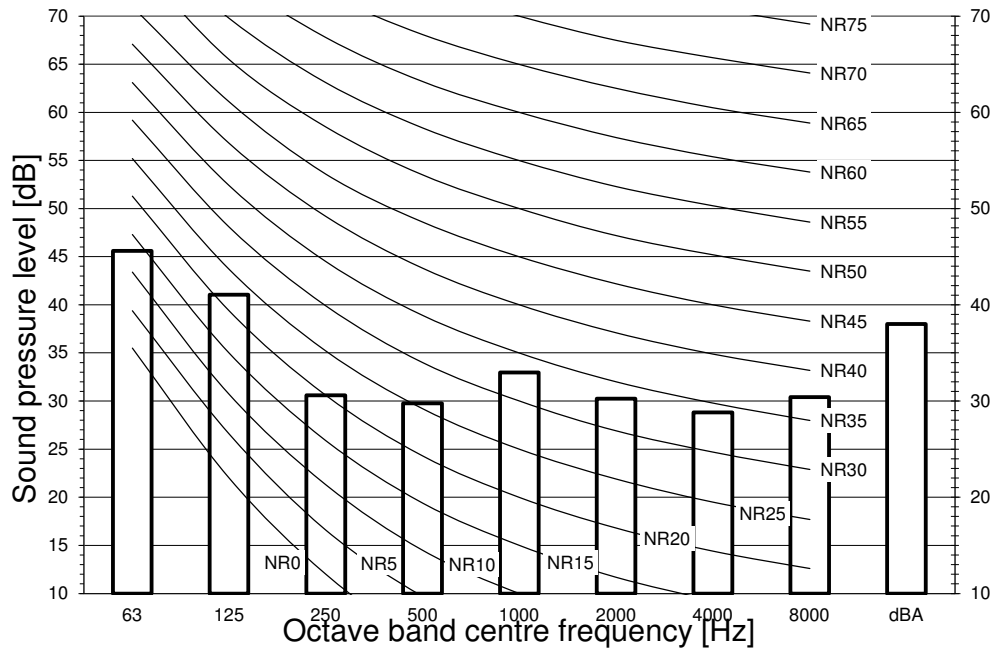


4D694510

9 Sound data

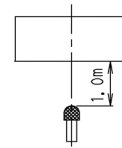
9 - 3 Sound Pressure Spectrum – Maximum

BS4A14AV1B



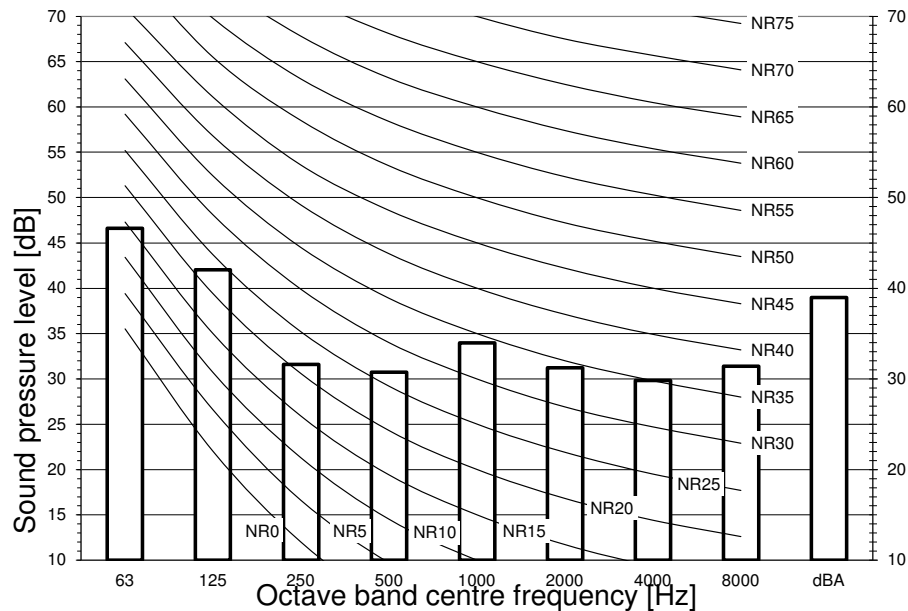
Notes

- Data is valid at free field condition.
- Data is valid at steady operation conditions resulting in maximum sound.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



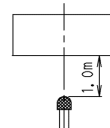
4D694502

BS6-8A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at steady operation conditions resulting in maximum sound.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

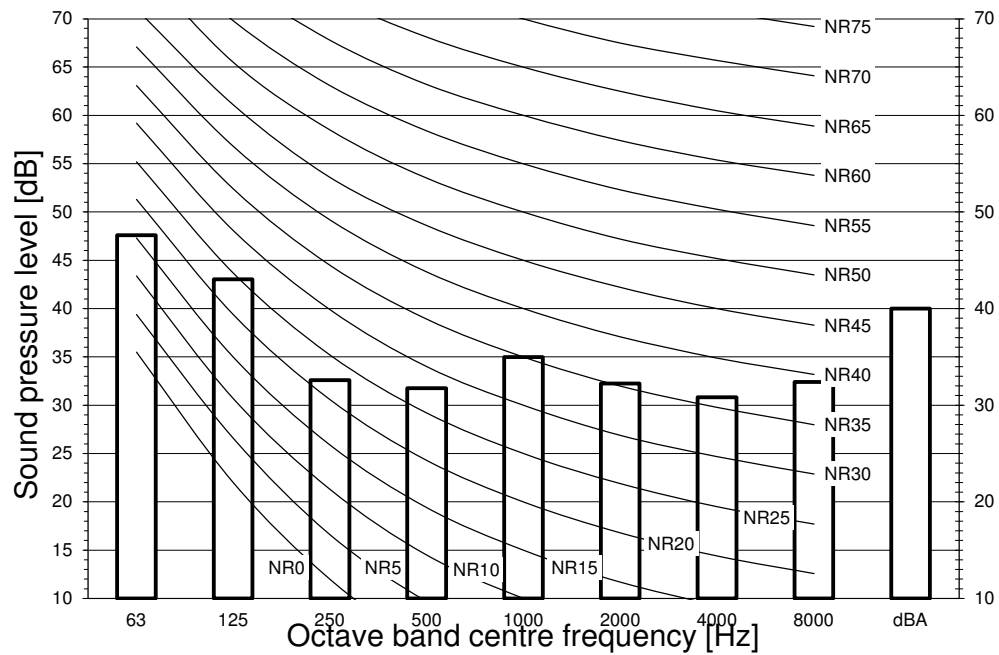


4D694503

9 Sound data

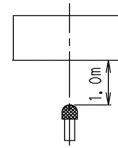
9 - 3 Sound Pressure Spectrum – Maximum

BS10-12A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at steady operation conditions resulting in maximum sound.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

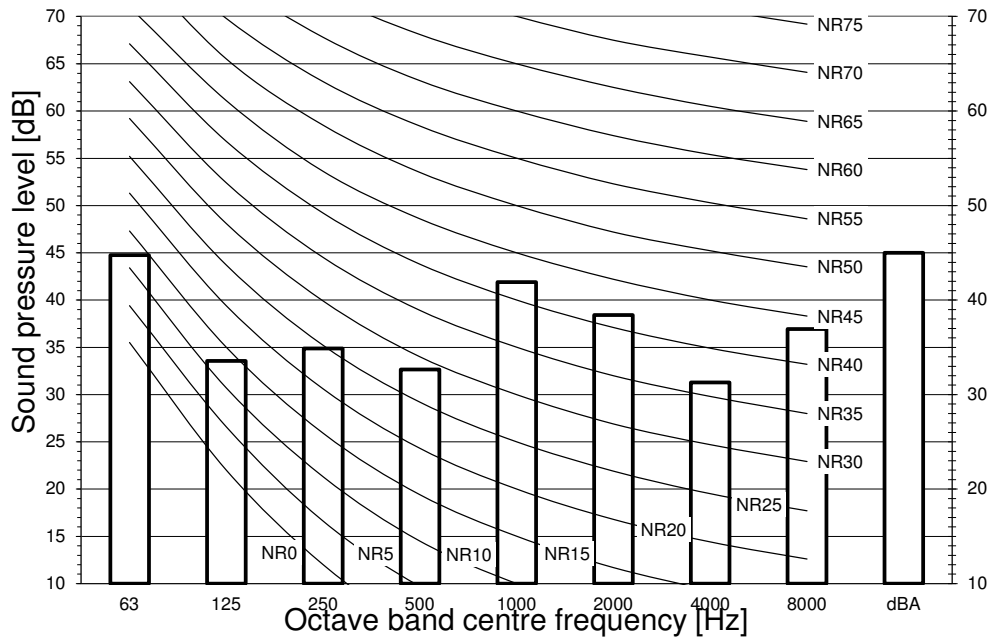


4D694504

9 Sound data

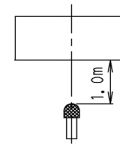
9 - 4 Sound Pressure Spectrum – Transient

BS4A14AV1B



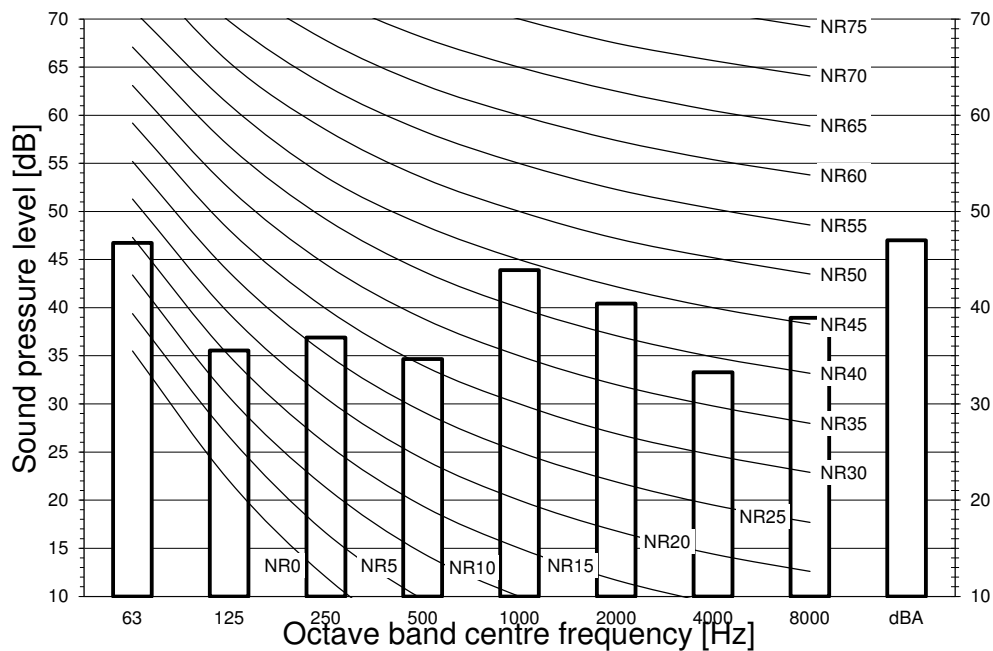
Notes

- Data is valid at free field condition.
- Data is valid at transient operation conditions resulting in maximum sound.
E.g. defrost or oil return operation, switching heating to cooling,....
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa



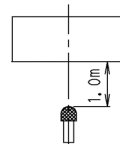
4D694505

BS6-8A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at transient operation conditions resulting in maximum sound.
E.g. defrost or oil return operation, switching heating to cooling,....
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

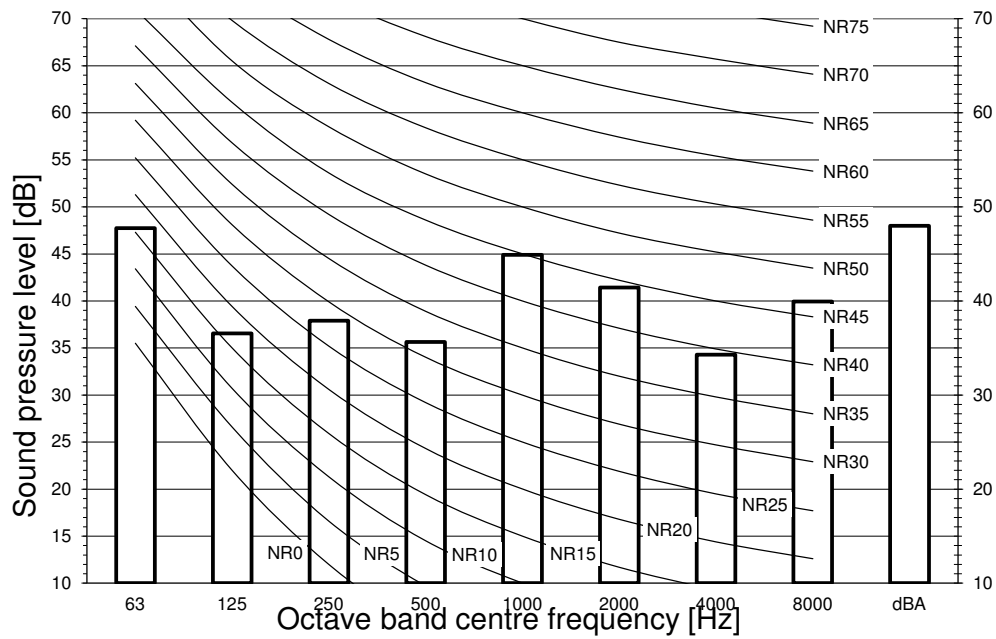


4D694506

9 Sound data

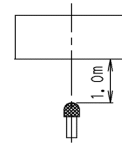
9 - 4 Sound Pressure Spectrum – Transient

BS10-12A14AV1B



Notes

- Data is valid at free field condition.
- Data is valid at transient operation conditions resulting in maximum sound.
E.g. defrost or oil return operation, switching heating to cooling,...
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 μ Pa

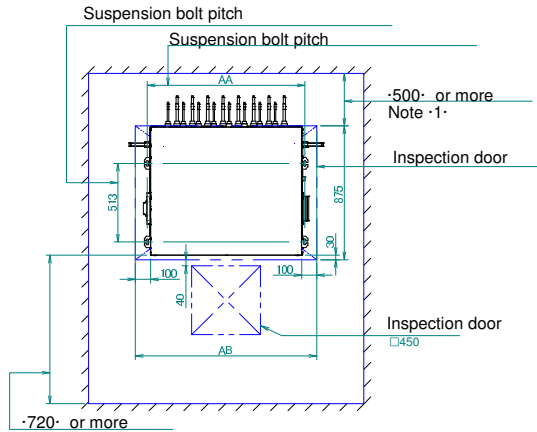


4D694507

10 Installation

10 - 1 Installation Method

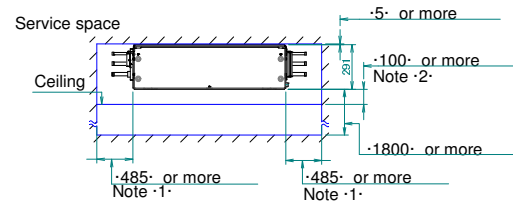
BS-A14AV1B



Model
BS4A14AJV1B
BS6-8A14AJV1B
BS10-12A14AJV1B

Notes

1. Leave sufficient space to connect the refrigerant piping.
2. Install in an area where a downward slope of $\cdot 1/100 \cdot$ or more is possible.



3D140293

10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

Requirements for R32 units

To comply with the requirements of enhanced tightness refrigerating systems of the IEC 60335-2-40:2018, this system is equipped with shut-off valves in the ·BS· unit and an alarm in the remote controller.

The ·BS· unit is prearranged for a ventilated enclosure as countermeasure.

Outdoor unit installation

The outdoor unit has to be installed outside. For indoor installation of the outdoor unit, additional measures can be necessary to comply with the applicable legislation.

Indoor unit installation

The total amount of refrigerant in the system shall be less than or equal to the maximum allowed total refrigerant amount.

The maximum allowed total refrigerant amount depends on the area of the rooms being served by the system and the rooms in the lowest underground floor.

Note: The total refrigerant charge amount in the system MUST always be lower than $15.96 \text{ [kg]} \times$ the number of indoor units connected downstream of ·BS· units, with a maximum of 63.8 kg.

When the R32 sensor in the indoor unit detects a refrigerant leak, the corresponding shut-off valves in the ·BS· unit close and the alarm in the remote controller connected to the indoor unit is triggered.

Follow the flowchart. Details are described in the manual of the outdoor unit.

4D141154

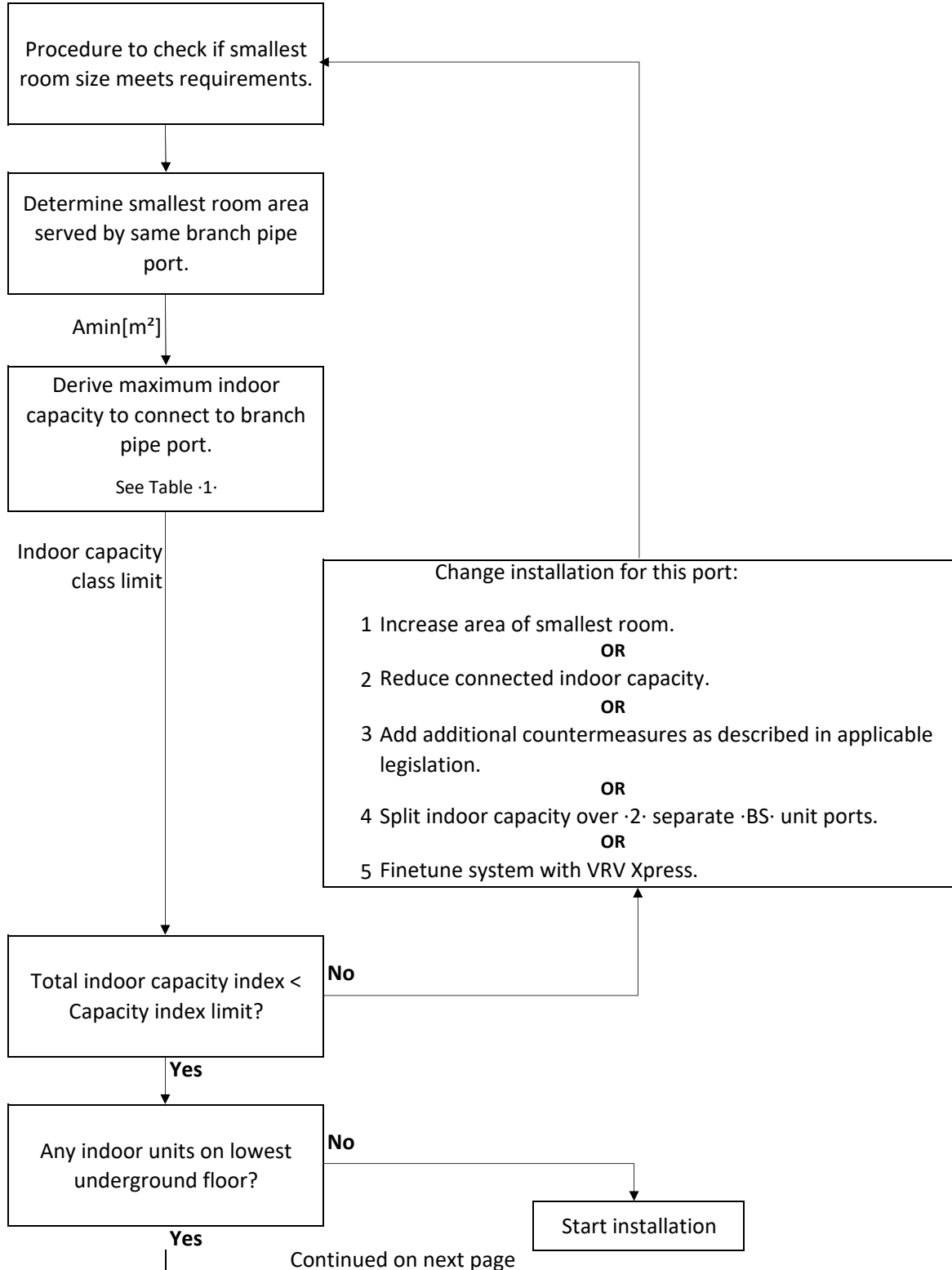
10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

Indoor unit installation

Flowchart (for EACH ·BS· unit branch pipe port)



4D141154

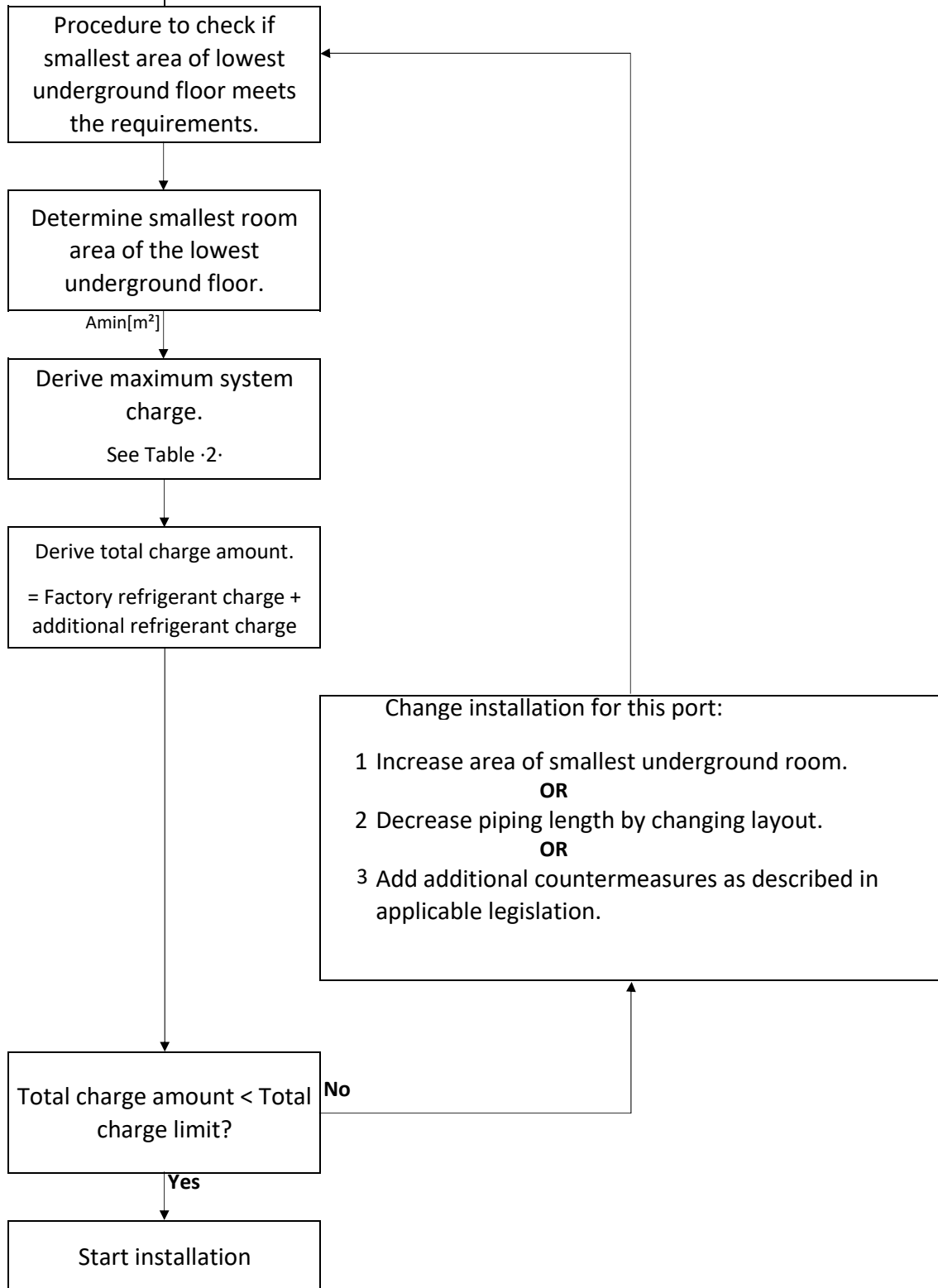
10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

Indoor unit installation

Continued from previous page



4D141154

10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

Indoor unit installation

Table ·1·

Room area [m ²]	Maximum total indoor unit capacity class		
	1 indoor unit per branch pipe port (·a·)	·2-5· units per branch pipe port	
		·40· m after first branch (·b·)	·90· m after first branch (·c·)
≤6	-	-	-
7	10	-	-
8	15	-	-
9	32	-	-
10	32	-	-
11	40	-	-
12	40	-	-
13	71	-	-
14	80	-	-
15	80	-	-
20	80	32	-
25	140	40	25
30	200	63	50
35	200	71	71
40	250	100	100
≥45	250	140	140

- (a) 1 indoor unit connected to a single branch pipe port.
(b) ·2· to ·5· indoor units connected to a single branch pipe port, ·40· m after first refrigerant branch.
(c) ·2· to ·5· indoor units connected to a single branch pipe port, ·90· m after first refrigerant branch.

Note: The values in Table ·1· are under the assumption of worst case indoor unit volume and ·40· m piping between indoor and ·BS· unit.

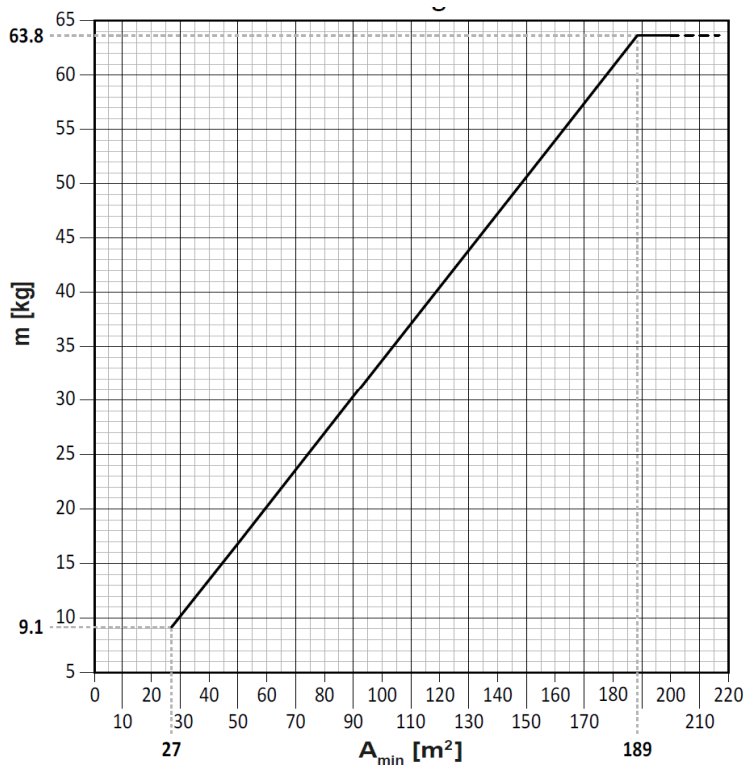
In VRV Xpress (<https://vrvxpress.daikin.eu/>) it is possible to add custom piping lengths and indoor units, which can lead to lower minimum room area requirements.

4D141154

BS-A14AV1B

Table ·2·

Lowest underground floor (·a·)



A _{min} (m ²)	m (kg)
27	9.1
30	10.1
40	13.5
50	16.8
60	20.2
70	23.6
80	27.0
90	30.3
100	33.7
110	37.1
120	40.5
130	43.9
140	47.2
150	50.6
160	54.0
170	57.4
180	60.7
189	63.8
190	63.8
200	63.8

4D141154

10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

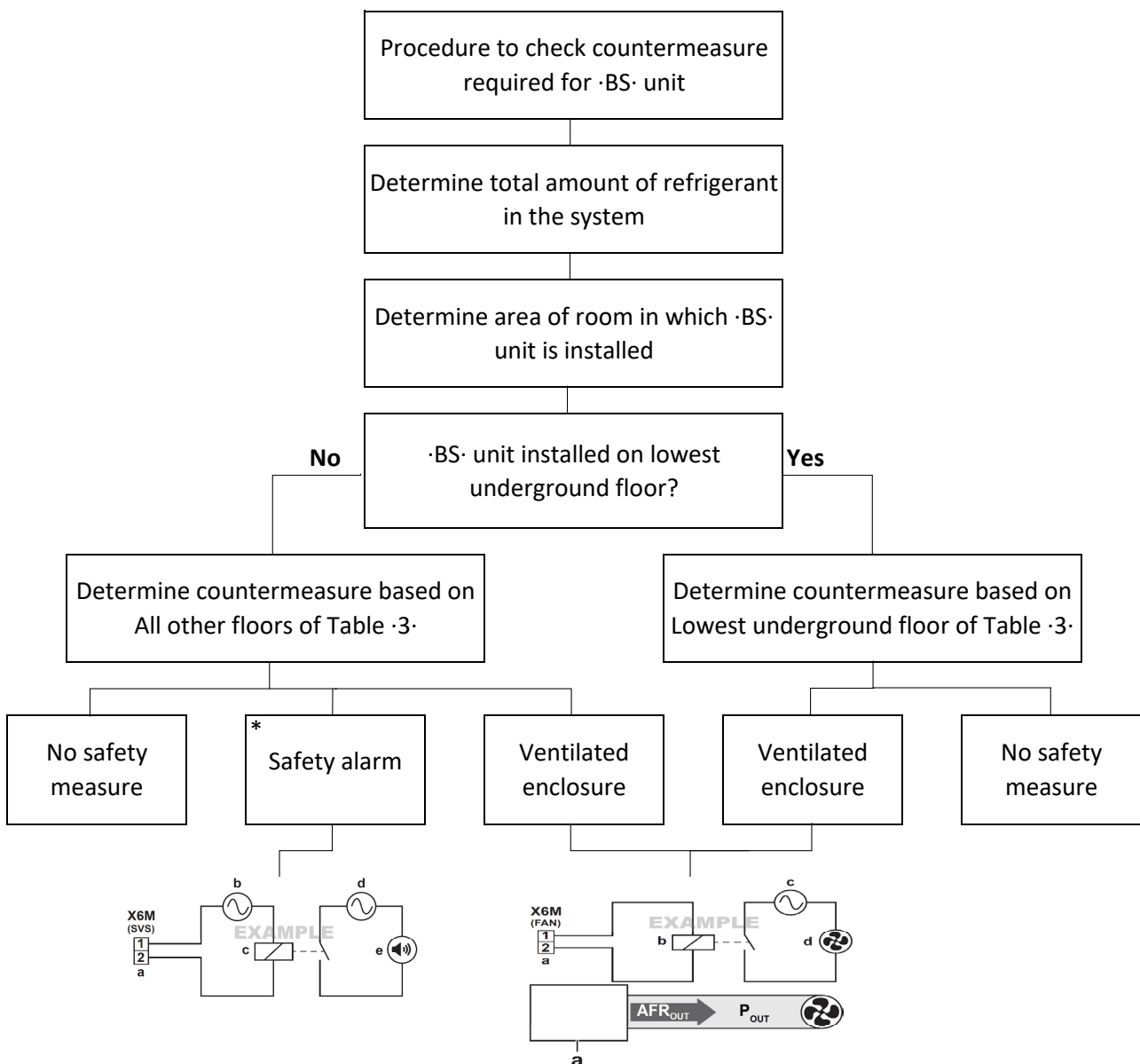
·BS· unit installation

Depending on the room size in which the ·BS· unit is installed and the total amount of refrigerant in the system, different safety measures can be applied.

Follow the flowchart. Details are described in the manual of ·BS· unit.

Note: If the installation height is more than ·2.2· m, different boundaries for the applicable safety measures can apply.

To know which safety measure is required in case the installation height is more than ·2.2· m, refer to VRV Xpress (<https://vrvxpress.daikin.eu/>).



* Do NOT use the external safety alarm if the ·BS· unit is installed in an occupied space where people are restricted in their movement.

4D141154

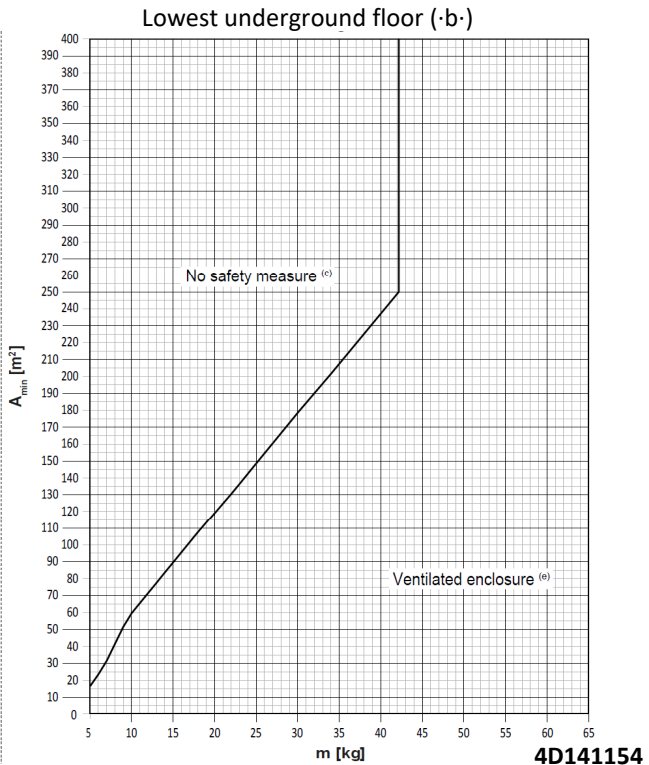
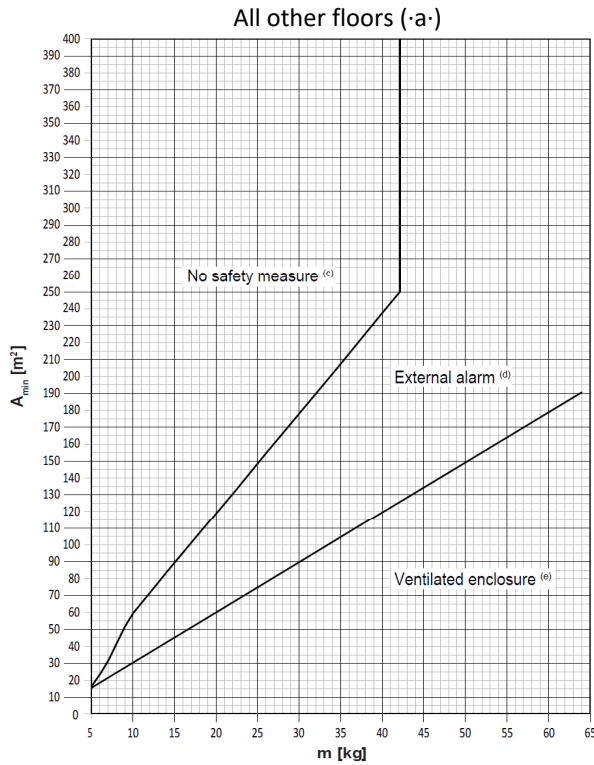
10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

•BS• unit installation

Table ·3·



4D141154

BS-A14AV1B

•BS• unit installation

m [kg]	Amin [m³]			m [kg]	Amin [m³]		
	All other floors (·a·)		Lowest underground floor (·b·)		All other floors (·a·)		Lowest underground floor (·b·)
	No safety measure (·c·)	External alarm (·d·)	No safety measure (·c·)		No safety measure (·c·)	External alarm (·d·)	No safety measure (·c·)
5	16	15	16	35	207	104	207
6	23	18	23	36	213	107	213
7	31	21	31	37	219	110	219
8	41	24	41	38	225	113	225
9	51	27	51	39	231	115	231
10	59	30	59	40	237	118	237
11	65	33	65	41	243	121	243
12	71	36	71	42	249	124	249
13	77	38	77	43	-	127	-
14	83	41	83	44	-	130	-
15	89	44	89	45	-	133	-
16	95	47	95	46	-	136	-
17	101	50	101	47	-	139	-
18	107	53	107	48	-	142	-
19	113	56	113	49	-	145	-
20	118	59	118	50	-	148	-
21	124	62	124	51	-	151	-
22	130	65	130	52	-	154	-
23	136	68	136	53	-	157	-
24	142	71	142	54	-	160	-
25	148	74	148	55	-	163	-
26	154	77	154	56	-	166	-
27	160	80	160	57	-	169	-
28	166	83	166	58	-	172	-
29	172	86	172	59	-	175	-
30	178	89	178	60	-	178	-
31	184	92	184	61	-	181	-
32	190	95	190	62	-	184	-
33	195	98	195	63	-	187	-
34	201	101	201	64	-	190	-

4D141154

10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

•BS• unit installation

When the R32 sensor in the •BS• unit detects a refrigerant leak, it will activate the safety measures.

Safety alarm

An external alarm circuit (field supply) must be connected to the SVS output of the •BS• unit.

When the R32 sensor in the •BS• unit detects a refrigerant leak, the SVS output closes and activates the alarm. An error message is displayed on the remote controllers of the connected indoor units.

- This alarm system must warn audibly AND visibly (e.g. a loud buzzer AND a flashing light). The audible alarm must be 15 dBA above the background sound level at all times.
- At least one alarm must be installed in the occupied space in which the •BS• unit is installed.
- For the occupancy listed below, the alarm system must additionally warn at a supervised location with 24-hour monitoring. To warn at a supervised location, connect a supervisor remote controller (e.g. •BRC1H52*•) to the system
 - with sleeping facilities.
 - where an uncontrolled number of people are present.
 - accessible for persons not familiar with the necessary safety precautions.
- Do NOT use the external safety alarm if the •BS• unit is installed in an occupied space where people are restricted in their movement.

For details, see the manual of the •BS• unit.

Ventilated enclosure

For the ventilated enclosure safety measure, ductwork and an extraction fan are installed.

When the R32 sensor in the •BS• unit detects a refrigerant leak, it will activate the safety measures.

This includes:

- opening the damper of the unit to allow air to enter and evacuate the refrigerant leak.
- activating the fan output signal to trigger an extraction fan to operate.
- displaying an error message on the remote controllers of the connected indoor units.

4D141154

BS-A14AV1B

•BS• unit installation

The information in the table below must be taken into account in case a ventilated enclosure is used as a safety measure.

Ductwork	The evacuation ductwork MUST vent outside the building. Avoid that dirt and small animals can enter the ductwork and lead to an obstruction. Example: install a non-return valve, grille, filter or other component in the evacuation duct.
Extraction fan	The extraction fan must have a CE marking and cannot act as an ignition source during normal operation. Example: Brushed DC motors can cause sparks and are not allowed. Fan power must be lower than 2.5 kVA.
Replacement air	Make sure that sufficient air is available for the extraction of a refrigerant leak. The extraction airflow rate must be maintained for at least 6.5 hours. This is achieved by providing a sufficiently large air volume around the •BS• unit, or by providing sufficient replacement air around the •BS• unit (e.g. natural openings or a dedicated opening in the false ceiling).
Maintenance	A periodic inspection of the unit is required, where the test run is repeated. Maintain the evacuation channel to avoid dust and dirt from building up and obstructing the flow path.

4D141154

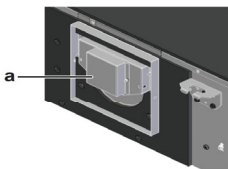
10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

·BS· unit installation

A damper at the air inlet of the ·BS· unit enables a choice between 3 types of configurations (see below).
The damper opens when a refrigerant leak has been detected in the ·BS· unit. This creates an airflow path from the leaking ·BS· unit to the extraction fan.



a Damper

When a ventilated enclosure is required, the following requirements apply.

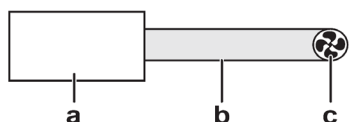
- Pressure inside the ·BS· unit has to be more than ·20· Pa below the ambient pressure.

Minimum airflow rate	
Model	Minimum airflow rate [m³/h]
BS4A	90
BS6-8A	87
BS10-12A	77

External fan needs to be selected in order to meet these requirements. The available calculation method depends on the configuration.

Possible configurations

One ·BS· unit – one extraction fan



- a BS unit
- b Ductwork
- c Extraction fan

Calculation method for selection of external fan

- Manual calculation: see ·BS· unit manual for details
- VRV Xpress: see <https://vrvxpress.daikin.eu/>

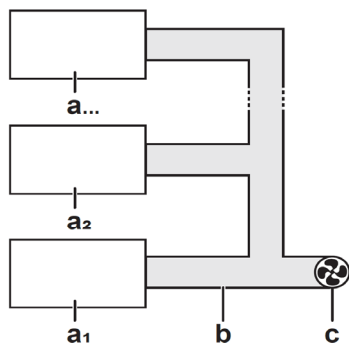
4D141154

BS-A14AV1B

·BS· unit installation

Multiple ·BS· units in parallel – one extraction fan

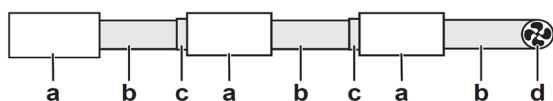
- VRV Xpress: see <https://vrvxpress.daikin.eu/>



- a_# BS unit #
- b Ductwork
- c Extraction fan

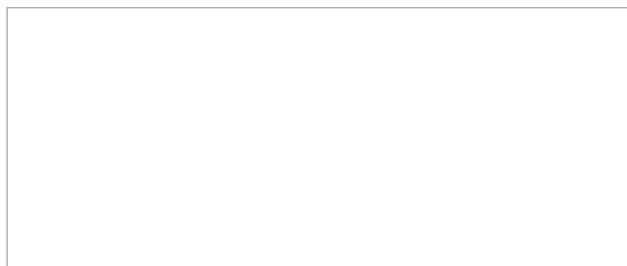
Multiple ·BS· units in series – one extraction fan

- VRV Xpress: see <https://vrvxpress.daikin.eu/>



- a BS unit
- b Ductwork
- c EKBSDCK
- d Extraction fan

4D141154



EEDEN22A

06/2022



The present leaflet is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V. Daikin Europe N.V. has compiled the content of this leaflet to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this leaflet. All content is copyrighted by Daikin Europe N.V.