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

BS-A14AV1B

BS4A14AJV1B
BS6A14AJV1B
BS8A14AJV1B
BS10A14AJV1B
BS12A14AJV1B

EEDEN22

TABLE OF CONTENTS

BS-A14AV1B

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 Shîrudo 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				
Weight	Unit			kg	40.0	56.0	65.0	83.0	89.0
PED					art. 4.3				
Piping connections	Indoor unit	Liquid	Type		Brazing connection				
			OD	mm	6.4 (1) / 9.5 (2)				
		Gas	Type		Brazing connection				
			OD	mm	9.5 (3) / 12.7 (4) / 15.9 (2)				
Drain pipe					VP20 (I.D. 20/O.D. 26)				
Sound absorbing thermal insulation					Polyethylene foam				

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;

Electrical specifications				BS4A14AV1B	BS6A14AV1B	BS8A14AV1B	BS10A14AV1B	BS12A14AV1B
Power supply	Phase			1~				
	Frequency		Hz	50				
	Voltage		V	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)When connecting indoor units smaller or equal to 80 class (no need to cut the outlet pipe) |
(2)When connecting indoor units larger or equal to 100 class (the outlet pipe needs to be cut) |
(3)When connecting indoor units smaller or equal to 32 class (no need to cut the outlet pipe) |
(4)When connecting indoor units between 40 & 80 class (the outlet pipe needs to be cut) |
Sound pressure level is a relative value, depending on the distance and acoustic environment. For more details, please refer to the sound level drawings. |
Sound power level is an absolute value that a sound source generates. |
Accessory pipe required |
MCA must be used to select the correct field wiring size. The MCA can be regarded as the maximum running current. |
MFA is used to select the circuit breaker and the ground fault circuit interrupter (earth leakage circuit breaker). |
Voltage range: units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits. |
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

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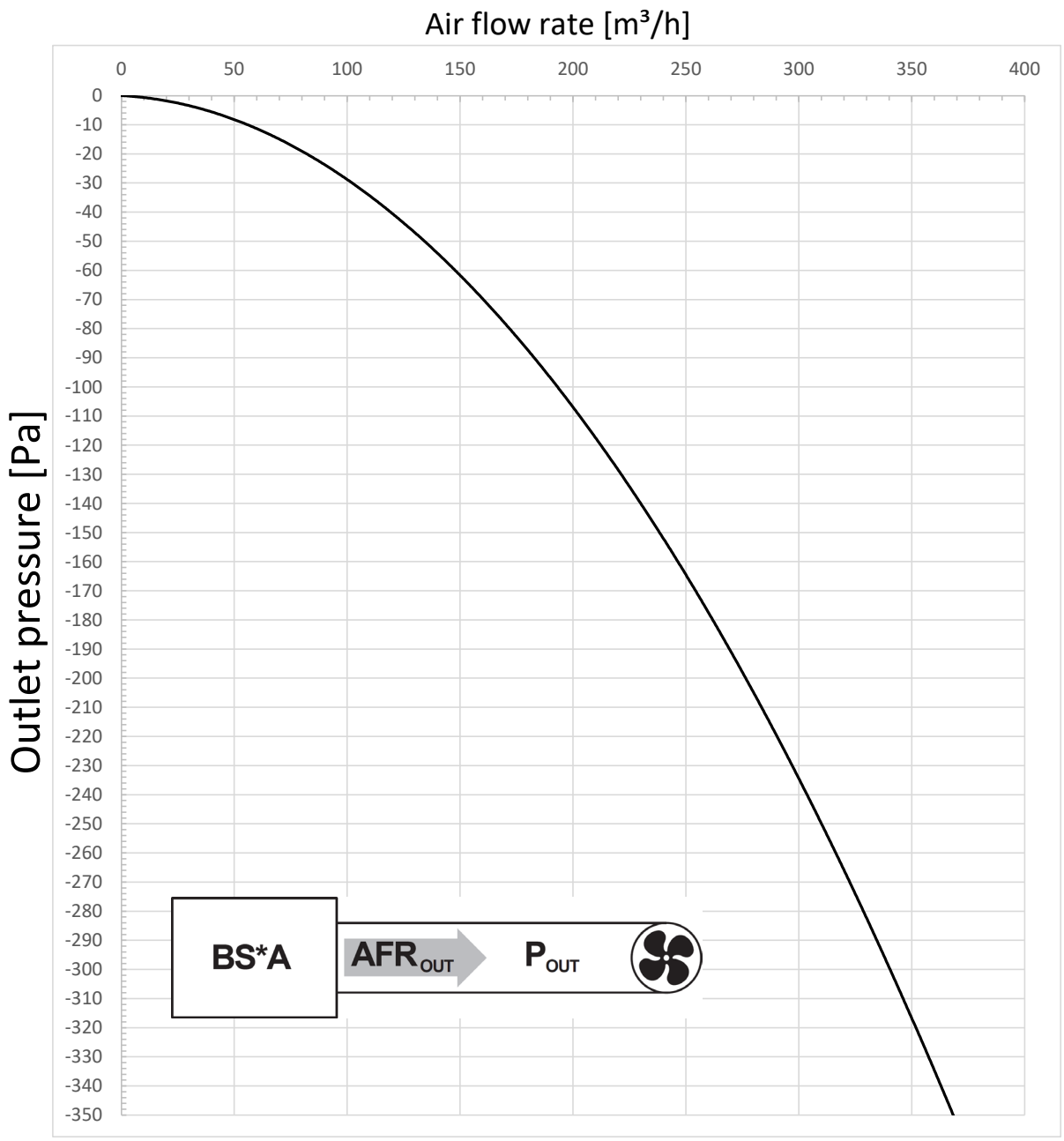
4 Pressure drops

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

BS4A14AV1B

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



AFR_{OUT} Air flow rate [m³/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.

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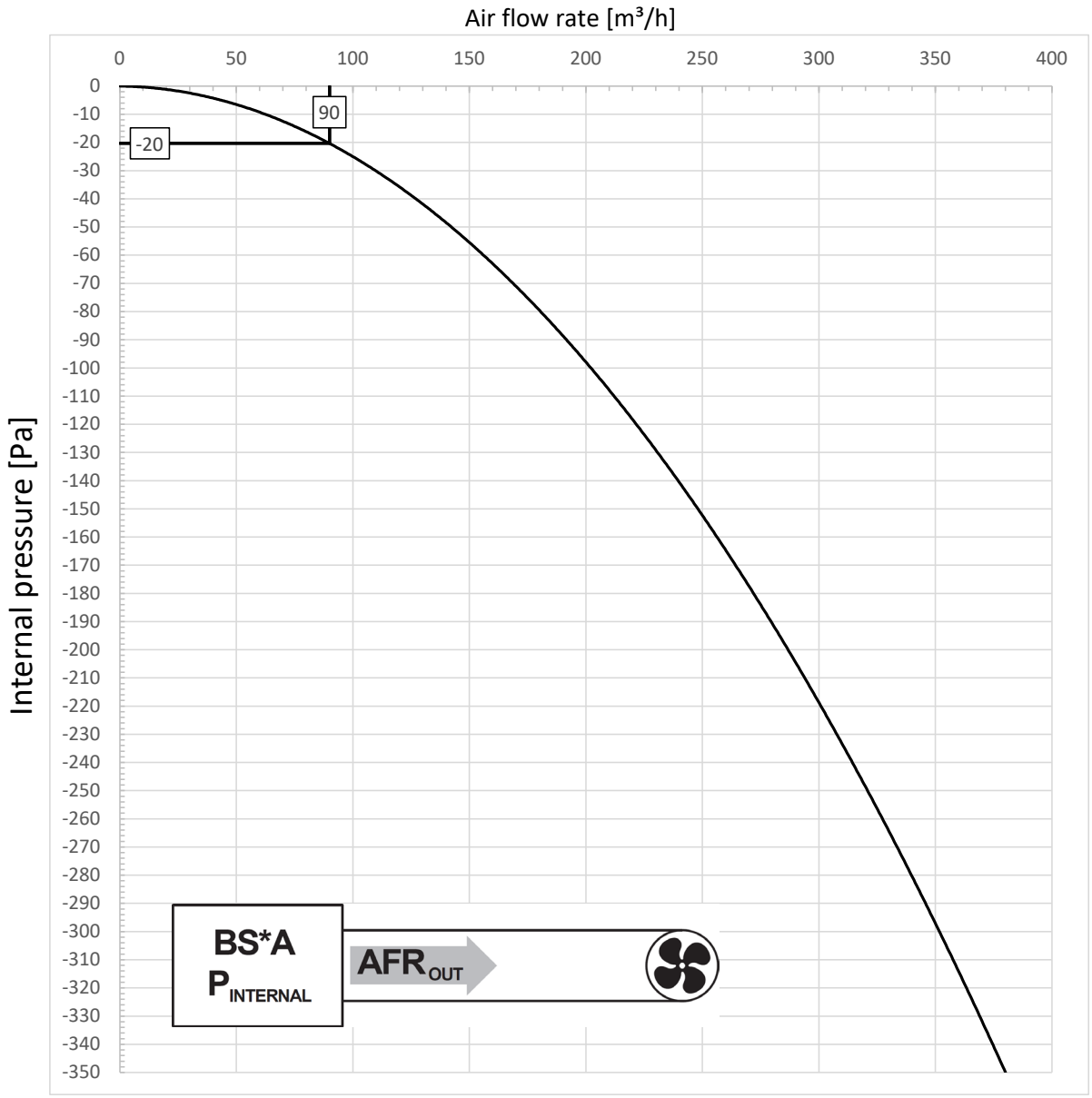
4 Pressure drops

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 [m³/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·

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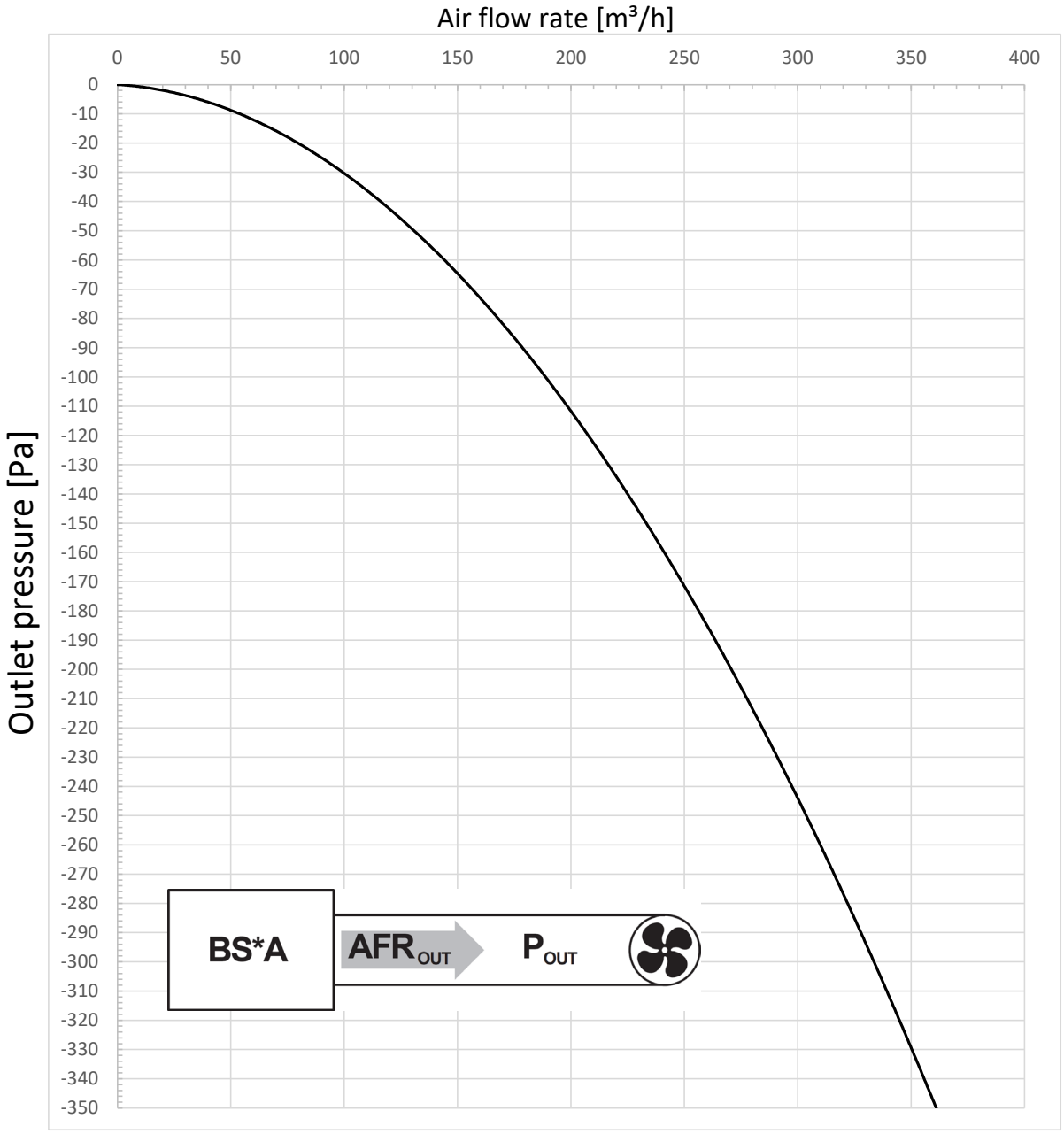
4 Pressure drops

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

BS6-8A14AV1B

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



AFR_{OUT} Air flow rate [m³/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.

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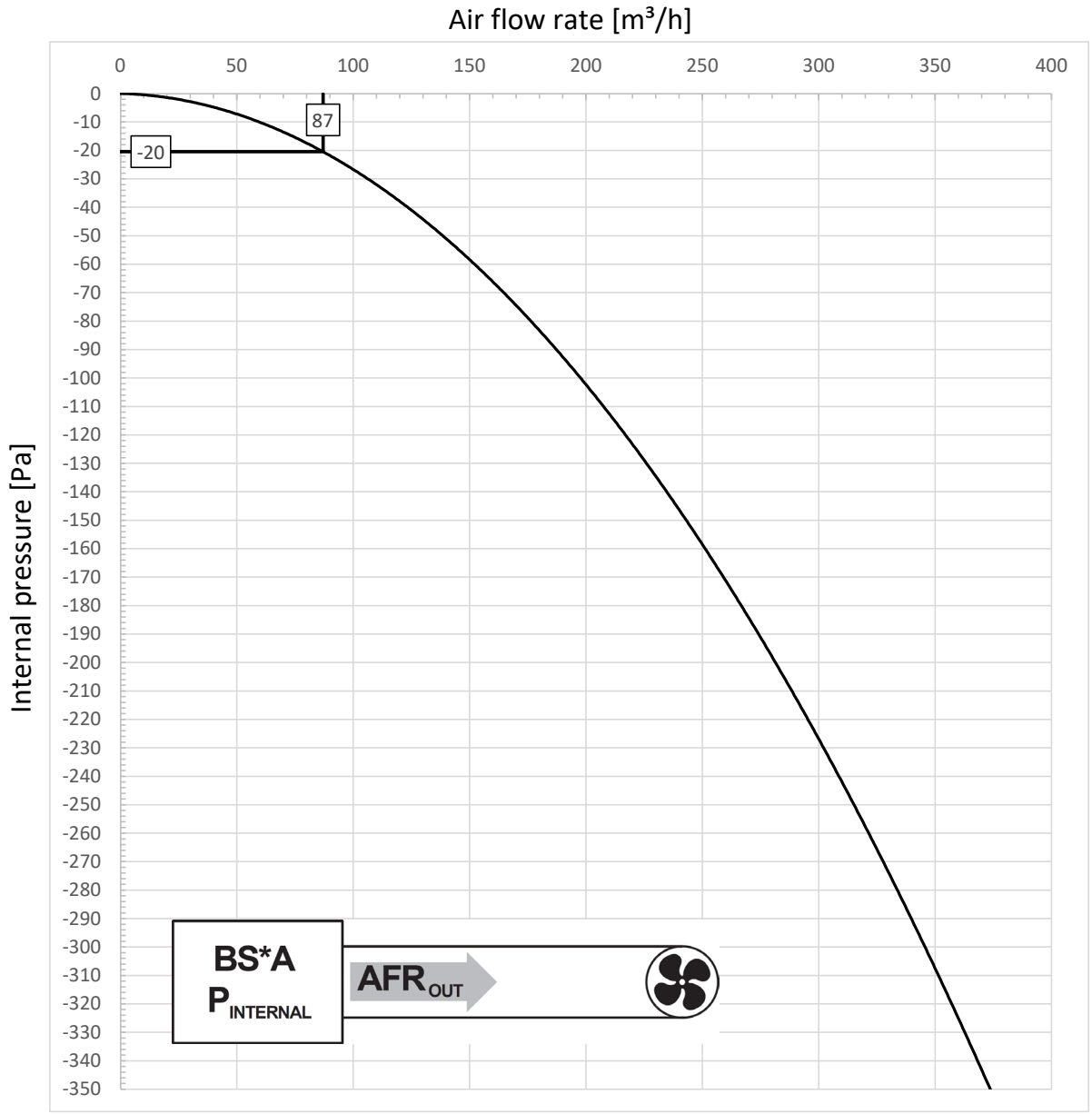
4 Pressure drops

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 [m³/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·

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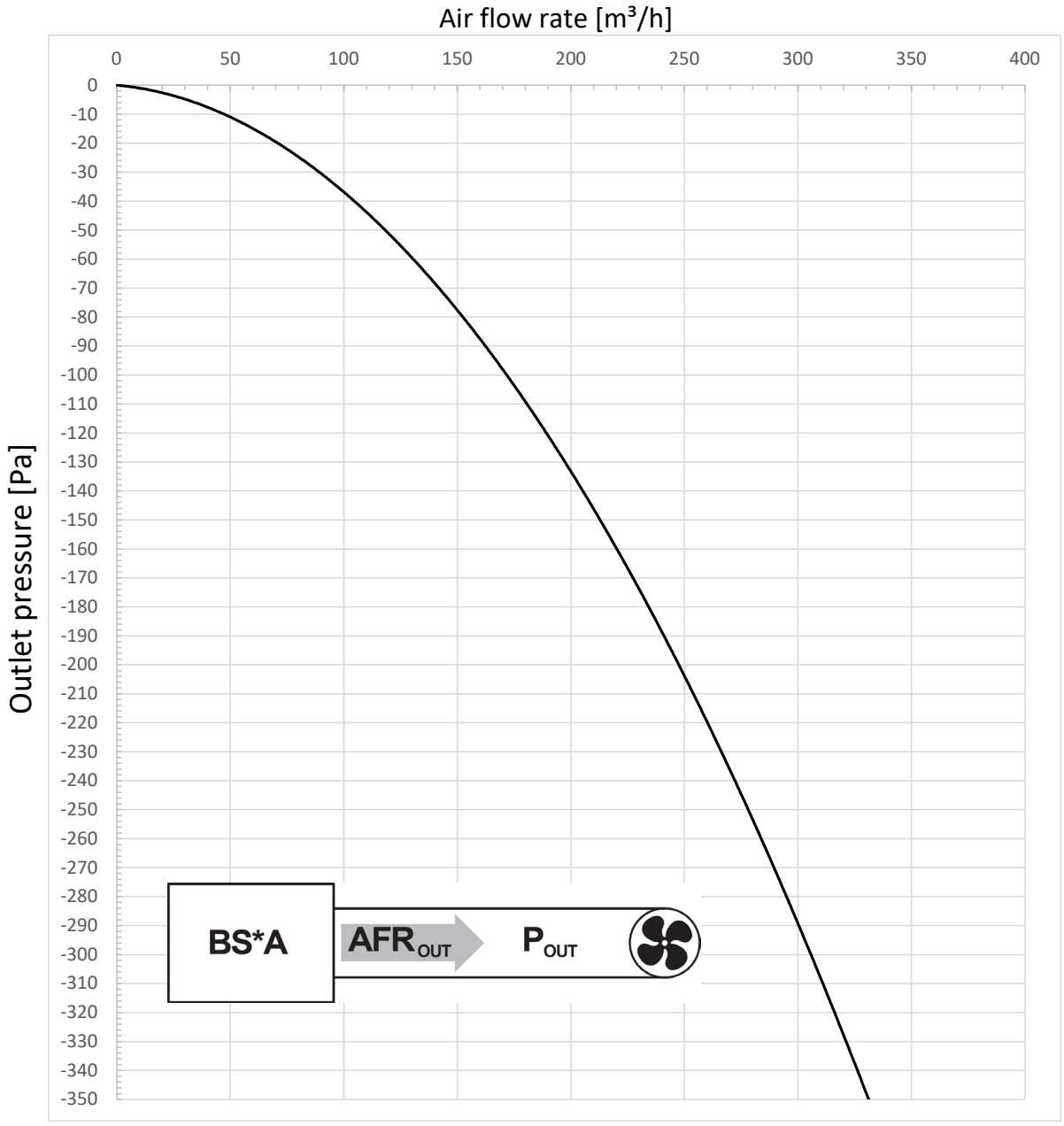
4 Pressure drops

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

BS10-12A14AV1B

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



AFR_{OUT} Air flow rate [m³/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.

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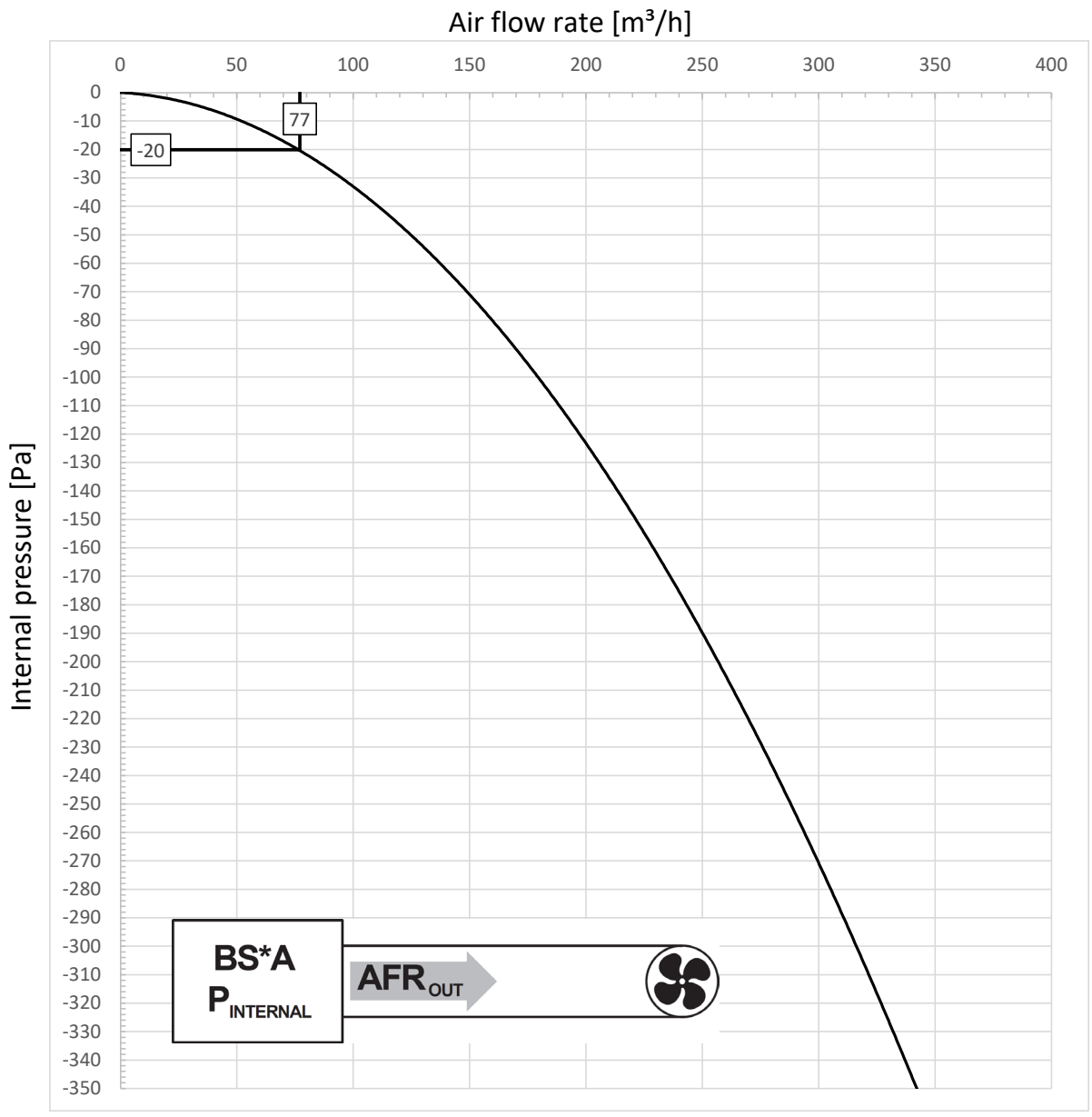
4 Pressure drops

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 [m³/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·

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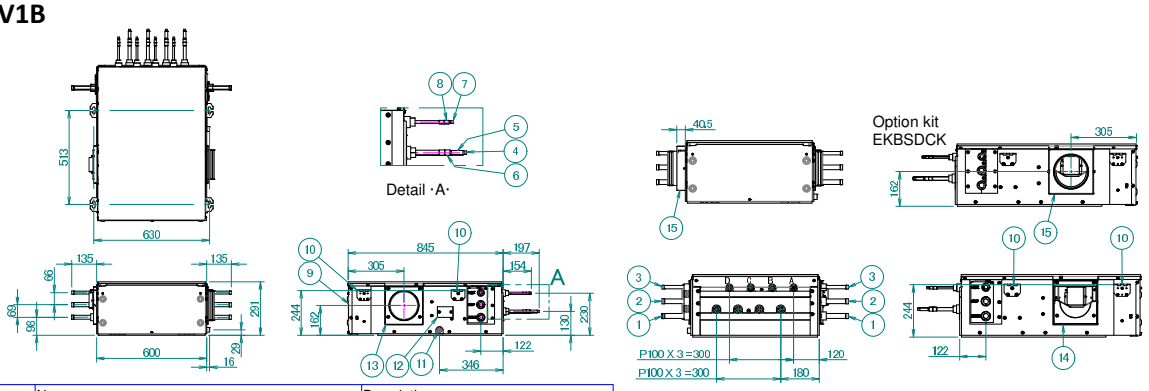
5 Dimensional drawings

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·

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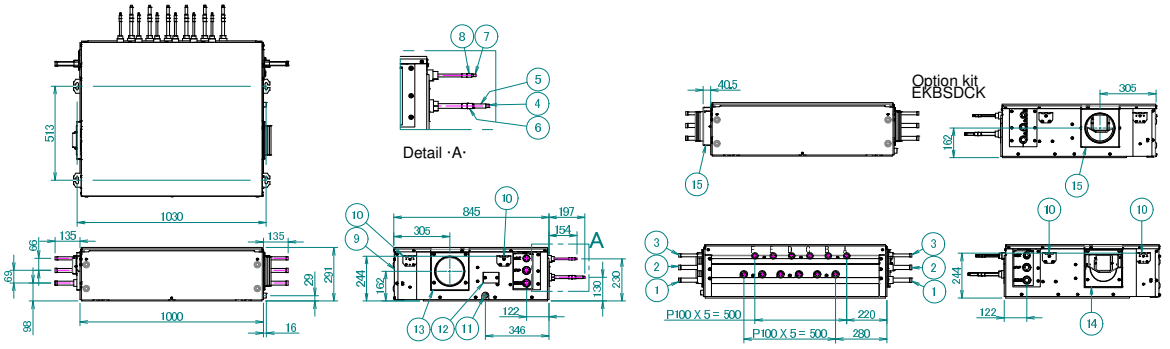
BS6A14AV1B



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·

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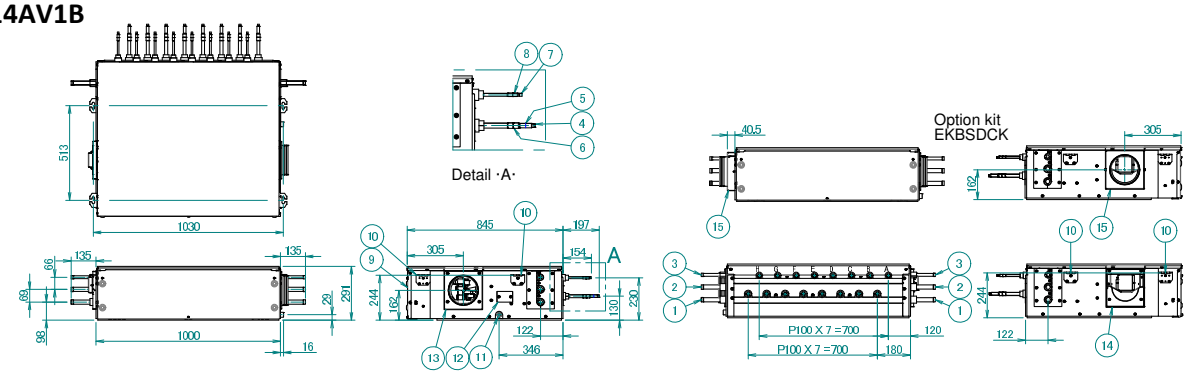
5 Dimensional drawings

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·

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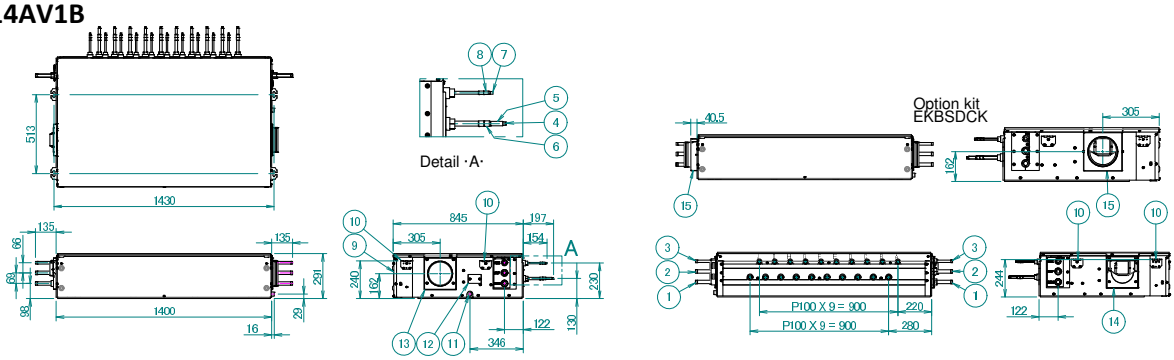
BS10A14AV1B



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·

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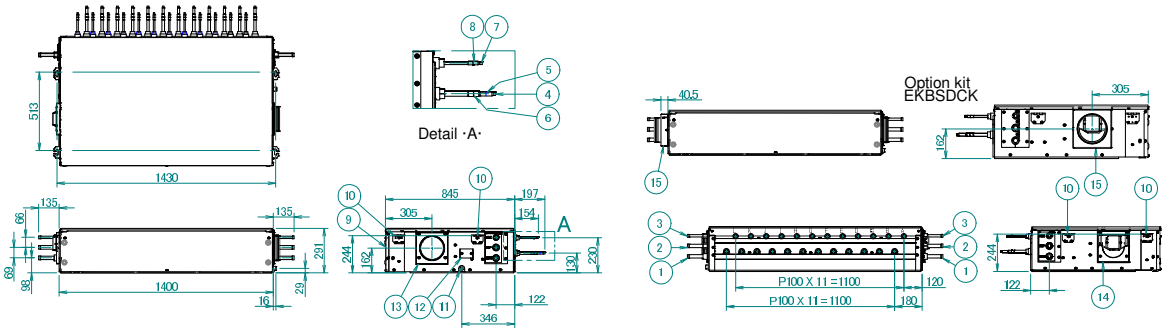
5 Dimensional drawings

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
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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·

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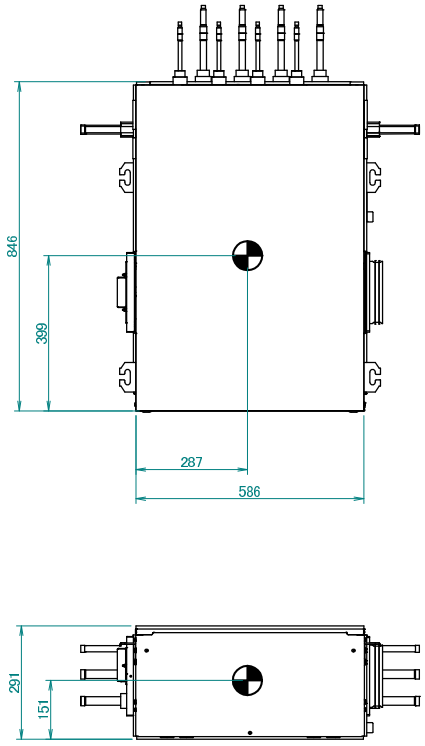
6 Centre of gravity

6 - 1 Centre of Gravity

BS4A14AV1B



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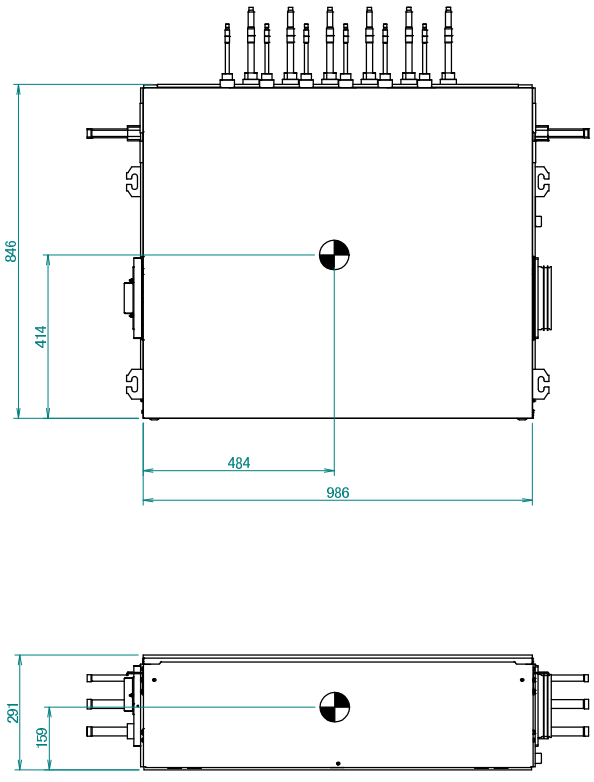
BS6A14AV1B



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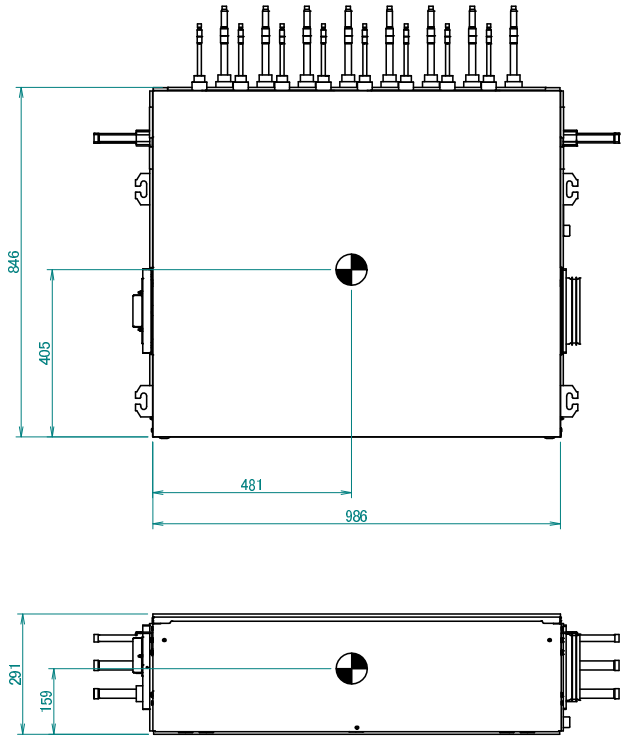
6 Centre of gravity

6 - 1 Centre of Gravity

BS8A14AV1B



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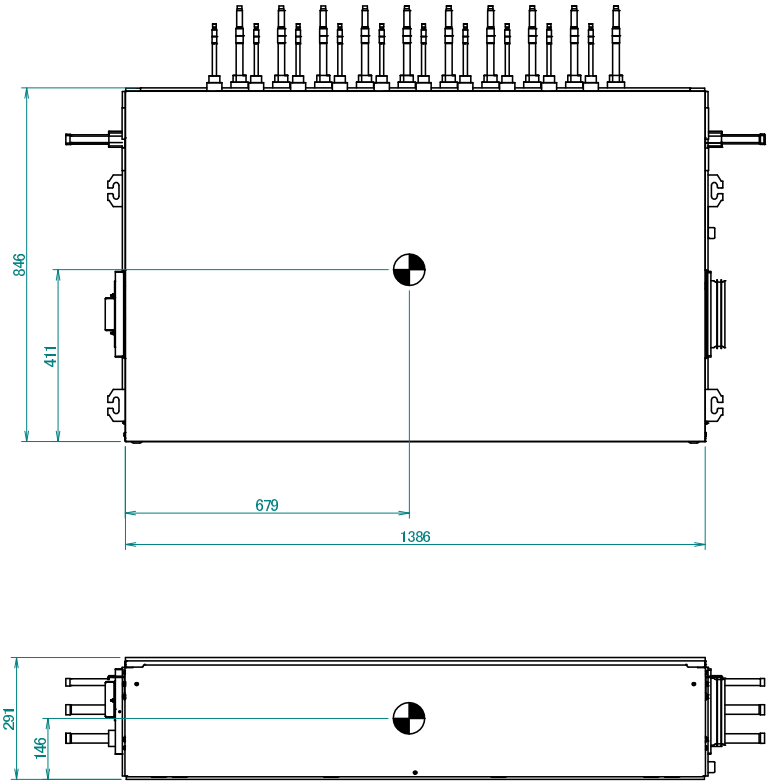
BS10A14AV1B



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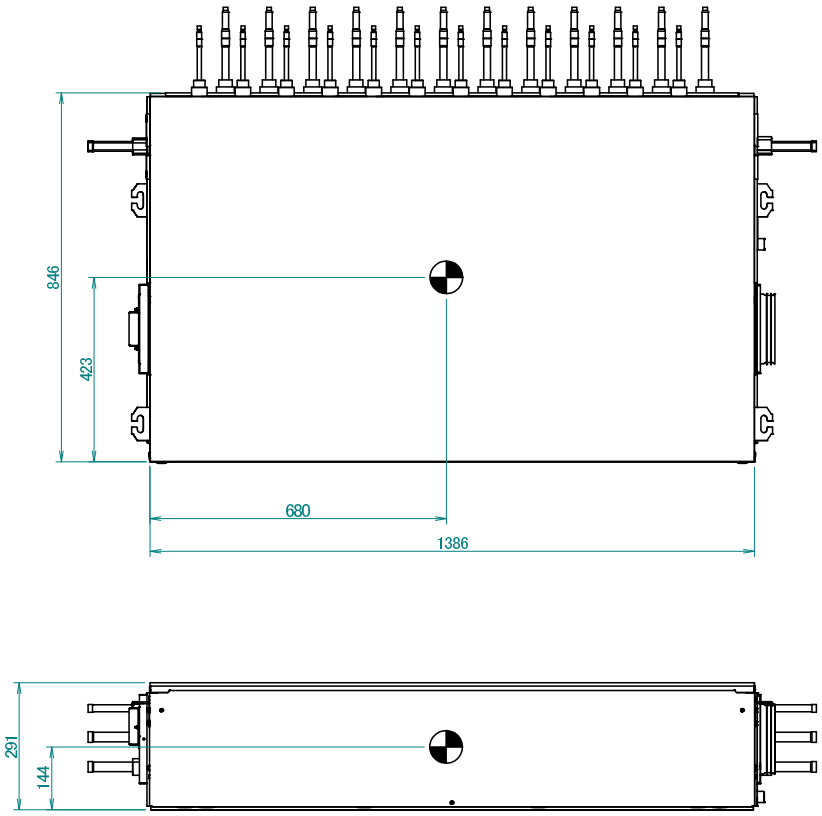
6 Centre of gravity

6 - 1 Centre of Gravity

BS12A14AV1B



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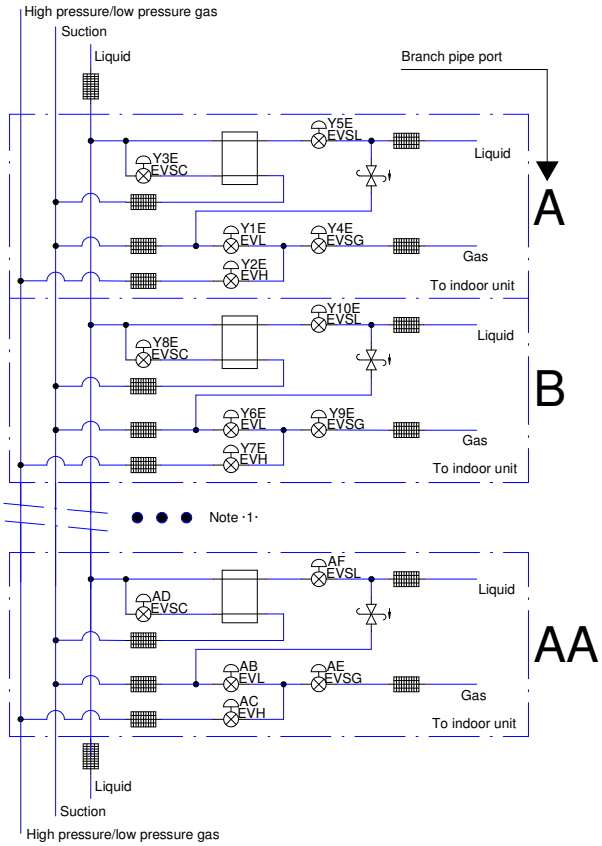
7 Piping diagrams

7 - 1 Piping Diagrams

BS-A14AV1B



Note ·1·

This pattern is repeated ·AG· 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

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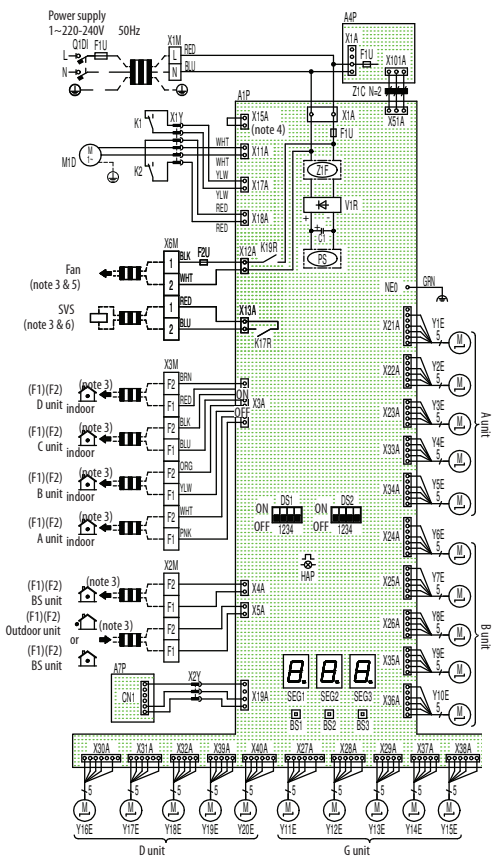
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

BS4A14AV1B **Wiring diagram**



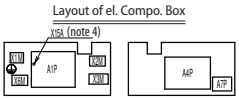
A1P	Printed circuit board (control)
A4P	Printed circuit board (back up)
A7P	Printed circuit board (gas sensor)
BS1~3 (A*P)	Push button switch (mode, set, return)
C1	Capacitor
DS*	Dip switch
F1U	Field fuse (field supply)
F1U (A*P)	Fuse (T, 3.15A, 250V)
F2U	Fuse (1A, 250V)
HAP	Flashing lamp (service monitor-green)
K*	Contact
M1D	Motor (damper)
PS	Switching power supply
Q1DI	Earth leakage circuit breaker (30mA) (field supply)
SEG1~3 (A*P)	7-Segment display
V1R	Diode bridge
X1M	Terminal strip (power)
X2M, X3M	Terminal strip (transmission)
X6M	Terminal strip (external output)
X*Y	Connector
Z1C	Noise filter (ferrite core)
Z1F	Noise filter

Y1E	Electronic expansion valve coil (EVL-1)	A unit
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 (EVSL-1)	
Y6E	Electronic expansion valve coil (EVL-2)	B unit
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 (EVSL-2)	
Y11E	Electronic expansion valve coil (EVL-3)	C unit
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 (EVSL-3)	
Y16E	Electronic expansion valve coil (EVL-4)	D unit
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 (EVSL-4)	
Optional accessories		
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, 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	
DS1	DS2
ON OFF	ON OFF



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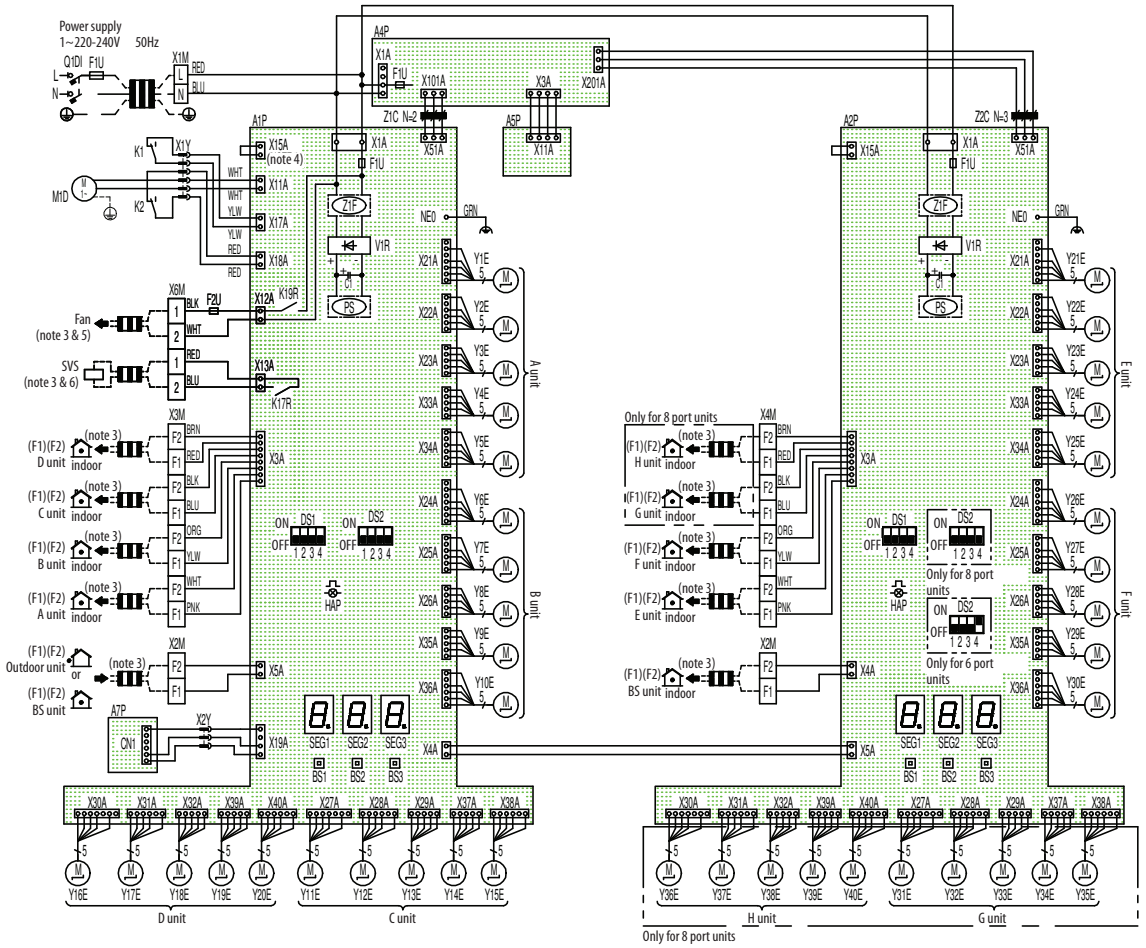
8 Wiring diagrams

8 - 1 Wiring Diagrams - Single Phase

BS6-8A14AV1B

Wiring diagram



A1P, A2P	Printed circuit board (control)	
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	
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)	A unit
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 (EVSL-1)	
Y6E	Electronic expansion valve coil (EVL-2)	B unit
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 (EVSL-2)	
Y11E	Electronic expansion valve coil (EVL-3)	C unit
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 (EVSL-3)	

Y16E	Electronic expansion valve coil (EVL-4)	D unit
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 (EVSL-4)	
Y21E	Electronic expansion valve coil (EVL-1)	E unit
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 (EVSL-1)	
Y26E	Electronic expansion valve coil (EVL-2)	F unit
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 (EVSL-2)	

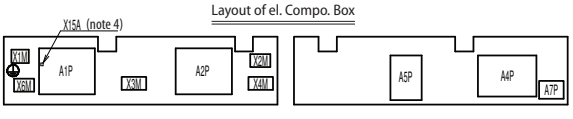
Y31E	Electronic expansion valve coil (EVL-3)	G unit
Y32E	Electronic expansion valve coil (EVH-3)	
Y33E	Electronic expansion valve coil (EVSC-3)	
Y34E	Electronic expansion valve coil (EVSG-3)	
Y35E	Electronic expansion valve coil (EVSL-3)	
Y36E	Electronic expansion valve coil (EVL-4)	H unit
Y37E	Electronic expansion valve coil (EVH-4)	
Y38E	Electronic expansion valve coil (EVSC-4)	
Y39E	Electronic expansion valve coil (EVSG-4)	
Y40E	Electronic expansion valve coil (EVSL-4)	
Optional accessories		
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, ⊂⊃: 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
BS8A14AJV1B	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4
BS6A14AJV1B	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4

Layout of el. Compo. Box



2D139832

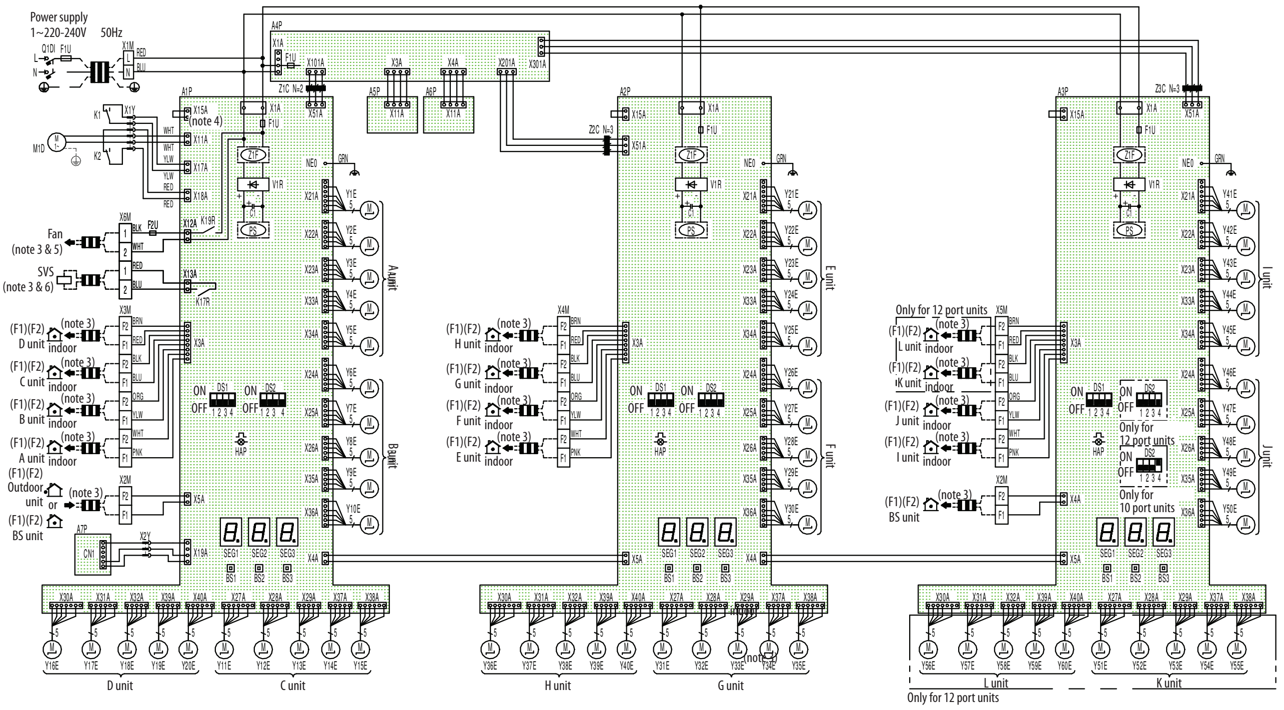
8

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	
Q1DI	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*C	Noise filter (ferrite core)	
Z1F	Noise filter	
Y1E	Electronic expansion valve coil (EVL-1)	A unit
Y2E	Electronic expansion valve coil (EVH-1)	A unit
Y3E	Electronic expansion valve coil (EVSC-1)	A unit
Y4E	Electronic expansion valve coil (EVSG-1)	A unit
Y5E	Electronic expansion valve coil (EVSL-1)	A unit
Y6E	Electronic expansion valve coil (EVL-2)	B unit
Y7E	Electronic expansion valve coil (EVH-2)	B unit
Y8E	Electronic expansion valve coil (EVSC-2)	B unit
Y9E	Electronic expansion valve coil (EVSG-2)	B unit
Y10E	Electronic expansion valve coil (EVSL-2)	B unit
Y11E	Electronic expansion valve coil (EVL-3)	C unit
Y12E	Electronic expansion valve coil (EVH-3)	C unit
Y13E	Electronic expansion valve coil (EVSC-3)	C unit
Y14E	Electronic expansion valve coil (EVSG-3)	C unit
Y15E	Electronic expansion valve coil (EVSL-3)	C unit
Y16E	Electronic expansion valve coil (EVL-4)	D unit
Y17E	Electronic expansion valve coil (EVH-4)	D unit
Y18E	Electronic expansion valve coil (EVSC-4)	D unit
Y19E	Electronic expansion valve coil (EVSG-4)	D unit
Y20E	Electronic expansion valve coil (EVSL-4)	D unit

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

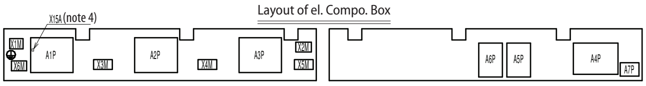
Y41E	Electronic expansion valve coil (EVL-1)	I unit
Y42E	Electronic expansion valve coil (EVH-1)	I unit
Y43E	Electronic expansion valve coil (EVSC-1)	I unit
Y44E	Electronic expansion valve coil (EVSG-1)	I unit
Y45E	Electronic expansion valve coil (EVSL-1)	I unit
Y46E	Electronic expansion valve coil (EVL-2)	J unit
Y47E	Electronic expansion valve coil (EVH-2)	J unit
Y48E	Electronic expansion valve coil (EVSC-2)	J unit
Y49E	Electronic expansion valve coil (EVSG-2)	J unit
Y50E	Electronic expansion valve coil (EVSL-2)	J unit
Y51E	Electronic expansion valve coil (EVL-3)	K unit
Y52E	Electronic expansion valve coil (EVH-3)	K unit
Y53E	Electronic expansion valve coil (EVSC-3)	K unit
Y54E	Electronic expansion valve coil (EVSG-3)	K unit
Y55E	Electronic expansion valve coil (EVSL-3)	K unit
Y56E	Electronic expansion valve coil (EVL-4)	L unit
Y57E	Electronic expansion valve coil (EVH-4)	L unit
Y58E	Electronic expansion valve coil (EVSC-4)	L unit
Y59E	Electronic expansion valve coil (EVSG-4)	L unit
Y60E	Electronic expansion valve coil (EVSL-4)	L unit
Optional accessories		
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, 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		A3P	
	DS1	DS2	DS1	DS2
BS12A14AJV1B	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4
BS10A14AJV1B	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4	ON OFF 1 2 3 4

Layout of el. Compo. Box

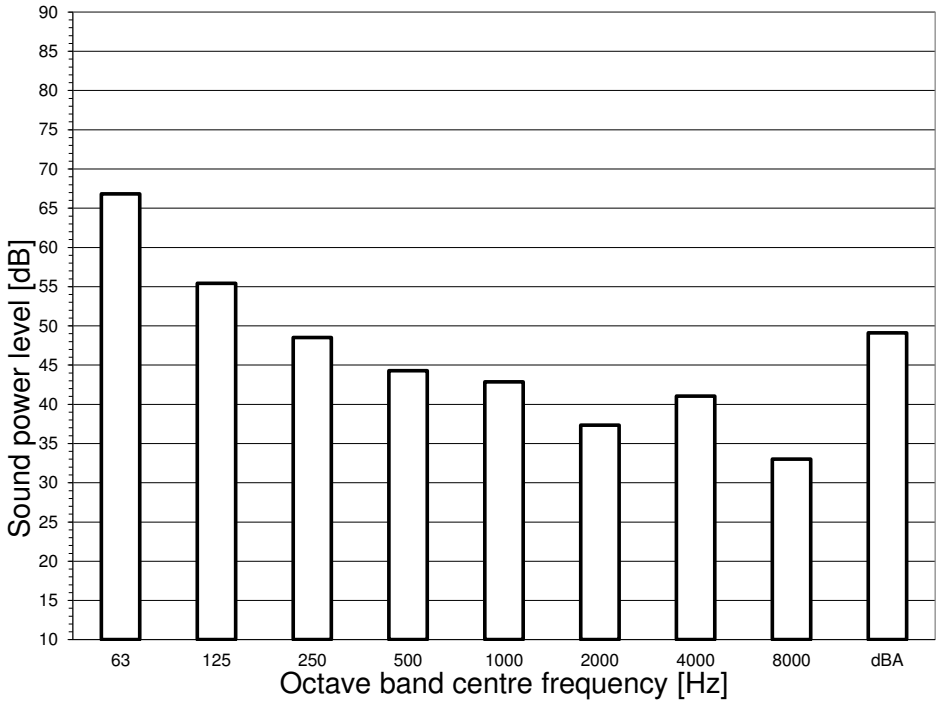


1D139833

9 Sound data

9 - 1 Sound Power Spectrum

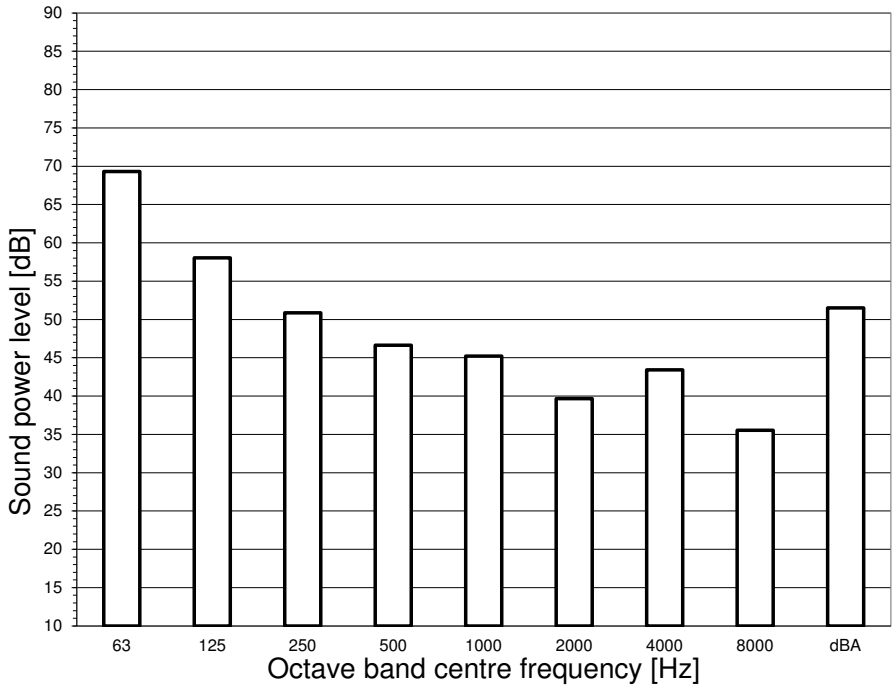
BS4A14AV1B



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



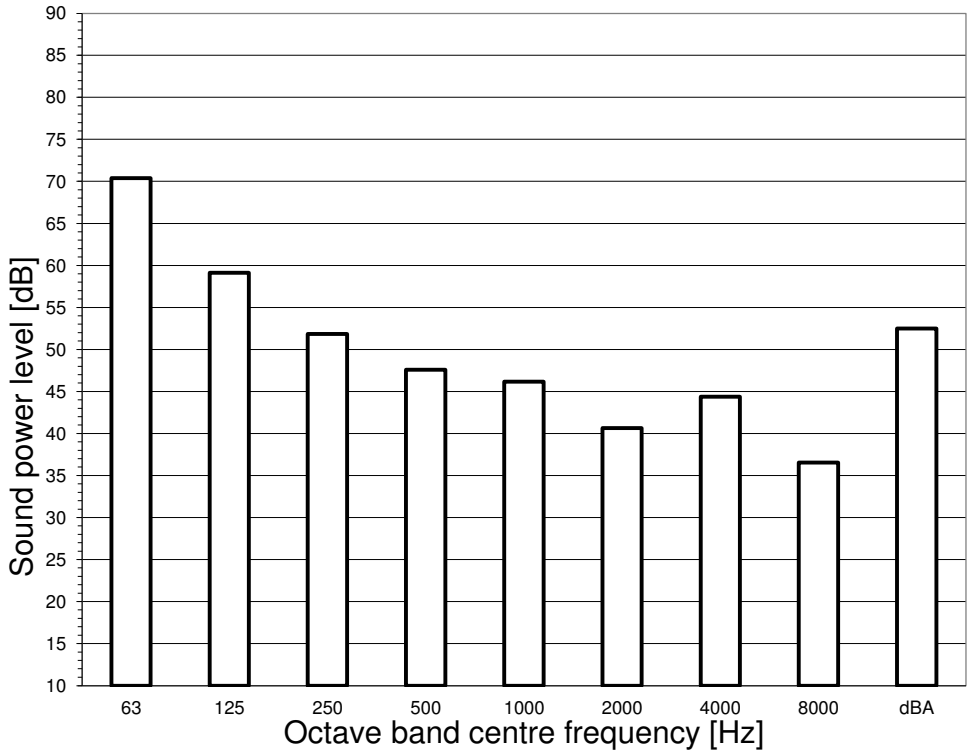
Notes
- dBA = A-weighted sound power level (A scale according to IE
- Reference acoustic intensity 0dB = ·10^ -12 W/m²·
- Measured according to ISO 3744

4D694500

9 Sound data

9 - 1 Sound Power Spectrum

BS10-12A14AV1B



Notes

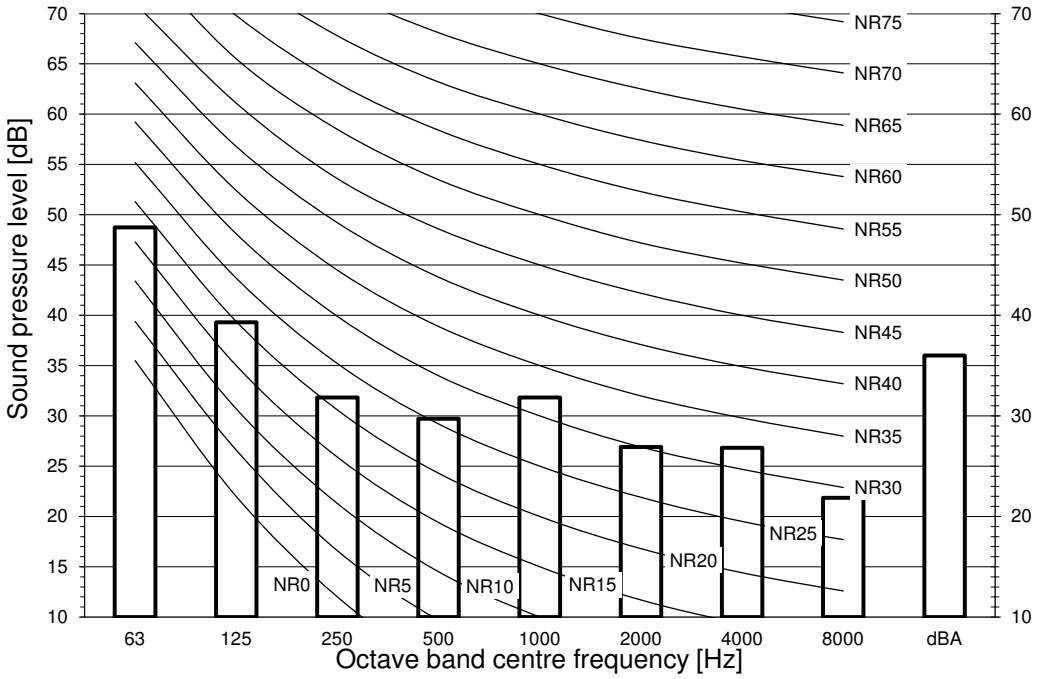
- dBA = A-weighted sound power level (A scale according to IEC).
- Reference acoustic intensity 0dB = ·10^ -12 W/m²·
- Measured according to ISO 3744

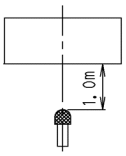
4D694501

9 Sound data

9 - 2 Sound Pressure Spectrum

BS4A14AV1B

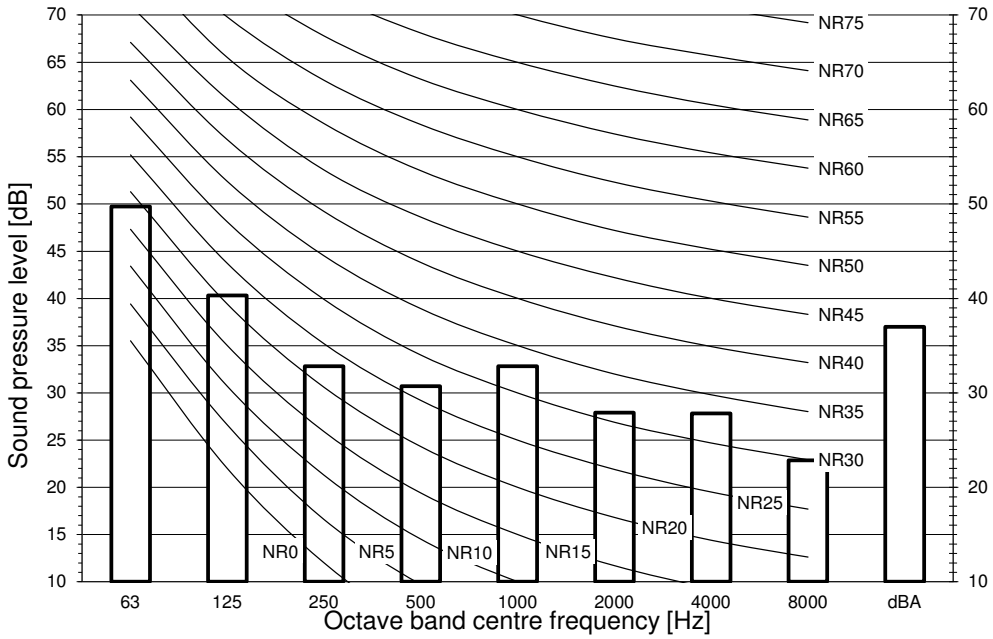


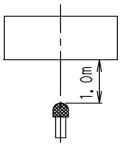


Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

4D694508

BS6-8A14AV1B





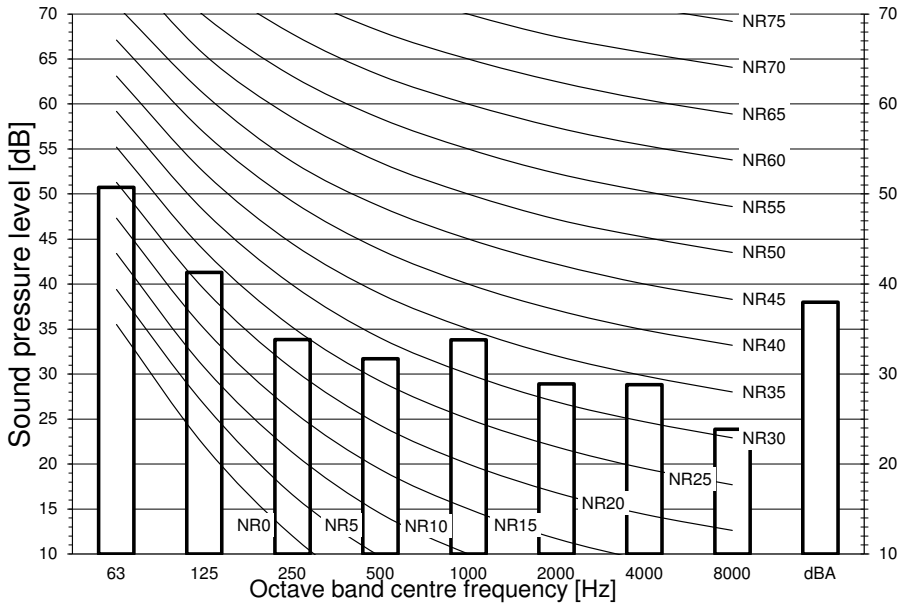
Notes
- Data is valid at free field condition.
- Data is valid at nominal operation condition.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

4D694509

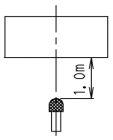
9 Sound data

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 µPa

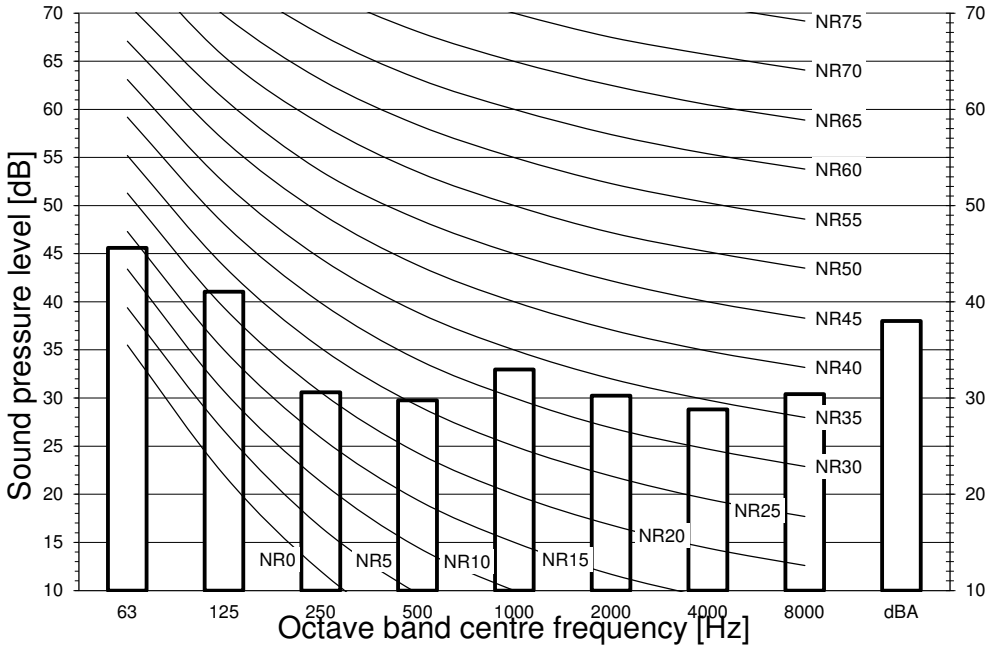


4D694510

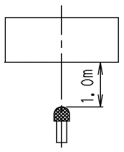
9 Sound data

9 - 3 Sound Pressure Spectrum – Maximum

BS4A14AV1B

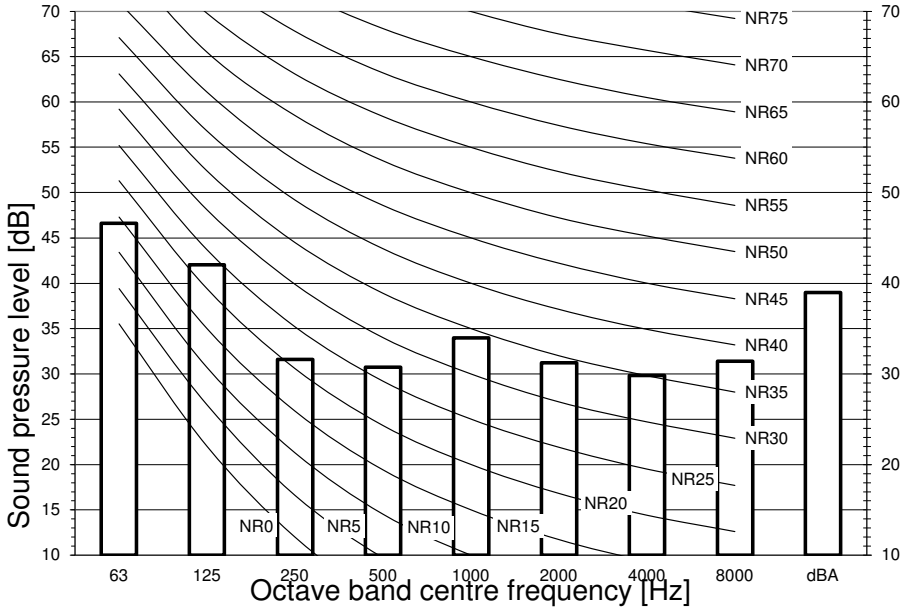


Notes
- Data is valid at free field condition.
- Data is valid at steady operation conditions resulting in maximum sound.
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB = 20 µPa

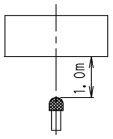


4D694502

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 µPa

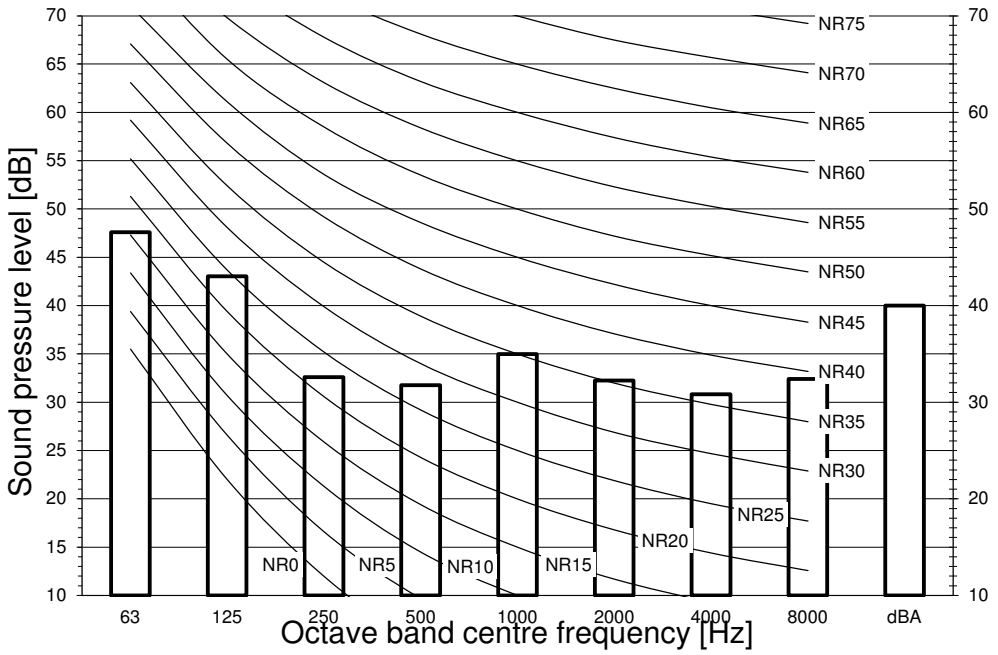


4D694503

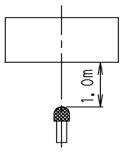
9 Sound data

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 µPa

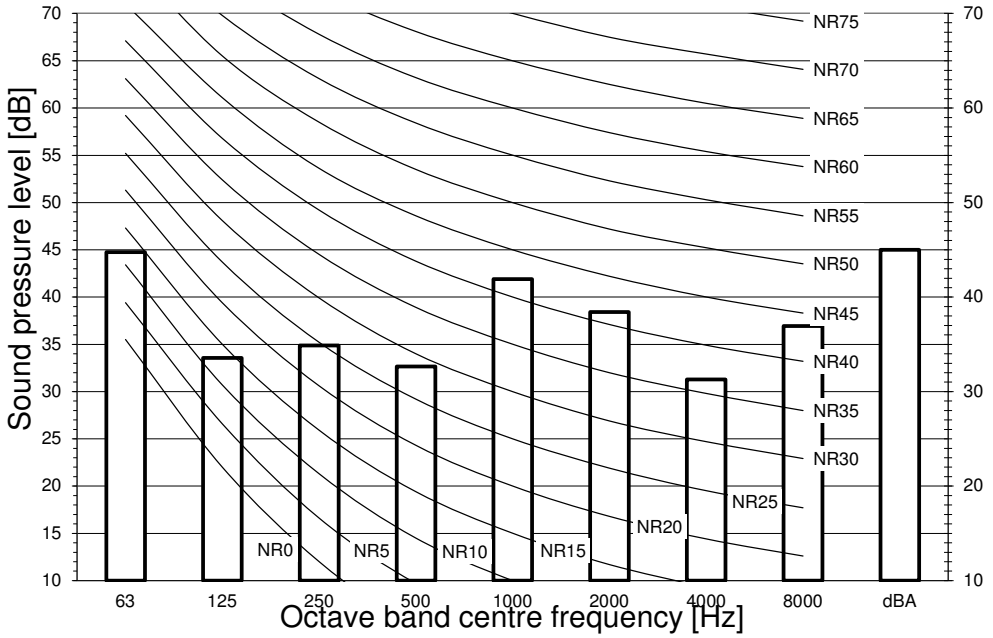


4D694504

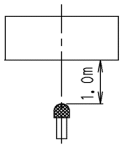
9 Sound data

9 - 4 Sound Pressure Spectrum – Transient

BS4A14AV1B

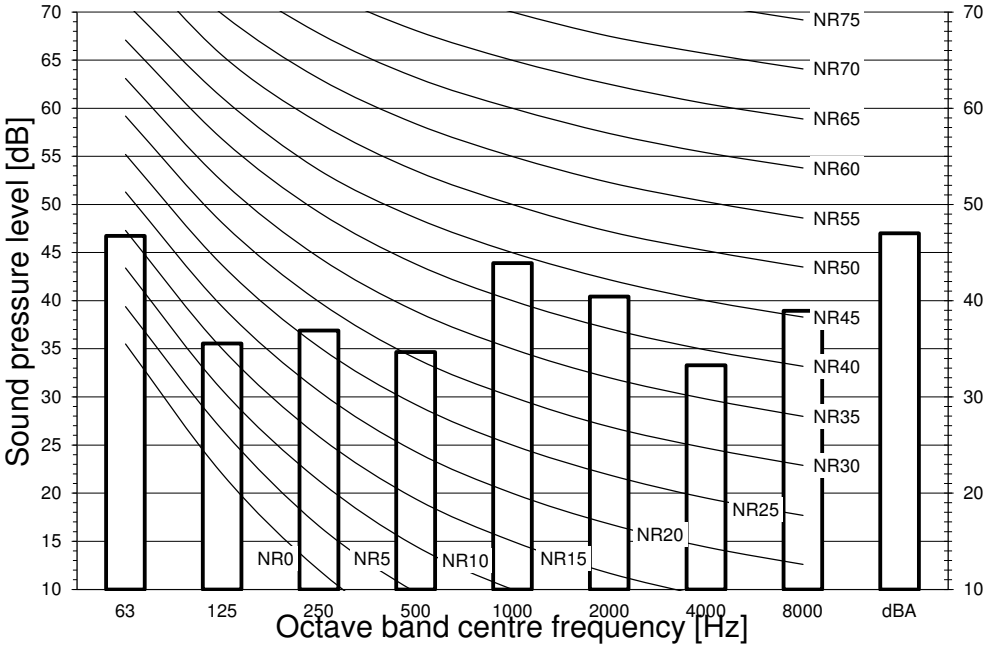


Notes
- Data is valid at free field condition.
- Data is valid at transient operation conditions resulting in maximum sound.
  E.g. defrost or oil return operation, switching heating to cooling,...
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB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

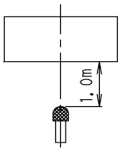


4D694505

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 µPa

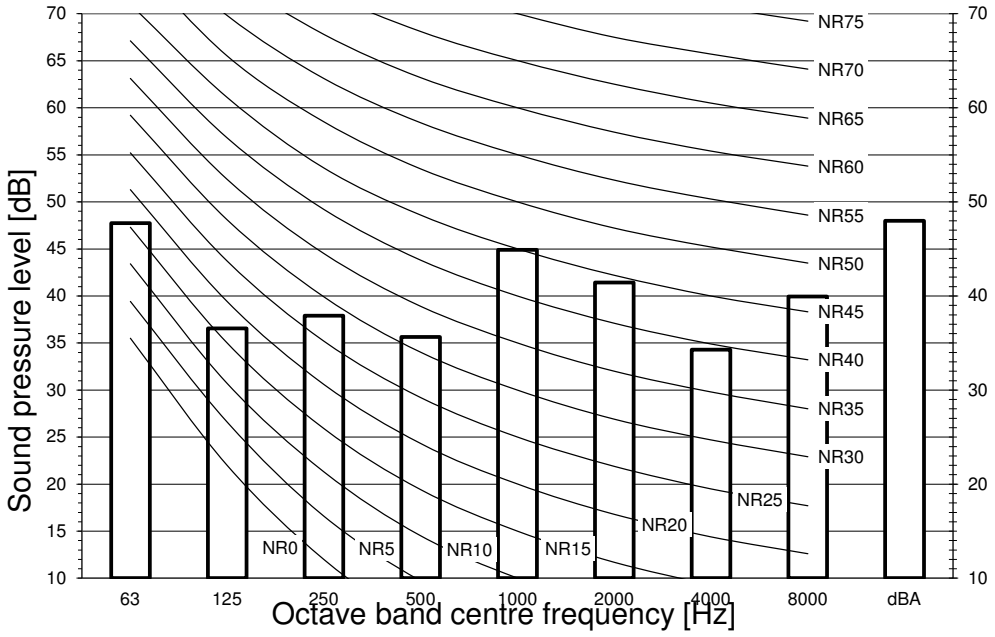


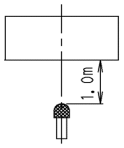
4D694506

9 Sound data

9 - 4 Sound Pressure Spectrum – Transient

BS10-12A14AV1B





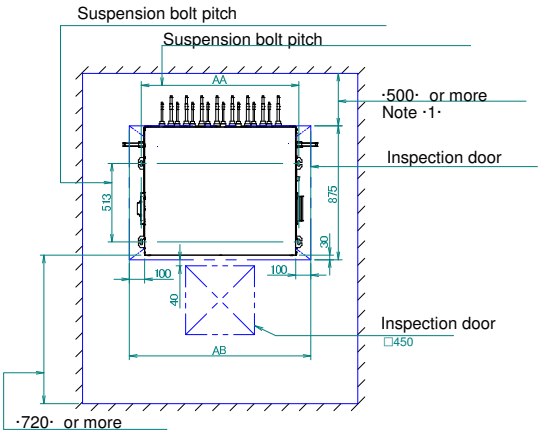
Notes
- Data is valid at free field condition.
- Data is valid at transient operation conditions resulting in maximum sound.
  E.g. defrost or oil return operation, switching heating to cooling,...
- dBA = A-weighted sound pressure level (A scale according to IEC).
- Reference acoustic pressure 0 dB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

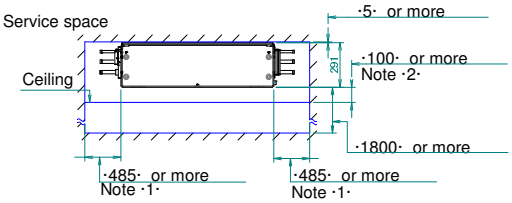
4D694507

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 ·1/100· 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· [kg] × 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

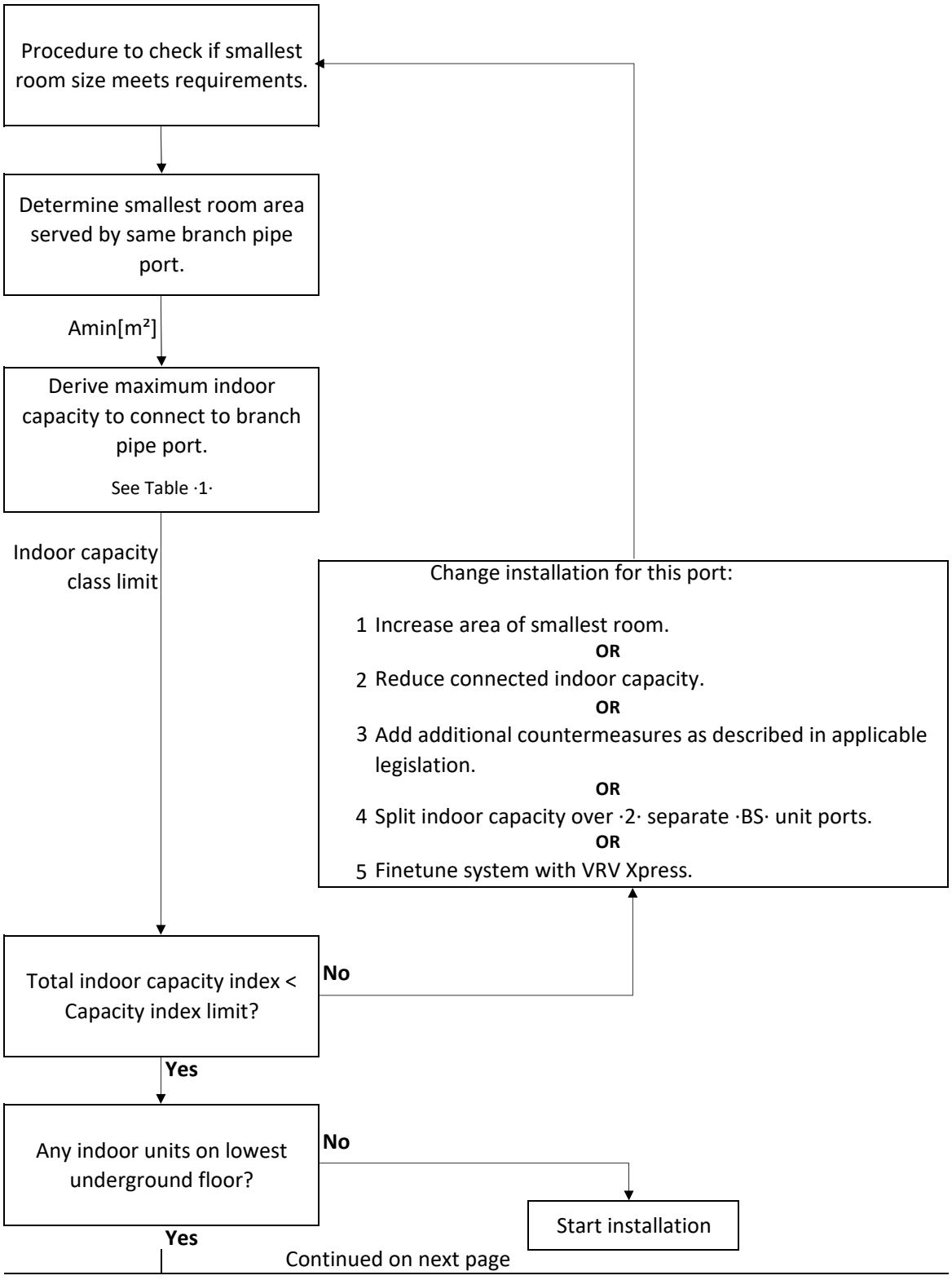
10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B

Indoor unit installation

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

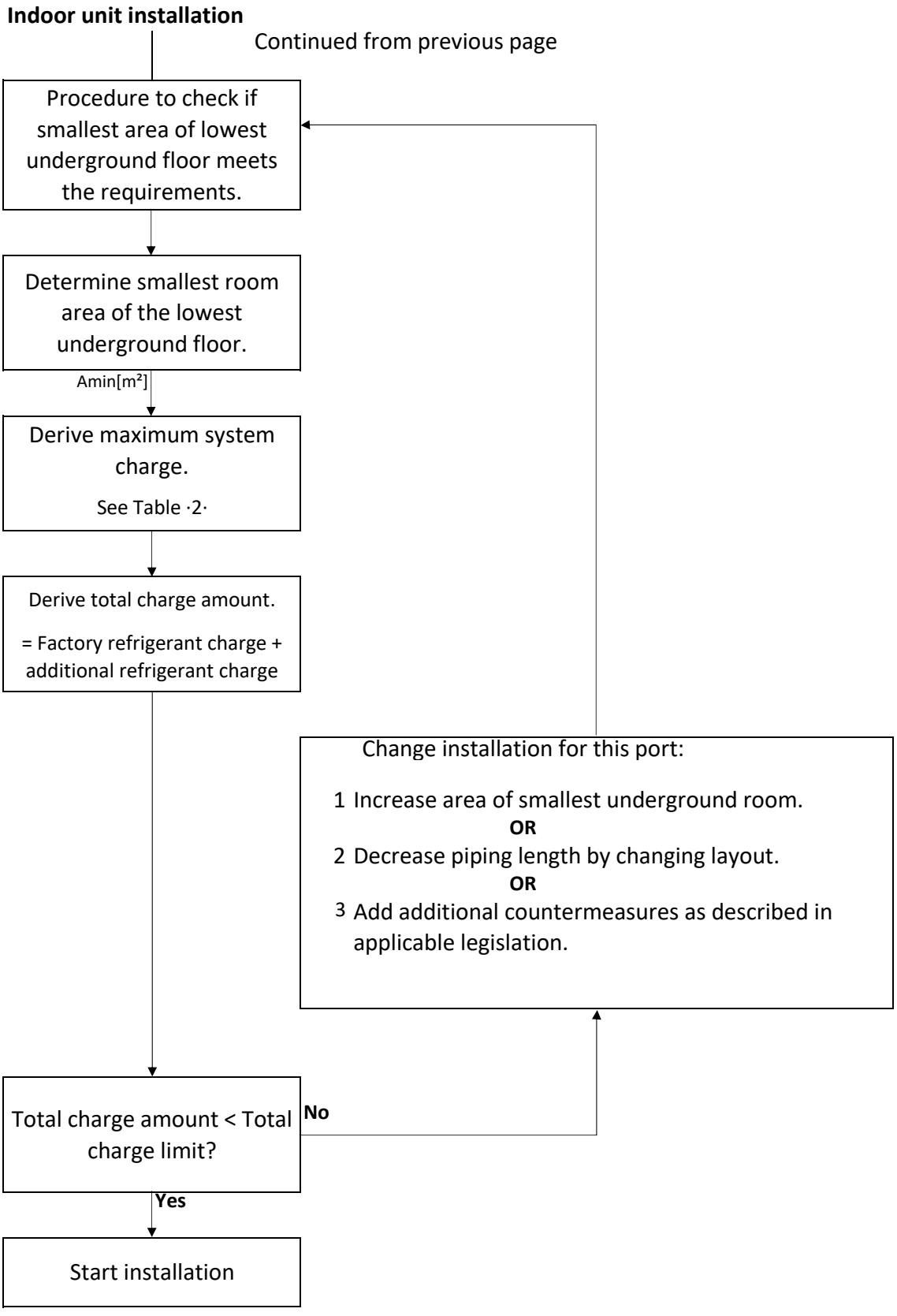


4D141154

10 Installation

10 - 2 Refrigerant Charge Information

BS-A14AV1B



10 Installation

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Indoor unit installation

Table ·1·

Room area [m²]	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.

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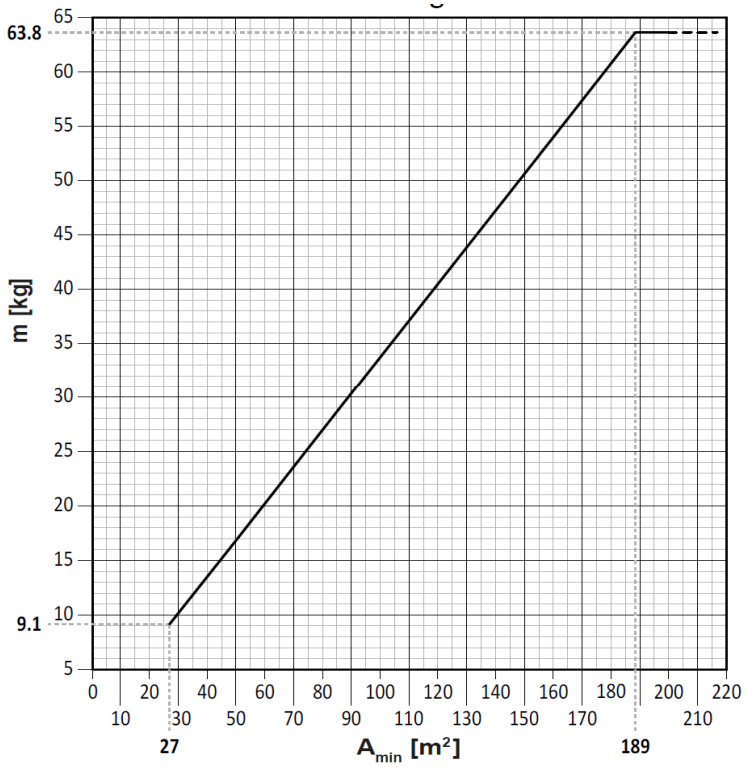
Table ·2·

Lowest underground floor (·a·)



A_{min} (m²)	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

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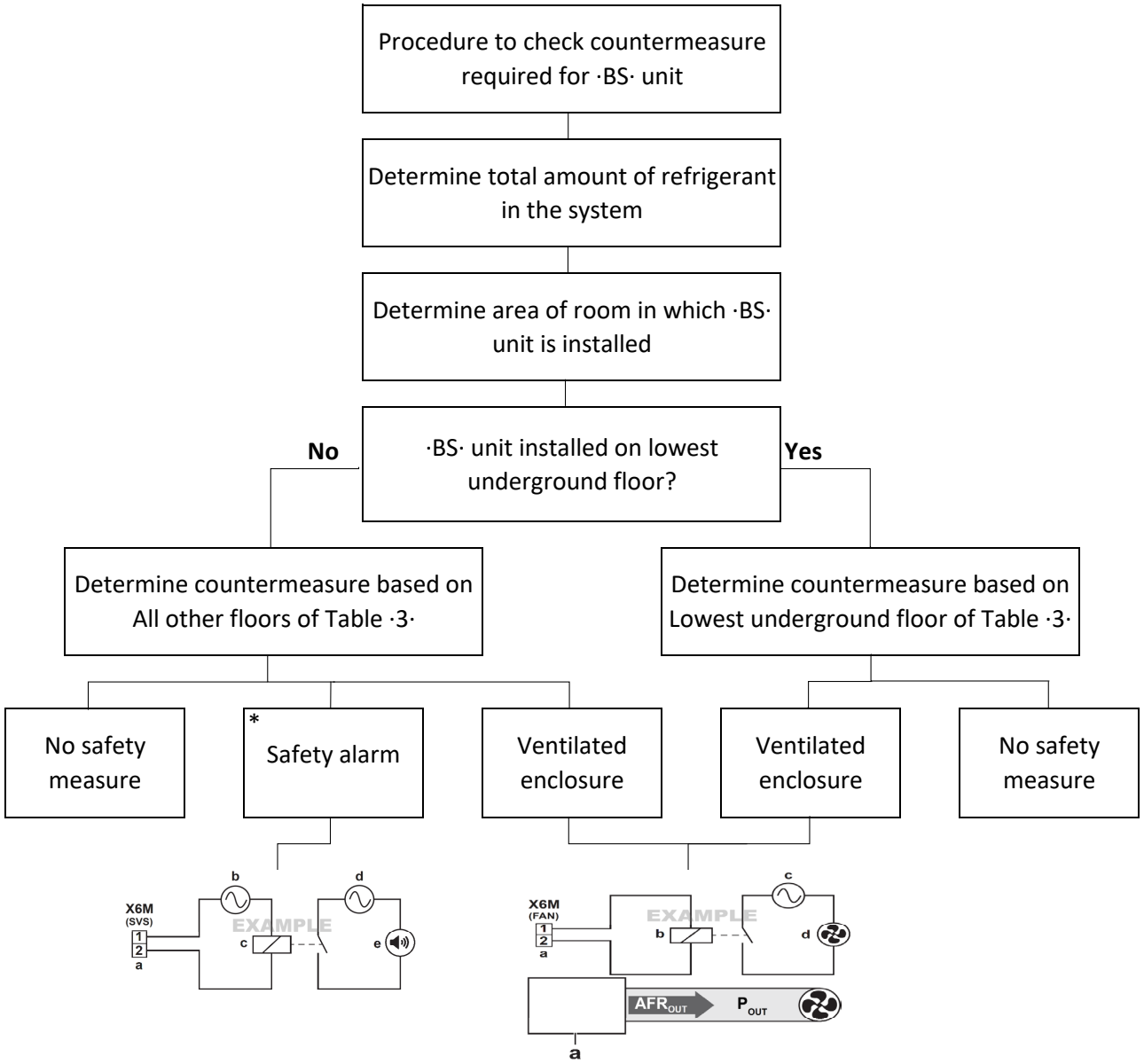
·BS· unit installation

10

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.

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10 Installation

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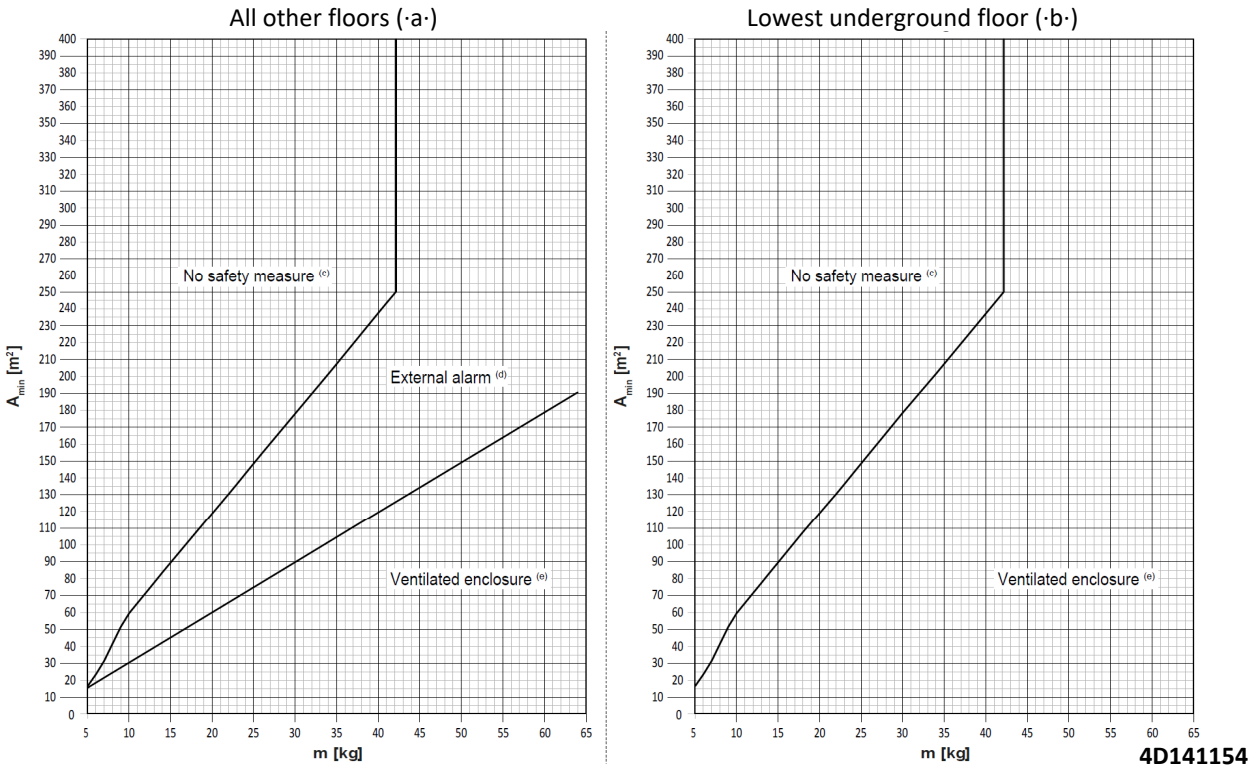
·BS· unit installation

Table ·3·



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·BS· unit installation

m [kg]	Amin [m²]			m [kg]	Amin [m²]		
	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	-

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10 Installation

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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.

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·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.

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10 Installation

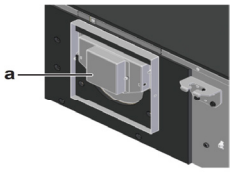
10 - 2 Refrigerant Charge Information

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.

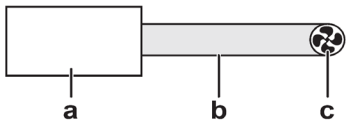
- Pressure inside the ·BS· unit has to be more than ·20· Pa below the ambient pressure.
-

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/

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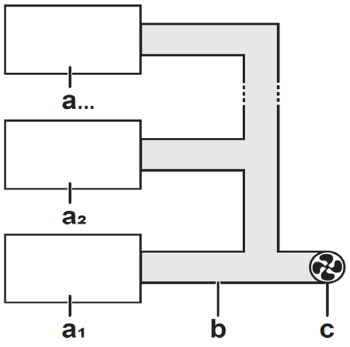
·BS· unit installation

Multiple ·BS· units in parallel – one extraction fan

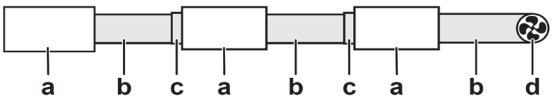
- VRV Xpress: see https://vrvxpress.daikin.eu/



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

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