

RDS

Discreet air curtain for revolving doors, with intelligent control

- For revolving doors
- Horizontal mounting
- Lengths: 1, 1,5, 2 and 2,5 m

⚡ Electrical heat: 8–30 kW

💧 Water heat WL

Application

RDS is an ideal air curtain solution for revolving doors. The air curtain is installed above the door and the exhaust duct is adapted to the diameter of the door, which gives a neat and discrete solution.

A revolving door prevents continuous drafts but still lets in a certain amount of cold air at every rotation. The air curtain prevents the cold air from penetrating and gives good heating comfort.

Design

The RDS consists of a unit and an exhaust duct adapted to the shape and colour of the revolving door. The product key offers many options for the design and finish of the air curtain.



Product specifications

- Prepared for the SIRE control system whose pre-programmed default settings and many features make it easy to install and use the air curtain. Read more about the SIRE controls package in the "Controls" section.
- Customised production based on the product key.
- The SIRE control system offers the possibility of frost protection for water heated units.
- The front of the duct is covered by a duct panel that is available in polished high gloss, polished or brushed stainless steel. It is also available in powder coated steel, in any RAL/NCS colour. Exhaust duct and air curtain in powder coated steel, white, RAL 9016. Aluminium louvres.

Technical specifications

⚡ Electrical heat - RDS E

Type	Output steps [kW]	Airflow* ¹ [m ³ /h]	Δt * ³ [°C]	Sound level* ² [dB(A)]	Voltage [V] Amperage [A] (control)	Voltage [V] Amperage [A] (heat)	Length [mm]	Weight* ⁶ [kg]
RDS23E08	2,7/5,4/8,1	1050/2300	23/11	60	230V~/2,3	400V3~/11,7	1000	80
RDS29E12	3,9/7,8/11,7	1300/2900	27/12	61	230V~/3,6	400V3~/16,9	1000	100
RDS38E18	6,0/12,0/18,0	1800/3800	30/14	62	230V~/4,8	400V3~/26,0	1500	150
RDS56E23	7,8/15,6/23,4	2700/5600	26/12	63	230V~/7,0	400V3~/33,8	2000	200
RDS65E30	9,9/18,8/29,7	3100/6500	29/14	64	230V~/8,2	400V3~/42,9	2500	220

💧 Water heat - RDS WL, coil for low water temperature (≤ 80 °C)

Typ	Output* ⁴ [kW]	Output* ⁵ [kW]	Airflow* ¹ [m ³ /h]	Δt * ^{3,4} [°C]	Δt * ^{3,5} [°C]	Water volume [l]	Sound level* ¹ [dB(A)]	Voltage [V]	Amperage [A]	Length [mm]	Weight* ⁶ [kg]
RDS23WL	10,3	17,9	1050/2300	18/13	31/23	2,2	60	230V~	2,3	1000	80
RDS29WL	11,7	20,4	1300/2900	17/12	29/21	2,2	61	230V~	3,6	1000	100
RDS38WL	17,3	29,8	1800/3800	18/13	31/23	3,4	62	230V~	4,8	1500	150
RDS56WL	25,5	43,3	2700/5600	18/13	30/23	4,5	63	230V~	7,0	2000	200
RDS65WL	32,0	54,1	3100/6500	19/15	32/25	5,7	64	230V~	8,2	2500	220

*¹) Lowest/highest airflow of totally 5 fan steps.

*²) Conditions: Distance to the unit 5 metres. Directional factor: 2. Equivalent absorption area: 200 m².

*³) Δt = temperature rise of passing air at maximum heat output and lowest/highest airflow.

*⁴) Applicable at water temperature 60/40 °C, air temperature, in +18 °C.

*⁵) Applicable at water temperature 80/60 °C, air temperature, in +18 °C.

*⁶) Approximate weight for air curtain and duct.

The data are estimated average values which are affected by the shape of the exhaust duct.

Protection class: IP20.

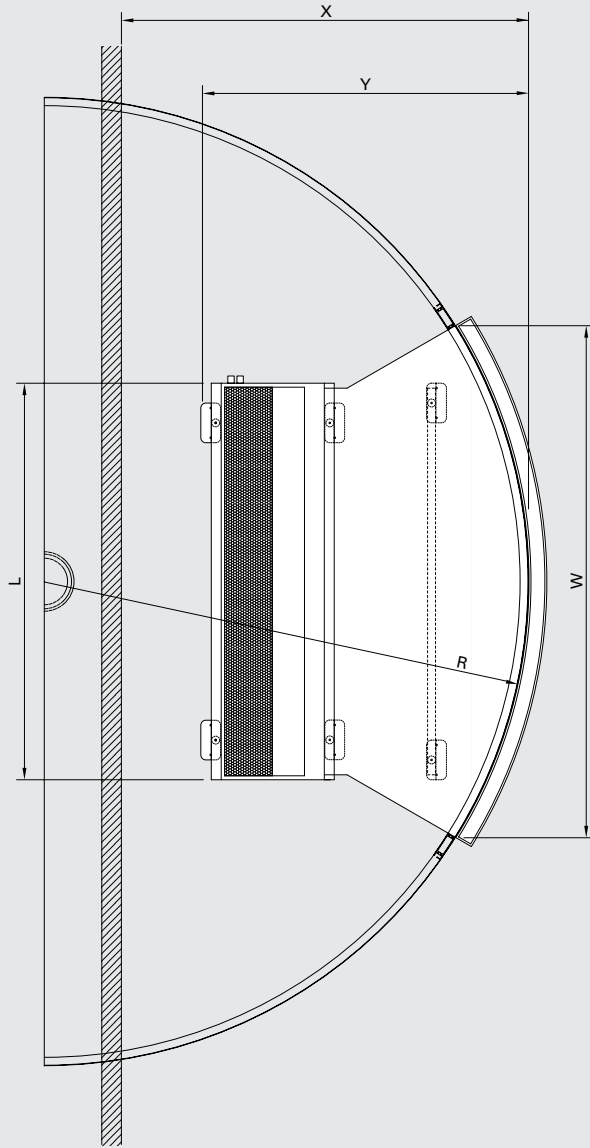
CE compliant.



RDS

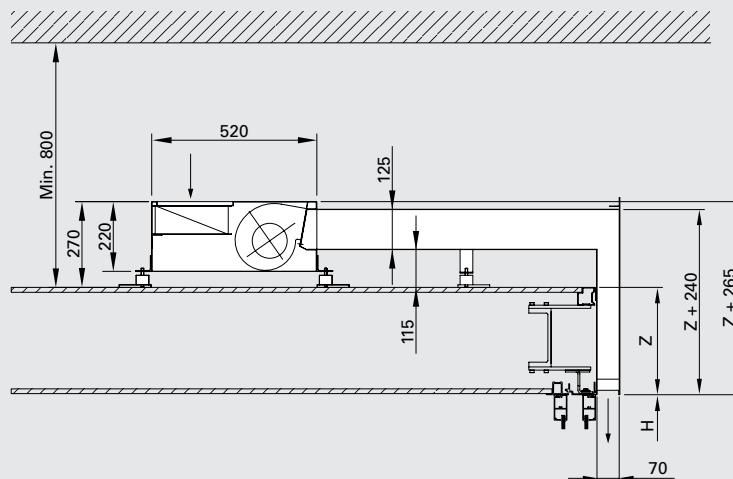
Dimensions

Top view



	L [mm]
RDS23	1000
RDS29	1000
RDS38	1500
RDS56	2000
RDS65	2500

Side view



Ordering

Select air curtain

To select which air curtain to order, multiply the width with the height of the opening of the revolving door, to get the surface of the opening. To create comfort in the entrance area between 3,5 and 5 kW heating per square metre of opening, depending on the lowest outdoor temperature, is needed.

Product key

Type - R - W - X - Z - Material / colour

Example: RDS56WL - 2500 - 2900 - 2350 - 500 - P

Y is variable, depending on the other dimensions in the product key.

Type	See Technical specifications.
R	The outer radius of the revolving door above the entrance height.
W	The opening width of the revolving door
X	The largest distance between the outer radius R of the revolving door and the wall to the outside
Z	The height between the inner ceiling of the revolving door (the position of the outlet of the duct) up to the outer roof of the revolving door (where the air curtain is mounted).
Material/ colour	P = Polished stainless steel B = Brushed stainless steel MP = Mirror polished stainless steel State RAL-kod = Powder coating RAL State NCS-kod = Powder coating NCS Only valid for duct cover plate. Air curtain and duct are made of powder lacquered steel panels, white, RAL9016.

Mounting

The air curtain is installed horizontally on the roof of the revolving door on steel plates (100 x 200 mm) that distribute the weight.

- Make sure that the air curtain fits on top of the revolving door.
- The distance between the roof of the revolving door and the inside ceiling must not be less than 800 mm, for installation and service to be possible.
- The distance X between the outer radius of the revolving door and the outer wall would in normal circumstances be at least 1400 mm.
- Normally the length 'L' of the air curtain should be less than the opening width 'W' of the revolving door.
- It is a requirement that the length 'L' of the air curtain is larger than the opening width 'W'. Or if there is limited space a special shaped duct can be supplied.
- Ensure that the ceiling of the revolving door can carry the weight of the air curtain and duct. The total weight of the installation is stated in the Technical specifications. If the revolving door roof cannot take the weight, RDS can be carried on a beam construction. Beam mountings included.

Contact Frico before ordering for more information about the product and special adaptations.



RDS

Connection

The PC board SIRE is built into the air curtain on delivery and is equipped with modular connectors for easy connection of external components. Read more about the SIRE control system in the "Controls" section.

Unit with electrical heating

The electrical connection is made on the side of the unit. Control (230V~) and power supply for heat (400V3~) should be connected to a terminal block. For units with electrical heating, power and control should be supplied separately.

Unit with water heating

Connected via the built-in control board with 2 m cord and plug.

The water coil is connected on the side of the unit via DN25 (1"), internal thread connections. Flexible hoses are available as an accessory.



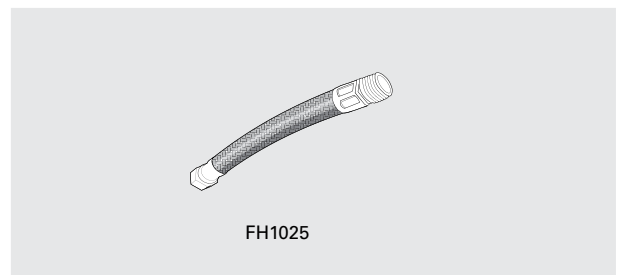
Accessories

RDSB, beam

If the revolving door roof cannot take the weight, RDS can be carried on a beam construction. Measurements 40x80 mm, state length when ordering.

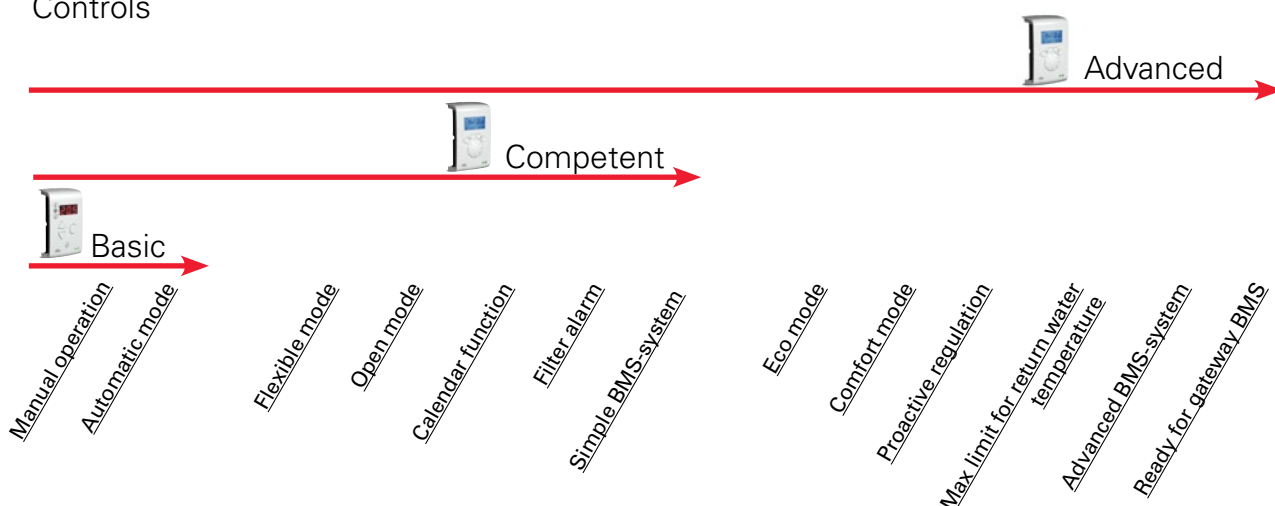
FH1025, flexible hose

Flexible hose (DN25, 1" inside thread) for easy connection to the pipe system.



Type	Description
RDSB	Beam 40x80 mm
FH1025	Flexible hose DN25, inside thread, length 1 m

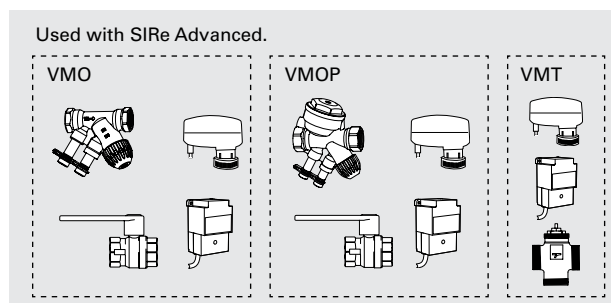
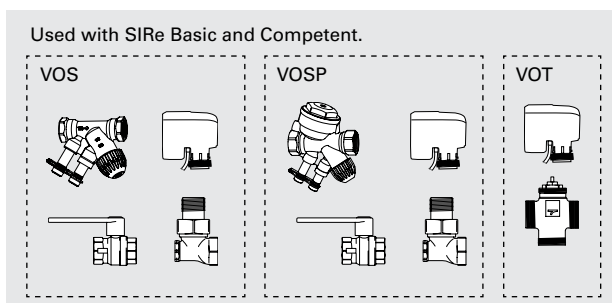
Controls



This air curtain is supplied with an integrated PC board SIRE. There are three different levels with different functionality to choose from, Basic, Competent or Advanced. Read more about the SIRE control system in the "Controls" section.

Type	Description
SIREB	Control system SIRE Basic
SIREAC	Control system SIRE Competent
SIREAA	Control system SIRE Advanced

Water control



Valve kit VOS(P), VOT, VMO(P) or VMT is used to control the water flow. For more information see the "Controls" section.

Type	Description
VOS15LF	Valve kit on/off, low flow, DN15
VOS15NF	Valve kit on/off, DN15
VOS20	Valve kit on/off, DN20
VOS25	Valve kit on/off, DN25
VOSP15LF	Pressure independent valve kit, low flow, DN15
VOSP15NF	Pressure independent valve kit, DN15
VOSP20	Pressure independent valve kit, DN20
VOSP25	Pressure independent valve kit, DN25
VOT15	Three way control valve and actuator on/off, DN15
VOT20	Three way control valve and actuator on/off, DN20
VOT25	Three way control valve and actuator on/off, DN25

Type	Description
VMO15LF	Modulating valve kit, low flow, DN15
VMO15NF	Modulating valve kit, DN15
VMO20	Modulating valve kit, DN20
VMO25	Modulating valve kit, DN25
VMOP15LF	Pressure independent and modulating valve kit, low flow, DN15
VMOP15NF	Pressure independent and modulating valve kit, DN15
VMOP20	Pressure independent and modulating valve kit, DN20
VMOP25	Pressure independent and modulating valve kit, DN25
VMT15	Three way control valve and modulating actuator, DN15
VMT20	Three way control valve and modulating actuator, DN20
VMT25	Three way control valve and modulating actuator, DN25

RDS

Output charts water

			Supply water temperature: 80 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 80/60 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPA]	Output**2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPA]
RDS23WL	max	2300	13,3	42,7	0,09	1,9	17,9	40,9	0,22	10,8
	min	1050	6,1	32,7	0,03	0,3	11,0	48,9	0,13	4,3
RDS29WL	max	2900	16,7	47,7	0,13	3,9	20,4	38,7	0,25	13,9
	min	1300	7,5	34,1	0,04	0,5	12,6	46,6	0,15	5,6
RDS38WL	max	3800	21,9	41,9	0,14	2,1	29,8	41,1	0,36	12,4
	min	1800	10,4	31,5	0,05	0,3	18,8	48,7	0,23	5,1
RDS56WL	max	5600	32,3	41,5	0,20	5,9	43,4	40,8	0,53	35,5
	min	2700	15,6	30,3	0,08	1,0	27,8	48,3	0,34	15,1
RDS65WL	max	6500	37,5	37,4	0,21	8,1	54,1	42,5	0,66	68,9
	min	3100	17,9	27,9	0,08	1,4	33,9	50,2	0,41	27,7

			Supply water temperature: 70 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 70/50 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPA]	Output**2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPA]
RDS23WL	max	2300	13,3	46,8	0,14	4,7	14,1	36,1	0,17	6,9
	min	1050	6,1	34,5	0,04	0,5	8,7	42,5	0,11	2,8
RDS29WL	max	2900	16,7	52,3	0,23	12,5	16,1	34,3	0,20	8,9
	min	1300	7,5	37,0	0,06	0,9	10,0	40,7	0,12	3,6
RDS38WL	max	3800	21,9	46,1	0,22	5,0	23,6	36,3	0,29	8,0
	min	1800	10,4	34,1	0,07	0,6	14,9	42,4	0,18	3,4
RDS56WL	max	5600	32,3	46,3	0,33	14,7	34,5	36,1	0,42	23,0
	min	2700	15,6	33,4	0,10	1,7	22,1	42,2	0,27	9,9
RDS65WL	max	6500	37,5	42,0	0,33	17,9	43,2	37,6	0,52	44,6
	min	3100	17,9	30,8	0,11	2,4	27,1	43,7	0,33	18,2

*1) Recommended outlet air temperature for good comfort and optimized output.

*2) Nominal output at given supply and return water temperature.

Output charts water

			Supply water temperature: 60 °C Room temperature: +18 °C Outlet air temperature: +35 °C*1				Water temperature: 60/40 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPA]	Output**2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPA]
RDS23WL	max	2300	13,3	51,9	0,40	35,5	10,3	31,3	0,12	3,9
	min	1050	6,1	37,9	0,07	1,2	6,4	36,0	0,08	1,6
RDS29WL	max	2900	13,8	46,9	0,26	15,0	11,7	29,9	0,14	5,0
	min	1300	7,5	40,9	0,10	2,3	7,3	34,6	0,09	2,1
RDS38WL	max	3800	21,9	51,5	0,63	36,4	17,3	31,4	0,21	4,5
	min	1800	10,4	37,8	0,11	1,4	11,0	36,0	0,13	1,9
RDS56WL	max	5600	32,3	52,0	1,05	136	25,5	31,4	0,31	13,1
	min	2700	15,6	37,7	0,17	4,3	16,4	35,9	0,20	5,7
RDS65WL	max	6500	37,1	48,0	0,72	83,2	32,0	32,5	0,39	25,4
	min	3100	17,9	34,9	0,17	5,5	20,2	37,2	0,24	10,5

			Supply water temperature: 55 °C Room temperature: +18 °C Outlet air temperature: +32 °C				Water temperature: 55/35 °C Room temperature: +18 °C			
Type	Fan position	Airflow [m³/h]	Output [kW]	Return water temp. [°C]	Water flow [l/s]	Pressure drop [kPA]	Output**2 [kW]	Outlet air temp. [°C]	Water flow [l/s]	Pressure drop [kPA]
RDS23WL	max	2300	11,2	46,0	0,30	20,9	8,4	28,7	0,10	2,7
	min	1050	5,2	35,0	0,06	1,1	5,2	32,6	0,06	1,1
RDS29WL	max	2900	14,1	50,0	0,76	124,2	9,5	27,7	0,11	3,4
	min	1300	6,4	37,0	0,09	1,9	6,0	31,5	0,07	1,4
RDS38WL	max	3800	18,7	46,0	0,50	24,0	14,1	28,9	0,17	3,1
	min	1800	8,6	34,0	0,10	1,1	9,0	32,7	0,11	1,3
RDS56WL	max	5600	27,2	46,0	0,73	68,5	20,9	29,0	0,25	9,1
	min	2700	12,5	32,0	0,13	2,8	13,5	32,8	0,16	4,0
RDS65WL	max	6500	31,0	42,0	0,56	50,8	26,4	30,0	0,32	17,6
	min	3100	14,4	30,0	0,14	3,8	16,7	33,9	0,20	7,4

*1) Recommended outlet air temperature for good comfort and optimized output.

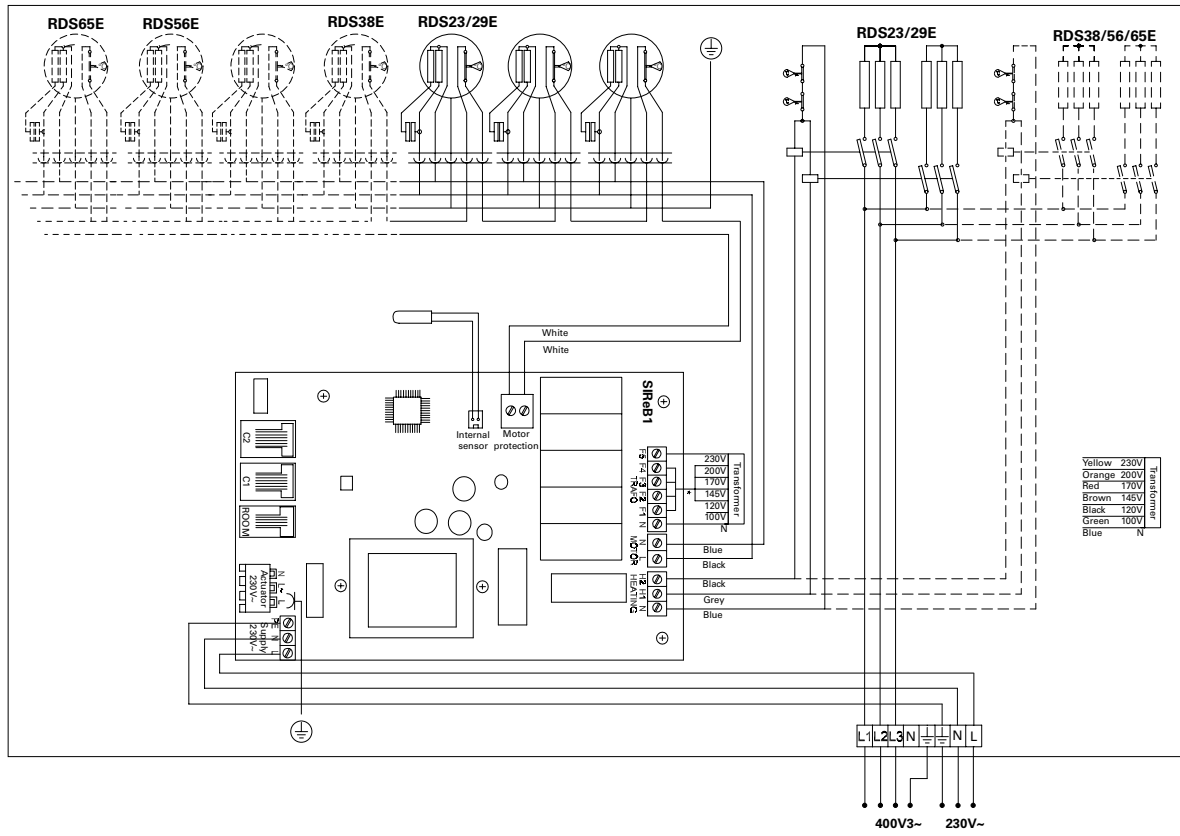
*2) Nominal output at given supply and return water temperature.

RDS

Wiring diagrams

Internal wiring diagram

Unit with electrical heating



Wiring diagrams

Internal wiring diagram

Unit with water heating

