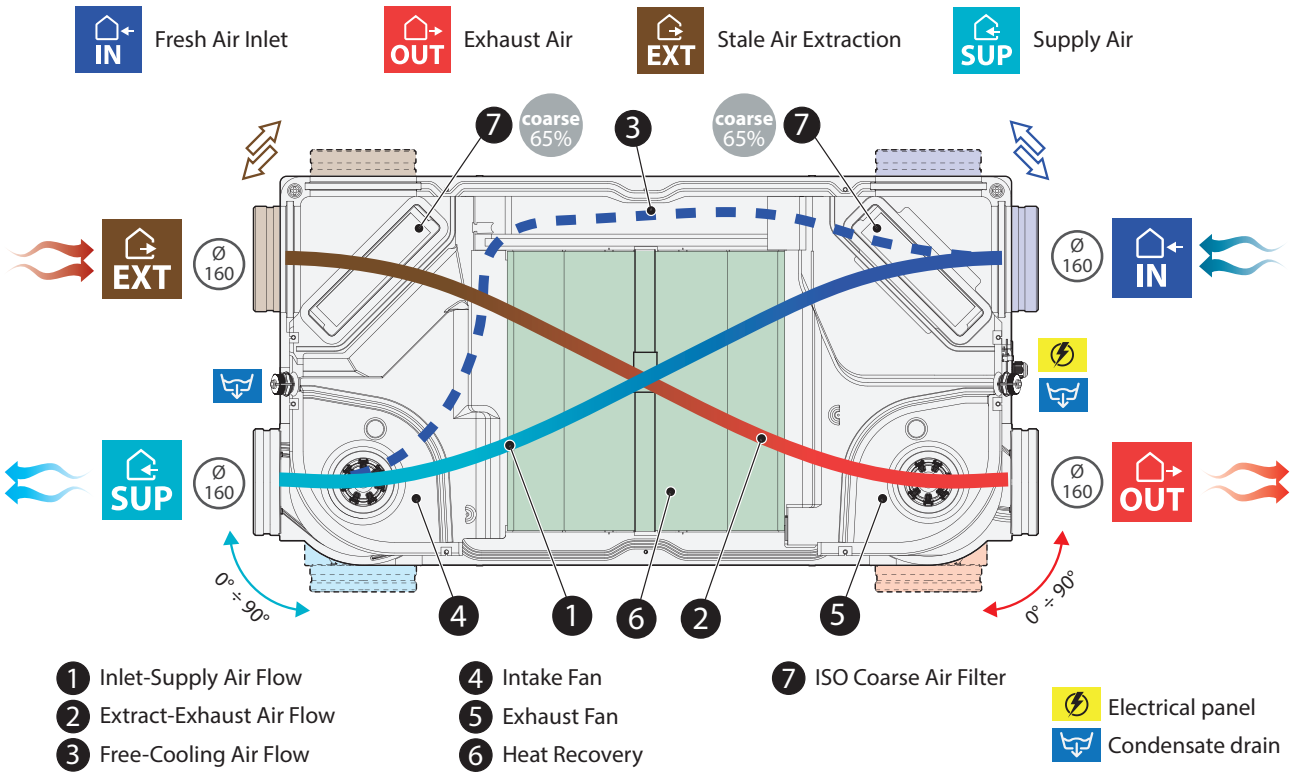
REFLAIR

TECHNICAL DATA SHEET

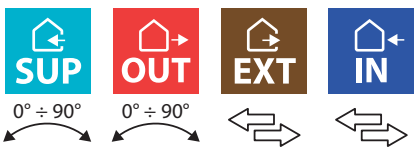
Description	Sizes (wxhxd)	Weight	Code
REFLAIR 150	1100x240x580 mm	22 kg	70RFL00150
REFLAIR 250	1100x240x580 mm		70RFL00250

Reflair is an high-efficiency ductable mechanical ventilation unit with heat recovery, designed for residential use. It can be installed either in the false ceiling or on the wall. Adjustable and configurable connections ensure a constant pressure drop and reduce the number of connections required. The construction in sintered expanded polypropylene thermally insulates the internal components and makes the unit extremely light. Thanks to its compact dimensions, it can be installed in spaces of reduced height. REFLAIR can be integrated and managed control panels integrated into the CoRe regulation system, or controlled via digital inputs.

PRINCIPLES OF OPERATION



- Balanced ventilation unit with heat recovery;
- Wall and false ceiling installation;
- High-efficiency heat recovery with countercurrent flows;
- EPP body to increase thermal and acoustic insulation and reduce the weight of the unit;
- Centrifugal fans with constant flow EC motor;
- 4 NTC sensors for air temperature monitoring;
- ISO Coarse 65% (G4) filters as standard;
- ISO ePM1 60% (F7) filters optional;
- Operating modes: manual, schedules, economy, boost, free-cooling;
- Room controllers: CoRe AIR SPEED, CoRe AIR CONTROL, CoRe AIR 3V, IAQ probes;
- Other control options: CoRe System, digital inputs, 0-10V signal, Modbus;
- No. 1 Condensate drain kit (SF-M, SF-P N) mandatory;



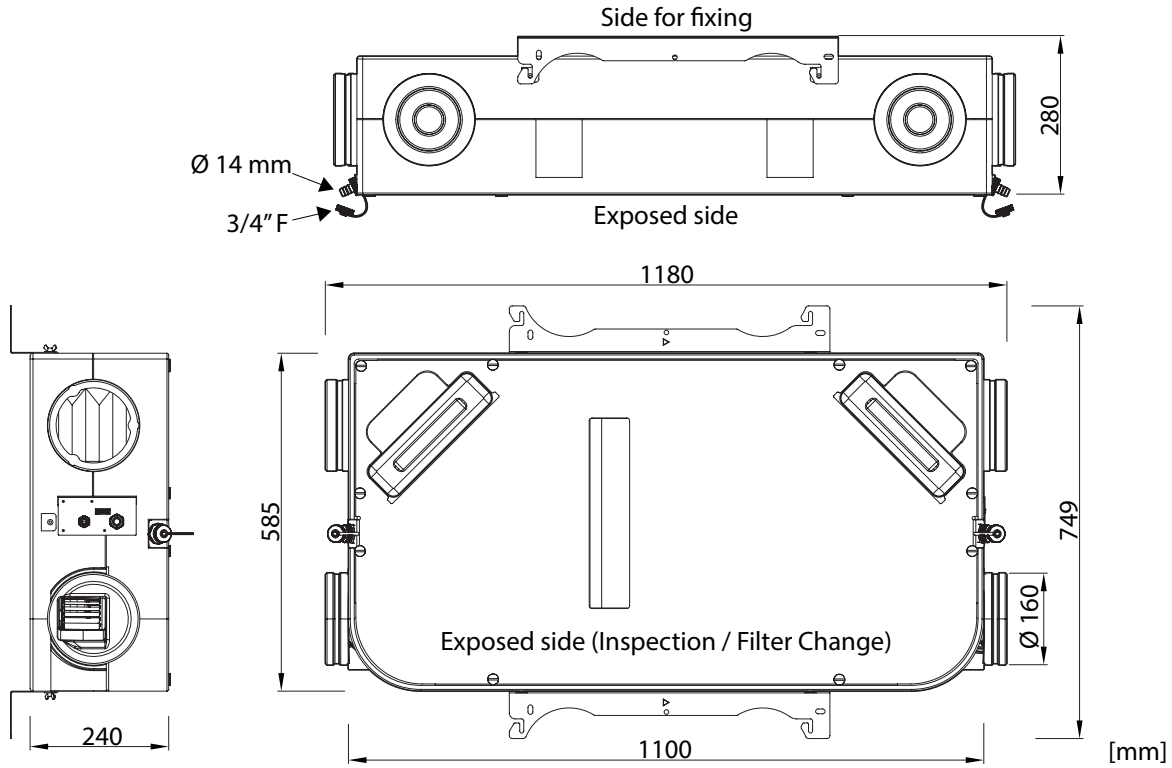
Packaging composition

- Mechanical ventilation unit;
- Installation template for brackets;
- Brackets for ceiling or wall mounting;
- Instruction manual for installation, start-up and maintenance;

Materials

- Sintered expanded polypropylene and prepainted steel;

DIMENSIONS



UNIT CONTROL MODES

CHARACTERISTICS

- Wall installation on built-in box 502/503 or Ø 60 mm
- Power supply 12 VDC (power supply unit required)
- Bus cable 2x0.5 mm2 twisted and shielded
- Power consumption max. 60 mA
- R-BUS port
- Devices for indoor application

CoRe Air Speed

Room control for displaying and setting the unit's operation.

CoRe Air Control

Room control for managing operating modes, time schedules and parameters of the unit.

CoRe Air 3v

Room control for displaying and setting the operation of the controlled mechanical ventilation unit.

INTEGRATION INTO CONTROL SYSTEM

Reflair can be integrated into RDZ CoRe System or within in systems with Modbus or KNX protocol.

Accessories / Complements		Code
ROOM CONTROLLER	CORE AIR SPEED	7041476
	CORE AIR CONTROL	7041477
	CORE AIR 3V	7141478
	INTERFACE KNX-UTA	7041480
AIR FILTERS KIT	REFLAIR 150/250 G4	70RFLG4000
	REFLAIR 150/250 F7	70RFLF7000
CONDENSATE DRAIN KIT (*)	SF-M 13	3600401
	SF-P N	7045504

(*) It is mandatory install nr. 1 condensate drain kit.

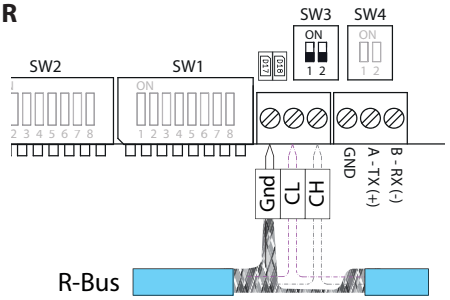
REFLAIR 150 | Optional		Code
STD ELECTRIC HEATER	RE-S 05-125	7045565
WATER BATTERY	BA-P 6	7045598
	BA-P 10	7045599
MODULATING VALVE Ø ½"		7045562

REFLAIR 250 | Optional		Code
STD ELECTRICAL RESISTANCE	RE-S 075-160	7045567
WATER BATTERY	BA-P 6	7045598
	BA-P 10	7045599
MODULATING VALVE Ø ½"		7045562

CORE SYSTEM R-BUS NETWORK CONNECTIONS

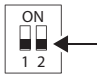
The communication cable between the various nodes is a 2 x 0,5 mm² twisted and shielded cable, entry-exit connection.
The shielding must be connected by creating continuity between the various pieces of cable and grounded at a single point in the network.
It is possible to connect several probes to the same Reflair unit.

REFLAIR

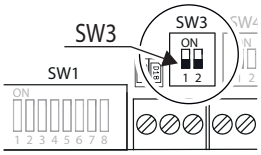


TERMINATION R-BUS (SWITCH SW3)

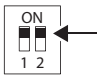
(D) Termination OFF (default)



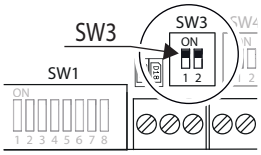
DIP 1-2 in OFF position



(T) Termination ON



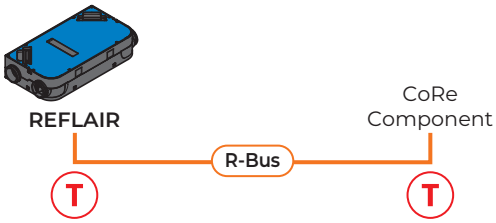
DIP 1-2 in ON position



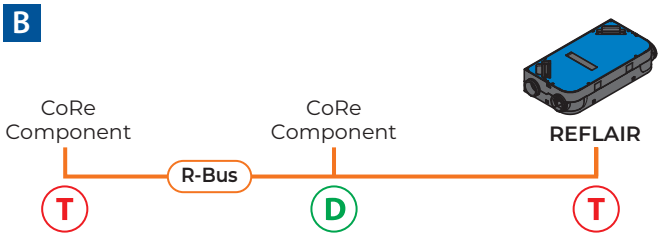
R-BUS termination must be set ONLY on the devices placed at the ends of the CoRe network.

CONNECTION EXAMPLES

A



B



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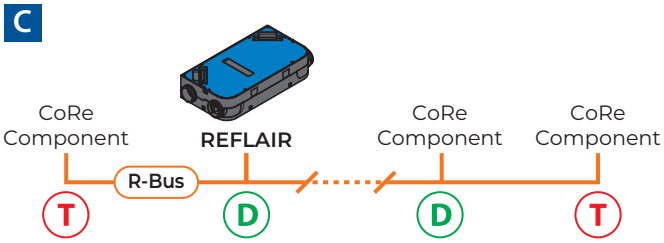


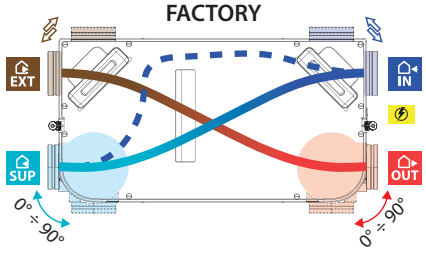
POSSIBLE INSTALLATION CONFIGURATIONS

Below we list the possible airflow configurations for the installation of REFLAIR in horizontal ceiling or vertical wall versions.
The unit is supplied with FACTORY configuration.
The reversal of flows, called REVERSE configuration, is obtained by setting DIP 2 Switch SW1 to ON position (see WIRING DIAGRAM on page 12).

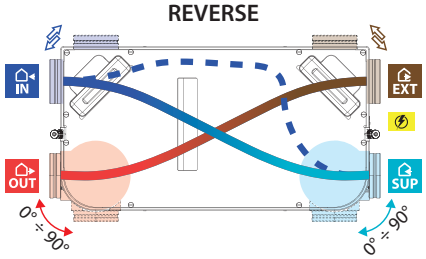
IN Fresh Air Inlet
OUT Exhaust Air
EXT Stale Air Extraction
SUP Supply Air
Electrical panel

CEILING MOUNTING

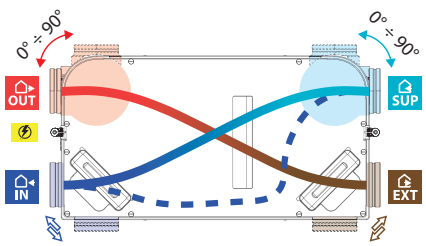
FACTORY



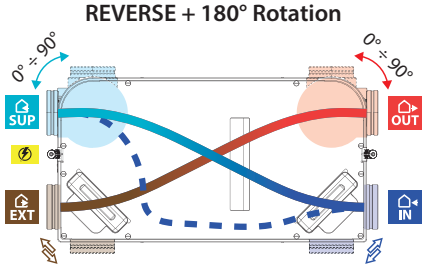
REVERSE



FACTORY + 180° Rotation

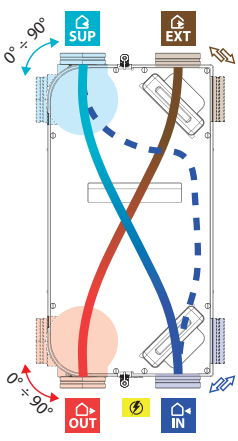


REVERSE + 180° Rotation

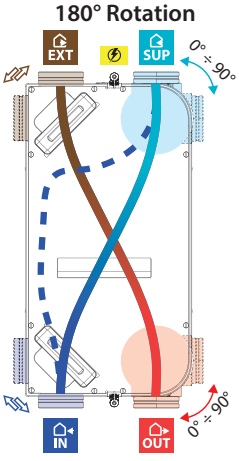


WLL MOUNTING

FACTORY



REVERSE + 180° Rotation

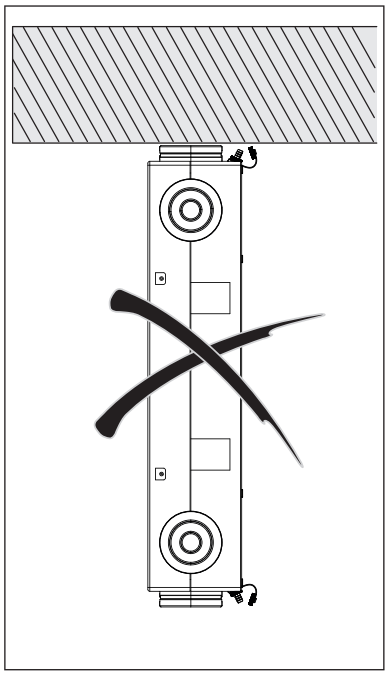


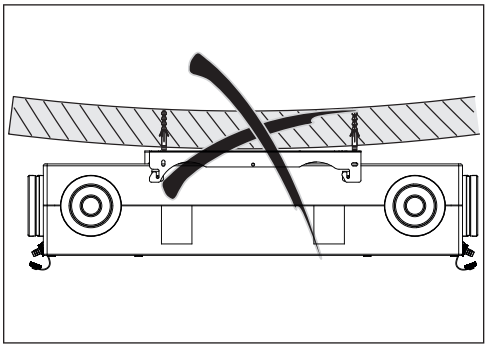
INSTRUCTION FOR POSITIONING AND FIXING

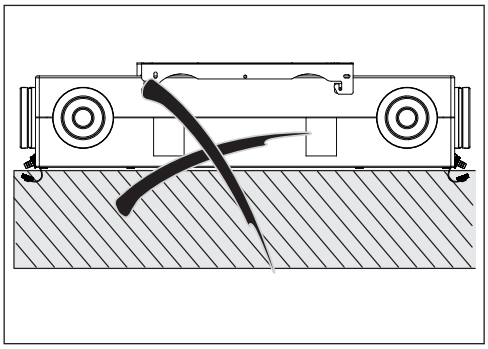
CAUTION

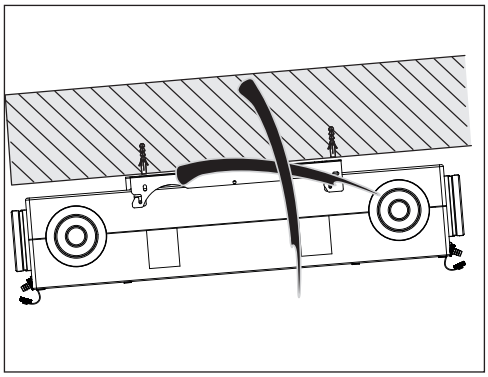
- Installation and maintenance must be carried out by qualified personnel only. Throughout installation, make sure that the equipment is not connected to the electrical mains.
- It shall be installed only inside the building.

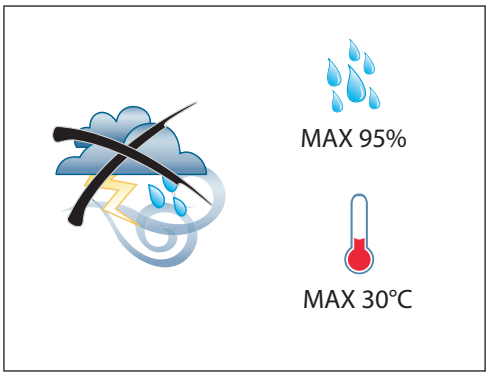
Positioning indication





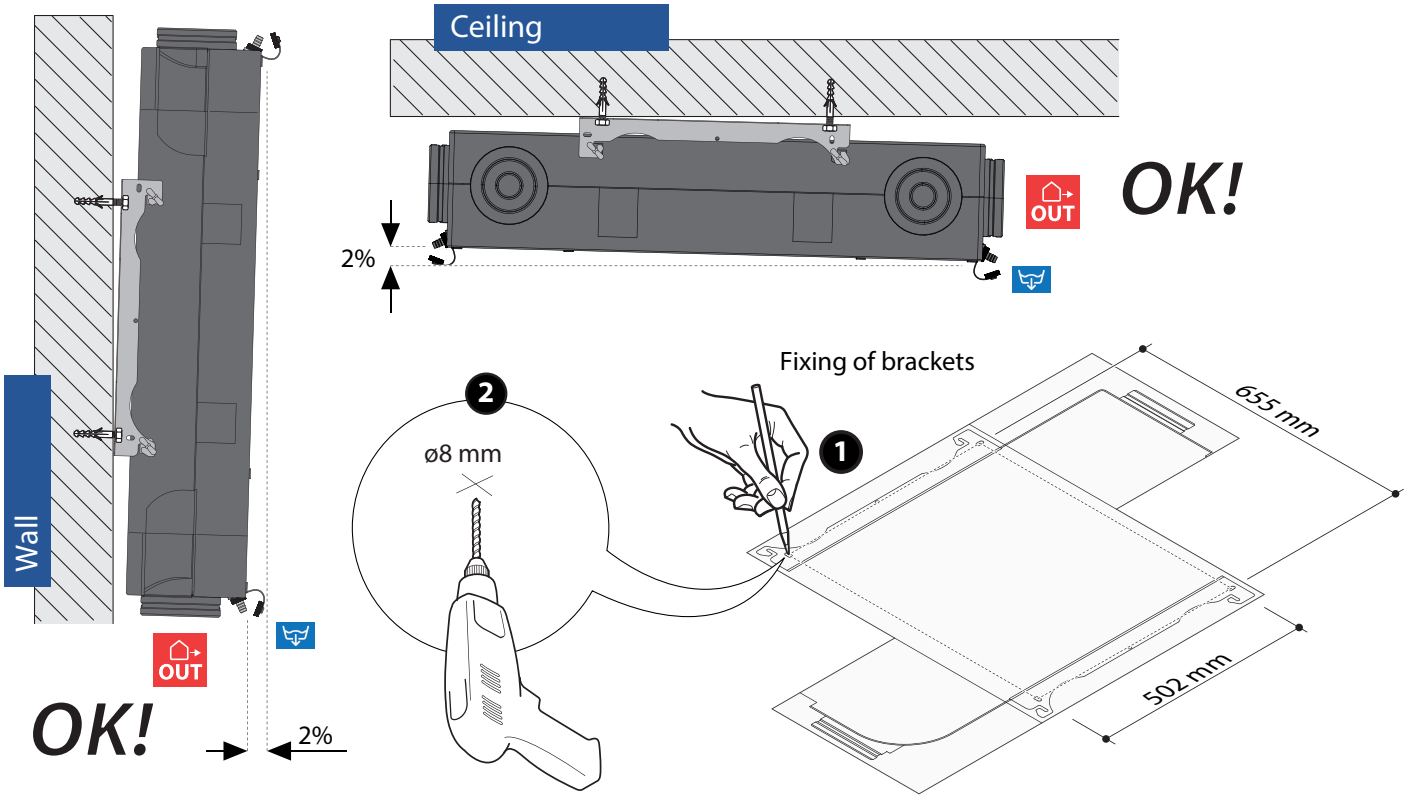






CORRECT POSITIONING

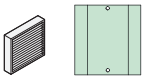
Position the machine on the ceiling or wall as indicated, use the supplied brackets to secure the unit.
Install with an inclination of 2% (approx. 2 cm) towards the condensate outlet, at the stale air outlet to the outside.
When installing the REFLAIR on the wall, keep the ejection flow (OUT) pointing downwards.

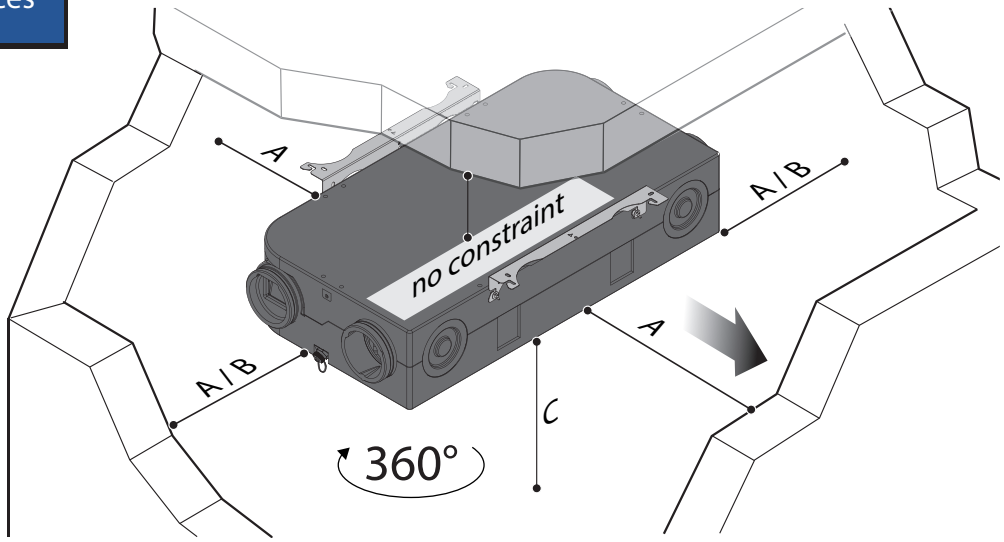


CEILING INSTALLATION

IMPORTANT: provide the necessary space for the aeraulic connections and for their bends by ensuring that the minimum respect constraints of the unit are respected.
The minimum distances to be observed depend on the positioning of the connections and the position of the electrical panel and condensate drain. Maintain a minimum distance of 40 cm on all sides of the unit with the presence of the aeraulic connections (A1), otherwise 10 cm is sufficient (A2). For inspection and maintenance of the unit, ensure a distance of at least 30 cm in the presence of the switch cabinet (B), 15 cm in the presence of the condensate drain (B) and 60 cm at the front for cleaning the filters/recuperator (C).

Minimum space allowances

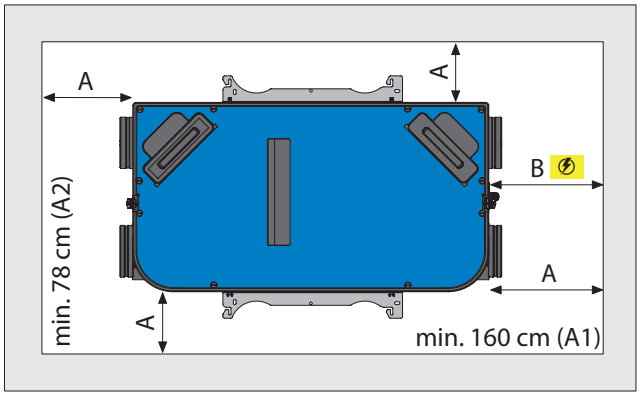
A		A1	min. 40 cm
		A2	min. 10 cm
B			min. 30 cm
			min. 30 cm
C			min. 60 cm

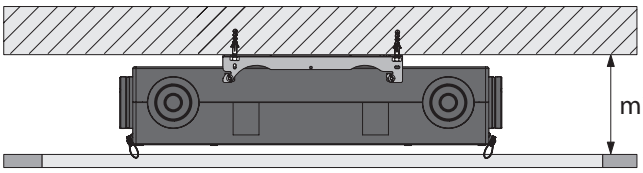


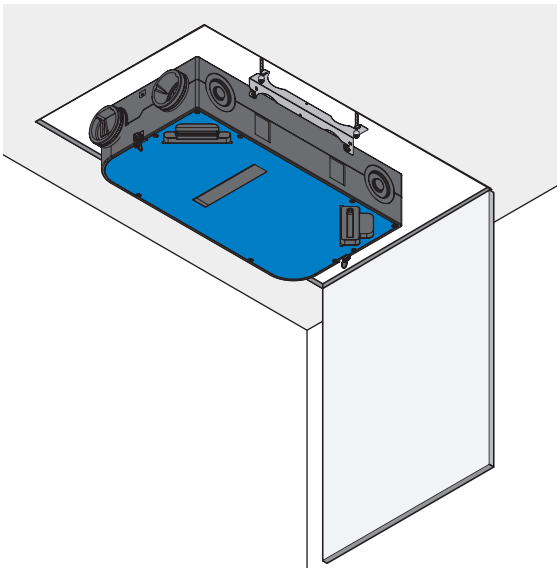
Inspection hatch

A		B
		
A1	A2	
min. 20 cm	min. 10 cm	min. 30 cm

FALSE CEILING INSTALLATION
When installing the unit in a false ceiling, it is MANDATORY to create an inspection hatch for servicing the unit.



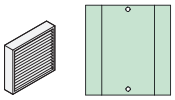


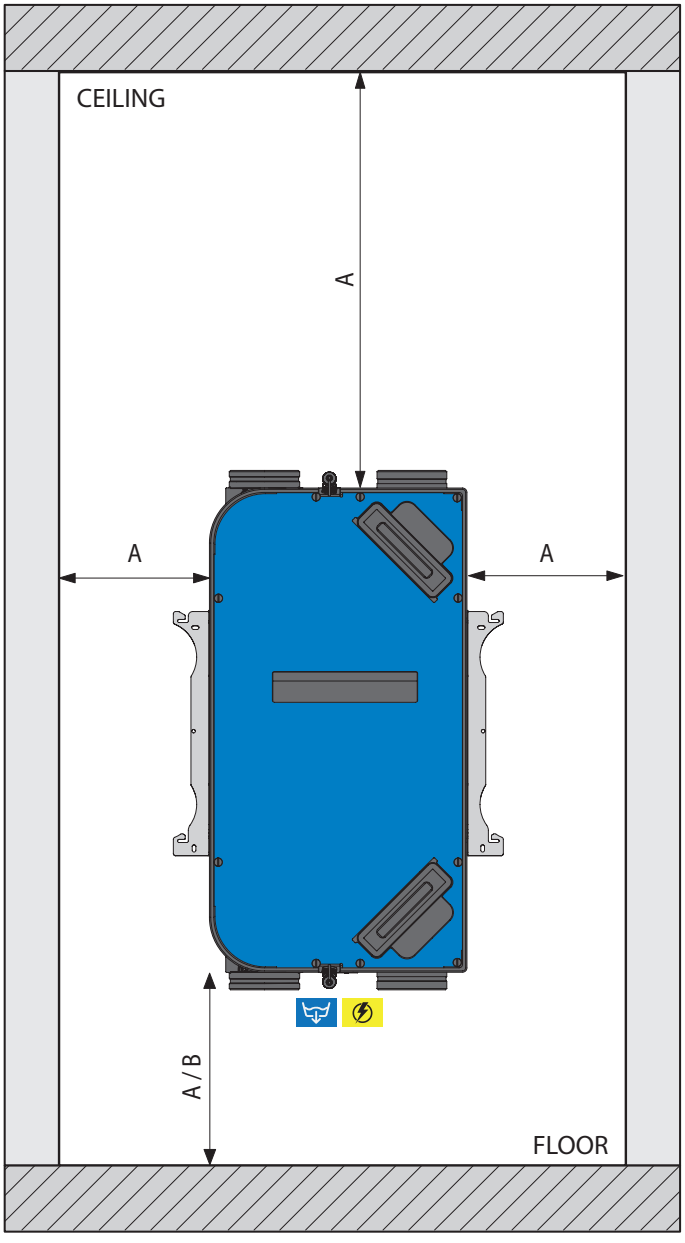


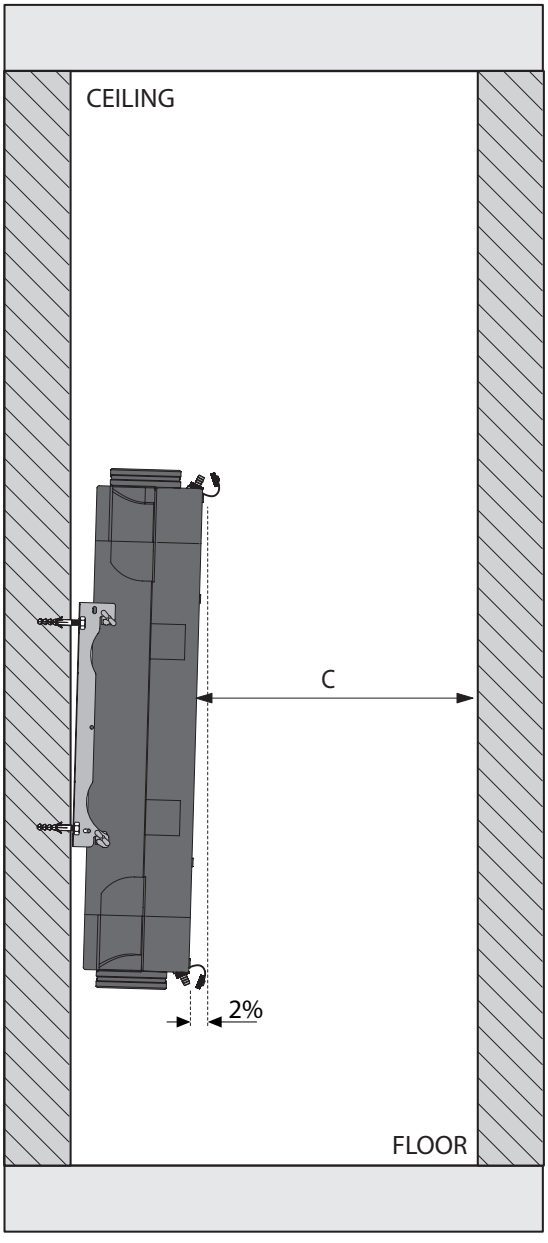
WALL INSTALLATION

IMPORTANT: provide the necessary space for the aeraulic connections and for their bends by ensuring that the minimum respect constraints of the unit are respected.
Position the machine with condensate drain and stale air ejection (OUT) flow orientation facing downwards.
The minimum distances to be observed depend on the positioning of the connections and the position of the electrical panel and condensate drain. Maintain min. 40 cm on all sides of the unit with the presence of the aeraulic connections (A1), otherwise 10 cm is sufficient (A2). For inspection and maintenance of the unit, ensure a distance of at least 30 cm in the presence of the switch cabinet (B), 15 cm in the presence of the condensate drain (B) and 60 cm at the front for cleaning the filters/recuperator (C).

Minimum space allowances

A		B		C
				
A1	A2			
min. 40 cm	min. 10 cm	min. 30 cm	min. 15 cm	min. 60 cm

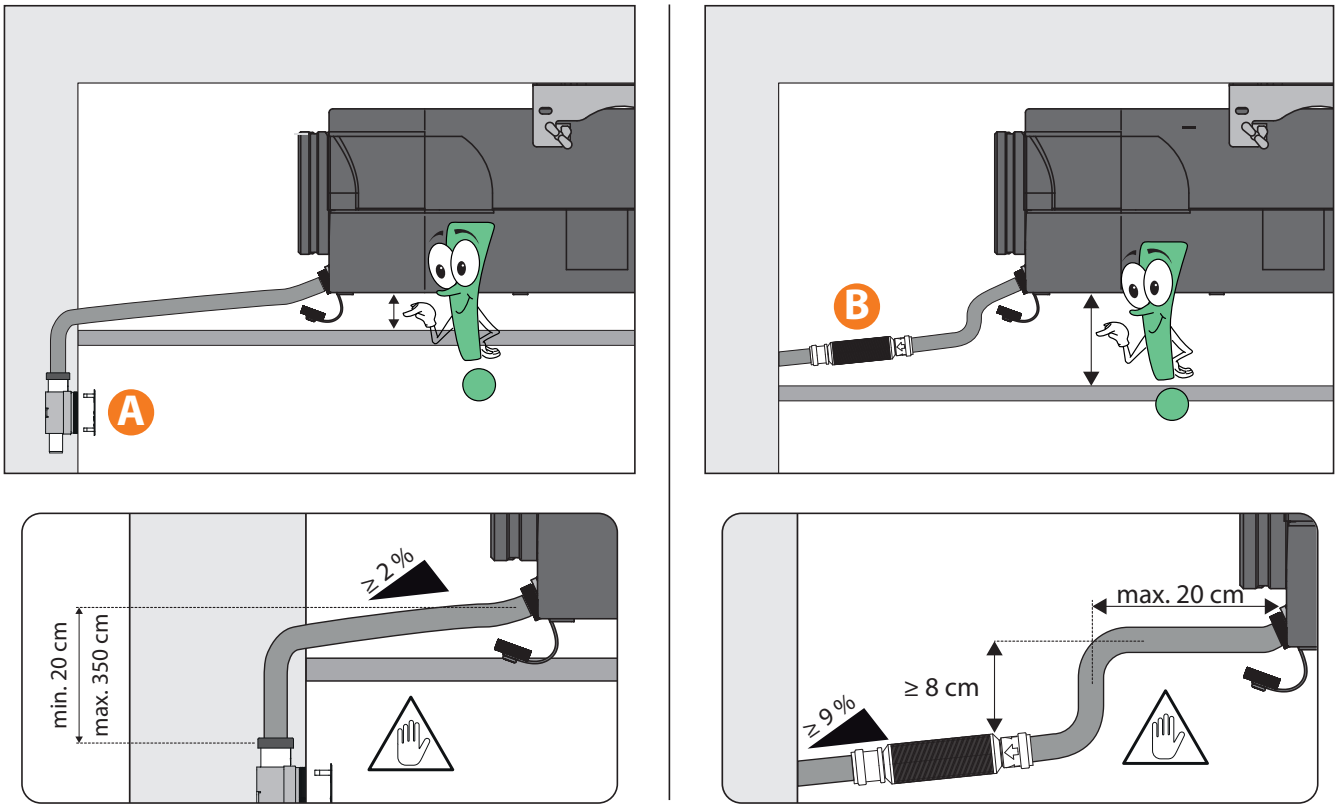




MANDATORY KIT FOR DRAIN CONDENSATE

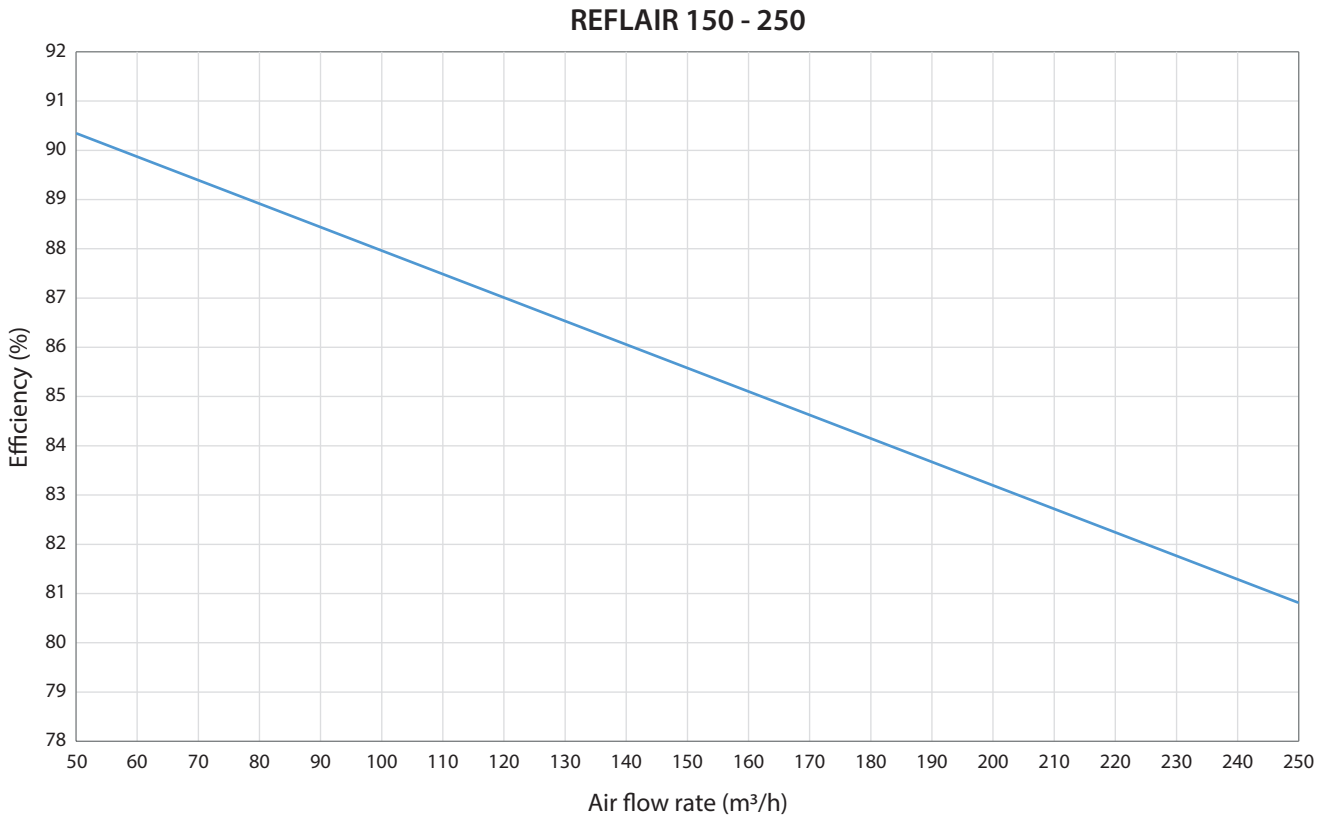
SF-P N | **SF-M 13**

Install the siphon on the drain line on the side corresponding to the connection of the outside air pipe (OUT-IN). Use the supplied kits, screwing the hose connector on the discharge side (Ø 14 mm) and the plug (3/4" F) on the opposite side.



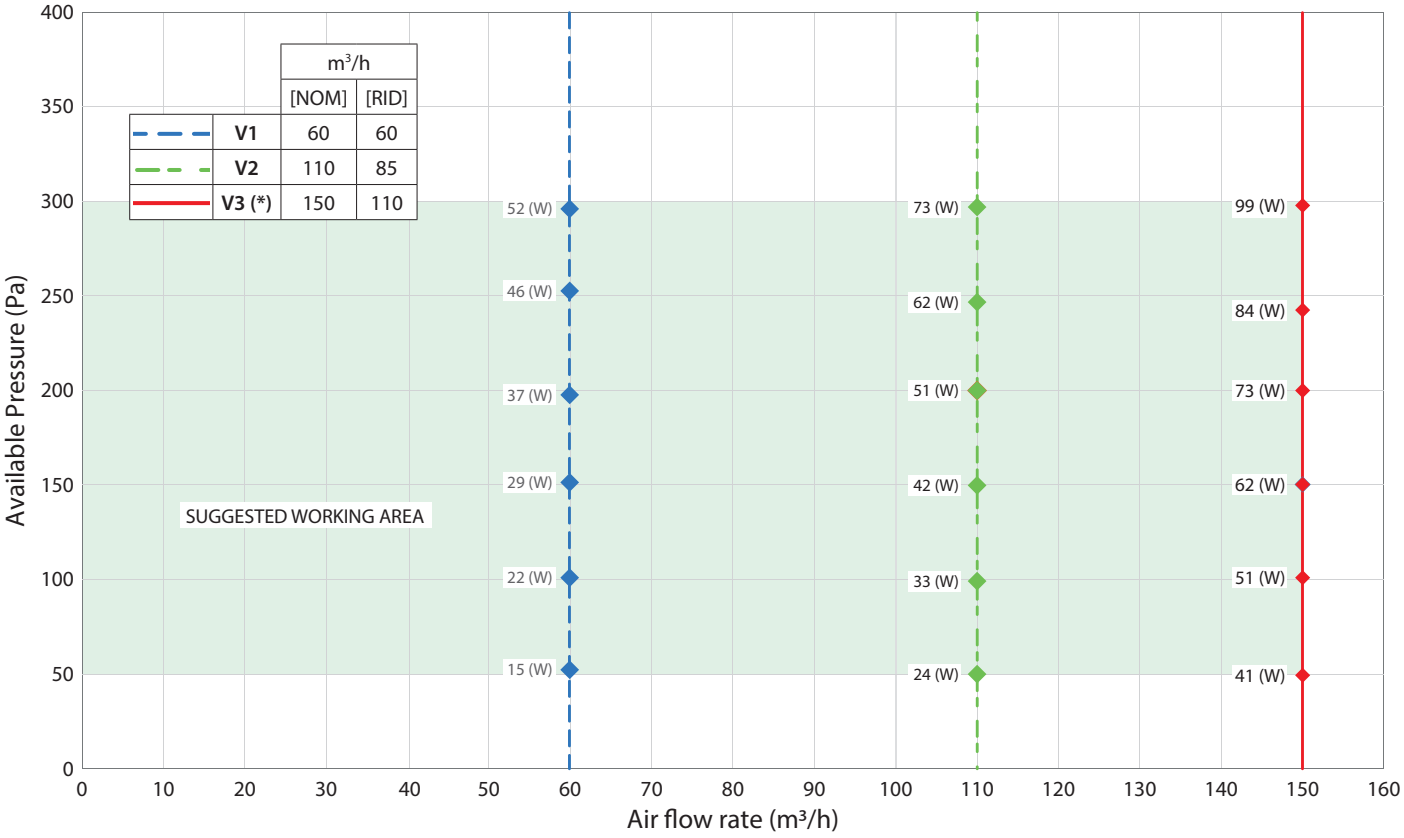
EXCHANGER EFFICIENCY

According to standard: UNI EN 13141

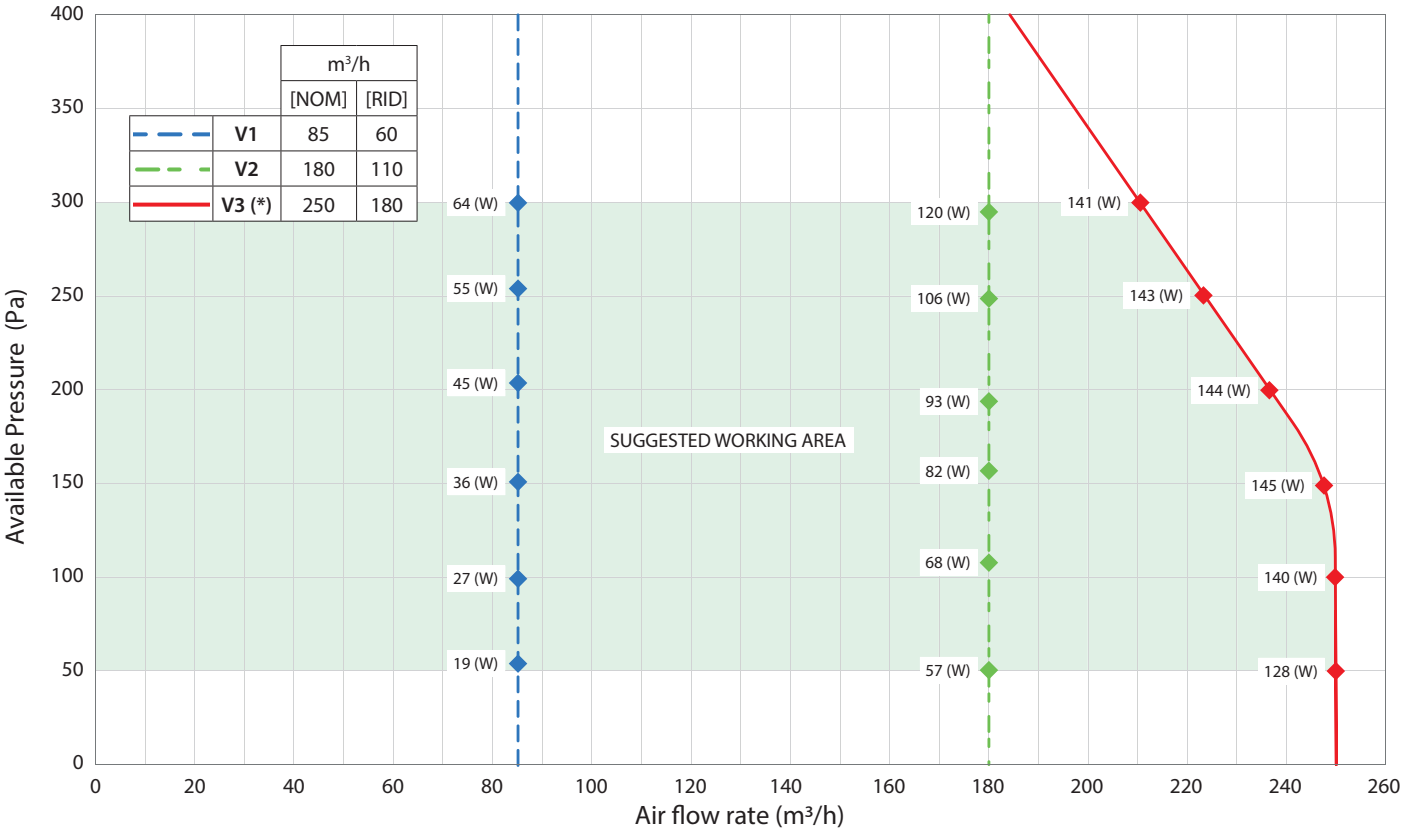


AERAULIC PERFORMANCE

REFLAIR 150



REFLAIR 250

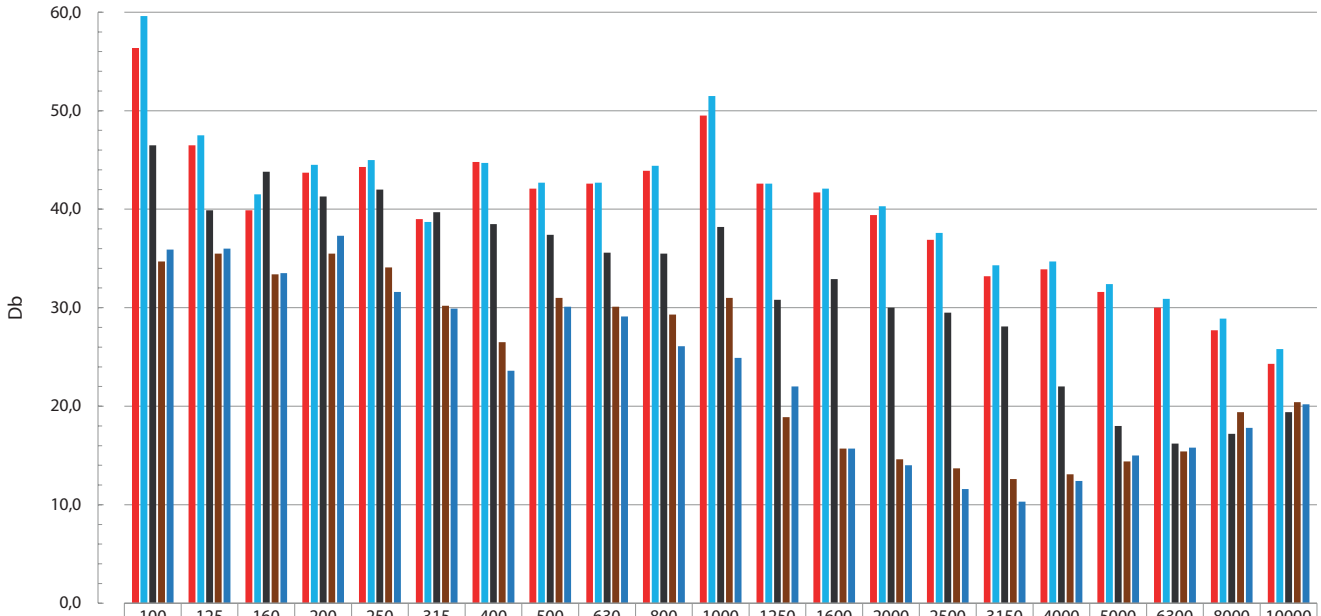


NOMINAL [NOM] AND REDUCED [RID] AIR FLOW RANGES
On installations with a 3-speed controller, a reduced flow rate range can be set via Dip Switch.

(*) Speed V3 (BOOST) is timed with a default of 15 min. and can be activated if environmental conditions require it.

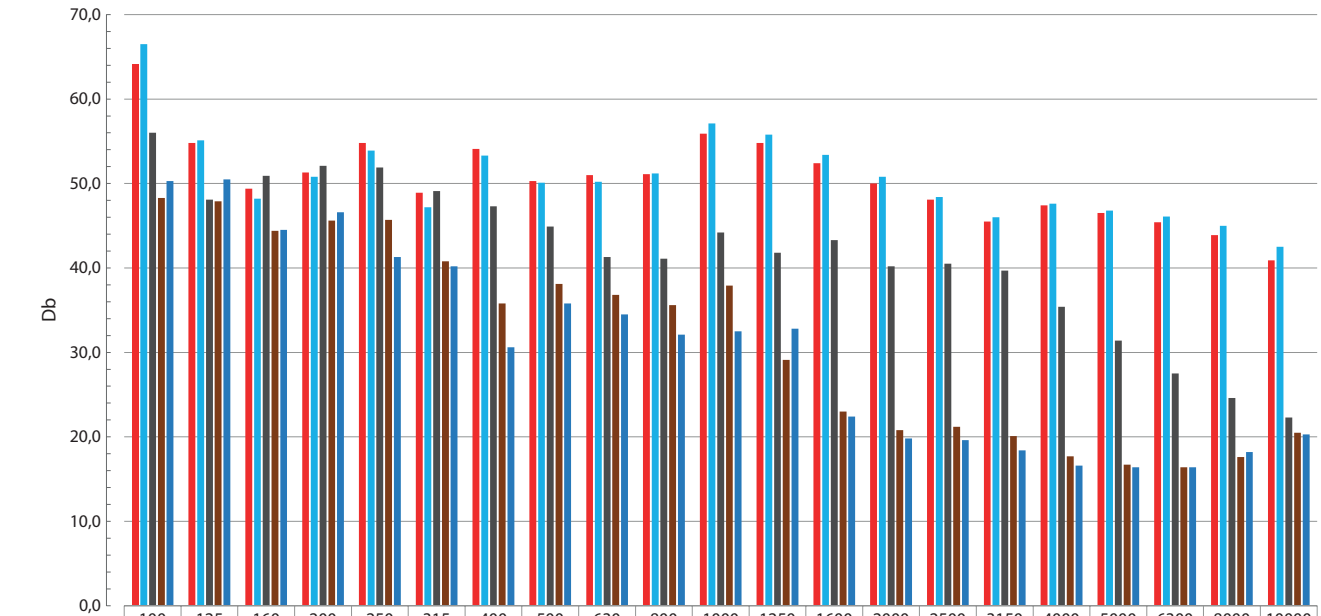
ACOUSTIC PERFORMANCE

REFLAIR 150 | Sound Power Levels



	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
EXHAUST OUTLET (OUT) Lwa 53,3 (dBA)	56,3	46,5	39,9	43,7	44,3	39,0	44,8	42,1	42,6	43,9	49,5	42,6	41,7	39,4	36,9	33,2	33,9	31,6	30,0	27,7	24,3
SUPPLY OUTLET (SUP) Lwa 54,6 (dBA)	59,6	47,5	41,5	44,5	45,0	38,7	44,7	42,7	42,7	44,4	51,5	42,6	42,1	40,3	37,6	34,3	34,7	32,4	30,9	28,9	25,8
CASING Lwa 45,0 (dBA)	46,5	39,9	43,8	41,3	42,0	39,7	38,5	37,4	35,6	35,5	38,2	30,8	32,9	30,0	29,5	28,1	22,0	18,0	16,2	17,2	19,4
EXHAUST INLET (EXT) Lwa 36,9 (dBA)	34,7	35,5	33,4	35,5	34,1	30,2	26,5	31,0	30,1	29,3	31,0	18,9	15,7	14,6	13,7	12,6	13,1	14,4	15,4	19,4	20,4
SUPPLY INLET (IN) Lwa 35,2 (dBA)	35,9	36,0	33,5	37,3	31,6	29,9	23,6	30,1	29,1	26,1	24,9	22,0	15,7	14,0	11,6	10,3	12,4	15,0	15,8	17,8	20,2

REFLAIR 250 | Sound Power Levels

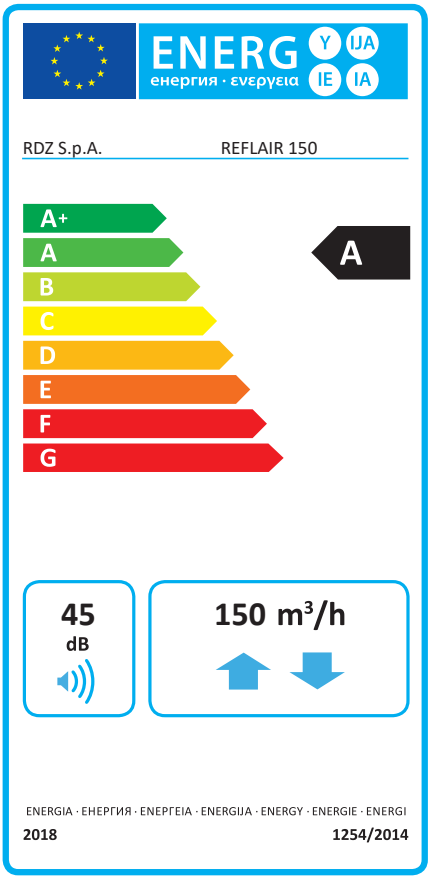


	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
EXHAUST OUTLET (OUT) Lwa 62,6 (dBA)	64,1	54,8	49,4	51,3	54,8	48,9	54,1	50,3	51,0	51,1	55,9	54,8	52,4	50,0	48,1	45,5	47,4	46,5	45,4	43,9	40,9
SUPPLY OUTLET (SUP) Lwa 63,2 (dBA)	66,5	55,1	48,2	50,8	53,9	47,2	53,3	50,1	50,2	51,2	57,1	55,8	53,4	50,8	48,4	46,0	47,6	46,8	46,1	45,0	42,5
CASING Lwa 53,7 (dBA)	56,0	48,1	50,9	52,1	51,9	49,1	47,3	44,9	41,3	41,1	44,2	41,8	43,3	40,2	40,5	39,7	35,4	31,4	27,5	24,6	22,3
EXHAUST INLET (EXT) Lwa 45,1 (dBA)	48,3	47,9	44,4	45,6	45,7	40,8	35,8	38,1	36,8	35,6	37,9	29,1	23,0	20,8	21,2	20,1	17,7	16,7	16,4	17,6	20,5
SUPPLY INLET (IN) Lwa 43,6 (dBA)	50,3	50,5	44,5	46,6	41,3	40,2	30,6	35,8	34,5	32,1	32,5	32,8	22,4	19,8	19,6	18,4	16,6	16,4	16,4	18,2	20,3

PERFORMANCE ACCORDING TO COMMISSION REGULATION (UE) NO 1254/2014

European Union Commission Regulation (EU) No 1254/2014
Ecodesign Requirements for Ventilation Units
Annex IV Information requirements [fiche] for RVUs as referred to in Article 4(1)
a) Manufacturer: RDZ S.p.A.
b) Model: REFLAIR 150
c) Specific Energy Consumption (SEC) kWh/(m²a) and Class:

	Control typology and CTRL factor							
	Manual		Clock		Central demand		Local demand	
	1		0,95		0,85		0,65	
	SEC	Class	SEC	Class	SEC	Class	SEC	Class
Cold	-75,1	A+	-76,0	A+	-77,8	A+	-81,2	A+
Average	-37,3	A	-38,0	A	-39,5	A	-42,2	A+
Warm	-13,0	E	-13,7	E	-14,9	E	-17,2	E



d)Article 2 typology:
I) Residential Ventilation Unit (RVU)
II) Bidirectional (BVU)
e) Drive Variable speed drive
f) Recuperative heat exchanger
g) Thermal efficiency of heat recovery 87,8% at reference flow rate
h) Maximum flow rate 150 m³/h at 100 Pa. This unit is for residential use only
i) Power input at maximum flow rate 126 W
j) Sound power level (LWA) 45 dB
k) Reference flow rate 0,0287 m³/s
l) Reference pressure difference 50 Pa
m) Reference Specific Power Input (SPI) 0,2355 W/(m³/h)
n) See c)
o) Leakage rates at reference flow rate
I) Maximum internal 5,1 %
II) Maximum external 4,7 %
p) Not applicable
q) Filter alarm reset via room controller
r) Not applicable
s) Recycling disassembly instruction - go to www.rdz.it
t) Not applicable
u) Not applicable
v) Annual electricity consumption (AEC) (in kWh electricity/a)

	Control typology and CTRL factor			
	Manual	Clock	Central demand	Local demand
	1	0,95	0,85	0,65
Cold	877	855	813	737
Average	340	318	276	200
Warm	295	273	231	155

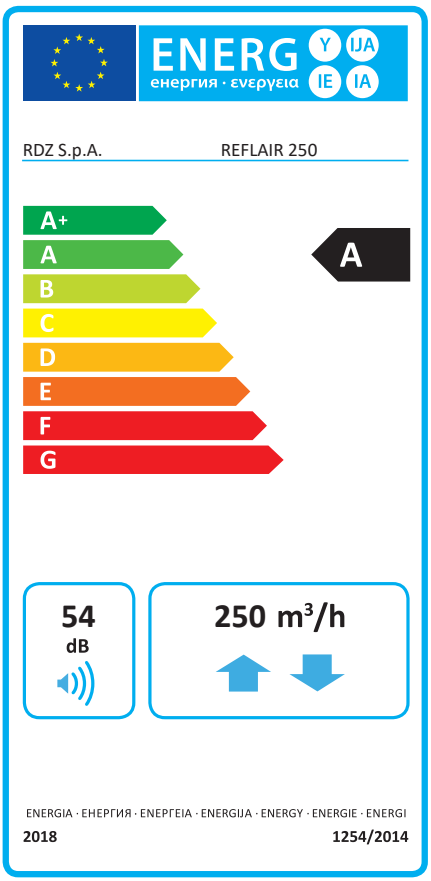
w) The annual heating saved (AHS) (in kWh primary energy/a)

	Control typology and CTRL factor			
	Manual	Clock	Central demand	Local demand
	1	0,95	0,85	0,65
Cold	8826	8864	8940	9092
Average	4512	4531	4570	4648
Warm	2040	2049	2067	2102

PERFORMANCE ACCORDING TO COMMISSION REGULATION (EU) NO 1254/2014

European Union Commission Regulation (EU) No 1254/2014
Ecodesign Requirements for Ventilation Units
Annex IV Information requirements [fiche] for RVUs as referred to in Article 4(1)
a) Manufacturer: RDZ S.p.A.
b) Model: REFLAIR 250
c) Specific Energy Consumption (SEC) kWh/(m²a) and Class:

	Control typology and CTRL factor							
	Manual		Clock		Central demand		Local demand	
	1		0,95		0,85		0,65	
	SEC	Classe	SEC	Classe	SEC	Classe	SEC	Classe
Cold	-69,0	A+	-70,3	A+	-72,9	A+	-77,8	A+
Average	-32,3	B	-33,4	B	-35,5	A	-39,4	A
Ward	-8,7	F	-9,6	F	-11,5	E	-14,8	E



d)Article 2 typology:
I) Residential Ventilation Unit (RVU)
II) Bidirectional (BVU)
e) Drive Variable speed drive
f) Recuperative heat exchanger
g) Thermal efficiency of heat recovery 84,2 % at reference flow rate
h) Maximum flow rate 250 m³/h. This unit is for residential use only
i) Power input at maximum flow rate 165 W
j) Sound power level (LWA) 54 dB
k) Reference flow rate 0,0497 m³/s
l) Reference pressure difference 50 Pa
m) Reference Specific Power Input (SPI) 0,3570 W/(m³/h)
n) See c)
o) Leakage rates at reference flow rate
I) Maximum internal 3 %
II) Maximum external 2,8 %
p) Not applicable
q) Filter alarm reset via room controller
r) Not applicable
s) Recycling disassembly instruction - go to www.rdz.it
t) Not applicable
u) Not applicable
v) Annual electricity consumption (AEC) (in kWh electricity/a)

	Control typology and CTRL factor			
	Manual	Clock	Central demand	Local demand
	1	0,95	0,85	0,65
Cold	1029	996	932	816
Average	492	459	395	279
Warm	447	414	350	234

w) The annual heating saved (AHS) (in kWh primary energy/a)

	Control typology and CTRL factor			
	Manual	Clock	Central demand	Local demand
	1	0,95	0,85	0,65
Cold	8602	8651	8750	8947
Average	4397	4422	4473	4573
Warm	1988	2000	2022	2068

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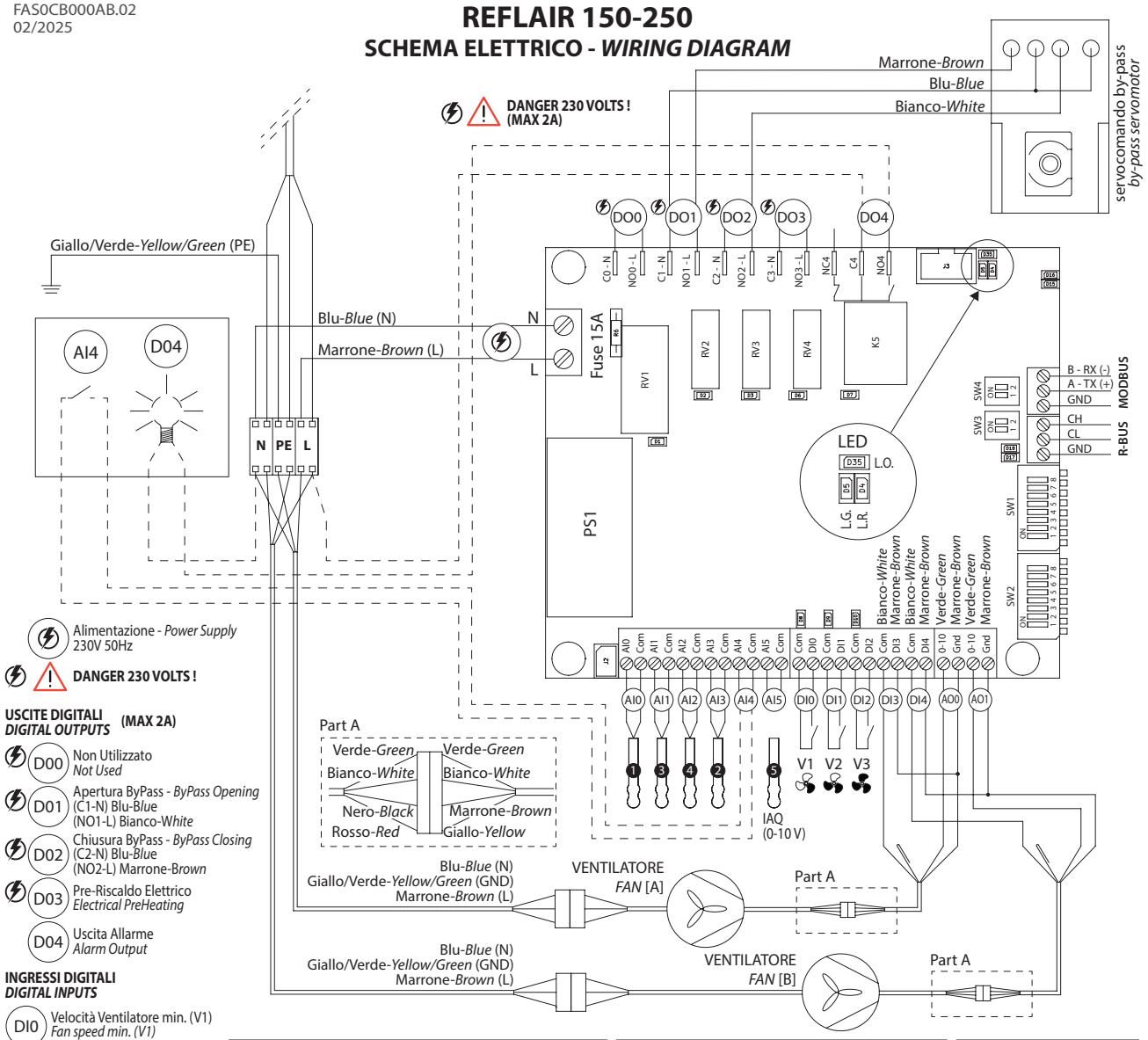
REFLAIR 150-250

SCHEMA ELETTRICO - *WIRING DIAGRAM*



USCITE DIGITALI *DIGITAL OUTPUTS* **(MAX 2A)**

- D00 — Non Utilizzato / *Not Used*
- D01 — Apertura ByPass - *ByPass Opening* (C1-N) Blu-*Blue* (NO1-L) Bianco-*White*
- D02 — Chiusura ByPass - *ByPass Closing* (C2-N) Blu-*Blue* (NO2-L) Marrone-*Brown*
- D03 — Pre-Riscaldo Elettrico / *Electrical PreHeating*
- D04 — Uscita Allarme / *Alarm Output*

INGRESSI DIGITALI *DIGITAL INPUTS*

- DI0 — Velocità Ventilatore min. (V1) / *Fan speed min. (V1)*
- DI1 — Velocità Ventilatore med. (V2) / *Fan speed med. (V2)*
- DI2 — Velocità Ventilatore max. (V3) / *Fan speed max (V3)*
- DI3 — [A] Ventilatore - *Fan* (Com) Bianco-*White* (DI3) Marrone-*Brown*
- DI4 — [B] Ventilatore - *Fan* (Com) Bianco-*White* (DI4) Marrone-*Brown*

USCITE ANALOGICHE *ANALOGUE OUTPUTS*

- AO0 — [A] Ventilatore - *Fan* (0-10) Verde-*Green* (Gnd) Marrone-*Brown*
- AO1 — [B] Ventilatore - *Fan* (0-10) Verde-*Green* (Gnd) Marrone-*Brown*

INGRESSI ANALOGICI *ANALOGUE INPUTS*

- AI0 — Sonda-*Probe* 1 (Com) (AI0) | Nero-*Black*
- AI1 — Sonda-*Probe* 3 (Com) (AI1) | Nero-*Black*
- AI2 — Sonda-*Probe* 4 (Com) (AI2) | Nero-*Black*
- AI3 — Sonda-*Probe* 2 (Com) (AI3) | Nero-*Black*
- AI4 — Reset Allarme Filtri / *Filters Alarm Reset*
- AI5 — Sonda Qualità Aria Amb. (*) 5 / *Indoor Air Quality Probe (*)* *Se Presente - *If present*

SWITCH SW1 (default)

DIP 1
SELETTORE FLUSSO ARIA-*AIR FLOW SELECTOR*
OFF= Portate Aria Nominali-*Nominal Flow Rates*
ON= Portate Aria Ridotte-*Reduced Flow Rates*

DIP 2
SELETTORE CONFIG.-*CONFIGURATION SELECTOR*
OFF= FACTORY
ON= REVERSE

DIP 2 OFF | FACTORY MODE
1. (AI0) SUP | Immissione Aria-*Supply Air*
3. (AI1) IN | Ingresso Aria Esterna-*Air Inlet*
4. (AI2) EXT | Estrazione Aria-*Air Extraction*
2. (AI3) OUT | Espulsione Aria-*Exhaust Air*
- [A] Ventilatore - *Fan* SUP | Immissione Aria-*Supply Air*
- [B] Ventilatore - *Fan* OUT | Espulsione Aria-*Exhaust Air*

DIP 2 ON | REVERSE MODE
1. (AI0) OUT | Espulsione Aria-*Exhaust Air*
3. (AI1) EXT | Estrazione Aria-*Air Extraction*
4. (AI2) IN | Ingresso Aria Esterna-*Air Inlet*
2. (AI3) SUP | Immissione Aria-*Supply Air*
- [A] Ventilatore - *Fan* OUT | Espulsione Aria-*Exhaust Air*
- [B] Ventilatore - *Fan* SUP | Immissione Aria-*Supply Air*

DIP 3
OFF= Recuperatore standard - *Standard exchanger*
ON= Recuperatore entalpico - *Enthalpic exchanger*

DIP 4
OFF= (AI5) 0-10 V Disabilitato - *Disabled*
ON= (AI5) 0-10 V Abilitato - *Enabled*

DIP 5-6-7
Non Utilizzato - *Not Used*

DIP 8
MODBUS - Gestione Portate Aria - *Air Flow Manag.*
OFF= % | ON= m³/h (Wi-KNX)

SWITCH SW2 (default)

DIP 1-2-3-4-5-6
INDIRIZZO MODBUS-*MODBUS ADDRESS*
DEFAULT: 9 (DIP 1 ON, DIP 4 ON)

DIP 7
VELOCITÁ TRASMISSIONE ***BAUD RATE***
OFF= 19200 Bit/s (Wi-KNX)
ON= 9600 Bit/s

DIP 8
NR. BIT STOP-*NR. OF STOP BITS*
OFF= 2 Bit Stop
ON= 1 Bit Stop (KNX)

SWITCH SW3 (default)
R-BUS
Terminazione Linea
Line termination
OFF= DIP (1-2) OFF
ON= DIP (1-2) ON

SWITCH SW4 (default)
MODBUS
Terminazione Linea
Line termination
OFF= DIP (1-2) OFF
ON= DIP (1-2) ON

ALLARMI E SEGNALAZIONI - *ALARMS AND SIGNALLING*

LED
(D5 L.G.) Verde-*Green* | Led Funzionamento-*Operation Led*
(D35 L.O.) Arancione-*Orange* | Led Allarmi-*Alarms Led*
(D4 L.R.) Rosso-*Red* | Led Errori-*Errors Led*

Tipo *Type*	Descrizione *Description*	Nr. Lampeggi *Nr. of flashes*
D5 L.G. Verde *Green*	Modalità Economy - *Economy mode*	1
	Modalità Rinnovo - *Renewal mode*	2
	Modalità Boost - *Boost mode*	3
	Modalità Sbrinamento - *Defrost mode*	4
D35 L.O. Arancione *Orange*	Allarme Sonda - *Probe Alarm* 1	1
	Allarme Sonda - *Probe Alarm* 3	2
	Allarme Sonda - *Probe Alarm* 4	3
	Allarme Sonda - *Probe Alarm* 2	4
	Allarme Sonda Qualità Aria - *Air Quality Probe Alarm* 5	5
D4 L.R. Rosso *Red*	Malfunzionamento Ventilatore (A) - *Fan (A) Malfunction*	1
	Malfunzionamento Ventilatore (B) - *Fan (B) Malfunction*	2
	Segnalazione Filtri Sporchi - *Dirty Filter Warning*	3
	Blocco Macchina Filtri Sporchi - *Machine Lock Dirty Filters*	4

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You Feel, We Care

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