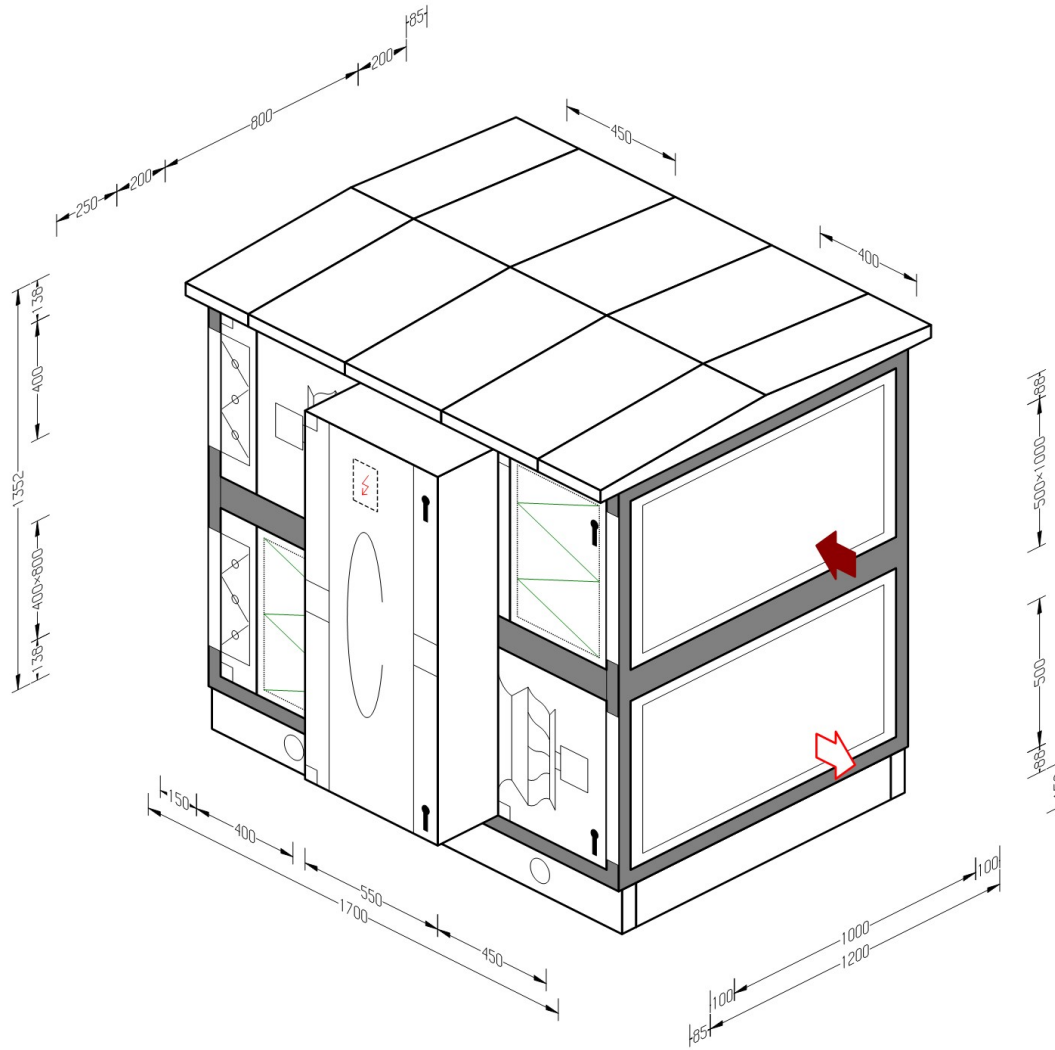


Isometric South West

2021-04-04
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Customer id	2459	Project name	(O142429) / 79 Avenue Road	
Project	29928	Unit name	(Rev01) / AHU/RF (Option 2)	
Unit	6	Supply air	eQ Prime-011	0.54 m³/sec
AOC	ACON-02792867	Exhaust air	eQ Prime-011	0.54 m³/sec

FläktGroup



Isometric South East

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Customer id	2459	Project name	(O142429) / 79 Avenue Road	
Project	29928	Unit name	(Rev01) / AHU/RF (Option 2)	
Unit	6	Supply air	eQ Prime-011	0.54 m³/sec
AOC	ACON-02792867	Exhaust air	eQ Prime-011	0.54 m³/sec

FläktGroup

AIR HANDLING UNIT eQ Prime

Project	29928 (O142429) / 79 Avenue Road	Acon 2.55.47452
AOC	ACON-02792867	
Unit	6 (Rev01) / AHU/RF (Option 2)	2021-04-04
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Customer		
Customers ref.		
Our ref.	Nick Power-Samways	
Supply air volume flow rate	0.54 m ³ /sec	Exhaust air volume flow rate 0.54 m ³ /sec
External static pressure	200 Pa	External static pressure 200 Pa
Mains electricity	3x400VAC±10%+N+PE, 50Hz	Weight 571 kg
Specific el. power demand (SFPv)	1.03 kW/(m ³ /s)	Dimensioned for wet condition
Ref. density	1.2 kg/m ³	Ref. altitude above sea level 0 m

SUMMARY

Functional sections in direction of air flow	v0 (m/s)	Et (%)	tw (°C)	ts (°C)	dP* (Pa)
Supply air:					
Connection section	2.1				2
Filter	1.4				68
Heat exchanger	1.2	87.6	-5 / 17.8	30 / 23	54
Plenum fan		60.9	17.8 / 18.2	23 / 23.5	324
Connection section	0.0				0
Supply outlet					200
Exhaust air:					
Exhaust inlet					200
Connection section	0.0				0
Filter	1.1				49
Heat exchanger	1.2		21 / -0.5	22 / 29	54
Plenum fan		61.8			305
Connection section	2.1				2

*Refers to the fan design case

Fan system effect is taken into account in fan performance

SOUND POWER LEVELS

(standard: EN13053 ISO/CD 13347-2)

Octave band (Hz)	Lw per octave band (dB)								LwA dB(A)
	63	125	250	500	1k	2k	4k	8k	
Fresh air connection	51	57	50	49	43	39	34	31	50
Supply air connection	60	67	62	63	64	62	58	55	68
Extract connection	56	58	52	51	45	42	38	36	52
Exhaust connection	63	68	64	65	66	64	61	58	71
To surroundings	50	56	43	33	30	30	30	30	43

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TECHNICAL SPECIFICATION (components listed in direction of air flow)

SUPPLY AIR

Intake air section

Size: 011

Material: AZ sheet steel

Inspection side: right

Pressure drop, dimensioning

2 Pa

Damper

Width cm : 080

Height in cm : 040

Tightness class : CEN 3

Connection: Flange

Function : Outdoor air

Location: internally end wall

Damper type: 100 mm blade

Material : AlZn

Damper actuator

Type: 2-Point with spring return

Delivery options: Mounted and connected

Filter

Inspection side: right

Filter selection

Filter class: F7 - ePM1 55%, glassfibre

Filter frame : Galv cassette

Prefilter: without

Design

Connection side : inlet in end wall

Location: negative pressure

Drain tray: without

Number of filters

2x492x492

Pressure drop, start

34 Pa

Pressure drop, dimensioning

68 Pa

Pressure drop, end

102 Pa

Face area

0.5 m²

Face velocity

1.4 m/s

Filter monitoring

Location: Supply air

Type: Combi sensor (modbus)

Delivery options: Mounted and connected

Rotary heat exchanger

Size: 11

Rotor type: Regoterm

Output variant: output variant 6 (2.1, 270mm wheel)

Function lenght: rotary with fan section before and after

Delivery version: Assembled rotor unit, max. face area

Material: galvanized sheet steel

Inspection side: right

Voltage: 1 x 230 V

Control connections: yes

Efficiency

Temperature efficiency according to standard EN 308

87.6 %

Temperature efficiency at 0°C outdoors

87.6 %

Cooling recovery

87.5 %

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Humidity efficiency, Summer		0.0 %
Humidity efficiency, Winter		54.7 %
Supply air	Summer	Winter
Pressure drop	54	48 Pa
Air temperature	30 / 23	-5 / 17.8 °C
Relative humidity	43 / 65	99 / 35.7 %
Capacity reduction	5	18 kW
Air flow transfer	0.11	0.12 m ³ /sec
Face velocity	1.2	1.2 m/s
Exhaust air	Summer	Winter
Pressure drop	54	49 Pa
Air temperature	22 / 29	21 / -0.5 °C
Relative humidity	50 / 33	40 / 100 %
Additional throttling	0	0 Pa
Face velocity	1.2	1.2 m/s

Plenum fan

Inspection side: right

Fan selection

Impeller type: Bluefin (composite)

Fan size: size 2

Anti-vibration mountings: wall mounted

Motor selection

Motor type: EC-motor

Motor control

Manufacture, type: EC-motor ZA

Housing protection: IP55

Design: on motor

Delivery options: mounted on current sub, quick connection

Dimensioning data

Speed	1770 Rpm
Max speed	3700 Rpm
Total efficiency	60.9 %
Total static pressure, dimensioning (wet coil)	324 Pa
Dynamic pressure	8 Pa
Fan system input power (absorbed electrical power)	0.299 kW
Temperature rise	0.5 °C
K factor	33.96
Fan wheel size	031

SFP Calculation

Fan system input power (absorbed electrical power) according to SFP	0.263 kW
Pressure rise	284 Pa
Speed	1676 Rpm

Motor

Motor output	2.4 kW
Electric current	3.0 A
Output margin, minimum	30 %

Doorstop (for doors on pressurized units)

Pressure-/flow sensor

Location: Supply air

Type: Combi sensor (modbus)

Pressure range: 0-3000 Pa

Delivery options: Mounted and connected

Frequency converter

Motor cable

Fan + EC motor

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Intake air section

Size: 011	
Material: AZ sheet steel	
Inspection side: right	
Pressure drop, dimensioning	0 Pa

EXHAUST AIR

Intake air section

Size: 011	
Material: AZ sheet steel	
Inspection side: left	
Pressure drop, dimensioning	0 Pa

Filter

Inspection side: left

Filter selection

Filter class: F7 - ePM1 55%, glassfibre
 Filter frame : Galv cassette
 Prefilter: without

Design

Connection side : inlet in end wall
 Location: negative pressure
 Drain tray: without

Number of filters	2x492x492
Pressure drop, start	24 Pa
Pressure drop, dimensioning	49 Pa
Pressure drop, end	73 Pa
Face area	0.5 m ²
Face velocity	1.1 m/s

Filter monitoring

Location: Exhaust air
 Type: Combi sensor (modbus)
 Delivery options: Mounted and connected

Plenum fan

Inspection side: left

Fan selection

Impeller type: Bluefin (composite)
 Fan size: size 2
 Anti-vibration mountings: wall mounted

Motor selection

Motor type: EC-motor

Motor control

Manufacture, type: EC-motor ZA
 Housing protection: IP55
 Design: on motor
 Delivery options: mounted on current sub, quick connection

Dimensioning data

Speed	1897 Rpm
Max speed	3700 Rpm
Total efficiency	61.8 %
Total static pressure, dimensioning (wet coil)	305 Pa
Dynamic pressure	12 Pa
Fan system input power (absorbed electrical power)	0.346 kW
Temperature rise	0.4 °C
K factor	33.96
Fan wheel size	031

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SFP Calculation

Fan system input power (absorbed electrical power) according to SFP	0.294 kW
Pressure rise	278 Pa
Speed	1762 Rpm

Motor

Motor output	2.4 kW
Electric current	3.0 A
Output margin, minimum	30 %

Doorstop (for doors on pressurized units)

Pressure-/flow sensor

Location: Exhaust air
Type: Combi sensor (modbus)
Pressure range: 0-3000 Pa
Delivery options: Mounted and connected

Frequency converter

Motor cable

Fan + EC motor

Intake air section

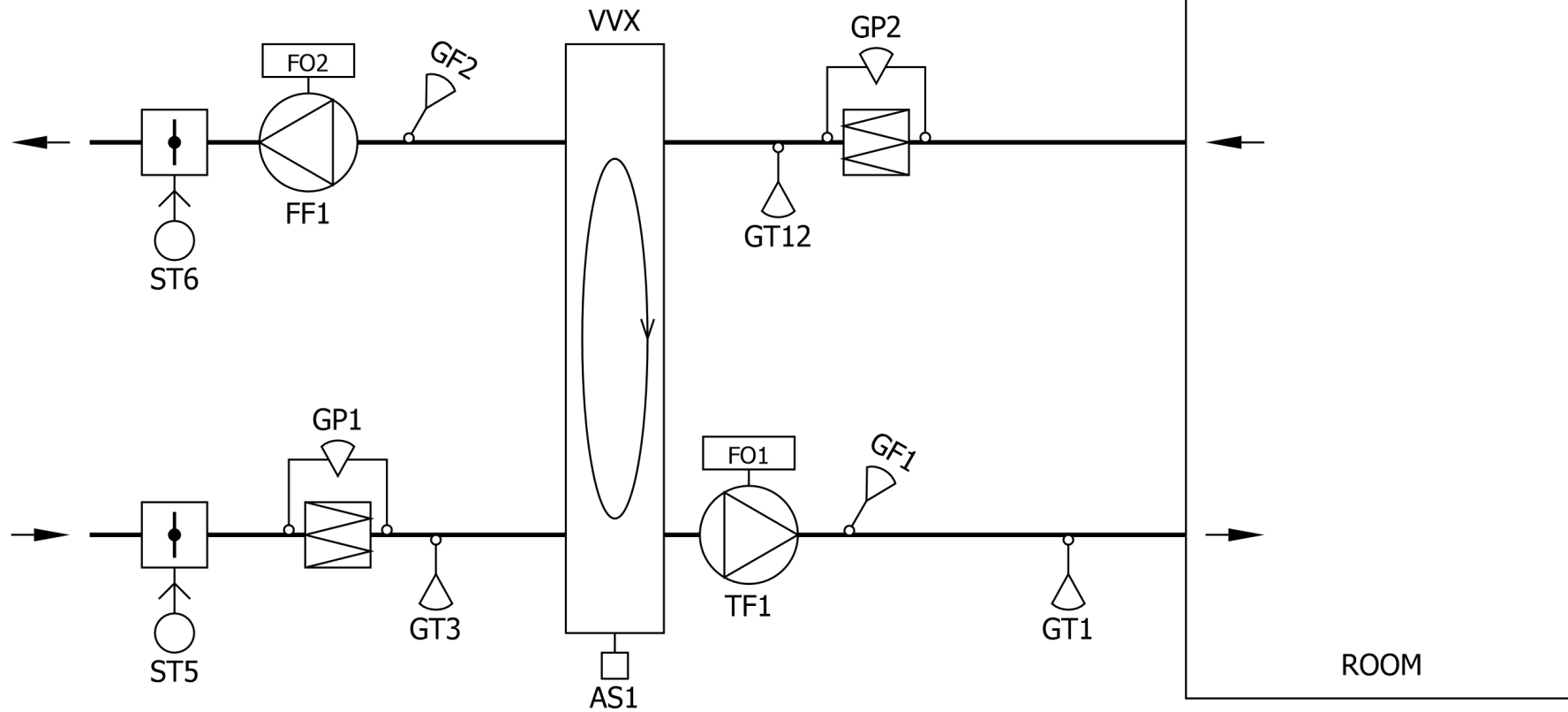
Size: 011	
Material: AZ sheet steel	
Inspection side: left	
Pressure drop, dimensioning	2 Pa

Damper

Width cm : 080
Height in cm : 040
Tightness class : CEN 3
Connection: Flange
Function : extract air
Location: internally end wall
Damper type: 100 mm blade
Material : AlZn

Damper actuator

Type: 2-Point with spring return
Delivery options: Mounted and connected



RC1

Customer id	2459	Project name	(O142429) / 79 Avenue Road
Project	29928	Unit name	(Rev01) / AHU/RF (Option 2)
Uid	6		
AOC	ACON-02792867		

Project	29928 (O142429) / 79 Avenue Road	Acon 2.55.47452
AOC	ACON-02792867	
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Description of Operation

Start and stop of air handling unit

When the fire alarm is triggered, both the supply air fan TF and exhaust fan FF are stopped.
Damper actuator ST5 opens before TF starts and closes when TF stops. ST5 closes at power failure.
Damper actuator ST6 opens before FF starts and closes when FF stops. ST6 closes at power failure.
The operation and alarm indication are in the OP-panel of RC1
RC1 controls the heatrecovery to 100% at start up, if the outdoor temperature is below 15°C

Temperature control

When the need for heat increases, RC1 controls heat exchanger VVX for heat recovery.
RC1 controls rotary heat exchanger via drive AS1.
Temperature sensor GT12 keeps the right exhaust air temperature via RC1.
Temperature sensor GT1 keeps the supply air temperature within limits via RC1.
when the need for cold air increases RC1 controls actual recovery to 100% for cold air recovery.

Fan control

Flow sensor GF1 keeps the flow constant for TF via corresponding VSD.
Flow sensor GF2 keeps the flow constant for FF via corresponding VSD.

Alarms for:

Running in manual mode,
heat exchanger VVX,
control failure supply air fan,
control failure exhaust air fan,
failure frequency converter supply air fan,
filter guard supply air,
filter guard exhaust air,
or temperature sensor failure.

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AOC ACON-02792867
Unit 6 (Rev01) / AHU/RF (Option 2)
Size 011

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Component List

Description	Reference	Type	Delivery options	Notes
on/off damper actu. spring Outdoor air	ST5	GMA1.21	Factory Fitted & Wired	
on/off damper actu. spring Exhaust air	ST6	GMA1.21	Factory Fitted & Wired	
Pressure guard Supply filter	GP1	QBM70	Factory Fitted & Wired	
Frequency converter exhaust air	FO2	ZIEHL-ABEGG	Factory Fitted & Wired	
Frequency converter supply air	FO1	ZIEHL-ABEGG	Factory Fitted & Wired	
Pressure guard Exhaust filter	GP2	QBM70	Factory Fitted & Wired	
Temperature sensor Supply air	GT1	PT1000 AKF1019207	Supplied loose with Cable & Quick Connector for Fitting/Containment by others	
Flow control Supply air	GF1	QBM70	Factory Fitted & Wired	
Flow control Exhaust air	GF2	QBM70	Factory Fitted & Wired	
Temperature sensor Outdoor air	GT3	QBM70	Factory Fitted & Wired	
Temperature sensor Exhaust air	GT12	QBM70	Factory Fitted & Wired	

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RATED CURRENT

Connection Point	Product Codes	Rated Voltage	Rated Current
Electrical cabinet	Acon STEQ	3x400 VAC	8 A*
-----			-----
TOTAL			8 A

*External loads (e.g pumps, shunts) are not included.