

ML 17 Plus System

Unit Submittal Data



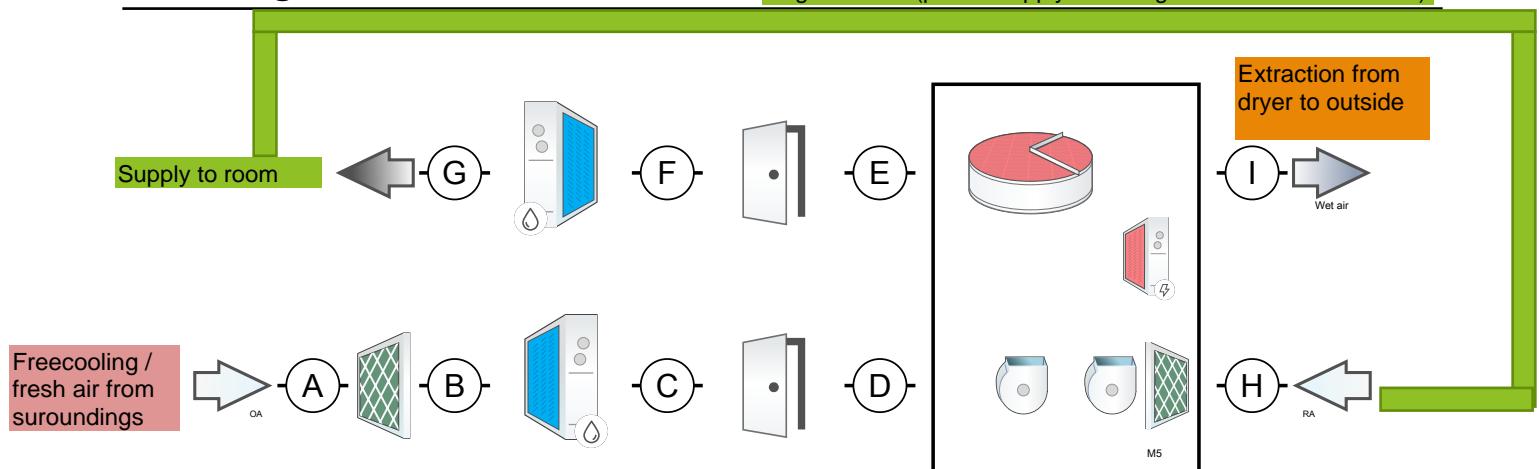
System name	ALT COOLING FINAL - ANTI - Product in - ML17+
Genesys No	G319976-2
Labels	Pfizer FFW
Prepared by	An Timmermans
Print date	07/03/2023 08:31:56
Program version	2023.3.1.37036

System Type ML 17 Plus System
 Plenum Code 1110
 Genesys No G319976-2
 Name ALT COOLING FINAL - ANTI - Product
 in - ML17+

Prepared by An Timmermans
 Print date 07/03/2023
 Labels Pfizer FFW

Flow diagram

Regeneration (part of supply air brought back to connection H)



Climate data location: Belgium, ANTWERP INTL 12 m / 1011.8 mbar

Summer

	A	B	C	D	E	F	G	H	I
Sm ³ /h	1700	1700	1700	1700	1700	1700	1700	631	631
°C	25	25	6	6	31	31	20	20	46
dp°C	13.9	13.8	5.9	5.9	-37.9	-37.9	-37.9	-41.0	20.9
% r.H.	50	50	99	99	0	0	1	0	25
Pa	0	-142	-231	-231	316	316	300	0	561

System capacities

Total Dehumidification

20.2 kg/h

21.1 kW

Dehumidifier

11.8 kg/h

33.5 A

Cooling Coil

8.4 kg/h

1.02 l/s

Dehumidification @ maximum capacity

System utilities

System total rated power

21.1 kW

System rated current

33.5 A

Chilled Water

System Type ML 17 Plus System
 Plenum Code 1110

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 Print date

 An Timmermans
 07/03/2023

Project Summary

 Number of systems 1
 System configurations 1 x ALT COOLING FINAL - ANTI - Product in - ML17+ (G319976-2)

System

System arrangement	ML Plus System
DH Model	ML17
React heater type	Electric
System airflow direction	Process left side
System voltage	400/3/50
System connection side	Back
Control system	Climatix
System weight	766.97 kg
Case number	0

Operating conditions

Operating temperature, minimum	-20.0 °C
Operating temperature, maximum	40.0 °C
Installation altitude, maximum	2000.00 m

Transport and Storage

Minimum temperature for transport and storage	-20.0 °C
Maximum temperature for transport and storage	70.0 °C
Packaging	Included

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Name	ALT COOLING FINAL - ANTI - Product in - ML17+		

Technical data - Filter, pre-treatment

Casing

Door	Removable panel
Inspection side	Right

Panel filter

Panel Filter grade (EN 779)	M5
Panel filter part no.1	150-016849-001 (1pcs)
Panel filter size 1	592x592x48

Bag filter

Bag filter grade (EN 779)	without
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Design

Dirtyness % for design	50 %
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Options

Pressure indicator	Pressure Switch 50-500Pa QBM9903-5
Pressure indicator quantity	1

Panel filter

Panel filter pressure drop design	142 Pa
Panel filter pressure drop clean	35 Pa
Panel filter pressure drop dirty	250 Pa

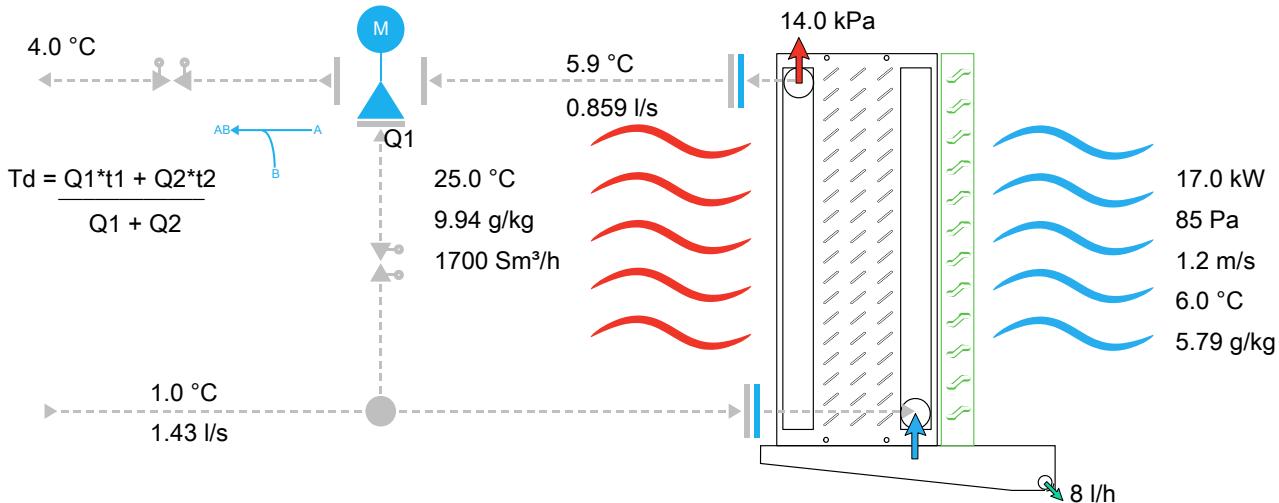
Filter

Average face velocity	1.38 m/s
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Technical data - Precooler, Propylene glycol



Design

Cooling fluid temperature in
Cooling fluid temperature out

1.0 °C
4.0 °C

Coil casing

Connection side
Coil frame material
Coil dimensions
Cooling coil fluid drainage

Left
FeZn 2.0 mm
806x685
Sloped tray, Inox304

Tubes

Tube material
Tube diameter
Tube thickness
Number of tube rows
Number of circuits

Copper
9.9mm (3/8")
0.30 mm
12
24

Fins

Fin material
Fin spacing
Fin thickness

Aluminium
3mm
0.2 mm

Fluid

Fluid
Cooling fluid antifreeze by weight
Coil fluid Pipe Connection Size
Fluid volume

Propylene glycol
30 %
DN 32
16 L

Accessories

Coil Flanges
Frost Protection
Droplet eliminator
Mist eliminator frame

Threaded flanges PN16
None
Removable polypropylene HT 33mm pitch
Separate frame, FeZn

1 x Valve, Precooler, Propylene glycol

Fluid valve type 3-WAY, VXG44.25-10
Valve fittings Brass
Coil fluid Pipe Connection Size DN 32
Valve, pipe side Rp 1 "
Valve connection, valve side G 1½ "

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1 x Valve Actuator

Actuator SIEMENS SAS61.03
Actuator voltage 24 V AC/DC
Actuator positioning voltage 0-10V DC

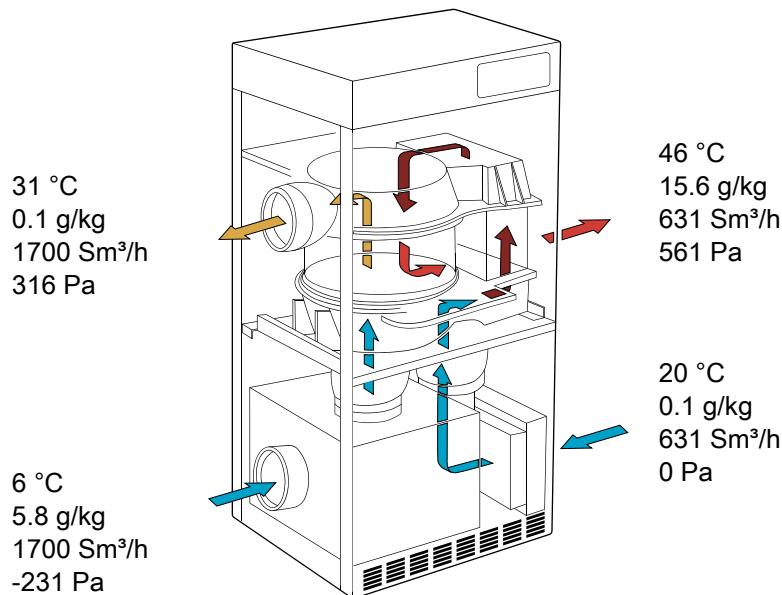
1 x Siphon Drainage, Non-Return Valve

Drainage valve Water trap, non-return, under pressure

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Technical data - Dehumidifier



Dehumidifier

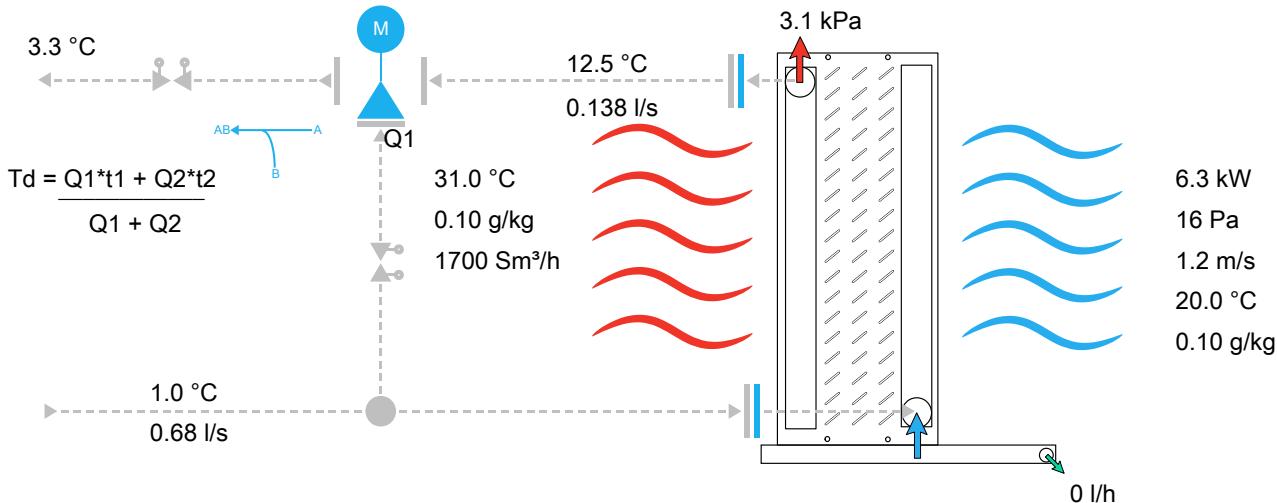
System arrangement	ML Plus System
Control system	Climatix
System voltage	400/3/50
DH Model	ML17
Desiccant rotor type	Silica Gel Blocked Rotor Center
Material , Coated galvanised steel 1.0mm, painted outside	AluZink
React Heater	Electric
React heater type	
React filter	M5
React filter	592x392x45
Reactivation filter size	150-012357-001
Reactivation filter part no.	
Process filter	Without
Process filter	n/a
Process filter size	n/a
Process filter part no.	
Options	
Insulated process inlet	Yes
User Manual	GB
Weight	
Weight	316 kg
React Heater	
Reactivation heater power	18.00 kW
Process fan(s)	
Fan grid power, Frequency controlled	2.20 kW
React fan	
Fan grid power	0.75 kW
Dehumidifier	
Component total rated electric power	21.10 kW
Component total rated electric current	33.50 A

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	in - MI 17+		
Reactivation max power			18.00 kW

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Technical data - Post cooler, Propylene glycol



Design

Cooling fluid temperature in
Cooling fluid temperature out

1.0 °C
4.0 °C

Coil casing

Connection side
Coil frame material
Coil dimensions
Cooling coil fluid drainage

Right
FeZn 1.5 mm
806x685
Flat tray, Inox304

Tubes

Tube material
Tube diameter
Tube thickness
Number of tube rows
Number of circuits

Copper
9.9mm (3/8")
0.30 mm
3
9

Fins

Fin material
Fin spacing
Fin thickness

Aluminium
3mm
0.2 mm

Fluid

Fluid
Cooling fluid antifreeze by weight
Coil fluid Pipe Connection Size
Fluid volume

Propylene glycol
30 %
DN 32
5 L

Accessories

Coil Flanges
Frost Protection
Droplet eliminator
Mist eliminator frame

Threaded flanges PN16
None
No
None

1 x Valve, Post cooler, Propylene glycol

Fluid valve type 3-WAY, VXG44.15-2.5
Valve fittings Brass
Coil fluid Pipe Connection Size DN 32
Valve, pipe side Rp 1/2 "
Valve connection, valve side G 1 "

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1 x Valve Actuator

Actuator SIEMENS SAS61.03
Actuator voltage 24 V AC/DC
Actuator positioning voltage 0-10V DC

1 x Siphon Drainage, Non-Return Valve

Drainage valve Water trap, non-return, overpressure

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Technical data - Control system

System arrangement

System arrangement

ML Plus System

Control system

Control system

Climatix

HMI

Magnetic Text Display

Communications protocols

Modbus TCP/IP

Munters Connected Climate®

No

Humidity control

Humidity transmitter

Dew Point Sensor

Humidity transmitter control

Dew Point

Sensor 2

No

Sensor 3

No

Sensor 4

No

Temperature sensor

PT1000

Temperature sensor

PT1000

Options

External Control

No

External temperature setpoint

No

CO2 Sensor

No

CO2 damper output

No

Floating dew point control

No

Re-transmission control

No

Re-transmission signal

No

Re-transmission control nr.2

No

Re-transmission signal nr.2

No

System

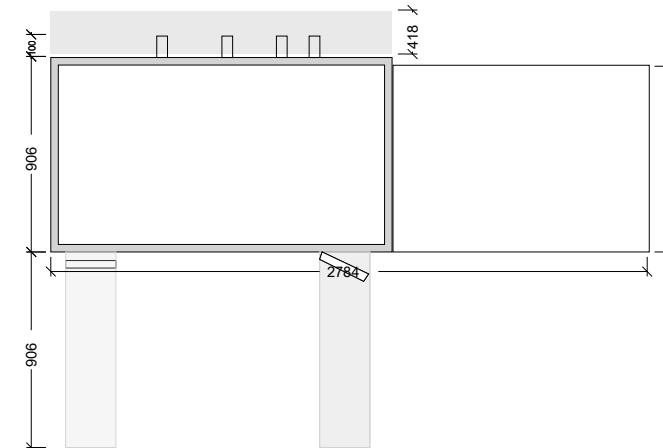
Process pretreatment temp sensor

PT1000

Limitation temp sensor

PT1000

Preliminary sketch



Regeneration (part of supply air brought back to connection H)

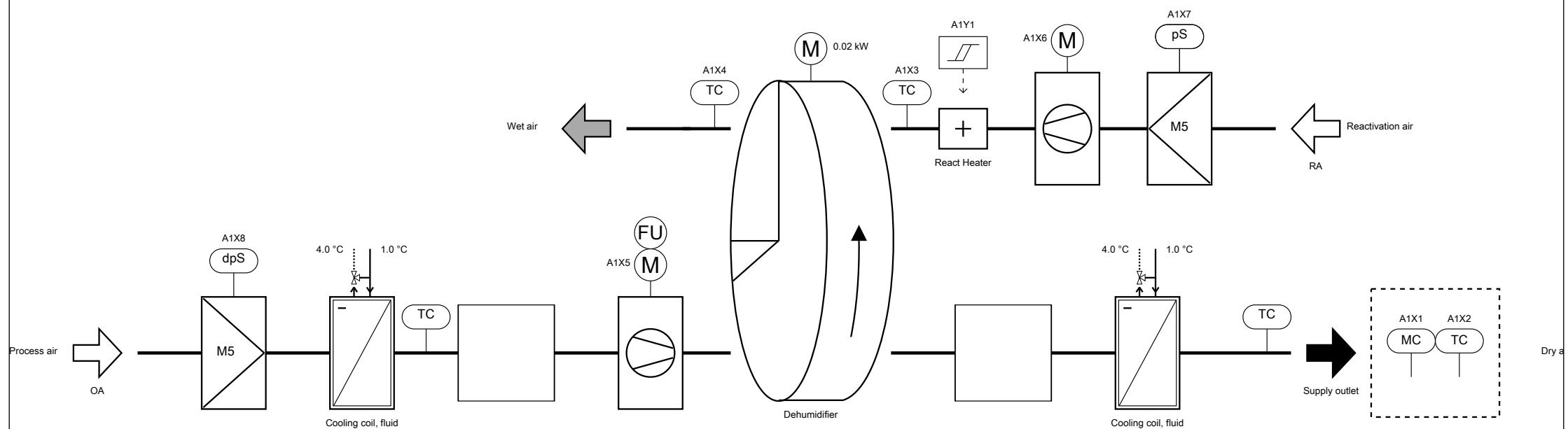


- 1 - Filter, pre-treatment
- 2 - Precooler, Propylene glycol
- 3 - Section, Empty/Access
- 4 - Dehumidifier
- 5 - Section, Empty/Access
- 6 - Post cooler, Propylene glycol

System weight
B1767 kg
767 kgSystem name
ALT COOLING FINAL - ANTI - Product in - ML17+Tolerances, if not indicated, according to
160-010266-001

Preliminary sketch (not to scale)

Design by
An TimmermansGenesys No
G319976-2

**System**

System arrangement
Process pretreatment temp
sensor
Limitation temp sensor
Precooler
Preheater
Post-treatment is present
Humidifier present
Post cooler or heater present

ML Plus System

PT1000 **Humidity sensor**
PT1000 Humidity transmitter
Yes Humidity transmitter control
No **Main selections**
Yes Remote start/stop
No **External control**
Yes External Control
External temperature setpoint

Dew Point Sensor
Dew Point

Yes
No
No
No

System name
ALT COOLING FINAL - ANTI - Product in - ML17+

Tolerances, if not indicated, according to
160-010266-001

P&ID

Munters

Design by
An Timmermans

Genesys No
G319976-2

Control system
Control system
HMI
Communications protocols

Climatix **Sensor**
Magnetic Text Display CO2 Sensor
Modbus TCP/IP Floating dew point control