

ML 1100 Plus System

Unit Submittal Data

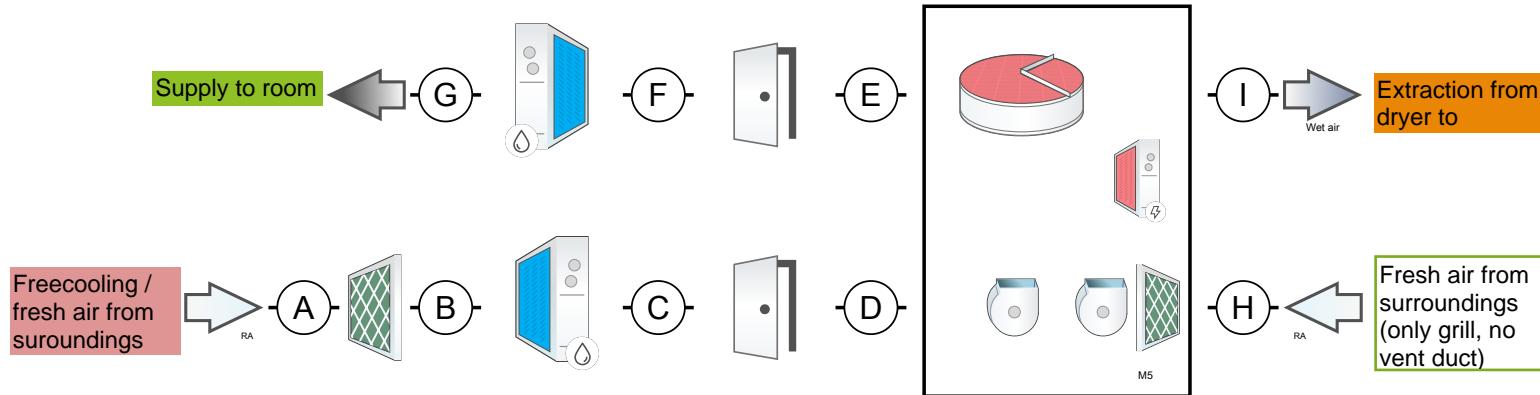


System name	ALT COOLING FINAL - ANTI - Lift out - ML1100+
Genesys No	G319979-2
Labels	Pfizer FFW
Prepared by	An Timmermans
Print date	07/03/2023 08:29:43
Program version	2023.3.1.37036

System Type ML 1100 Plus System
Plenum Code 0710
Genesys No G319979-2
Name ALT COOLING FINAL - ANTI - Lift out -
ML1100+

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

Flow diagram



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

Summer

	A	B	C	D	E	F	G	H	I
Sm ³ /h	700	700	700	700	700	700	700	408	408
°C	25	25	6	6	32	32	4	25	48
dp°C	13.9	13.8	5.9	5.9	-26.9	-26.9	-26.9	13.9	24.6
% r.H.	50	50	99	99	1	1	6	50	28
Pa	0	-134	-181	-181	775	775	740	0	846

System capacities

Total Dehumidification	8.2 kg/h
Dehumidifier	4.8 kg/h
Cooling Coil	3.5 kg/h

System utilities

System total rated power	12.8 kW
System rated current	20.2 A
Chilled Water	0.62 l/s

Dehumidification @ maximum capacity

System Type ML 1100 Plus System
Plenum Code 0710

Prepared by An Timmermans
Print date 07/03/2023

Project Summary

Number of systems 1
System configurations 1 x ALT COOLING FINAL - ANTI - Lift out - ML1100+ (G319979-2)

System

System arrangement	ML Plus System
DH Model	ML1100
React heater type	Electric
System airflow direction	Process left side
System voltage	400/3/50
System connection side	Back
Control system	Climatix
System weight	520.88 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

System Type	ML 1100 Plus System	Prepared by	An Timmermans
Plenum Code	0710	Print date	07/03/2023
Genesys No	G319979-2	Labels	Pfizer FFW
Name	ALT COOLING FINAL - ANTI - Lift out - ML1100+		

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	150-016847-001 (1pcs)
Panel filter size 1	395x595x48

Bag filter

Bag filter grade (EN 779)	without
---------------------------	---------

Design

Dirtyness % for design	50 %
------------------------	------

Options

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

Panel filter

Panel filter pressure drop design	134 Pa
Panel filter pressure drop clean	17 Pa
Panel filter pressure drop dirty	250 Pa

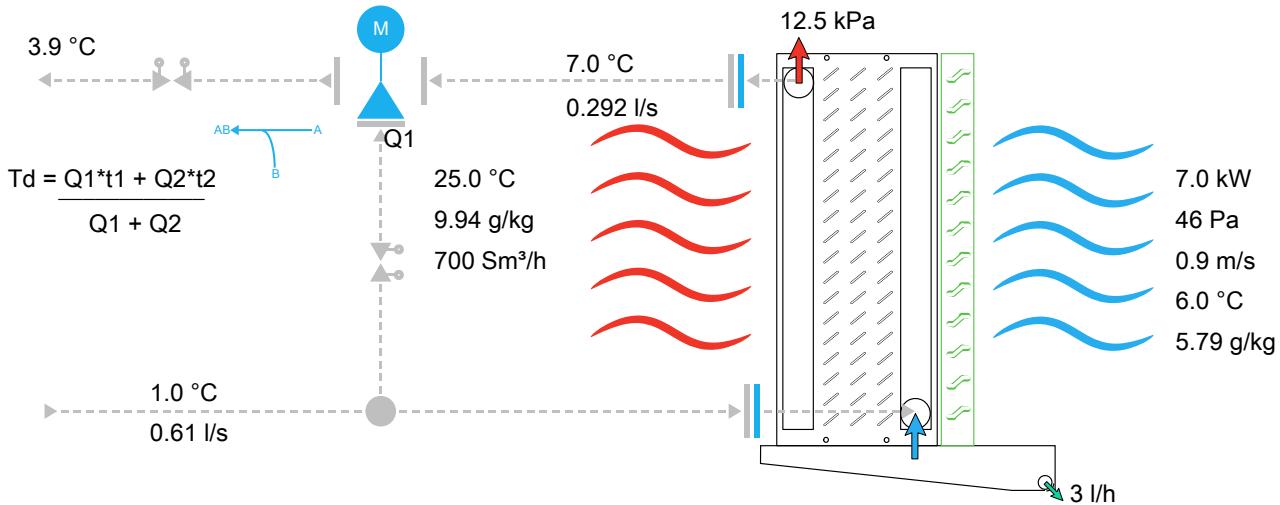
Filter

Average face velocity	0.86 m/s
-----------------------	----------

System Type ML 1100 Plus System
Plenum Code 0710
Genesys No G319979-2
Name ALT COOLING FINAL - ANTI - Lift out -
ML1100+

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

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 1.5 mm
502x685
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
10
10

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 25
9 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
Valve fittings
Coil fluid Pipe Connection Size
Valve, pipe side
Valve connection, valve side

3-WAY, VXG44.15-2.5
Brass
DN 25
Rp 1/2 "
G 1 "

System Type	ML 1100 Plus System	Prepared by	An Timmermans
Plenum Code	0710	Print date	07/03/2023
Genesys No	G319979-2	Labels	Pfizer FFW
Name	ALT COOLING FINAL - ANTI - Lift out -		
	ML1100+		

1 x Valve Actuator

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

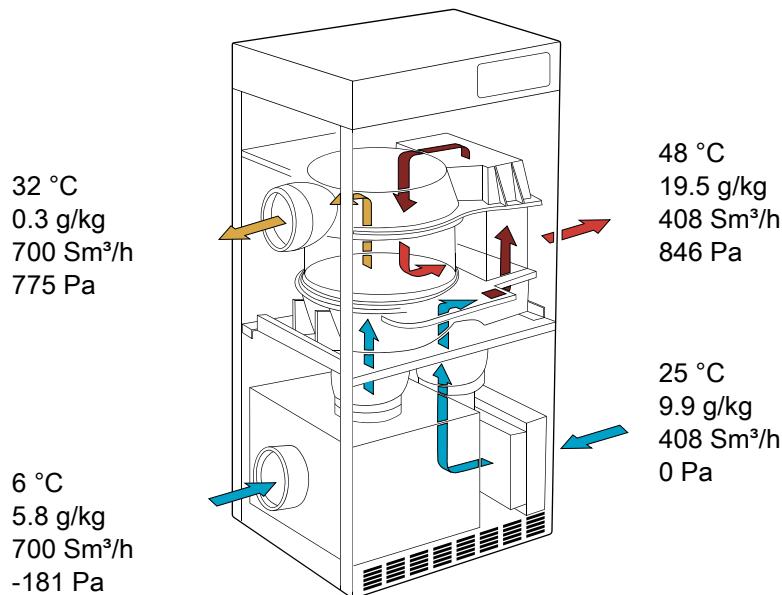
1 x Siphon Drainage, Non-Return Valve

Drainage valve	Water trap, non-return, under pressure
----------------	--

System Type ML 1100 Plus System
Plenum Code 0710
Genesys No G319979-2
Name ALT COOLING FINAL - ANTI - Lift out -
ML1100+

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

Technical data - Dehumidifier



Dehumidifier

System arrangement
Control system
System voltage
DH Model
Desiccant rotor type
Material, Coated galvanised steel 1.0mm,
painted outside

ML Plus System
Climatix
400/3/50
ML1100
Silica Gel Blocked Rotor Center
AluZink

React Heater

React heater type Electric

React filter

React filter
Reactivation filter size M5
520x310x45
Reactivation filter part no. 150-012355-001

Process filter

Process filter
Process filter size n/a
Process filter part no. n/a

Options

Insulated process inlet Yes
User Manual GB

Weight

Weight 169 kg

React Heater

Reactivation heater power 8.43 kW

Process fan(s)

Fan grid power 0.47 kW

React fan

Fan grid power 0.44 kW

Dehumidifier

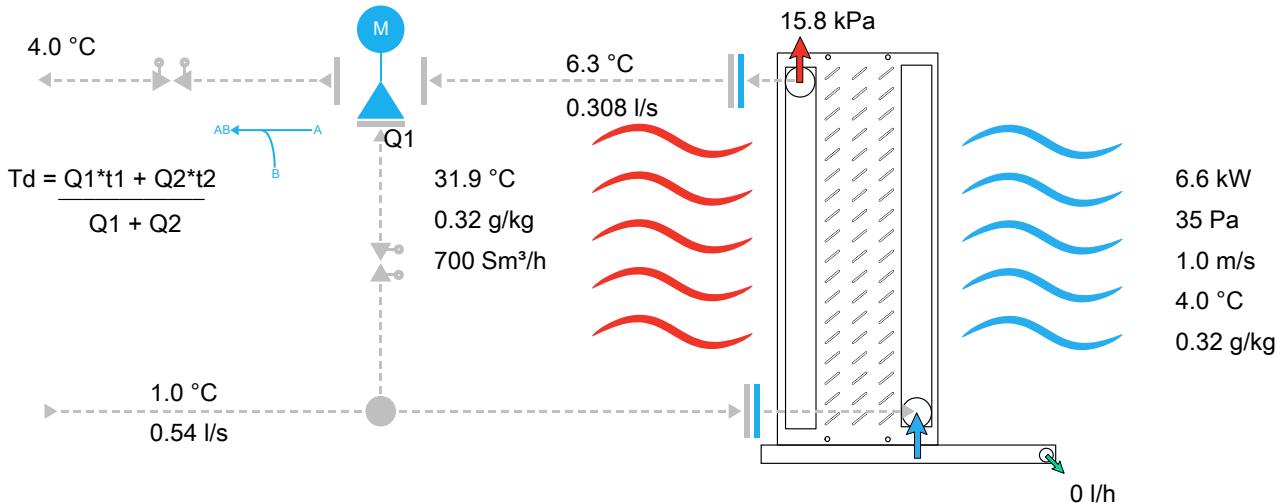
Component total rated electric power 12.75 kW
Component total rated electric current 20.20 A

System Type	ML 1100 Plus System	Prepared by	An Timmermans
Plenum Code	0710	Print date	07/03/2023
Genesys No	G319979-2	Labels	Pfizer FFW
Name	ALT COOLING FINAL - ANTI - Lift out -		
	MI 1100+		
Reactivation max power			11.10 kW

System Type ML 1100 Plus System
Plenum Code 0710
Genesys No G319979-2
Name ALT COOLING FINAL - ANTI - Lift out -
ML1100+

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

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
502x685
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
10
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 50
12 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 50
Valve, pipe side Rp 1/2 "
Valve connection, valve side G 1 "

System Type ML 1100 Plus System
Plenum Code 0710
Genesys No G319979-2
Name ALT COOLING FINAL - ANTI - Lift out -
ML1100+

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

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

System Type	ML 1100 Plus System	Prepared by	An Timmermans
Plenum Code	0710	Print date	07/03/2023
Genesys No	G319979-2	Labels	Pfizer FFW
Name	ALT COOLING FINAL - ANTI - Lift out - ML1100+		

Technical data - Control system

System arrangement

System arrangement

ML Plus System

Control system

Control system

Climatix

HMI

Communications protocols

Munters Connected Climate®

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

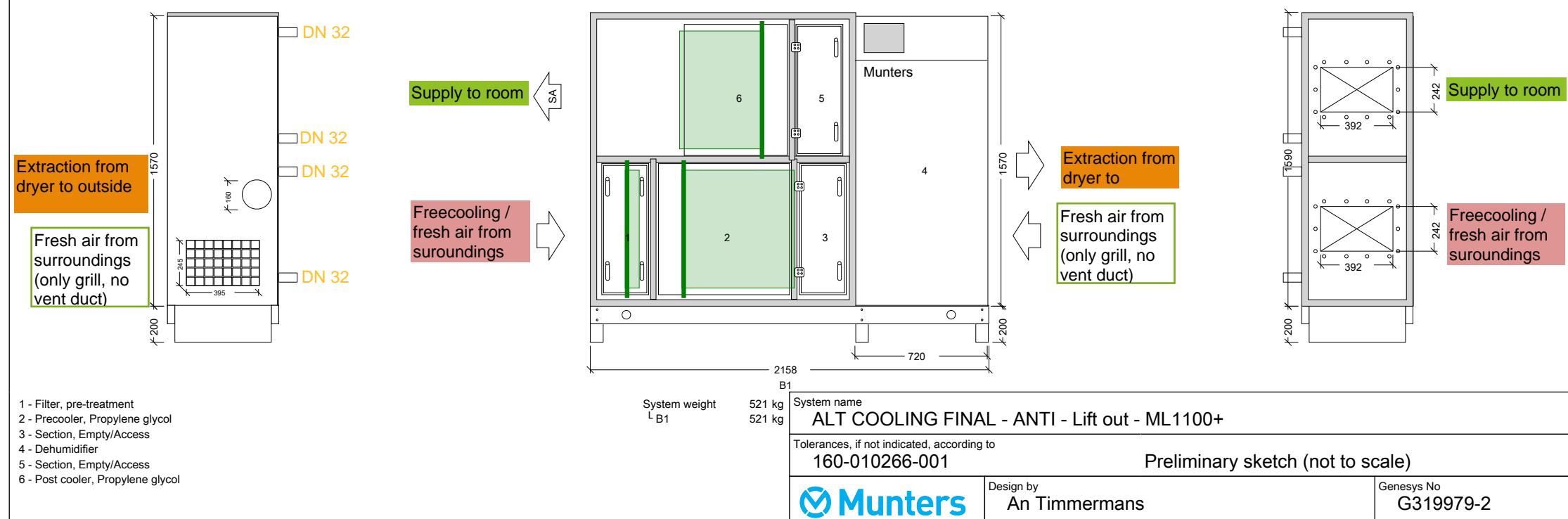
Process pretreatment temp sensor

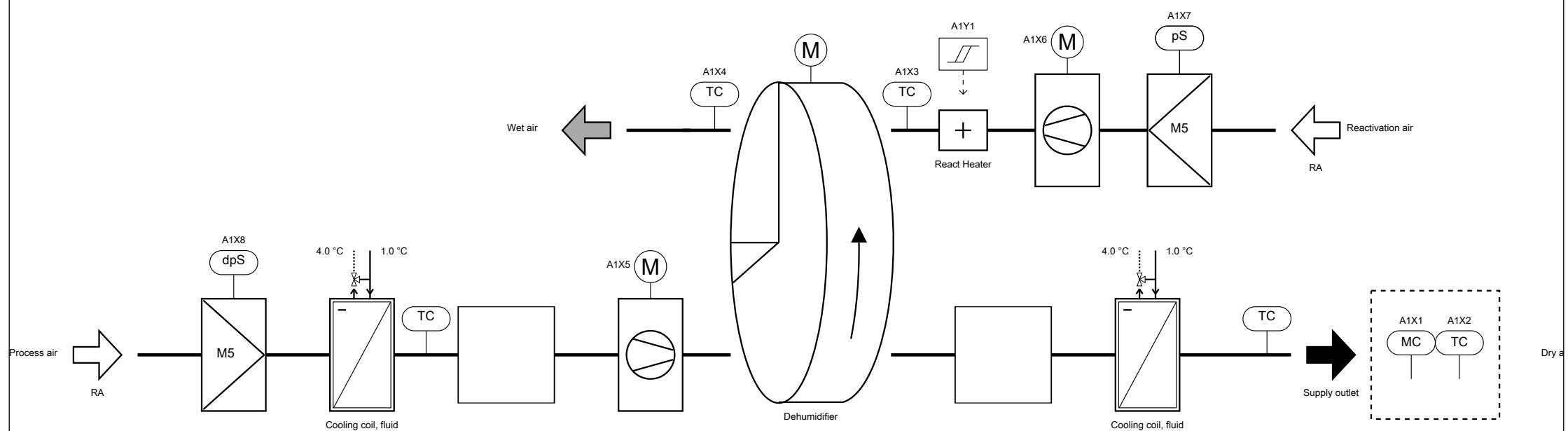
PT1000

Limitation temp sensor

PT1000

Preliminary sketch



**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 - Lift out - ML1100+

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

P&ID

Munters

Design by
An Timmermans

Genesys No
G319979-2