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Operating Manual D-EOMAH03402-25_00EN

COMPACT L AIR HANDLING UNIT

ALB

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1 ABOUT THIS DOCUMENT

1.1. Notice

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MicroTech 4	from Daikin Applied Europe		
Before starting	This document refers to the following components: POL688, POL 955, POL 822, POL895, POL871		
Application range	Microtech 4 Controller		
	Users of this document are intended to be:		
Users	- AHU users		
	- Sales staff		
Conventions	MicroTech 4 further in this document and when proper will be referred to as "MicroTech"		

2 SAFETY INFORMATION

Observe all safety directions and comply with the corresponding general safety regulations in order to preventpersonal injury and damage to property.

- Safety devices may not be removed, bypassed or taken out of operation.
- Apparatus and system components may only be used in a technically fault-free state. Faults that canaffect safety must be rectified immediately.
- Observe the required safety instructions against excessively high contact voltages.
- The plant may not be in operation if the standard safety devices are out of operation or if their effects are influenced in some other way.
- All handling that affects the prescribed disconnection of the protective extra-low voltage (AC 24 V)must be avoided.
- Disconnect the supply voltage before opening the apparatus cabinet. Never work when the power is on!
- Avoid electromagnetic and other interference voltages in signal and connection cables.
- Assembly and installation of system and plant components may only be performed in accordance with corresponding installation instructions and instructions for use.
- Every electric part of the system must be protected against static charging: electronic components, open printed circuit boards, freely accessible connectors and apparatus components that are connected with the internal connection.
- All equipment that is connected to the system must be CE marked and comply with the Machine SafetyDirective.

3 INTRODUCTION

This operating manual provides basic information that allows the control of the Daikin Air Handling Unit (AHU). Compact L AHUs are used for air conditioning and air handling in terms of pressure and temperature level control.

3.1 Basic Control System Diagnostic

Unit controllers, extension modules and communication modules are equipped with two status LED, BSP and BUS, to indicate the operational status of the devices. The "BUS" LED indicates the status of the communication with the controller. The meaning of the two status LED is indicated below.

MAIN CONTROLLER

BSP LED

LED Color	Mode
Solid Green	Application running
Solid Yellow	Application loaded but not running (*) or BSP Upgrade mode active
Solid Red	Hardware Error (*)
Flashing Green	BSP startup phase. The controller needs time for starting.
Flashing Yellow	Application not loaded (*)
Flashing Yellow/Red	Fail safe mode (in case that the BSP upgrade was interrupted)
Flashing Red	BSP Error (software error*)
Flashing Red/Green	Application/BSP update or initialization

(*) Contact Service.

EXTENSION MODULES

BSP LED

LED Color	Mode
Solid Green	BSP running
Solid Red	Hardware Error (*)
Flashing Red	BSP Error (*)
Flashing Red/Green	BSP upgrade mode

BUS LED

LED Color	Mode
Solid Green	Communication running, I/O working
Solid Yellow	Communication running but parameter from the application wrong ormissing,
	or incorrect factory calibration
Solid Red	Communication down (*)

3.2 Room Interface

Unit has 2 different human machine interfaces (HMI from here on), one is an 822 default, the other is POL895 or POL871, these have a lcd that can be plugged in the HMI port on controller (Th). Explanation of hot points on both is explained here down:

3.2.1 Room Unit Interface



Legend

Legene				
No.	lcon	Name	Function	
1	Ů	On/Off	Button for power on or power off	
4	-	Minus	Button for set-point adjustment, each operation of the Minus (-) reduces the setpoint by 0.1°C/0.5°F or 0.5°C/1.0°F, which is defined in controller's settings.	
5	+	Plus	Button for set-point adjustment, each operation of the Plus (+) increases the setpoint by 0.1°C/0.5°F or 0.5°C/1.0°F, which is defined in controller's settings.	
6	~	Ok	Button for confirmation of Date/Time and Scheduler settings (for POL822.60/XXX only)	
8	\bigcirc	Mode	Cooling/Heating mode	



All HMIs except POL 822 allow navigation through the application pages, the available data can change, the LCD shows additional data to configure optional items such as BMS configuration, some of the additional values are protected with different level passwords to prevent wrong parameterizations to unauthorized users.

To select the voice the user must click on green triangle (web interface) or pushing knob POL895 or Enter key POL871.

3.3 Password

Different levels of password are available in the application, at each level different parameters are accessible. Summary of password and access level in the table below

Level name	Level index	Password
End user		
User	6	5321
Maintenance	4	2526

To access password input page, select "Settings" from main menu as shown below:

Compact L		
Return humidity	0.0 %rH	•
HMI Switch	Off 🕨	
Input / Output	•	I.
Setpoints	•	
Settings		
About Unit	•	Ŧ

Select "Enter Password" to show menu with "Login"

Settings		
Cool/Heat HMI	Cool	
Enter Password		

Select "Entry" and use the needed value as reported in table at the beginning of the chapter.

 Login	•
Entry	**** 🕨

4 CONTROL FUNCTIONS

This section describes the main control functions available in Daikin Compact L Air Handling Units. The activation sequence of the devices installed in Daikin AHU for thermoregulation control is shown below.

- On the Base Unit the fans will be free to start immediately, while if you have dampers the fans will wait for the minimum opening before starting.
- Fan speed is monitored with an algorithm that evaluates the differential pressure by reading the pressure difference between the zone before the fan and the fan impeller. This placement allows us to control the machine in constant air flow, the system will adjust the fan speed to reach the setpoint and keep it as stable as possible.
- While reaching the setpoint the system will start treating the air with the heat recovery unit by-pass.
- If coils are present, the algorithm will start the control loops on Temperature and/or Humidity to meet the demand. Treatment control can be done on the supply temperature or the return temperature.



The start-up sequence is performed to meet the desired pressure/airflow and temperature setpoints as efficiently as, to keep energy consumption low.

The Compact L is sold in its standard configuration and is dedicated to air exchange with heat exchanger with By-pass and external air filter, but there are various possibilities for configuration by adding the various Optional. For activation of the various components go, after putting the password in Settings, to the AHU Configuration, Unit Configuration, Config Components and Config Function.



2	AHU Configuration		
	Unit Configuration		•
	Config Components		•
	Config Functions		•
	Config Save / Load		•

Remember to go to the "Restart required!" item after you have made all the changes to each individual menu.

⁴ Unit Configuration	•	² Config Components		⁴ Config Functions	•
Return ~~~~~ IEQ Sensor ~ IEQ Serial Nr Restart Required!	Disabled > Disabled > Enter U >	Control COP function Freecooling Restart Required!	Pressure Enabled ngDisabled Disabled	Fire alarm Unit switch ~~~~~ DO Logic Global alarm Unit run Restart Required!	N.C > N.C > Warning > Unit status >
² Unit Configuration		² Config Components	•	² Config Eunctions	,
Restart Required!	Execute	Restart Required!	× Execute	Restart Required!	Execute
Save Cancel		Save Cancel	•	Save Cancel	

You can also restart with each individual change for each menu.

4.1 Dampers

4.1.1 Base Unit

4	Unit Configuration			
	Dampers			
	Shutoff	Disabled	Þ	
	~~~~~ Filters ~~~~~	~~~~		
	Outdoor Pre	Disabled	Þ	
	Return Pre	Disabled	Þ	
				v

#### 4.1.2 Outdoor and Exhaust air dampers

4	Unit Configuration	Þ	
	Shutoff Disabled	] •	Î
	Outdoor Pre Disabled	Þ	
	Return Pre Disabled	Þ	
			v

Which allows exclusion of AHU from direct and coming from outdoor ducts. Connect Shutoff Damper on pin X2.1 on terminal Y.

#### 4.1.3 Supply and Return air dampers.



Which allows the exclusion of AHU from direct and coming from indoor ducts. Connect Shutoff Damper on pin X2.2 on terminal Y.

#### 4.2 Coils

#### 4.2.1 Base Unit

Unit Configuration			
~~~~~ Pre ~~~~~	~~~~		
External coil	Disabled		
~~~~~~ Post ~~~~~~	~~~~		Ш
Heating I	Disabled		Ľ
~~~~~~ Humidity ~~~~~	~~~~		
Outdoon	Disphlad	ĸ	Ŧ

4.2.2 External Pre-heating coil

This Coil can be either Electric or Water, it is used to raise the inlet temperature of the AHU before the heat recovers. Enable coil on Unit Configuration

Unit Configuration		
~~~~~~~ Pre ~~~~~~~~		
External coil Disabled	▶	
~~~~~~ Post ~~~~~~~		h
Heating I Disabled	Þ	ľ
~~~~~~ Humidity ~~~~~~~		
Outdoon Disphlod	ĸ	Ŧ

Select coil type on Config. Components

4	Config Components			
	~~~~~ Coil ~~~~	~~~~~	_	
	Pre-heating	Water		Ш
	~~~~~ Fans ~~~~	~~~~~		Ш
	Control	Flow	►	Ш
	COP function	Disabled	Þ	Ш
	~~~~~~ Freecooling ~	~~~~~		Ч
	Freecooling	Disabled	Þ	÷
4	Config Components			
	~~~~~ Coil ~~~~	~~~~~		
	· · ·			×
Pr	e-heating	Water	~	Ш
		Water		Ш
		Electri	ic	Ш
_				l
	Save Cancel			

When selecting Electric Pre-heat, you need to install the additional Outdoor temperature sensor on the duct before the Pre-heat coil

# 4.3 Main coil DX or Water

Enable coil on Unit Configuration

Unit Configuration			
Return Pre	Disabled	Þ	*
~~~~ Main ~~~	~~~~~		
Coil	None	₽	
~~~~~ Pre ~~~~	~~~~~		ľ
External coil	Disabled	Þ	
Post			

Select coil type on Config. Components.

For DX solution, it provides the installation of our ERQ, maximum one circuit.

1	Unit Configuration			
	Return Pre	Disabled		-
	cool	None	♦	1
	~~~~~ Pre ~~~~~~	~~~~		
	External coil	Disabled	Þ	
	AAAAAAAAAAA Post AAAAAAA	~~~~		Ŧ

4	Unit Configuration	•
		×
Coi	1	None V
		Water ERQ
	Save Cancel	

Choose the EKE box kind from the config. components

4	Config Components		
	~~~~~ Coil ~		
	Pre-heating	Water	Þ
	EKE box kind	EKEA	
	~~~~~ Fans	~~~~~	
	Control	Flow	Þ
	COP function	Disabled	•
	~~~~~ Freecoolir	1g ~~~~~	Ŧ
4			
4	Config Components		•
4	Config Components		×
4 EK	Config Components	EKE	
4 EK	Config Components	EKE EKE	

## 4.3.1 Water main coil

For the water solution through the software, you can decide whether to have a heat only, cool only or a combined water coil.

Select coil type on Unit Configuration

4	Unit Configuration			
	~~~~~ Main ~~~~~~ Coil	~~~ Water	♦	Î
	External coil	~~~ Disabled	Þ	ľ
	~~~~~ Post ~~~~~ Heating I	~~~ Disabled	Þ	

Select coil function on Config. Function

4	Config Functions		
	~~~~~~ Coil ~~~~~~~		4
	Main	Cool	
	~~~~~~~ Fans ~~~~~~~~~		
	Control loop regulation		
		No	Þ
	~~~~~~ Polarities ~~~~~~~		
	ran ann		

These coils are used to treat the air and reach the temperature setpoint.

² Config Functions	
	×
Main	Cool/Heat~
	Cool
	Heat
	Cool/Heat
Save Cancel	
Dehumidification	Disabled 🕨 🖕

4.3.2 Post Heating 1 Coil

Enabled Post heating 1 coil on Unit Configuration

4	Unit Configuration		•	
	····· Pre ····	~~~~~		4
	External coil	Disabled	Þ	
	Post	~~~~~		h
	Heating I	Disabled	•	ľ
	Humidity -	~~~~~		
	Outdoor	Disabled	•	÷

Select coil Function on Config. Function

4	Config Function	s	•	
	~~~~~ Coi	1 ~~~~~~		4
	Main	Cool		Ш
	Post-heating I	Post		Ш
	R32	Disabled	•	Ľ
	R32 amount	10 kg		
	Low flow limit	Disabled		
	~~~~~ Fan:	S ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Ŧ

Select the type of internal coil installed.



5 POST-HEATING COIL

It can be either Electric or Water coil, the Electric one is a duct coil mounted externally to the AHU and can only be a Post-heating coil, while the Water coil is mounted internally to the unit on the slides just after the supply fan (Attention! If you install the water coil you cannot install the Supply filter) and can be used either as a Post or Heat water coil if you have provided a main cold water only coil.

Choose the Post coil 1 kind from the Config. Components. (After enabling the Post Coil 1 form the Unit Conf.)

4	Config Components		•
	~~~~ Coil ~~~	~~~~~	4
	Pre-heating	Water	Þ
	EKE box kind	EKEA	Þ
	Post coil I kind	Water	
	~~~~ Fans ~~~	~~~~~	
	Control	Flow	Þ
	COP function	Disabled	•
	I		_
4	Config Components		•
	~~~~~ Coil ~~~	~~~~~	÷
	I		×
Po	st coil I kind	Water	<b>V</b>
		Water	
		Electri	.c
	Save Cancel		

#### 5.1.1 External coil

Enable External coil on Unit Configuration. This coil is used to supplement heat during heating when the main coil cannot reach in setpoint and/or for dehumidification.

When you enable the external coil you are selecting Electric Post-heat, when you make this choice you need to install the additional Supply temperature sensor on the duct after the Post-heat coil

2	Unit Configuration			
	~~~~~ Post ~~~~~	~~~~		
	Internal coil	Disabled		
	External coil	Enabled	•	
	~~~~~ Humidity ~~~~~	~~~		I
	Outdoor	Disabled	•	Ĩ
	Supply	Disabled		
	Return	Disabled		

#### 5.2 Filters

#### 5.2.1 Base Unit

Outdoor and/or return pre-filters can be added to the unit. However, a pressure transducer is required to monitor the pressure differential and trigger an alarm if necessary.

4	Unit Configuration		•	
	~~~~~ Filters ~~~~	~~~~		•
	Outdoor Pre	Disabled		
	Return Pre	Disabled	Þ	U
	~~~~~ Main ~~~~~	~~~~		
	Coil	None	Þ	
	~~~~~ Pre ~~~~~	~~~~		Ŧ

5.2.2 Outdoor air Pre-filter

If the Outdoor Pre-filter is available, a pressure transducer should be connected to pin X1A on terminal Y

4	Unit Configuration		•	
	~~~~~~ Filters ~~~~~~	~~~		*
	Outdoor Pre	Disabled	▶	l,
	Return Pre	Disabled	Þ	l
	~~~~~~ Main ~~~~~~	~~~		
	Coil	None	Þ	
	~~~~~ Pre ~~~~~~	~~~		Ŧ

## 5.2.3 Return air Filter.

If the Return Pre-filter is available, pressure transducer should be connected to pin X5B on terminal Y.

4	Unit Configuration	•	
	~~~~~~ Filters ~~~~~~~~		4
	Outdoor Pre Disabled		
	Return Pre Disabled		l
	Coil Main None	•	
	~~~~~ Pre ~~~~~~~		Ŧ

# 5.3 Optional POL955 A/B (OPTIONs)

The optional POL955 A/B are used to manage some components that can be added to the unit configuration.

The Components in POL955 A are:

PO	L955 OPTION A	
	Error status	X4A on -X
	R32 Alarm	X5A on -X
	Defrost	X6A on -X
EKEA	Input ON/OFF	Q13A/Q14A on -X
	Cool/Heat status	Q23A/Q24A on -X
	Malfunction Low flow	Q33A/Q34A on -X
	0-10 DC	Y1A on -X
	Supply Air Temperature	X7A on -X
	(Electric/ Water Coil Pump)	X8A on -X
Post Heating	Alarm	
Fost Heating	(Electric/ Water Coil Pump) ON/OFF	Q43A/Q44A on -X
	(Electric/ Water Coil Pump)	Y2A on -X
	Signal	
Peturn Air	CO2	X2A on -X
Neturn An	Humidity	X3A on -X
DPT	Outdoor Air Prefilter	X1A on -X
	(Cooling/Heating/Cooling-Heating) Alarm	X4A on -X
Water Coil		
Water Coll	(Cooling/Heating/Cooling-Heating) ON/OFF	Q13A/Q14A on -X
	(Cooling/Heating/Cooling-Heating) Signal	Y1A on -X

## 5.3.1 Return air humidity

If available, connect the Return Humidity probe to pin X3A on terminal X

4	Unit Configuration		
	~~~~~~ Humidity ~~~~~~~		
	Outdoor Disal	bled	Þ
	Supply Disa	bled	Þ
	Return Disa	bled	
	~~~~~~ Air Quality ~~~~~~~		
	Return Disa	bled	<u>ب</u>

#### 5.3.2 CO2 probe

If available, connect the CO2 probe to pin X2A on terminal X



## 5.4 Optional POL955 B OPTION

The Components in POL955 B are:

POL955 OP		
	Outdoor Air Temperature	X1B on -Y
	(Electric/ Water Coil Pump)	X4B on -X
Pro-Heating	Alarm	
Fie-nealing	(Electric/ Water Coil Pump) ON/OFF	Q14B on -X
	(Electric/ Water Coil Pump)	Y1B on -X
	Signal	
	Return Air Prefilter	X5B on -Y
DF1	Supply/Return Duct pressure control	X6B on -Y
Comfort Economy	-	X7B on -X
Lumidity	Outdoor Air	X2B on -X
riamdity	Supply Air	X3B on -X

# 5.4.1 Outdoor air humidity

4	Unit Configuration			
	_			
	~~~~~~ Humidity ~			
	Outdoor	Disabled	₽	
	Supply	Disabled	₽	
	Return	Disabled	Þ	l
	~~~~~~ Air Quality	~~~~~		Ľ
	Return	Disabled	Þ	Ŧ

If available, connect the Outdoor Humidity probe to pin X2B on terminal X  $\,$ 

# 5.4.2 Supply air humidity

If available, connect the Supply Humidity probe to pin X3B on terminal X

4	Unit Configuration			
	-			
	~~~~~ Humidity ~	~~~~~		
	Outdoor	Disabled		
	Supply	Disabled		
	Return	Disabled	Þ	I
	~~~~~~ Air Quality	~~~~~		Ľ
	Return	Disabled	Þ	Ŧ

# 6 MAIN MENU SCREEN

The unit is sold without its own on-board interface. the parameters can be accessed in various ways, via web interface if the unit is connected to the network, via Pol 895 with which you have the possibility to access the various menus of the AHU depending on the password entered and with Pol 822 which it only allows you to read the temperature of the environment where it is installed, turn the AHU ON/OFF, change the temperature set point and change the hot/cold status of the unit (if set by the HMI on the control).

## 6.1 LCD/Web interface

Through Main Menu screen the user can read the main important information necessary for monitoring the AHU status. In particular, the user can:

- Control the AHU status
- Read main values
- Switch unit Off/On
- Change the AHU Setpoint
- Access to the I/O overview menu
- Access settings
- About Unit
- Restore alarm conditions

Next chapters will describe any item of he main menu. In the following table the user can find all the items of the main menu screen and the section where it is described.

Main Menu item	Section
Actual status	Display the actual status of the AHU.
Mode	Display the type of treatment Cool or Heat
Supply/Return temp	Display actual supply, return temperature used to regulate treatment system.
HMI switch	Change the unit status from OFF to On and vice versa.
Input/Output	Allow user to access menu that shows all the input/output values of the AHU.
Setpoints	Allow user to access menu that shows unit setpoints.
Settings	Allow user to access menu that shows all unit settings (up to the password input).
About unit	Allow user to access information about control system of the AHU.
Restore alarm condition	Allow user to reset alarms once the problem is fixed.

# 7 ACTUAL STATUS

This item displays the actual status of the AHU. All possible statuses are reported in the table below.

	HMI Path: Main page -> Actual status				
4	Compact L				
	Actual Status			4	
		Off by DI Switch		1	
	Mode	Cool			
	Regulation temp	0.0 °C			
	Return humidity	0.0 %rH			
	HMI Switch	Off	▶	Ŧ	

Main Menu item	Value	Description
Actual status	Off by fire alarm Off by alarm Off by DI switch Off by BMS Off On	Off by fire alarm: Highest priority alarm, the unit is switched off immediately. Off by alarm Unit is switched off due to alarms that doesn't allow the system to work in safety condition. Off by DI switch The unit is switched off by the selector on the electrical panel. Off by BMS The unit is switched off by BMS command. Off The unit is switched off by HMI command On The unit is witched on and operational

On status follows a priority chain according to the following table:

HMI switch	Panel switch	BMS	Unit actual status
Off	х	х	Off
On	Off	х	Off
On	On	Off	Off (if BMS enabled)
			On (if BMS disabled)
On	On	On	On

The "X" value means that whichever state doesn't affect the unit actual status.

# 8 MODE

This item displays the mode of the AHU. the possible mode are cool or heat.

4	Modular Top				
	Actual Status On				
	Mode	Co	ool		L
	Supply temperature	24.6	°C		L
	Return temperature 2	24.2	°C		
	HMI Switch		On	Þ	
	Tabut /Output				•

# 9 SUPPLY/RETURN TEMP

This item (read-only) displays the actual average supply air temperature value used to regulate the AHU.

HMI Path: Main page -> Supply temp

4	Compact L		
	Actual Status		
		Off by DI Switch	
	Regulation temp	0.0 °C	H
	HMI Switch	Off	H
			Ľ
	Input / Output		
	Satnointe		Ŧ

The probe will monitor the temperature value, and the system will use the temperature to ensure the setpoint is maintained.

The system will be able to provide optimized commands to correct any deviation from the temperature set point with all the treatment systems envisaged, increasing or decreasing the signal sent to the treatment system. The same applies to the return probe if selected as the control temperature.

# **10 HMI SWITCH**

This item displays and allows you to set the status of the AHU.

Γ

4	Compact L		
	Actual Status		4
		Off by DI Switch	l
	Regulation temp	0.0 °C	l
	HMI Switch	Off	
	Input / Output		Ŧ

HMI Path: Main Menu -> HMI Switch

I

4	Compact L		
	Actual Status		4
		• •	×
НМІ	: Switch	Off 🗸	
		Off	
		On	
		Ventilation	
	Save Cancel	Economy	
		Scheduler	
	ESC	Test	0

# 11 INPUT/OUTPUT

HMI Path: Main Menu -> Input/Output				
4	Compact L			
	Regulation temp	0.0 °C		
	HMI Switch	Off		h
	Input / Output			1
	Setpoints			
	Settings			
	About Unit			ļ

This menu (read-only) allow to access submenus of read values throughout the application.

Selecting "Input/Output" a menu shows the access to sub menus dedicated to different signals of the system as explained below:

Select "Analog Inputs" to show probes and transducers values.

Г

4	Input / Output	
	Analog Inputs	•
	Analog Outputs	•
	Digital Inputs	•
	Digital Outputs	•

Scroll down to show remaining values.

4	Analog Inputs	•
	~~~~~~ Temperatures ~~~~~~	4
	Outdoor 0.0 °C	- 1
	Supply 0.0 °C	
	Return 0.0 °C	
	Exhaust 0.0 °C	
	~~~~~~ Fans ~~~~~~~~	
	Supply flow 0m3/h	v

4	Analog Inputs		
	~~~~~ Fans ~~~~	~~~~~	
	Supply flow	0m3/h	
	Return flow	0m3/h	
	~~~~ Filters ~~~~	~~~~	
	Outd pressure	0 Pa	
	Return pressure	0 Pa	
	~~~~~ Recuperator ~~	~~~~~	F

4	Analog Inputs			
	Subbil in	011	2711	A
	Return flow	Øm	3/h	
	~~~~~ Filters ~~~~~~	<i>.</i>		
	Outd pressure	0	Pa	
	Return pressure	0	Ра	1
	~~~~~ Recuperator ~~~~~~	~		I
	Pressure	0	Pa	Ļ
	Pressure	0	Pa	

Select "Analog Outputs" to show coil and fans values.

4	Input / Output	
	Analog Inputs	•
	Analog Outputs	•
	Digital Inputs	۶.
	Digital Outputs	۱.

When you enable the components the various sections will be created, scroll to view all.

4	Analog Outputs			
	~~~~~ Dampers	~~~~~~		1
	Recovery	100.0	%	
	~~~~~ FANS	~~~~~~~~		I.
	Supply	76.3	%	
	Return	58.1	%	
				×

Select "Digital Inputs" to show alarms and switch status.

4	Input / Output	
	Analog Inputs	•
	Analog Outputs	•
	Digital Inputs	•
	Digital Outputs	Þ

Scroll down to show remaining values.

4	Digital Inputs		
	~~~~~ Frost Swi	tch ~~~~~	4
	Frost switch	Passive	
	~~~~~ Alarms	~~~~~~~	
	Fire	Passive	
	~~~~~ Switch	~~~~~~	
	Unit	044	•
4	Digital Inputs		
4	Digital Inputs	~~~~~	
4	Digital Inputs ~~~~~ Alarms Fire	~~~~~ Passive	•
4	Digital Inputs	~~~~~ Passive	Â
4	Digital Inputs ~~~~~ Alarms Fire ~~~~~ Switch	~~~~~ Passive	ŕ
4	Digital Inputs ~~~~~ Alarms Fire ~~~~ Switch Unit	~~~~~ Passive ~~~~~ Off	ŕ
4	Digital Inputs ~~~~~ Alarms Fire ~~~~ Switch Unit Economy	<pre>~~~~ Passive ~~~~ Off Comfort</pre>	ŕ
4	Digital Inputs ~~~~~ Alarms Fire ~~~~ Switch Unit Economy Cool/Heat	<pre>~~~~ Passive ~~~~ Off Comfort Cool</pre>	^

Select "Digital Outputs" to show command and switch.

4	Input / Output	
	Analog Inputs	•
	Analog Outputs	•
	Digital Inputs	•
	Digital Outputs	•

When you enable the components, the various sections will be created, scroll to view all.

4	Digital Output		•
	~~~~~ Switch	~~~~~	
	Unit run	Passive	
	Global alarm	Active	
	Cool/Heat	Heat	

12 SETPOINT

HMI Path: Main Menu -> Setpoints 4 Compact L Regulation temp 0.0 °C HMI Switch Off Þ Input / Output Setpoints Settings About Unit

This menu allows the user to access all setpoints used to control AHU.

Selecting "Setpoints" a page allows to change all setpoints values, used by the system to target regulation algorithm. This setpoint is used to regulate the treatment system modulation by a PI algo using supply/return temperature as feedback.

if the regulation temperature is the return one you will have four setpoints (as in the image) if instead you regulate on the supply, you will only have the first two setpoints.

4	Setpoints		•	
	Time	5.0 min	Þ	۸
	~~~~~ Temperatures ~~~~	~~~		
	Main cool	24.0 °C	•	I
	Main heat	20.0 °C	•	l
	Main cool eco	26.0 °C	•	
	Main heat eco	20.0 °C	•	
	~~~~~ Fans ~~~~~~	~~~		Ŧ

When adjusting on the return temperature we need to set the desired temperature on the Main cool or Main heat item after which we need to set the threshold below which we do not want to go in case of Cool (supply min) on the supply temperature and the threshold above which we do not want to go in case of Heat (supply max) also on the supply temperature.

This allows us to adjust the temperature within a range between the return and supply temperatures. This type of regulation is used to avoid excessive temperature changes and to have high energy savings.

Main cool	× 20.0 °C
Save Cancel	
Main cool eco	26.0 °C
Save Cancel	
Main heat	22.0 °C
Save Cancel	
Main heat eco	× 20.0 °C
Save Cancel	

These setpoints are used to set air flow or pressure you want for the environment and keep the fan as stable as possible. Set both air flow.

4	Setpoints		•	
	~~~~~~ Fans ~~~~~	~~~~~		
	Supply flow	3000m3/h		
	Supply flow eco	1800m3/h		
	Return flow	3000m3/h		h.
	Return flow eco	1800m3/h		I.
	~~~~~ Filters ~~~~	~~~~~		Ľ
	Warning threshold			÷
Sup	oly flow	3900 m3/h		×
	Save Cancel			

This setpoint is used to set the pressure you want for the environment and keep the fan as stable as possible. Attention! to set the pressure you must change the tubes configuration on the supply and return Fans of base unit as per the instructions.

You can also enable the COP function, which will adjust on the supply pressure and, thanks to the algorithm, manage the speed of the return fan. The setpoint displayed will be only that of the supply pressure.

4	Setpoints		•		
	~~~~~ Fans ~~~~	~~~~~			
	Supply pressure	300. <mark>0</mark> Pa	Þ	1	
	Supply pressure eco	150.0 Pa	Þ		
	Return flow fact	95.0 %			
	~~~~~ Air Quality ~	~~~~~		U	
	C02	600.0 ppm	•		
	voc	400.0 ppb	•		
	PM 2 5	3 110/m3		Ŧ	

If the humidifier and <u>humidity</u> probes are enabled, you can be set the humidification setpoint and the minimum and maximum supply humidity thresholds.

This control loop has the same operation as the temperature loop. This allows us to have high energy saving and excellent accuracy on the regulation.

4	Setpoints				
				·	4
	~~~~~~ Humidity ~~~~~	~~~~			
	Main dehum	55.0	%rH	•	h
	Main dehum eco	60.0	%rH	•	ų
	Supply min	30.0	%rH	•	
	Supply max	80.0	%rH	Þ	
	~~~~~~~ Fans ~~~~~~	~~~~			11
					Ŧ

This setpoint is used to set the pressure difference you want to report on each activated filter. The first is just a warning, the second is a fault that stopped the AHU.

4	Setpoints			
	~~~~~ Filters	~~~~~~		
	Warning threshold			_
	Return	150.0	Pa	
	Outdoor	150.0	Pa	
	Fault threshold			
	Return	300.0	Pa	
	Outdoor	300.0	Pa	

# **13 SETTINGS**

This menu, up to the password level, allows the user to access submenus for communication channels.

L

4 Compact L		
Regulation temp	0.0 °C	
HMI Switch	Off	Þ
Input / Output		
Setpoints		
Settings		
About Unit		

HMI Path: Main Menu -> Setting

Selecting settings and log with needed password to access different menu as show below:

Menu with User level password.

6	Settings	
	Communication	•
	Options	•
	Cool/Heat HMI Cool	Þ
	Enter Password	•

.

Menu with Maintenance level password.

4	Settings		
	AHU Configuration		
	Communication	•	1
	Daikin On Site	•	
	Main Regulation	•	
	Side Regulation	•	
	Options	•	I.
	Cool/Heat HMI Cool	Þ	
	Enter Password		÷

Select "Communication" to access different channel parametrization.

4	Settings	
	AHU Configuration	•
	Communication	•
	Daikin On Site	•
	Main Regulation	•
	Side Regulation	
	Options	•
	Cool/Heat HMI Cool	Þ
	Enter Password	

Select "IP-Config." to access configuration of IP address of the control system.

4	Communication		
	IP-Config. 010 . 039 . 002 .	036	
	IO-Module bus		
	Process bus		
	Communic.modules		

Select "DHCP" to enable or disable the service.

4	Tcp Ip Cor	nfig					
	DHCP				Enabled		
	Act Ip	010 . 0	39.	002 .	036		1
	Act Msk	255 . 2	55.	255 .	000		I.
	Act Gwy	010 . 0	39.	002 .	002		I.
	Gvn Ip	192 . 1	68.	001 .	042	Þ	J
	Gvn Msk	255 . 2	55 .	255 .	000	Þ	
	Gvn Gwy	<b>1</b> 92 . 1	68.	001 .	001	Þ	
	Primarv D	10.3	9.14	8.17		•	٧

Scroll down to show remaining values.

In case of DHCP disabled use Gvn (given) fields to assign specific IP values to the control system. MAC is the mac address of the POL688 (control system) of the unit.

4	Tcp Ip Conf	ig			
	Gvn Ip	192 . 168 .	001 .	042	- 1
	Gvn Msk	255 . 255 .	255 .	000	
	Gvn Gwy	192 . 168 .	001 .	001	
	Primary D	10.39.1	48.17		
	Secondary	0.0.0.0			
	MAC	00-A0-03-	EF-92-0	0	
	After modif	ication of va	lue		
	Restart Req	uired!			-

Select "Communic.modules" to access configuration of additional comm modules if present.

4	Communication	
	IP-Config. 010.039.002.036	•
	IO-Module bus	•
	Process bus	•
	Communic.modules	

In the presence of a connected module, specific menu will appear to allow parametrization (communication setting) of every single module installed.



From Settings you can enter to Service where you can access several services as

- Daikin On Site
- Main regulation
- Language Selection
- Heat/Cool kind
- Enabling BMS
- Time Scheduler
- Clock Settings

# HMI Path: Main Menu -> Service

4	Settings			
	AHU Configuration			
	Communication		•	
	Service			
	Heat/Cool HMI Co	ool	Þ	
	Enter Password			
_				

## • Daikin On Site

Select "Daikin On Site" to access cloud connection if available.

4	Service			
				*
	Main Regulations			
	Side Regulations			
	Enable BMS D	isabled	Þ	l
	Daikin On Site			l
				L
	Time Scheduler			l
	Clock Settings			÷

## Main Regulation

Select "Main Regulation" to adjust the loop timing of some features.

4	Service			
	Language Selection	English	Þ.	1
	Heat/Cool kind			
		HMI	Þ	
	Main Regulations		•	
	Side Regulations			
	Enable BMS	Disabled		
	Daikin On Site			٧

4	Main Regulation			
	~~~~ Recovery ~~~	~~~~		
	Time defrost	10.0 min	Þ	
	Temp defrost	2.0 °C	•	
	Delay defrost	150.0 s	Þ	
	Frost	OK	Þ	
	Multi defrost	2.0 s	Þ	
	Defrost supply thr	25.0 °C	Þ	

4	Main Regulations			
	~~~~~ Main ~~~~	~~~~~		
	Winter pre-heating	Disabled	Þ	
	Cool loop KP	1.0	Þ	
	Cool loop TI	60.0 s	Þ	١.
	Heat loop KP	1.0	•	
	Heat loop TI	60.0 s	Þ	
				12

# Language Selection

Select "Language Selection" to change language of HMI if available.

4	Service			
	Language Selection	English	•	4
	Heat/Cool kind			L
		HMI	•	L
				L
	Main Regulations			L
	Side Regulations			Ľ
	Enable BMS	Disabled	•	
	Daikin On Site		•	Ŧ

## Cool/Heat kind

Select "Cool/Heat kind" to access menu.

4	Service			
	Language Selection	English	•	1
	Heat/Cool kind			L
		HMI	₽	L
				L
	Main Regulations			L
	Side Regulations			•
	Enable BMS	Disabled	•	
	Daikin On Site		•	Ŧ

Select the season change input mode.

4	Options		•
Co	ol/heat kind	HMI	~
		HMI	1
		Panel switch	1
		BMS	н
-		Outdoor temperature	н
_	Save Ca	Regulation temperature	

#### Enabling BMS

Select "Enable BMS" to access menu that Allow to enable or disable BMS functionality (Off / On of the unit). from emote).

4	Service		
	Main Regulations		
	Side Regulations	1	•
	Enable BMS D	isabled	
	Daikin On Site	I	
	Time Scheduler	1	
	Clock Settings	1	÷.

## • Time Scheduler and Clock Settings

Select "Time Scheduler" and "Clock Settings" to program the start-up and shutdown of the unit by time slots and days of the week.

4	Service	•	
	Main Regulations	•	
	Side Regulations	•	l,
	Enable BMS Disabled	•	I
	Daikin On Site	•	L
			J.
	Time Scheduler	•	Ш
	Clock Settings	•	÷

# **14 ABOUT UNIT**

This menu allows users to access pages with information about unit software.

HMI Path: Main Menu -> About unit				
				1
About Unit				
Serial Nr	Enter Unit	Serial		
Unit Size		Size#7		
Application in	nfo			
Modular T				
Software vers	sion	2.00.A		
BSP		11.48		
Act Ip	10.39.2.3	36		Ļ

This page shows useful information to note while contacting service in case of need. Single information is explained below:

"Serial Nr" show the specific serial number of the unit.

4	About Unit		•
	Serial Nr Ent	er Unit Serial	-
	Unit Size	Size#7	
	Application Info		
	Platform	FUJIN Comfort	
	Compact L		
	Software version	1.00.A	
	Subversion	00	
	RSP	11.56	v

"Software version:" shows the application release running on the unit control system.

4	About Unit		•
	Serial Nr	Enter Unit Serial	
	Unit Size	Size#7	
	Application Inf	o	
	Platform	FUJIN Comfort	
	Compact L		
	Software vers:	ion 1.00.A	
	Subversion	00	
	BSP	11.56	

"BSP" shows the release of the operating system running on the unit control system.

4	About Unit		
	Application Info		
	Platform	FUJIN Comfort	
	Compact L		
	Software version	1.00.A	
	Subversion	00	
	BSP	11.56	- 1
	ActIp 1	.0.39.2.51	ļ

"Act IP" show the actual IP address of the control system board.

4	About Unit		
	Application Info		
	Platform	FUJIN Comfort	
	Compact L		1
	Software version	1.00.A	- 1
	Subversion	00	- 1
	BSP	11.56	- 1
	ActIp 1	L0.39.2.51	Ŧ

# 15 ALARM

# 15.1 Alarm list

	Alarms	Class	High Limit	Low Limit
Туре	Name			
	PreHeating electrical alarm	WA1		
ts	Combine pump alarm	WA1		
ndu	ERQ alarm	WA1		
	Humidifier alarm	WA1		
gita	Fire alarm	FL1		
Dić	Post heathing pump alarm	WA1		
	Post Heathing electrical alarm	WA1		
	Outdoor temperature	WA1	80 °C	- 20 °C
	Outdoor temperature optional	WA1	80 °C	- 20 °C
	Supply temperature	FL1	80 °C	- 20 °C
	Supply temperature optional	FL1	80 °C	- 20 °C
	Return temperature	WA1	80 °C	- 20 °C
	Exhaust temperature	WA1	1000 Pa	0 Pa
S	Outdoor pre-filter optional pressure	WA1	1000 Pa	0 Pa
nd	Outdoor filter pressure	WA1	1000 Pa	0 Pa
in	Supply fan pressure	FL1	1000 Pa	0 Pa
loc	Supply fan pressure optional	FL1	1000 Pa	0 Pa
vna	Return fan pressure optional	FL1	1000 Pa	0 Pa
A	Supply filter pressure optional	WA1	1000 Pa	0 Pa
	Return filter pressure	WA1	1000 Pa	0 Pa
	Return fan pressure	FL1	1000 Pa	0 Pa
	Outdoor humidity	WA1	100 %r.H	0 %r.H
	Supply humidity	WA1	100 %r.H	0 %r.H
	Return humidity	WA1	100 %r.H	0 %r.H
	Return CO2	WA1	2000 ppb	0 ppb
0 o E	FAN	FL1		

		Legend			
WA1 =	WA1 = Warning The unit will continue to work by reporting the alarm.				
FL1 =	Fault	The unit will stop operation as it is a critical alarm.			

#### 15.2 Alarm Reset

This menu allows the user to reset alarms once the problem is fixed.

HMI Path: Main Menu -> Red blinking bell					
Info	4	le			
		Compact L			
		Actual Status	Off by DI	Switch	- i
		Regulation temp		0.0 °C	
		HMI Switch		Off	•
		Input / Output			1
• \$			ESC 🌑		ок

This page shows everything about the alarms and allows reset once the problem is fixed. To access the reset, you must enter one of the passwords described in the previous chapters.

Select "Alarm list" to open the page where all the alarms are shown.

The number next to the green triangle means the number of alarms present.

	· · -			
4	Alarming		•	
	Alarm list	3	•	
	Alarm history	15	•	
	Alarm-snapshot	0	•	
	Advanced		•	
	Event history	0	•	

Select "Acknowledge" to open the page where you can execute the reset command select execute and press save.

4	Alarm list		
	Acknowledge		-
	+ Return humidity: config err	•	U
	+ Outdoor humidity: config er	•	
	+ Humidifier: config error	•	
			Ŧ

If the problem has been solved the alarm will disappear from the list.

⁴ Alarm list	•
Acknowledge	Execute
Save Cancel	
	×

Select "Alarm history" to view the list of actions taken for each alarm.

4	Alarming			
	Alarm list	3	•	
	Alarm history	15	•	
	Alarm-snapshot	0	•	
	Advanced		•	
	Event history	0	•	

Scroll to view all list.

4	Alarm history		
	Entries	15	-
	- Recovery pressure: OK		
	+ Return humidity: config err		
	+ Outdoor humidity: config er		
	+ Recovery pressure: com faul		
	+ Humidifier: config error		
	- Recovery pressure: OK		_
	+ Recoverv pressure: com faul		*

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