Ventilation VTS

Software for air handling units
1.0.027

IMPORTANT

Only qualified personnel may install or carry out technical service on the product.

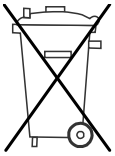
The customer must only use the product in the manner described in the documentation relating to the product.

In addition to observing any further warnings described in this manual, the following warnings must be heeded for all products:

- Prevent the electronic circuits from getting wet. Rain, humidity and all types of liquids or condensate contain corrosive minerals that may damage the electronic circuits. In any case, the product should be used or stored in environments that comply with the temperature and humidity limits specified in the manual.
- Do not install the device in particularly hot environments. Too high temperatures may reduce the life of electronic devices, damage them and deform or melt the plastic parts. In any case, the product should be used or stored in environments that comply with the temperature and humidity limits specified in the manual.
- Do not attempt to open the device in any way other than described in the manual.
- Do not drop, hit or shake the device, as the internal circuits and mechanisms may be irreparably damaged.
- Do not use corrosive chemicals, solvents or aggressive detergents to clean the device.
- Do not use the product for applications other than those specified in the technical manual.

The technical specifications shown in the manual may be changed without prior warning.

DISPOSAL



INFORMATION FOR USERS ON THE CORRECT HANDLING OF WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

In reference to European Union directive 2002/96/EC issued on 27 January 2003 and the related national legislation, please note that:

- WEEE cannot be disposed of as municipal waste and such waste must be collected and disposed of separately;
- the public or private waste collection systems defined by local legislation must be used. In addition, the equipment can be returned to the distributor at the end of its working life when buying new equipment;
- the equipment may contain hazardous substances: the improper use or incorrect disposal of such may have negative effects on human health and on the environment;
- the symbol (crossed-out wheeled bin) shown on the product or on the packaging and on the instruction sheet indicates that the equipment has been introduced onto the market after 13 August 2005 and that it must be disposed of separately;
- in the event of illegal disposal of electrical and electronic waste, the penalties are specified by local waste disposal legislation.

KEY TO THE ICONS

	NOTE: to bring attention to a very important subject; in particular, regarding the practical use of the various functions of the product.
	IMPORTANT: to bring critical issues regarding the use to the attention of the user.
	TUTORIAL: some simple examples to accompany the user in configuring the most common settings.

CONTENTS

1. INTRODUCTION

1.1 Main features

Usability and display – The menu-based system allows the application to be configured as a tool for instant diagnostics. All this is possible by the immediately accessible overview screens.

Quick menus - information on the status is accessible directly from the main menu, without needing to access the submenus. Configuration, active function and operating temperature information are arranged in loops of screens, scrolled by pressing the DOWN button from the main screen.

List of functions:

Main features	Application code will determine the unit type
Heat recovery	AD – Supply-exhaust application without recovery
	AG – Supply-exhaust application with glycol heat recovery
	AP – Supply-exhaust application with plate cross-flow recuperator
	AR – Supply-exhaust application with rotary regenerator
	AS – Supply application
Coils management	HW – Water heater
	HE – Electric heater
	CW – Water cooler
	DX – Direct expansion
	CWHW - Cooler heater coil
	EVPR.HMFR – Evaporative humidifier
Fans	Up to 10 supply fans
	Up to 10 exhaust fans
	Option of redundant function with 2 fans
Hardware	uPC3 extra small
User interface	HMI Advanced
Languages	EN
Unit of measure	International
	USA
Alarms	Automatic and manual management
	Log from application
Supervisor protocol	Modbus
	Bacnet

1.2 Field connections

Rotary wheel
Addr. 4

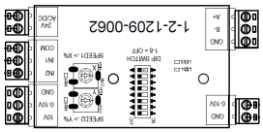
Exhaust CO2
Addr. 21

c.pCOe
Addr. 15
(Optional)

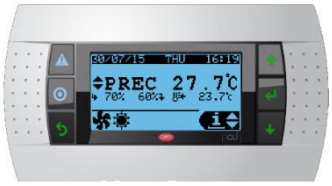
Supply fan (old) 1..5
Addr. 2 - 5 - 7 - 9

Supply Fanwall (max 10pcs.):
Addr. 41, 42, 43, 44, 45,
46, 47, 48, 49, 40

HMI Basic
Addr. 16

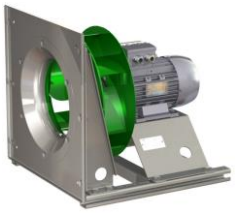


Module I/O – PCB EC
Addr. 13



Exhaust pressure
Addr. 12

Supply pressure
Addr. 11



Exhaust fan (old) 1..5
Addr. 3 - 6 - 8 – 10
Exhaust Fanwall (max 10pcs.):
Addr. 51, 52, 53, 54, 55,
56, 57, 58, 59, 50

Return humidity
Addr. 32

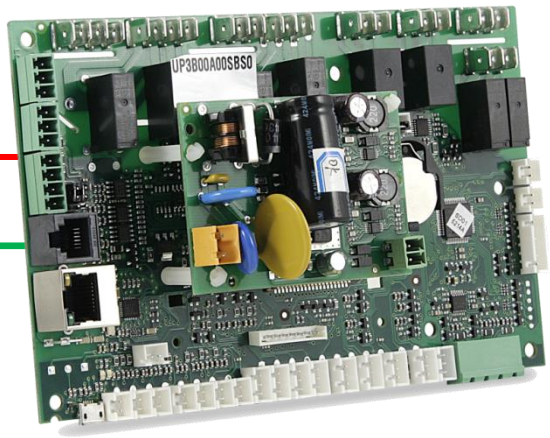
Supply humidity
Addr. 31

Module I/O / Pressure sensor
Mainboard – Control Circuit
Addr. 18

9600,8n1 Modbus

ModBus® master protocol on port **FB**

Display protocol on port **DISP**



2. START UP

It is possible to load/update the application software of the uPC3
controllers family with thw following methods:

- Update via microUSB
- Update from computer by using c.factory (via USB or Ethernet connection)
- Update with file transfer via FTP

Update with file transfer via microUSB

1- Connect to microUSB port

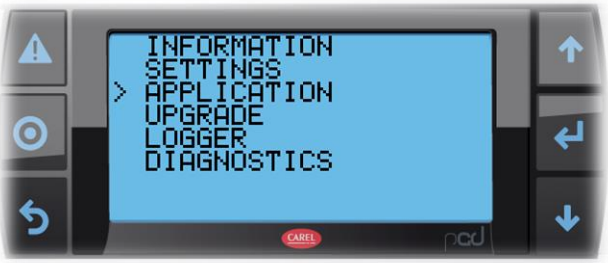
2- Open an My Computer USB Drive

3- Drag&drop the software update file from the directory on the computer to the “UPGRADE” directory on the uPC3 controller

4- Disconnect microUSB cable.
After disconnect cable autorun will start loading new software.

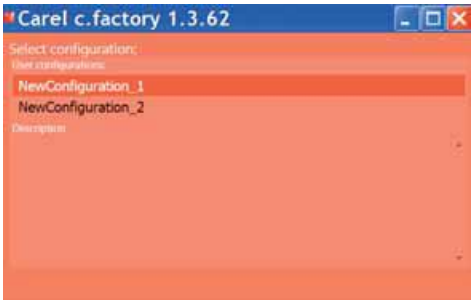
5- Wait for the application to load and the VTS logo to appear

6- After loading - Restart application press Alarm and Enter go to Application and Restart application.



Update from computer using c.factory
On all uPC3 family controllers, the application program can be loaded by using the c.factory software, with direct connection to the controller via USB cable or Ethernet network. To upload the application program, proceed as follows:

Update via Ethernet connection:
Configure the computer and the uPC3 controller so that they belong to the same LAN 1-Open c.factory and select the application program fi le compiled Inc.strategy tool (“.otr” fi le extension). The tool will list the configurations defined in c.design. Select the configuration to be loaded on the controller and click “next”.



2- Select the files to be loaded on the controller and “Ethernet connection” type. Select the MAC address of the uPC3 controller being updated and click “upload”.

3-At the end of the update procedure, the uPC3 controller restarts automatically with the new application program (or new configuration)

Update via USB connection:
Connect the computer to the uPC3 controller via USB cable using device USB port.

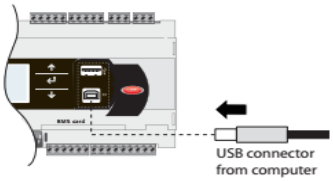
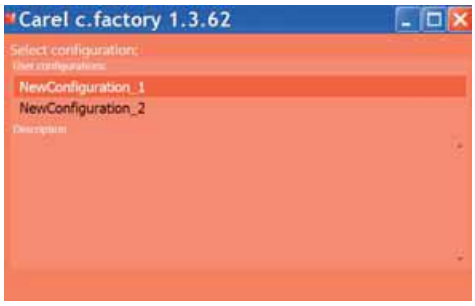


Fig. 6.g

1- Open c.factory and select the application program file compiled in c.suite (".otr" file extension). The tool will list the configurations defined in c.design. Select the configuration to be loaded on the controller and click "next".



2- Select the files be loaded on the controller and "USB Connection" type. Select the serial port that the uPC3 controller is connected to via USB cable and click "upload";

. **Note:** if the uPC3 controller contains an application program that is protected by a different password or digital signature than the new application program, a dialogue box will be shown prompting for the previous password. If the password entered is correct, the new application program can be upladed.

3-At the end of the update procedure, the uPC3 controller restarts automatically with the new application program (or new configuration)

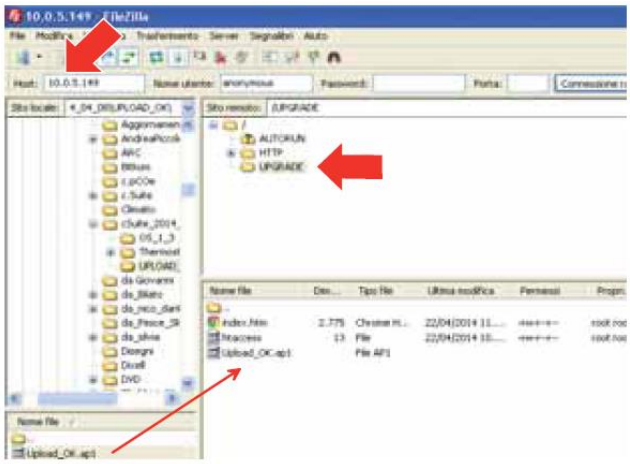
Attention: before updating the uPC3 controller via USB connection, check in the system menu that the Device USB port is enabled (Settings → USB Settings → PC connection)

Updat with file transfer via FTP

The uPC3 family con trollers fitted with Ehternet port include an FTP srver that provided acces to the public partition of the file system. Files and directories in this partion can be read, modified, created and deleted. FTP can also be used to transfer and .ap1 file, for example to update the image of the operating system or the application program. This is done using an FTP client, for example "FileZilla". The default username to access the file system is "anonymous". To protect the contents of the public the file system against unauthorised access, different user can be created, assigning each a different access profile, dedicated to each service and adapted to the individual directory. To update via FTP:

1-Open an FTP client. Enter the IP address of the uPC3 controller and the access credentials (default user "anonymous", no password)

2- Drag&drop the software update file from the directory on the computer to the "UPGRADE" directory on the uPC3 controller

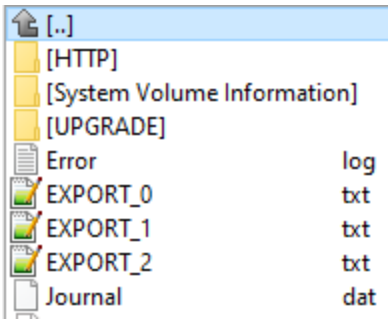


3-Access the system menu on the uPC3 and select "UPGRADE"

. **Note:** when having loaded the update file to the "UPGRADE" directory via FTP, the update procedure can also be started using the virtual terminal.

Before upgrading the software, it is possible to save the existing AHU settings to restore later:

- import / export is done in uPC3 via menu -> unit cfg. -> I11 screen
- the name of the settings file is Export_00 (the "Export" part is fixed, the number is set by the user) - it is possible to save several different configuration settings and import them at the desired time
- the file with the given settings is saved in the internal memory of the controller, it can be accessed via a micro-USB connection or via an ftp server
- import / export is only allowed when the unit is in the "Off" mode - otherwise a message about the lack of import / export will be displayed
- below are three sample configurations saved in export files:



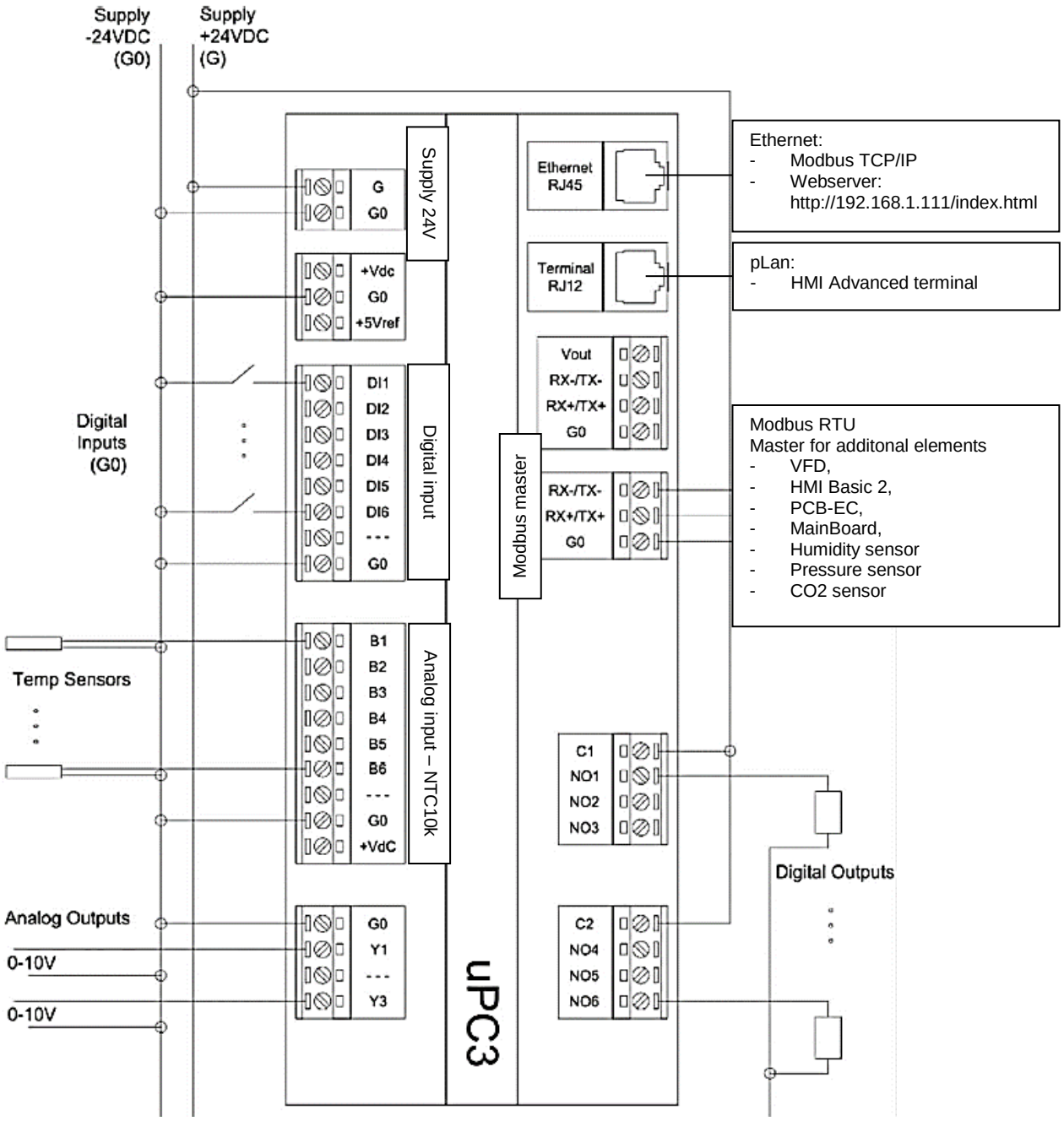
3. INSTALLATION

3.1 I/O configuration

Analog inputs	Descrition	Type	Note
B1	Supply temperature	NTC	Always enabled
B2	Return temperature	NTC	Forced enabled in case of return temperature regulation
B2	Pre-Heater temperature	NTC	Enabled in uunit with Pre-Heaater and Module I/O - MainBoard
B3	Outside temperature	NTC	Always enabled
B4	Recovery protection (Exhaust temperature)	NTC	Enabled in case of recovery
B5	Back water temperature	NTC	Enabled in case of HW unit
B6	Supply after recovery	NTC	Enabled for Compact unit – only information
B6	After preheater temperature	NTC	Enabled in case of preheater
HMI Basic 2 – Temp.	Room temperature	MB	Enabled in case of room temperature regulation or HMI basic 2
Exp.31 – Hum.	Supply humidity	MB	Enabled in case of any humidity regulation
Exp. 32 - Hum.	Return humidity	MB	Enabled in case of return humidity regulation
Exp. 11 - Press.	Supply air pressure	MB	Enabled in case of fan regulation present
Exp. 12 - Press.	Exhaust air pressure	MB	Enabled in case of fan regulation present and exhaust fan present
Exp. 21 – CO2	CO2 return sensor	MB	Enabled in case of air quality control
Exp. 18 - MainBoard	Supply air pressure	MB	Enabled in case of fan regulation present
Exp. 18 - MainBoard	Exhaust air pressure	MB	Enabled in case of fan regulation present and exhaust fan present
Exp. 18 - MainBoard	Supply filter pressure	MB	Enabled in case of fan regulation present
Exp. 18 - MainBoard	Exhaust filter pressure	MB	Enabled in case of fan regulation present and exhaust fan present
Digital inputs	**Descrition**	**Type**	**Note**
DI1	Fire alarm		Always enabled
DI2	Antifreeze thermostat		Enabled in case of HW option
DI2	Electric heater thermostat alarm		Enabled in case of HE option
DI3	Cooling alarm		Enabled in case of cooling coil enabled
DI4	Humidifier alarm		Always enabled
DI4	Supply filter		Enabled for unit without humidity / DI win/sum / MainBoard activity / PCB-EC activity
DI5	Summer/Winter		Enabled in DXH

DI5	Return filter		Enabled for unit without humidity / DI win/sum / MainBoard activity / PCB-EC activity
DI6	Remote Off or change Mode		On the screen G08 in Menu – In/Out settings you can change the operating mode.
Exp. 13 – PCB EC	Supply filter	MB - IN1	Enabled with PCB EC
Exp. 13 – PCB EC	Exhaust filter	MB - IN2	Enabled with PCB EC
Digital outputs	**Descrition**	**Type**	**Note**
NO1	Main heating (heater or pump)		Enabled in case of heating device
NO1	Re-Heater		Enabled in unit with DX_H and second heater
NO2	Supply and exhaust damper		Always enabled
NO3	Global Alarm		Enabled for unit without reheater or preheater
NO3	ReHeater		Enabled in case of reheater device
NO3	PreHeater		Enabled in case of preheater device
NO4	Main cooling 1 (DX or pump)		Enabled in case of cooling device
NO4	DX_H start		Enabled in case of DX_H device
NO5	Main cooling 2		Enabled in case of cooling 2 step device
NO5	DXH Reverse		Enabled in caes of cooling/heating coil
NO5	Humidity		Enabled in case of humidity device
NO5	Glicol pump		Enabled in case of recovery glicol device
NO5	Redundant		Enabled in case of redundant device
NO6	Heating 2nd stage		Enabled in case of 2nd heating device for HE unit
NO6	Humidifier		Enabled in case of humidifier device
NO6	DX_H 2nd stage		Enabled in case of 2nd DX_H
Analog outputs	**Descrition**	**Type**	**Note**
Y1	Heating output	0-10V	Enabled in case of heating device
Y1	Re-heating output	0-10V	Enabled in case of Re-Heater device
Y3	Cooling output	0-10V	Enabled in case of cooling device
Y3	Mixing damper output	0-10V	Enabled in case of Mixing damper device
Y3	Recovery output	0-10V	Enabled in case of Recovery device
Exp. 13 – PCB EC	Heat recovery	MB-AO1	Enabled in case of heat recovery
Exp. 13 – PCB EC	Mixing chamber signal	MB-AO2	Enabled in case of mixing chamber
Exp. 18 - MainBoard	Heat recovery	MB-AO1	Enabled in case of heat recovery
Exp. 18 - MainBoard	Mixing chamber signal	MB-AO2	Enabled in case of mixing chamber
Exp. 18 - MainBoard	Humidifier	MB-AO3	Enabled in case of humidifier
Exp. 18 - MainBoard	Preheater output	MB-AO4	Enabled in case of preheater

Attention: Structure of the software in class A: the thermal protection safeties for overload and high pressure must act directly on the compressor actuator and are thus wired in series with the command for coil of the compressor contactor.



3.2 Standard input/output for function

I/O **Standard elements for all units**

uPC3 I/O	Descrition	Type	Note
B1	Supply temperature	NTC	
B2	Return temperature	NTC	Optional
B3	Outside temperature	NTC	
DI1	Fire alarm	NC	
DI6	Remote Off	NC	
pLan RJ12	HMI Advanced terminal	pLan	
3-pins RS485	HMI Basic 2 terminal	RS-485	Optional

Expansion module I/O

Compact suspended / floor RRG unit with built-in automation standard equipped with an:

- expansion module I/O – MainBoard Control-Circuit,
- CAV regulation for fan
- all sensor temperature with additional B6 after recovery on supply.
- humidity return sensor

Ventus CBX - Controlbox automation standard equipped with an expansion module I/O – PCB-EC.

Water heater – H_cw

Control

- PID controller - Heating
- PID controller - Protecting the rebate sensor
- Limiting the minimum / maximum signal
- Low air temperature alarm

uPC3 I/O	Descrition	Type	Note
Y1	Heating control signal	0-10V DC	
NO1*	Main heating - Pump	+24V DC 230V AC	
B5	Back water temperature	NTC	Optional
DI2	Antifreeze thermostat	NC	

* For supplying circulation pumps, a relay with + 24 V DC to 230 V AC is available.

Electric heater – HE

Control

- PID controller - Heating
- Limiting the minimum / maximum signal
- Adjustable switching level individual sections

uPC3 I/O	Descrition	Type	Note
Y1	Control of the PWM section	0-10V DC	
NO1	Main heater section 2 – On/Off	+24V DC	
NO6	Main heater section 3 – On/Off	+24V DC	
DI2	Heater alarm	NC	

Water cooler – C_cw

Control

- PID controller - Cooling
- Limiting the minimum / maximum signal

uPC3 I/O	Descrition	Type	Note
Y3	Cooling control signal	0-10V DC	
NO4	Main cooling - Pump	+24V DC	
DI3	Cooler alarm	NC	

DX cooler – C_dx

Control

- PID controller - Cooling
- Limiting the minimum / maximum signal
- Adjustable switching level of individual sections

uPC3 I/O	Descrition	Type	Note
Y3	Cooling control signal	0-10V DC	
NO4	Main cooler section 1 – On/Off	+24V DC	
NO5	Main heater section 2 – On/Off	+24V DC	
DI3	Cooler alarm	NC	

Fan – V

Control

- Standard work percentage control
- PID control for regulation CAV*
- PID control for regulation VAV

uPC3 I/O	Descrition	Type	Note
3-pins RS485	Modbus RTU communication	RS-485	

* CAV standard for Compact unit using the Mainboard module I/O – Control Circuit.

Filters – F

Control

- Compact – Pressure transducer
- Ventus – Pressure switch

uPC3 I/O	Descrition	Type	Note
3-pins RS485*1	Modbus RTU communication	RS-485	Compact
IN1*2	Air supply filter – pressure switch	NC	CBX
IN2*2	Air return filter – pressure switch	NC	CBX
DI4*3	Air supply filter – pressure switch	NC	CBX
DI5*3	Air return filter – pressure switch	NC	CBX

*1 For Compact units the need to use the Mainboard module I/O – Control Circuit.
*2 Input IN1/IN2 available on the PCB-EC extension I/O module.
*3 Input DI4/DI5 available In the case of a unit without a humidifier, DXH.

Recovery – Plate cross / HEX – P

Control

- PID controller - Heat recovery
- PID controller - Cooling recovery
- Limiting the minimum signal

uPC3 I/O	Descrition	Type	Note
B4	Exhaust temperature after recovery – antifreeze protection	NTC	
B6*1	Supply temperature after recovery – in compact unit	NTC	Optional
AO1*2	By-pass actuator	0-10V DC	
Y3*3	By-pass actuator	0-10V DC	Optional

*1 Additional sensor for calculating the recovery efficiency used in compact AHUs.
*2 Output AO1 available on the PCB-EC extension I/O module available for unit without humidifier.
*3 In the case of a unit without a mixing chamber and a cooler, it is possible to use Y3 for recovery.

Recovery - Rotary – R

Control

- PID controller - Heat recovery
- PID controller - Cooling recovery
- Limiting the minimum signal

uPC3 I/O	Description	Type	Note
B4	Exhaust temperature after recovery – antifreeze protection	NTC	
B6*1	Supply temperature after recovery – in compact unit	NTC	Optional
3-pins RS485	Modbus RTU communication	RS-485	

*1 Additional sensor for calculating the recovery efficiency used in compact AHUs.

Recovery - Glycol – G

Control

- PID controller - Heat recovery
- PID controller - Cooling recovery
- Limiting the minimum signal

uPC3 I/O	Description	Type	Note
B4	Exhaust temperature after recovery – antifreeze protection	NTC	
B6*1	Supply temperature after recovery – in compact unit	NTC	Optional
AO1*2	Valve adjustment actuator	0-10V DC	
Y3*3	Valve adjustment actuator	0-10V DC	Optional
NO5*4	Glycol pump	+24V DC	

*1 Additional sensor for calculating the recovery efficiency used in compact AHUs.
*2 Output AO1 available on the PCB-EC extension I/O module available for unit without humidifier.
*3 In the case of a unit without a mixing chamber and a cooler, it is possible to use Y3 for recovery.
*4 In systems without DXH, humidifier, fan redundant.

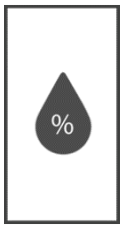
Mixing chamber – M

Control

- PID controller - Heating
- PID controller - Cooling
- PID - CO2 controller
- Limiting the minimum / maximum signal

uPC3 I/O	Description	Type	Note
AO2*1	Valve adjustment actuator	0-10V DC	
Y3*2	Valve adjustment actuator	0-10V DC	Optional

*1 Output AO2 available on the PCB-EC extension I/O module.
*2 In the case of a unit without a recovery and a cooler, it is possible to use Y3 for mixing chamber.



Humidifier – W

Control

- PID controller - Humidity
- PID controller - Compensation for supply air humidity
- Limiting the minimum / maximum signal

uPC3 I/O	Description	Type	Note
3-pins RS485	Humidity transducers Modbus RTU communication	RS-485	
AO1*1	Humidifier control signal	0-10V DC	
NO5*2	Humidifier – On/Off	+24V DC	

*1 Output AO1 available on the PCB-EC extension I/O module.
*2 In the case of a unit without a glycol recovery and a redundant fan, it is possible to use NO5 for humidifier.

DXH Reverse – C_dxh

Control

- PID controller - Heating
- PID controller - Cooling
- Limiting the minimum / maximum signal
- Adjustable switching level of individual sections

uPC3 I/O	Description	Type	Note
Y3	Heating/Cooling control signal	0-10V DC	
NO4	DXH section 1 – On/Off	+24V DC	
NO6	DXH section 2 – On/Off	+24V DC	
NO5*	DXH Reverse – Heat/Cool	+24V DC	
DI3	DXH alarm	NC	

* DXH output available In the case of a unit without humidifier, recovery glycol, redundant fan.

Redundant fan

The fan section contains doubled fans, motors and inverters. One fan is working, the other is a reserve in the event of a failure. In addition, the operating hours counters decide on routine switching between the fans so that the load and wear of both units is uniform. When switching from one fan to another, there is a gap to adjust the position of the dampers directing the air flow.

uPC3 I/O	Description	Type	Note
3-pins RS485	Modbus RTU communication	RS-485	
NO5*	Redundant damper	+24V DC	

* DXH output available In the case of a unit without humidifier, recovery glycol, DXH.

PreHeater

Control
- PID controller – Heating
- Addtitonal temp. sensor

uPC3 I/O	Descrition	Type	Note
AO2	Heating control signal	0-10V DC	For CBX
B6	Temp. after heater	NTC	
AO4	Heating control signal	0-10V DC	For compact
B2	Temp. after heater	NTC	
NO3	Main heating – Start signal	+24V DC	
B5	Back water temperature	NTC	
DI2	Heater alarm	NC	

ReHeater

Control
- PID controller – Heating
- Addtitonal temp. sensor

uPC3 I/O	Descrition	Type	Note
Y1*	Heating control signal	0-10V DC	
NO1*	Main heating – Start signal	+24V DC	
AO2**	Heating control signal	0-10V DC	
NO3**	Main heating – Start signal	+24V DC	
DI2	Heater alarm	NC	

* For systems when the heater behind the DXH exchanger.
** For systems when the heater after the main heater.

4. UNIT CONFIGURATION

4.1 Application code

HMI Advanced ► Menu ► Unit cfg. ► I02

To change application codce Running change to NO and go mask above I01.

Application code is a combination of elements, functions and option sub-codes.

	Code	Val	Options
	Letter code	0	AS: supply application
		1	AD: Supply&Exhaust (S/E)
		2	AR: S/E & Rotary wheel
		3	AG: S/E & Glycol
		4	AP: S/E & Plate cross
1	Main-Heater	0	None
		1	Hot water
		2	Direct expansion
		3	Electric heater
		4	Steam
2	Main-Cooler	0	None
		1	Chilled water
		2	Direct expansion
3	Reverse heat/cool	0	None
		1	Hydronic
		2	Direct expansion
4	Pre-Heater	0	None
		1	Hot water
		2	Direct expansion
		3	Electric heater
5	Re-Heater	0	None
		1	Hot water
		2	Direct expansion
		3	Electric heater
6	Economizer	0	None
		1	Yes
7	Humidifer	0	None
		1	Evaporative Humidifying
		2	Steam
8	HMI Basic 2	6	None
		7	HMI Basic 2

In unit configuration mask a parameter “running mode” is provided. It will put the SW in running operation, while in stop mode all the functions, inputs and outputs are bypassed. Before to start the unit, the service must check that everything is set in a correct way.

The application code can change only if the unit is in configuration mode.

Description for other values in the automation code:

For example:
AR|0|2|0|0|1|1|0|6|3|0|0|0|0|0|1

Recovery mode:
0: None
1: Winter
2: Summer
3: Winter + Summmer

For active recovery, winter recovery is the standard. Summer recovery should be activated on the
Menu ► Recovery ► D03 screen

AR|0|2|0|0|1|1|0|6|3|**0**|0|0|0|0|1

Redundant fan:
0: NO
1: YES

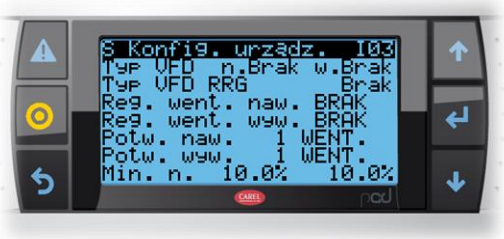
The number of fans is selected on the screen
Menu ► Unit cfg. ► I03

AR|0|2|0|0|1|1|0|6|3|0|**0|0|0|0|1**

The remaining values are system values.

4.2 Modbus devices

HMI Advanced ► Menu ► Unit cfg. ► I03



The inverter type can be selected separately for the supply fan, exhaust fan and rotary exchanger.
Type VFD:

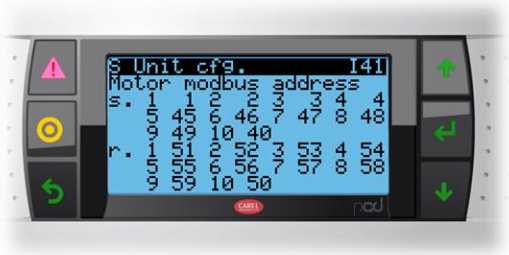
- LS iC5

- LS iG5
- ABB ACS
- EC
- DFI

ATTENTION! For the underlined type of VFD it is needed to input the required parameters by VFD keyboard. There is no possibility to configure by uPC3.

Depending on the configuration selected, it is possible to manually change the modbus address of individual motors for supply and return for maximum 10 fans.

HMI Advanced ► Menu ► Unit cfg. ► I41



4.2.1 **LS VFD (iC5 and iG5A)**

For iC5

Parameter	Code	Value	Comment
Way of Control	DRV	3	
Frequency setting metod	Frq	8	
Converter's address in Modbus Network	I60	-	Motor modbus address
Reaction on communication time-out	I62	2	Stop
Communication time-out	I63	30	30 sec.

For iG5

Parameter	Code	Value	Comment
Way of Control	DRV	3	
Frequency setting metod	Frq	7	
Converter's address in Modbus Network	I60	-	Motor modbus address
Reaction on communication time-out	I62	2	Stop

4.2.2 **VTS EC motor**

All necessary information in DTR for EC motor.

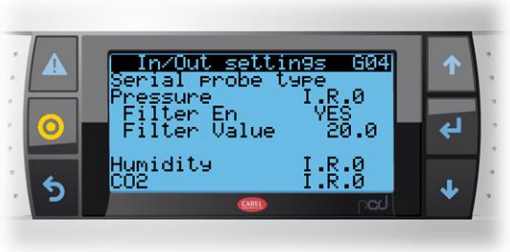
Additional information.

Procedure how to configure the rotary wheel:
- go to the motor mask Menu ► Unit cfg. ► I03, chose "Rotor VFD type" as EC.
- After that there will new mask " I15" appear below, enter this line
- You'll see the mask "old address: 4, new address: 4"
- There is "Set" option, choose "YES"
- The procedure of setting the fan will be carried out. Once it is successfully finished you'll see the sign "test mode". Note that during setting procedure the other modbus members might give errors, but this is all right.
- Change "Set" option to "NO"
- After the whole procedure restart the controller

4.2.3 **Pressure / Humidity / CO2 sensor**

HMI Advanced ► Menu ► In/Out settings ► G03

Screen on which pressure / humidity / CO2 transducers can be activated. In addition, we can choose the type of pressure transducer on the G04 screen



I.R. – Input register
H.R – Holding register

Command type	Data type	Addr.
InputRegister	INT	0
InputRegister	INT	1
InputRegister	INT	2
InputRegister	INT	3
HoldingRegister	INT	0
HoldingRegister	INT	1
HoldingRegister	INT	2
HoldingRegister	INT	3

Pressure sensor

uPC3 (new)	uPC (old)	
I.R.0	SPS	
I.R.1		
H.R.0	DPT	
	DPC	VTS
H.R.1		

Important information when using an external pressure transducer, turn off the measurement on the Control-Circuit board.
HMI Advanced ► Menu ► Other ► J03/J04

Humidity sensor

uPC3 (new)	uPC (old)	
I.R.0		
I.R.1	DXH	
I.R.2		
H.R.0	HCRH	VTS
H.R.1		
H.R.2	RH	

Important information when using an external humidity transducer, turn off the measurement on the Control-Circuit board.
HMI Advanced ► Menu ► Other ► J03/J04

CO2 sensor

uPC3 (new)	uPC (old)	
I.R.0		
I.R.1		
I.R.2		
H.R.0	HTC	VTS
H.R.1	CDD	
H.R.2		
I.R.3	DSC	
H.R.3		

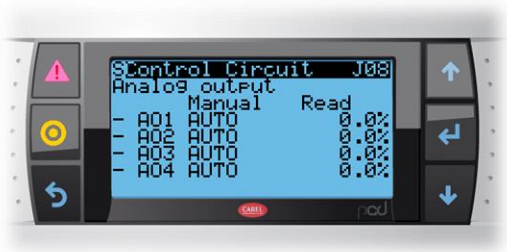
4.2.4 **Module I/O**

HMI Advanced ► Menu ► Other ► J03

The menu from which we activate individual extension modules.

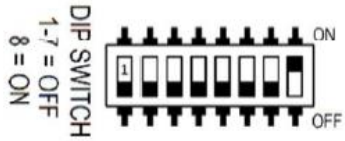
VTS – MainBoard – Control Circuit

Additional settings for the Control-Circuit module on the screens:

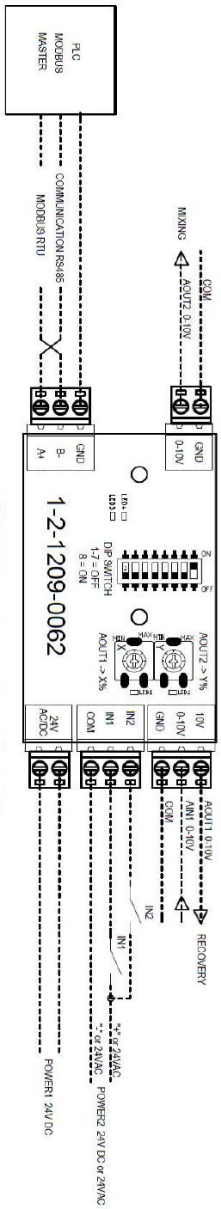


VTS – PCB-EC

For proper operation with the controller uPC3, it is necessary to set the dip switch 8 to ON. This will switch RS-485 communication on the PCB-EC board from Master to Slave and work correctly with the controller.



EC_board is Modbus Slave, can not work without outside plc. Change outputs and read inputs by commands from external PLC controller



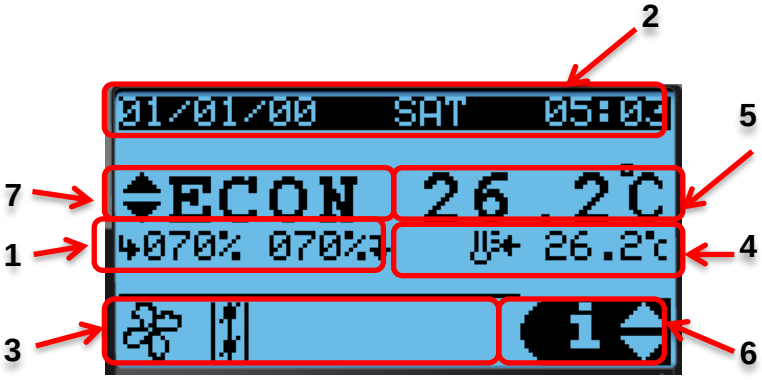
5. USER INTERFACE

5.1 Display HMI Advanced

The terminal, which is shown in the figure above, has 6 buttons whose meanings are described below:

- *Alarm*	Display the list of active alarms Manually reset alarms
- *Prg*	Change work mode
- *Esc*	Return to the previous screen
- *Up* - *Down*	Navigate between the display screens or increase/decrease the value.
- *Enter*	Switch from parameter display to edit Confirm value and return to the parameter list

The following screen displays an example of the main screen with an active unit, highlighting the fields and icons used:



1. Fans speed
2. Date and Time
3. Current unit status:

4. Main temperature regulation
5. Set point
6. Indicates access to the user menu using the UP, DOWN and ENTER keys to confirm
7. Selection of operating mode
   - STOP
   - ECO
   - OPTIMAL
   - COMFORT
   - AUTO (scheduler)

- opening / closing dampers
- fans work
- heating
- cooling
- humidification
- dehumidification
- active recovery
- normal stop
- emergency stop
- active scheduler

Changing the control panel operating mode is possible by pressing the PRG (1) button as many times until the desired operating mode appears on the screen. The mode is accepted by pressing the "ENTER" (2) button. Lack of acceptance within 30s will return you to the previously set mode. In order to cancel the selected mode in advance, you can use the "ESC" button.

5.2 User Menu

On the main screen, the UP and DOWN buttons can be used to scroll through the functions and ENTER used to select them. No password is needed to access and edit these parameters.
PRG button is used to change the work mode. Changing the work mode must be confirmed by the user within 6s by ENTER button. In the absence of confirmation work mode returns to the last value

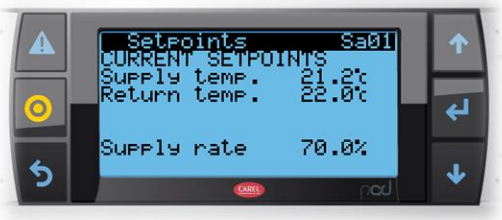
Info
Set
Menu

5.2.1 **Info**

The general synoptics for the unit can be shown from the user menu. The physical status of the inputs, device outputs and probes are available in a menu connected to the synoptics.
The individual screens of the synoptics are shown below.

5.2.2 **Set**

In this menu is possible to see the current setpoint and the working mode, defined by the scheduler. It's possible to set the setpoint of the unit and the scheduler. Set Point is represented by one variable for each mode.



The transition to the setting screen is done using the "UP" / "DOWN" keys. On screens from you can find (depending on the active configuration):

- supply air temperature
- room / extract temperature
- air humidity
- air quality
- efficiency of the supply fan
- exhaust fan efficiency

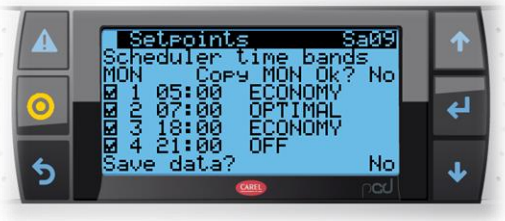
On the screen you can change the settings for each operating mode individually. Moving the cursor to the active field is done by pressing the "ENTER" button. Change in value - with the arrow keys. Accepting the set value and moving to the next field is done by the "ENTER" button.

5.2.3 **Scheduler**

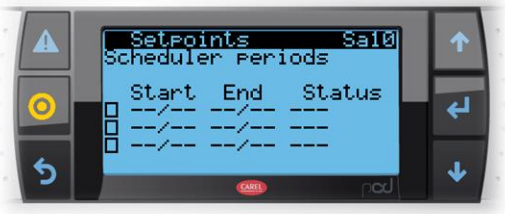
Time zone / date / time
On the scheduler screen, you can select the time zone in which the controller is located and set the current date, time and day of the week.

Time schedule
On clock screen you can set a time schedule.
The time schedule is active when the control is in the AUTO mode.

Basic schedule
The basic daily schedule allows you to program 4 work mode changes, individually for each day.
After setting the schedule for the selected day, this selection should be saved. After saving, it is possible to copy the settings to other days or immediately for the whole week.



Special periods
On the periods screen it is possible to set periods (dates from - to) in which the schedule will be modified. There are settings for three intervals and they have a higher priority than the basic schedule. In this way, the control panel can be programmed eg during holiday periods.



Special days
On the special day screen is possible to set six special days, which have the highest priority.

Implementation of the schedule
Considering the priorities of time schedule settings, the order of their implementation is as follows:

- The first special day settings are those with the highest priority. The other settings are then ignored.
- If a given day is not defined as special, but is in a special period, then the mode for the special period is implemented.
- If both of these do not occur, the basic schedule is implemented.

5.2.4 **Menu**
Access the main menu

5.3 Menu description

Regardless of the displayed screen, pressing the programming key accesses the password entry screen which allows access to the main menu shown below.
The code of the mask is determined by the menu tree.

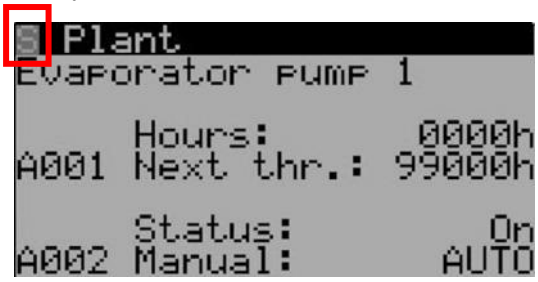
First letter	Second letter	N.
A. Heating	0	0..99
B. Cooling	0	0..99
C. Fans	0	0..99
D. Recovery	0	0..99
E. Mixing	0	0..99
F. Humidifier	0	0..99
G. In/Out settings	0	0..99
	a. Activation sensors	
	b. Offset sensors	
	c. Rotate DI	
	d. Type sensor	
	e. Manual sensor	
H. Settings	0	0..99
I. Unit cfg.	0	0..99
	a. Application code	
	b. Type VFD	
	c. Type regulation	
J. Other	0	0..99
	a. Module I/O	
	b. Export logs	
K. LogOut		0.99

5.3.1 **Password Management**

The program has 3 different password levels:

1. Advanced user (maintenance): read only access to all parameters. Default password: 0000.
2. Service: read access to all parameters with the ability to edit some of them (for more information on the parameters that can be changed, see the parameters table). Default password: 0001.
3. Manufacturer: read/write access to all parameters. Default password: 0002.

In the parameters screen, the access needed to edit the parameters is shown, always with the same codes. An example follows.



Once the password is entered it will be maintained for 5 minutes from the last time a key was pressed and then the password will need to be re-entered in order to access the parameters of the advanced functions. In the Log-Out menu, the password can be force entered without waiting 5 minutes.

5.4 Display HMI Basic 2

HMI Basic 2 HY is a basic control panel, designed to operate air handling units equipped with the uPC3 controller.

Panel functions:

- AHU starting and stopping
- operating mode selection
- the ability to view and change the parameters of individual operating modes (temperature, humidity, CO2 level, speed of supply and exhaust fans)
- reading of leading, outside and room temperatures (built-in room temperature sensor)
- setting the AHU operation according to the schedule
- alarm handling (viewing, deleting)

For more information on the operation of HMI Basic 2, please refer to the dedicated documentation available on the VTS website.

1. Temperature (supply, return or room)
2. Humidity
3. Air pressure (in percentage)
4. Air quality

5.5 User setpoint

Temperature setpoint of the unit can be changed by:

- Scheduler
- HMI Basic 2
- HMI Advanced
- Comfort zone

The last setpoint change that come will wins.

HMI Basic 2 and HMI Advanced can change the working setpoint between ECO, OPTIMAL and COMFORT.
This working mode can change the following sets if the functions are activated:

6. FUNCTIONS

6.1 On request

The On status requires the AND logic of:

- Unit configured by Service
- No serious alarm
- On by digital input
- On by the OR of the following conditions:
  - On by pGD
  - On by BMS
  - On by HMI Basic 2, if present
  - On by scheduler, if enabled

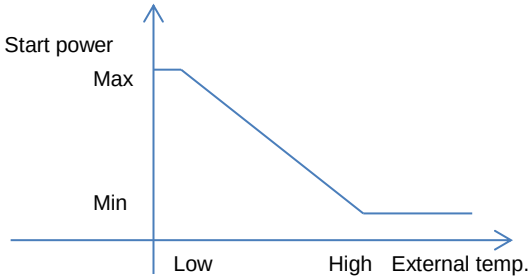
Variable mode is shared with all the control sources

If any condition go to OFF, the uni twill turn OFF.

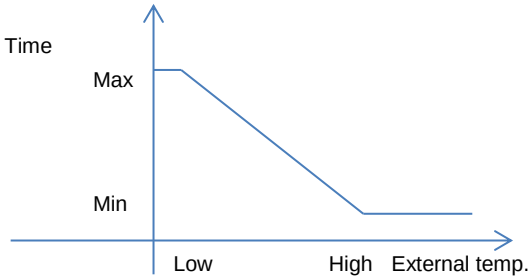
6.2 Start/Stop sequence

When the unit is turned ON by a previous condition the sequence to start will be enabled.
The start sequence is divided into the following steps:

1. The external temperature is checked.
2. If the external temperature is lower than antifreeze setpoint, the heating devices after recovery, will be activated in 60s at power determined by the graph below:

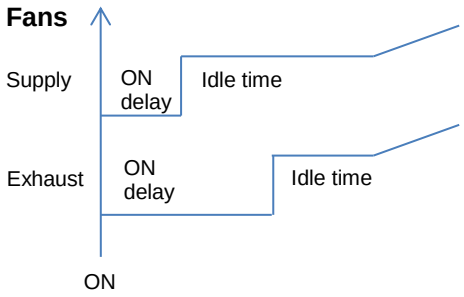


3. The heating power will be kept for a certain time determined by the following graph:

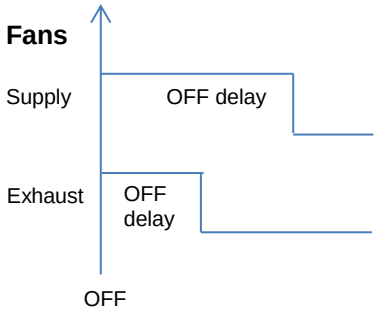


4. In case of external temperature greater than antifreeze setpoint or after the antifreeze sequence timer, the damper can be opened.
5. After 30s the fan can start and devices can regulate. If heating devices are in regulation mode from antifreeze condition, the release of manual mode should not cause a peack on the heating outputs.

When the fans start to regulate, another sequence will start, described below:

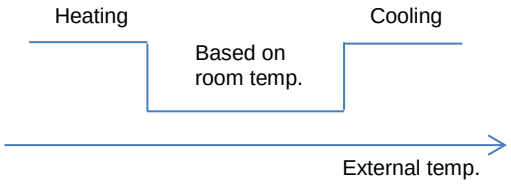


When the unit is turned OFF, the fans will be kept at the previous power and after a settable time they can be turned OFF.

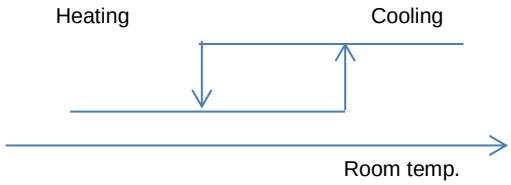


6.3 Cooling/Heating changeover

The external and room/return temperatures are considered: if the external temperature is lower than a minimum threshold or greater than a upper threshold the heating or cooling mode can be forced:



In the middle, between the heating and cooling external temperature thresholds, or when the external temperature probe isn't available the heating or cooling mode will be decided considering the room temperature or the return temperature (if the probes are available), here below it is represented the behaviour in case of room temperature:



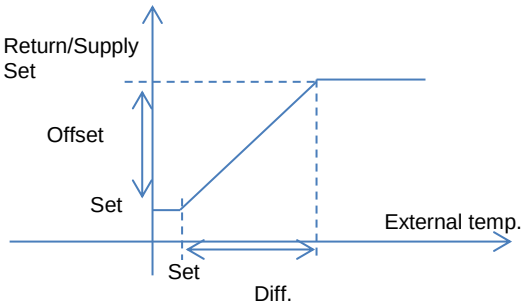
If the room temperature is greater than the setpoint, the unit starts in cooling mode and remains in cooling mode until the room temperature becomes lower than the heating setpoint for a settable time, then the heating mode is activated with the heating setpoint. In the same way, if the starting temperature is lower than the heating setpoint the unit starts in heating mode and remains in heating mode until the room temperature becomes greater than the cooling setpoint for a settable time.

6.4 Temperature regulation strategy

6.4.1 External compensation

In case the external temperature probe is present, it is possible to adjust the temperature setpoint accordingly to the value read by this probe. The compensation can be direct or reverse and it is done adding an offset to the temperature setpoint.

The compensation is done only with room or return air temperature regulation. In case of supply temperature regulation there is no need for compensation, because it is the regulation itself that acts to compensate the external conditions.



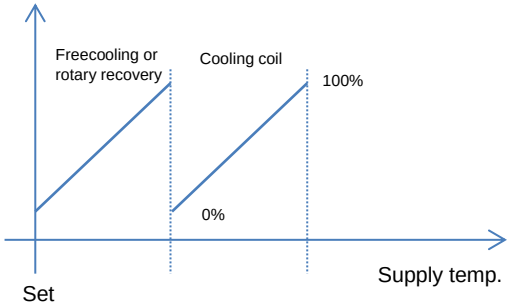
6.4.2 Return/Room regulation

The regulation of the unit could be done according to return, supply or room set.
The calculation of supply set in case of return or room regulation is done by a PID that change the setpoint between a min and max value.

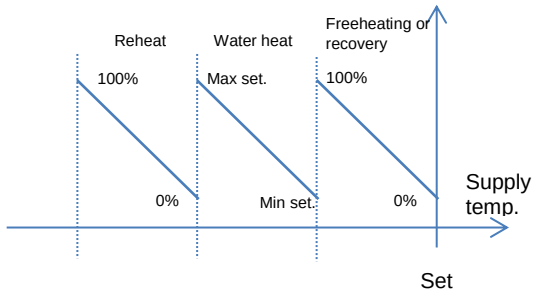
6.4.3 Supply regulation

The temperature regulation is based on supply temperature and its setpoint. If the setpoint set is the room set or return set, this will be converted to supply set.

To calculate the power of devices, a PID sequence is used.
The following graph show the PID sequence in case of cooling:



The following graph show the PID sequence in case of heating:



With a unique setpoint and different sets of PID parameters, the first request is calculated with a standard PID. The second request starts when the first one has reached 100%. The setpoint for the second device regulation is the same, while the PID set of parameters is different. According to the PID behaviour of the second device, the percentage of activation of the second device at the start up should be equal to ‘’offset’’, but thanks to the incremental PID it is possible to consider only the last calculated delta so that there aren’t any bumps, then the second device will start from the minimum output, then it will regulate according to PID parameters and supply temperature.

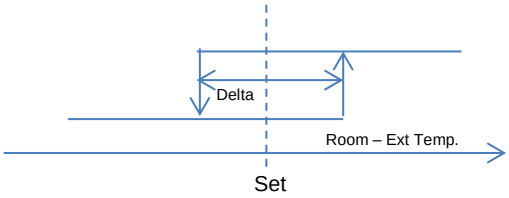
In case we have 2 devices and one is not available when required from the sequential PID regulation - for activation conditions not verified (i.e. freecooling/freeheating conditions) or active alarms - the request passes to the other one. If the first device becomes available again the device will be turned on at 100%.

6.5 Fresh air regulation

In case of unit without the mixing damper, the supply air is always coming from the outside: if the external temperature is better than the room or return temperature and the activation of freecooling/freeheating is verified (external temperature lower than the regulation temperature

of a settable delta), the bypass damper opens and the heat exchanger is bypassed.

In the following picture we represent the ''freecooling'' enabling, that in case of unit without the mixing damper is the by-pass damper activation condition, considering as example the room temperature as regulation variable.
The freecooling is enabled if the external temperature is higher than the lower supply temperature threshold, while the freeheating is enabled if the external temperature is lower than the upper supply temperature threshold.



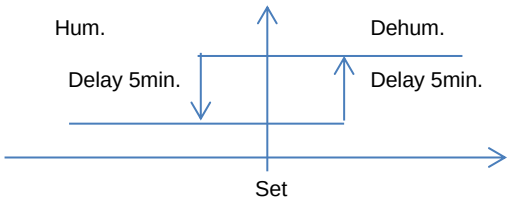
The bypass damper can be modulated to reach the desired temperature for the supply air temperature, because the freecooling can be considered as the first step of sequential PID regulation.
In case of unit with the mixing damper, the freecooling/freeheating conditions are the same, but mixing damper and external one modulate accordingly, and the logic acts on the bypass damper as in the previous case.

6.5.1 Night kick

If the unit is in standby mode, the unit start at a certain hour in the night to check the conditions and if there is requests, the unit switch ON. When conditions are reached, the unit goes back to standby.

6.6 Humidity regulation

The regulation of the unit could be done according to return, supply or room set.
The regulation of humidity in this SW is done by absolute humidity.
Absolute humidity set is the conversion between the actual temperature setpoint (room, return or supply) and the humidity set that the user can change.
Absolute humidity is the conversion between the actual temperature and the humidity of room, return or supply.
Based of these convertions it's possible to determine if the unit should go in humidifying or dehumidifying mode. When the humidity goes to change mode, a delay of 5 minutes is provided to avoid fast change of humidity control.



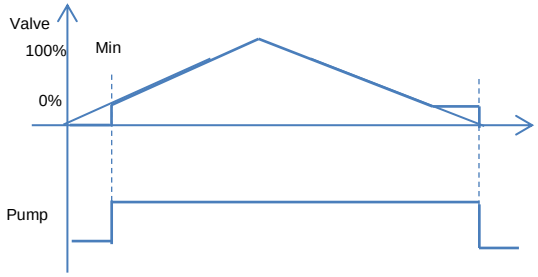
In case of regulation on return or room temperature, the application check the supply humidity limits to avoid water of the ducts. Closer the supply humidity is to the limits, lower the humidity PID can act.
In case of regulation on supply, the humidity request goes directly to the devices.

In case of dehumidifying:
- The signal to control the cooling devices is calculate from the maximum between output temperature PID and the output humidity PID.
- The main heating devices are disabled and the reheaters works to compensate the cooling effect.

6.7 Devices activation

6.7.1 Hydronic circuits

Below the description of how the water circuits works in the application. Valves could be present according application code in main cool, main heat, reverse, preheat and reheat sides.
The PID sequence calculate a request 0-100% that could be directly executed by the valves or in some cases, the request is used to calculate the setpoint for the water, in case the water temperature is present.
Here below the regulation of hot water devices:



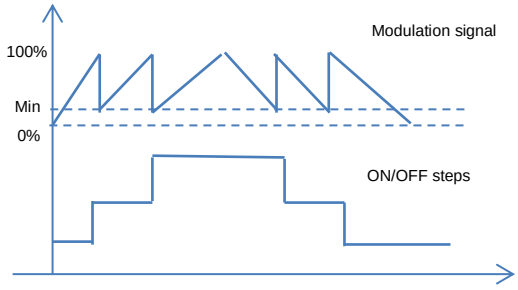
6.7.2 Heaters

Below the description of how the heaters works in the application. Heaters could be present according application code in main, preheat and reheat sides.
The PID sequence calculate a request 0-100% that is directly executed by the heaters.
Maximum heaters managed are 2 ON-OFF and 1 modulating.
The SW need the power of each heater to divide the power in the best way.
The modulating device has the highest priority and there isn't any rotation, but in case of devices with different power, the priority of ON-OFF devices can

change to satisfy in the best way the request by thermoregulation.

Here below an example with devices with the same power:
Min inverter power: 20%
Max heaters power: 33.3kW
In this case the second heater will start when the request reach the threshold calculated in the following way:

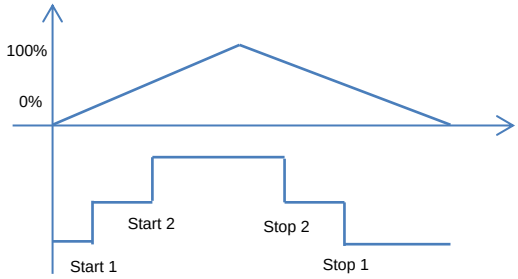
Before to start the ON-OFF device, the request must be greater than 20% of the power of the second device.
Here below the graph:



It's possible to set different power of the heaters, so the ON sequence will be different to follow the request from PID loop.

6.7.3 **Direct expansion (DX)**

Below the description of how the direct expansions circuit works in the application. DX could be present according application code in main cool, main heat, reverse, preheat and reheat sides.
The PID sequence calculate a request 0-100% that is executed by ON-OFF devices and by a modulating device.
Each ON-OFF device has a threshold to start the device and a threshold to stop the device.
The modulating element will follow the request from PID sequence.

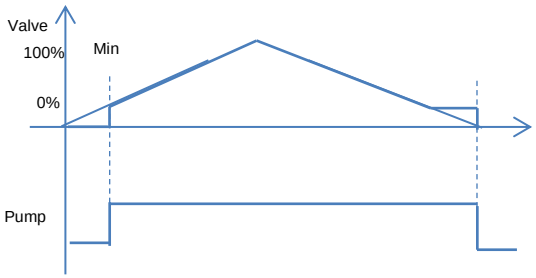


Between the stages activation there is a timinings control, listed below:

1. Minimum On time
2. Minimum Off time
3. Time between same device.

6.7.4 **Steam**

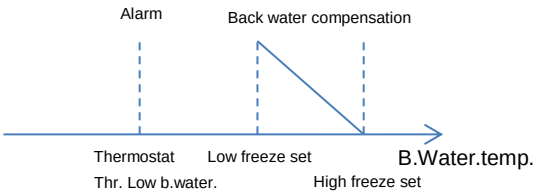
Below the description of how the steam device works in the application. Steam device could be present in the main heater only.
The PID sequence calculate a request 0-100% that is directly executed by the steam actuator.
Here below the regulation of device:



Steam device doesn't need antifreeze and frost protection.

6.8 Antifreeze management

Antifreeze management is divided in different stages.
Startup: described in start/stop sequence paragraph.
Running: see preheater regulation.
Low temperature by thermostat: in case of low temperature by thermostat the fans are stopped, the damper are closed and the heating devices are forced to 100%.



Low back water condition: if the back water temp. is too low the unit behave in the same way of low temperature by thermostat.
If the back water temp. is lower, according to another threshold, the back water temperature set is compensated with a delta according to the external temperature.

6.8.1 **PreHe: Preheater**

The device will modulate accoding to its PID settings to keep the setpoint based on after preheater coil temperature.
Main goal of this device is prepare air for recovery and to avoid antifreeze condition for heat recovery device. In case of hot water coil, the request from the PID on after coil temperature is used to calculate the setpoint of the water, then another PID calculate the opening of the valve.

6.9 Fans control

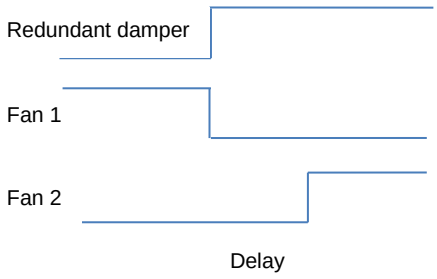
There could be up to 4 fans in supply and exhaust according to unit size.

6.9.1 Single fan

In case of single fan, the fan will start according to sequence and it will regulate according to the setpoint calculated by the application.

6.9.2 Redundant fans

In case of redundant fans, one fan will be on, while the other is an emergency fan. Every settable hour, the fan will switch to keep the same working hours. Even in case of alarm on the working fan, the SW will try to switch to the other fan that can work.
The procedure for the redundant fans are:



A delay is provided to allow the damper to open or close.

6.9.3 Multi Fan

In the multifan regulation, the fans will start at the same time and they will regulate according to the same request.

6.9.4 Regulation

The regulation of the fan can be done according to:

1. None
2. CAV regulation
3. VAV regulation
4. Follow supply (for exaust only)

If there isn't any regulation, the setpoint defined by scheduler will be actuated by the fans.
In case of VAV regulation, the air pressure is used as input of the PID and the setpoint is in Pa.
In case of CAV regulation, the air pressure is used to calculate the air volume in m3/h.
The formula to calcula the air volume is:
*AirFlow:=K_Factor*SQRT(AirPress)*

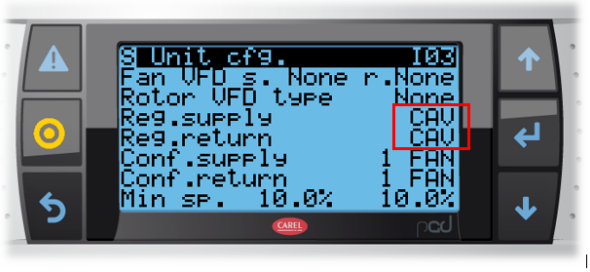
Perc – value is changed when is changing work mode.

K factor is defined by the fan code:

Id.	Mask description	K factor value
0	CUSTOM	Custom by UI
1	VS-225	46.0
2	VS-250	56.0
3	VS-315	105.0
4	VS-355	132.0
5	VS-400	154.0
6	VS-450	205.0
7	VS-500	258.0
8	VS-560	336.0
9	VS-630	402.0
10	VS-190	36.0

It's possible in Setpoint loop to change the fan speed according to unit mode (Eco, Optimal, Comfort). The value is in percentage of the setpoint of the fan in service menu.

Selecting the adjustment mode for fan on the screen Menu ► Unit cfg. ► I03



In the case of CAV regulation (To maintain a constant output) on the fan configuration screen we set extreme parameters for a given device:
Menu ► Fans ► C05

In the case of VAV regulation (To maintain constant pressure) on the fan configuration screen we set extreme parameters for a given device:
Menu ► Fans ► C06

Change of set point is at following screens Sa06 and Sa07 – you set the percentage of 0-100% in reference to the value set in parameters.
For example: 60% - means 60% of nominal airflow.

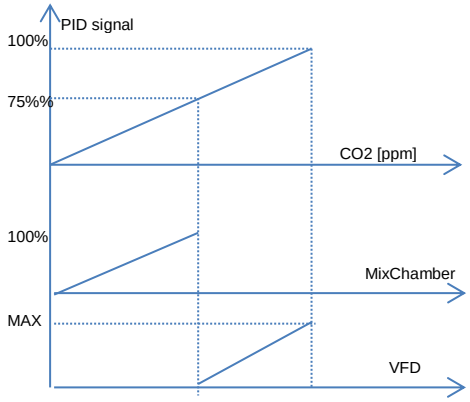
6.10 Mixing chamber control

Acccording to CO2 value, if present, a PID will calculate the request for the mixing chamber.
If the PID is higher, then the mixing chamber will close more and more.
The greater request between CO2 request and freecooling/freeheating, will actuate the damper.

The mixing chamber can be setup from service in the following ways to bypass the request by freecooling and CO2 in the following ways:
Disabled: the mixing chamber is always closed and the recovery is always active.
Enabled at startup: at startup there could be a fast heating option to by pass the external condition for a while and allows the devices to warm up quickly.
Enabled by request: by request from HMI Advanced is possible to enable the mixing damper until the temperature conditions reach the setpoint.

6.11 CO_2 Regulation

A signal is split and has a direct impact on the degree of participation of outside air and provides a correction signal to drive the VFD. VFD correction signal is limited to the MAX allowable adjustments.



6.12 Minor functions

6.12.1 Antistuck procedure

In case of pumps or steam configured, the SW must check if the pumps stayed OFF for a long time. After one week of pump off, it has to start in any condition to avoid the risk of stack. The valve will open at 100%. Time is not saved in permanent memory.

6.12.2 Fire alarm

In case of fire alarm by digital input or in case of exhaust temperature > 70°C, the fire alarm procedure is activated.
All the devices are stop, but the fan can run according to service parameter.

6.12.3 Filter alarm

When the dirty filter alarm is active, it is possible to increment the fans speed of a settable %.

6.12.4 Forcing I/O

It's possible to force the input values and the outputs values in In/Out settings menu.

6.12.5 Scheduler

On the HMI Basic 2 it is possible to set the number of enabled bands (maximum 6), for each one the starting time and the setpoint of the room temperature.
Both for uPC3 scheduler and HMI Basic 2 it will be possible to apply the time bands set to all the days of the week, Monday to Friday, Saturday and Sunday, day by day.

On the uPC3 there will be 4 time bands and for each one it will be possible to set the starting time and the unit status (Off, Economy, Pre-comfort, Comfort). For each status there will be a set of values applied: main regulation setpoint, humidity setpoint (if any humidity probe is present), CO2

level or air flow setpoint (if differential pressure probe is present).
Besides the daily time band, it will be possible to set up to 3 special periods and 6 special days, for each one it will be possible to set the unit status (Off, Economy, Pre-comfort, Comfort, Auto).

The time bands of the uPC3 and the set of the HMI Basic 2 have the same priority. The last set that comes it will wins.
The options of the scheduler are:

1. No scheduler
2. Scheduler by uPC3
3. Scheduler by HMI Basic 2
4. Scheduler by uPC3, activation by HMI Basic 2

7. SUPERVISOR

Communication protocols uPC3:

1. Internal ethernet connection:
   - Modbus TCP/IP: 192.168.1.111:502
   - Webserver: http://192.168.1.111/

2. External (optional) card:
   - Modbus TCP_IP with webserver (pCOWeb) - DHCP
   - Modbus RS-485

List of variables available in the document: uPC3 – BMS Variable

8. ALARMS

8.1 Alarms interface

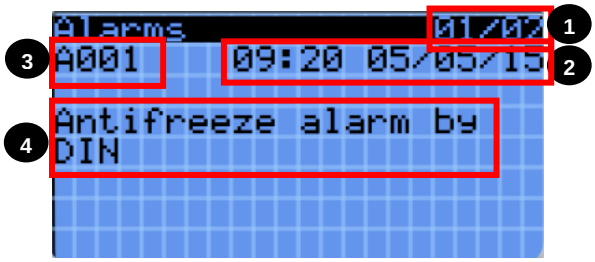
8.1.1 Alarms screen and LEDs

Pressing the ALARM key can occur in two different situations - no alarm or one alarm present.

If there is no alarm, the following screen is displayed:

This screen makes it possible to easily enter the alarms log using the ENTER key.

If there is at least one alarm, the alarms screen is displayed sorted by alarm code from lesser to greater.



Each alarm contains the information needed to understand the cause of the alarm.
The information available in the screen is shown below:

1. Alarm number/total alarms;
2. Alarm date and time;
3. Unique alarm code;
4. Long alarm description;
5. Value of the probe linked to the alarm;

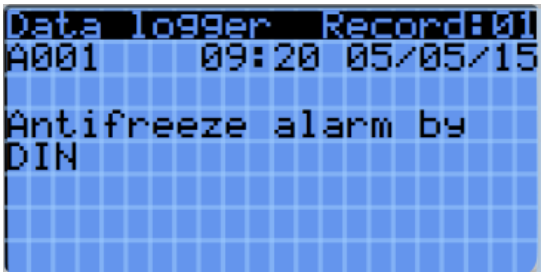
In every alarm screen, the alarms log can be displayed by pressing ENTER.

The red LED under the ALARM button can be:

- Off: no active alarm;
- Flashing: there is at least one active alarm and the display shows a screen that is not part of the alarms loop.
- On: there is at least one active alarms and a screen that is part of the alarms loop is displayed.

8.1.2 Alarms log

From the main menu, entering the Alarms Log menu allows access to the following alarms log display screen.



The alarms log memorizes the operation status when the alarms are triggered. Each log entry is an even that can be displayed from among all of the events available in the memory.
The information saved in the alarms screen will also be saved in the alarms log. The maximum number of events that can be saved is 100. Once the limit is reached, the most recent alarm will overwrite the oldest one. The alarms log can be cleared in the Settings menu or by restoring the uPC3 to default values.

8.1.3 Reset alarms

The alarms can be reset manually, automatically or automatically with retries:

- Manual reset: when the cause of the alarm has stopped, the buzzer must first be reset using the ALARM button and then the ALARM button pressed a second time for a true reset. At this point, even the specific alarm action is reset and the device can restart.
- Automatic reset: when the alarm condition stops automatically, the buzzer is silenced and the alarm reset.
- Automatic reset with retries: The number of interventions per hour is checked. If that number is less than the set maximum, the alarm is on automatic reset, once the limit is exceeded it becomes manual.

Code	Description	Reset	Counter	Time [ms]
A0000	Supply fan 1 - Ground fault	User reset		
A0001	Supply fan 1 - Inverter overheat	User reset		
A0002	Supply fan 1 - Motor overheat	User reset		
A0003	Supply fan 1 - Overload	User reset		
A0004	Supply fan 1 - Phase open	User reset		
A0005	Supply fan 1 - Overvoltage	User reset		
A0006	Supply fan 1 - Low voltage	User reset		
A0007	Supply fan 1 - Overcurrent	User reset		
A0008	Supply fan 1 - Inverter overload	User reset		
A0009	Supply fan 1 - Heat sink overheat	User reset		
A0010	Supply fan 1 - DC overload	User reset		
A0011	Supply fan 1 - Phase lost	User reset		
A0012	Supply fan 1 - Electric thermal	User reset		
A0013	Supply fan 1 - Parameter save error	User reset		
A0014	EC Supply fan 8 - Overvoltage	User reset		
A0015	Supply fan 1 - HW fault	User reset		
A0016	Supply fan 1 - Communication error	User reset		
A0017	Supply fan 1 - Cooling fan fault	User reset		
A0018	Supply fan 1 - Cut off	User reset		
A0019	Supply fan 1 - External fault A	User reset		
A0020	Supply fan 1 - External fault B	User reset		
A0021	Supply fan 1 - Option	User reset		
A0022	Supply fan 1 - Offline	User reset		
A0023	Supply fan 1 - Alarm	User reset		
A0024	Supply fan 2 - Ground fault	User reset		
A0025	Supply fan 2 - Inverter overheat	User reset		
A0026	Supply fan 2 - Motor overheat	User reset		
A0027	Supply fan 2 - Overload	User reset		
A0028	Supply fan 2 - Phase open	User reset		
A0029	Supply fan 2 - Overvoltage	User reset		
A0030	Supply fan 2 - Low voltage	User reset		
A0031	Supply fan 2 - Overcurrent	User reset		
A0032	Supply fan 2 - Inverter overload	User reset		
A0033	Supply fan 2 - Heat sink overheat	User reset		
A0034	Supply fan 2 - DC overload	User reset		
A0035	Supply fan 2 - Phase lost	User reset		
A0036	Supply fan 2 - Electric thermal	User reset		
A0037	Supply fan 2 - Parameter save error	User reset		
A0038	Supply fan 2 - HW fault	User reset		
A0039	Supply fan 2 - Communication error	User reset		
A0040	Supply fan 2 - Cooling fan fault	User reset		
A0041	Supply fan 2 - Cut off	User reset		
A0042	Supply fan 2 - External fault A	User reset		
A0043	Supply fan 2 - External fault B	User reset		
A0044	Supply fan 2 - Option	User reset		

A0045	Supply fan 2 - Offline	User reset
A0046	Supply fan 2 - Alarm	User reset
A0047	Supply fan 3 - Ground fault	User reset
A0048	Supply fan 3 - Inverter overheat	User reset
A0049	Supply fan 3 - Motor overheat	User reset
A0050	Supply fan 3 - Overload	User reset
A0051	Supply fan 3 - Phase open	User reset
A0052	Supply fan 3 - Overvoltage	User reset
A0053	Supply fan 3 - Low voltage	User reset
A0054	Supply fan 3 - Overcurrent	User reset
A0055	Supply fan 3 - Inverter overload	User reset
A0056	Supply fan 3 - Heat sink overheat	User reset
A0057	Supply fan 3 - DC overload	User reset
A0058	Supply fan 3 - Phase lost	User reset
A0059	Supply fan 3 - Electric thermal	User reset
A0060	Supply fan 3 - Parameter save error	User reset
A0061	Supply fan 3 - HW fault	User reset
A0062	Supply fan 3 - Communication error	User reset
A0063	Supply fan 3 - Cooling fan fault	User reset
A0064	Supply fan 3 - Cut off	User reset
A0065	Supply fan 3 - External fault A	User reset
A0066	Supply fan 3 - External fault B	User reset
A0067	Supply fan 3 - Option	User reset
A0068	Supply fan 3 - Offline	User reset
A0069	Supply fan 3 - Alarm	User reset
A0070	Supply fan 4 - Ground fault	User reset
A0071	Supply fan 4 - Inverter overheat	User reset
A0072	Supply fan 4 - Motor overheat	User reset
A0073	Supply fan 4 - Overload	User reset
A0074	Supply fan 4 - Phase open	User reset
A0075	Supply fan 4 - Overvoltage	User reset
A0076	Supply fan 4 - Low voltage	User reset
A0077	Supply fan 4 - Overcurrent	User reset
A0078	Supply fan 4 - Inverter overload	User reset
A0079	Supply fan 4 - Heat sink overheat	User reset
A0080	Supply fan 4 - DC overload	User reset
A0081	Supply fan 4 - Phase lost	User reset
A0082	Supply fan 4 - Electric thermal	User reset
A0083	Supply fan 4 - Parameter save error	User reset
A0084	Supply fan 4 - HW fault	User reset
A0085	Supply fan 4 - Communication error	User reset
A0086	Supply fan 4 - Cooling fan fault	User reset
A0087	Supply fan 4 - Cut off	User reset
A0088	Supply fan 4 - External fault A	User reset
A0089	Supply fan 4 - External fault B	User reset
A0090	Supply fan 4 - Option	User reset

A0091	Supply fan 4 - Offline	User reset
A0092	Supply fan 4 - Alarm	User reset
A0093	Return fan 1 - Ground fault	User reset
A0094	Return fan 1 - Inverter overheat	User reset
A0095	Return fan 1 - Motor overheat	User reset
A0096	Return fan 1 - Overload	User reset
A0097	Return fan 1 - Phase open	User reset
A0098	Return fan 1 - Overvoltage	User reset
A0099	Return fan 1 - Low voltage	User reset
A0100	Return fan 1 - Overcurrent	User reset
A0101	Return fan 1 - Inverter overload	User reset
A0102	Return fan 1 - Heat sink overheat	User reset
A0103	Return fan 1 - DC overload	User reset
A0104	Return fan 1 - Phase lost	User reset
A0105	Return fan 1 - Electric thermal	User reset
A0106	Return fan 1 - Parameter save error	User reset
A0107	Return fan 1 - HW fault	User reset
A0108	Return fan 1 - Communication error	User reset
A0109	Return fan 1 - Cooling fan fault	User reset
A0110	Return fan 1 - Cut off	User reset
A0111	Return fan 1 - External fault A	User reset
A0112	Return fan 1 - External fault B	User reset
A0113	Return fan 1 - Option	User reset
A0114	Return fan 1 - Offline	User reset
A0115	Return fan 1 - Alarm	User reset
A0116	Return fan 2 - Ground fault	User reset
A0117	Return fan 2 - Inverter overheat	User reset
A0118	Return fan 2 - Motor overheat	User reset
A0119	Return fan 2 - Overload	User reset
A0120	Return fan 2 - Phase open	User reset
A0121	Return fan 2 - Overvoltage	User reset
A0122	Return fan 2 - Low voltage	User reset
A0123	Return fan 2 - Overcurrent	User reset
A0124	Return fan 2 - Inverter overload	User reset
A0125	Return fan 2 - Heat sink overheat	User reset
A0126	Return fan 2 - DC overload	User reset
A0127	Return fan 2 - Phase lost	User reset
A0128	Return fan 2 - Electric thermal	User reset
A0129	Return fan 2 - Parameter save error	User reset
A0130	Return fan 2 - HW fault	User reset
A0131	Return fan 2 - Communication error	User reset
A0132	Return fan 2 - Cooling fan fault	User reset
A0133	Return fan 2 - Cut off	User reset
A0134	Return fan 2 - External fault A	User reset
A0135	Return fan 2 - External fault B	User reset
A0136	Return fan 2 - Option	User reset

A0137	Return fan 2 - Offline	User reset
A0138	Return fan 2 - Alarm	User reset
A0139	Return fan 3 - Ground fault	User reset
A0140	Return fan 3 - Inverter overheat	User reset
A0141	Return fan 3 - Motor overheat	User reset
A0142	Return fan 3 - Overload	User reset
A0143	Return fan 3 - Phase open	User reset
A0144	Return fan 3 - Overvoltage	User reset
A0145	Return fan 3 - Low voltage	User reset
A0146	Return fan 3 - Overcurrent	User reset
A0147	Return fan 3 - Inverter overload	User reset
A0148	Return fan 3 - Heat sink overheat	User reset
A0149	Return fan 3 - DC overload	User reset
A0150	Return fan 3 - Phase lost	User reset
A0151	Return fan 3 - Electric thermal	User reset
A0152	Return fan 3 - Parameter save error	User reset
A0153	Return fan 3 - HW fault	User reset
A0154	Return fan 3 - Communication error	User reset
A0155	Return fan 3 - Cooling fan fault	User reset
A0156	Return fan 3 - Cut off	User reset
A0157	Return fan 3 - External fault A	User reset
A0158	Return fan 3 - External fault B	User reset
A0159	Return fan 3 - Option	User reset
A0160	Return fan 3 - Offline	User reset
A0161	Return fan 3 - Alarm	User reset
A0162	Return fan 4 - Ground fault	User reset
A0163	Return fan 4 - Inverter overheat	User reset
A0164	Return fan 4 - Motor overheat	User reset
A0165	Return fan 4 - Overload	User reset
A0166	Return fan 4 - Phase open	User reset
A0167	Return fan 4 - Overvoltage	User reset
A0168	Return fan 4 - Low voltage	User reset
A0169	Return fan 4 - Overcurrent	User reset
A0170	Return fan 4 - Inverter overload	User reset
A0171	Return fan 4 - Heat sink overheat	User reset
A0172	Return fan 4 - DC overload	User reset
A0173	Return fan 4 - Phase lost	User reset
A0174	Return fan 4 - Electric thermal	User reset
A0175	Return fan 4 - Parameter save error	User reset
A0176	Return fan 4 - HW fault	User reset
A0177	Return fan 4 - Communication error	User reset
A0178	Return fan 4 - Cooling fan fault	User reset
A0179	Return fan 4 - Cut off	User reset
A0180	Return fan 4 - External fault A	User reset
A0181	Return fan 4 - External fault B	User reset
A0182	Return fan 4 - Option	User reset

A0183	Return fan 4 - Offline	User reset		
A0184	Return fan 4 - Alarm	User reset		
A0185	Rotary VFD - Ground fault	User reset		
A0186	Rotary VFD - Inverter overheat	User reset		
A0187	Rotary VFD - Motor overheat	User reset		
A0188	Rotary VFD - Overload	User reset		
A0189	Rotary VFD - Phase open	User reset		
A0190	Rotary VFD - Overvoltage	User reset		
A0191	Rotary VFD - Low voltage	User reset		
A0192	Rotary VFD - Overcurrent	User reset		
A0193	Rotary VFD - Inverter overload	User reset		
A0194	Rotary VFD - Heat sink overheat	User reset		
A0195	Rotary VFD - DC overload	User reset		
A0196	Rotary VFD - Phase lost	User reset		
A0197	Rotary VFD - Electric thermal	User reset		
A0198	Rotary VFD - Parameter save error	User reset		
A0199	Rotary VFD - HW fault	User reset		
A0200	Rotary VFD - Communication error	User reset		
A0201	Rotary VFD - Cooling fan fault	User reset		
A0202	Rotary VFD - Cut off	User reset		
A0203	Rotary VFD - External fault A	User reset		
A0204	Rotary VFD - External fault B	User reset		
A0205	Rotary VFD - Option	User reset		
A0206	Rotary VFD - Offline	User reset		
A0207	Rotary VFD - Alarm	User reset		
A0208	IO Module - c.pCOe - Offline	Auto reset		
A0209	IO Module - c.pCOe - Configuration error	Auto reset		
A0210	Supply air pressure - Offline	Auto reset		
A0211	Return air pressure - Offline	Auto reset		
A0212	Supply humidity - Offline	Auto reset		
A0213	Return humidity - Offline	Auto reset		
A0214	Supply temperature - Probe not working	Auto reset		
A0215	Cooling device - Alarm	User reset		
A0216	Antifreeze alarm - By digital input	Auto reset until counter	3	3600
A0217	Prototype software	Auto reset		
A0218	High number of retain - Memory writings	User reset		
A0219	Error in retain - Memory writings	User reset		
A0220	Return temperature - Probe not working	Auto reset		
A0221	External temperature - Probe not working	Auto reset		
A0222	CO2 air quality - Probe not working	Auto reset		
A0223	Return recovery temp. - Probe not working	Auto reset		
A0224	Basic - TH-Tune - Offline	Auto reset		
A0225	Supply temperature - Out of range	User reset		
A0226	Supply air flow - Warning	User reset		
A0227	Return air flow - Warning	User reset		
A0228	Humidifier - Alarm	User reset		

A0229	Humidifier - Maintenance required	Auto reset		
A0230	Return fan - Maintenance required	Auto reset		
A0231	Supply fan - Maintenance required	Auto reset		
A0232	Reheating coil - Maintenance required	Auto reset		
A0233	Heat recovery - Maintenance required	Auto reset		
A0234	Supply filter - Alarm	Auto reset		
A0235	Return filter - Return filter alarm	Auto reset		
A0236	Basic - TH-Tune - Clock not working	Auto reset		
A0237	Basic - TH-Tune - Temperature probe not working	Auto reset		
A0238	Basic - TH-Tune - Humidity probe not working	Auto reset		
A0239	BMS offline - BMS offline	Auto reset		
A0240	Supply diff. pressure - Probe not working	User reset		
A0241	Return diff. pressure - Probe not working	User reset		
A0242	Fire alarm - By digital input	User reset		
A0243	Heating coil - Water temperature probe not working	Auto reset		
A0244	Preheating coil - Water temperature probe not working	Auto reset		
A0245	After preheating coil - Water temperature probe not working	Auto reset		
A0246	Heating device - Alarm	Auto reset until counter	3	3600
A0247	Fire alarm - By temperature	User reset		
A0248	Fan group - Alarm	Auto reset		
A0249	Antifreeze alarm - Heat back water temperature	Auto reset until counter	3	3600
A0250	Antifreeze alarm - Preheat back water temperature	Auto reset until counter	3	3600
A0251	Supply fan 5 - Ground fault	User reset		
A0252	Supply fan 5 - Inverter overheat	User reset		
A0253	Supply fan 5 - Motor overheat	User reset		
A0254	Supply fan 5 - Overload	User reset		
A0255	Supply fan 5 - Phase open	User reset		
A0256	Supply fan 5 - Overvoltage	User reset		
A0257	Supply fan 5 - Low voltage	User reset		
A0258	Supply fan 5 - Overcurrent	User reset		
A0259	Supply fan 5 - Inverter overload	User reset		
A0260	Supply fan 5 - Heat sink overheat	User reset		
A0261	Supply fan 5 - DC overload	User reset		
A0262	Supply fan 5 - Phase lost	User reset		
A0263	Supply fan 5 - Electric thermal	User reset		
A0264	Supply fan 5 - Parameter save error	User reset		
A0265	Supply fan 5 - HW fault	User reset		
A0266	Supply fan 5 - Communication error	User reset		
A0267	Supply fan 5 - Cooling fan fault	User reset		
A0268	Supply fan 5 - Cut off	User reset		
A0269	Supply fan 5 - External fault A	User reset		
A0270	Supply fan 5 - External fault B	User reset		
A0271	Supply fan 5 - Option	User reset		
A0272	Supply fan 5 - Offline	User reset		
A0273	Supply fan 5 - Alarm	User reset		
A0274	Return fan 5 - Ground fault	User reset		

A0275	Return fan 5 - Inverter overheat	User reset
A0276	Return fan 5 - Motor overheat	User reset
A0277	Return fan 5 - Overload	User reset
A0278	Return fan 5 - Phase open	User reset
A0279	Return fan 5 - Overvoltage	User reset
A0280	Return fan 5 - Low voltage	User reset
A0281	Return fan 5 - Overcurrent	User reset
A0282	Return fan 5 - Inverter overload	User reset
A0283	Return fan 5 - Heat sink overheat	User reset
A0284	Return fan 5 - DC overload	User reset
A0285	Return fan 5 - Phase lost	User reset
A0286	Return fan 5 - Electric thermal	User reset
A0287	Return fan 5 - Parameter save error	User reset
A0288	Return fan 5 - HW fault	User reset
A0289	Return fan 5 - Communication error	User reset
A0290	Return fan 5 - Cooling fan fault	User reset
A0291	Return fan 5 - Cut off	User reset
A0292	Return fan 5 - External fault A	User reset
A0293	Return fan 5 - External fault B	User reset
A0294	Return fan 5 - Option	User reset
A0295	Return fan 5 - Offline	User reset
A0296	Return fan 5 - Alarm	User reset
A0297	EC Supply fan 1 - Undervoltage	Auto reset
A0298	EC Supply fan 1 - Overvoltage	Auto reset
A0299	EC Supply fan 1 - IGBTOvercurrent	User reset
A0300	EC Supply fan 1 - Hot	User reset
A0301	EC Supply fan 1 - Phase Loss	User reset
A0302	EC Supply fan 1 - Parameters CRC	User reset
A0303	EC Supply fan 1 - Circuit fault	User reset
A0304	EC Supply fan 1 - Motor fault	User reset
A0305	EC Supply fan 1 - Too hot	User reset
A0306	EC Supply fan 1 - I2R IGBT fault	User reset
A0307	EC Supply fan 2 - Undervoltage	Auto reset
A0308	EC Supply fan 2 - Overvoltage	Auto reset
A0309	EC Supply fan 2 - IGBTOvercurrent	User reset
A0310	EC Supply fan 2 - Hot	User reset
A0311	EC Supply fan 2 - Phase Loss	User reset
A0312	EC Supply fan 2 - Parameters CRC	User reset
A0313	EC Supply fan 2 - Circuit fault	User reset
A0314	EC Supply fan 2 - Motor fault	User reset
A0315	EC Supply fan 2 - Too hot	User reset
A0316	EC Supply fan 2 - I2R IGBT fault	User reset
A0317	EC Return fan 1 - Undervoltage	Auto reset
A0318	EC Return fan 1 - Overvoltage	Auto reset
A0319	EC Return fan 1 - IGBTOvercurrent	User reset
A0320	EC Return fan 1 - Hot	User reset

A0321	EC Return fan 1 - Phase Loss	User reset
A0322	EC Return fan 1 - Parameters CRC	User reset
A0323	EC Return fan 1 - Circuit fault	User reset
A0324	EC Return fan 1 - Motor fault	User reset
A0325	EC Return fan 1 - Too hot	User reset
A0326	EC Return fan 1 - I2R IGBT fault	User reset
A0327	EC Return fan 2 - Undervoltage	Auto reset
A0328	EC Return fan 2 - Overvoltage	Auto reset
A0329	EC Return fan 2 - IGBTOvercurrent	User reset
A0330	EC Return fan 2 - Hot	User reset
A0331	EC Return fan 2 - Phase Loss	User reset
A0332	EC Return fan 2 - Parameters CRC	User reset
A0333	EC Return fan 2 - Circuit fault	User reset
A0334	EC Return fan 2 - Motor fault	User reset
A0335	EC Return fan 2 - Too hot	User reset
A0336	EC Return fan 2 - I2R IGBT fault	User reset
A0337	Temperature Probe - Recovery Supply	Auto reset
A0338	IO Module - MainBoard - Offline	User reset
A0339	IO Module - MainBoard - Alarm sensor temperature	User reset
A0340	IO Module - MainBoard - Alarm sensor humidity	User reset
A0341	IO Module - MainBoard - Alarm pressure supply fan	User reset
A0342	IO Module - MainBoard - Alarm pressure supply filter	User reset
A0343	IO Module - MainBoard - Alarm pressure return fan	User reset
A0344	IO Module - MainBoard - Alarm pressure return filter	User reset
A0345	IO Module - MainBoard - Alarm analog output 1	User reset
A0346	IO Module - MainBoard - Alarm analog output 2	User reset
A0347	IO Module - MainBoard - Alarm analog output 3	User reset
A0348	IO Module - MainBoard - Alarm analog output 4	User reset
A0349	IO Module - MainBoard - Alarm temperature supply fan	User reset
A0350	IO Module - MainBoard - Alarm temperature supply filter	User reset
A0351	IO Module - MainBoard - Alarm temperature return fan	User reset
A0352	IO Module - MainBoard - Alarm temperature return filter	User reset
A0353	IO Module - MainBoard - Alarm supply 24V	User reset
A0354	IO Module - MainBoard - Alarm control temperature	User reset
A0355	IO Module - MainBoard - Alarm control supply	User reset
A0356	IO Module - MainBoard - Alarm AO - PWM	User reset
A0357	Config - Offline	User reset
A0358	Config - Error Alarm	User reset
A0359	Supply fan 6 - Offline	User reset
A0360	Supply fan 7 - Offline	User reset
A0361	Supply fan 8 - Offline	User reset
A0362	Supply fan 9 - Offline	User reset
A0363	Supply fan 10 - Offline	User reset
A0364	Return fan 6 - Offline	User reset
A0365	Return fan 7 - Offline	User reset
A0366	Return fan 8 - Offline	User reset

A0367	Return fan 9 - Offline	User reset
A0368	Return fan 10 - Offline	User reset
A0369	Supply fan 6 - Ground fault	User reset
A0370	Supply fan 6 - Inverter overheat	User reset
A0371	Supply fan 6 - Motor overheat	User reset
A0372	Supply fan 6 - Overload	User reset
A0373	Supply fan 6 - Phase open	User reset
A0374	Supply fan 6 - Overvoltage	User reset
A0375	Supply fan 6 - Low voltage	User reset
A0376	Supply fan 6 - Overcurrent	User reset
A0377	Supply fan 6 - Inverter overload	User reset
A0378	Supply fan 6 - Heat sink overheat	User reset
A0379	Supply fan 6 - DC overload	User reset
A0380	Supply fan 6 - Phase lost	User reset
A0381	Supply fan 6 - Electric thermal	User reset
A0382	Supply fan 6 - Parameter save error	User reset
A0383	Supply fan 6 - HW fault	User reset
A0384	Supply fan 6 - Communication error	User reset
A0385	Supply fan 6 - Cooling fan fault	User reset
A0386	Supply fan 6 - Cut off	User reset
A0387	Supply fan 6 - External fault A	User reset
A0388	Supply fan 6 - External fault B	User reset
A0389	Supply fan 6 - Option	User reset
A0390	Supply fan 6 - Alarm	User reset
A0391	Return fan 6 - Ground fault	User reset
A0392	Return fan 6 - Inverter overheat	User reset
A0393	Return fan 6 - Motor overheat	User reset
A0394	Return fan 6 - Overload	User reset
A0395	Return fan 6 - Phase open	User reset
A0396	Return fan 6 - Overvoltage	User reset
A0397	Return fan 6 - Low voltage	User reset
A0398	Return fan 6 - Overcurrent	User reset
A0399	Return fan 6 - Inverter overload	User reset
A0400	Return fan 6 - Heat sink overheat	User reset
A0401	Return fan 6 - DC overload	User reset
A0402	Return fan 6 - Phase lost	User reset
A0403	Return fan 6 - Electric thermal	User reset
A0404	Return fan 6 - Parameter save error	User reset
A0405	Return fan 6 - HW fault	User reset
A0406	Return fan 6 - Communication error	User reset
A0407	Return fan 6 - Cooling fan fault	User reset
A0408	Return fan 6 - Cut off	User reset
A0409	Return fan 6 - External fault A	User reset
A0410	Return fan 6 - External fault B	User reset
A0411	Return fan 6 - Option	User reset
A0412	Return fan 6 - Alarm	User reset

A0413	Supply fan 7 - Ground fault	User reset
A0414	Supply fan 7 - Inverter overheat	User reset
A0415	Supply fan 7 - Motor overheat	User reset
A0416	Supply fan 7 - Overload	User reset
A0417	Supply fan 7 - Phase open	User reset
A0418	Supply fan 7 - Overvoltage	User reset
A0419	Supply fan 7 - Low voltage	User reset
A0420	Supply fan 7 - Overcurrent	User reset
A0421	Supply fan 7 - Inverter overload	User reset
A0422	Supply fan 7 - Heat sink overheat	User reset
A0423	Supply fan 7 - DC overload	User reset
A0424	Supply fan 7 - Phase lost	User reset
A0425	Supply fan 7 - Electric thermal	User reset
A0426	Supply fan 7 - Parameter save error	User reset
A0427	Supply fan 7 - HW fault	User reset
A0428	Supply fan 7 - Communication error	User reset
A0429	Supply fan 7 - Cooling fan fault	User reset
A0430	Supply fan 7 - Cut off	User reset
A0431	Supply fan 7 - External fault A	User reset
A0432	Supply fan 7 - External fault B	User reset
A0433	Supply fan 7 - Option	User reset
A0434	Supply fan 7 - Alarm	User reset
A0435	Return fan 7 - Ground fault	User reset
A0436	Return fan 7 - Inverter overheat	User reset
A0437	Return fan 7 - Motor overheat	User reset
A0438	Return fan 7 - Overload	User reset
A0439	Return fan 7 - Phase open	User reset
A0440	Return fan 7 - Overvoltage	User reset
A0441	Return fan 7 - Low voltage	User reset
A0442	Return fan 7 - Overcurrent	User reset
A0443	Return fan 7 - Inverter overload	User reset
A0444	Return fan 7 - Heat sink overheat	User reset
A0445	Return fan 7 - DC overload	User reset
A0446	Return fan 7 - Phase lost	User reset
A0447	Return fan 7 - Electric thermal	User reset
A0448	Return fan 7 - Parameter save error	User reset
A0449	Return fan 7 - HW fault	User reset
A0450	Return fan 7 - Communication error	User reset
A0451	Return fan 7 - Cooling fan fault	User reset
A0452	Return fan 7 - Cut off	User reset
A0453	Return fan 7 - External fault A	User reset
A0454	Return fan 7 - External fault B	User reset
A0455	Return fan 7 - Option	User reset
A0456	Return fan 7 - Alarm	User reset
A0457	Supply fan 8 - Ground fault	User reset
A0458	Supply fan 8 - Inverter overheat	User reset

A0459	Supply fan 8 - Motor overheat	User reset
A0460	Supply fan 8 - Overload	User reset
A0461	Supply fan 8 - Phase open	User reset
A0462	Supply fan 8 - Overvoltage	User reset
A0463	Supply fan 8 - Low voltage	User reset
A0464	Supply fan 8 - Overcurrent	User reset
A0465	Supply fan 8 - Inverter overload	User reset
A0466	Supply fan 8 - Heat sink overheat	User reset
A0467	Supply fan 8 - DC overload	User reset
A0468	Supply fan 8 - Phase lost	User reset
A0469	Supply fan 8 - Electric thermal	User reset
A0470	Supply fan 8 - Parameter save error	User reset
A0471	Supply fan 8 - HW fault	User reset
A0472	Supply fan 8 - Communication error	User reset
A0473	Supply fan 8 - Cooling fan fault	User reset
A0474	Supply fan 8 - Cut off	User reset
A0475	Supply fan 8 - External fault A	User reset
A0476	Supply fan 8 - External fault B	User reset
A0477	Supply fan 8 - Option	User reset
A0478	Supply fan 8 - Alarm	User reset
A0479	Return fan 8 - Ground fault	User reset
A0480	Return fan 8 - Inverter overheat	User reset
A0481	Return fan 8 - Motor overheat	User reset
A0482	Return fan 8 - Overload	User reset
A0483	Return fan 8 - Phase open	User reset
A0484	Return fan 8 - Overvoltage	User reset
A0485	Return fan 8 - Low voltage	User reset
A0486	Return fan 8 - Overcurrent	User reset
A0487	Return fan 8 - Inverter overload	User reset
A0488	Return fan 8 - Heat sink overheat	User reset
A0489	Return fan 8 - DC overload	User reset
A0490	Return fan 8 - Phase lost	User reset
A0491	Return fan 8 - Electric thermal	User reset
A0492	Return fan 8 - Parameter save error	User reset
A0493	Return fan 8 - HW fault	User reset
A0494	Return fan 8 - Communication error	User reset
A0495	Return fan 8 - Cooling fan fault	User reset
A0496	Return fan 8 - Cut off	User reset
A0497	Return fan 8 - External fault A	User reset
A0498	Return fan 8 - External fault B	User reset
A0499	Return fan 8 - Option	User reset
A0500	Return fan 8 - Alarm	User reset
A0501	Supply fan 9 - Ground fault	User reset
A0502	Supply fan 9 - Inverter overheat	User reset
A0503	Supply fan 9 - Motor overheat	User reset
A0504	Supply fan 9 - Overload	User reset

A0505	Supply fan 9 - Phase open	User reset
A0506	Supply fan 9 - Overvoltage	User reset
A0507	Supply fan 9 - Low voltage	User reset
A0508	Supply fan 9 - Overcurrent	User reset
A0509	Supply fan 9 - Inverter overload	User reset
A0510	Supply fan 9 - Heat sink overheat	User reset
A0511	Supply fan 9 - DC overload	User reset
A0512	Supply fan 9 - Phase lost	User reset
A0513	Supply fan 9 - Electric thermal	User reset
A0514	Supply fan 9 - Parameter save error	User reset
A0515	Supply fan 9 - HW fault	User reset
A0516	Supply fan 9 - Communication error	User reset
A0517	Supply fan 9 - Cooling fan fault	User reset
A0518	Supply fan 9 - Cut off	User reset
A0519	Supply fan 9 - External fault A	User reset
A0520	Supply fan 9 - External fault B	User reset
A0521	Supply fan 9 - Option	User reset
A0522	Supply fan 9 - Alarm	User reset
A0523	Return fan 9 - Ground fault	User reset
A0524	Return fan 9 - Inverter overheat	User reset
A0525	Return fan 9 - Motor overheat	User reset
A0526	Return fan 9 - Overload	User reset
A0527	Return fan 9 - Phase open	User reset
A0528	Return fan 9 - Overvoltage	User reset
A0529	Return fan 9 - Low voltage	User reset
A0530	Return fan 9 - Overcurrent	User reset
A0531	Return fan 9 - Inverter overload	User reset
A0532	Return fan 9 - Heat sink overheat	User reset
A0533	Return fan 9 - DC overload	User reset
A0534	Return fan 9 - Phase lost	User reset
A0535	Return fan 9 - Electric thermal	User reset
A0536	Return fan 9 - Parameter save error	User reset
A0537	Return fan 9 - HW fault	User reset
A0538	Return fan 9 - Communication error	User reset
A0539	Return fan 9 - Cooling fan fault	User reset
A0540	Return fan 9 - Cut off	User reset
A0541	Return fan 9 - External fault A	User reset
A0542	Return fan 9 - External fault B	User reset
A0543	Return fan 9 - Option	User reset
A0544	Return fan 9 - Alarm	User reset
A0545	Supply fan 10 - Ground fault	User reset
A0546	Supply fan 10 - Inverter overheat	User reset
A0547	Supply fan 10 - Motor overheat	User reset
A0548	Supply fan 10 - Overload	User reset
A0549	Supply fan 10 - Phase open	User reset
A0550	Supply fan 10 - Overvoltage	User reset

A0551	Supply fan 10 - Low voltage	User reset
A0552	Supply fan 10 - Overcurrent	User reset
A0553	Supply fan 10 - Inverter overload	User reset
A0554	Supply fan 10 - Heat sink overheat	User reset
A0555	Supply fan 10 - DC overload	User reset
A0556	Supply fan 10 - Phase lost	User reset
A0557	Supply fan 10 - Electric thermal	User reset
A0558	Supply fan 10 - Parameter save error	User reset
A0559	Supply fan 10 - HW fault	User reset
A0560	Supply fan 10 - Communication error	User reset
A0561	Supply fan 10 - Cooling fan fault	User reset
A0562	Supply fan 10 - Cut off	User reset
A0563	Supply fan 10 - External fault A	User reset
A0564	Supply fan 10 - External fault B	User reset
A0565	Supply fan 10 - Option	User reset
A0566	Supply fan 10 - Alarm	User reset
A0567	Return fan 10 - Ground fault	User reset
A0568	Return fan 10 - Inverter overheat	User reset
A0569	Return fan 10 - Motor overheat	User reset
A0570	Return fan 10 - Overload	User reset
A0571	Return fan 10 - Phase open	User reset
A0572	Return fan 10 - Overvoltage	User reset
A0573	Return fan 10 - Low voltage	User reset
A0574	Return fan 10 - Overcurrent	User reset
A0575	Return fan 10 - Inverter overload	User reset
A0576	Return fan 10 - Heat sink overheat	User reset
A0577	Return fan 10 - DC overload	User reset
A0578	Return fan 10 - Phase lost	User reset
A0579	Return fan 10 - Electric thermal	User reset
A0580	Return fan 10 - Parameter save error	User reset
A0581	Return fan 10 - HW fault	User reset
A0582	Return fan 10 - Communication error	User reset
A0583	Return fan 10 - Cooling fan fault	User reset
A0584	Return fan 10 - Cut off	User reset
A0585	Return fan 10 - External fault A	User reset
A0586	Return fan 10 - External fault B	User reset
A0587	Return fan 10 - Option	User reset
A0588	Return fan 10 - Alarm	User reset
A0589	EC Supply fan 3 - Undervoltage	Auto reset
A0590	EC Supply fan 3 - Overvoltage	Auto reset
A0591	EC Supply fan 3 - IGBTOvercurrent	User reset
A0592	EC Supply fan 3 - Hot	User reset
A0593	EC Supply fan 3 - Phase Loss	User reset
A0594	EC Supply fan 3 - Parameters CRC	User reset
A0595	EC Supply fan 3 - Circuit fault	User reset
A0596	EC Supply fan 3 - Motor fault	User reset

A0597	EC Supply fan 3 - Too hot	User reset
A0598	EC Supply fan 3 - I2R IGBT fault	User reset
A0599	EC Return fan 3 - Undervoltage	Auto reset
A0600	EC Return fan 3 - Overvoltage	Auto reset
A0601	EC Return fan 3 - IGBTOvercurrent	User reset
A0602	EC Return fan 3 - Hot	User reset
A0603	EC Return fan 3 - Phase Loss	User reset
A0604	EC Return fan 3 - Parameters CRC	User reset
A0605	EC Return fan 3 - Circuit fault	User reset
A0606	EC Return fan 3 - Motor fault	User reset
A0607	EC Return fan 3 - Too hot	User reset
A0608	EC Return fan 3 - I2R IGBT fault	User reset
A0609	EC Supply fan 4 - Undervoltage	Auto reset
A0610	EC Supply fan 4 - Overvoltage	Auto reset
A0611	EC Supply fan 4 - IGBTOvercurrent	User reset
A0612	EC Supply fan 4 - Hot	User reset
A0613	EC Supply fan 4 - Phase Loss	User reset
A0614	EC Supply fan 4 - Parameters CRC	User reset
A0615	EC Supply fan 4 - Circuit fault	User reset
A0616	EC Supply fan 4 - Motor fault	User reset
A0617	EC Supply fan 4 - Too hot	User reset
A0618	EC Supply fan 4 - I2R IGBT fault	User reset
A0619	EC Return fan 4 - Undervoltage	Auto reset
A0620	EC Return fan 4 - Overvoltage	Auto reset
A0621	EC Return fan 4 - IGBTOvercurrent	User reset
A0622	EC Return fan 4 - Hot	User reset
A0623	EC Return fan 4 - Phase Loss	User reset
A0624	EC Return fan 4 - Parameters CRC	User reset
A0625	EC Return fan 4 - Circuit fault	User reset
A0626	EC Return fan 4 - Motor fault	User reset
A0627	EC Return fan 4 - Too hot	User reset
A0628	EC Return fan 4 - I2R IGBT fault	User reset
A0629	EC Supply fan 5 - Undervoltage	Auto reset
A0630	EC Supply fan 5 - Overvoltage	Auto reset
A0631	EC Supply fan 5 - IGBTOvercurrent	User reset
A0632	EC Supply fan 5 - Hot	User reset
A0633	EC Supply fan 5 - Phase Loss	User reset
A0634	EC Supply fan 5 - Parameters CRC	User reset
A0635	EC Supply fan 5 - Circuit fault	User reset
A0636	EC Supply fan 5 - Motor fault	User reset
A0637	EC Supply fan 5 - Too hot	User reset
A0638	EC Supply fan 5 - I2R IGBT fault	User reset
A0639	EC Return fan 5 - Undervoltage	Auto reset
A0640	EC Return fan 5 - Overvoltage	Auto reset
A0641	EC Return fan 5 - IGBTOvercurrent	User reset
A0642	EC Return fan 5 - Hot	User reset

A0643	EC Return fan 5 - Phase Loss	User reset
A0644	EC Return fan 5 - Parameters CRC	User reset
A0645	EC Return fan 5 - Circuit fault	User reset
A0646	EC Return fan 5 - Motor fault	User reset
A0647	EC Return fan 5 - Too hot	User reset
A0648	EC Return fan 5 - I2R IGBT fault	User reset
A0649	EC Supply fan 6 - Undervoltage	Auto reset
A0650	EC Supply fan 6 - Overvoltage	Auto reset
A0651	EC Supply fan 6 - IGBTOvercurrent	User reset
A0652	EC Supply fan 6 - Hot	User reset
A0653	EC Supply fan 6 - Phase Loss	User reset
A0654	EC Supply fan 6 - Parameters CRC	User reset
A0655	EC Supply fan 6 - Circuit fault	User reset
A0656	EC Supply fan 6 - Motor fault	User reset
A0657	EC Supply fan 6 - Too hot	User reset
A0658	EC Supply fan 6 - I2R IGBT fault	User reset
A0659	EC Return fan 6 - Undervoltage	Auto reset
A0660	EC Return fan 6 - Overvoltage	Auto reset
A0661	EC Return fan 6 - IGBTOvercurrent	User reset
A0662	EC Return fan 6 - Hot	User reset
A0663	EC Return fan 6 - Phase Loss	User reset
A0664	EC Return fan 6 - Parameters CRC	User reset
A0665	EC Return fan 6 - Circuit fault	User reset
A0666	EC Return fan 6 - Motor fault	User reset
A0667	EC Return fan 6 - Too hot	User reset
A0668	EC Return fan 6 - I2R IGBT fault	User reset
A0669	EC Supply fan 7 - Undervoltage	Auto reset
A0670	EC Supply fan 7 - Overvoltage	Auto reset
A0671	EC Supply fan 7 - IGBTOvercurrent	User reset
A0672	EC Supply fan 7 - Hot	User reset
A0673	EC Supply fan 7 - Phase Loss	User reset
A0674	EC Supply fan 7 - Parameters CRC	User reset
A0675	EC Supply fan 7 - Circuit fault	User reset
A0676	EC Supply fan 7 - Motor fault	User reset
A0677	EC Supply fan 7 - Too hot	User reset
A0678	EC Supply fan 7 - I2R IGBT fault	User reset
A0679	EC Return fan 7 - Undervoltage	Auto reset
A0680	EC Return fan 7 - Overvoltage	Auto reset
A0681	EC Return fan 7 - IGBTOvercurrent	User reset
A0682	EC Return fan 7 - Hot	User reset
A0683	EC Return fan 7 - Phase Loss	User reset
A0684	EC Return fan 7 - Parameters CRC	User reset
A0685	EC Return fan 7 - Circuit fault	User reset
A0686	EC Return fan 7 - Motor fault	User reset
A0687	EC Return fan 7 - Too hot	User reset
A0688	EC Return fan 7 - I2R IGBT fault	User reset

A0689	EC Supply fan 8 - Undervoltage	Auto reset
A0690	EC Supply fan 8 - IGBTOvercurrent	User reset
A0691	EC Supply fan 8 - Hot	User reset
A0692	EC Supply fan 8 - Phase Loss	User reset
A0693	EC Supply fan 8 - Parameters CRC	User reset
A0694	EC Supply fan 8 - Circuit fault	User reset
A0695	EC Supply fan 8 - Motor fault	User reset
A0696	EC Supply fan 8 - Too hot	User reset
A0697	EC Supply fan 8 - I2R IGBT fault	User reset
A0698	EC Return fan 8 - Undervoltage	Auto reset
A0699	EC Return fan 8 - Overvoltage	Auto reset
A0700	EC Return fan 8 - IGBTOvercurrent	User reset
A0701	EC Return fan 8 - Hot	User reset
A0702	EC Return fan 8 - Phase Loss	User reset
A0703	EC Return fan 8 - Parameters CRC	User reset
A0704	EC Return fan 8 - Circuit fault	User reset
A0705	EC Return fan 8 - Motor fault	User reset
A0706	EC Return fan 8 - Too hot	User reset
A0707	EC Return fan 8 - I2R IGBT fault	User reset
A0708	EC Supply fan 9 - Undervoltage	Auto reset
A0709	EC Supply fan 9 - Overvoltage	Auto reset
A0710	EC Supply fan 9 - IGBTOvercurrent	User reset
A0711	EC Supply fan 9 - Hot	User reset
A0712	EC Supply fan 9 - Phase Loss	User reset
A0713	EC Supply fan 9 - Parameters CRC	User reset
A0714	EC Supply fan 9 - Circuit fault	User reset
A0715	EC Supply fan 9 - Motor fault	User reset
A0716	EC Supply fan 9 - Too hot	User reset
A0717	EC Supply fan 9 - I2R IGBT fault	User reset
A0718	EC Return fan 9 - Undervoltage	Auto reset
A0719	EC Return fan 9 - Overvoltage	Auto reset
A0720	EC Return fan 9 - IGBTOvercurrent	User reset
A0721	EC Return fan 9 - Hot	User reset
A0722	EC Return fan 9 - Phase Loss	User reset
A0723	EC Return fan 9 - Parameters CRC	User reset
A0724	EC Return fan 9 - Circuit fault	User reset
A0725	EC Return fan 9 - Motor fault	User reset
A0726	EC Return fan 9 - Too hot	User reset
A0727	EC Return fan 9 - I2R IGBT fault	User reset
A0728	EC Supply fan 10 - Undervoltage	Auto reset
A0729	EC Supply fan 10 - Overvoltage	Auto reset
A0730	EC Supply fan 10 - IGBTOvercurrent	User reset
A0731	EC Supply fan 10 - Hot	User reset
A0732	EC Supply fan 10 - Phase Loss	User reset
A0733	EC Supply fan 10 - Parameters CRC	User reset
A0734	EC Supply fan 10 - Circuit fault	User reset

A0735	EC Supply fan 10 - Motor fault	User reset		
A0736	EC Supply fan 10 - Too hot	User reset		
A0737	EC Supply fan 10 - I2R IGBT fault	User reset		
A0738	EC Return fan 10 - Undervoltage	Auto reset		
A0739	EC Return fan 10 - Overvoltage	Auto reset		
A0740	EC Return fan 10 - IGBTOvercurrent	User reset		
A0741	EC Return fan 10 - Hot	User reset		
A0742	EC Return fan 10 - Phase Loss	User reset		
A0743	EC Return fan 10 - Parameters CRC	User reset		
A0744	EC Return fan 10 - Circuit fault	User reset		
A0745	EC Return fan 10 - Motor fault	User reset		
A0746	EC Return fan 10 - Too hot	User reset		
A0747	EC Return fan 10 - I2R IGBT fault	User reset		
A0748	IO Module - IO PCB - Offline	User reset		
A0749	DX Reverse - Alarm	Auto reset until counter	3	3600
A0750	Filter alarm - high pressure	User reset		
A0751	RRG alarm - no work confirmation	User reset		
A0752	cPCOE - Offline	Auto reset		
A0753	THTune - Alarm temperature	Auto reset		
A0754	cPCOE - Alarm configuration	Auto reset		
A0755	THTune - Alarm humidity	Auto reset		
A0756	THTune - Alarm clock	Auto reset		
A0757	Supply air pressure - Filter - Offline	Auto reset		
A0758	Supply air pressure - Filter 2 - Offline	Auto reset		
A0759	Return air pressure - Filter - Offline	Auto reset		
A0760	Supply diff. pressure - Filter - Probe not working	User reset		
A0761	Supply diff. pressure - Filter 2 - Probe not working	User reset		
A0762	Return diff. pressure - Probe not working	User reset		
A0763	Supply filter Modbus - Alarm	Auto reset		
A0764	Supply filter 2 Modbus - Alarm	Auto reset		
A0765	Return filter Modbus - Alarm	Auto reset		
A0766	Return fan 15 - DC overload	User reset		
A0767	Return fan 15 - Phase lost	User reset		
A0768	Return fan 15 - Electric thermal	User reset		
A0769	Return fan 15 - Parameter save error	User reset		
A0770	Return fan 15 - HW fault	User reset		
A0771	Return fan 15 - Communication error	Auto reset		
A0772	Return fan 15 - Cooling fan fault	User reset		
A0773	Return fan 15 - Cut off	User reset		
A0774	Return fan 15 - External fault A	User reset		
A0775	Return fan 15 - External fault B	User reset		
A0776	Return fan 15 - Option	User reset		
A0777	Return fan 15 - Alarm	User reset		
A0778	Return fan 11 - Motor overheat	User reset		
A0779	Supply fan 11 - Heat sink overheat	User reset		
A0780	Supply fan 11 - Offline	Auto reset		

A0781	Return fan 11 - Offline	Auto reset
A0782	Supply fan 11 - Ground fault	User reset
A0783	Supply fan 11 - Inverter overheat	User reset
A0784	Supply fan 11 - Motor overheat	User reset
A0785	Supply fan 11 - Overload	User reset
A0786	Supply fan 11 - Phase open	User reset
A0787	Supply fan 11 - Overvoltage	User reset
A0788	Supply fan 11 - Low voltage	User reset
A0789	Supply fan 11 - Overcurrent	User reset
A0790	Supply fan 11 - Inverter overload	User reset
A0791	Supply fan 11 - DC overload	User reset
A0792	Supply fan 11 - Phase lost	User reset
A0793	Supply fan 11 - Electric thermal	User reset
A0794	Supply fan 11 - Parameter save error	User reset
A0795	Supply fan 11 - HW fault	User reset
A0796	Supply fan 11 - Communication error	Auto reset
A0797	Supply fan 11 - Cooling fan fault	User reset
A0798	Supply fan 11 - Cut off	User reset
A0799	Supply fan 11 - External fault A	User reset
A0800	Supply fan 11 - External fault B	User reset
A0801	Supply fan 11 - Option	User reset
A0802	Supply fan 11 - Alarm	User reset
A0803	Return fan 11 - Ground fault	User reset
A0804	Return fan 11 - Inverter overheat	User reset
A0805	Return fan 11 - Overload	User reset
A0806	Return fan 11 - Phase open	User reset
A0807	Return fan 11 - Overvoltage	User reset
A0808	Return fan 11 - Low voltage	User reset
A0809	Return fan 11 - Overcurrent	User reset
A0810	Return fan 11 - Inverter overload	User reset
A0811	Return fan 11 - Heat sink overheat	User reset
A0812	Return fan 11 - DC overload	User reset
A0813	Return fan 11 - Phase lost	User reset
A0814	Return fan 11 - Electric thermal	User reset
A0815	Return fan 11 - Parameter save error	User reset
A0816	Return fan 11 - HW fault	User reset
A0817	Return fan 11 - Communication error	Auto reset
A0818	Return fan 11 - Cooling fan fault	User reset
A0819	Return fan 11 - Cut off	User reset
A0820	Return fan 11 - External fault A	User reset
A0821	Return fan 11 - External fault B	User reset
A0822	Return fan 11 - Option	User reset
A0823	Return fan 11 - Alarm	User reset
A0824	Return fan 12 - Motor overheat	User reset
A0825	Supply fan 12 - Heat sink overheat	User reset
A0826	Supply fan 12 - Offline	Auto reset

A0827	Return fan 12 - Offline	Auto reset
A0828	Supply fan 12 - Ground fault	User reset
A0829	Supply fan 12 - Inverter overheat	User reset
A0830	Supply fan 12 - Motor overheat	User reset
A0831	Supply fan 12 - Overload	User reset
A0832	Supply fan 12 - Phase open	User reset
A0833	Supply fan 12 - Overvoltage	User reset
A0834	Supply fan 12 - Low voltage	User reset
A0835	Supply fan 12 - Overcurrent	User reset
A0836	Supply fan 12 - Inverter overload	User reset
A0837	Supply fan 12 - DC overload	User reset
A0838	Supply fan 12 - Phase lost	User reset
A0839	Supply fan 12 - Electric thermal	User reset
A0840	Supply fan 12 - Parameter save error	User reset
A0841	Supply fan 12 - HW fault	User reset
A0842	Supply fan 12 - Communication error	Auto reset
A0843	Supply fan 12 - Cooling fan fault	User reset
A0844	Supply fan 12 - Cut off	User reset
A0845	Supply fan 12 - External fault A	User reset
A0846	Supply fan 12 - External fault B	User reset
A0847	Supply fan 12 - Option	User reset
A0848	Supply fan 12 - Alarm	User reset
A0849	Return fan 12 - Ground fault	User reset
A0850	Return fan 12 - Inverter overheat	User reset
A0851	Return fan 12 - Overload	User reset
A0852	Return fan 12 - Phase open	User reset
A0853	Return fan 12 - Overvoltage	User reset
A0854	Return fan 12 - Low voltage	User reset
A0855	Return fan 12 - Overcurrent	User reset
A0856	Return fan 12 - Inverter overload	User reset
A0857	Return fan 12 - Heat sink overheat	User reset
A0858	Return fan 12 - DC overload	User reset
A0859	Return fan 12 - Phase lost	User reset
A0860	Return fan 12 - Electric thermal	User reset
A0861	Return fan 12 - Parameter save error	User reset
A0862	Return fan 12 - HW fault	User reset
A0863	Return fan 12 - Communication error	Auto reset
A0864	Return fan 12 - Cooling fan fault	User reset
A0865	Return fan 12 - Cut off	User reset
A0866	Return fan 12 - External fault A	User reset
A0867	Return fan 12 - External fault B	User reset
A0868	Return fan 12 - Option	User reset
A0869	Return fan 12 - Alarm	User reset
A0870	Return fan 13 - Motor overheat	User reset
A0871	Supply fan 13 - Heat sink overheat	User reset
A0872	Supply fan 13 - Offline	Auto reset

A0873	Return fan 13 - Offline	Auto reset
A0874	Supply fan 13 - Ground fault	User reset
A0875	Supply fan 13 - Inverter overheat	User reset
A0876	Supply fan 13 - Motor overheat	User reset
A0877	Supply fan 13 - Overload	User reset
A0878	Supply fan 13 - Phase open	User reset
A0879	Supply fan 13 - Overvoltage	User reset
A0880	Supply fan 13 - Low voltage	User reset
A0881	Supply fan 13 - Overcurrent	User reset
A0882	Supply fan 13 - Inverter overload	User reset
A0883	Supply fan 13 - DC overload	User reset
A0884	Supply fan 13 - Phase lost	User reset
A0885	Supply fan 13 - Electric thermal	User reset
A0886	Supply fan 13 - Parameter save error	User reset
A0887	Supply fan 13 - HW fault	User reset
A0888	Supply fan 13 - Communication error	Auto reset
A0889	Supply fan 13 - Cooling fan fault	User reset
A0890	Supply fan 13 - Cut off	User reset
A0891	Supply fan 13 - External fault A	User reset
A0892	Supply fan 13 - External fault B	User reset
A0893	Supply fan 13 - Option	User reset
A0894	Supply fan 13 - Alarm	User reset
A0895	Return fan 13 - Ground fault	User reset
A0896	Return fan 13 - Inverter overheat	User reset
A0897	Return fan 13 - Overload	User reset
A0898	Return fan 13 - Phase open	User reset
A0899	Return fan 13 - Overvoltage	User reset
A0900	Return fan 13 - Low voltage	User reset
A0901	Return fan 13 - Overcurrent	User reset
A0902	Return fan 13 - Inverter overload	User reset
A0903	Return fan 13 - Heat sink overheat	User reset
A0904	Return fan 13 - DC overload	User reset
A0905	Return fan 13 - Phase lost	User reset
A0906	Return fan 13 - Electric thermal	User reset
A0907	Return fan 13 - Parameter save error	User reset
A0908	Return fan 13 - HW fault	User reset
A0909	Return fan 13 - Communication error	Auto reset
A0910	Return fan 13 - Cooling fan fault	User reset
A0911	Return fan 13 - Cut off	User reset
A0912	Return fan 13 - External fault A	User reset
A0913	Return fan 13 - External fault B	User reset
A0914	Return fan 13 - Option	User reset
A0915	Return fan 13 - Alarm	User reset
A0916	Return fan 14 - Motor overheat	User reset
A0917	Supply fan 14 - Heat sink overheat	User reset
A0918	Supply fan 14 - Offline	Auto reset

A0919	Return fan 14 - Offline	Auto reset
A0920	Supply fan 14 - Ground fault	User reset
A0921	Supply fan 14 - Inverter overheat	User reset
A0922	Supply fan 14 - Cut off	User reset
A0923	Supply fan 14 - Motor overheat	User reset
A0924	Supply fan 14 - Overload	User reset
A0925	Supply fan 14 - Phase open	User reset
A0926	Supply fan 14 - Overvoltage	User reset
A0927	Supply fan 14 - Low voltage	User reset
A0928	Supply fan 14 - Overcurrent	User reset
A0929	Supply fan 14 - Inverter overload	User reset
A0930	Supply fan 14 - DC overload	User reset
A0931	Supply fan 14 - Phase lost	User reset
A0932	Supply fan 14 - Electric thermal	User reset
A0933	Supply fan 14 - Parameter save error	User reset
A0934	Supply fan 14 - HW fault	User reset
A0935	Supply fan 14 - Communication error	Auto reset
A0936	Supply fan 14 - Cooling fan fault	User reset
A0937	Supply fan 14 - External fault A	User reset
A0938	Supply fan 14 - External fault B	User reset
A0939	Supply fan 14 - Option	User reset
A0940	Supply fan 14 - Alarm	User reset
A0941	Return fan 14 - Ground fault	User reset
A0942	Return fan 14 - Inverter overheat	User reset
A0943	Return fan 14 - Overload	User reset
A0944	Return fan 14 - Phase open	User reset
A0945	Return fan 14 - Overvoltage	User reset
A0946	Return fan 14 - Low voltage	User reset
A0947	Return fan 14 - Overcurrent	User reset
A0948	Return fan 14 - Inverter overload	User reset
A0949	Return fan 14 - Heat sink overheat	User reset
A0950	Return fan 14 - DC overload	User reset
A0951	Return fan 14 - Phase lost	User reset
A0952	Return fan 14 - Electric thermal	User reset
A0953	Return fan 14 - Parameter save error	User reset
A0954	Return fan 14 - HW fault	User reset
A0955	Return fan 14 - Communication error	Auto reset
A0956	Return fan 14 - Cooling fan fault	User reset
A0957	Return fan 14 - Cut off	User reset
A0958	Return fan 14 - External fault A	User reset
A0959	Return fan 14 - External fault B	User reset
A0960	Return fan 14 - Option	User reset
A0961	Return fan 14 - Alarm	User reset
A0962	Return fan 15 - Motor overheat	User reset
A0963	Supply fan 15 - Heat sink overheat	User reset
A0964	Supply fan 15 - Offline	Auto reset

A0965	Return fan 15 - Offline	Auto reset
A0966	Supply fan 15 - Ground fault	User reset
A0967	Supply fan 15 - Inverter overheat	User reset
A0968	Supply fan 15 - Motor overheat	User reset
A0969	Supply fan 15 - Overload	User reset
A0970	Supply fan 15 - Phase open	User reset
A0971	Supply fan 15 - Overvoltage	User reset
A0972	Supply fan 15 - Low voltage	User reset
A0973	Supply fan 15 - Overcurrent	User reset
A0974	Supply fan 15 - Inverter overload	User reset
A0975	Supply fan 15 - DC overload	User reset
A0976	Supply fan 15 - Phase lost	User reset
A0977	Supply fan 15 - Electric thermal	User reset
A0978	Supply fan 15 - Parameter save error	User reset
A0979	Supply fan 15 - HW fault	User reset
A0980	Supply fan 15 - Communication error	Auto reset
A0981	Supply fan 15 - Cooling fan fault	User reset
A0982	Supply fan 15 - Cut off	User reset
A0983	Supply fan 15 - External fault A	User reset
A0984	Supply fan 15 - External fault B	User reset
A0985	Supply fan 15 - Option	User reset
A0986	Supply fan 15 - Alarm	User reset
A0987	Return fan 15 - Ground fault	User reset
A0988	Return fan 15 - Inverter overheat	User reset
A0989	Return fan 15 - Overload	User reset
A0990	Return fan 15 - Phase open	User reset
A0991	Return fan 15 - Overvoltage	User reset
A0992	Return fan 15 - Low voltage	User reset
A0993	Return fan 15 - Overcurrent	User reset
A0994	Return fan 15 - Inverter overload	User reset
A0995	Return fan 15 - Heat sink overheat	User reset
A0996	EC Supply fan 11 - Undervoltage	Auto reset
A0997	EC Supply fan 11 - Overvoltage	Auto reset
A0998	EC Supply fan 11 - IGBTOvercurrent	User reset
A0999	EC Supply fan 11 - Hot	User reset
A1000	EC Supply fan 11 - Phase Loss	User reset
A1001	EC Supply fan 11 - Parameters CRC	User reset
A1002	EC Supply fan 11 - Circuit fault	User reset
A1003	EC Supply fan 11 - Motor fault	User reset
A1004	EC Supply fan 11 - Too hot	User reset
A1005	EC Supply fan 11 - I2R IGBT fault	User reset
A1006	EC Supply fan 12 - Undervoltage	Auto reset
A1007	EC Supply fan 12 - Overvoltage	Auto reset
A1008	EC Supply fan 12 - IGBTOvercurrent	User reset
A1009	EC Supply fan 12 - Hot	User reset
A1010	EC Supply fan 12 - Phase Loss	User reset

A1011	EC Supply fan 12 - Parameters CRC	User reset
A1012	EC Supply fan 12 - Circuit fault	User reset
A1013	EC Supply fan 12 - Motor fault	User reset
A1014	EC Supply fan 12 - Too hot	User reset
A1015	EC Supply fan 12 - I2R IGBT fault	User reset
A1016	EC Supply fan 13 - Undervoltage	Auto reset
A1017	EC Supply fan 13 - Overvoltage	Auto reset
A1018	EC Supply fan 13 - IGBTOvercurrent	User reset
A1019	EC Supply fan 13 - Hot	User reset
A1020	EC Supply fan 13 - Phase Loss	User reset
A1021	EC Supply fan 13 - Parameters CRC	User reset
A1022	EC Supply fan 13 - Circuit fault	User reset
A1023	EC Supply fan 13 - Motor fault	User reset
A1024	EC Supply fan 13 - Too hot	User reset
A1025	EC Supply fan 13 - I2R IGBT fault	User reset
A1026	EC Supply fan 14 - Undervoltage	Auto reset
A1027	EC Supply fan 14 - Overvoltage	Auto reset
A1028	EC Supply fan 14 - IGBTOvercurrent	User reset
A1029	EC Supply fan 14 - Hot	User reset
A1030	EC Supply fan 14 - Phase Loss	User reset
A1031	EC Supply fan 14 - Parameters CRC	User reset
A1032	EC Supply fan 14 - Circuit fault	User reset
A1033	EC Supply fan 14 - Motor fault	User reset
A1034	EC Supply fan 14 - Too hot	User reset
A1035	EC Supply fan 14 - I2R IGBT fault	User reset
A1036	EC Supply fan 15 - Undervoltage	Auto reset
A1037	EC Supply fan 15 - Overvoltage	Auto reset
A1038	EC Supply fan 15 - IGBTOvercurrent	User reset
A1039	EC Supply fan 15 - Hot	User reset
A1040	EC Supply fan 15 - Phase Loss	User reset
A1041	EC Supply fan 15 - Parameters CRC	User reset
A1042	EC Supply fan 15 - Circuit fault	User reset
A1043	EC Supply fan 15 - Motor fault	User reset
A1044	EC Supply fan 15 - Too hot	User reset
A1045	EC Supply fan 15 - I2R IGBT fault	User reset
A1046	EC Return fan 11 - Undervoltage	Auto reset
A1047	EC Return fan 11 - Overvoltage	Auto reset
A1048	EC Return fan 11 - IGBTOvercurrent	User reset
A1049	EC Return fan 11 - Hot	User reset
A1050	EC Return fan 11 - Phase Loss	User reset
A1051	EC Return fan 11 - Parameters CRC	User reset
A1052	EC Return fan 11 - Circuit fault	User reset
A1053	EC Return fan 11 - Motor fault	User reset
A1054	EC Return fan 11 - Too hot	User reset
A1055	EC Return fan 11 - I2R IGBT fault	User reset
A1056	EC Return fan 12 - Undervoltage	Auto reset

A1057	EC Return fan 12 - Overvoltage	Auto reset		
A1058	EC Return fan 12 - IGBTOvercurrent	User reset		
A1059	EC Return fan 12 - Hot	User reset		
A1060	EC Return fan 12 - Phase Loss	User reset		
A1061	EC Return fan 12 - Parameters CRC	User reset		
A1062	EC Return fan 12 - Circuit fault	User reset		
A1063	EC Return fan 12 - Motor fault	User reset		
A1064	EC Return fan 12 - Too hot	User reset		
A1065	EC Return fan 12 - I2R IGBT fault	User reset		
A1066	EC Return fan 13 - Undervoltage	Auto reset		
A1067	EC Return fan 13 - Overvoltage	Auto reset		
A1068	EC Return fan 13 - IGBTOvercurrent	User reset		
A1069	EC Return fan 13 - Hot	User reset		
A1070	EC Return fan 13 - Phase Loss	User reset		
A1071	EC Return fan 13 - Parameters CRC	User reset		
A1072	EC Return fan 13 - Circuit fault	User reset		
A1073	EC Return fan 13 - Motor fault	User reset		
A1074	EC Return fan 13 - Too hot	User reset		
A1075	EC Return fan 13 - I2R IGBT fault	User reset		
A1076	EC Return fan 14 - Undervoltage	Auto reset		
A1077	EC Return fan 14 - Overvoltage	Auto reset		
A1078	EC Return fan 14 - IGBTOvercurrent	User reset		
A1079	EC Return fan 14 - Hot	User reset		
A1080	EC Return fan 14 - Phase Loss	User reset		
A1081	EC Return fan 14 - Parameters CRC	User reset		
A1082	EC Return fan 14 - Circuit fault	User reset		
A1083	EC Return fan 14 - Motor fault	User reset		
A1084	EC Return fan 14 - Too hot	User reset		
A1085	EC Return fan 14 - I2R IGBT fault	User reset		
A1086	EC Return fan 15 - Undervoltage	Auto reset		
A1087	EC Return fan 15 - Overvoltage	Auto reset		
A1088	EC Return fan 15 - IGBTOvercurrent	User reset		
A1089	EC Return fan 15 - Hot	User reset		
A1090	EC Return fan 15 - Phase Loss	User reset		
A1091	EC Return fan 15 - Parameters CRC	User reset		
A1092	EC Return fan 15 - Circuit fault	User reset		
A1093	EC Return fan 15 - Motor fault	User reset		
A1094	EC Return fan 15 - Too hot	User reset		
A1095	EC Return fan 15 - I2R IGBT fault	User reset		
A1096	HMI Basic 2 - Offline	Auto reset		
A1097	Heat Pump - Alarm	Auto reset		
A1098	Heat Pump - Offline	Auto reset		
A1099	Bluetooth Module - Alarm	Auto reset		
A1100		Auto reset		
A1101	Emergency closing alarm - Alarm status	Auto reset until counter	3	3600
A1102	Low superheat alarm - Alarm status	Auto reset until counter	3	3600

A1103	LOP alarm - Alarm status	Auto reset until counter	3	3600
A1104	MOP alarm - Alarm status	Auto reset until counter	3	3600
A1105	Motor alarm evd - Alarm status	Auto reset until counter	3	3600
A1106	Low suction temperature alarm - Alarm status	Auto reset until counter	3	3600
A1107	Hig temp cond alarm - Alarm status	Auto reset until counter	3	3600
A1108	EVD range error alarm - Alarm status	Auto reset until counter	3	3600
A1109	EVD pin out of bound alarm - Alarm status	Auto reset until counter	3	3600
A1110	Retain variable to much overwritten alarm - Alarm status	Auto reset until counter	3	3600
A1111	Alarm status	Auto reset until counter	3	3600
A1112	Alarm discharge probe pressure - Alarm status	Auto reset until counter	3	3600
A1113	Alarm suction probe pressure - Alarm status	Auto reset until counter	3	3600
A1114	Alarm discharge probe temperature - Alarm status	Auto reset until counter	3	3600
A1115	Alarm suction probe temperature - Alarm status	Auto reset until counter	3	3600
A1116	Alarm reference speed - Alarm status	Auto reset until counter	3	3600
A1117	High differential pressure alarm - Alarm status	Auto reset until counter	3	3600
A1118	Out of Envelope - View specific mask - Alarm status	Auto reset until counter	3	3600
A1119	Starting failure wait retry - Alarm status	Auto reset until counter	3	3600
A1120	Starting failure exceeded maximum attemps - Alarm status	Auto reset until counter	3	3600
A1121	Low delta pressure - Alarm status	Auto reset until counter	3	3600
A1122	High discharge gas temperature - Alarm status	Auto reset until counter	3	3600
A1123	AL01: Inverter vercurrent - Alarm status	Auto reset until counter	3	3600
A1124	AL02: Inverter motor overload - Alarm status	Auto reset until counter	3	3600
A1125	AL03: Inverter DC Bus overvoltage - Alarm status	Auto reset until counter	3	3600
A1126	AL04: Inverter DC bus undervoltage - Alarm status	Auto reset until counter	3	3600
A1127	AL05: Inverter drive overtemperature - Alarm status	Auto reset until counter	3	3600
A1128	AL06: Inverter drive undertemperature - Alarm status	Auto reset until counter	3	3600
A1129	AL07: Inverter overcurrent hardware - Alarm status	Auto reset until counter	3	3600
A1130	AL08: Inverter motor overtemperature (PTC) - Alarm status	Auto reset until counter	3	3600
A1131	AL09: Inverter IGBT fault - Alarm status	Auto reset until counter	3	3600
A1132	AL10: Inverter CPU error - Alarm status	Auto reset until counter	3	3600
A1133	AL11: Inverter factory default done - Alarm status	Auto reset until counter	3	3600
A1134	AL12: Inverter DC bus ripple too large - Alarm status	Auto reset until counter	3	3600
A1135	AL13: Inverter data communication fault - Alarm status	Auto reset until counter	3	3600
A1136	AL14: Inverter drive thermistor fault - Alarm status	Auto reset until counter	3	3600
A1137	AL15: Inverter autotuning fault - Alarm status	Auto reset until counter	3	3600
A1138	AL16: Inverter safe torque off - Alarm status	Auto reset until counter	3	3600
A1139	AL17: Inverter motor phase loss - Alarm status	Auto reset until counter	3	3600
A1140	AL18: Inverter internal fan fault - Alarm status	Auto reset until counter	3	3600
A1141	AL19: Inverter stall - Alarm status	Auto reset until counter	3	3600
A1142	AL20: Inverter PFC fault - Alarm status	Auto reset until counter	3	3600
A1143	AL21: Inverter input power supply overvoltage - Alarm status	Auto reset until counter	3	3600
A1144	AL22: Inverter input power supply undervoltage - Alarm status	Auto reset until counter	3	3600
A1145	AL23: Inverter STO circuit fault - Alarm status	Auto reset until counter	3	3600
A1146	AL24: Inverter STO circuit fault - Alarm status	Auto reset until counter	3	3600
A1147	AL25: Inverter ground fault (only for single-phase) - Alarm status	Auto reset until counter	3	3600
A1148	AL26: Inverter ADC conversion sync fault - Alarm status	Auto reset until counter	3	3600

A1149	AL27: Inverter hw syncronization fault - Alarm status	Auto reset until counter	3	3600
A1150	AL28: Inverter drive overload - Alarm status	Auto reset until counter	3	3600
A1151	AL29: Inverter drive over temperature (hardware) - Alarm status	Auto reset until counter	3	3600
A1152	AL98: Inverter drive unexpected re-start - Alarm status	Auto reset until counter	3	3600
A1153	AL99: Inverter drive unexpected stop - Alarm status	Auto reset until counter	3	3600
A1154	Inverter offline - Alarm status	Auto reset until counter	3	3600
A1155	Liquid temperature probe alarm - Alarm status	Auto reset until counter	3	3600
A1156	Auxiliary probe A error alarm - Alarm status	Auto reset until counter	3	3600
A1157	Auxiliary probe B error alarm - Alarm status	Auto reset until counter	3	3600
A1158	Auxiliary probe C error alarm - Alarm status	Auto reset until counter	3	3600
A1159	Alarm BMS offline - Alarm status	Auto reset until counter	3	3600
A1160	Compressor 2 fault - Alarm status	Auto reset until counter	3	3600
A1161	Compressor 3 fault - Alarm status	Auto reset until counter	3	3600
A1162	Ineffective adaptive control - Alarm status	Auto reset until counter	3	3600
A1163	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1164	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1165	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1166	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1167	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1168	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1169	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1170	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1171	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1172	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1173	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1174	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1175	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1176	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1177	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1178	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1179	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1180	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1181	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1182	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1183	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1184	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1185	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1186	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1187	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1188	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1189	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1190	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1191	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1192	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1193	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1194	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600

A1195	Automatic generated by Alarm editor - Alarm status	Auto reset until counter	3	3600
A1196	Envelope zone alarm 2: high compressor ratio - Alarm status	Auto reset until counter	3	3600
A1197	Envelope zone alarm 3: high discharge pressure - Alarm status	Auto reset until counter	3	3600
A1198	Envelope zone alarm 4: high current - Alarm status	Auto reset until counter	3	3600
A1199	Envelope zone alarm 5: low sucttion pressure - Alarm status	Auto reset until counter	3	3600
A1200	Envelope zone alarm 6: low compressor ratio - Alarm status	Auto reset until counter	3	3600
A1201	Envelope zone alarm 7: low pressure differential - Alarm status	Auto reset until counter	3	3600
A1202	Envelope zone alarm 8: low discharge pressure - Alarm status	Auto reset until counter	3	3600
A1203	Envelope zone alarm 9: low suction pressure - Alarm status	Auto reset until counter	3	3600
A1204	Alarm suction probe temperature vapour injection	Auto reset until counter	3	3600
A1205	Envelope zone alarm 10: high discharge temperature - Alarm status	Auto reset until counter	3	3600
A1206	Alarm suction probe pressure vapour injection	Auto reset until counter	3	3600
A1207	Alarm evaporation probe temperature vapour injection	Auto reset until counter	3	3600
A1208	Alarm external probe temperature	Auto reset until counter	3	3600
A1209	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1210	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1211	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1212	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1213	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1214	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1215	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1216	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1217	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1218	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1219	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1220	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1221	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1222	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1223	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1224	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1225	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1226	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1227	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1228	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1229	Automatic generated by Alarm editor	Auto reset until counter	3	3600
A1230	Driver off-line	Auto reset until counter	3	3600
A1231	01: Inverter over current	Auto reset until counter	3	3600
A1232	02: Inverter motor overload	Auto reset until counter	3	3600
A1233	03: Inverter DC bus over voltage	Auto reset until counter	3	3600
A1234	04: Inverter DC bus under voltage	Auto reset until counter	3	3600
A1235	05: Inverter drive over temperature	Auto reset until counter	3	3600
A1236	06: Inverter drive under temperature	Auto reset until counter	3	3600
A1237	07: Inverter over currentHW	Auto reset until counter	3	3600
A1238	08: Inverter motor over temperature	Auto reset until counter	3	3600
A1239	09: Inverter IGBT module error	Auto reset until counter	3	3600
A1240	10: Inverter CPU error	Auto reset until counter	3	3600

A1241	11: Inverter parameters default	Auto reset until counter	3	3600
A1242	12: Inverter DC bus ripple	Auto reset until counter	3	3600
A1243	13: Inverter data communication fault	Auto reset until counter	3	3600
A1244	14: Inverter drive thermistor fault	Auto reset until counter	3	3600
A1245	15: Inverter autotuning fault	Auto reset until counter	3	3600
A1246	16: Inverter drive disabled	Auto reset until counter	3	3600
A1247	17: Inverter motor phase fault	Auto reset until counter	3	3600
A1248	18: Inverter internal fan fault	Auto reset until counter	3	3600
A1249	19: Inverter speed fault	Auto reset until counter	3	3600
A1250	20: Inverter PFC module error	Auto reset until counter	3	3600
A1251	21: Inverter PFC over voltage	Auto reset until counter	3	3600
A1252	22: Inverter PFC under voltage	Auto reset until counter	3	3600
A1253	23: Inverter STO detection error	Auto reset until counter	3	3600
A1254	24: Inverter STO detection error	Auto reset until counter	3	3600
A1255	25: Inverter Ground fault	Auto reset until counter	3	3600
A1256	26: Inverter internal error 1	Auto reset until counter	3	3600
A1257	27: Inverter internal error 2	Auto reset until counter	3	3600
A1258	28: Inverter drive overload	Auto reset until counter	3	3600
A1259	29: Inverter microcontroller safety drive stopped	Auto reset until counter	3	3600
A1260	98: Inverter unexpected restart	Auto reset until counter	3	3600
A1261	99: Inverter unexpected stop	Auto reset until counter	3	3600