Operation & Maintenance Manual

IOM 8083D01
Rev. B 6/23

DDC Controller
Water Source Heat Pump with Hot Gas Reheat Option

HydroTech™
R-410A Water Source Heat Pump

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First Co. / AE-Air works to continuously improve its products and as a result, it reserves the right to change design and specifications without notice.

The warranty may be void unless the Startup & Performance Checklist is completed and returned to the warrantor. If the HVAC unit is not installed properly, the warranty will be void, as the manufacturer cannot be held accountable for problems that stem from improper installation.

******WARNING TO INSTALLER, SERVICE PERSONNEL AND OWNER******

Altering the product or replacing parts with non-authorized factory parts voids all warranty or implied warranty and may result in adverse operational performance and/or a possible hazardous safety condition to service personnel and occupants. Company employees and/or contractors are not authorized to waive this warning.

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SAFETY CONSIDERATIONS

1. READ THE ENTIRE MANUAL BEFORE STARTING THE INSTALLATION.
2. These instructions are intended as a general guide and do not supersede national, state, or local codes in any way.
3. Altering the product, improper installation, or the use of unauthorized factory parts voids all warranty or implied warranty and may result in adverse operation and/or performance or may result in hazardous conditions to service personnel and occupants. Company employees or contractors are not authorized to waive this warning.
4. This product should only be installed and serviced by a qualified, licensed, and factory authorized installer or service agency.
5. All "kits" and "accessories" used must be factory authorized when modifying this product. Refer and follow instructions packaged with the kits or accessories when installing.

RECOGNIZE THE FOLLOWING SAFETY NOTATIONS THROUGHOUT THIS MANUAL AND POSTED ON THE EQUIPMENT:

DANGER

Indicates an imminently hazardous situation, which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation or unsafe practices that could result in severe personal injury or death and/or damage to property.

WARNING

ELECTRIC SHOCK HAZARD

This warning signifies potential electrical shock hazards that could result in personal injury or death.

CAUTION

The CAUTION symbol indicates a potentially hazardous situation that may result in minor or moderate injury.

IMPORTANT

Suggests important procedure steps to insure proper installation, reliability, or operation.

NOTE

Used to highlight suggestions, which may result in enhanced installation, reliability or operation.

WARNING

FIRE OR EXPLOSION HAZARD

Failure to follow safety warnings exactly could result in dangerous operation, serious injury, death or property damage.

Improper servicing could result in dangerous operation, serious injury, death or property damage.

- Before servicing, disconnect all electrical power to the unit.
- When servicing controls, label all wires prior to disconnecting. Reconnect wires correctly.

Verify proper operation after servicing.

INTRODUCTION

This manual provides information regarding the Siemens DDC controller. The DDC controller is a self-contained device that is capable of complete, stand-alone operation or in a network environment. Information in the controller can be displayed and modified by using the keypad/display HMI (Human Machine Interface) service tool. The information can also be accessed through BAS or via controller web server interface.

ADDITIONAL INSTRUCTIONS

For installation and startup instructions and general information regarding a water source heat pump with hot gas reheat option, refer to the applicable model specific installation and manual *(Table 1).*

INSTALLATION AND MAINTENANCE RESOURCES	
MODEL	IOM MANUAL
WSV6 Series	IOM8001
WSV6 Large Series	IOM8002

Table 1 - Installation and Maintenance Resources

PART № CROSS REFERENCE	
PART DESCRIPTION	FIRST CO PART NUMBER
DDC Controller	CB900
HMI Service Tool	CB1000
Heat pump Thermostat	By others

Table 2 - Part Number Cross Reference

GENERAL INFORMATION

APPLICATIONS

The CB900 DDC Controller with BACnet³MS/TP and Modbus communication protocols are designed for water source heat pumps hot gas reheat option. All of the energy saving features and options for the water source heat pumps can be controlled with CB900 DDC Controller.

The DDC Controller contains all functionalities required to operate basic and advanced operations of water source heat pumps hot gas reheat option. The DDC Controller can operate with standard heat pump room thermostat (by others) for basic operation. For advanced operation, additional sensors (de-humidity stat or aquastat) are required.

The DDC Controller has outputs to control a supply fan, compressor(s) and reversing valve. It also provides I/Os for additional functionalities.

FEATURES

Thermostat Control.
Random Start.
Anti-short cycle protection.
Compressor Minimum On/Off timers.
High Refrigerant Pressure Protection.
Loss of Refrigerant Charge Protection/Low Pressure Protection.
High Condensate Level Protection.
Blower Delay.
Compressor Delay.
Water Pump/Valve Delay.
Three times Fault Retries.
Fault Lock out with 24hrs Retry.
Two-Speed EC Fan Operation.
PSC Fan Operation.

ADVANCED FEATURES

Waterside Economizer Operation.
Hot Gas Reheat Dehumidification.
Two-Step Compressor Operation.
Supply Air Temperature Monitoring.
(0-10 VDC) EC Motor Control.

ALARMS

High Refrigerant Pressure Alarm.
Low Refrigerant Pressure Alarm.
Defected Sensor Alarm.
Air Coil Low temperature Alarm.
Low Leaving Water Temperature Alarm.
Condensate Detection Alarm.

NETWORKING CAPABILITY

Built-In BACnet® MSTP/IP, Modbus IP/RTU.

SERVICE AND RELIABILITY FEATURES

Software Update via USB Port.
Factory Wiring Harness Connectors.

All op-codes are accessible via BACnet, Modbus or HMI Service Tool.

PHYSICAL DATA

POWER SUPPLY

24 VDC ± 10%
Max Power Input: 36W

OPERATING CONDITIONS

Storage: -40°C to 70°C
90% RH non-condensing
Operating: -40°C to 70°C
90% RH non-condensing

MECHANICAL SPECIFICATIONS

Dimensions: 249 x 109 x30.2 mm

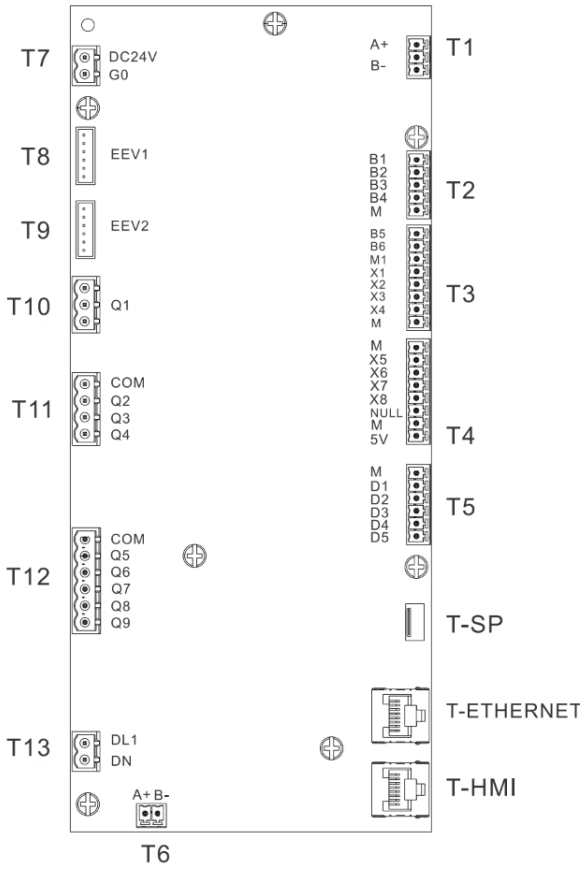


FIGURE 1 – Controller Connection Map

DDC CONTROLLER WIRING

DDC CONTROLLER WIRING				
TERMINAL	POLE	IDENTIFIER	WIRE COLOR	COMPONENTS
T1	3	+	On-board RS 485	BMS (Field)
	2	-		
	1	Ref		
T2	5	B1	Grey	Leaving Water Temp. Sensor
	4	B2	Black	Air Coil Temperature Sensor
	3	B3	Yellow	Condensate Overflow Sensor
	2	B4	Orange	Supply Air Temp. Sensor
	1	M	Brown	Comp. Contactor Com.
T3	8	B5	Grey	Dryer Temperature Sensor
	7	B6		
	6	M		
	5	X1	Blue	Low Pressure Switch (NC)
	4	X2		
	3	X3		
	2	X4		
	1	M	Brown	Com.
T4	8	M		
	7	X5		
	6	X6		
	5	X7		
	4	X8		
	3	NULL		
	2	M		
	1	5V	Green	Low Pressure Switch (C)
T5	6	M		
	5	D1	Black	High Pressure Switch (L - NO)
	4	D2	Green	Thermostat G
	3	D3	Orange	Thermostat O - Reversing Valve
	2	D4	Yellow	Thermostat Y
	1	D5	Grey	Thermostat DH
T6	1	A+	Extension Interface (RS485)	
	2	B-		
T7	1	DC24V	Red	Power Supply +Vo
	2	G0	Brown	Power Supply -Vo
T8	●	EEV1		
T9	●	EEV2		
T10	1	NC		
	2	Q1-COMP	Yellow	Comp. Contactor
	3	NO	Yellow	High Pressure Switch (H - NC)
T11	1	COM	Brown	Com.
	2	Q2	Violet	Fan Motor Speed (Medium)
	3	Q3	Grey	
	4	Q4	White	Fan Motor Speed (High)
T12	1	COM	Red	High Pressure Switch (C)
	2	Q5	Green	
	3	Q6	Blue	Reheat Valve
	4	Q7	Red	Bleed Off Valve
	5	Q8		
	6	Q9		
T13	1	DL		
	2	DN		

Table 3 - DDC Controller Wiring

DDC CONTROLLER I/O

LEAVING WATER TEMPERATURE SENSOR

Factory installed 10 kΩ thermistor is monitoring the leaving water temperature.

AIR COIL TEMPERATURE SENSOR

Factory installed 10 kΩ thermistor is monitoring the air coil refrigerant temperature.

CONDENSATE OVERFLOW SENSOR

Factory wired Condensate Overflow Alarm input. An alarm will be generated any time this input has resistance value between 0 and 100 kΩ for 30 continuous seconds during the compressor run cycle. This alarm disables the compressor output as well as the supply fan.

SUPPLY AIR TEMPERATURE SENSOR

Factory installed 10 kΩ thermistor is monitoring the supply air temperature.

DRYER REFRIGERANT TEMPERATURE SENSOR

Factory installed 10 kΩ thermistor is monitoring the dryer refrigerant temperature.

LOW PRESSURE SWITCH STATUS

Alarm input is monitoring the NC low pressure switch. An alarm will be generated any time the switch is open due to low refrigerant pressure for 30 seconds. This low pressure switch is bypassed for the initial 120 seconds of a compressor start-up.

HIGH PRESSURE SWITCH STATUS

Alarm input is monitoring the NO high pressure switch. An alarm will be generated any time the switch is close due to high refrigerant pressure. The compressor contactor is de-energized immediately.

G - FAN CALL - THERMOSTAT

Thermostat input for fan operation. Input requires 24VAC to activate.

O - REVERSING VALVE CALL - THERMOSTAT

Thermostat input for reversing valve operation. Input requires 24VAC to activate in cool mode.

Y - COMPRESSOR CALL - THERMOSTAT

Thermostat input for compressor operation. Input requires 24VAC to activate.

DH - DEHUMIDIFICATION CALL - THERMOSTAT

De-humidistat input for dehumidification operation. Input requires 24VAC to activate.

COMPRESSOR CONTACTOR

This 24VAC relay output signal is used to energize the compressor contactor.

SUPPLY FAN MEDIUM SPEED

This 24VAC relay output signal is used to energize the supply fan motor medium speed tap. This is the fan speed for fan only mode. Factory setting is motor medium speed (violet). If low speed is needed, remove the violet wire from controller Q2 terminal and cap it off. Use the grey wire (motor low speed) which is capped off to connect to Q2 terminal.

SUPPLY FAN HIGH SPEED

This 24VAC relay output signal is used to energize the supply fan motor high speed tap. This controller Q4 terminal could be used to activate water pump/valve.

REHEAT VALVE

This 24VAC relay output signal is used to energize the Reheat Valve during the Full Dehumidification.

BLEED OFF VALVE

This 24VAC relay output signal is used to energize the Bleed Off Valve during the Cool mode.

DDC CONTROLLER OPERATIONAL CODES

DDC CONTROLLER OPERATIONAL CODES	
DESCRIPTION OF OPERATION	ALARM No.
OpCode - Normal Operation	Code 11
OpCode - Lock Out - High Pressure	Code 12
OpCode - Lock Out - Low Pressure	Code 13
OpCode - Lock Out - Leaving Water Temp.	Code 14
OpCode - Lock Out - Air Coil Temp.	Code 15
OpCode - Lock Out - Condensate Detected	Code 16
OpCode - Lock Out - Swapped CO1/CO2 Thermistors	Code 18
OpCode - Lock Out - Temperature Sensors	Code 19
OpCode - Warning - Under Cooling Capacity	Code 20
OpCode - Warning - Over Cooling Capacity	Code 21
OpCode - Warning - Under Heating Capacity	Code 22
OpCode - Warning - Over Heating Capacity	Code 23

Table 4 - DDC Controller Operational Codes

GENERATION OF MACHINE MODE

GENERATION OF MACHINE MODE							
DiagnosticEnable	MachineEnable	OpCode = 12 to 19	O	Y	G	DH	Mode
0	0	0	X	0	0	0	Stand By
0	1	0	X	0	1	0	Fan Only
0	1	0	0	1	X	X	Heat
0	1	0	1	1	X	0	Cool
0	1	0	1	0	X	1	Dehum
0	X	1	X	X	X	X	Lock Out
1	X	X	X	X	X	X	Diagnostic

Table 5 - Generation of Machine Mode

1 :True - 0 : False - X : Don't Care

MODE OF OPERATIONS

RANDOM START

The DDC Controller features a 10-110 seconds random start upon power up.

ANTI-SHORT CYCLE PROTECTION

The DDC Controller incorporates a 5 minutes On/Off anti-short cycle protection for compressor. The 5 minutes minimum ON time is bypassed if there is alarm.

MODE: STAND BY

The MachineEnable command is off or there is no signal from thermostat. The unit is on standby mode. All outputs are off.

MODE: FAN ONLY

The MachineEnable command is on and there is only G signal from thermostat. The unit is on Fan only mode. Supply fan runs at medium speed.

MODE: HEAT

The MachineEnable command is on and there is Y signal but no O signal from thermostat. The unit is on Heat mode. The controller:

Energizes water valve/pump.
Energizes supply fan at high speed,
Activates Random Start (if applicable).
Activates Anti-Short Cycle Protection.
Energizes the compressor.

MODE: COOL

The MachineEnable command is on and there is Y and O signals but no DH signal from thermostat. The unit is on Cool mode. The controller:

Activates Anti-Short Cycle Protection.
Energizes water valve/pump.
Energizes Supply fan at high speed,
Energizes the reversing valve.
Energizes the bleed-off valve.
Activates Random Start (if applicable).
Activates Anti-Short Cycle Protection.
Energizes the compressor.

MODE: DEHUM.

The MachineEnable command is on and there is O and DH signals but no Y signal from thermostat. The unit is on Dehum mode. The controller:

Activates Anti-Short Cycle Protection.
Energizes water valve/pump.
Energizes supply fan at high speed,
Energizes the reversing valve.
Energizes the compressor.
Energizes the reheat valve.
Activates Random Start (if applicable).
Activates Anti-Short Cycle Protection.

MODE: LOCK OUT

Compressor and supply fan are shutdown. The DDC controller will attempt faulty retry with all protections and delays applied. After 3 unsuccessful retries, the unit will remain in the lock out mode for 24 hours. The controller will attempt another retry. After 3 unsuccessful retries (after 24 hours), the controller will lock out the unit permanently. Hard reset is required.

MODE: DIAGNOSTIC

All outputs can be controlled manually via HMI. This mode is self-deactivated after 5 minutes.

BACNET® AND MODBUS VARIABLES

Data accessible through T1 of the DDC controller ***(Figure 1)***. Connectors are provided with the controller. Some configurations might be required.

BACNET® and MODBUS Variables					
BACnet Instance	Modbus Index	Variable Name	Variable Description	Type	Access
MSV0	NA	Software Revision	Property State text: x1 x2 x3 x4. Where x1 indicates major change; x2 indicates changes involve hardware, wirings, x3 indicates software only change; x4 indicates minor changes without hardware or wiring changes.	StateText[0]	ReadOnly
BV0	0	HP Status	Status of high-pressure switch: 0-normal, 1-high pressure	Binary/Coil	ReadOnly
BV1	1	LP Status	Status of low-pressure switch: 0-normal, 1-high pressure	Binary/Coil	ReadOnly
AV0	0	ExitWaterCoilTemp	Exit ware coil temperature in degree F	Analog/HoldingReg	ReadOnly
AV1	1	AirCoiltemp	Air coil temperature in degree F	Analog/HoldingReg	ReadOnly
BV2	2	Condensate Status	Status of condensate in drain pan (1-condensate detected, 0- not detected	Binary/Coil	ReadOnly
BV3	3	ReversingValue Status	Status of reversing valve (0-off, 1-on)	Binary/Coil	ReadOnly
AV2	2	SupplyAirTemp	Supply air temperature in degree F	Analog/HoldingReg	ReadOnly
MSV1	3	OpCode	Controller opcode, 11-OK, 12- high pressure, 13- low pressure 14- low temperature exit water, 15- low temperature of air coil, 16-condensate detected, 18- swapped temperature, 19- bad thermistor, 20-low cooling capacity, 21-high cooling capacity, 22-low heating capacity, 23-high heating capacity	MultiState/HoldingReg	ReadOnly
BV4	4	Ysignal Status	Status of Y signal	Binary/Coil	ReadOnly
BV5	5	Csignal Status	Status of C signal	Binary/Coil	ReadOnly
BV6	6	Osignal Status	Status of O signal	Binary/Coil	ReadOnly
BV7	7	DHsignal Status	Status of DH signal	Binary/Coil	ReadOnly
AV3	4	3TimesLockout	Count of 3 tries before lock out	Analog/HoldingReg	ReadOnly
MSV2	5	ModeofMachine	1-Standby, 2-FanOnly, 3-Heat, 4-Cool, 5-Cool/Dehum, 6-Full dehum, 7-Lock out, 8-Diagnostic	MultiState/HoldingReg	ReadOnly
BV8	8	TestModeStatus	Test mode status. If system is in testmode, all wait times are shortened. Testmode is self-disabled after 15 min of activation	Binary/Coil	ReadOnly
BV9	9	ReheatValveStatus	ReHeatValve status	Binary/Coil	ReadOnly
MSV3	6	FanMode	Fan status	MultiState/HoldingReg	ReadOnly
BV10	10	CompStatus	Compressor status	Binary/Coil	ReadOnly
MSV4	7	MachEnable	System Enable/Disable	MultiStat/HoldingReg	ReadOnly
BV11	11	BleedOffValveStatus	BleedOffValve status	Binary/Coil	ReadOnly
AV4	8	Tdryer	Dryer temp.	Analog/HoldingReg	ReadOnly
MSV5	NA	Program No.	Factory program number	StateText[0]	ReadOnly
MSV6	NA	Program Rev	Factory program rev	StateText[0]	ReadOnly
NA	11	ProgramNo1st char	First character of factory program number (1 A, 2 B, 3 C,…)	HoldingReg	ReadOnly
NA	12	ProgramNo 2nd char	Second character of factory program number (1-A, 2-B, 3-C,….)	HoldingReg	ReadOnly
NA	13	ProgramNo Numeric	Numeric part of program number (0-000, 1-001, 2-002)	HoldingReg	ReadOnly
NA	14	Program Rev	Factory program Rev (1-A, 2-B, 3-C…)	HoldingReg	ReadOnly
NA	15	Software Rev x1	x1 indicates major change	HoldingReg	ReadOnly
NA	16	Software Rev x2	x2 indicates changes involve hardware wirings	HoldingReg	ReadOnly
NA	17	Software Rev x3	x3 indicates software only change	HoldingReg	ReadOnly
NA	18	Software Rev x4	x4 indicates minor changes without hardware or wiring changes	HoldingReg	ReadOnly

Table 6 - BACnet® and Modbus Variables

SOFTWARE UPGRADE INSTRUCTION

All water source heat pump units with DDC option are shipped with the controller fully programmed and tested. There are instances such as an improved featured program or special application, when there is a need for software update. All software updates can be done via USB drive.

a. Copy all the *.ucf files are in the root directory of a totally empty USB 2.0 (32GB Max. FAT and FAT32) flash drive. Ensure that they are unzipped. Do *not* rename the files. They are:
   i. HMI.ucf
   ii. HMI4Web.ucf
   iii. HMIcomp.ucf
   iv. MBRTComp.ucf

b. With power off, insert the USB flash drive to the USB Interface of the Controller.
c. Push the Controller Button while apply the power to the controller.
d. Keep pushing down the Controller Button until the Controller Board LED light is solid red.
e. Remove the power from the Controller.
f. Wait for 10 seconds.
g. Apply the power to the Controller. The Controller is fully programmed and ready to function. The LED should be solid green.

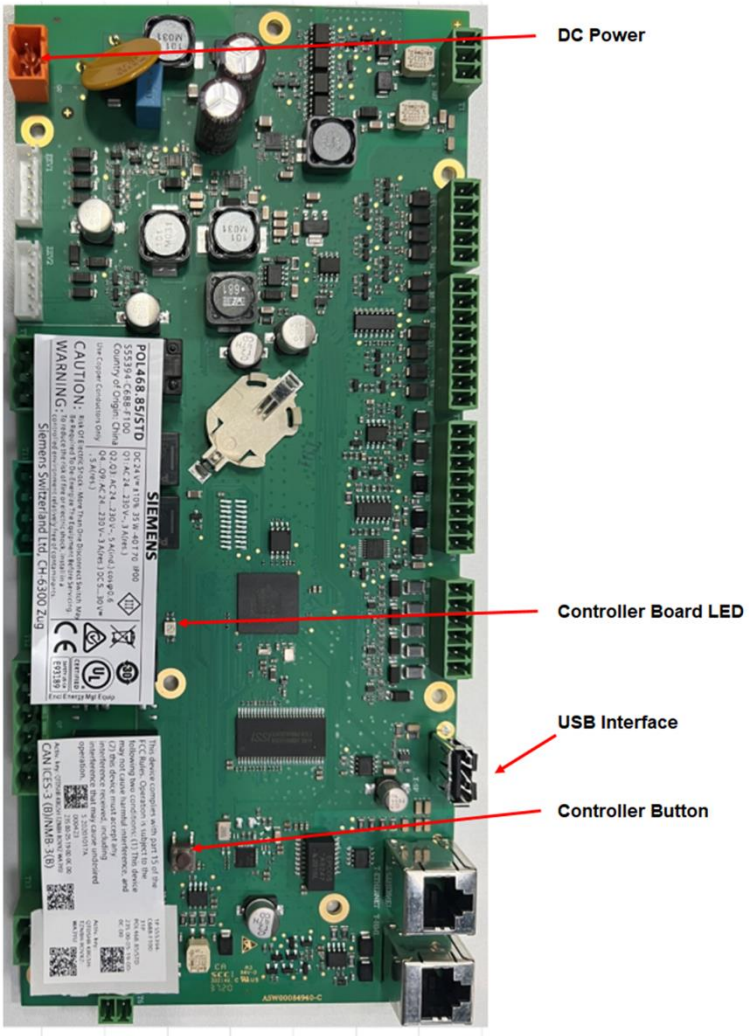


FIGURE 2 – Controller Software Upgrade Component Location

OPTIONAL – HMI SERVICE TOOL

CB1000 is an optional service tool with 4-wire twisted pair spiral cable (with one RJ45 plug) for magnetic mounting or hand-held operation. The service tool allows complete access to unit mode of operation, status of major components, operational codes, alarms, diagnostic and test features.

Dimension	173.2 x 95.5 x 21.6 mm.
Weight	350 g
Cable length	2.5 m (extended)

Operation

Temperature	-40°C to 70°C
Humidity	5% to 95% RH (non-condensing)

FIGURE 3 – CB1000 HMI Service Tool

CONNECTION AND POWER

CB1000 HMI Service Tool is powered by controller via local HMI connection. Simply connect CB1000 RJ45 to T-HMI of the controller ***(Figure 1).*** At first plug in, it takes few minutes for the CB1000 HMI Service Tool to download program/menu from controller. Once complete, Main overview page will be displayed.

CB1000 FUNCTION KEYS		
Key Name	Operation	Description
UP	Press	- To increase the input value
	Press and hold	- To enable the acceleration function to increase the value in a large extent
DOWN	Press	- To decrease the input value
	Press and hold	- To enable the acceleration function to decrease the value in a large extent
ENTER	Press	- To select one item - To confirm selection
	Press and hold	- To enter password
INFO	Press	- To go to home page
ALARM	Press	- To activate and switch to alarm page
ESC	Press	- To cancel modification - To exit to upper level of menu or back to previous page
	Press and hold	- To go to home page

Table 7 - CB1000 Function Keys

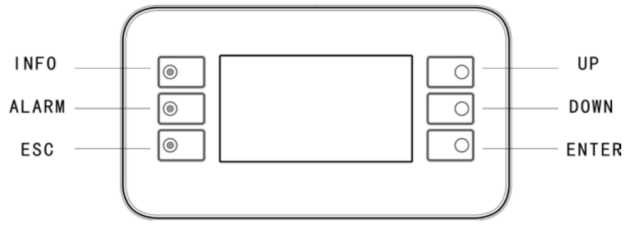


FIGURE 4 – CB1000 Function Keys

The 93x58 mm LCD screen displays menu pages. Each page contains several lines. Each line on a page can contain status only information or include changeable data fields.

When the cursor is on a line, the status only information is line is highlighted meaning the text is blue with white box around it. If the line contains changeable data field other than ►, press ENTER button and the changeable data field will be highlighted. Press UP or DOWN button to change its value. Press ENTER button to confirm selection.

If the changeable data field is ►, press ENTER button will display the correspondent menu page.

Press ESC button will lead to the previous page or move back one level.

OPTIONAL – HMI SERVICE TOOL CONTINUED

PASSWORDS

Various menu functions are accessible or inaccessible, depending on the access level of the user and the password they enter, if any. There are three access levels, Level 1 (No password), Level 2 and Level 3, with Level 3 having the highest level of access. Without entering the password, the user is at Level 1 and has access only the basic status menu items.

At any time or screen, press and hold ENTER button for 10 seconds to access the LOGIN page to entering password:

Use the UP or DOWN button to change the value of the number. Press Enter button to select the number and move to the next digit. All four digits must be selected to complete the Login.

Entering an invalid password is not acceptable. Retry again with proper password or press and hold ESC button to get out of the Login screen.

If proper password has been entered, press and hold ENTER button for more than 10 seconds will give you the chance to log off from the password level.

On any screen, the number of keys at the top right hand corner indicates the password level.

Level 1 - No key (blank)

Level 2 - 2 keys

Level 3 - 3 keys

Level 1 password is no password. Level 2 password is 8273. Contact the manufacturer for Level 3 password.

HMI MENU STRUCTURE

The following is a description of the CB1000 HMI Service Tool menu structure. These menus and items can all be displayed with LCD screen display. Menu items displayed will change based on the selected password level.

When the CB1000 HMI Service Tool is plugged to the controller, it will download the program and menus from the controller. This may take a few minutes. Upon completion, the Main overview page will be displayed.

MAIN OVERVIEW

Items in main overview ***(Table 8)*** contain basic software and program information.

Menu Display Name	Default Setting	Range	Password Level
HydroTech	-	-	None
SoftwareRev:	-	-	
programNo	-	-	
programRev	-	-	

Table 8 - Main Overview

HydroTech is a selectable item which will lead to HydroTech page ***(Table 9).***

SoftwareRev is a status only which indicates the software revision.

programNo is a status only which indicates the program number.

programRev is a status only which indicates the program revision.

HydroTech (page)
Items in HydroTech page ***(Table 9)*** contain basic unit operating status, diagnostic function and setting.

HMI MENU STRUCTURE CONTINUED

Menu Display Name	Default Setting	Range	Password Level
ModeOfMachine	-	Standby	None
		Fan Only	
		Heat	
		Cool	
		Dehum	
		Lock Out	
		Diagnostic	
OpCode	-	11	None
		12	
		13	
		14	
		15	
		16	
		18	
		19	
		20	
		21	
		22	
		23	
MachineEnable	-	On	None
		Off	
Status	-	-	None
Diagnostic	-	-	Level 2, 3
Setting	-	-	Level 2, 3

Table 9 - HydroTech

ModeOfMachine is a status only which indicates the status of operation mode. The unit can be in any operating modes shown. See *(Table 5)* for details of each mode.

OpCode is a status only which indicates the status of operation code. The unity can be in any operating codes shown. See *Table 4* for details of each operation code.

MachineEnable is a selectable which indicates the status of the enable function of the machine. To change, press ENTER button. Use the UP or DOWN to select and press ENTER button.

Status is a selectable item which will lead to STATUS page *(Table 10).*

Diagnostic is a selectable item which will lead to DIAGNOSTIC page *(Table 11)*. Item is available/viewable for Level 2 or Level 3 password only.

Setting is a selectable item which will lead to SETTING page *(Table 12).* Item is available/viewable for Level 2 or Level 3 password only.

Status (page)
Items in STATUS page *(Table 10)* contain the status of component information.

ModeOfMachine is a status only which indicates the status of operation mode. The unit can be in any operating modes shown. See *Table 5* for details of each mode.

TestModeEnable is a selectable which indicates the status of test mode function. If the status is On, the function activates the test mode to shorten the compressor wait times. This function lasts 15 minutes.

Y Signal is a status only which indicates the status of the compressor call from the thermostat.

O Signal is a status only which indicates the status of the cooling call from the thermostat.

DH Signal is a status only which indicates the status of the dehumidification call from the thermostat.

G Signal is a status only which indicates the status of the fan call from the thermostat.

CompressorStatus is a status only which indicates the status of the compressor contactor.

FanMode is a status only which indicates the status of the fan operating speed.

BleedOffValveStatus is a status only which indicates the status of the 3-way valve.

ReheatValveStatus is a status only which indicates the status of the reheat valve.

ExitWaterTemp(CO1) is a status only which indicates the leaving water temperature.

AirCoilTemp(CO2) is a status only which indicates the indoor coil leaving air temperature.

rTempDryer is a status only which indicates the dryer refrigerant temperature.

SupplyAirTemp is a status only which indicates the discharge/supply air temperature.

HighPressureSwitch is a status only which indicates the status of the refrigerant high pressure switch fault.

LowPressureSwitch is a status only which indicates the status of the refrigerant low pressure switch fault.

CondensateRes is a status only which indicates the resistance of the condensate overflow sensor.

HMI MENU STRUCTURE CONTINUED

Menu Display Name	Default Setting	Range	Password Level
ModeOfMachine	-	Standby	None
		Fan Only	
		Heat	
		Cool	
		Dehum	
		Lock Out	
		Diagnostic	
TestModeEnable	-	On	
		Off	
Y Signal	-	On	
		Off	
O Signal	-	On	
		Off	
DH Signal	-	On	
		Off	
G Signal	-	On	
		Off	
CompressorStatus	-	On	
		Off	
FanMode	-	Low	
		High	
BleedOffValveStatus	-	On	
		Off	
ReHeatValveStatus	-	On	
		Off	
ExitWaterTemp(CO1)	-	-	
AirCoilTemp(CO2)	-	-	
rTempDryer	-	-	
SupplyAirTemp	-	-	
HighPressureSwitch	-	On	
		Off	
LowPressureSwitch	-	On	
		Off	
CondensateRes	-	0 - 650 kOhm	
CondensateStatus	-	OK	
		Fault	
OpCode	-	11	
		12	
		13	
		14	
		15	
		16	
		18	
		19	
		20	
		21	
		22	
		23	
3TriesLockOut	-	0.0	
		1.0	
		2.0	
		3.0	

Table 10 - Status

OpCode is a status only which indicates the status of operation code. The unit can be in any operating codes shown. See ***Table 4*** on for details of each operation code.

3TriesLockOut is a status only which indicates the status of the number of faulty retries the unit has performed. See **Mode: Lock Out** in ***Page 10*** for more details. Once the status is 3.0, the unit will lock out. Hard restart (cycle the power) is required.

Diagnostic (page)

Items in DIAGNOSTIC page ***(Table 11)*** contain the selectable and status of diagnostic / troubleshooting components. Password level 2 or 3 is required for this page.

Menu Display Name	Default Setting	Range	Password Level
DiagnosticEnable	Off	Off	Level 2, 3
		On	
CpFnhVlvPmpEnable	Off	Off	
		On	
CompressorStatus	Off	Off	
		On	
FanModeStatus	High	High	
		Low	
ReheatValveEnable	Off	Off	
		On	
BleedOffValveEnable	Off	Off	
		On	
FanLowEnable	Off	Off	
		On	
WaterTemp(CO1)	-	-	
AirCoilTemp(CO2)	-	-	
DryerTemp	-	-	
SupplyAirTemp	-	-	

Table 11 -Diagnostic

CondensateStatus is a status only which indicates the status of the condensate overflow sensor fault.

HMI MENU STRUCTURE CONTINUED

DiagnosticEnable is a selectable which indicates the status of the diagnostic function. The default value is Off. To enable this function, press ENTER button. Use the UP or DOWN button to On and press the ENTER button. This function lasts 15 minutes. When the function is On, the 5 Enable functions (CpFnhVlvPumpEnable, ReheatValveEnable, BleedOffValveEnable and FanLowEnable) will be turned Off. This will allow for troubleshooting these components individually.

CpFnhVlvPmpEnable is a selectable which activates the compressor, fan (high speed) and water pump function. To change, DiagnosticEnable has to be On, press the ENTER button. Use the UP or DOWN button to On and press the ENTER button.

CompressorStatus is a status only which indicates the status of the compressor contactor.

FanModeStatus is a status only which indicates the status of the fan operating speed.

ReheatValveEnable is a selectable which activates the reheat valve. Reheat valve is a component of dehumidification. To change, DiagnosticEnable has to be On, press the ENTER button. Use the UP or DOWN button to On and press the ENTER button.

BleedOffValveEnable is a selectable which activates the bleed-off valve. To change, DiagnosticEnable has to be On, press the ENTER button. Use the UP or DOWN button to On and press the ENTER button.

FanLowEnable is a selectable which activates the low fan speed function. To change, DiagnosticEnable has to be On, press the ENTER button. Use the UP or DOWN button to On and press the ENTER button.

WaterTemp(CO1) is a status only which indicates the leaving water temperature.

AirCoilTemp(CO2) is a status only which indicates the indoor coil leaving air temperature. CondensateStatus is a status only which indicates the status of the condensate overflow sensor fault.

DryerTemp is a status only which indicates the dryer refrigerant temperature.

SupplyAirTemp is a status only which indicates the discharge/supply air temperature.

Setting (page)

Items in SETTING page (*Table 12*) contain the selectable and status of the parameter setting components. Password level 2 or 3 is required for this page.

Menu Display Name	Default Setting	Range	Password Level
Communication	-	-	Level 2, 3
ImperiaEngSystem	Passive	Passive	
		Active	
ParameterSave	Passive	Passive	
		Active	
ParaSaveSuccessful	No	No	
		Yes	
ParameterLoad	Passive	Passive	
		Partial	
		Full	
ParaLoadSuccessful	No	No	
		Yes	
<AdvancedSetting>	-	-	Level 3
FactoryReset	Off	Off	
		On	
Restart	-	-	Level 2, 3

Table 12 - Setting

Communication is a selectable to set the BACnet/Modbus communication components. Press ENTER button will lead to Communication page (*Table 13*).

ImperialEngSystem is a selectable which indicates the status of the unit of measurements. The default is SI (System International) unit (Temperature is expressed in °C). To change or set, press the ENTER button and select Active to change to IP (Imperial or Inch/Pound) unit which the temperature is expressed in °F. Soft restart is required to ensure all internal parameters get converted. Select Restart (at the end of the page). Press ENTER button and select Execute.

HMI MENU STRUCTURE CONTINUED

ParameterSave is a selectable which enables the setting parameters save function. With the USB flash drive in the controller USB Interface, current parameter setting data in the controller can be uploaded to the USB flash drive by pressing the ENTER button and select Active.

ParaSaveSuccessful is a status only indicates the status if the setting parameters save function performed successfully. If the status is **Yes** after performing ParameterSave function, all parameters are successfully uploaded and save to the USB. If the status is **No**, repeat ParameterSave function.

ParameterLoad is a selectable which enables the setting parameters load function. To enable or load the parameters to the controller, with the USB flash drive containing setting parameter data in the controller USB Interface, press ENTER button and select Active.

ParaLoadSuccessful is s status only indicates the status if the setting parameters load function performed successfully. If the status is **Yes** after performing ParameterLoad function, all parameters are successfully downloaded from the USB to the controller. If the status is **No**, repeat ParameterLoad function.

AdvancedSetting is a selectable to review and set the communication and authorization parameters. Press ENTER button will lead to Communication Overview page (***Table 17***). Password level 3 is required for this function.

FactoryReset is a selectable to reset the field setting back to factory defaults. To reset, press the ENTER. Select ON and press the ENTER button. All the field setting parameters will be reset to factory defaults.

Restart is a selectable which when selected will soft restart the unit. Press ENTER button and select Execute to perform this function. Restart is required after change of any setting parameters.

Communication (page)
Items in Communication page (***Table 13***) contain the selectable and status of the BACnet/Modbus setting parameters. Password level 2 or 3 is required for this page.

Menu Display Name	Default Setting	Range	Password Level
IpConfig	-	-	Level 2, 3
ModeOfComm	BacIp&ModRtu	BacIp&ModRtu BacMstp	Level 2, 3
BacnetMstp	Active	Active Passive	Level 3
BacNetMstpSettings	-	-	Level 2, 3
ModBusRtuSettings	-	-	Level 2, 3
Restart	-	-	Level 2, 3

Table 13 - Communication

IpConfig is a selectable to set the communication IP configuration. Press ENTER button will lead to IPConfig page (***Table 14***).

ModeOfComm is a selectable to set mode of communications; set to **BacIp&ModRtu** to have Bacnet Ip and Modbus Rtu communications; or **BacNetMstp** to enable Bacnet Mstp communication (**BacNetMstp** must be set to Active).

BacNetMstp is a selectable to set Bacnet Mstp communications active.

ModBus IP is always available. Either BACnet IP or BACnet Mstp can be active but not both at the same time. Either Modbus Rtu or BACnet Mstp can be active but not both at the same time.

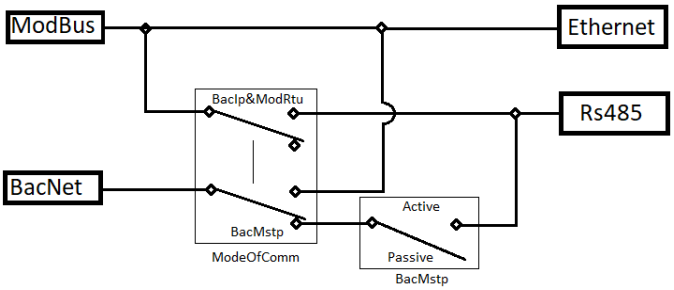


FIGURE 5 – Setting mode of communications

HMI MENU STRUCTURE CONTINUED

BacnetMstpSetting is a selectable to set the communication BACnet MSTP parameters. Press ENTER button will lead to BacNetMstpSetting page (*Table 15*).

ModbusRtuSetting is a selectable to set the communication Modbus RTU parameters. Press ENTER button will lead to ModbusRtuSetting page (*Table 16*).

Restart is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is highly recommended to restart the unit if there are new setting parameters in order for the program to run with new parameters.

IPConfig (page)
Items in IPConfig page (*Table 14*) contain the selectable and status of the internet protocol (IP) configuration setting parameters.

Menu Display Name	Default Setting	Range	Password Level
DHCP	Passive	Passive Active	Level 2, 3
IP address	192.168.1.42	-	
Subnet mask	255.255.255.0	-	
Default gateway	192.168.1.1	-	
Preferred DNS server	194.25.2.129	-	
Alternate DNS server	194.25.2.130	-	
Host name	POL468_0D0C7A	-	
MAC address	00-05-19-0D-0C-7A	-	
Link	Passive	-	
100 Mbit	Passive	-	
After modification of value Restart required!			

Table 14 - IPConfig

DHCP is a selectable which sets the DHCP (Dynamic Host Configuration Protocol), Active (Dynamic) or Passive (Static). With DHCP in Active state, the controller is enabling the network to assign IP address. DHCP in Passive state will allow the ability to manually change the IP address. To change from the current state, press ENTER button, use the UP or DOWN button to select different mode and press ENTER button. Soft restart is required after the change.

IP address is a selectable which sets the current IP address. To change the IP address, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper address. Soft restart is required after the change.

Subnet mask is a selectable which sets the current client subnet mask. To change the subnet mask, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper subnet mask. Soft restart is required.

Default gateway is a selectable which sets the current default gateway. To change the default gateway, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper default gateway. Soft restart is required after the change.

Preferred DNS server is a selectable which sets the current preferred DNS server. To change the preferred DNS server, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper preferred DNS server. Soft restart is required after the change.

Alternate DNS server is a selectable which sets the current alternate DNS server. To change the alternate DNS server, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper alternate DNS server. Soft restart is required after the change.

Host name is a status only which indicates the current host name.

MAC address is a status only which indicates the current MAC address.

Link is a status only which indicates the status of link parameter.

HMI MENU STRUCTURE CONTINUED

100 Mbit is a status only which indicates the status of 100 Mbit parameter.

After modification of value Restart required! is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

ImperialEngSystem is a selectable which indicates the status of the unit of measurements. The default is SI (System International) unit (Temperature is expressed in °C). To change or set, press the ENTER button and select Active to change to IP (Imperial or Inch/Pound) unit which the temperature is expressed in °F. Soft restart is required to ensure all internal parameters get converted. Select Restart (at the end of the page). Press ENTER button and select Execute.

BacNetMstpSetting (page)
Items in BacNetMstpSetting page (*Table 15*) contain the selectable of the BACnet MSTP (Master Slave Token Passing) setting parameters.

Menu Display Name	Default Setting	Range	Password Level
CommBaudRate	38400	9600	Level 2, 3
		19200	
		38400	
		57600	
		115200	
DeviceAddress	9.0	0.0 - 254.0	
MaxMaster	127.0	0.0 - 127.0	
MaxInfoFrame	10.0	1.0 -32.0	
Restart	-		

Table 15 - BacNetMstpSetting

CommBaudRate is a selectable which sets the current communication Baud rate. To set or change the communication Baud rate, press ENTER button, use the UP or DOWN button to select the desired Baud rate and press ENTER button. Soft restart is required after the change.

DeviceAddress is a selectable which isets the current device ID. For BACnet MSTP, the device address is 0-127. To set or change the device ID, press ENTER button, use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

MaxMaster is a selectable which sets the current Max Master. To set or change the Max Master, press ENTER button, use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

MaxInfoFrame is a selectable which sets the current Max Information Frame. To set or change the Max Information Frame, press ENTER button, use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Restart is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

ModBusRtuSetting (page)
Items in ModBusRtuSetting page (*Table 16*) contain the selectables of the Modbus RTU (Remote Terminal Unit) setting parameters.

Menu Display Name	Default Setting	Range	Password Level
CommBaudRate	38400	9600	Level 2, 3
		19200	
		38400	
		57600	
		115200	
DeviceAddress	9.0	0.0 - 254.0	
ModBusParity	None	Even	
		Odd	
		None	
ModBusStopBit	1StopBit	1StopBit	
		2StopBit	
Restart	-		

Table 16 - ModBusRtuSetting

HMI MENU STRUCTURE CONTINUED

ComBaudRate is a selectable which sets the current communication Baud rate. To set or change the communication Baud rate, press ENTER button, use the UP or DOWN button to select the desired Baud rate and press ENTER button. Soft restart is required after the change.

DeviceAddress is a selectable which sets the current device ID. For Modbus RTU, the device address is 1-247. To set or change the device ID, press ENTER button, use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

ModBusParity is a selectable which sets the current Modbus parity. To set or change the Modbus parity, press ENTER button, use the UP or DOWN button to select the desired Modbus parity and press ENTER button. Soft restart is required after the change.

ModBusStopBit is a selectable which sets the current Modbus Stop Bit. To set or change the Modbus Stop Bit, press ENTER button, use the UP or DOWN button to select the desired Modbus Stop Bit and press ENTER button. Soft restart is required after the change.

Restart is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

Communication Overview (page)
Items in Communication overview page (*Table 17*) contain the selectable and status of communication parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Please contact the manufacturer for password. 100 Mbit is a status only which indicates the status of 100 Mbit parameter.

Comm.module overview is a selectable. Press ENTER button will lead to Com.module overview page (*Table 18*).

IP-Config is a selectable which indicates the status of IP (Internet Protocol) configuration parameters. To view, press ENTER button. This will lead to IP-Config page (*Table 19*).

Menu Display Name	Default Setting	Range	Password Level
Comm.module overview	-	-	Level 3
IP-Config	-	-	
192.168.1.42			
POL468_0D0C7A			
WLAN-Config	AccessPoi	-	
0.0.0.0			
Modbus RTU (RS485)	-	-	
Climatix IC	-	-	
BACnet	OK	-	
Authorization	****	-	

Table 17 - Communication Overview

WLAN-Config is a selectable which indicates the status of WLAN (Wireless Local Area Network) configuration parameters. To view, press ENTER button. This will lead to WLAN-Config page (*Table 21*).

Modbus RTU (RS485) is a selectable which indicates the status of Modbus RTU (Remote Terminal Unit) configuration parameters. To view, press ENTER button. This will lead to Modbus RTU page (*Table 23*).

Climatix IC is a selectable which indicates the status of Climatix IC (Remote Monitoring and Intelligent Diagnostics) configuration parameters. To view, press ENTER button. This will lead to CSL-Config page (*Table 24*).

BACnet is a selectable which indicates the status of BACnet (Building Automation and Control network) configuration parameters. To view, press ENTER button. This will lead to BACnet page (*Table 15)*.

Comm.module overview (page)
Items in Comm.module overview page (*Table 18*) contain the selectable reminding that soft restart is required after modification of parameters. To restart, move the cursor to Restart required!, press ENTER button, select Execute and press ENTER button.

HMI MENU STRUCTURE CONTINUED

Menu Display Name	Default Setting	Range	Password Level
After use default or After modification of value Restart required!			Level 3

Table 18 - Com.module Overview

IP-Config (page)
Items in IP-Config page (Table 19) contain the selectable and status of IP (Internet Protocol) configuration parameters. Password level 3 is required for this page.

Menu Display Name	Default Setting	Range	Password Level
DHCP	-	Passive Active	Level 3
IP address	-	-	
Subnet mask	-	-	
Default gateway	-	-	
Preferred DNS server	-	-	
Alternate DNS server	-	-	
Host name	-	-	
MAC address	-	-	
Link	Passve	-	
100 Mbit	Passive	-	
Advanced	-	-	
After modification of value Restart required!			

Table 19 - IP-Config

DHCP is a selectable which sets the DHCP (Dynamic Host Configuration Protocol), Active (Dynamic) or Passive (Static). With DHCP in Active state, the controller is enabling the network to assign IP address. DHCP in Passive state will allow the ability to manually change the IP address. To change from the current state, press ENTER button, use the UP or DOWN button to select different mode and press ENTER button. Soft restart is required after the change.

IP address is a selectable which sets the IP address. To change the IP address, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper address. Soft restart is required after the change.

Subnet mask is a selectable which sets the client subnet mask. To change the subnet mask, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper subnet mask. Soft restart is required.

Default gateway is a selectable which indicates the current default gateway. To change the default gateway, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper default gateway. Soft restart is required after the change.

Preferred DNS server is a selectable which indicates the current preferred DNS server. To change the preferred DNS server, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper preferred DNS server. Soft restart is required after the change.

Alternate DNS server is a selectable which indicates the current alternate DNS server. To change the alternate DNS server, ensure that DHCP is in Passive state then move the cursor to digit that needs to change. Use the UP or Down button to select the number and press ENTER button. Repeat to other digit until getting the proper alternate DNS server. Soft restart is required after the change.

Host name is a status only which indicates the current host name.

MAC address is a status only which indicates the current MAC address.

Link is a status only which indicates the status of link parameter.

100 Mbit is a status only which indicates the status of 100 Mbit parameter.

HMI MENU STRUCTURE CONTINUED

After modification of value Restart required! is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

Menu Display Name	Default Setting	Range	Password Level
Tool Access	Active	Active	Level 3
		Passive	
Port	4242	0 - 65535	
Authorization			
+Administrator			
User name		ADMIN	
Password			
+Web HMI (HTTP)	Active	Active	
		Passive	
Port	80	0 - 65535	
User name	WEB		
Password			
+FTP	Active	Active	
		Passive	
Port	21	0 - 65535	
User name	ADMIN		
Password			
+TFTP	Active	Active	
		Passive	
Port	69	0 - 65535	
+JSON			
Mapping	19384	0 - 65535	
User name	JSON		
Password			
Po. Idle timeout	3600s	0s - 65535s	
After modification of value Restart required!			

Table 20 - aIP-Config

Tool Access is a selectable which sets the tool access function. To set or change the tool access function, press ENTER button, select Active or Passive. Then press Enter button. Soft restart is required after the change.

Tool Access Port is a selectable which sets the communication port. To set or change the port, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Tool Access Authorization is a selectable which sets the authorization password. To set or change the authorization, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Administrator User name is a selectable which sets the administrator user name. To set or change the user name, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Administrator Password is a selectable which sets the administrator password. To set or change the password, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Web HMI (HTTP) is a selectable which sets the Web HMI internet access. To set or change the Web HMI, press ENTER button, select Active or Passive. Then press Enter button. Soft restart is required after the change.

Web HMI (HTTP) Port is a selectable which sets the Web HMI communication port. To set or change the port, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Web HMI (HTTP) User name is a selectable which sets the Web HMI user name. To set or change the user name, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Web HMI (HTTP) Password is a selectable which sets the Web HMI password. To set or change the password, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

HMI MENU STRUCTURE CONTINUED

FTP is a selectable which sets the TP (file transfer protocol). To set or change the FTP, press ENTER button, select Active or Passive. Then press Enter button. Soft restart is required after the change.

FTP Port is a selectable which sets the FTP communication port. To set or change the port, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

FTP User name is a selectable which sets the FTP user name. To set or change the user name, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

FTP Password is a selectable which sets the FTP password. To set or change the password, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

TFTP is a selectable which sets the TFTP (trivial file transfer protocol). To set or change the TFTP, press ENTER button, select Active or Passive. Then press Enter button. Soft restart is required after the change.

TFTP Port is a selectable which sets the TFTP communication port. To set or change the port, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

JSON Mapping is a selectable which sets the JSON (open standard file format and data interchange format) mapping. To set or change the mapping, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

JSON User name is a selectable which sets the t JSON user name. To set or change the user name, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

JSON Password is a selectable which sets the TFTP password. To set or change the password, move the cursor to digit that needs to change. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

Po. idle timeout is a selectable which sets the port idle timeout. To set or change the timeout, press ENTER button. Use the UP or DOWN button to increase or decrease the value and press ENTER button. Soft restart is required after the change.

After modification of value Restart required! is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

WLAN-Config (page)
Items in WLAN-Config page (*Table 21*) contain the selectable and status of WLAN (Wireless communication to form local area network) configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

Menu Display Name	Default Setting	Range	Password Level
Mode			Level 3
DHCP	Active	Active	
		Passive	
IP Adress			
Subnet mask			
Default gateway			
Preferred DNS server			
Alternate DNS server			
MAC address			
Advance			

Table 21 - WLAN-Config

Mode is a status only which indicates the current WLAN mode.

DHCP is a status only which indicates the current DHCP (Dynamic Host Configuration Protocol).

HMI MENU STRUCTURE CONTINUED

IP address is a status only which indicates the current address.

Subnet mask is a status only which indicates the current client subnet mask.

Default gateway is a status only which indicates the current default client subnet mask.

Preferred DNS server is a status only which indicates the current preferred DNS (Domain Name System) server.

Alternate DNS server is a status only which indicates the current alternate DNS (Domain Name System) server.

MAC address is a status only which indicates the current MAC (Media Access Control) address.

Advance is a selectable for more advance WLAN configuration parameters. Press ENTER button will lead to aWLAN-Config page (*Table 22*).

aWLAN-Config (advance WLAN-Config page)
Items in aWLAN-Config (*Table 22*) contain the selectable of advance WLAN configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

Menu Display Name	Default Setting	Range	Password Level
USB power	Yes	Yes No	-
Enable	Yes	Yes No	
Tool enable	Yes	Yes No	
HTTP enable	Yes	Yes No	
After modification of value Restart required!			

Table 22 - aWLAN-Config

USB power is a selectable which sets the USB power option. To set or change the USB power, press ENTER button. Use the UP or Down button to select the desired option and press ENTER button. Soft restart is required after the change.

Enable is a selectable which sets the WLAN mode enable option. To set or change the WLAN mode enable, press ENTER button. Use the UP or Down button to select the desired option and press ENTER button. Soft restart is required after the change.

Tool enable is a selectable which sets the Tool enable option. To set or change the Tool enable option, press ENTER button. Use the UP or Down button to select the desired option and press ENTER button. Soft restart is required after the change.

HTTP enable is a selectable which sets the HTTP (Hypertext Transfer Protocol) enable option. To set or change the HTTP enable option, press ENTER button. Use the UP or Down button to select the desired option and press ENTER button. Soft restart is required after the change.

After modification of value Restart required! is a selectable to soft restart the unit. Press ENTER button and select Execute to perform this function. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

Modbus RTU (RS485) (page)
Items in Modbus RTU (RS485) page (*Table 23*) contain the selectable reminding that soft restart is required after modification of parameters. To restart, move the cursor to Restart required!, press ENTER button, select Execute and press ENTER button.

Menu Display Name	Default Setting	Range	Password Level
After use default or After modification of value Restart required!			Level 3

Table 23 - Modbus RTU (RS485)

CSL-Config
Items in CSL-Config (*Table 19*) contain the selectable and status of Climatix configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

HMI MENU STRUCTURE CONTINUED

Enable is a selectable which indicates the current Climatix configuration enable function. To set or change the configuration enable function, press ENTER button. Use the UP or DOWN button to select the desired value and press ENTER button. Press the ESC button to go back the previous page.

Serial number is a status only which indicates the current serial number of the controller.

Activation key is a status only which indicates the current activation key of the controller.

Communication is a status only which indicates the status of state communication.

Menu Display Name	Default Setting	Range	Password Level
Enable		Disable	Level 3
		Depricated	
		Enable	
Serial number			
Activation key			
+State			
Communication			
Cloud server			
Tenant key			
Upgrade allowed		Wait	
		Yes	
		No	
Upgrade request		Active	
		Passive	
Advance			
Application info			

Table 24 - CSL-Config

Cloud server is a status only which indicates the status of state cloud server.

Tenant key is a selectable which indicates the status of the tenant key. To change, the tenant key, move the cursor to character or digit. Use the UP or DOWN button to select and press the ENTER button.

Upgrade allowed is a selectable which indicates the status of upgrade allowed function. To change, press ENTER button. Use the UP or DOWN button to the desired value and press ENTER button. Press the ESC button to go back the previous page.

Upgrade request is a selectable which indicates the status of upgrade request function. To change, press ENTER button. Use the UP or DOWN button to the desired value and press ENTER button. Press the ESC button to go back the previous page.

Advance is a selectable for more advance Climatix configuration parameters. Press ENTER button will lead to aCSL-Config page (*Table 25*).

Application info is a selectable for application information. Press the ENTER button will lead to aApplication info page (*Table 26*).

aCSL-Config (advance CSL-Config page)
Items in aCSL-Config page (*Table 25*) contain the selectable and status of advanced Climatix configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

Menu Display Name	Default Setting	Range	Password Level
Server name/IP adr.	Disable		Level 3
Min.send intervall	30s	0 - 65535s	
Reconnect time	15s	0 - 65535s	
Communication	16384	0 - 65535	
Possible languages			
Certificate SSL			
Options	-		
Idle timeout RTA	3600s	0 - 65535s	

Table 25 - aCSL-Config

Server name/IP adr. is a status only which indicates the Climatix server IP address.

Min. send interval is a selectable which sets the minimum send interval. To set or change, press ENTER button. Use the UP or DOWN button to the desired value and press ENTER button. Press the ESC button to go back the previous page.

Reconnect time is a selectable which sets the reconnect time. To set or change, press ENTER button. Use the UP or DOWN button to the desired value and press ENTER button. Press the ESC button to go back the previous page.

HMI MENU STRUCTURE CONTINUED

Communication is a selectable which sets the communication port. To change, press ENTER button. Use the UP or DOWN button to the desired value and press ENTER button. Press the ESC button to go back the previous page.

Possible languages is a selectable which indicates the possible languages when available.

Certificate SSL is a selectable which sets the SSL (Secure Sockets Layer) certificate. To change, press ENTER button. There are 4 selections: *Domain*, *Time*, *Selfsigned* and *RootCA*. Use the UP or DOWN button to the desired item and press the ENTER button to select. There will be a check mark in front the item that you selected. Repeat until all the desired are checked. Then move the cursor to *Done* and press the ENTER button.

Options is a selectable which sets the options of Climatix. The default is NA, which 0x0000 is displayed. To change, press ENTER button. Move the cursor to RTA and press the ENTER button. Check mark will appear in front of RTA. Press the ESC button to go back the previous page.

Idle timeout RTA is a selectable which sets the idle timeout RTA. To change, press the ENTER button. Use the UP or DOWN button to the desired value and press the ENTER button. Press the ESC button to go back the previous page.

aApplication info (advance Application info page)
Items in aApplication info page (*Table 26*) contain the selectable and status of application information. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

Menu Display Name	Default Setting	Range	Password Level
Plant info	POL6x8		Level 3
Site name	#		
Street	#		
City	#		

Table 26 - aApplication info

Plant info is a selectable which sets the plant information. To change, move the cursor to the first character. Press the ENTER button. Use the UP or DOWN button to the desired value and press the ENTER button. Repeat until all the characters matched the desired. Press the ESC button to go to the next item. If there is no more changes, press the ESC button to go back the previous page.

Site name is a selectable which sets the site name. To set or change, move the cursor to the first character. Press the ENTER button. Use the UP or DOWN button to the desired value and press the ENTER button. Repeat until all the characters matched the desired. Press the ESC button to go to the next item. If there is no more changes, press the ESC button to go back the previous page.

Street is a selectable which sets the address number and street name. To set or change, move the cursor to the first character. Press the ENTER button. Use the UP or DOWN button to the desired value and press the ENTER button. Repeat until all the characters matched the desired. Press the ESC button to go to the next item. If there is no more changes, press the ESC button to go back the previous page.

City is a selectable which sets the address city name. To set or change, move the cursor to the first character. Press the ENTER button. Use the UP or DOWN button to the desired value and press the ENTER button. Repeat until all the characters matched the desired. Press the ESC button to go to the next item. If there are no more changes, press the ESC button to go back the previous page.

BACnet (page)
Items in BACnet page (*Table 27*) contain the selectable and status of BACnet (Building Automation and Control networks) configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact the manufacturer for password.

HMI MENU STRUCTURE CONTINUED

Menu Display Name	Default Setting	Range	Password Level
Application.state			Level 3
Device name			
Device ID	1098746	0 -4194302	
+TCP/IP:	Passive	Passive	
		Active	
Port	47800	0 - 65535	
+RS485:2	Active	Passive	
		Active	
MS/TP address	9	0 - 255	
Baud rate	38400	9600 - 49664	
Max.master	127	0 -127	
Max. info frames	10	0 - 32	
Advanced			
+General:			
Database revision	1		
Config.CRC	39801		
Restart BACstac			
After modification of value Restart required!			

Table 27 - BACnet

Application state is a status only which indicates the BACnet application state.

Device name is a selectable which sets the BACnet device name. To set or change, move the cursor to the first character and press the ENTER button. Use the UP or DOWN button to the desired character and press the ENTER button. Repeat for the next character. When all characters have been changed, press the ESC button to go back to the next BACnet parameters.

Device ID is a selectable which sets the BACnet device ID. To set or change, press the ENTER button. Use the UP or DOWN button to select the desired value and press the ENTER button.

TCP/IP is a selectable which sets the BACnet TCP/IP function. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button and the check mark will appear in front of the selected value. Press the ESC button to go back the previous page.

Port is a selectable which sets the BACnet TCP/IP port. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

RS485-2 is a selectable which sets the BACnet RS485-2 function. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button and the check mark will appear in front of the selected value. Press the ESC button to go back the previous page.

MS/TP address is a selectable which sets the BACnet RS485-2 MS/TP address. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Baud rate is a selectable which sets the BACnet RS485-2 Baud rate. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Max master is a selectable which sets the BACnet RS485-2 Max master. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Max. info frames is a selectable which sets the BACnet RS485-2 Max. info frames. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Advanced is a selectable for more advanced BACnet configuration parameters. Press ENTER button will lead to aBACnet page (*Table 28*).

Database revision is a status only which indicates the current database revision.

Config CRC is a status only which indicates the current CRC configuration.

Restart BACstac is a selectable which indicates the restart function. To execute, press the ENTER button. Use the UP or Down button to select *Execute* and press the ENTER button.

HMI MENU STRUCTURE CONTINUED

After modification of value Restart required! is a selectable to soft restart the unit. To perform, press the ENTER button and select *Execute* and press the ENTER button. It is necessary to restart the unit if there are new setting parameters in order for the program to run with new parameters.

aBACnet (page)
Items in aBACnet page (*Table 28*) contain the selectable and status of more advanced BACnet (Building Automation and Control networks) configuration parameters. Items in this section require Network Administrator knowledge and permission. Password level 3 is required for this page. Contact First Co for password.

Menu Display Name	Default Setting	Range	Password Level
+Foreign device	Passive	Passive	Level 3
		Active	
BBMD IP	0.0.0.0		
BBMD Port	47808	0 - 65535	
+APDU			
Timeout	6000	1000 - 60000	
Segm.timeout	5000	500 - 60000	
Max.length	480	50 - 1024	
Number of retries	3	0 - 65535	
+Segm.support	Transmit	Both	
		Transmit	
		Receive	
		No	
Max. segments	4	2 - 8	
Character set	ANSI/UTF-8	Auto	
		ANSI/UTF-8	
		ISO-8859-1	
		UCS-2	
Mapping	16384	0 - 65535	
Security level	0	0 - 65535	

Table 28 -a BACnet

Foreign device is a selectable which sets the BACnet foreign device function. To set or change, press the ENTER button. Use the UP or DOWN button to select the value, Press the ENTER button and the check mark will appear in front the selected value. Press the ESC button to go back the previous page.

BBMD IP is a selectable which sets the BACnet foreign device BBMD IP (Broadcast Management Device) or broadcast smuggler. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

BBMD Port is a selectable which sets the BACnet foreign device BBMD IP router port. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Timeout is a selectable which sets the BACnet Application Layer (APDU) timeout. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Segm.timeout is a selectable which sets the BACnet Application Layer (APDU) segmentation timeout. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Max.length is a selectable which sets the BACnet Application Layer (APDU) maximum length. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Number of retries is a selectable which sets the BACnet Application Layer (APDU) number of retries. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

Segm.support is a selectable which sets the BACnet segmentation support function. To set or change, press the ENTER button. Use the UP or DOWN button to select the value, Press the ENTER button and the check mark will appear in front the selected value. Press the ESC button to go back the previous page.

HMI MENU STRUCTURE CONTINUED

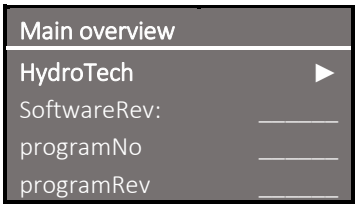
Max. segments is a selectable which sets the BACnet segmentation support maximum segments. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

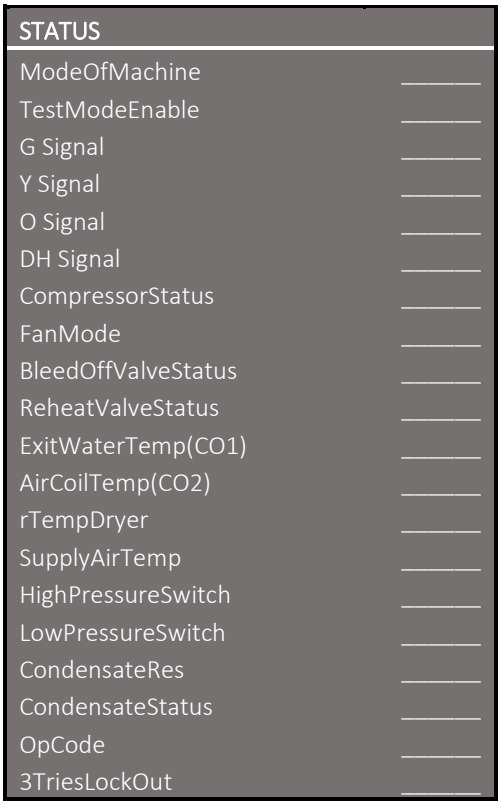
Character set is a selectable which sets the BACnet encoding character set. To set or change, press the ENTER button. Use the UP or DOWN button to select the value, Press the ENTER button and the check mark will appear in front the selected value. Press the ESC button to go back the previous page.

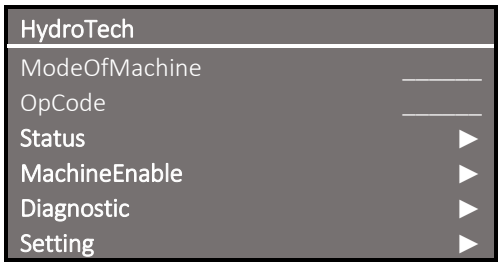
Mapping is a selectable which sets the BACnet mapping. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page.

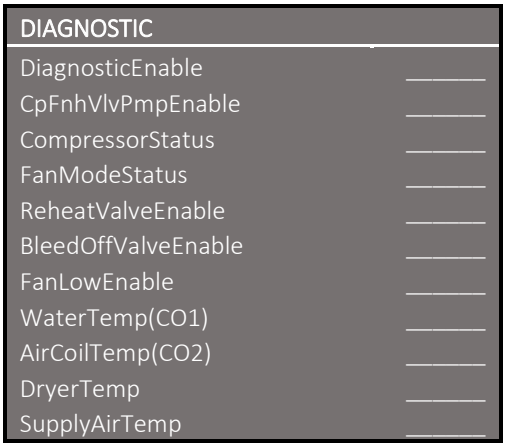
Security level is a selectable which sets the BACnet security level. To set or change, press the ENTER button, Use the UP or DOWN button to select the value. Press the ENTER button to go back the previous page

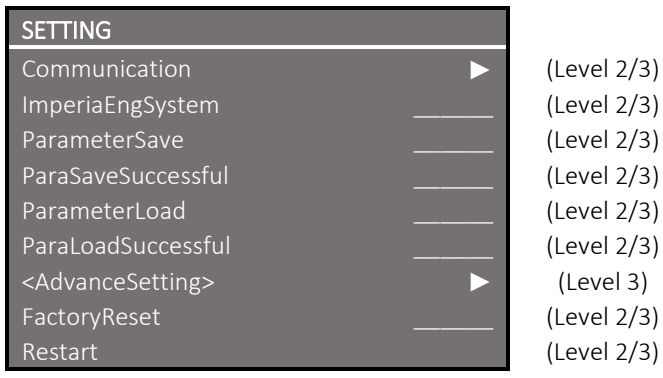
HMI SERVICE TOOL - MAIN MENU STRUCTURE











HMI SERVICE TOOL - SETTING PAGE SUB-MENU STRUCTURE

Communication	
IpConfig ▶	(Level 2/3)
ModeOfComm _____	(Level 2/3)
BacnetMstp _____	(Level 3)
BacNetMstpSettings ▶	(Level 2/3)
ModBusRtuSettings ▶	(Level 2/3)
Restart	(Level 2/3)

Communication Overview		
Com.module overview ▶		(Level 3)
IP-Config ▶		(Level 3)
>	192.168.1.42	(Level 3)
>	POL468_0D0C7A	(Level 3)
WLAN-Config	noDevice ▶	(Level 3)
>	0.0.0.0	(Level 3)
Modbus RTU (RS485) ▶		(Level 3)
Climatix IC ▶		(Level 3)
BACnet	OK ▶	(Level 3)
Authorization		(Level 3)
>	****	(Level 3)

HMI SERVICE TOOL - COMMUNICATION PAGE SUB-MENU STRUCTURE

IpConfig		
DHCP _____		(Level 2/3)
IP address _____		(Level 2/3)
>	*.*.*.*	(Level 2/3)
Subnet mask		(Level 2/3)
>	*.*.*.*	(Level 2/3)
Default gateway		(Level 2/3)
>	*.*.*.*	(Level 2/3)
Preferred DNS server		(Level 2/3)
>	*.*.*.*	(Level 2/3)
Alternate DNS server		(Level 2/3)
>	*.*.*.*	(Level 2/3)
Host name		(Level 2/3)
>	POL468_0D0C7A	(Level 2/3)
MAC address		(Level 2/3)
>	00-05-19-0D-0C-7A	(Level 2/3)
Link _____		(Level 2/3)
100 Mbit _____		(Level 2/3)
After modification of value		(Level 2/3)
Restart required!		(Level 2/3)

BacNetMstpSettings		
ComBaudRate _____		(Level 2/3)
DeviceAddress _____		(Level 2/3)
MaxMaster _____		(Level 2/3)
MaxInfoFrame _____		(Level 2/3)
Restart		(Level 2/3)

ModBusRtuSettings		
ComBaudRate _____		(Level 2/3)
DeviceAddress _____		(Level 2/3)
ModbusParity _____		(Level 2/3)
ModBusStopBit _____		(Level 2/3)
Restart		(Level 2/3)

HMI SERVICE TOOL - COMMUNICATION OVERVIEW PAGE SUB-MENU STRUCTURE

Comm.module Overview	
After use default or	(Level 3)
After modification of value	(Level 3)
Restart required!	(Level 3)

IP-Config		
DHCP	_____	(Level 3)
IP address		(Level 3)
>	*.*.*.*	(Level 3)
Subnet mask		(Level 3)
>	*.*.*.*	(Level 3)
Default gateway		(Level 3)
>	*.*.*.*	(Level 3)
Preferred DNS server		(Level 3)
>	*.*.*.*	(Level 3)
Alternate DNS server		(Level 3)
>	*.*.*.*	(Level 3)
Host name		(Level 3)
>	POL468_0D0C7A	(Level 3)
MAC address		(Level 3)
>	00-05-19-0D-0C-7A	(Level 3)
Link	_____	(Level 3)
100 Mbit	_____	(Level 3)
Advanced	▶	(Level 3)
After modification of value		(Level 3)
Restart required!		(Level 3)

WLAN-Config		
Mode	_____	(Level 3)
DHCP	_____	(Level 3)
IP Adress		(Level 3)
>	*.*.*.*	(Level 3)
Subnet mask		(Level 3)
>	*.*.*.*	(Level 3)
Default gateway		(Level 3)
>	*.*.*.*	(Level 3)
Preferred DNS server		(Level 3)
>	*.*.*.*	(Level 3)
Alternate DNS server		(Level 3)
>	*.*.*.*	(Level 3)
MAC address		(Level 3)
>	00-00-00-00-00-00	(Level 3)
Advance	▶	(Level 3)

Modbus RTU (RS485)	
After modification of value	(Level 3)
Restart required!	(Level 3)

BACnet		
Application.state	_____	(Level 3)
Device name		(Level 3)
>	POL468.85/STD	(Level 3)
Device ID	_____	(Level 3)
+TCP/IP:	_____	(Level 3)
Port	_____	(Level 3)
+RS485:2	_____	(Level 3)
MS/TP address	_____	(Level 3)
Baud rate	_____	(Level 3)
Max.master	_____	(Level 3)
Max. info frames	_____	(Level 3)
Advanced	▶	(Level 3)
+General:		(Level 3)
Database revision	_____	(Level 3)
Config.CRC	_____	(Level 3)
Restart BACstac		(Level 3)
After modification of value		(Level 3)
Restart required!		(Level 3)

HMI SERVICE TOOL – IP-CONFIG, WLAN, BACNET, CLIMATIX PAGE SUB-MENU STRUCTURE

aIP-Config		
+Tool access	_____	(Level 3)
Port	_____	(Level 3)
Authorization		(Level 3)
> ****		(Level 3)
+Administrator		(Level 3)
User name		(Level 3)
> ****		(Level 3)
Password		(Level 3)
> ****		(Level 3)
+Web HMI (HTTP)	_____	(Level 3)
Port	_____	(Level 3)
User name		(Level 3)
> ****		(Level 3)
Password		(Level 3)
> ****		(Level 3)
+FTP	_____	(Level 3)
Port	_____	(Level 3)
User name		(Level 3)
> ****		(Level 3)
Password		(Level 3)
> ****		(Level 3)
+TFTP	_____	(Level 3)
Port	_____	(Level 3)
+JSON		(Level 3)
Mapping	_____	(Level 3)
User name		(Level 3)
> ****		(Level 3)
Password		(Level 3)
> ****		(Level 3)
Po. Idle timeout	_____	(Level 3)
After modification of value		(Level 3)
Restart required!		(Level 3)

aWLAN-Config		
USB power	_____	(Level 3)
Enable	_____	(Level 3)
Tool Enable	_____	(Level 3)
HTTP enable	_____	(Level 3)
After modification of value		(Level 3)
Restart required!		(Level 3)

aCSL-Config		
Server name/IP adr.	_____	(Level 3)
https://clx.connectivity.ccl-siemens.com		(Level 3)
Min.send intervall	_____	(Level 3)
Reconnect time	_____	(Level 3)
Communication	_____	(Level 3)
Possible languages		(Level 3)
>-	-	(Level 3)
Certificate SSL	_____	(Level 3)
Options	_____	(Level 3)
Idle timeout RTA	_____	(Level 3)

aApplication info		
Plant info		(Level 3)
> #		(Level 3)
Site name		(Level 3)
> #		(Level 3)
Street		(Level 3)
> #		(Level 3)
City		(Level 3)
> #		(Level 3)

HMI SERVICE TOOL – IP-CONFIG, WLAN, BACNET, CLIMATIX PAGE SUB-MENU STRUCTURE CONTINUED

aBACnet		
+Foreign device	_____	(Level 3)
BBMD IP		(Level 3)
> 0.0.0.0		(Level 3)
BBMD Port	_____	(Level 3)
+APDU	_____	(Level 3)
Timeout	_____	(Level 3)
Segm.timeout	_____	(Level 3)
Max.length	_____	(Level 3)
Number of retries	_____	(Level 3)
+Segm.support	_____	(Level 3)
Max. segments	_____	(Level 3)
Charcter set	_____	(Level 3)
Mapping	_____	(Level 3)
Security level	_____	(Level 3)

NOTES

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