

Design Envelope IPC 9511

Air cooled chilled water
plant control system

Installation and operating instructions

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Armstrong Chilled water plant control system, IPC 9511 is completely factory-assembled, tested, and shipped to the job site as integral units ready to receive incoming power supply. These instructions describe the procedures to be followed during installation, commissioning and operation to ensure optimum performance and reliability. When contacting the factory for assistance, please provide the unit serial number and other pertinent data, such as IPC model no.

1.0 INTEGRATED PUMP CONTROLLER

1.1 INSTALLATION INSTRUCTIONS

Incoming supply – stand-alone IPC 9511 control system (no rack) - The incoming power supply should be brought in through the bottom of the panel adjacent to the main terminals. Note that this is the only electrical connection required at the panel.

The power supply voltage is 115V/1/60 as standard. Please refer to drawing # PTP00078M0-800/801 for instructions to connect to the IPC 9511 control system terminal block.

NOTE: All electrical wiring should be performed by a qualified electrician in accordance with the latest edition of the National Electrical Code, local codes and regulations.

1.2 FIELD DEVICES INSTALLATION INSTRUCTIONS

Before attempting to start configuring the IPC 9511 control system using the operator interface (HMI – touch-screen), make sure the entire field installed devices such as DP sensors, flow sensors, DP switches, chiller communication wires are properly installed and wired to the IPC 9511 control system as per wiring diagram PTC00078M0-800/801.

1.3 BUILDING AUTOMATION SYSTEM (BAS) CONNECTION

The IPC 9511 control system is provided with an RS 485 serial port or an Ethernet port to communicate to the BAS. The standard communication protocol is Modbus, BACnet and Lonworks are options. Refer to wiring diagram for wiring instructions. Please refer to the IPC 9511 control system generic terminal block drawing for the different parameters and data points communicated to the BAS.

2.0 DISPLAYS OVERVIEW

The IPC9511 control system HMI is divided in three set of displays: Operation, Alarms and Setup.

The Operation Displays are used by the operator to view and control the system (chiller, pumps, valves, etc.). The Alarm screens are used to display the current alarms, store and display history alarms, give helpful information on each alarm. The Setup Screens are used to set, view, save, and restore the system specific control parameters (i.e. number of pumps, zone range, zone setup, min speed, etc.).

The list of displays in each set is as follows:

Operation displays:

- System overview
- Chiller 1, 2, 3, etc. control
- Pump 1, 2, 3, etc. control
- Zone overview
- Isolation valves & bypass valve control

Alarm displays:

- Alarm
- Alarm history

Setup displays:

- Zone setup
- Plant setup
- System sensor setup
- Pump setup
- Speed setup
- PID /Sensor less setup
- Chiller staging setup
- Valve /Bypass valve setup
- BAS setup

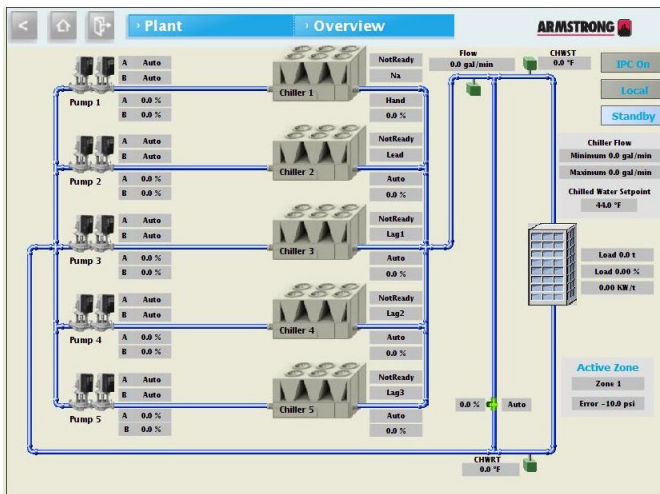
3.0 OPERATOR DISPLAYS

Operator Displays include operation displays, alarm management displays.

3.1 OPERATION DISPLAYS

See the following table

3.1.1 System overview



This screen provides an overview of the entire system operating conditions

- 1 Dropdown menu on header has buttons to navigate through other operation screens
- 2 The top right corner of the screen shows the IPC status (**ON/OFF**), IPC mode (**LOCAL/REMOTE**), plant mode (**mechanical/standby**) and chilled water setpoint.
- 3 The chiller minimum and maximum flows, chilled water setpoint are displayed for operator.
- 4 The piping system configuration is displayed, with icons for the chillers, pumps and valves
- 5 The system sensors are displayed: Supply and return temperatures, primary flow, load, system power (if enabled)
- 6 Number of zone enabled, active zone and error of active zone are displayed for the zones that are enabled
- 7 Bypass valve mode (**HAND/AUTO**) and position in percentage
- 8 Isolation valves mode (**HAND/AUTO**) and status (**opened/closed**)
- 9 Chiller and pump mode (HOA)
- 10 Displays chiller status (**na/ready/enabled/started/running/shutdown/alarm/not ready**)
- 11 Indicates lead and lag chillers
- 12 Pumps' running status, duty/standby and speed are displayed
- 13 Pressing the pump icons will open the popup screen of pump control
- 14 Pressing the chiller icons will open the popup screen of chiller control
- 15 Pressing the building icon will open popup screen of zone overview

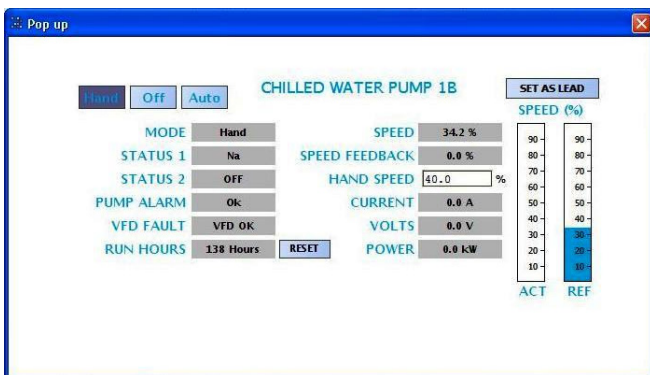
3.1.2 Zone overview

	Actual	Setpoint	Error	Status	Active
Zone 1	0.0 psi	10.0 psi	-10.00	Enable	<input checked="" type="checkbox"/>
Zone 2	0.0 psi	10.0 psi	-10.00	Enable	<input type="checkbox"/>
Zone 3	0.0 psi	10.0 psi	-10.00	Enable	<input type="checkbox"/>
Zone 4	0.0 psi	10.0 psi	-10.00	Enable	<input type="checkbox"/>
Zone 5	0.0 psi	10.0 psi	-10.00	Enable	<input type="checkbox"/>

This screen provides detailed information about the zones

- 1 **Actual** is the current value from the DP sensor
- 2 **Setpoint** indicates the user adjustable setpoint for each zone
- 3 **Error** is the difference between actual and setpoint, the zone with the most negative error becomes the active zone
- 4 **Status** indicates whether the zone is enabled or disabled
- 5 **Active** indicates which zone is the active zone (indicated by green lamp)

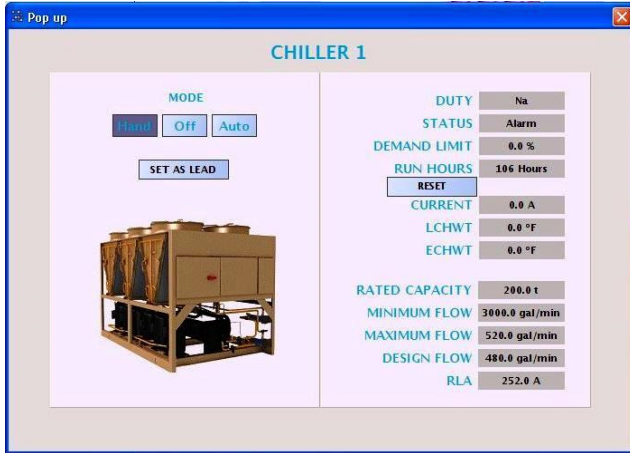
3.1.3 Pump n control screen



This popup screen provides control of the pump. One screen per pump.

- 1 Press the **HAND, OFF, AUTO** buttons to select the desired mode
- 2 Press **SET AS DUTY1** button to set the pump as lead pump, also referenced as duty 1. The other pumps in the IPC will rearrange themselves as duty 2, duty 3, etc. or stand-by if selected
- 3 **Status 1** displayed the pump duty status duty1, duty2, duty3 etc. or stand-by if selected.
- 4 **Status 2** displayed pump run status (running/off/alarm)
- 5 Pump alarm will be displayed if there is a problem with the pump.
- 6 vFD fault will be displayed if there is a problem with the vFD.
- 7 Run hours indicates the pump total running time since the last reset and can be reset by pressing the **RESET** button.
- 8 **SPEED** displayed the reference speed sent to the vFD in % value of pump full speed
- 9 **SPEED FEEDBACK** displayed pump actual speed feedback from the vFD in % value of pump full speed
- 10 When in **HAND** mode, enter the desired speed in the **hand speed** box
- 11 vFD current (amps), voltage (volts) and power (kW) is displayed.
- 12 When in **AUTO** mode, the speed of the pump is automatically determined by the control system.
- 13 The control system output speed (reference speed sent to the vFD) is displayed in % value of pump full speed in the bar graph
- 14 Pump actual speed (feedback from the vFD) is displayed in % value of pump full speed in the bar graph

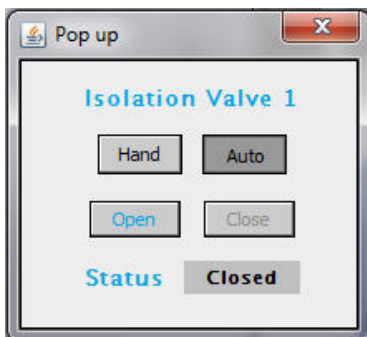
3.1.4 Chiller n control



This popup screen provides control of the chiller. One screen per chiller.

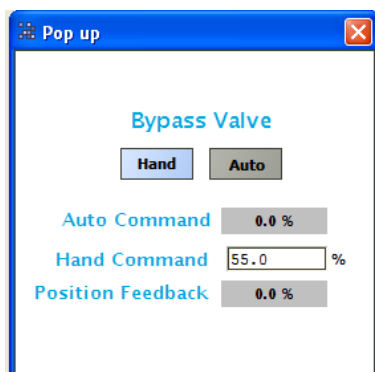
- 1 Press the **HAND**, **OFF**, **AUTO** buttons to select the desired mode
- 2 Press **SET AS LEAD** button to set the chiller as lead chiller. The other chillers in the IPC will rearrange themselves as lag 1, lag 2, etc.
- 3 **DUTY** displays the chiller's order: lead, lag 1, lag 2, lag 3, etc.
- 4 **STATUS** displays chiller status (not ready, ready, enabled, started, running, alarm)
- 5 **Demand limit** displays the reference demand limit set to the chiller in % value of chiller full capacity
- 6 **Run hours** indicates the chiller total running time since the last reset and can be reset by pressing the **RESET** button.
- 7 Chiller current (amps), leaving and entering chilled water temperatures (C/F) are displayed
- 8 **Rated capacity** displays the chiller corresponding chiller capacity for user reference
- 9 Chiller minimum & maximum flows are displayed
- 10 **RLA** indicates the chiller Rated Load Amps

3.1.5 Isolation valves & bypass valve control



This popup screen provides control of the isolation valve. One screen per valve.

- 1 Press the **HAND** or **AUTO** buttons to select the desired mode
- 2 When in **HAND** mode, press the **OPEN** or **CLOSE** buttons to perform the desired action
- 3 **STATUS** indicates the position of the valve or if it is in alarm



This popup screen provides control of the bypass valve.

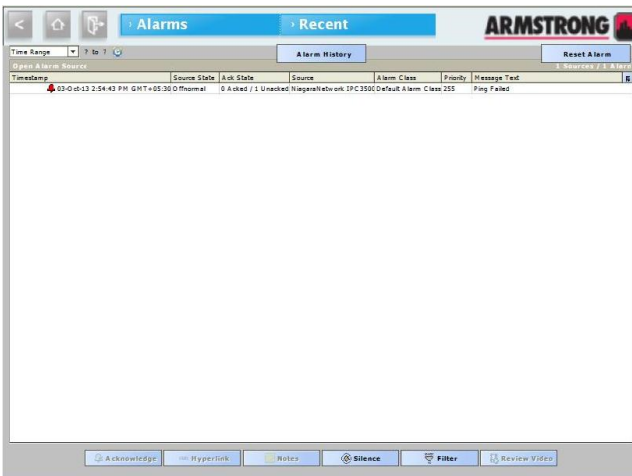
- 1 Press the **HAND** or **AUTO** buttons to select the desired mode.
- 2 When in **HAND** mode, enter **hand command** for desired action.
- 3 **Auto command** indicated the valve command in percentage, when in auto mode.
- 4 **Position feedback** displays the actual position of the valve opening in %, if enabled in bypass valve setup.

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3.2 ALARM DISPLAYS

3.2.1 ALARM MANAGEMENT DISPLAYS

3.2.1A Alarms screen



- 1 All alarms will be displayed in chronological order
- 2 The last alarm will be at the top of the screen
- 3 Press **reset alarm** to reset all active alarms
- 4 Pressing the **silence** button will silence the alarm.
- 5 Press the up and down arrow buttons to view more alarms
- 6 Press the **alarm history** button to bring up the alarm history screen
- 7 Press the buttons on the dropdown menu at the top to bring up the desired screen

3.2.1B Alarm history screen



- 1 The alarm history saved in the internal memory is displayed
- 2 Press the top-left button (dropdown) to select the time range (today/last 24 hours/yesterday/week to date/last week/last 7 days/month to date/last month/year to date/last year) for history alarm to display
- 3 Press the up and down arrow buttons to view more alarms
- 4 Press the buttons on the dropdown menu at the top to bring up the desired screen

3.2.1C List of alarms

ALARM	DESCRIPTION	POSSIBLE CAUSES
Pump n run feedback alarm	Indicates that the PLC didn't detect the pump run feedback after commanding the pump to start	<ul style="list-style-type: none"> • VFD not configured for serial communication • Loose or broken wire from VFD • Not proper VFD selected (parameter 1.6) • Impeller is stuck • VFD in Off at the local panel
Pump n drive fault alarm	Indicates that the pump VFD is reporting a fault	VFD over current or other problem. Check VFD local display
Pump n drive communication alarm	Indicates that the IPC does not have communication with the pump VFD	<ul style="list-style-type: none"> • Not proper VFD selected (parameter 1.6) • VFD not configured for serial communication • Loose or broken wire from VFD • Damaged serial port on Jace 3E
Chilled water supply temperature sensor alarm	Indicates that the temperature sensor is out of range	<ul style="list-style-type: none"> • Connection to transmitter is short or open circuited • Damaged PLC analog input • Loose or broken wire from transmitter • Damaged transmitter
Chilled water return temperature sensor alarm	Indicates that the temperature sensor is out of range	<ul style="list-style-type: none"> • Connection to transmitter is short or open circuited • Damaged PLC analog input • Loose or broken wire from transmitter • Damaged transmitter
DP transmitter fail alarm	Indicates that the DP transmitter is out of range	<ul style="list-style-type: none"> • Connection to transmitter is short or open circuited • Damaged PLC analog input • Loose or broken wire from transmitter • Damaged transmitter
Flow transmitter fail alarm	Indicates that the flow transmitter is out of range	<ul style="list-style-type: none"> • Connection to transmitter is short or open circuited • Damaged PLC analog input • Loose or broken wire from transmitter • Damaged transmitter
Zone n transmitter alarm	Indicates that the zone transmitter is out of range	<ul style="list-style-type: none"> • Connection to transmitter is short or open circuited • Damaged PLC analog input • Loose or broken wire from transmitter • Damaged transmitter
All zones transmitter alarm	Indicates that all zones transmitters are out of range	All zone sensors are in alarm
Chiller n isolation valve alarm	Indicates that the valve is not at the position commanded (open or closed) after the corresponding delay	<ul style="list-style-type: none"> • There is a problem with valve position limit switch • The valve is not operating • Loose or broken wire from limit switch • Damaged digital input
Chiller n panel alarm	Indicates that the chiller local control panel is reporting an alarm	<ul style="list-style-type: none"> • Check chiller panel for a cause • In case of hardwired chillers, check for digital input to PLC
Chiller n run feedback alarm	Indicates that there was no chiller run feedback detected within the corresponding delay	<ul style="list-style-type: none"> • In case of hardwired chillers, check that the chiller is receiving the start command • In case of hardwired chillers, check that the IPC reads current and that it is at least 10% (or parameter 4.14) of RLA • In case of serial communication, verify that the chiller is sending the run feedback • Verify that chiller is configured for remote operation
Chiller n no flow alarm	Indicates that chiller's n pump is not running or valve is closed	<ul style="list-style-type: none"> • Verify pump alarms • Verify valve alarms
Chiller n no communication alarm	Indicates that the IPC does not have communication with the chiller	<ul style="list-style-type: none"> • Not proper protocol selected (parameters 4.2 & 4.3) • Chiller not configured for serial communication • Loose or broken wire from chiller • Damaged serial port on Jace 3E
Refrigerant leak alarm	A refrigerant leak has been detected in the mechanical room. All equipment is stopped	<ul style="list-style-type: none"> • Verify refrigerant leak detector • Loose or broken wire from detector • Check PLC digital input
Emergency stop	The emergency stop button has been activated	

3.3 SETUP DISPLAYS

The setup displays allow viewing, modifying, saving and restoring system parameters. There are 3 levels of password protected access:

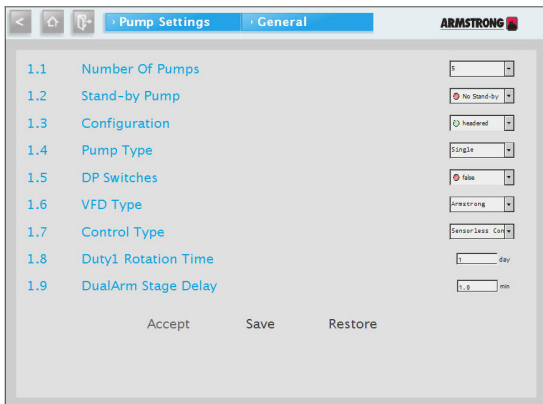
LEVEL	ACTIONS ALLOWED
Level 0	<ul style="list-style-type: none"> View only
Level 1	<ul style="list-style-type: none"> Modify all parameters Restore previously saved default values (factory defaults)
Level 2	<ul style="list-style-type: none"> Modify all parameters Save changes Restore previously saved default values (factory defaults)

The following sections list and describe each setup screen to be set-up with :

'To be configured on site' indicating the parameters to be configured on site following the system settings and configuration.

'Default' indicating the default settings which can be adjusted as required.

3.3.1 PUMP GENERAL SETUP



1.1 NUMBER OF PUMPS

RANGE	FUNCTION
1-5	Indicates how many primary pumps are installed in the system
	To be configured on site

1.2 STAND-BY PUMP

OPTIONS	FUNCTION
No standby pump	All pumps in the system are duty. In a dedicated system this parameter is meaningless
One standby pump	One of the pumps in the system will be assigned as standby, it will only operate if a duty pump fails and there is no other duty pump to replace it. In a dedicated system this parameter is meaningless
	To be configured on site

1.3 CONFIGURATION

OPTIONS	FUNCTION
Header	The pumps have a header
Dedicated	Each pump has a dedicated connection to a chiller
	To be configured on site

1.4 PUMP TYPE

OPTIONS	FUNCTION
Single	System configured for single pump operation
dualArm	System configured for dualArm pump operation
Twin	System configured for twin pump operation
	To be configured on site

1.5 DP SWITCHES

OPTIONS	FUNCTION
Disable	Pump DP switches are not installed. The IPC will use the drives' run feedback as confirmation that the pumps are operating
Enable	Pump DP switches are installed. The IPC will use them as confirmation that the pumps are operating
	To be configured on site

1.6 VFD TYPE

OPTIONS	FUNCTION
Armstrong	Serial communication to Armstrong ivs drive
Danfoss	Serial communication to Danfoss FC-102 drive
ABB	Serial communication to ABB ACH550 drive
Yasgawa	Serial communication to Yasgawa E7 drive
	To be configured on site

*NOTE: The IPC9511 is configured to communicate to the drives with the following parameters: Modbus RTU, 19200 baud, no parity, 8 bits 1 stop

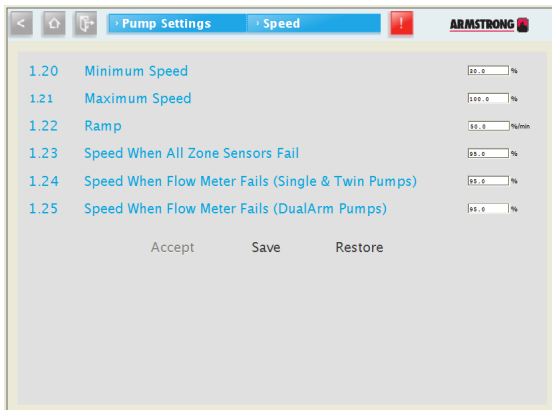
1.7 CONTROL TYPE	
OPTIONS	FUNCTION
Zone DP / temp. control	The pump speed will be controlled by the control system local PID based on the DP sensor / Temp. sensor feedback
Sensorless	The pump speed will be calculated by the control system as per the sensorless algorithm
External command.	The pump speed will be controlled by an external optimization system To be configured on site

1.8 DUTY1 ROTATION TIME	
RANGE	FUNCTION
1-999 days	Indicates how often the lead (duty 1) pump will rotate among the duty pumps
7 days	Default

1.9 DUAL-ARM STAGE DELAY	
RANGE	FUNCTION
1-999 min	The delay will be considered to stage the dual arm pump as per the chiller flow condition in dedicated configuration
2 min	Default

DEFAULT SETTINGS	
OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made
Save	When logged-in in level 2, save all current parameters as default
Restore	When logged-in in level 1 or 2, restore all current parameters as default

3.3.2 PUMP SPEED SETUP



1.20 MINIMUM SPEEDS	
RANGE	FUNCTION
0.0-100.0 %	The minimum speed the pumps will be allowed to run in Auto or Hand mode
100%	Default

1.21 MAXIMUM SPEED	
RANGE	FUNCTION
0.0-100.0 %	The maximum speed the pumps will be allowed to run in Auto or Hand mode
30%	Default

1.22 RAMP	
RANGE	FUNCTION
1-999 %/min	Indicates the amount of time it will take the pumps to increase their speed from 0% to 100% or to decrease their speed from 100% to 0%
20%/min	Default

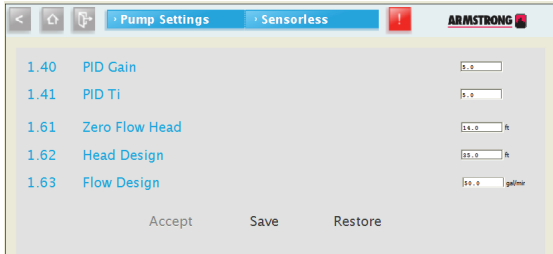
1.23 SPEED WHEN ALL ZONE SENSORS FAIL	
RANGE	FUNCTION
0.0-100.0 %	Indicates the speed the pumps will run at if all zone sensors fail
95%	Default

1.24 FLOW WHEN FLOW METER FAILS (SINGLE & TWIN PUMP)	
RANGE	FUNCTION
0.0-100.0 %	Indicates the speed the pumps will run at if system flow sensor fails applicable only for single / twin pump configurations.
95%	Default

1.25 FLOW WHEN FLOW METER FAILS (DUALARM)	
RANGE	FUNCTION
0.0-100.0 %	Indicates the speed the pumps will run at if system flow sensors fail applicable only for dualArm pump configuration.
80%	Default

DEFAULT SETTINGS	
OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.3 PUMP PID AND SENSORLESS SETUP



1.40 PID GAIN

RANGE	FUNCTION
0-9999	Determines the pump speed control PID loop gain. Larger values correspond to a more responsive control system.
0.05	Default

1.41 PID Ti

RANGE	FUNCTION
0-999	Determines the pump speed control PID loop integral time. Larger values correspond to more iterations and reduction of steady state error
0.5	Default

1.61 ZERO FLOW HEAD

OPTIONS	FUNCTION
0-999	Pump head at zero flow. It is used to determine the system control curve
	To be configured on site

1.62 HEAD DESIGN

OPTIONS	FUNCTION
0-999	Pump design head. It is used to determine the system control curve
	To be configured on site

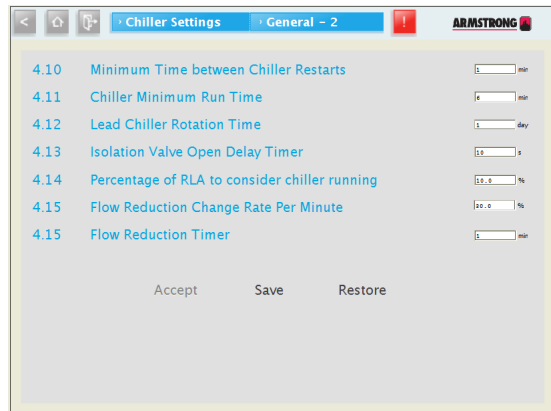
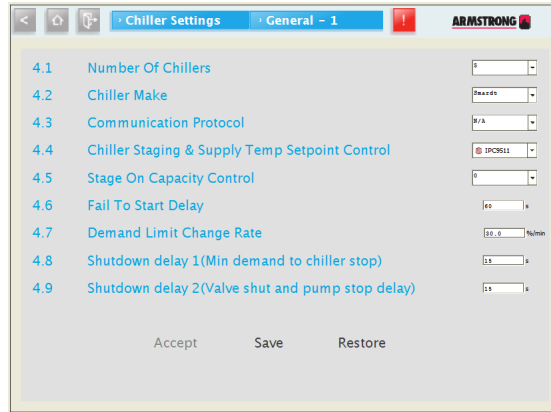
1.63 FLOW DESIGN

OPTIONS	FUNCTION
0-99999	Pump design flow. It is used to determine the system control curve
	To be configured on site

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.4 CHILLER GENERAL SETUP



4.1 NUMBER OF CHILLERS

RANGE	FUNCTION
1-5	Selects the number of chillers in the system
	To be configured on site

4.2 CHILLER MAKE

OPTIONS	FUNCTION
Hardwired	Selects hardwired control of the chillers. The signals used are: DO to start/stop the chiller, AO for chilled water set point, AO for demand limit control (this is optional, see chiller stage type), AI for amps reading.
Smardt	Control system communication with Smardt chillers.
York talk2	Control system communication with York talk2 chillers.
York talk3	Control system communication with York talk3 chillers.
McQuay AGZ	Control system communication with McQuay AGZ.
	To be configured on site

4.3 COMMUNICATION PROTOCOL

OPTIONS	FUNCTION
N/A	No protocol is selected
Modbus RTU	Selects Modbus RTU
BACnet IP	Selects BACnet IP
BACnet MS/TP	Selects BACnet MS/TP
Lonworks	Selects Lonworks
	To be configured on site

4.4 CHILLER STAGING & SUPPLY TEMP. SETPOINT CONTROL

OPTIONS	FUNCTION
IPC9511	Supply temperature setpoint and chiller staging done through the IPC 9511 control system.
External optimization	Supply temperature setpoint and chiller staging done by an external ultra-efficient plant automation (OPTI-VISOR™)
IPC9511	Default

4.5 STAGE ON CAPACITY CONTROL

OPTIONS	FUNCTION
Demand limit reduction	When a chiller is staged On, the demand limit will be reduced in order to balance the load
Flow reduction	When a chiller is staged On, the flow will be reduced in order to balance the load. This option is only for a header system and chillers with no demand limit control option
Demand limit reduction	Default

4.6 FAIL TO START DELAY

RANGE	FUNCTION
0-999 sec	Indicates the time the IPC waits for the chiller run feedback to be detected before issuing a chiller run feedback alarm
120 SEC	Default

4.7 DEMAND LIMIT CHANGE RATE

RANGE	FUNCTION
0.0-100.0 %/min	Determines the rate of change of the chillers demand limit measured in percentage per minute. Use this value to determine how fast the IPC will increase the demand limit from minimum to maximum (and vice versa). The greater this value, the faster the IPC will increase or reduce the demand limit of the chillers
30%/min	Default

4.8 SHUTDOWN DELAY 1(MIN DEMAND TO CHILLER STOP)

RANGE	FUNCTION
0-999 sec	When shutting down a chiller, this is the time delay from the moment the demand limit reached the minimum to the moment the IPC sends the stop signal to the chiller
180 sec	Default

4.9 SHUTDOWN DELAY 2 (VALVE SHUT AND PUMP STOP DELAY)

RANGE	FUNCTION
0-999 sec	When shutting down a chiller, this is the time delay from the moment the IPC sends the stop signal to the chiller to the moment the IPC stops the associated chilled water pump and closes the isolation valve
180 sec	Default

4.10 MINIMUM TIME BETWEEN CHILLER RESTART

RANGE	FUNCTION
0-999 min	Once a chiller stops, this value indicates the time the IPC will wait before allowing the chiller to run again
15 min	Default

4.11 CHILLER MINIMUM RUN TIME

RANGE	FUNCTION
0-999 min	Indicates the minimum time a chiller will run, even if the staging Off conditions are present.
15 min	Default

4.12 LEAD CHILLER ROTATION TIME

RANGE	FUNCTION
0-999 days	Indicates how often the rotation of the lead chiller occurs
7 day	Default

4.13 ISOLATION VALVE OPEN DELAY TIMER

RANGE	FUNCTION
0-999 sec	Indicates the time the isolation valves take to go from closed to fully open.
120 sec	Default

4.14 PERCENTAGE OF RLA TO CONSIDER CHILLER RUNNING

RANGE	FUNCTION
0-100 %	Percentage of rated load amps to determine that a chiller is running.
10%	Default

4.15 FLOW REDUCTION CHANGE RATE PER MINUTE

RANGE	FUNCTION
0-100 %	When staging on a chiller, this value indicates the time the IPC waits for the flow to reach the setpoint before aborting the chiller stage on sequence. It is used only when the capacity control (parameter 4.5) is flow reduction
30%/min	Default

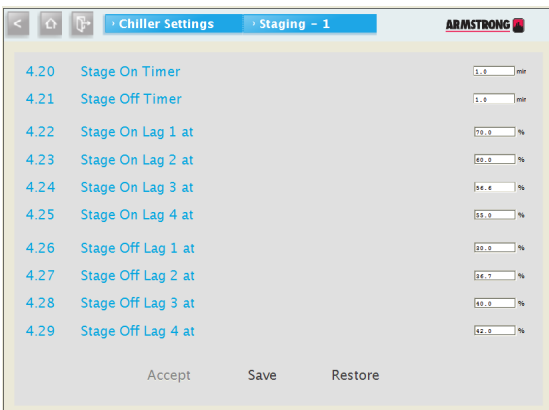
4.16 FLOW REDUCTION TIMER

RANGE	FUNCTION
0-999 sec	When staging on a chiller, this value indicates the time the IPC waits for the flow to reach the setpoint before aborting the chiller stage on sequence.
2 min	Default

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.5 CHILLER STAGING SETUP



4.20 STAGE ON DELAY

RANGE	FUNCTION
0-999 sec	Time delay to wait before staging on the next lag chiller after the condition is met (parameters 4.22 to 4.25)
5 min	Default

4.21 STAGE OFF DELAY

RANGE	FUNCTION
0-999 sec	Time delay to wait before staging off the last lag chiller after the condition is met (parameters 4.26 to 4.29)
5 min	Default

4.22 STAGE ON LAG 1 AT

RANGE	FUNCTION
0.0-100.0 %	Indicates the load percent threshold to stage on lag 1 chiller. The chiller will be staged on when the load exceeds this threshold longer than the stage on delay (parameter 4.20)
70%	Default

4.23 STAGE ON LAG 2 AT

RANGE	FUNCTION
0.0-100.0 %	Indicates the load percent threshold to stage on lag 2 chiller. The chiller will be staged on when the load exceeds this threshold longer than the stage on delay (parameter 4.20)
60%	Default

4.24 STAGE ON LAG 3 AT

RANGE	FUNCTION
0.0-100.0 %	Indicates the load percent threshold to stage on lag 3 chiller. The chiller will be staged on when the load exceeds this threshold longer than the stage on delay (parameter 4.20)
56.60%	Default

4.25 STAGE ON LAG 4 AT

RANGE	FUNCTION
0.0-100.0 %	Indicates the load percent threshold to stage on lag 4 chiller. The chiller will be staged on when the load exceeds this threshold longer than the stage on delay (parameter 4.20)
55%	Default

4.26 STAGE OFF LAG 1 AT

RANGE	FUNCTION
0.0-100.0%	Indicates the load percent threshold to stage off lag 1 chiller. The chiller will be staged off when the load falls under this threshold longer than the stage off delay (parameter 4.21)
30%	Default

4.27 STAGE OFF LAG 2 AT

RANGE	FUNCTION
0.0-100.0%	Indicates the load percent threshold to stage off lag 2 chiller. The chiller will be staged off when the load falls under this threshold longer than the stage off delay (parameter 4.21)
36.70%	Default

4.28 STAGE OFF LAG 3 AT

RANGE	FUNCTION
0.0-100.0%	Indicates the load percent threshold to stage off lag 3 chiller. The chiller will be staged off when the load falls under this threshold longer than the stage off delay (parameter 4.21)
40%	Default

4.29 STAGE OFF LAG 4 AT

RANGE	FUNCTION
0.0-100.0%	Indicates the load percent threshold to stage off lag 4 chiller. The chiller will be staged off when the load falls under this threshold longer than the stage off delay (parameter 4.21)
42%	Default

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

4.30 STAGE ON DT

RANGE	FUNCTION
0-99.9 °F OR °C	If the chilled water supply temperature exceeds its set point by this value for longer than the time indicated on 4.33, the next lag chiller will be staged on
3°F	Default

4.31 STAGE OFF LOW CHWRT

RANGE	FUNCTION
0-99.9 °F OR °C	If the chilled water return temperature falls below chilled water supply temperature setpoint plus this value for longer than one minute, the last lag chiller will be staged off
4°F	Default

4.32 STAGE OFF LOW CHWST

RANGE	FUNCTION
0-99.9 °F OR °C	If the chilled water supply temperature falls below its setpoint minus this value for longer than one minute, the last lag chiller will be staged off
4°F	Default

4.33 SATGE ON TIMER SETPOINT

RANGE	FUNCTION
0-999 min	Time delay for condition of parameter 4.30
2 min	Default

4.34 STAGE ON TIMER HIGH FLOW

RANGE	FUNCTION
0-999 min	Time delay to stage on the next lag chiller based on high flow
2 min	Default

4.35 PLANT STAGE TIMER

RANGE	FUNCTION
0-999 min	After a chiller has been staged on or off, the IPC9511 will ignore all staging conditions until this timer expires
5 min	Default

4.36 PERCENTAGE OF RLA TO STAGE ON NEXT LAG CHILLER

RANGE	FUNCTION
0-100.0%	When the combined current (in percentage) of the operating chillers exceeds this value for longer than the time specified on 4.38, stage on the next lag chiller
95%	Default

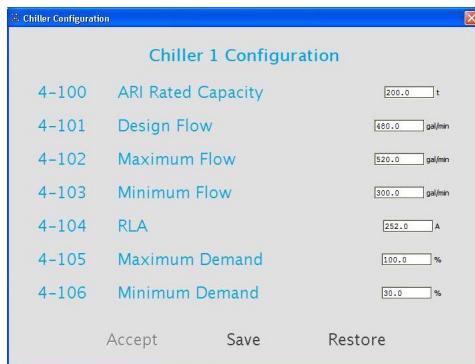
4.37 PERCENTAGE OF RLA TO STAGE OFF LAST LAG CHILLER

RANGE	FUNCTION
0-100.0%	When the combined current (in percentage) of the operating chillers falls below this value for longer than the time specified on 4.38, stage off the last lag chiller
20%	Default

4.38 TIME DELAY TO STAGE BASED ON CURRENT

RANGE	FUNCTION
0-999 min	Time delay for condition of parameters 4.37 and 4.38
2 min	Default

3.3.5.1 INDIVIDUAL CHILLER SETUP



4-100/110/120/130/140 ARI RATED CAPACITY

RANGE	FUNCTION
0-9999 tons	Rated cooling capacity of the chiller in tons as per air-conditioning & refrigeration Institute
	To be configured on site

4.101/111/121/131/141 DESIGN FLOW

RANGE	FUNCTION
0-9999 GPM	Determines the chiller design flow. Used to stage On & Off dualArm pumps
	To be configured on site

4.102/112/122/132/142 MAXIMUM FLOW

RANGE	FUNCTION
0-9999 GPM	Determines the chiller rated maximum flow. The IPC9511 will reduce pump speed if the flow climbs above this value (combined with all operating chillers)
	To be configured on site

4.103/113/123/133/143 MINIMUM FLOW

RANGE	FUNCTION
0-9999 GPM	Determines the chiller rated minimum flow. The IPC9511 will open the bypass valve and increase the pump speed if the flow falls under this value (combined with all operating chillers)
	To be configured on site

4.104/114/124/134/144 RLA

RANGE	FUNCTION
0-999.9 A	Determines the chiller nameplate RLA
	To be configured on site

4-105/115/125/135/145 MAXIMUM DEMAND

RANGE	FUNCTION
0-100.0%	Determines the demand limit (in percentage) to be sent (gradually, see parameter 4.7) to the chiller once the chiller is confirmed running. Default is 100.0%, if there is a problem with the chiller that doesn't allow it to run at maximum capacity, use this parameter to limit the chiller to a reduced capacity
	To be configured on site

4-106/116/126/136/146 MINIMUM DEMAND

RANGE	FUNCTION
0-100.0%	Determines the chiller minimum demand limit (in percentage). When the chiller is started, the IPC9511 will initially limit its demand to this value
	To be configured on site

3.3.6 SENSOR SETUP

5.1 SUPPLY TEMP. SENSOR ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Enable	Default

5.2 SUPPLY TEMP. ZERO

RANGE	FUNCTION
-999.0 TO 999.0°F, °C	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 4mA output
32°F	Default

5.3 SUPPLY TEMP. SENSOR RANGE

RANGE	FUNCTION
-999.0 TO 999.0°F, °C	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
212°F	Default

5.4 RETURN TEMP. SENSOR ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Enable	Default

5.5 RETURN TEMP. SENSOR ZERO

RANGE	FUNCTION
-999.0 TO 999.0°F, °C	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 4mA output
32°F	Default

5.6 RETURN TEMP. SENSOR RANGE

RANGE	FUNCTION
-999.0 TO 999.0°F, °C	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
212°F	Default

5.7 FLOW SENSOR ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Enable	Default

5.8 FLOW SENSOR RANGE

RANGE	FUNCTION
0.0-9999.9 GPM	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
	To be configured on site

5.9 STRAINER DP ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Disable	Default

5.10 STRAINER DP ZERO

RANGE	FUNCTION
-999.0 TO 999.9 PSI	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 4mA output
	To be configured on site

5.11 STRAINER DP RANGE

RANGE	FUNCTION
0-999 PSI	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
	To be configured on site

5.12 BYPASS VALVE FEEDBACK ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Disable	Default

5.13 BYPASS VALVE FEEDBACK ZERO

RANGE	FUNCTION
0.0-100.0 %	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 4mA output
0%	Default

5.14 BYPASS VALVE FEEDBACK RANGE

RANGE	FUNCTION
0.0-100.0 %	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
100%	Default

5.50 REFRIGERANT LEAK SWITCH ENABLE

OPTIONS	FUNCTION
Disable	Sensor is disabled
Enable	Sensor is enabled
Disable	Default

5.51 TEMPERATURE UNIT

OPTIONS	FUNCTION
°F	Selects °F as the sensor's engineering units
°C	Selects °C as the sensor's engineering units
°F	Default

5.52 FLOW UNIT

OPTIONS	FUNCTION
gmp	Selects gpm as the sensor's engineering units
lps	Selects lps as the sensor's engineering units
m ³ /hr	Selects m ³ /hr as the sensor's engineering units
USgpm	Default

5.53 PRESSURE UNIT

OPTIONS	FUNCTION
Psi	DP sensors in psi are used
Ft	DP sensors in ft are used
kPa	DP sensors kPa psi are used
M	DP sensors in m are used
Bar	DP sensors in bar are used
Psi	Default

5.54 TYPE OF ELECTRIC SENSORS

OPTIONS	FUNCTION
current	For future use
kW	For future use
	To be configured on site

5.60 CHILLER 1 CURRENT SENSOR ENABLE

OPTIONS	FUNCTION
Disable	No current transmitter is installed. The IPC relies on the serial communication to determine the chiller current
Enable	Current transmitter is installed
	To be configured on site

5.61 CHILLER 1 CURRENT SENSOR RANGE

RANGE	FUNCTION
0.0-9999.0 A	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output
	To be configured on site

5.62 CHILLER 2 CURRENT SENSOR ENABLE

OPTIONS	FUNCTION
Disable	No current transmitter is installed. The IPC relies on the serial communication to determine the chiller current
Enable	Current transmitter is installed To be configured on site

5.63 CHILLER 2 CURRENT SENSOR RANGE

RANGE	FUNCTION
0.0-9999.0 A	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output To be configured on site

5.64 CHILLER 3 CURRENT SENSOR ENABLE

OPTIONS	FUNCTION
Disable	No current transmitter is installed. The IPC relies on the serial communication to determine the chiller current
Enable	Current transmitter is installed To be configured on site

5.65 CHILLER 3 CURRENT SENSOR RANGE

RANGE	FUNCTION
0.0-9999.0 A	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output To be configured on site

5.66 CHILLER 4 CURRENT SENSOR ENABLE

OPTIONS	FUNCTION
Disable	No current transmitter is installed. The IPC relies on the serial communication to determine the chiller current
Enable	Current transmitter is installed To be configured on site

5.67 CHILLER 4 CURRENT SENSOR RANGE

RANGE	FUNCTION
0.0-9999.0 A	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output To be configured on site

5.68 CHILLER 5 CURRENT SENSOR ENABLE

OPTIONS	FUNCTION
Disable	No current transmitter is installed. The IPC relies on the serial communication to determine the chiller current
Enable	Current transmitter is installed To be configured on site

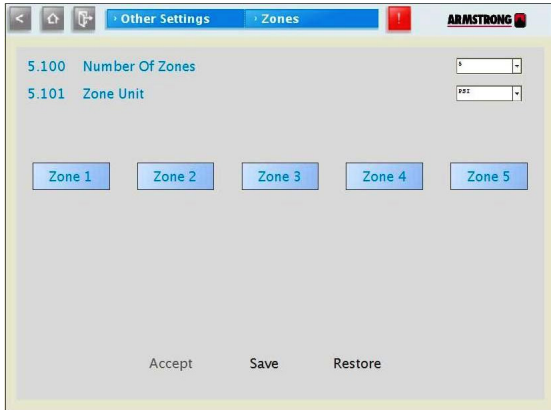
5.69 CHILLER 5 CURRENT SENSOR RANGE

RANGE	FUNCTION
0.0-9999.0 A	Indicates the range of the sensor in engineering units. This value corresponds to the sensor's 20mA output To be configured on site

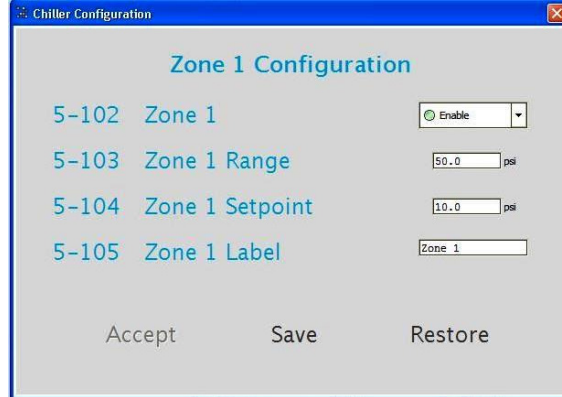
DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.7 ZONE SETUP



3.3.7.1 INDIVIDUAL ZONE SETUP



5.100 NUMBER OF ZONES (SENSORS)

RANGE	FUNCTION
1-5	Indicates how many zones will be used to control the system, typically one zone per area of the building or AHU
1	Default

5.101 ENG. UNIT FOR THE SENSORS

OPTIONS	FUNCTION
Psi	DP sensors in psi are used
Ft	DP sensors in ft are used
kPa	DP sensors kPa psi are used
M	DP sensors in m are used
Bar	DP sensors in bar are used
°F	Temperature sensors in °F are used
°C	Temperature sensors in °C are used
Psi	Default

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

5-102 ZONE 1

OPTIONS	FUNCTION
Disable	The zone is disabled, it won't be used to determine the active zone and pump speed
Enable	The zone is enabled, it will be used to determine the active zone and pump speed
Enable	Default

5-103 ZONE 1 RANGE

RANGE	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the range of the DP or temperature sensor of the zone
50 Psi	Default

5-104 ZONE 1 SETPOINT

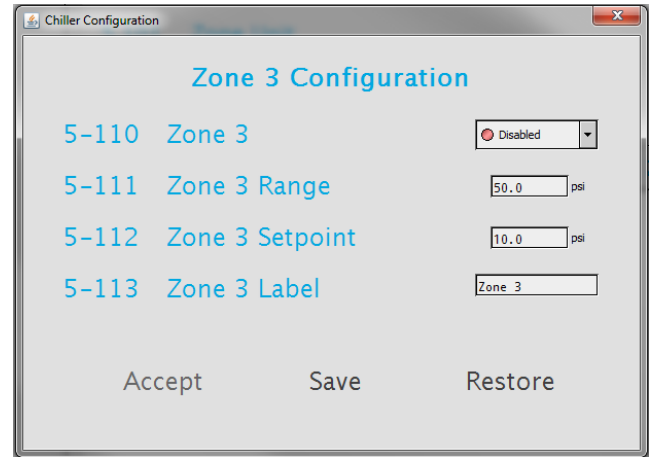
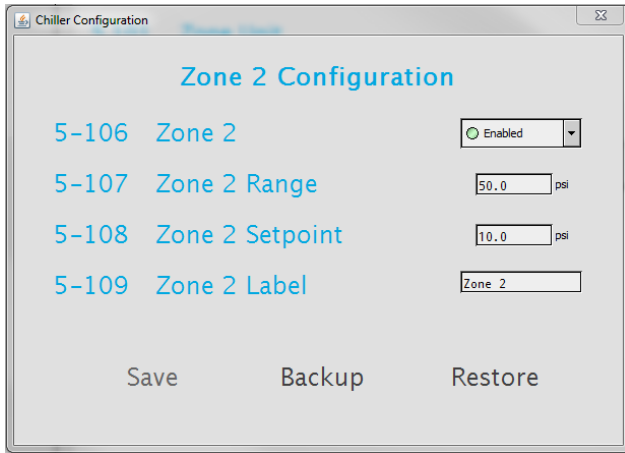
OPTIONS	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the setpoint of the zone. The IPC uses this value to determine the pump speed
	To be configured on site

5-105 ZONE 1 LABEL

RANGE	FUNCTION
N/A	Enter the zone name or location
	To be configured on site

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.



5-106 ZONE 2

OPTIONS	FUNCTION
Disable	The zone is disabled, it won't be used to determine the active zone and pump speed
Enable	The zone is enabled, it will be used to determine the active zone and pump speed
	To be configured on site

5-107 ZONE 2 RANGE

RANGE	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the range of the DP or temperature sensor of the zone
	To be configured on site

5-108 ZONE 2 SETPOINT

OPTIONS	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the setpoint of the zone. The IPC uses this value to determine the pump speed
	To be configured on site

5-109 ZONE 2 LABEL

RANGE	FUNCTION
N/A	Enter the zone name or location
	To be configured on site

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

5-110 ZONE 3

OPTIONS	FUNCTION
Disable	The zone is disabled, it won't be used to determine the active zone and pump speed
Enable	The zone is enabled, it will be used to determine the active zone and pump speed
	To be configured on site

5-111 ZONE 3 RANGE

RANGE	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the range of the DP or temperature sensor of the zone
	To be configured on site

5-112 ZONE 3 SETPOINT

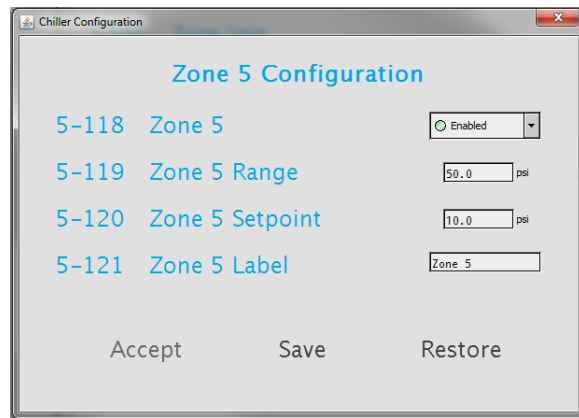
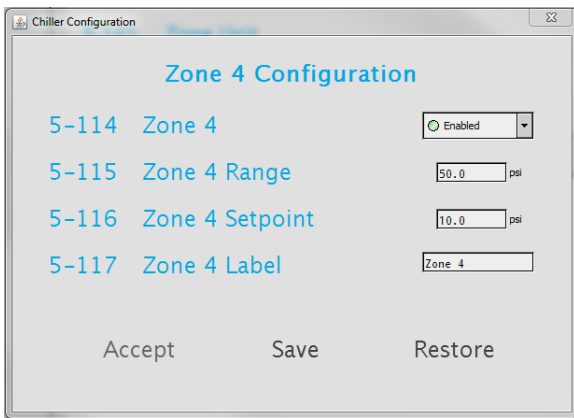
OPTIONS	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the setpoint of the zone. The IPC uses this value to determine the pump speed
	To be configured on site

5-113 ZONE 3 LABEL

RANGE	FUNCTION
N/A	Enter the zone name or location
	To be configured on site

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.



5-114 ZONE 4

OPTIONS	FUNCTION
Disable	The zone is disabled, it won't be used to determine the active zone and pump speed
Enable	The zone is enabled, it will be used to determine the active zone and pump speed
	To be configured on site

5-118 ZONE 5

OPTIONS	FUNCTION
Disable	The zone is disabled, it won't be used to determine the active zone and pump speed
Enable	The zone is enabled, it will be used to determine the active zone and pump speed
	To be configured on site

5-115 ZONE 4 RANGE

RANGE	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the range of the DP or temperature sensor of the zone
	To be configured on site

5-119 ZONE 5 RANGE

RANGE	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the range of the DP or temperature sensor of the zone
	To be configured on site

5-116 ZONE 4 SETPOINT

OPTIONS	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the setpoint of the zone. The IPC uses this value to determine the pump speed
	To be configured on site

5-120 ZONE 5 SETPOINT

OPTIONS	FUNCTION
0.0-999.9 (psi,ft, kPa,m, bar,°F, °C)	Indicates the setpoint of the zone. The IPC uses this value to determine the pump speed
	To be configured on site

5-117 ZONE 4 LABEL

RANGE	FUNCTION
N/A	Enter the zone name or location
	To be configured on site

5-121 ZONE 5 LABEL

RANGE	FUNCTION
N/A	Enter the zone name or location
	To be configured on site

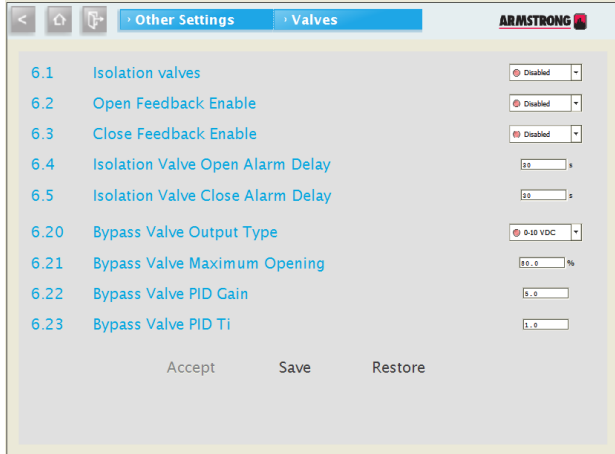
DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

DEFAULT SETTINGS

OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.8 VALVE SETUP



6.1 ISOLATION VALVES

OPTIONS	FUNCTION
Disable	No digital inputs are utilized as valve feedback. The valves are considered open when they are commanded to do so
Enable	Digital inputs are utilized as valve open / close feedback
Enable	Default

6.2 OPEN FEEDBACK ENABLE

OPTIONS	FUNCTION
Disable	No digital inputs are utilized as valve open feedback. The valves are considered open when they are commanded to do so
Enable	Digital inputs are utilized as valve open feedback
Enable	Default

6.3 CLOSE FEEDBACK ENABLE

OPTIONS	FUNCTION
Disable	No digital inputs are utilized as valve close feedback. The valves are considered close when they are commanded to do so
Enable	Digital inputs are utilized as valve close feedback
Disable	Default

6.4 ISOLATION VALVE OPEN ALARM DELAY

RANGE	FUNCTION
0-999 sec	Indicates the time the IPC waits for the isolation valve open feedback to be detected before issuing an isolation valve alarm
180 sec	Default

6.5 ISOLATION VALVE CLOSE ALARM DELAY

RANGE	FUNCTION
0-999 sec	Indicates the time the IPC waits for the isolation valve close feedback to be detected before issuing an isolation valve alarm
180 sec	Default

6.20 BYPASS VALVE OUTPUT TYPE

RANGE	FUNCTION
0-10 VDC	Selects 0 VDC as valve fully closed command
2-10 VDC	Selects 2 VDC as valve fully closed command
0-10 VDC	Default

6.21 BYPASS VALVE MAXIMUM OPENING

RANGE	FUNCTION
0.0 - 100.0 %	Determines the maximum allowable opening (in %) of the valve.
100%	Default

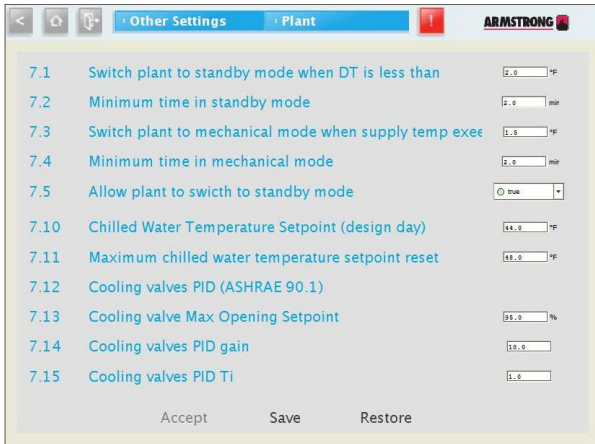
6.22 BYPASS VALVE PID GAIN

RANGE	FUNCTION
0-9999	Determines the pump speed control PID loop gain. Larger values correspond to a more responsive control system
0.5	Default

6.23 BYPASS VALVE PID Ti

RANGE	FUNCTION
0-999	Determines the pump speed control PID loop integral time. Larger values correspond to more iterations and reduction of steady state error
0.5	Default

3.3.9 PLANT SETUP



7.1 SWITCH PLANT TO STANDBY MODE WHEN DT IS LESS THAN

RANGE	FUNCTION
0.0-999.9 °F, °C	When the plant is in mechanical mode, the IPC constantly monitors the difference (DT) between Chilled Water Return Temperature and Chilled Water Setpoint, if it falls under this value and the corresponding timer has expired (parameter 7.4), the plant will be changed to standby mode (no chillers operate, only the duty 1 pump runs)
2°F	Default

7.2 MINIMUM TIME IN STANDBY MODE

RANGE	FUNCTION
0-999 min	Once the plant switches to standby mode, it will remain in this mode until this timer expires
15 min	Default

7.3 SWITCH PLANT TO MECHANICAL MODE WHEN SUPPLY TEMP EXCEEDS SETPOINT BY

RANGE	FUNCTION
0.0-999.9 °F, °C	When the plant is in standby mode, the IPC constantly monitors the Chilled Water Supply Temp, if it climbs over the Chilled Water Temp Setpoint by this value and the corresponding timer has expired (parameter 7.2), the plant will be changed to mechanical mode
1.5°F	Default

7.4 MINIMUM TIME IN MECHANICAL MODE

RANGE	FUNCTION
0-999 MIN	Once the plant switches to mechanical mode, it will remain in this mode until this timer expires
15 min	Default

7.5 ALLOW PLANT TO SWITCH TO STANDBY MODE

OPTIONS	FUNCTION
False	The IPC will not change to standby mode notwithstanding the conditions
True	The IPC will change to standby mode when the conditions are met (parameters 7.1 & 7.4)
Enable	Default

7.10 CHILLED WATER TEMPERATURE SETPOINT (DESIGN DAY)

RANGE	FUNCTION
0.0-999.9 °F, °C	This the chilled water setpoint output to the chillers and used to determine the plant mode (parameter 7.3)
44°F	Default

7.11 MAXIMUM CHILLED WATER TEMPERATURE SETPOINT RESET

RANGE	FUNCTION
0.0-999.9 °F, °C	For future use
48°F	Default

7.12 COOLING VALVES PID (ASHRAE 90.1)

OPTIONS	FUNCTION
False	The cooling valves option is not used
True	The IPC will receive the position of the most open cooling valve from the BMS and using a PID loop will maintain said valve at the desired setpoint (parameter 7.13), by means of modifying the active zone setpoint.
Disable	Default

7.13 COOLING VALVE MAX OPENING SETPOINT

RANGE	FUNCTION
0.0-100.0 %	If parameter 7.12 is true , this is the position at which the IPC will maintain the position of the cooling valve with the maximum opening
95%	Default

7.14 COOLING VALVE PID GAIN

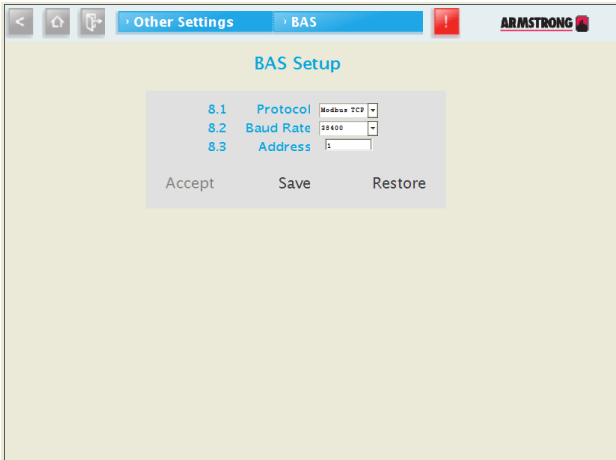
RANGE	FUNCTION
0.0-100.0	Cooling valves PID proportional gain
0.5	Default

7.15 COOLING VALVE PID Ti

RANGE	FUNCTION
0.0-100.0	Cooling valves PID integral time
0.5	Default

DEFAULT SETTINGS	
OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

3.3.10 BAS SETUP



8.3 ADDRESS	
RANGE	FUNCTION
0-127	Selects the IPC BAS address. Only applies to Modbus protocols
	To be configured on site

DEFAULT SETTINGS	
OPTIONS	FUNCTION
Accept	The IPC accepts the changes made to the setup. It changes from grayed out to bold when a change was made.
Save	When logged-in in level 2, save all current parameters as default.
Restore	When logged-in in level 1 or 2, restore all current parameters as default.

8.1 PROTOCOL	
OPTIONS	FUNCTION
N/A	No BAS protocol is selected
Modbus RTU	Selects Modbus RTU
BACnet IP	Selects BACnet IP
BACnet MS/TP	Selects BACnet MS/TP
Lonworks	Selects Lonworks
Modbus TCP	Selects Modbus TCP
	To be configured on site

8.2 BAUD RATE	
OPTIONS	FUNCTION
9600	Selects 9600 as baud rate. Only applies to Modbus and Metasys protocols
19200	Selects 19200 as baud rate. Only applies to Modbus and Metasys protocols
38400	Selects 38400 as baud rate. Only applies to Modbus and Metasys protocols
76800	Selects 76800 as baud rate. Only applies to Modbus and Metasys protocols
	To be configured on site

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