



AYK 550 AIR MODULATOR

QUICK START

Supersedes: Nothing

Form 100.42-NO1 (206)

QUICK START AYK550-UH HVAC DRIVES (1...150HP)



Table of Contents










Safety

Use of Warnings and Notes 1

Start-Up

HVAC Control Panel Features 3
Start-Up 5
Modes 6
Application Macros 16
YORK Defaults 19

Safety

-  **Warning!** The AYK550 adjustable speed AC drive should **ONLY** be installed by a qualified electrician.
-  **Warning!** Even when the motor is stopped, dangerous voltage is present at the Power Circuit terminals U1, V1, W1 and U2, V2, W2 and, where present, UDC+, UDC-, BRK+ and BRK-.
-  **Warning!** Dangerous voltage is present when input power is connected. After disconnecting the supply, wait at least 5 minutes (to let the intermediate circuit capacitors discharge) before removing the cover.
-  **Warning!** Even when power is removed from the input terminals of the AYK550, there may be dangerous voltage (from external sources) on the terminals of the relay outputs R01...R03.
-  **Warning!** When the control terminals of two or more drive units are connected in parallel, the auxiliary voltage for these control connections must be taken from a single source which can either be one of the units or an external supply.
-  **Warning!** The AYK550-UH is not a field repairable unit. Never attempt to repair a malfunctioning unit; contact the factory or your local Authorized Service Center for replacement.
-  **Warning!** The AYK550 will start up automatically after an input voltage interruption if the external run command is on.
-  **Warning!** The heat sink may reach a high temperature. Consult York AYK550 Users Manual.
-  **Warning!** If the drive will be used in a floating network, remove screws at EM1 and EM3 (Frame size R1...R4), or F1 and F2 (Frame size R5 or R6). Consult YORK AYK550 Users Manual Form 100.42-O1 (604).

Note! For more technical information, contact the factory or your local YORK sales representative.

Use of Warnings and Notes

There are two types of safety instructions throughout this manual:

- Notes draw attention to a particular condition or fact, or give information on a subject.
- Warnings caution you about conditions which can result in serious injury or death and/or damage to the equipment. They also tell you how to avoid the danger. The warning symbols are used as follows:



Dangerous voltage warning warns of high voltage which can cause physical injury and/or damage to the equipment.

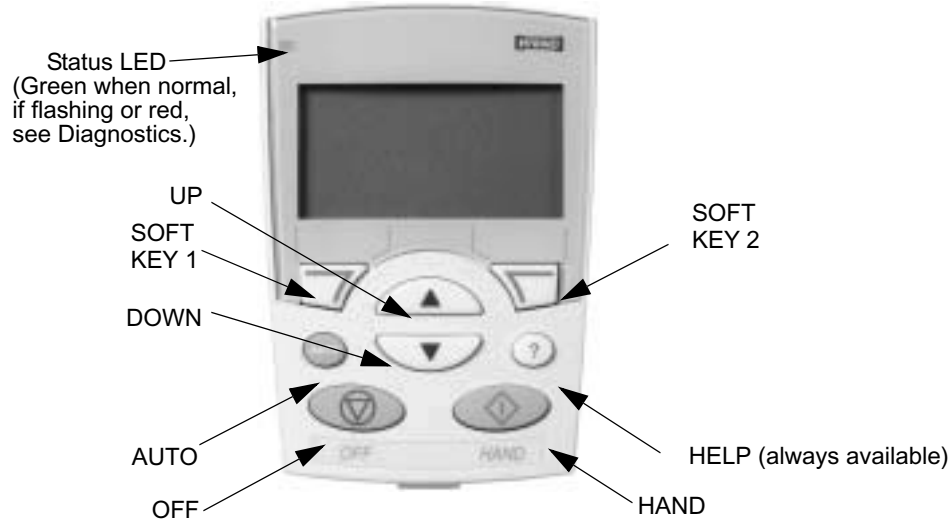


General warning warns about conditions, other than those caused by electricity, which can result in physical injury and/or damage to the equipment

Start-Up

HVAC Control Panel Features

The AYK550 HVAC control panel (ACS-CP-B) features:



X0201




- Language selection for the display
- Drive connection that can be made or detached at any time
- Start-up assistant to facilitate drive commissioning
- Copy function for moving parameters to other AYK550 drives
- Backup function for saving parameter sets
- Context sensitive help
- Real-time clock

General Display Features

Soft Key Functions

The soft key functions are defined by text displayed just above each key.

Display Contrast

To adjust display contrast, simultaneously press  and  or , as appropriate.






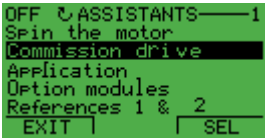
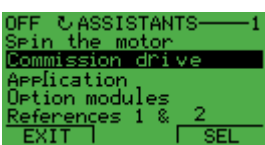


Start-Up

Start-Up can be performed in two ways:

- Using the Start-Up Assistant.
- Changing the parameters individually.

Start-Up by Using the Start-Up Assistant








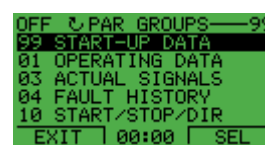
To start the Start-Up Assistant, follow these steps:












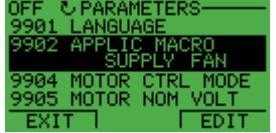
1	Select MENU to enter the main menu		
2	Select ASSISTANTS with the Up/Down buttons and select ENTER.	 	
3	Scroll to COMMISSION DRIVE with the Up/Down buttons.		
4	Change the values suggested by the assistant to your preferences and then press SAVE after every change.		

The Start-Up Assistant will guide you through the start-up.

Start-Up by Changing the Parameters Individually

To change the parameters, follow these steps:

1	Select MENU to enter the main menu.		
2	Select the Parameters mode with the UP/DOWN buttons and select ENTER to select the Parameters mode.	 	
3	Select the appropriate parameter group with the UP/DOWN buttons and select SEL	 	

4	Select the appropriate parameter in a group with the UP/DOWN buttons. Select EDIT to change the parameter value.	  	
5	Press the UP/DOWN buttons to change the parameter value.	 	
6	Select SAVE to store the modified value or select CANCEL to leave the set mode. Any modifications not saved are cancelled.		
7	Select EXIT to return to the listing of parameter groups, and again to return to the main menu.	 	

To complete the control connections by manually entering the parameters, see "Parameters Mode" in this section.

For detailed hardware description, see the "Technical Data" section.

Note! The current parameter value appears below the highlighted parameter.

Note! To view the default parameter value, press the UP/DOWN buttons simultaneously.

Note! The most typical and necessary parameters to change are parameter groups 99 Start-up data, 10 Start/Stop/Dir, 11 Reference Select, 20 Limits, 21 Start/Stop, 22 Accel/Decel, 26 Motor Control and 30 Fault Functions.

Note! To restore the default factory settings, select the application macro HVAC default.

Modes

The HVAC control panel has several different modes for configuring, operating and diagnosing the drive. The modes are:

- **Standard display mode** – Shows drive status information and operates the drive.
- **Parameters mode** – Edits parameter values individually.
- **Start-up assistant mode** – Guides the start-up and configuration.
- **Changed parameters mode** – Shows changed parameters.
- **Drive parameter backup mode** – Stores or uploads the parameters.
- **Clock set mode** – Sets the time and date for the drive.
- **I/O settings mode** – Checks and edits the I/O settings.

Standard Display Mode

Use the standard display mode to read information on the drive's status and to operate the drive. To reach the standard display mode, press EXIT until the LCD display shows status information as described below.

Status Information

Top. The top line of the LCD display shows the basic status information of the drive.

- HAND – Indicates that the drive control is local, that is, from the control panel.
- AUTO – Indicates that the drive control is remote, such as the basic I/O (X1) or fieldbus.
- ↻ – Indicates the drive and motor rotation status as follows:

Control panel display	Significance
Rotating arrow (clockwise or counterclockwise)	<ul style="list-style-type: none"> • Drive is running and at setpoint • Shaft direction is forward or reverse
Rotating arrow blinking	Drive is running but not at setpoint
Stationary arrow	Drive is stopped

- Upper right – shows the active reference.

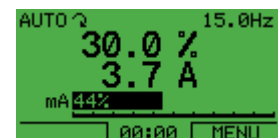
Middle. Using parameter group 34, the middle of the LCD display can be configured to display:

- One to three parameter values – The default display shows parameters 0103 (OUTPUT FREQ) in percentages, 0104 (CURRENT) in amperes and 0120 (AI1) in milliamperes.
- A bar meter rather than one of the parameter values.





Bottom. The bottom of the LCD display shows:

- Lower corners – show the functions currently assigned to the two soft keys.
- Lower middle – displays the current time (if configured to show the time).



Operating the Drive

AUTO/HAND – The very first time the drive is powered up, it is in the auto control (AUTO) mode, and is controlled from the Control terminal block X1.

To switch to hand control (HAND) and control the drive using the control panel, press and hold the  or  button.

- Pressing the HAND button switches the drive to hand control while keeping the drive running.
- Pressing the OFF button switches to hand control and stops the drive.

To switch back to auto control (AUTO), press and hold the  button.


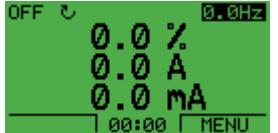











Hand/Auto/Off – To start the drive press the HAND or AUTO buttons, to stop the drive press the OFF button.





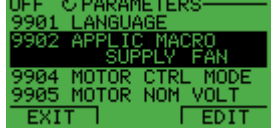
Reference – To modify the reference (only possible if the display in the upper right corner is in reverse video) press the UP or DOWN buttons (the reference changes immediately).

The reference can be modified in the local control mode, and can be parameterized (using Group 11 reference select) to also allow modification in the remote control mode.

Parameters Mode

To change the parameters, follow these steps:

1	Select MENU to enter the main menu.		
2	Select the Parameters mode with the UP/DOWN buttons, and select ENTER to select the Parameters mode.	 	
3	Select the appropriate parameter group with the UP/DOWN buttons and select SEL	 	
4	Select the appropriate parameter in a group with the UP/DOWN buttons. Select EDIT to change the parameter.	 	
5	Press the UP/DOWN buttons to change the parameter value.		

6	Select SAVE to store the modified value or select CANCEL to leave the set mode. Any modifications not saved are cancelled.		
7	Select EXIT to return to the listing of parameter groups, and again to return to the main menu.	 	

To complete the control connections by manually entering the parameters, see "Parameters Mode" in the this section.

For detailed hardware description, see the Appendix.

Note! The current parameter value appears below the highlighted parameter.


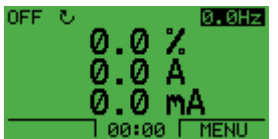







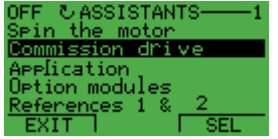
Note! To view the default parameter value, press the UP/DOWN buttons simultaneously.



Note! The most typical and necessary parameters to change are parameter groups 99 Start-up data, 10 Start/Stop/Dir, 11 Reference Select, 20 Limits, 21 Start/Stop, 22 Accel/Decel, 26 Motor Control and 30 Fault Functions.

Note! To restore the default factory settings, select the application macro HVAC default.

Start-Up Assistant Mode

To start the Start-Up Assistant, follow these steps:

1	Select MENU to enter the main menu		
2	Select ASSISTANTS with the Up/Down buttons and select ENTER.	  	
3	Scroll to COMMISSION DRIVE with the Up/Down buttons and select SEL.	  	

4	Change the values suggested by the assistant to your preferences and then press SAVE after every change.		
---	--	---	---

The Start-Up Assistant will guide you through the start-up.

The Start-Up Assistant guides you through the basic programming of a new drive. (You should familiarize yourself with basic control panel operation and follow the steps outlined above.) At the first start, the drive automatically suggests entering the first task, Language Select. The assistant also checks the values entered to prevent entries that are out of range.

The Start-Up Assistant is divided into tasks. You may activate the tasks one after the other, as the Start-Up Assistant suggests, or independently.

Note! If you want to set the parameters independently, use the Parameters mode.








The order of tasks presented by the Start-up Assistant depends on your entries. The following task list is typical.

Task name	Description
Spin the motor	<ul style="list-style-type: none"> • Prompts for control panel display language selection. • Prompts for motor data. • Guides user through rotation check.
Commission drive	Prompts for motor data.
Application	Prompts for application macro selection.
References 1 & 2	<ul style="list-style-type: none"> • Prompts for the source of speed references 1 and 2. • Prompts for reference limits. • Prompts for frequency (or speed) limits.
Start/Stop Control	<ul style="list-style-type: none"> • Prompts for the source for start and stop commands. • Prompts for start and stop mode definition. • Prompts for acceleration and deceleration times.
Protections	<ul style="list-style-type: none"> • Prompts for current and torque limits. • Prompts for the use of Run enable and Start enable signals. • Prompts for the use of emergency stop. • Prompts for Fault function selection. • Prompts for Auto reset functions selection.
Constant Speeds	<ul style="list-style-type: none"> • Prompts for the use of constant speeds. • Prompts for constant speed values.
PID Control	<ul style="list-style-type: none"> • Prompts for PID settings. • Prompts for the source of process reference. • Prompts for reference limits. • Prompts for source, limits and units for the process actual value. • Defines the use of Sleep function.
Low Noise Setup	<ul style="list-style-type: none"> • Prompts for switching frequency. • Prompts for definition of Flux optimization. • Prompts for the use of Critical speeds.

Task name	Description
Panel Display	Prompts for display variable and unit settings.
Timed Functions	Prompts for the use of Timed functions.
Output	<ul style="list-style-type: none"> Prompts for the signals indicated through the relay outputs. Prompts for signals indicated through the analog outputs AO1 and AO2. Sets the minimum, maximum, scaling and inversion values.

Changed Parameters Mode

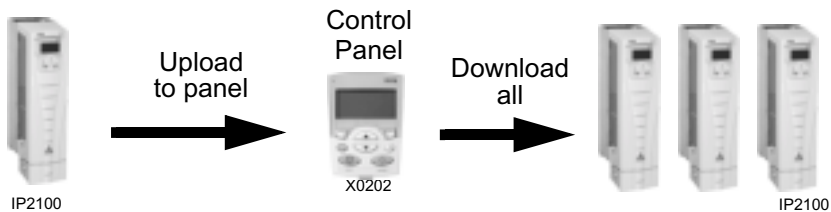
To view changed parameters, follow these steps:

1	Select MENU to enter the menu.		
2	Select CHANGED PAR with the UP/DOWN buttons and select ENTER.	 	
3	A list of changed parameters is displayed. Select EXIT to exit the parameters mode.		

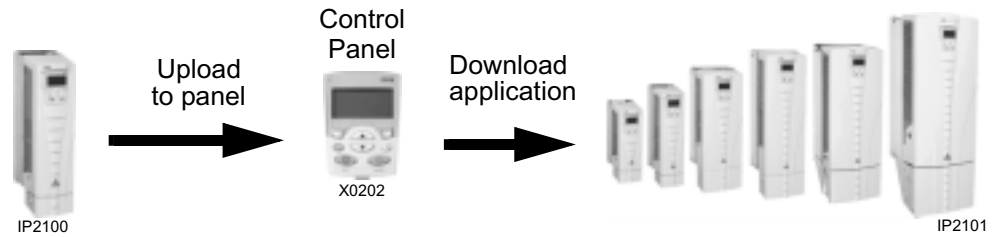
Drive Parameter Backup Mode

Use the parameter backup mode to export parameters from one drive to another. The parameters are uploaded from a drive to the control panel and downloaded from the control panel to another drive. Two options are available:

- Download all – copies all application and motor parameters to the drive. Useful where drives of the same size use the same application. Also useful to create a backup for recovery if drive parameters are corrupted or erased.



- Download application – copies only the application to the drive. Useful where drives of different sizes use the same application. Parameters 9905...9909, 1605, 1607, 5201, group 51 parameters and internal motor parameters are NOT copied.




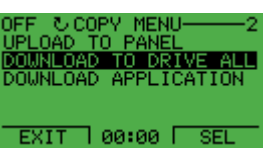

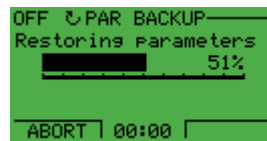





To upload parameters to control panel, follow these steps:


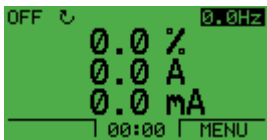



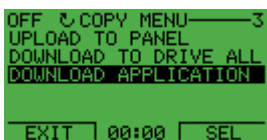

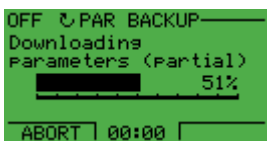
1	Select MENU to enter the main menu.		
2	Select PAR BACKUP with the UP/DOWN buttons and select ENTER.		
3	Scroll to Upload to Panel and select SEL.		
4	The text "Copying parameters" and a progress diagram is displayed. Select ABORT if you want to stop the process.		
5	The text "Parameter upload successful" is displayed and the control panel returns to the PAR BACKUP menu. Select EXIT to return to the main menu. Now you can disconnect the panel.		




To download all parameters to drive, follow these steps:

1	Select MENU to enter the menu.		
---	--------------------------------	--	--

2	Select PAR BACKUP with the UP/DOWN buttons.		
3	Scroll to Download to drive all and select SEL.		
4	The text "restoring parameters" is displayed. Select ABORT if you want to stop the process.		
5	After the download stops, the message "Parameter download successful" is displayed and the control panel goes back to PAR BACKUP menu. Select EXIT to return to the main menu.		 

To download application to drive, follow these steps:

1	Select MENU to enter the menu.		
2	Select PAR BACKUP with the UP/DOWN buttons.		
3	Scroll to DOWNLOAD APPLICATION and select SEL.		
4	The text "Downloading parameters (partial)" is displayed. Select ABORT if you want to stop the process.		


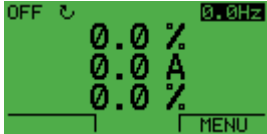











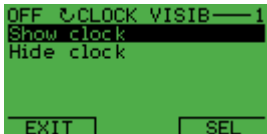




<p>5</p>	<p>The text "Parameter download successful" is displayed and the control panel returns to PAR BACKUP menu. Select EXIT to return to the main menu.</p>		 
----------	--	---	--

Note! If upload or download of parameters is aborted, the partial parameter set is not implemented.

Clock Set Mode


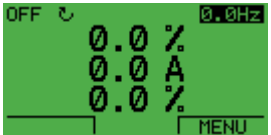














The clock set mode is used for setting the time and date for the internal clock of the AYK550. In order to use the timer functions of the AYK550, the internal clock has to be set first. Date is used to determine weekdays and is visible in Fault logs.

To set the clock, follow these steps:

<p>1</p>	<p>Select MENU to enter the main menu.</p>		
<p>2</p>	<p>Scroll to Clock Set with the UP/DOWN buttons and select ENTER to enter the Clock Set mode.</p>	  	
<p>3</p>	<p>Scroll to Clock Visibility with the UP/DOWN buttons and select SEL to change the visibility of the clock.</p>	  	
<p>4</p>	<p>Scroll to Show Clock with the UP/DOWN buttons and select SEL to make the clock visible.</p>	  	
<p>5</p>	<p>Scroll to Set Time with the UP/DOWN buttons and select SEL.</p>	  	


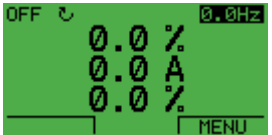














I/O Settings Mode

To view and edit the I/O settings, follow these steps:

1	Select MENU to enter the main menu.		
2	Scroll to I/O Settings with the UP/DOWN buttons and select ENTER.	 	
3	Scroll to the I/O setting you want to view with the UP/DOWN buttons and select SEL.	 	
4	Select the setting you want to view with the UP/DOWN buttons and select OK.	 	
5	You can change the value with the UP/DOWN buttons and save it by selecting SAVE. If you do not want to change the setting, select CANCEL.	 	
6	Select EXIT to return to the main menu.		

I/O Settings Mode

To view and edit the I/O settings, follow these steps:

1	Select MENU to enter the main menu.		
2	Scroll to I/O Settings with the UP/DOWN buttons and select ENTER.	 	
3	Scroll to the I/O setting you want to view with the UP/DOWN buttons and select SEL.	 	
4	Select the setting you want to view with the UP/DOWN buttons and select OK.	 	
5	You can change the value with the UP/DOWN buttons and save it by selecting SAVE. If you do not want to change the setting, select CANCEL.	 	
6	Select EXIT to return to the main menu.		

Application Macros

Overview

Macros change a group of parameters to new, predefined values designed for specific applications. Use macros to minimize the need for manual editing of parameters. Selecting a macro sets all other parameters to their default values, except:

- Group 99: Start-up Data parameters
- The PARAMETER LOCK 1602
- The PARAM SAVE 1607
- Groups 50...52 serial communication parameters
- Group 29: Maintenance triggers

After selecting a macro, additional parameter changes can be made manually using the control panel.

Application macros are enabled by setting the value for parameter 9902 APPLIC MACRO. By default, HVAC default (value 1) is the enabled macro.

General Considerations

The following considerations apply for all macros:

- When using a direct speed reference in AUTO mode, connect the speed reference to analog input 1 (AI1), and provide the START command using digital input 1 (DI1). In HAND/OFF mode, the control panel provides the speed reference and START command.
- When using process PID, connect the feedback signal to analog input 2 (AI2). As a default, the control panel sets the Setpoint, but analog input 1 can be used as an alternate source. You can set up process PID using parameters (Group 40) or using the PID control assistant (recommended).


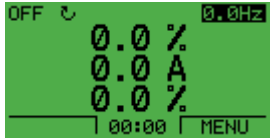



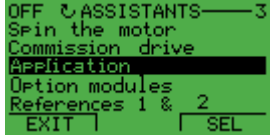


Application / Macro Listing

This section describes the following macros:

9902 Value	Macro	9902 Value	Macro
1	HVAC default	8	Internal timer
2	Supply fan	9	Internal timer with constant speeds
3	Return fan	10	Floating point
4	Cooling tower fan	11	Dual setpoint PID
5	Condenser	12	Dual setpoint PID with constant speeds
6	Booster pump	13	E-bypass
7	Pump alternation	14	Hand Control

Selecting an Application Macro

To select a macro, follow these steps:

1	Select MENU to enter the main menu.		
2	Select ASSISTANTS with the Up/Down buttons and select ENTER.		
3	Scroll to APPLICATION and select ENTER.		
4	Select a macro with the Up/Down buttons and select SAVE.		

Restoring Defaults

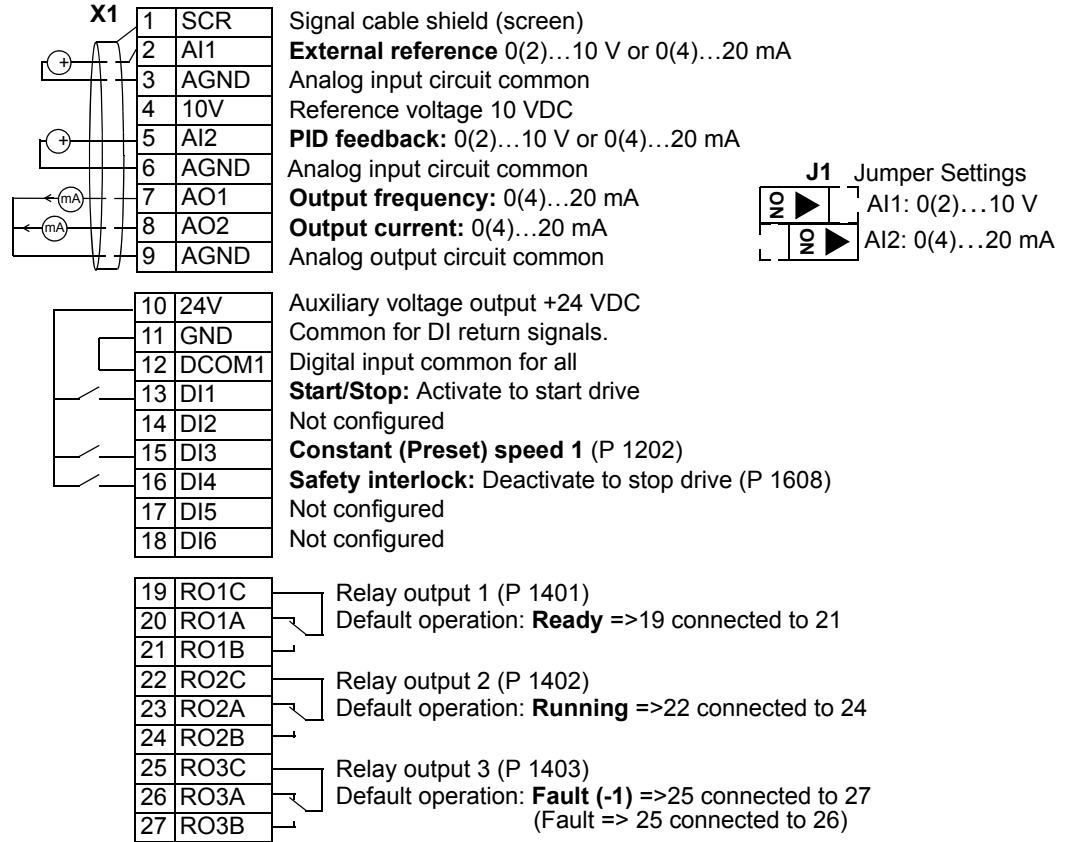
To restore the factory default settings, select the application macro HVAC Default.

Control Wiring

Each macro has specific requirements for control wiring. For general details about the AYK550 control wiring terminals, see “Control Terminal Descriptions” on page 238. Specific wiring requirements are included with each macro description.

HVAC Default

This macro provides the factory default parameter settings for the AYK550-UH. Factory defaults can be restored at any time by setting parameter 9902 to 1. The diagram below shows typical wiring using this macro. When using direct speed reference in AUTO mode or process PID, see "General Considerations" on page 16.



Parameters Changed Relative to HVAC Default			
Parameter	Value	Parameter	Value
None (Default macro)			

Note! YORK Drives are pre-configured using the "HVAC" default macro. Changing user macros may require changes to factory control wiring.

Note! To program critical skip frequencies to eliminate mechanical "system" resonance and vibrations, see Parameter Group 25.

YORK Defaults

GROUP 34 PANEL DISPLAY

3401	Signal1 Param	Output Freq
3402	Signal1 Min	0.0 Hz
3403	Signal1 Max	500.0 Hz
3404	Output1 Dsp Form	+0.0%
3405	Output1 Unit	%
3406	Output1 Min	0.0%
3407	Output1 Max	833.3%
3408	Signal2 Param	Current
3409	Signal2 Min	0.0 A
3410	Signal2 Max	1.1* A
3411	Output2 Dsp Form	+0.0
3412	Output2 Unit	A
3413	Output2 Min	0.0 A
3414	Output2 Max	1.1* A
3415	Signal3 Param	AI 1
3416	Signal3 Min	0.0%
3417	Signal3 Max	100.0%
3418	Output3 Dsp Form	+0.0
3419	Output3 Unit	mA
3420	Output3 Min	0.0 mA
3421	Output3 Max	20.0 mA

GROUP 35 MOTOR TEMP MEAS

3501	Sensor Type	None
3502	Input Selection	AI1
3503	Alarm Limit	0
3504	Fault Limit	0

GROUP 36 TIMED FUNCTIONS

3601	Timers Enable	Not Sel
3602	Start Time 1	12:00:00 AM
3603	Stop Time 1	12:00:00 AM
3604	Start Day 1	Monday
3605	Stop Day 1	Monday
3606	Start Time 2	12:00:00 AM
3607	Stop Time 2	12:00:00 AM
3608	Start Day 2	Monday
3609	Stop Day 2	Monday
3610	Start Time 3	12:00:00 AM
3611	Stop Time 3	12:00:00 AM
3612	Start Day 3	Monday
3613	Stop Day 3	Monday
3614	Start Time 4	12:00:00 AM
3615	Stop Time 4	12:00:00 AM
3616	Start Day 4	Monday
3617	Stop Day 4	Monday
3622	Boost Sel	Not Sel
3623	Boost Time	00:00:00
3626	Timer 1 Src	Not Sel
3627	Timer 2 Src	Not Sel
3628	Timer 3 Src	Not Sel
3629	Timer 3 Src	Not Sel

GROUP 40 PROCESS PID SET 1

4001	Gain	2.5
4002	Integration Time	3.0 s
4003	Derivation Time	0.0 s
4004	PID Derivation Filter	1.0 s
4005	Error Value Inv	No
4006	Units	%
4007	Unit Scale	1
4008	0% Value	0.0%
4009	100% Value	100.0%
4010	Set Point Sel	Keypad
4011	Internal Setpnt	40.0%
4012	Setpoint Min	0.0%
4013	Setpoint Max	100.0%
4014	Fbk Sel	Act1
4015	Fbk Multiplier	0.000
4016	Act1 Input	AI2
4017	Act2 Input	AI2
4018	Act1 Minimum	0%
4019	Act1 Maximum	100%
4020	Act2 Minimum	0%
4021	Act2 Maximum	100%
4022	Sleep Selection	Not Sel
4023	PID Sleep Level	0.0 Hz
4024	PID Sleep Delay	60.0 s
4025	Wake-Up Dev	0.0%
4026	Wake-Up Delay	0.50 s
4027	PID Param Set	Set 1

GROUP 41 PROCESS PID SET 2

4101	Gain	2.5
4102	Integration Time	3.0 s
4103	Derivation Time	0.0 s
4104	PID Deriv Filter	1.0 s
4105	Error Value Inv	No
4106	Units	%
4107	Unit Scale	0.0%
4108	% Value	0.0%
4109	100% Value	100.0%
4110	Set Point Set	Keypad
4111	Internal Setpnt	40.0%
4112	Setpoint Min	0.0%
4113	Setpoint Max	100.0%
4114	Fbk Sel	Act1
4115	Fbk Multiplier	0.000
4116	Act1 Input	AI2
4117	Act2 Input	0%
4118	Act1 Minimum	0%
4119	Act1 Maximum	100%
4120	Act2 Minimum	0%
4121	Act2 Maximum	100%
4122	Sleep Selection	Not Sel
4123	PID Sleep Level	0.0 Hz
4124	PID Sleep Delay	60.0 s
4125	Wake-Up Dev	0.0%
4126	Wake-Up Delay	0.50 s

GROUP 42 EXT/TRIM PID

4201	Gain	1.0
4202	Integration Time	60.0 s
4203	Derivation Time	0.0 s
4204	PID Deriv Time	1.0 s
4205	Error Value Inv	No
4206	Units	%
4207	Unit Scale	1
4208	9% Value	0.0%
4209	100% Value	100.0%
4210	Set Point Set	AI1
4211	Internal Setpnt	40.0%
4212	Setpoint Min	0.0%
4213	Setpoint Max	100.0%
4214	Fbk Sel	Act1
4215	Fbk Multiplier	0.000
4216	Act1 Input	AI2
4217	Act2 Input	AI2
4218	Act1 Minimum	0%
4219	Act1 Maximum	100%
4220	Act2 Minimum	0%
4221	Act2 Maximum	100%
4228	Activate	Not Sel
4229	Offset	0.0%
4230	Trim Mode	Not Sel
4231	Trim Scale	100.0%
4232	Correction Src	PID2ref

GROUP 51 EXT COMM MODULE

5101	FBA Type	Not Defined
5192	FBA Par 2...26	0
5127	FBA Par Refresh	Done
5128	FILE CPI FW Rev	0000 hex
5129	FILE Config ID	0000 hex
5130	FILE Config Rev	0000 hex
5131	FBA Status	Idle
5132	FBA CPIFW Rev	0000 hex
5133	FBA Appl FW Rev	0000 hex

GROUP 52 PANEL COMM

5201	Station ID	1
5202	Baud Rate	9.6 kb/s
5203	Parity	8N1
5204	OK Messages	0
5205	Parity Errors	0
5206	Frame Errors	0
5207	Buffer Overruns	0
5208	CRC Errors	0

GROUP 53 EFB PROTOCOL

5301	EFB Protocol ID	0000 hex
5302	EFB Station ID	1
5303	EFB Baud Rate	9.6 kb/s
5304	EFB Parity	8N1
5305	EFB Ctrl Profile	YORK Drives
5306	EFB OK Messages	0
5307	EFB CRC Errors	0
5308	EFB UART Errors	0
5309	EFB Status	Idle
5310	EFB Par 10-20	0

GROUP 81 PFC CONTROL

8103	Reference Step 1	0.0%
8104	Reference Step 2	0.0%
8105	Reference Step 3	0.0%
8109	Start Freq 1	60.0 Hz
8110	Start Freq 2	60.0 Hz
8111	Start Freq 3	60.0 Hz
8112	Low Freq 1	30.0 Hz
8113	Low Freq 2	30.0 Hz
8114	Low Freq 3	30.0 Hz
8115	Aux Mot Start D	5.0 s
8116	Aux Mot Stop D	3.0 s
8117	Nr Of Aux Mot	1
8118	Autochnng Interv	Not Sel
8119	Autochnng Level	50.0%
8120	Interlocks	D14
8121	Reg Bypass Ctrl	No
8122	PFC Start Delay	0.50 s
8123	PFC Enable	Not Sel
8124	Acc in Aux Stop	Not Sel
8125	Dec in Aux Start	Not Sel
8126	Timed Autochnng	Not Sel
8127	Motors	2



P.O. Box 1592, York, Pennsylvania USA 17405-1592
Copyright © by Johnson Controls 2013
Form 100.42-NO1 (206)
Supersedes: Nothing

800-861-1001
www.johnsoncontrols.com

Subject to change without notice. Printed in USA
ALL RIGHTS RESERVED