

KEYPAD OPERATION AND QUICK-START



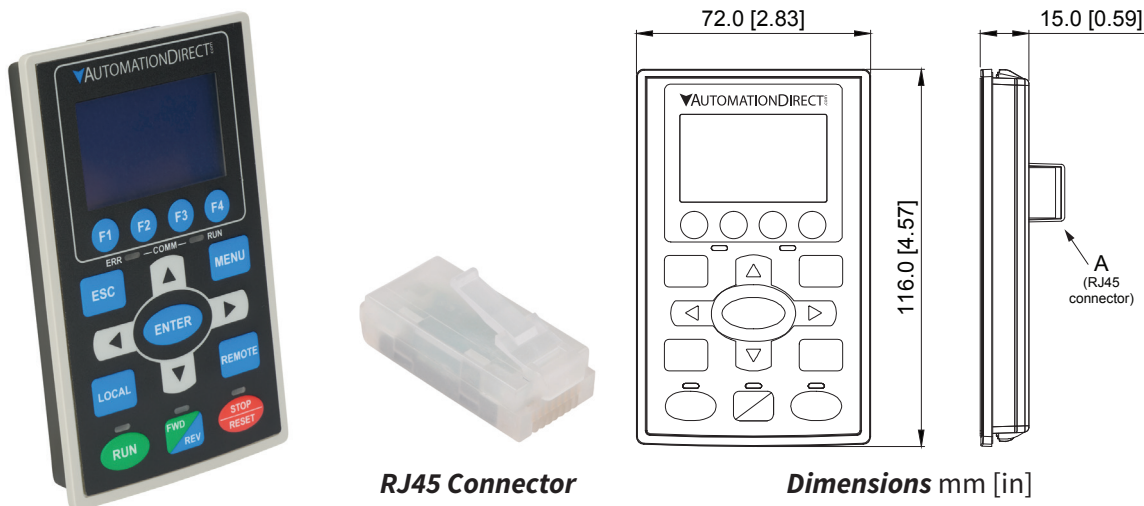
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Chapter 3: Keypad Operation and Quickstart

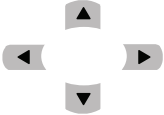







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THE DURAPULSE GS4 DIGITAL KEYPAD

The GS4 removable keypad can be installed flat on the surface of the control box (with or without bezel GS4-BZL) with the appropriate hole punched in the control box cover (See Arrow “A”). Use the supplied RJ45 connector and an RJ45 cable to connect to the GS4 drive. The front cover is IP56 rated. The keypad may be mounted remotely and connected to the drive with a standard RJ45 CAT5e straight through patch cable. (An RJ45 crossover cable will NOT work as the keypad extension cable.) **The maximum RJ45 extension lead is 5m (16ft).** No other wiring is required.



Descriptions of Keypad Functions														
	RUN Key <ul style="list-style-type: none"> Valid only when the source of operation command is from the keypad. The RUN LED light (above the button) turns ON when the drive is running. RUN can be pressed even when drive is in process of stopping. When in "LOCAL" mode, RUN is only valid when the source of operation command is from the keypad. 													
	STOP/RESET Key <i>This key has the highest processing priority in any situation.</i> <ul style="list-style-type: none"> When the drive receives a STOP command, whether or not the drive is in operation or stop status, the drive will execute a "STOP" command. The RESET key can be used to reset the drive after a fault occurs. For those faults that can't be reset by the RESET key, see the fault records after pressing MENU key for details. <p>NOTE: The ability to STOP the drive from the keypad is effective ONLY if the drive is configured to RUN and/or STOP from the keypad. Keypad STOP can be disabled by parameters such as P3.00, P3.01, P3.03~P3.16.</p>													
	Operation Direction Key <ul style="list-style-type: none"> This key only controls the operation direction and does NOT activate the drive. FWD: forward. REV: reverse. Refer to the LED descriptions for more details. 													
	ENTER Key Press ENTER to go to the next menu level. If it is the last level, then press ENTER to execute the command.													
	ESC Key The ESC key function serves to leave the current menu and return to the last menu. It also functions as a return key while in the sub-menu.													
	MENU Key Press MENU to return to the Main Menu. Menu Content: <table border="1" data-bbox="381 1774 1404 1890"> <tr> <td>1) Param Setup</td><td>5) PLC</td><td>9) Time Setup</td></tr> <tr> <td>2) Quick Start</td><td>6) Copy Param</td><td>10) Language</td></tr> <tr> <td>3) Keypad Lock</td><td>7) Copy PLC</td><td>11) Start-up</td></tr> <tr> <td>4) Fault Record</td><td>8) Displ Setup</td><td></td></tr> </table>		1) Param Setup	5) PLC	9) Time Setup	2) Quick Start	6) Copy Param	10) Language	3) Keypad Lock	7) Copy PLC	11) Start-up	4) Fault Record	8) Displ Setup	
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2) Quick Start	6) Copy Param	10) Language												
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4) Fault Record	8) Displ Setup													
<i>Continued on next page.</i>														

Descriptions of Keypad Functions (continued)	
	Direction: Left/Right/Up/Down <ul style="list-style-type: none"> In the numeric value setting mode, the arrows are used to move the cursor and change the numeric value. In the menu/text selection mode, the arrows are used for item selection.
	Function Keys <ul style="list-style-type: none"> F1 is JOG function. The F2, F3 keys are reserved for future use. The F4 key is used to ADD parameters to the user-defined My-Menu Quick-Start Menu (see "My Menu" in the Quick-Start section of this chapter for more information).
	LOCAL Key <ul style="list-style-type: none"> This key causes the drive to follow the LOCAL (2nd source) settings for frequency command and operation.* The factory settings of both source of Local frequency and Local operation are the Digital Keypad. Pressing the LOCAL key with the drive stopped will switch the operation and frequency to the LOCAL source (P3.01 and P4.01). Pressing the LOCAL key with the drive running can be configured to keep running or to stop upon transition. See P3.58 for more information. The selected mode, LOCAL or REMOTE, will be displayed on the GS4-KPD. When P3.58=0 then LOCAL correlates to HAND mode. The Digital Input Definition must not be set to 33 (LOC/REM Switch). <p><i>*Refer to P3.58 for more detail and other options on how the drive behaves when switching between LOCAL and REMOTE. Refer to P3.00, P3.01, P4.00 and P4.01 for defining LOCAL and REMOTE sources of operation and frequency.</i></p>
	REMOTE Key <ul style="list-style-type: none"> This key causes the drive to follow the REMOTE (1st source) settings for frequency command and operation.* The factory settings of both source of Remote frequency and Remote operation are the Digital Keypad. Pressing the REMOTE key with the drive stopped will switch the operation and frequency to the REMOTE source. Pressing the REMOTE key with the drive running can be configured to keep running or to stop upon transition. See P3.58 for more information. The selected mode, LOCAL or REMOTE, will be displayed on the GS4-KPD. When P3.58=0 then LOCAL correlates to HAND mode. The Digital Input definition must not be set to 33 (LOC/REM Switch). <p><i>*Refer to P3.58 for more detail and other options on how the drive behaves when switching between LOCAL and REMOTE. Refer to P3.00, P3.01, P4.00 and P4.01 for defining LOCAL and REMOTE sources of operation and frequency.</i></p>
Descriptions of LED Functions	
	Steady ON: Drive is running. Blinking: Drive is stopping or in base block. Steady OFF: Drive is not running.
	Steady ON: Drive is stopped or in the process of stopping. Blinking: Drive is in standby; selected speed reference source is at zero. (If expecting movement, confirm that a speed reference is present.) Steady OFF: Drive is running. <i>NOTE: The ability to STOP the drive from the keypad is effective ONLY if the drive is configured to RUN and/or STOP from the keypad. Keypad STOP can be disabled by parameters such as P3.00, P3.01, P3.03~P3.16.</i>
	Operation Direction LED <ul style="list-style-type: none"> Green light is on, the drive is running forward or will run forward when given a run command. Red light is on, the drive is running backwards or will run backwards when given a run command. Alternating green/red light: the drive is changing direction.
	ERR_COMM_RUN These LEDs represent the status of RS-485 communication through COM port 1. RUN-LED Flashing: RS485 is transferring ERR-LED Red: Latest Tx or Rx failed Off: Latest Tx or RX = OK Flashing: Please check the RS-485 master for proper configuration/communication, and also check the PLC code for proper operation if serial comm is enabled inside the PLC.

GS4 START-UP DISPLAY



At power up, the Start-up Page displays the *DURAPULSE*, GS4 logo. This page is replaced by the Status Page in 3 seconds.

Pressing the UP Arrow while the Start-up Page is displayed will show the current keypad firmware.

STATUS PAGE

			LOCAL
▲▼	F	60.00	Hz
	H	0.00	Hz
	v	0.00	Vdc
JOG		14:35:36	

Drive status:

Press the LOCAL key to allow local control of the drive.

Press the REMOTE key to allow remote control of the drive.

Pressing the Up and Down Direction keys allow the user to scroll through the Status Page items.

F X.xx Hz (actual GS4 command frequency)

H X.xx Hz (actual GS4 output frequency)

U XXX.x User defined value (in this example P8.00 = 3 DC bus voltage*)

A X.xx Amp (output amperage)

JOG and time:

JOG appears above the F1 key and is the function assigned to that key.

The GS4 internal clock is displayed, center bottom.



NOTE: When Power is applied, the keypad will display the startup Page followed by the Status Page. The Status Page displays the GS4 default settings F/H/U/A. While the order F/H/U/A is always fixed, P8.01 can be used to set which value appears on the top row at power-up. The UP and DOWN Arrows will scroll through the display options.



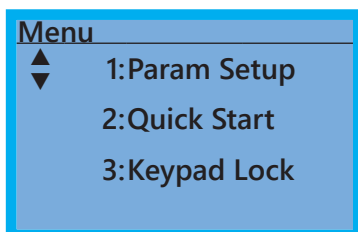
NOTE: If an “Err” appears on the keypad after pressing <Enter> in any menu or parameter, then the action did not take affect. The keypad will report back “End” if the action was performed correctly. Ex: writing a value out of range to a parameter will cause a “Err” message.



* **NOTE:** Refer to Parameter P8.00 in Chapter 4, AC Drive Parameters for a complete list of the values that can be displayed on line 3 of the keypad display. The value in P8.00 is the value that will be shown when the drive powers up. By scrolling to the User Defined row, the Left and Right Direction keys can be used to display any of the other selections available.

MENU PAGE

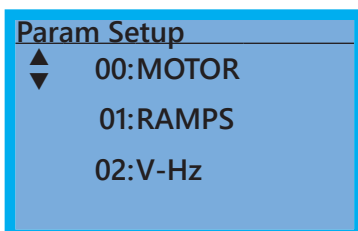
Press the Menu button from any page to access the Menu Page. Use the Up and Down Direction keys to scroll through the Menu content. Press the Enter key to open the selected Menu content item.



- 1: Param Setup - Parameter Setup
Set up the individual drive parameters.
- 2: Quick Start
Set typically used parameters to allow quick drive startup.
- 3: Keypad Lock
Lock the Keypad.
- 4: Fault Record
Display fault information for the drive.
- 5: PLC
Run the current PLC program.
- 6: Copy Param - Copy Parameters
Save drive parameters to the keypad or drive.
- 7: Copy PLC
Copy a previously saved PLC program to the keypad or drive.
- 8: Displ Setup
Adjust contrast and backlight settings for the display.
- 9: Time Setup
Set the time.
- 10: Language
Set the display language.
- 11: Start-up
Set the Start-up Page display.

PARAM SETUP - PARAMETER SETUP PAGE

See the individual parameter summary tables in *Chapter 4 - AC Drive Parameters* for specific parameter explanations and settings.



- 00: MOTOR
- 01: RAMPS
- 02: V-Hz
- 03: DIGITAL
- 04: ANALOG
- 05: PRESETS
- 06: PROTECT
- 07: PID
- 08: DISPLAY
- 09: COMMUNICATION
- 10: PUMP
- 11: FAULTS

QUICK-START – QUICK-START PAGE

The Quick Start function allows the user to set typically used parameters for quick drive startup and motor protection.

For basic applications, it may only be necessary to enter parameters into the “Basic Configuration” Menu. The “Basic” menu contains Motor definition/protection information and a bare minimum set of parameters that will need to be set. “Control I/O” allows for customization of the most common I/O settings, and each subsequent menu configures additional features and allows more customization of the drive.



If the GS4 drive has been previously configured, it is advisable to restore the default settings (by using parameter P9.08) before reconfiguring the drive.

Quick Start

- ▲ 1:Basic Config
- ▼ 2:Control I/O
- 3:Enhancements

The Quick Start function allows the user to quickly set typically used parameters. Not all of the six Quick Start categories need to be configured for every application, but the categories that are needed for the particular application should be configured in sequential order as shown below (starting with 1:Basic Config).

- 1: Basic Config
- 2: Control I/O
- 3: Enhancements
- 4: Protection
- 5: PID
- 6: My Menu (User Defined Quick Start Menu)

1: BASIC CONFIG**Basic Con :P00.00**

- ▲ 01:Mtr1 Max VoltOut
- ▼ 02:Mtr1 Amps Rated
- 03:Mtr1 Base Hz

Parameters in the Basic Configuration menu:

- | | | |
|----|-------|---|
| 1 | P0.00 | Motor 1 Maximum Output Voltage |
| 2 | P0.01 | Motor 1 Rated Current |
| 3 | P0.02 | Motor 1 Base Frequency |
| 4 | P0.03 | Motor 1 Rated RPM |
| 5 | P0.04 | Drive Maximum Output Frequency |
| 6 | P0.08 | Motor 1 Rated Horsepower (HP) |
| 7 | P0.09 | Motor 1 Number of Poles |
| 8 | P1.00 | Stop Method |
| 9 | P1.01 | Acceleration Time 1 |
| 10 | P1.02 | Deceleration Time 1 |
| 11 | P3.00 | 1st Source of Operation Command [Remote] |
| 12 | P3.01 | 2nd Source of Operation Command [Local] |
| 13 | P4.00 | 1st Source of Frequency Command [Remote] |
| 14 | P4.01 | 2nd Source of Frequency Command [Local] |
| 15 | P6.00 | Electronic Thermal Overload Relay (Motor 1) |
| 16 | P6.01 | Electronic Thermal Characteristic (Motor 1) |
| 17 | P6.33 | Drive Derating Method |
| 18 | P6.34 | Variable/Constant Torque Duty Selection |
| 19 | P9.08 | Restore to Default |

2: CONTROL I/O

Control I	:P03.02
▲ 01:2,3 wire Control	
02:DI1 Function	
03: DI2 Function	

Parameters in the Control I/O menu:

1	P3.02	2/3 Wire Operation Mode
2	P3.03	Multi-Function Input (DI1)
3	P3.04	Multi-Function Input (DI2)
4	P3.05	Multi-Function Input (DI3)
5	P3.06	Multi-Function Input (DI4)
6	P3.17	Multi-Function Output Terminal 1 (Relay 1)
7	P3.18	Multi-Function Output Terminal 2 (Relay 2)
8	P4.02	Analog Input 1 (AI1) Function
9	P4.03	Analog Input 2 (AI2) Function
10	P4.05	AI1 – I/V Selection
11	P4.06	AI2 – I/V Selection
12	P4.09	Analog Frequency Command for Reverse Run
13	P4.10	AI1 Input Bias (Offset)
14	P4.11	AI1 Input Bias (Offset) Polarity
15	P4.12	AI1 Input Gain
16	P4.13	AI1 Filter
17	P4.15	AI2 Input Bias (Offset)
18	P4.16	AI2 Input Bias (Offset) Polarity
19	P4.17	AI2 Input Gain
20	P4.18	AI2 Filter
21	P4.50	Analog Output 1 (AO1)
22	P4.51	AO1 Gain
23	P4.52	AO1 Negative Value Handle
24	P4.53	AO1 0~20mA/4~20mA Selection
25	P4.60	AO1 Output Constant Level
26	P5.01	Multi-Speed 1
27	P5.02	Multi-Speed 2
28	P5.03	Multi-Speed 3
29	P5.04	Multi-Speed 4

3: ENHANCEMENTS

Enhanceme	:P01.09
▲ 01:S Curve Acc1	
02:S Curve Dec1	
03:Jog Acc Time	

Parameters in the Enhancements menu:

1	P1.09	S-curve Accel Time 1
2	P1.10	S-curve Decel Time 1
3	P1.13	Jog Acceleration Time
4	P1.14	Jog Deceleration Time
5	P5.00	Jog Frequency
6	P1.19	Skip Frequency 1 Upper Limit
7	P1.20	Skip Frequency 1 Lower Limit
8	P1.25	DC Injection Current Level
9	P1.26	DC Injection Time During Start-up
10	P1.27	DC Injection Time During Stopping
11	P1.28	Start-Point for DC Injection During Stopping
12	P2.00	Volts/Hertz Settings
13	P2.01	Slip Compensation Gain
14	P2.25	Slip Compensation Filter
15	P2.02	Torque Compensation Gain
16	P2.03	Torque Compensation Filter
17	P2.10	PWM Carrier Frequency
18	P2.11	Control Mode
19	P2.18	Zero Speed Select
20	P6.25	Upper Limit of Output Frequency
21	P2.23	Automatic Energy-Saving Operation
22	P2.24	Power Saving Gain
23	P2.26	Slip Deviation Level
24	P2.27	Slip Deviation Detection time
25	P2.28	Slip Deviation Treatment

4: PROTECTION**Protectio :P06.04**

▲ 01:Auto Restart Qty
▼ 02:Reset Window
03:BB Spd Searc

Parameters in the Protection menu:

1	P6.04	Auto Restart after Fault
2	P6.05	Reset Time for Auto Restart after fault
3	P6.06	Base Block Speed Search after Fault (oc,ov,bb)
4	P6.09	Fwd/Rev Direction Inhibit
5	P6.13	Auto Adjustable Accel/Decel
6	P6.14	Over-torque Detection Mode (OT1)
7	P6.15	Over-torque Detection Level (OT1)
8	P6.16	Over-torque Detection Time (OT1)
9	P6.26	Lower Limit of Output Frequency
10	P6.28	Dynamic Braking Voltage Level
11	P6.29	Line Start Lockout
12	P6.31	Cooling Fan Control
13	P6.32	PWM Fan Speed
14	P6.45	Output Phase Loss (OPhL) Detection Selection
15	P6.46	Output Phase Loss Detection time
16	P6.47	Output Phase Loss Current Detection Level
17	P6.49	Input Phase Loss Treatment
18	P6.69	Input Phase Loss Detection Time
19	P6.70	Input Phase Loss Ripple Detection
20	P6.50	GFF Detect Current Level (% of INV I-Rated)
21	P6.51	GFF Low Pass Filter Gain
22	P6.71	STO Alarm Latch

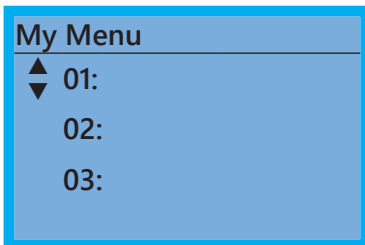
5: PID**PID :P7.00**

▲ 01:PID Fbk Select
▼ 02:Rem Freq Src
03:Loc Freq Src

Parameters in the PID menu:

1	P7.00	PID Action/Mode
2	P4.00	1st Source of Frequency Command [Remote]
3	P4.01	2nd Source of Frequency Command [Local]
4	P4.02	Analog Input 1 (AI1) Function
5	P4.03	Analog Input 2 (AI2) Function
6	P4.04	Analog Input 3 (AI3) Function
7	P4.05	AI1 – I/V Selection
8	P4.06	AI2 – I/V Selection
10	P7.03	PID Feedback Gain
11	P7.04	PID Offset Value
12	P7.13	Proportional Gain
13	P7.14	Integral Time
14	P7.15	Derivative Value
15	P7.18	PID Output Frequency Limit
16	P7.20	Feedback Signal Detection Time
17	P7.21	PID Feedback Loss
18	P7.22	PID Feedback Loss Speed Level Default
19	P7.25	PID Mode Selection
20	P7.26	PID Reverse Enable
21	P8.00	User Display
22	P8.01	Start-up Display Selection
23	P8.02	User Defined Format
24	P8.03	User Defined Max
25	P8.04	User Defined Setpoint

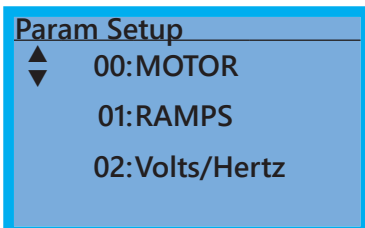
6: MY MENU



My Menu allows the user to store up to 32 parameters of their choosing into a custom Quick Start menu. Storing parameters in the My Menu menu can be accomplished in two steps.

Step 1:

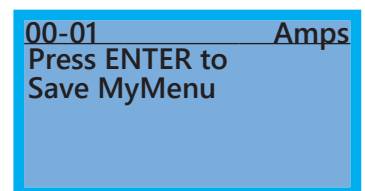
From the main menu, go to the parameter you want to add under “1: Param Setup.”



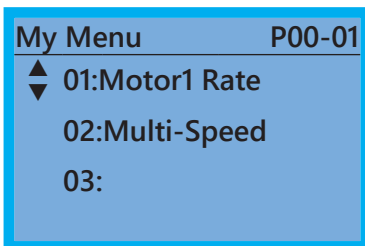
Step 2:

When you are on the page where you can adjust the parameter value, notice that the word ADD is above function key F4. Press the F4 key to ADD the displayed parameter to “My Menu”.

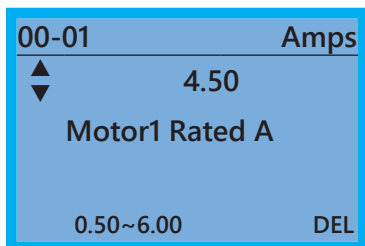
F4



Select the desired parameter group and parameter to include in the My Menu menu. Press Enter to add the selected parameter to My Menu.



To delete a My Menu parameter, in the My Menu menu, position the cursor next to the parameter you wish to delete and press Enter.



Notice that “DEL” appears above the F4 key. Press the F4 key and then Enter to delete from My Menu.

F4

KEYPAD LOCK - KEYPAD LOCK PAGE**Keypad Lock**

Press ENTER to
Lock Key

Keypad Lock is used to lock the keypad from unintentional activation during operation.

ENTER

Press the Enter key to lock the keypad.

LOCAL			
▲▼ F	60.00	Hz	
H	0.00	Hz	
v	335.6	Vdc	
JOG	03:45:36		

The Status Page will again display.

RUN**Keypad Lock**

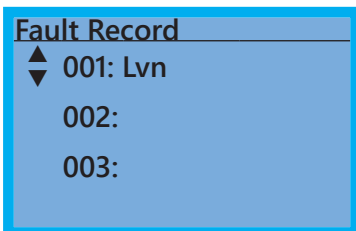
Press ESC 3sec
to UnLock Key

Pressing ANY key will display the message Press ESC to UnLock Key.

ESC

LOCAL			
▲▼ F	60.00	Hz	
H	0.00	Hz	
v	335.6	Vdc	
JOG	03:46:12		

Press and hold the ESC key for 3 seconds to unlock the keypad. The display will return to the Status Page.

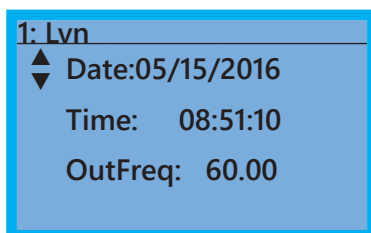
FAULT RECORD - FAULT RECORD PAGE

GS4 drive faults are stored from 1: to 20:. Refer to *Chapter 6: Maintenance and Troubleshooting* for a complete list of fault messages that may appear. Use the Up and Down Direction keys to scroll through the list.

1:
2:
3:
▲
▼
18:
19:
20:

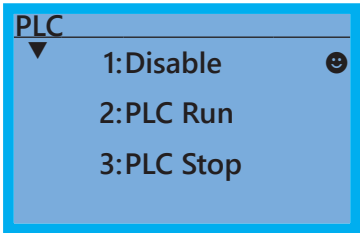
ENTER

Press the Enter key to display information about the drive status when the fault occurred.



Date: 00/00/0000
Time: 00:00:00
OutFreq: 0.00
OutAmp: 0.00
OutVolt 0.0
DCBus: 0.0

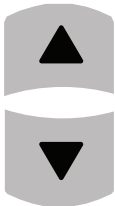
PLC - PLC FUNCTION PAGE



PLC Function is used to Enable/Disable and Run/Stop the internal PLC. The active selection is marked by a smiley face character on the far right of the display.



WARNING: ON A POWER CYCLE THE **PLC RUN/STOP STATE WILL BE DETERMINED BY THE LAST STATE THE KEYPAD WAS PLACED IN, OR BY THE CONFIGURED DIGITAL INPUTS. IF THE STATE WAS CHANGED VIA GSLOGIC, THAT RUN/STOP STATE MAY NOT BE TRUE ON A POWER CYCLE.**



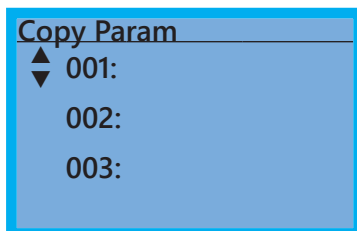
Use the Up and Down Direction keys to select Disable, PLC Run or PLC Stop.



Press the Enter key to confirm the selection.

	PLC/RUN	LOC
▲ F	60.00	Hz
▼ H	0.00	Hz
v	335.6	Vdc
JOG	04:10:16	

Selecting PLC Run will activate the GS4 internal PLC. The keypad status Page will display PLC/RUN at the top, center of the display. If PLC Stop is selected, the PLC program will stop and the Status Page will display PLC/STOP at the top center of the page. Selecting Disable will disable the GS4 internal PLC and return control to the drive. Selecting PLC Run or PLC Stop also can determine whether the physical I/O are controlled by the Drive or are controlled by the PLC. See Chapter 8 for more information on the integrated PLC and GSLogic software.

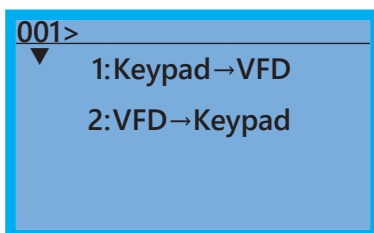
COPY PARAM - COPY PARAMETERS PAGE (KEYPAD COPY)

Copy Parameters is used to save up to four drive configurations into the keypad. The keypad can then download any of these configurations into the drive, or it can be moved to a different drive and download the parameter settings of the original drive. Use the Up and Down Direction keys to scroll through the four available copy parameter locations. If a field is blank, then no copy has been made to that location.

001: ExhaustFan
002: IntakeFan1
003: Filename02
004:

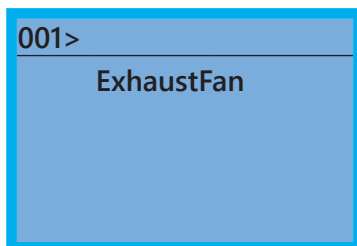
ENTER

Press the Enter key to select the desired location for writing the current parameter settings.



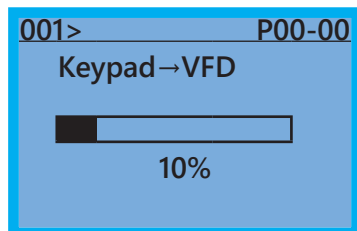
Use the Up and Down Direction keys to select Keypad→VFD to copy the current parameter settings from the keypad to the drive or VFD→Keypad to write the current parameter settings from the drive to the keypad. Press the Enter key.

VFD → KEYPAD

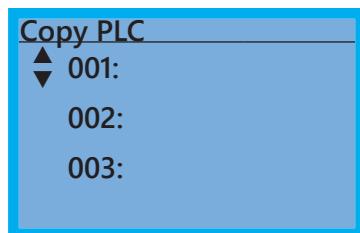


When VFD→Keypad is selected, the keypad will prompt you for a filename to save the existing configuration into. Use the Left/Right Arrows to scroll from character to character and the Up/Down Arrows to change the alphanumeric character. Pressing Enter will begin the transfer of parameters from the drive into the keypad.

KEYPAD → VFD



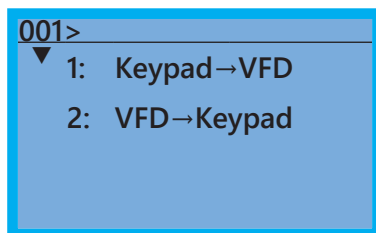
When Keypad→VFD is selected, the keypad will begin the transfer of the preselected file parameters from the keypad into the drive. As shown in the example to the left, “001” is the file to be transferred. **(NOTE: P9.06, Parameter Copy Enable, must first be set to 1.)** Pressing F4 while in the Copy Param menu will prompt you to Delete All 4 saved programs (“Press ENTER to clear”).

COPY PLC - COPY PLC PAGE

Copy PLC is used to copy previously saved PLC program from the keypad to the drive or from the drive to the keypad. Use the Up and Down Direction keys to scroll through the four available Copy PLC locations. If the field is blank, then no copies have been made.

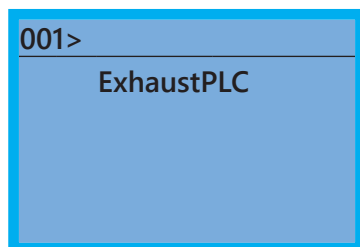
ENTER

Press the Enter key to select the desired location for writing the current program.



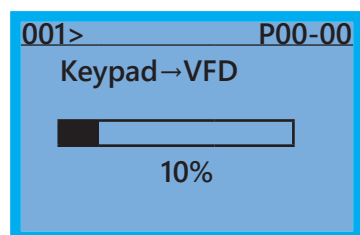
Use the Up and Down Direction keys to select Keypad→VFD to copy the previously saved PLC settings from the keypad to the drive or VFD→Keypad to write the current PLC program from the drive to the keypad.

VFD → KEYPAD

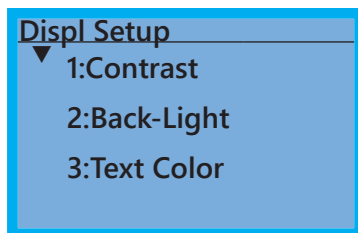


When VFD→Keypad is selected, the keypad will prompt you for a filename to save the existing configuration into. Use the Left/Right arrows to scroll from character to character and the Up/Down arrows to change the alphanumeric character. Pressing Enter will begin the transfer of PLC program from the drive into the keypad.

KEYPAD → VFD

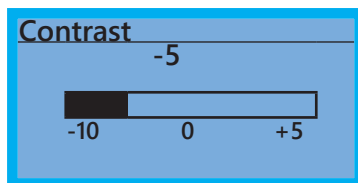


When Keypad→VFD is selected, the keypad will begin the transfer of PLC program from the keypad into the drive.

DISPL SETUP - DISPLAY SETUP PAGE

The Display Setup Page allows the user to adjust the Contrast, Backlight time and Text Color of the display.

- 1: Contrast
- 2: Backlight
- 3: Text Color

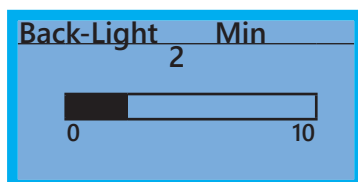


Use the Up and Down direction arrows to adjust the Contrast to the desired setting.

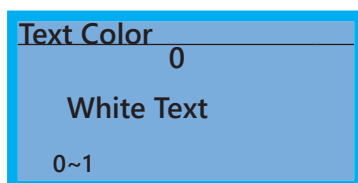
The range of adjustment is from -20 to +20.

The default value is 0.

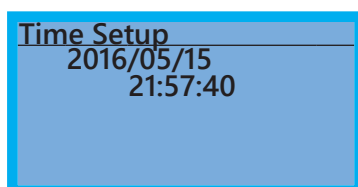
Entering a value of 0 will keep the backlight ON all the time.



Use the Up and Down direction arrows to adjust the time when the display backlight turns off. The range of adjustment is from 0 to 10 minutes. The default value is 5 minutes.



Use the Up and Down direction arrows to select from white text or blue text for the display.

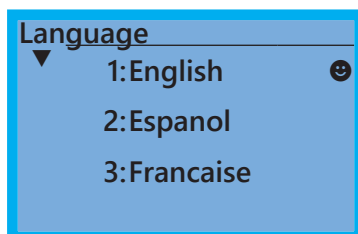
TIME SETUP - TIME SETUP PAGE

The Time Setup Page allows the user to change the date and time.

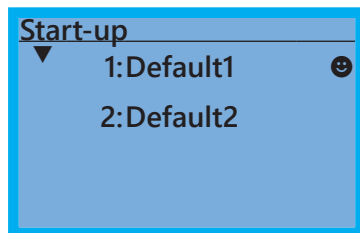
The date format is Year/Month/Day. Time is displayed in 24-hour clock format and is displayed as Hours:Minutes:Seconds. Use the Right and Left Arrow keys to move the cursor to the desired location and use the Up and Down Arrow keys to adjust the setting.

After adjusting the time, move the cursor to the Seconds entry before pressing the Enter Key.

The real time clock (RTC) is maintained in the keypad. A capacitor is used to provide power for the RTC during power loss. The capacitor can maintain power for the RTC for 7 days with no drive power applied.

LANGUAGE - LANGUAGE PAGE

The Language Page sets the language shown on the display. Select from English, Spanish or French.

START-UP - START-UP PAGE

The Start-up Page allows the user to select from three different screens that display during initial start-up. Default1 setting displays the GS4 logo screen, Default2 setting displays “Initializing, Please Wait.”

KEYPAD FAULT CODES

Following are the fault codes and descriptions for the GS4-KPD. To reset the fault codes press the Enter and Reset buttons simultaneously. These faults indicate either a communication error between the keypad and the drive or a keypad failure. To correct: 1) Inspect and clean the RJ45 connectors on the back of the keypad and the RJ45 connector leading into the drive. 2) Replace the cable and/or RJ45 M-M adapter with a standard Ethernet patch cable. 3) If the RJ45 connections are OK, replace the keypad.

- ①

②

③

LOCAL

Fault FrEr

kpdFlash Read Er

① Display error signal

② Abbreviated error code
The code is displayed as shown on GS4-KPD

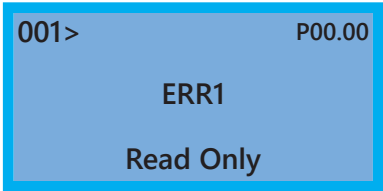
③ Display error description

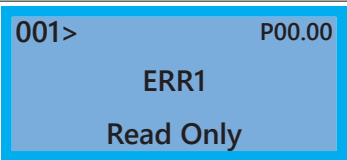
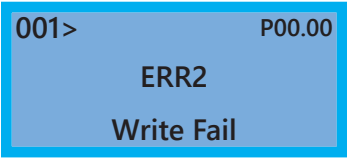
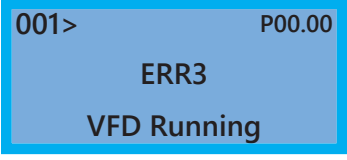
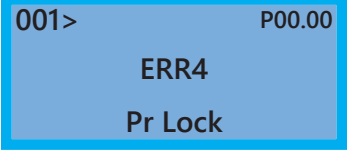
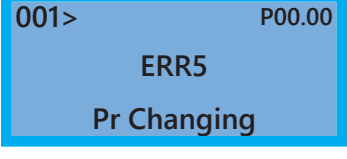
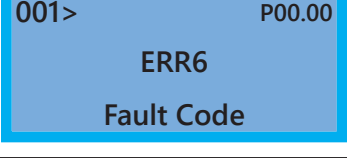
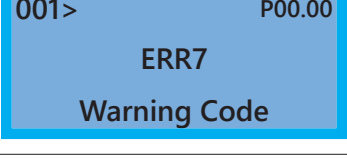
Display	Description	Corrective Actions
<div style="border: 2px solid blue; padding: 10px;"> <p style="text-align: right;">LOCAL</p> <p>Fault FrEr</p> <p>kpdFlash Read Er</p> </div>	<p>Flash memory read error (FrEr)</p> <p>Keypad flash memory read error.</p>	<p>An error has occurred on keypad's flash memory.</p> <ol style="list-style-type: none"> 1. Press RESET on the keypad to clear the error. 2. Verify what kind of error has occurred on keypad's flash memory. 3. Shut down the system, wait 10 minutes and power up the system. <p>If the error remains contact technical support.</p>
<div style="border: 2px solid blue; padding: 10px;"> <p style="text-align: right;">LOCAL</p> <p>Fault FsEr</p> <p>kpdFlash Save Er</p> </div>	<p>Flash memory save error (FsEr)</p> <p>Keypad flash memory save error.</p>	<p>An error has occurred on keypad's flash memory.</p> <ol style="list-style-type: none"> 1. Press RESET on the keypad to clear the error. 2. Verify what kind of error has occurred on keypad's flash memory. 3. Shut down the system, wait 10 minutes and power up the system. <p>If the error remains contact technical support.</p>
<div style="border: 2px solid blue; padding: 10px;"> <p style="text-align: right;">LOCAL</p> <p>Fault FPEr</p> <p>kpdFlash Pr Er</p> </div>	<p>Flash memory parameter error (FPEr)</p> <p>Keypad flash memory parameter error.</p>	<p>Errors occurred on factory setting parameters possibly caused by firmware update.</p> <ol style="list-style-type: none"> 1. Press RESET on the keypad to clear the error. 2. Verify if there is a problem on the FLASH IC. 3. Shut down the system, wait 10 minutes and power up the system. <p>If the error remains contact technical support.</p>
<div style="border: 2px solid blue; padding: 10px;"> <p style="text-align: right;">LOCAL</p> <p>Fault VFDr</p> <p>Read VFD Info Er</p> </div>	<p>Reading AC motor drive data error (VFDr)</p> <p>Keypad flash memory when read AC data error.</p>	<p>Keypad can't read data from drive.</p> <ol style="list-style-type: none"> 1. Verify if the keypad is properly connected to the drive with the RJ45 connector. 2. Press RESET on the keypad to clear the error. 3. Shut down the system, wait 10 minutes and power up the system. <p>If the error remains contact technical support.</p>
<i>Continued on next page</i>		

Display	Description	Corrective Actions
<div> <div>Fault</div> <div>CPUEr</div> <div>CPU Error</div> <div>LOCAL</div> </div>	<p>CPU error (CPUEr)</p> <p>Keypad CPU error</p>	<p>A serious error in the keypad's CPU.</p> <ol style="list-style-type: none"> 1. Check for any problem on CPU clock. 2. Check for any problem on Flash IC. 3. Check for any problem on RTC IC. 4. Verify that the communication quality of the RS-485 cable is good. 5. mShut down the system, wait for ten minutes, and then restart the system. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>CK1</div> <div>Comm Command Er</div> <div>LOCAL</div> </div>	<p>Communication command error 1 (CK1)</p> <p>Keypad communication data, illegal function code (Keypad auto-detects this error and displays it)</p>	<p>Keypad does not accept the motor drive's communication command.</p> <ol style="list-style-type: none"> 1. Remove the keypad and reconnect it. 2. Verify if the Baud rate = 19200 bps, and the Format = RTU8, N, 2. 3. Verify if the keypad is properly connected to the motor drive on the communication contact by a communication cable such as RJ45. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>CK2</div> <div>Comm Address Er</div> <div>LOCAL</div> </div>	<p>Communication address error (CK2)</p> <p>Keypad communication data, illegal data address (keypad auto-detects this error and displays it)</p>	<p>Keypad does not accept the motor drive's communication command.</p> <ol style="list-style-type: none"> 1. Remove the keypad and reconnect it. 2. Verify if the Baud rate = 19200 bps, and the Format = RTU8, N, 2. 3. Verify if the keypad is properly connected to the motor drive on the communication contact by a communication cable such as RJ45. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>CK3</div> <div>Comm Data Error</div> <div>LOCAL</div> </div>	<p>Communication data error (CK3)</p> <p>Keypad communication data, illegal data value (keypad auto-detects this error and displays it)</p>	<p>Keypad does not accept the motor drive's communication command.</p> <ol style="list-style-type: none"> 1. Remove the keypad and reconnect it. 2. Verify if the Baud rate = 19200 bps, and the Format = RTU8, N, 2. 3. Verify if the keypad is properly connected to the motor drive on the communication contact by a communication cable such as RJ45. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>CK4</div> <div>Comm Slave Error</div> <div>LOCAL</div> </div>	<p>Communication slave error (CK4)</p> <p>Keypad communication data is written to read-only address (keypad auto-detects this error and displays it)</p>	<p>Keypad does not accept the motor drive's communication command.</p> <ol style="list-style-type: none"> 1. Remove the keypad and reconnect it. 2. Verify if the Baud rate = 19200 bps, and the Format = RTU8, N, 2. 3. Verify if the keypad is properly connected to the motor drive on the communication contact by a communication cable such as RJ45. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>CK10</div> <div>KpdComm Time Out</div> <div>LOCAL</div> </div>	<p>Keypad communication time out (CK10)</p> <p>Keypad communication data, transmission time-out (keypad auto-detects this error and displays it)</p>	<p>Keypad does not accept the motor drive's communication command.</p> <ol style="list-style-type: none"> 1. Remove the keypad and reconnect it. 2. Verify if the Baud rate = 19200 bps, and the Format = RTU8, N, 2. 3. Verify if the keypad is properly connected to the motor drive on the communication contact by a communication cable such as RJ45. <p>If the error remains, contact technical support.</p>
<div> <div>Warning</div> <div>TPNO</div> <div>TP No Object</div> <div>LOCAL</div> </div>	<p>Keypad communication timeout (TPNO)</p> <p>Object not supported by TPEditor</p>	<p>Keypad's TPEditor uses an unsupported object.</p> <ol style="list-style-type: none"> 1. Verify that the TPEditor is not using an unsupported object or setting. Delete unsupported objects and unsupported settings. 2. Re-edit the object in the TPEditor, and then download it to the keypad. 3. Verify that the motor drive supports the TP functions. <p>If the drive does not support TP function, the main page displays Default.</p> <p>If the error remains, contact technical support.</p>

FILE COPY SETTING FAULT DESCRIPTION

These faults occur when the keypad cannot perform the command after clicking the ENTER key in the copy function.

- ①  ← Current position where the fault occurs on the parameter.
- ② To be saved in keypad parameter file 1
- ③ Abbreviated error code
The code is displayed as shown on GS4-KPD
- ④ Displays error description

Display	Description	Corrective Actions
	Read only (ERR1) Parameter and file are read only	The parameter/file is read only and cannot be written to. 1. Verify the specification in the user manual. If the error remains, contact technical support.
	Write in error (ERR2) Fail to write parameter and file.	An error occurred while writing to a parameter/file. 1. Check for any problem on the Flash IC. 2. Shut down the system, wait for ten minutes, and then restart the system. If the error remains, contact technical support.
	Drive operating (ERR3) AC motor drive is in operating status	A setting cannot be changed while the motor drive is in operation. 1. Verify that the drive is not in operation. If the error remains, contact technical support.
	Parameter locked (ERR4) AC motor drive parameter is locked.	A setting cannot be changed because a parameter is locked. 1. Check if the parameter is locked. If it is locked, unlock it and try to set the parameter again. If the error remains, contact technical support.
	Parameter changing (ERR5) AC motor drive parameter is changing	A setting cannot be changed because a parameter is being modified. 1. Check if the parameter is being modified. If it is not being modified, try to change that parameter again. If the error remains, contact technical support.
	Fault code (ERR6) Fault code is not cleared	A setting cannot be changed because an error has occurred in the motor drive. 1. Check if any error occurred in the motor drive. If there is no error, try to change the setting again. If the error remains, contact technical support.
	Warning code (ERR7) Warning code is not cleared	A setting cannot be changed because of a warning message given to the motor drive. 1. Check if there is a warning message given to the motor drive. If the error remains, contact technical support.
Continued on next page		

<i>Display</i>	<i>Description</i>	<i>Corrective Actions</i>
<div>001> P00.00</div> <div>ERR8</div> <div>Type Mismatch</div>	File type mismatch (ERR8) File type mismtach	Data to be copied are not the correct type, so the setting cannot be changed. 1. Check if the products' serial numbers to be copied are in the same category. If they are in the same category, try to copy the setting again. If the error remains, contact technical support.
<div>001> P00.00</div> <div>ERR9</div> <div>Password Lock</div>	Password locked (ERR9) File is locked with password	A setting cannot be changed because some data are locked. 1. Check if the data are unlocked or able to be unlocked. If the data are unlocked, try to change the setting again. 2. Shut down the system, wait for ten minutes, and then restart the system. If the error remains, contact technical support.
<div>001> P00.00</div> <div>ERR10</div> <div>Password Fail</div>	Password fail (ERR10) File password mismatch	A setting cannot be changed because the password is incorrect. 1. Check if the password is correct. If the password is correct, try to change the setting again. 2. Shut down the system, wait for ten minutes, and then restart the sytem. If the error remains, contact technical support.
<div>001> P00.00</div> <div>ERR11</div> <div>Version Fail</div>	Version fail (ERR11) File version mismatch	A settings cannot be changed because the version of the data is incorrect. 1. Check if the version of the data matches the motor drive. If it matches, try to change the setting again. If the error remains, contact technical support.
<div>001> P00.00</div> <div>ERR12</div> <div>VFD Time Out</div>	VFD time out (ERR12) AC motor drive copy function time-out	A setting cannot be changed because the data copying time-out expired. 1. Try copying the data again. 2. Check if copying data is authorized. If it is authorized, try to copy the data again. 3. Shut down the system, wait for ten minutes, and then restart the system. If the error remains, contact technical support.

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Page