

HI 6500 Programmer's Quick Reference

The Programmer's Quick Reference guide is intended to be a helpful and efficient reference tool for power users and technical personnel when interfacing with this Hardy product. It is not designed to replace the User's Guide.

Users Guide:

http://www.hardysolutions.com/tenants/hardy/documents/Hi6500seriesUserGuid_0116.pdf

Online Unit:

<http://hi6500.hardysolutions.com/>

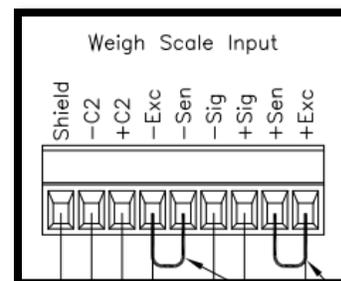
Default IP Address:

192.168.0.100

NOTE: Units have an internal webpage to use.

Input Table:

[-] EIP_HI6500:I	{...}		_0102:
- EIP_HI6500:I.ConnectionFaulted	1	Decimal	BOOL
+ EIP_HI6500:I.Command	16#0000_0066	Hex	DINT
+ EIP_HI6500:I.Command_Status	16#0000_0003	Hex	DINT
+ EIP_HI6500:I.Parameter_ID	0	Decimal	DINT
+ EIP_HI6500:I.Parameter_Value	0	Decimal	DINT
+ EIP_HI6500:I.Unit_Status	16#0000_0000	Hex	DINT
- EIP_HI6500:I.Net_Weight	60.19476	Float	REAL
- EIP_HI6500:I.Gross_Weight	15.0	Float	REAL
+ EIP_HI6500:I.Read_1	0	Decimal	DINT
+ EIP_HI6500:I.Read_2	0	Decimal	DINT
+ EIP_HI6500:I.Read_3	0	Decimal	DINT
+ EIP_HI6500:I.Read_4	0	Decimal	DINT
+ EIP_HI6500:I.Read_5	0	Decimal	DINT



Output Table:

[-] EIP_HI6500:O	{...}		_0102:
+ EIP_HI6500:O.Command	16#0000_0066	Hex	DINT
+ EIP_HI6500:O.status_data	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_Value	0	Decimal	DINT
+ EIP_HI6500:O.Reserved1	0	Decimal	DINT
+ EIP_HI6500:O.Reserved2	0	Decimal	DINT
+ EIP_HI6500:O.Reserved3	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID_1	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID_2	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID_3	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID_4	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID_5	0	Decimal	DINT

Commands:

Command number	Command
0	Read Parameter
1	Zero Cmd
2	Tare Cmd
4	Write Non-Volatile Cmd
5	Print Cmd
6	Weigh Sample Cmd
0x64 (100 dec)	Cal Low Cmd
0x65 (101 dec)	Cal High Cmd
0x66 (102 dec)	C2 Cal Cmd
0x1000 (4096 dec)	Write Integer Cmd
0x1001 (4097 dec)	Write Float Cmd

COMMANDS

E.G. A C2 Cal command through the output table:

[-] EIP_HI6500:O	{...}		_0102:Hardy...
+ EIP_HI6500:O.Command	16#0000_0066	Hex	DINT

COMMAND BEING GIVEN

Each command will echo in the “Command” tag of the input table once it has been run and will have its status returned into the “Command Status” tag.

Example: A C2 Cal command being echoed back (66) and failure status due to motion (3).

- EIP_HI6500:I	{...}		_0102:H
- EIP_HI6500:I.ConnectionFaulted	1	Decimal	BOOL
+ EIP_HI6500:I.Command	16#0000_0066	Hex	DINT
+ EIP_HI6500:I.Command_Status	16#0000_0003	Hex	DINT

COMMAND ECHO

Status returns will vary. A complete list of status returns is listed in the Users Guide (starting on page 38).

0x66 (102 decimal): C2 CAL CMD. Write a 0x66 hex to the command register to perform a C2 calibration.

- Calibration_Fail 1
- Calibration_Fail_Motion 3
- Calibration_Fail_Adc_Error 4
- Calibration_Fail_Noc2 5
- Calibration_Fail_C2capeq 6
- Calibration_Fail_C2clones 7
- During a C2 Cal Command: Code 2 indicates "calibration in progress".

COMMAND STATUSES

General Tip:

“0x” and “16#” are used to signify a Hex value.

Hexadecimal commands and statuses are common however a decimal value can also be used.

E.G. A hex command of 0x66 would be equal to a decimal value of 102.

+ EIP_HI6500:O.Command	16#0000_0066	Hex	DINT
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COMMANDS IN HEX AND DECIMAL

+ EIP_HI6500:O.Command	102	Decimal	DINT
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Example: A C2 Calibrate command of “0x66” would be entered as “16#0000_0066”

Parameters:

Parameters can be changed with the built-in webpage or the AOP by double clicking on the unit in the controller organizer of the program. The ID# 25 must be “Enabled” to use this feature.

Hardy 4000 Series EIP_HI4000_SE
Hardy 6500 Series EIP_HI6500
ETHERNET-MODULE EIP_HARDY

The screenshot shows the 'Configuration' tab of a software interface. At the top, there are tabs for 'General', 'Connection', 'Module Info', 'Configuration', 'Parameters', 'Internet Protocol', and 'Port Configuration'. Below these is a 'Group:' dropdown menu set to '<All Parameters>'. The main area contains a table with columns: ID, Name, Value, Units, Style, and Description. Below the table is an 'Insert Factory Defaults' button and a help message: 'The values displayed here are from the Configuration Tag. These values are stored in the controller and are automatically sent to the module when changes are applied or a connection is established.' At the bottom, there are buttons for 'OK', 'Cancel', 'Apply', and 'Help', and a status indicator 'Status: Offline'.

ID	Name	Value	Units	Style	Description
25	Enable_Disable	Disable			Enables/Disables
26	Unit	lb			Units set for this
27	Grads	0 = 1			Grads/Display I
28	Motion Tolerance	10.0	Float		Enter Motion To
29	Decimal Point	2			Select Decimal
30	Scale Capacity	999999.0	Float		Enter Scale Ca
31	Loadcell Sensitivity	3.0 mV/V			Select Loadcell
32	Cal Motion Tolerance	10.0	Float		Enter Calibratio
33	Ref Weight	0.0	Float		Enter Referenc
34	Gravity Correction	1.001159	Float		Enter Gravity C
35	Span Weight	1000.0	Float		Enter Span We
36	Waversaver	1.0 Hz			Waversaver Fr
37	Num Averages	10	Decimal		Enter the numb
38	Count Enable	Disable			To enable Cour

AOP

Parameter Message Tip:

Parameters can be changed in the "C" (Configuration) table and a Module Reconfigure type MSG instruction can be executed to write the "C" parameters to the unit.

Example:

This screenshot shows a 'Message Configuration - HI6500MSG1' window. The 'Message Type' dropdown is set to 'Module Reconfigure'. Above this window, a 'Message' box is visible with 'Message Control HI6500MSG1' and three status indicators: (EN), (DN), and (ER).

This screenshot shows the 'Message Configuration - HI6500MSG1' window with the 'Path' field set to 'EIP_HI6500'. The window has tabs for 'Configuration*', 'Communication*', and 'Tag'.

Reading Parameters Manually:

A command of “0” is a read parameter command.

The parameter ID must be chosen to read a parameter.

The parameter IDs are located in the manual. (Starting on page 115)

Menu	SubMenu	Parameter Name	Param ID
Filter	(menu items)	WAVERSAVER	0x2081
Filter	(menu items)	Num Averages	0x2082
Filter (NO entry)	(menu items)	Motion Threshold	0x2101

PARAMETER VALUES

E.G. A read parameter command to read the number of averages (0x2082)

+ EIP_HI6500:O.Command	16#0000_0000	Hex	DINT
+ EIP_HI6500:O.status_data	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID	16#0000_2082	Hex	DINT

READING A PARAMETER

The command will echo and the parameter value will appear in the input table of the PLC.

- EIP_HI6500:I	{...}		_0102:
- EIP_HI6500:I.ConnectionFaulted	1	Decimal	BOOL
+ EIP_HI6500:I.Command	16#0000_0000	Hex	DINT
+ EIP_HI6500:I.Command_Status	16#0000_0000	Hex	DINT
+ EIP_HI6500:I.Parameter_ID	16#0000_2082	Hex	DINT
+ EIP_HI6500:I.Parameter_Value	10	Decimal	DINT

THE READ PARAMETER ECHO

Writing Parameters Manually:

A command of “1000” is the write integer command to write an integer value to an integer type parameter.

E.G. Writing a value of 50 to the number of averages parameter.

- EIP_HI6500:O	{...}		_0102:
+ EIP_HI6500:O.Command	16#0000_1000	Hex	DINT
+ EIP_HI6500:O.status_data	0	Decimal	DINT
+ EIP_HI6500:O.Parameter_ID	16#0000_2082	Hex	DINT
+ EIP_HI6500:O.Parameter_Value	50	Decimal	DINT

WRITING A PARAMETER

The input table will echo and the written data will appear.

- EIP_HI6500:I	{...}		_0102:
- EIP_HI6500:I.ConnectionFaulted	0	Decimal	BOOL
+ EIP_HI6500:I.Command	16#0000_1000	Hex	DINT
+ EIP_HI6500:I.Command_Status	16#0000_0000	Hex	DINT
+ EIP_HI6500:I.Parameter_ID	16#0000_2082	Hex	DINT
+ EIP_HI6500:I.Parameter_Value	50	Decimal	DINT

THE WRITE PARAMETER ECHO

Using the USB

Saving Parameters to a USB drive is easy using the display or webpage.

The parameters will be a small text file inside an HI6500 folder on the USB.

NOTE: USBs vary. If the read or write does not appear to function, try another USB.

Restoring Parameters:

Upon bootup, the HI6500 will search a connected USB for a restore.txt file in an HI 6500 folder.

It will restore the values that are in the restore.txt file.

The restore.txt file is the same format as the params.txt file.

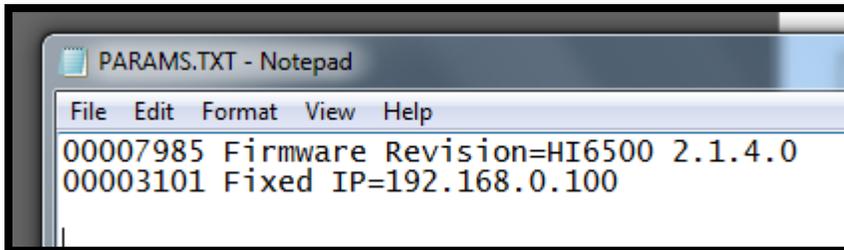
A params.txt file can be renamed restore.txt to create a default parameter restoration file.

For example, a commonly restored parameter is the IP address.



In this example, we have deleted the other parameters and just left the IP address.

NOTE: The first line is ignored. Always paste a firmware revision line *then* the desired restore information.

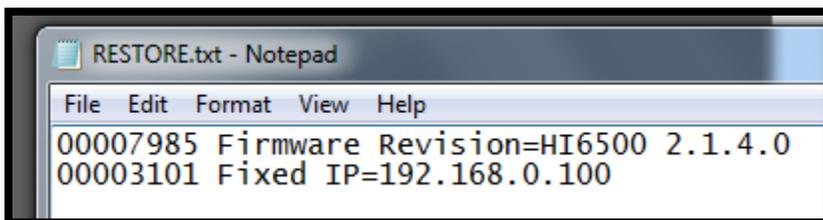
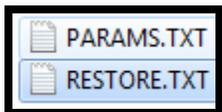


USB PARAMS TEXT FILE

00007985 Firmware Revision=HI6500 2.1.4.0

00003101 Fixed IP=192.168.0.100

Save the file as restore.txt in the HI6500 folder of the USB.



USB RESTORE TEXT FILE

If this file is saved in the HI6500 folder, then every time the USB is installed and power is cycled, the fixed IP will change to 192.168.0.100.