

# Basic Command Set for iLoad Digital Sensors

The following table lists the commands used to communicate with the following Loadstar Sensors products.

- iLoad Digital Series Sensors (iLoad Pro, iLoad TR and iLoad)
- DQ-1000U (iLoad Mini Series) Load Cell Interface

When sending commands to the load cell, simply send **command<CR>** where **<CR>** is the carriage return character (0x0D). There is no need to send the line feed character (0x0A). When reading from the sensor, you need to process both the **<CR>** and **<LF>** characters.

Command	Function
<b>&lt;ENTER&gt;</b>	This just pings the port and the sensor responds with "A" to indicate that it is set up and ready.
<b>CT0</b>	This sets the tare (or zero) for the sensor. If you plan to zero out a preload, please use this command.
<b>00W1 or W</b>	The 00W1 command outputs the weight or force reading once. (W command is not supported in all firmware versions).
<b>00W0</b>	00W0 outputs a continuous stream of weight or force readings. Hit <Enter> to stop streaming. The output is in 1/1000 of a pound (millipound). E.g., if the reading returned is 2345, the sensor reading is equivalent to 2.345 lb.
<b>SLC</b>	This command outputs a floating point number that indicates the load capacity of the sensor in lb.
<b>SS1</b>	This command outputs a factory ID of the sensor. This command can be used to identify each load cell uniquely. The user can burn his own serial number (or any other identifying string) into the load cell by issuing the <b>CS1 &lt;id&gt;</b> command. However this should be done only if the user is writing his own software and needs IDs that are different from the predefined IDs.
<b>00T1</b>	Outputs the elapsed time (in milliseconds since the last tare) and the weight (in millipounds) once.
<b>00T0</b>	Outputs the above time and weight information continuously. Hit <ENTER> to stop the output.
<b>CPS xx</b>	Set averaging parameter 1. xx is a number between 32 and 1023. Higher numbers 'smoothen' the readings but slow down the response. Higher numbers also increase the sensor resolution. (It is not recommended that the user change this setting.)
<b>CSS yy</b>	Set averaging parameter 2. yy is a number between 1 and 15. 1 means no averaging. 15 means highest averaging. Higher settings smoothen the data at the cost of latency.  (For firmware versions 9E and above set CSS=1)

<b>CLA zz</b>	Set averaging parameter 3. (Only available in firmware versions 9E and above) zz is a number between 1 and 256. (1 means no averaging, 256 means highest averaging)
<b>CVM &lt;0,1&gt;</b>	For firmware versions 9H and above only. CVM 0 -> When in analog mode, converts weight to voltage between 0.5 to 4.5 V DC approx. CVM 1 -> Outputs an user specified voltage between 0 to 5 V. User specifies a voltage by using the CVT command below.
<b>CVT &lt;0 to 1023&gt;</b>	For firmware versions 9H and above only. When CVM is set to 1, an analog voltage between 0 to 5V approx is output. CVT 0 -> Outputs 0 V DC CVT 1023 -> Outputs 5 V DC
<b>CUN &lt;0, 1&gt;</b>	For firmware versions 9H and above only. Specifies whether the calibration is in single direction only (compression or tension) or in universal mode (compression AND tension). CUN 0 -> Compression OR tension. Outputs a voltage proportional to weight between 0.5 to 4.5 V DC approx. CUN 1 -> Universal calibration. Outputs a voltage between 0.5 to 2 V for compression and between 2 to 4.5 V for tension.
<b>?</b>	Shows the firmware version number and commands available. Some of the commands are for internal use only.

If the user is writing his or own software to read the iLoad digital load cells, it is recommended to remove averaging and use the following settings:

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CPS 8
CSS 1
CLA 1
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Then perform any needed averaging in the application itself. The above settings will also ensure that you get the highest data output rate for the configured baud rate.