ΩΞ OMEGA™

User's Guide

Using Omega™
Data Acquisition Products with...

DASY*Lab*®

Data Acquisition System Laboratory

ΩΞ OMEGA™

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System requirements

Hardware

- CPU – X86-compatible processor from 1 GHz; fast single core performance is preferred against very many cores
- Memory – minimum of 2 GB; 4 GB recommended (DASYLab is still a 32-bit application)
- Disk Space – 1 GB free space, of which at least 500 MB is on the system partition
- Video/Graphic card – color depth at least 24 or 32 bits (True Color)
- Screen resolution – at least 1024 × 768; full HD
  (1920 × 1080) and better recommended

Operating systems

- Windows 10, 32-bit
  Windows 10, 64-bit (as a 32-bit application)
- Windows 8.1, 32-bit
  Windows 8.1, 64-bit (as a 32-bit application)
- Windows 7, 32-bit
  Windows 7, 64-bit (as a 32-bit application)

Software

- Latest version of the InstaCal driver/utility software
- Microsoft® .Net Framework 2.0 SP2 or later

Download and install InstaCal

InstaCal is bundled with the Universal Library and is included with Omegasoft software. Omegasoft is available as a software download from https://assets.omega.com/software/OMEGADAQ.zip. You must be logged in as an administrator to install Omegasoft software.

Connect your Omega device to a signal source

Connect the device so that it acquires signals from analog channel 0.

Refer to your hardware user's guide for instructions on installing and connecting the device to an analog signal source. Omega user's guides are available at www.omega.com/en-us/pdf-manuals.

Launch InstaCal and add devices

Launch InstaCal from the **Start** menu. How you add devices depends on the type of bus interface.

Adding USB, Bluetooth, WEB, and PCI/PCIe devices

These device types are automatically detected by InstaCal.

Select the device(s) to add to InstaCal on the **Plug and Play Board Detection** dialog box and click **OK**.

Adding Ethernet devices

Complete the following steps to manually add Ethernet devices to InstaCal after they are connected to the computer or network.

1. Select **Install** » **Add Board** to open the **Board Selection List**.

2. Click on the tab corresponding to the type of device to install.

3. Select the device(s) and click **Add**.

Each added device is listed on the **PC Board List**.

Download and install DASYLab

DASYLab 2020 is provided in a zip file that contains a self-extracting installer. When you purchase DASYLab, a serial number is emailed to you. This serial number is used to register DASYLab.

> **Note:** **If you previously installed the DASYLab evaluation version**, do not reinstall DASYLab. Open the Configurator 2020 program from the Start menu and enter the serial number provided in the email.

1. Download DASYLab from https://assets.omega.com/software/SWD-DASYLAB-Series.zip, extract the contents of the zip file and run the self-extracting installer **DASYLAB2020.exe**.

   The installer extracts the DASYLab installation files to your computer, and the **StartCD** program runs automatically.

2. Click on **Install DASYLab 2020** to launch the English installer.

3. Click **Next** and follow the onscreen prompts to select the installation directory, accept the license agreements, and install the software.

4. After the software is installed, the **Configurator** automatically opens for you to register the software or enable the evaluation version:

   a. Enter your name, company, and serial number in the textboxes provided.

   b. If you are *registering* DASYLab enter the **Serial number** provided in the email and click **Continue**.
   If you are *evaluating* DASYLab, enable the **Install evaluation version** checkbox and click **Continue**.

Install the Omega Engineering Driver

Use the Configurator to install the Omega driver:

1. From the **Packages** tab expand the **Data acquisition** node.

2. Select **Omega Engineering OMB/OM** and then **Enable**.

3. On the **Options** tab, select the file extensions to associate with DASYLab and click **OK**.

   Refer to the *Options* topic in the *Configurator* section of the DASYLab Help for more information.

Restart the computer when prompted and launch DASYLab.

Acquire, display, and write analog data

Complete the procedures in this section to acquire, display, and write data from a single analog channel with DASYLab. You can use either a physical Omega DAQ device or the DEMO-BOARD to perform the procedures.

Omega Engineering modules

Measurement Computing modules are available from the **Omega** folder in the **Inputs/Outputs** Module group.
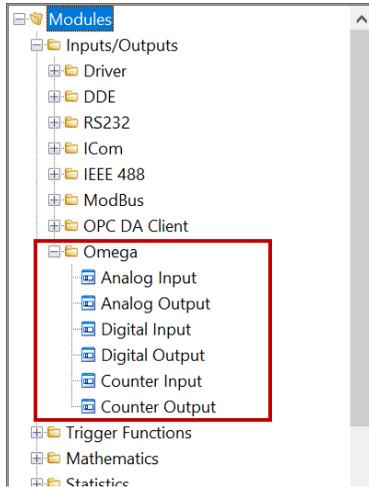
Add an Analog Input module

Complete the following steps to add an Analog Input module to the DASYLab worksheet:

1. From the **Omega** folder, drag an **Analog Input** module onto the worksheet.

DASYLab prompts you to choose a device from installed Omega hardware.

2. Select the device and analog channels to use and click **OK**.
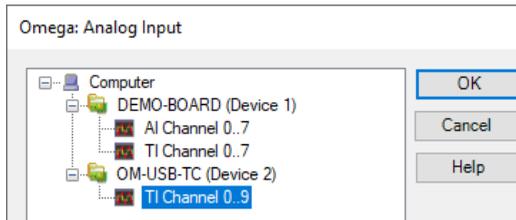
3. Double-click on the Analog Input module to open its dialog box.

Leave channel 0 enabled and all other channels disabled; this is the default configuration.

4. In the Range area, enter –5 for the **Lower limit** and 5 for the **Upper limit**.

5. Click **Measurement** to open the **Measurement Setup** dialog box.

6. Click **Modify** to open the **Modify Timebase** dialog box.

7. Change the **Scan rate** to a rate supported by your device.

Note: The maximum scan rate for the DEMO-BOARD is 100 Hz.

8. Click **OK** to close each dialog box and save your settings.

Add a Write Data module

Use the Write Data module to write the analog data to a file. Complete the following steps to add the Write Data module to the worksheet:

1. Expand the **Files** folder and drag a Write Data module onto the worksheet.

2. Connect a wire between the Analog Input module output pin and the Write Data module input pin.

   Tip: Drag the modules together to make the connection:

Configure the data file

The Write Data module has numerous properties you can set that determine how the file is saved. To set up the data file using the **Write Data** dialog box, complete the following steps:

1. Double click on the Write Data module to open its dialog box.

2. Select **ASCII (Excel CSV Preset)** from the **File format** list box. Your data is saved in a *comma-separated values* (CSV) text file that you can open or import with Microsoft Excel®.

3. Click **Yes** in the **User Information** prompt to set the delimiter to **Comma** and the measurement time to seconds for CSV files.

4. Click **File** and specify a name and location to save the data, then click **Save**.

5. Click **Options** to open the **Write Data: ASCII Format** dialog box.

6. Select **Date+time** from the **Time format** list box to store the actual date and time for each row of samples.

7. Click **OK** to close each dialog box.

Add a Y/t Chart module

Use a display module such as the Y/t Chart to display the signals. Complete the following steps to add a Y/t Chart module to the worksheet:

1. Expand the **Display** folder and drag a Y/t Chart module onto the worksheet.

2. Click the wire connecting the Analog Input module and the Write Data module and drag it to the input of the Y/t Chart module.

   The worksheet will look like this:
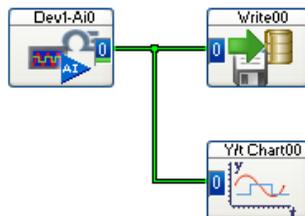
Run the worksheet

After setting up the operation, run the worksheet to acquire input data from the Omega DAQ device, display the data on a chart, and write the data to a file. To run the worksheet, complete the following steps:

1. Click **Start** ▶ on the DASYLab Function bar.

2. Click on the **Restore all Windows** icon on the DASYLab Function bar to open the minimized Y/t Chart window.

The analog signal acquired from the Omega DAQ device is plotted on the **Y/t Chart00** display. An example is shown here.
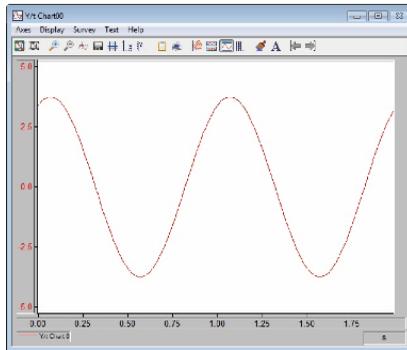
3. Click **Stop** ■ on the DASYLab Function bar to stop the program.

Use Excel to view the saved csv file. An example is shown here.

	A	B	C
1	DASYLab 2020 - 2020		
2	Worksheet name: (unknown)		
3	Recording date : 01/22/20	12:59:32 PM	
4	Block length : 100		
5	Delta : 0.001 sec.		
6	Number of channels : 1		
7	Date	Time	Write0 [V]
8	01/22/20	59:31.7	-0.433
9	01/22/20	59:31.7	-0.433
10	01/22/20	59:31.7	-2.722
11	01/22/20	59:31.7	-2.722
12	01/22/20	59:31.7	-4.248

Omega module information

To learn more about Omega modules, select **Omega » Help** from the DASYLab Help menu.

WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of 13 months from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal one (1) year product warranty to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR UNDERLINED WARRANTY RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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