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OMYL SERIES **Portable Data Loggers**



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The information contained in this document is believed to be correct, but OMEGA accepts no liability for any errors it contains, and reserves the right to alter specifications without notice.

WARNING: These products are not designed for use in, and should not be used for, human applications.

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2 Hardware Checklist

Included in delivery for all loggers are:

- OMYL Series data logger
- Lithium battery type CR2477N (OMYL-BATT)
- USB cable
- OmegaView Software for Windows supplied on USB-Stick

Additionally included in delivery of OMYL-M32, OMYL-M41, OMYL-M42, OMYL-M90

- OMYL-CS cable(s)

Further options include:

- Calibration certificate
- Wall holder, metal strip and seal
- Connection cables OMYL-CI, OMYL-CU, OMYL-CP
(for connecting voltage/current signals >1V to the inputs)

3 Quickstart

Receive readings in only six easy steps:

- ▶ Install the USB driver from the USB stick:
execute file: ...\\USBDriver\\USBXpressInstaller.exe
- ▶ Install OmegaView for Windows
Execute file ...\\setup.exe
- ▶ Open the logger by unscrewing its rear cap. Insert the battery. Connect the USB cable to the respective ports of the logger and the PC.
- ▶ The Operating System will detect the device automatically. Wait for the notice that the device is ready to use.
- ▶ Start OmegaView. The program automatically recognizes the logger and displays a picture of that logger.
Double click on the picture to select the logger.
- ▶ Right Click on the logger and select Metermode. After a few seconds online readings from the connected logger will appear on the screen.

Start logging in two additional steps

- ▶ Again Right Click on the logger picture and then click on **Start Logger**.
- ▶ Click on **Start Logger now**. The logger will start on the nearest minute with a preset logging interval of 10 seconds. The logger's blue LED will flash accordingly.

Viewing a Graph of measured data in just another step

- ▶ Click on **Download Data**.
Stored readings will be downloaded, saved as an ASCII file, and a graph is displayed.

4 General information

The OMYL series consists of a large variety of loggers: Some have an internal sensor only. Others have inputs for external sensors, while some have both sensor types.

A full list of models can be found on our website.



The logger uses sensor inputs to which external sensors are connected. Some of the sensors are combined sensors, such as the OMYL-RHT for measuring temperature and humidity. This sensor uses a single input connector.

The loggers have a memory capacity for 100,000 readings which can optionally be extended to 4,000,000 readings.

Logging can be set to either “stop-when-full” or “ring-buffer mode” (continuous mode).

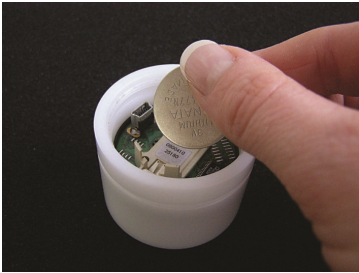
The device can be controlled over the USB interface using OmegaView Software. It only a few clicks to select the relevant parameters

4.1 Installing the batteries

The logger's power supply is provided by a 3.0V lithium battery CR2477N (OMYL-BATT).

Optionally for high-temp-applications a CR2450HT (OMYL-BATT-HT) battery can be supplied.

The device offers internal battery monitoring. OmegaView will indicate when the battery will require replacing. In addition, the LED flashing periodically indicates the need for the battery to be replaced (see chapter 9, understanding LEDs for further information). In order to insert a battery into the datalogger, unscrew the back cover of the logger then insert the battery keeping the correct polarity – negative pole downwards.



When the battery has been fitted after a few seconds the LED on the front of the logger will start flashing in red/green/blue to indicate it is operating.

OMYL Logger	
Interval	Battery life
>1 min	4 years
10 sec	230 days
1 sec	25 days

The battery life depends mainly on the logging interval selected. The table gives an overview for typical intervals.

Some other factors reduce battery life. E.g., low temperatures decrease battery life. Downloading data or operation in MeterMode will also cause an increased energy consumption, which further decreases battery life.

4.2 Installation of OmegaView

System requirements

Hard-/Software	Minimum-Configuration	Recommended Configuration
Computer:	Intel Pentium, 1 GHz	Intel Pentium III, 2 GHz
Operating system:	Windows XP/Win7	Windows XP/Win7
RAM:	512 MB	1 GB or more
Monitor:	Any windows-supported monitor	Monitor with VGA- or higher resolution graphic
Mouse:	Any windows-supported mouse	Any windows-supported mouse
Port:	1 free USB-port	1 free USB-port
Printer:	Any windows-supported printer	Any windows-supported printer



The setup program for OmegaView can be found on the USB-stick provided. Click on **Setup_OmegaView_ForWindows.exe** which will guide you through the installation progress.



Choose the appropriate folder and wait for the software to install.



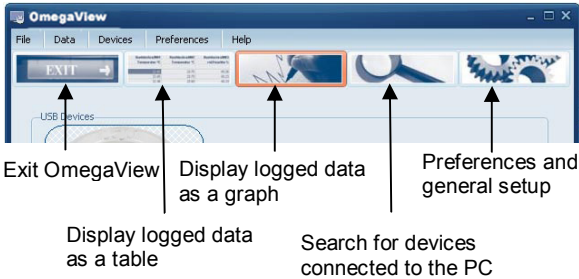
Install the **USB driver** when prompted. Click on **Install** and wait until the driver has been installed.

After the setup has been completed, tick the checkbox to run **OmegaView** immediately. Then click **Done** to finish.



NOTE: If OmegaView does not start automatically, please open it manually from the start menu or the shortcut on the PC.

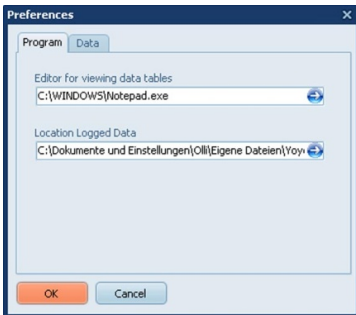
5 Main Software-Menu



5.1 Preferences and general setup



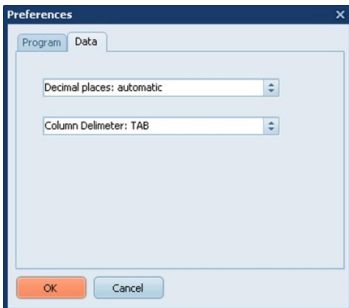
To set up preferences for the OmegaView Software, click on **Preferences/Program** or the **Preferences** icon.



Click on **Program** to change the settings and paths within OmegaView.

Set the default program used to view the downloaded data

Select **Location** where downloaded data is stored



Click on **Data** to change export settings.

Select **Decimal places to automatic** (default) to export data with as many decimal places as the sensor channels physically allows or select the required number of decimal places.

Select the **Column delimiter** to **TAB** or **Semicolon**, as required.

5.2 Search for Devices



Locate the USB port of the logger, next to the battery, and plug in the USB cable supplied with the logger. Plug the other end of the USB cable into any USB port on the PC.



Windows will automatically identify the logger using the USB-Express driver. In the OmegaView software a picture of your datalogger will appear. This may take up to 30 seconds.



Normally a logger will be automatically detected when connected. If the logger is not automatically detected click on the icon or **Devices/Search** in order to scan the USB ports for new devices.



Up to 6 dataloggers can be connected to the PC at any one time. A picture will appear for each logger allowing communication to anyone of them. If more than 6 loggers are connected, only 6 will be shown.

NOTE: If the picture of the logger does not appear please check if the USB cable is properly connected and then refer to chapter 8 for troubleshooting.

6 Logger Identification



By moving the mouse pointer across a picture of a logger, a prompt will appear to click once or twice on that picture.

By clicking once, further information will appear to identify the logger.

A serial number, the Short ID, Date Code, Description as well as the **manufacturers name** will be displayed.



If more than one logger is connected, double click on the particular logger to enable communication. This highlights the chosen logger.

Now the logger has been selected further information is available.



Click once on the logger's picture to show additional information about the logger model and status.

The **full serial number, logger status, number of channels, firmware version, battery capacity, memory percentage used** and the **actual logger time** will be displayed.

Logger Status gives information about the status of the logger. If the status is “**sleeping**”, no readings are being taken and the logger is waiting to be ‘set’ to log. If the status is “**logging**” the interval set will also be displayed.

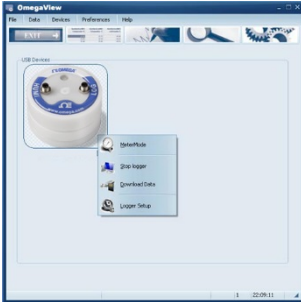
The **battery voltage** is an indication of the battery life remaining. It is recommended keeping track of the battery usage or simply use a new one if the status of the battery is unknown and data is important. Refer to table in chapter 4.1 to understand the impact of the interval on the battery life. The logger works with a lithium battery whose life isn't easy to predict. A brand new battery has a capacity of 3.0 V. A completely worn battery has less than 2.5V. The logger also predicts battery life which is indicated on the LEDs. Please refer to chapter 0 to understand the meanings of the LEDs .

Memory % shows the memory capacity used.

Note, that stored readings are overwritten when the logger is set to start logging.

Actual Time shows the loggers' time. The logger automatically synchronizes its logger time with the PC time when it is starts logging.

7 Logger Control



Once the logger has been selected, right click to enter the menu to control the logger.

A logger control window is opened and will show the following functions **Metermode**, **Start/Stop Logger**, **Download Data** and **Logger Setup**.

7.1 Online Meter



In the Logger control window click on **Metermode**, to see current logger readings for channels that are set.

Note that the screen shows channels in their numeric order. That means that first of all, all channels assigned to slot 1 will be displayed, then all channels assigned to slot 2 and so on.

Please refer to chapter 7.5 for more information on Slot numbers and channel numbers.

Note: The logger is mainly used for unattended long term logging, therefore Meter Mode is used to test the logger and verify that the sensors have been connected correctly and are providing the correct readings.

When the logger is connected to a USB port it will self heat therefore the internal sensors may not be as accurate, the values may be up to 2°C higher than the actual values.

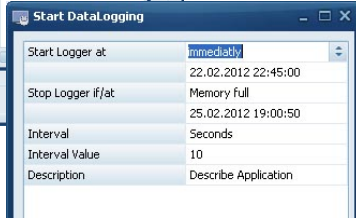
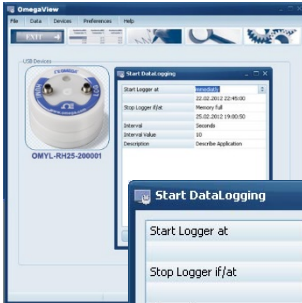
Once the logger has been disconnected from the PC and moved to an external environment, the internal sensors of the logger may take up to a few hours to stabilize.

7.2 Start/stop logger



Clicking on **Start Logger** in the logger control window will bring up the settings for logging.

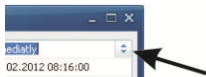
Note: that if the logger is already logging data, the **Start Logger** command will not be available. Instead the **Stop Logger** command will be displayed.



In the **Start Data Logging** window there are the following settings: **Logger Start condition, Logger Stop condition, Interval (unit/value)** and a **run description**.

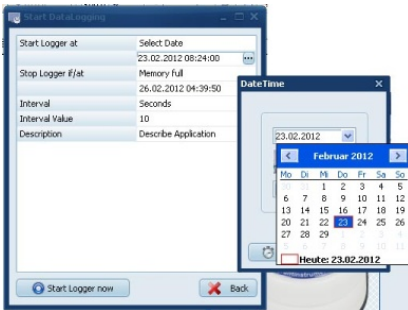
The logger can be started **immediately** or at a **specific date/time**.

When set to **immediately** the logger will start logging from the nearest full minute.



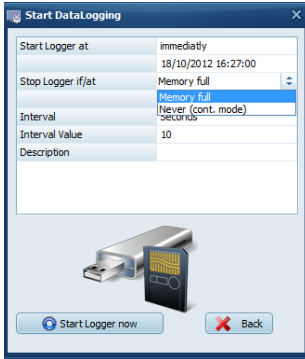
click here
to change

To change the settings I click on the arrow button next to the default condition.



To set the logger to start at a specific date/time, change the **Start Logger** at condition to **Select Date**. Then browse the **calendar** to change the **Start date and time**.

In the **Start Datalogger** window, the **Stop condition** for the logger can be set.



If the **Memory full** option is selected the loggers will stop logging when the memory is full.

If **never (cont mode)** option is selected the logger will start to overwrite the oldest readings when the memory is full.

To set the interval rate of the readings, select the unit ; Hours, Minutes, Seconds or Hertz and define the Interval Value.

Examples: to log every 10 Minutes, select **Minutes** at the Section **Interval** and enter **10** as the **Interval Value**.

To log at 5 Hertz, select **Hertz** at the Section **Interval** and enter **5** as the **Interval Value**.

Finally, a **Description** of up to 46 characters can be entered. This Description will be stored in the datafile to identify the readings when viewed later.

When all settings have been entered as required, click on **Start logger now**.

Once started a message will appear to confirm the logger has started logging successfully.

7.3 Download Data

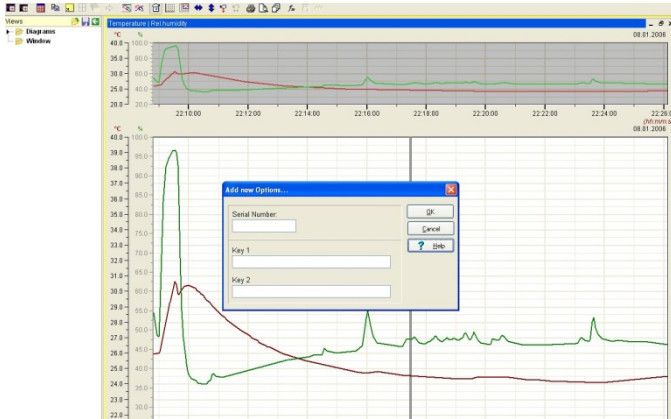


Clicking on **Download Data** will transfer all stored data to your PC. It will automatically store the files as a ***.BIN** file and as a ***.ASCII** file. The original ***.BIN** file is a compressed datafile which can be archived using a minimum of hard disk space.

The ***.ASCII** file is used for graphical analysis by the GraphTool of OmegaView (only available in OmegaView Plus) and to import into third-party software.

As soon as the data has been fully processed the GraphTool software will pop up. When purchasing the OmegaView Plus software there will be a serial number and two keys which will need to be entered here. If these have already been entered the analysis function will appear. (details about graphical analysis can be found in a separate manual for the OmegaView Plus software package)

The files are automatically stored in a folder defined by OmegaView. This can be found at **C:\Users\Public\Public Documents\Graphtool**



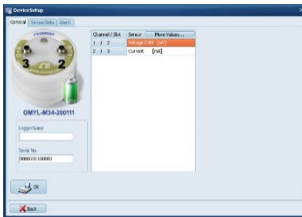
If the OmegaView Plus edition of OmegaView has not been purchased, the software can be upgraded.

Please contact Omega to purchase an OmegaView Plus license (OMYL-SOFT-PLUS).

7.4 Logger Setup - General

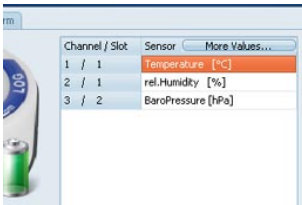


Click on **Logger Setup**, to define general settings for the logger, i.e. channel settings, alarm settings).



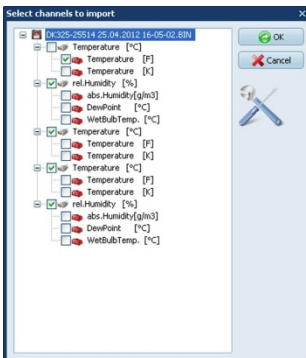
A picture of the logger is displayed so the inputs/slots can be identified.

The battery capacity is displayed in the same picture. If the battery status is “green” the battery is still in a usable condition. If the battery is red, it should be replaced soon and only a short term logging period should be performed.



Click on the **General** tab and then enter a logger name this can be used for later for identification.

Click on “**More values**”, to set the calculated readings required.



Select the calculated values as they are required to be returned. These will be stored in the same ASCII-file as the original data.

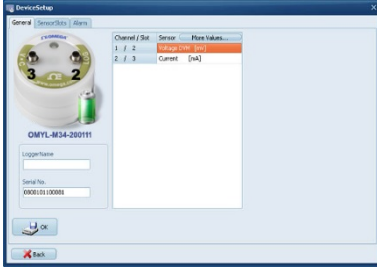
Note: If the calculated values are not selected, the .bin file can be imported and the calculated values can be selected as appropriate.

7.5 Logger Setup – Sensor Slots

Those loggers that have additional inputs for external signals or sensors have to be configured correctly to show the expected values and prevent damage.

The input types that can be configured for different sensor/signals types are shown in the table:

	PT100/PT1000 Thermistor	Humidity Temp	Barometric pressure	Condensation	Voltage Current	Pulse	Thermocouple	Strain gauge	Micro volt	Soil moisture	Light
OMYL-T11 OMYL-T12	x										
OMYL-T15 OMYL-T16							x				
OMYL-RH23		x	x								
OMYL-RH25	x	x		x							
OMYL-M32					x			x	x		
OMYL-M33 OMYL-M34					x						
OMYL-M41 OMYL-M42						x					
OMYL-M61		x									
OMYL-M62		x	x								
OMYL-M90	x	x		x	x	x			x	x	x

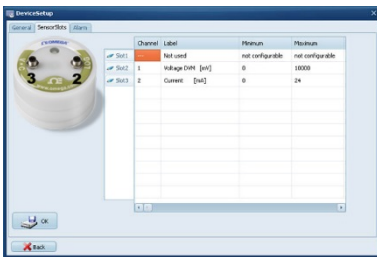


Click on **Logger Setup**, to configure the inputs.

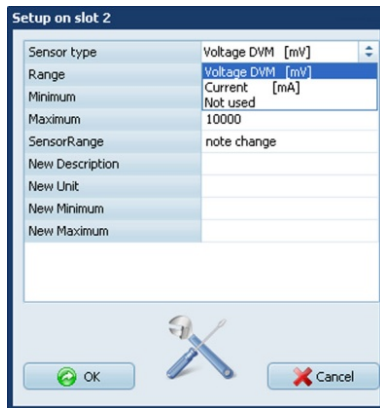
The actual configuration of the logger and the range are displayed.

Click on the **Sensor Slots** tab.

NOTE: This function is only available when the logger is not logging.

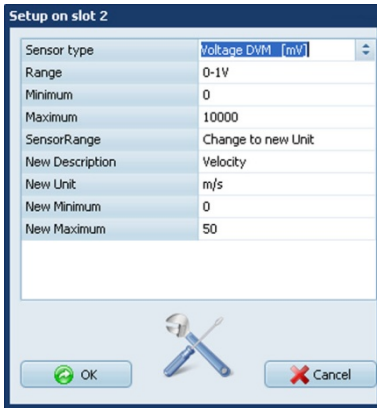


Click on the symbol of the slot to be modified for example **Slot2**.



Here the sensor type connected to Slot2 can be selected. If one of the standard sensors of the OMYL loggers is required then simply select the corresponding sensor type.

If the sensor has any analog output the sensor range can be scaled.



OmegaView automatically assigns the **minimum** and **maximum** values of the sensor range.

This can be altered if required.

In order to set engineering units for the sensor, select **Change to new Unit** in the section **SensorRange**.

Further settings can be entered. The above example shows the values for a sensor with a linear range of 0...50m/s = to 0...1V.

In this example the following has been entered:

New Description: Velocity

New Unit: m/s

New Minimum: 0

New Maximum: 50

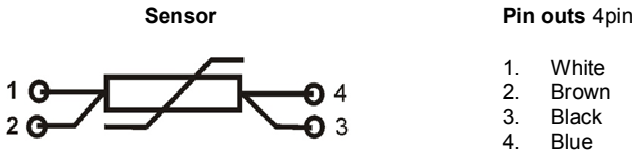
Once the correct settings have been entered for the sensor click on the **OK** button.

As per the default, this new range will automatically be activated and logged when the logger is started. If the engineering units are no longer required they can be deselected at **Logger Setup, General, More values**, further information on this can be found in chapter 7.4.

7.5.1 Temperature PT100/PT1000/Thermistor

The standard temperature sensors supplied (OMYL-EU, OMYL-CM etc) are all PT1000-sensors. If you are connecting a standard sensor, select type **Temp.PT1000**.

If you are using a sensor purchased elsewhere, assign pins 1 to 4 and select the appropriate sensor type in the software.



This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **Temp.PT1000 [°C]** or **PT100** or **Thermistor U**

7.5.2 Sensors for temperature (Thermocouple)

The OMYL-T15 and OMYL-T16 allow connection of the thermocouple sensors. These can be of any type from K, T, J, B, E, N, R or S. Connect the sensors into the logger with the correct polarity.

This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **Thermocouple [°C]**.

7.5.3 Combined Sensors for temperature / humidity

This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **Temp/RH [°C/%]**. Although humidity/temperature-sensors have are two separate sensors, they only use one channel of the logger.

Humidity sensor life can be affected by environmental conditions. Read the Trouble shooting section for more details.

7.5.4 Sensors for condensation

The condensation sensor Type SHS delivers a “1” Signal when condensation has been detected and a “0”, if no condensation is detected. This connection can be configured in **LoggerSetup/SensorSlot - SlotMode: Condensation []**.

7.5.5 Pulse Count - potential-free contacts

The OMYL-M41/42 and the OMYL-M90 data loggers can process signals from external switch contacts. The sensors need to be connected to the OMYL-CS cable. Just connect cable colours according to the scheme below:

Potential free contact (i.e.Reed relay)



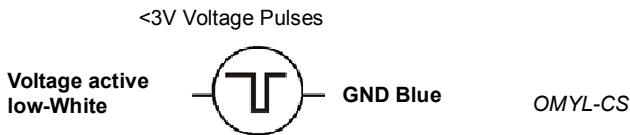
With both asynchronous and synchronous signals a pulse is counted when the switch is closed.

This connection can be configured in **LoggerSetup/SensorSlot - SlotMode: Frequency [Hz]**.

Important: Connecting voltages higher than 3 Volts will damage the device.

7.5.6 Pulse Count - Voltage pulses <3Volts CMOS

If the pulse signal is not a voltage-free signal but has a potential, **which is less than 3V** then the standard OMYL-CS cable can be used. Connect pins 3 and 4 according to the following image:



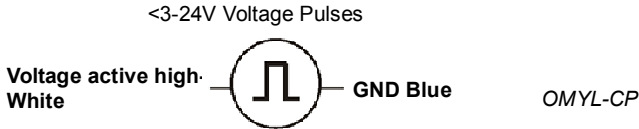
With both asynchronous and synchronous signals a pulse is counted on the falling edge (from high level to low level).

This connection can be configured in **LoggerSetup/SensorSlot - SlotMode: Frequency [Hz]**.

Important: Connecting voltages higher than 3 Volts will damage the device.

7.5.7 Pulse Count - Voltage signals >3Volts

If the loggers OMYL-M41/42 and OMYL-M90 are used for pulse counts with a signal between 3V and 24V the **OMYL-CP** connection cable will be required. Operation with other cables may cause damage.



With both asynchronous and synchronous signals a pulse is counted on the rising edge (from low level to high level).

This connection can be configured in **LoggerSetup/SensorSlot - SlotMode: Frequency [Hz]**.

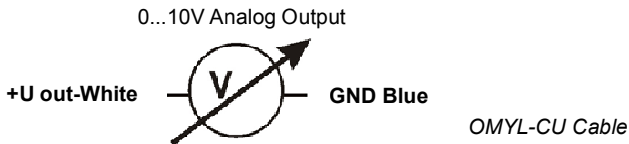
Important: Connecting pulse inputs with a voltage greater than 24 Volts will damage the device.

7.5.8 Voltage - GND reference signals (max 10V)

Applications: standard analog levels of industrial transmitters, etc.

This mode is suitable for measuring voltage signals between 0-10 Volts. This signal needs to be connected with the OMYL-CU cable. Input with another cable may cause damage to the device and mismatched readings.

The software allows selection of the input ranges 0-1V/ 0-2,5V / 0-5V / 0-10V (or freely selectable between 1-10V). Input impedance in this mode is 100 KOhm.



This connection can be configured in **LoggerSetup/SensorSlot - SlotMode: Voltage DVM [mV]**.

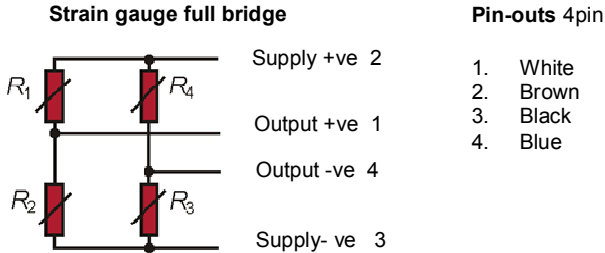
The power supply for additional transmitters needs to be provided externally.

Important: Connecting voltages higher than 10 Volts will damage the device.

7.5.9 Strain gauge – sensors (OMYL-M32 only)

The OMYL-M32 logger can measure two strain gauges. It is designed for full resistance bridges at 60-700 Ohms.

Simply use OMYL-CS cables to connect the sensor to the logger.



This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **DMS**.

Usually complete Strain gauge bridges are supplied calibrated. In the calibration certificate the bridge rated output $C_N \left[\frac{\text{mV}}{\text{V}} \right]$ will be listed. With these specifications the bridge rated output $C_{NR} \left[\frac{\text{mV}}{\text{mA}} \right]$ is converted as followed:

Conversion of the bridge rated output $C_N \left[\frac{\text{mV}}{\text{V}} \right]$ to $C_{NR} \left[\frac{\text{mV}}{\text{mA}} \right]$

$$C_{NR} \left[\frac{\text{mV}}{\text{mA}} \right] = \frac{C_N * \text{bridge rated output}}{1000}$$

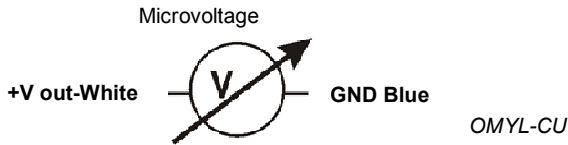
Example: $C_{NR} \left[\frac{\text{mV}}{\text{mA}} \right] = 2 \frac{\text{mV}}{\text{V}} @ 50\text{kg} / R_{\text{bridge}} = 120\Omega$

$$C_{NR} = \frac{2 * 120}{1000} = 0,24 \text{ mV @ } 50\text{kg}$$

OmegaView Plus has an integrated formula editor, which allows you to enter a formula as described above to calculate Forces/tensions from the mV reading.

7.5.10 Lowest-voltage measurement (OMYL-M32 only)

The OMYL-M32 can measure very low voltage signals for example in the range of +/- 5mV with a resolution as low as 0,15µV.



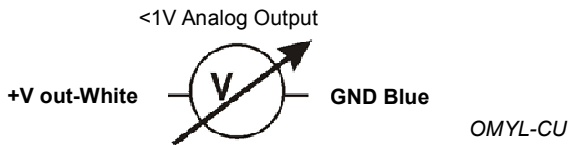
This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **High-Impedance**.

7.5.11 Voltage - GND reference signals (OMYL-M32/-M90, max 1V)

In order to measure low voltage levels < 1VDC from grounded voltage sources, connect the OMYL-CS cable according to the diagram below.

In this mode the logger can perform at an interval of up to 32 Hz.

Measuring ranges 0-10 mV or 0-1000mV are possible. The measuring range 0-10 mV allows for a resolution of up to 560 nV. The input impedance in this mode is > 2.5 MOhm.



This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **Voltage DVM [mV]**.

Important: Connecting voltages greater than 1 Volt will damage the device

7.5.12 Current measurement (max 24 mA)

Current measurements can be made with signals up to a maximum of 24 mA. The signals need to be connected with the OMYL-CI cable.

Input with another cable will cause damage to the device.

The software will allow for the input range to be freely selected between 0-24 mA.

The input impedance in this mode is 100 KOhm. The maximum sampling rate is 32 Hz.

This connection can be configured in **LoggerSetup/SensorSlot** - SlotMode: **Current [mA]**.

Connections for OMYL-CI cable to measure a current up to 24mA

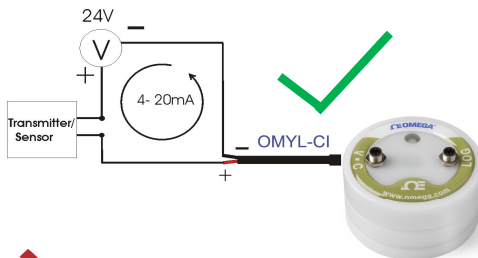
White = Analog input +

Blue = Analog input -

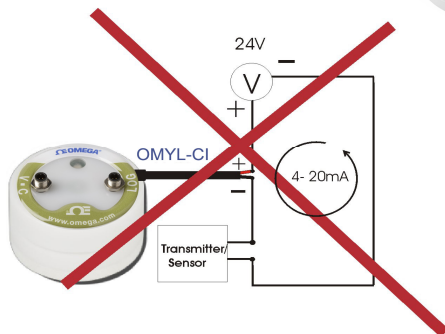
The OMYL-CI has a 10 Ohm shunt resistor built in.

The transmitter will be required to be powered externally.

Warning! Always connect the data logger to the lowest potential of the current loop. Meter the low-side current and do not meter the high-side current (see the following image).



Correct



Incorrect

7.5.13 Soil moisture sensor - Decagon series (OMYL-M90 only)



The OMYL-SMP probes can be connected to the **OMYL-M90** for measuring soil moisture.

The sensors of the OMYL-SMP series are capacitive sensors for soil moisture that measure the permittivity of soil. An output signal proportional to the soil moisture is created by altering the sensor's reference voltage. The significant differences between the permittivity of water (ca. 80), soil (ca. 4) and air (ca. 1) are beneficial in the measuring principle as the changes in moisture content, result in a large change in the permittivity of the soil.

The influences of the soil's temperature and salinity are minimized by the specialist surface coating of the sensor.

Specifications:

OMYL-SMP-2

Measuring range: 0-saturation

Accuracy: $<0,03\text{m}^3/\text{m}^3$ for all soils, up to 8 dS/m

With soil specific calibration: $\pm 0,02\text{ }^3/\text{m}^3$ ($\pm 2\%$)

Resolution: $0,001\text{ m}^3/\text{m}^3$ VWC in mineral soils. 0,25% in natural soil

Operating temperature range: $-40-60^\circ\text{C}$

Selecting the measuring site

When selecting the site to measure be aware that the immediate surrounding area of the sensor has the most influence on the readings.

For example, holes, cavities, and compactions can have an effect on the measurements.

Do not install the sensor near large metal objects as this can affect the magnetic field surrounding the sensor.

Please be aware of objects (such as sticks and stones) between the sensor brackets as these may affect the measurements.

When installing the sensor please make sure that the contact areas between the sensor and the soil are maximized.

Two methods can be helpful in siting the sensor:

Installing the OMYL-SMP-2

1. The installation of the OMYL-SMP-2 is especially easy to manage. After digging a sufficiently deep hole for the sensor, insert the brackets into unspoiled soil at the bottom or side of the hole.

The sensor needs to be entirely covered, including the rubber over molding.

If it's too difficult to insert the sensor, try to loosen the ground. DO NOT drive the sensor into the soil by force, as this may cause irreparable damage.

2. Carefully refill the hole. Try to prevent the rubber-coating segment from being bent as this may cause damage.

Position of the sensor

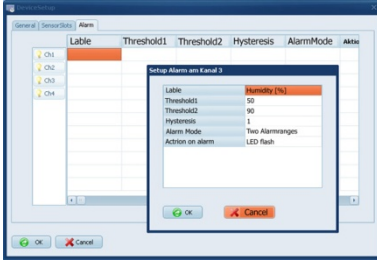
The sensor can be operated in any position, but the installation at right angles to the surface is preferable in order not to impede infiltration.

Removing the sensor

NEVER pull the sensor's cable if to remove it from the ground. This could damage the device.

7.6 Logger Setup – Configuring Alarms

Yoyo loggers have integrated alarm functionality. An LED will start to flash if thresholds are exceeded.



Click on **Alarm**, to display the alarm settings.

Then click on the symbol of the channel in order to change the settings.



Select from the following Alarm Modes:

One alarm range:

Sensor



There is one alarm range for the selected channel. If the sensor value is higher than the (Alarm threshold1 \pm Hysteresis) and lower than (Alarm threshold2 \pm Hysteresis) the logger will start to alarm.

Two alarm ranges:

Sensor



There are two alarm ranges for the selected channel. If the sensor value is higher than the (Alarm threshold1 \pm Hysteresis) and lower than (Alarm threshold2 \pm Hysteresis) there is no Alarm.

Otherwise the logger will start to alarm.

Now set the values for **Threshold 1** and **Threshold 2** and define the **Hysteresis**

8 Troubleshooting

Typical error messages that may occur during operation are listed below. Try to solve the problem with the following help list before contacting Omega.

A) *No logger is displayed*

First, check if the logger cable is correctly connected to the USB Port and to the logger. Secondly, uninstall the software and re-install the complete package (software/USB-driver). Administration rights are required during the installation process. If the problem still exists there may be a fault with the logger.

B) *Unknown Logger is displayed*

The software being used may be an old version, which doesn't recognize the new hardware. Check with Omega for any upgrades.

C) *Cannot contact logger*

If the error message continues to show after checking that the loggers are connected correctly and appears in the OmegaView software. This could be due to the logger having a flat or missing battery. Replace the battery and verify initial function test as follows:

After having inserted the battery the LED on logger front should flash in all three colours (LED chaser). This shows the logger is operating. Now, try contacting the logger. If problem still exists there may be a problem with the logger hardware, contact Omega.

D) *Logger stops taking readings after a period logging.*

Please check the logger setup for any settings selected for a stop date/time, change the setup if necessary. Otherwise this could be due to a flat battery. Check battery voltage in OmegaView (see chapter 4.1) and possibly replace battery.

E) *Humidity/Temperature readings continuously show -40°C/+120°C .*

Humidity/Temperature-Sensor is faulty or the cable has been damaged.

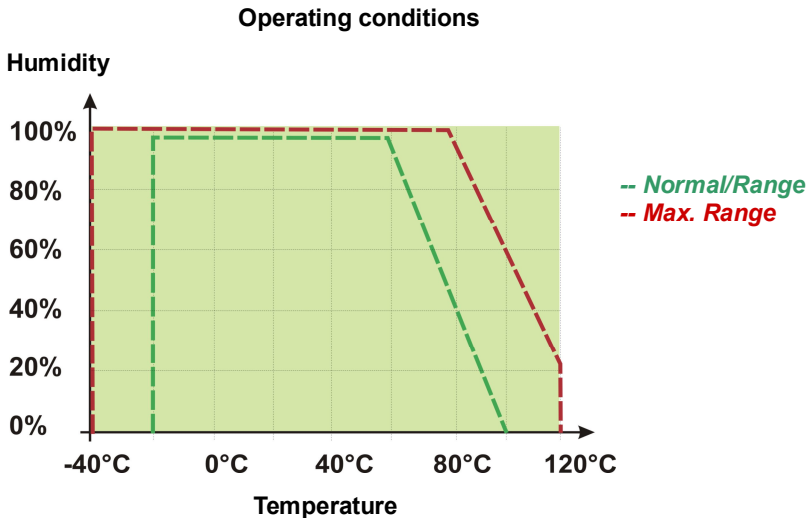
F) *Other sensors continuously show their Max/Min:*

Sensor or sensor cable could be damaged.

Important notes for measuring humidity

The OMYL humidity/temperature probes are a precise, reliable humidity sensor element which has a good long-term stability. The capacitive sensor allows for humidity measurement in many applications and will give stable readings in clean environments for several years.

Depending on the environmental conditions the sensor can become contaminated by for example: dust, chemicals and dirty water which will reduce the active life. There are further limitations, the sensor may be used in a operating range of 0-100% RH this operating range is reduced at as the operating temperature increases. See the graph below. This is due to the fact that quite an aggressive environment is developed when measuring high humidity and high temperature at the same time:



The sensor should not be damaged when condensation occurs occasionally. If condensation does occur, dry out the sensor in order to return to the correct measurements, except the sensor polymer is contaminated with substances (see above). If condensation occurs regularly or for a long period of time, the sensor life is reduced. If the sensor is even saturated it may give incorrect readings in the range of 0-100% RH (sometimes even negative readings), but will recover when water droplets have evaporated.

To ensure high quality readings we therefore recommend that probes/loggers are verified and calibrated on an annual basis.

9 Understanding the LEDs

The logger LED's for Type OMYL-T10 and OMYL-RH20 are colored differently compared to those of the rest of the yoyo logger series.

Datalogger OMYL-T10 , OMYL-RH20

Logger Status	Red LED	Yellow LED	Green LED
Logs at interval	-	-	Flashes at interval
USB communication	-	on	-
Alarm occurred	Flashes at 8seconds	-	-
Alarm status cleared after an alarm occurred	-	Flashes at 8seconds	-
At least 2 alarms occurred with a pause in between.	Flashes at 8seconds	Flashes at 8seconds	-
Battery empty	Flashes at 15seconds	Flashes at 15seconds	Flashes at 15seconds
System check OK after battery change	LED chaser	LED chaser	LED chaser

All other datalogger of OMYL series

Logger Status	Red LED	Blue LED	Green LED
Logs at interval	-	Flashes according to log interval	-
Monitors alarm conditions	-	-	Flashes every 8 secs
Alarm active	Long Flash for 1 second every 8 seconds	-	-
Alarm occurred but is not active anymore	Short Flash every 8 seconds	-	-
Battery empty	Intense flickering for 0.5 seconds every 15 seconds	-	-
System check OK after battery change	LED chaser		

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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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

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

FOR **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.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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