

Connecting AML Micro-X

The AML Micro-X is a single sensor probe capable of measuring Sound Velocity, Conductivity, Pressure, Turbidity, or Temperature depending on the ordered configuration.

The Micro-X is compatible with the NexSens X2 data logger when equipped with the Tu-Xchange Turbidity sensor and RS-232 communication options. Prior to interfacing with an X2, the AML must be configured in a terminal.

The AML Micro-X and Tu-Xchange Sensor Manuals can be downloaded from the manufacturer's website [here](#)



Connecting AML Micro-X

Connectorization

For X2 compatibility, sensors must have UW connectors. There are 3 options:

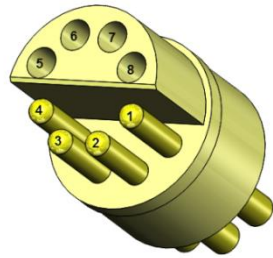
- Factory installed UW connectors
- UW Plug and Flying Lead cable
- UW Field Wireable Plug

Recommendation: Invest in factory connectorization of all sensors for a long-term, robust and waterproof connection

UW8 Plug Signal	UW8-Plug Pin	AML RS-232 Sensor Cable	UW-FWP Signal	UW-FWP Pin
RS-232 Tx	1	White	RS-232 Tx	J ¹
Ground	2	Black	Ground	J ²
RS-232 Rx	3	Green	RS-232 Rx	J ³
5V	4	-	5V	J ⁴
12V	5	Red	12V	J ⁵
SDI-12	6	-	SDI-12	J ⁶
RS-485 B	7	-	RS-485 B	J ⁷
RS-485 A	8	-	RS-485 A	J ⁸



UW to Flying Lead Cable



UW-8P



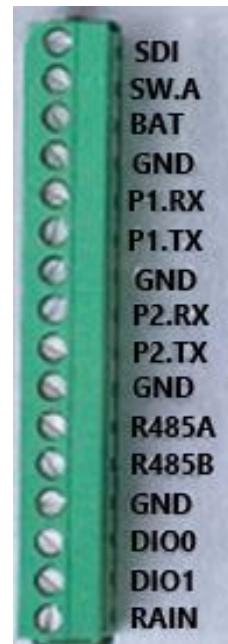
UW Field Wireable Plug



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Flying Lead Connection

For an iSIC-V2 integration, sensors may use a flying lead connection to the Digital Terminal directly.



iSIC-V2 Digital Terminal	AML
SW.A	Red
GND	Black
P1.Rx	Green
P1.Tx	White

Configuring AML Micro-X

To interface with the X2 data logger, the AML Micro-X must have NMEA output enabled and be configured to output data on startup. These settings can be changed by connecting the AML to a terminal program such as Tera Term.

Terminal Connection Settings

8 bits

1 stop bit

No parity

No hardware handshaking

Baud Rate of 38400 (default)

Commands to Send

Configures Data Output on Startup

SET STARTUP NOHEADER

SET STARTUP MONITOR

SET SAMPLE RATE 2/S

SET DETECT 05

SET AUTOMONITOR 1

Enables NMEA Output

SET NMEAON

Configuring AML Micro-X

To confirm that all of the settings have taken effect, send the **display options** command and verify the list matches the following. Note that the SN and Firmware values at the beginning of the list as well as the scaling values at the end of the list will vary sensor to sensor:

```
>display options
[Instrument]
Type=Micro.X Turbidity
SN=011300
Firmware=1.11
SampleUnits=/ second
SampleInterval=2
DisplayHeader=no
StartupMode=Monitor
DetectionMode=05
RX=on
TrailingSpace=off
PressureFormat=42
TemperatureFormat=23
TurbidityFormat=42
DoxygenFormat=21
TurbidityWaitForData=off
```

```
StartupRawReal=Real
PressureUnits=dbar
TemperatureUnits=Celcius
TurbidityUnits=NTU
DoxygenUnits=mg/L
Latitude=+45.000
PressureOffset=+0.000
UsePressureOffset=no
AddressMode=off
AddressByte=09
SerialParity=none
SerialEcho=on
CommunicationsDelay=0
NMEAMode=on
AutoMonitorSeconds=1
TurbidityAveraging=16
```

```
[Channel 1]
SensorName1=TU2.Xchange
Slot1=2
BoardSN1=011300
SensorSN1=600154
CalDate1=03/21/16
WiperPresent=no
WipeOnPowerUp=no
AutoWipeSecs=no
CalBy1=KS~
CalRange1=0-3000 NTU
CalAccuracy1=0.000%
TUA= 1.903093E-01
TUB= 0.000000E-01
```

```
TUC= 0.000000E-01
TUD= 0.000000E-01
TUE= 9.690741E-01
TUF= 0.000000E-01
TUG= 0.000000E-01
TUH= 0.000000E-01
TUI= 8.054424E-05
TUJ= 0.000000E-01
TUK= 0.000000E-01
TUL= 0.000000E-01
TUM=-2.032497E-08
TUN= 0.000000E-01
TUU= 0.000000E-01
TUP= 0.000000E-01
```

Configuring AML Micro-X

Reconnect to the terminal at 9600 Baud, cycle power on the Micro-X, and verify that the sensor begins sending out lines of turbidity data in the form **\$AML,TUN,301.2,SN,600013*38**

```
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B  
$AML,TUN,0.32,SN,600154*0B
```

Example of startup data stream