

THE MEASURABLE DIFFERENCE.



DEWETRON

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OXYGEN TRAINING > SENSOR DATABASE





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GENERAL PURPOSE

To minimize the effort for configuration of high channel count systems, OXYGEN offers a sensor database

Channel Settings for different settings can be defined and stored to the sensor database

Thus, the definition needs only be done once and can afterwards be applied to any hardware input channel

All settings to be selected in the Channel Setup are accessible in the sensor database

In case several identical sensors are used during a measurement, the general settings can be defined in the sensor database and applied to several different input channels

The sensor database can be found in System Settings → Sensors

Only analog sensors are supported, i.e. no Encoders yet

System Settings

- Measurement Setup
- Header Data
- Advanced Setup
- Hardware
- Sync Setup
- DAQ Hardware
- Sensors**
- Extensions and Plugins
- Overview
- Remote Control
- User Interface
- UI Options
- Localization
- System Actions
- Shutdown

Sensors

Name	Serial No.	Scaling
PNA-CLAMP-S		Offset: 0 Scale: 16.6666667 Unit: A
PNA-CLAMP-10/-20		Offset: 0 Scale: 10 Unit: A
SE-CUR-CLAMP-1000-DC		Offset: 0 Scale: 1000 Unit: A
SE-CUR-CL...1000-DC-S		Offset: 0 Scale: 500 Unit: A
SE-CUR-CLAMP-200-DC		Offset: 0 Scale: 100 Unit: A
SE-CUR-CLAMP-500-DC		Offset: 0 Scale: 250 Unit: A
PA-LF-310-DC		Offset: 0 Scale: 2000 Unit: A
PA-LF-1010-DC		Offset: 0 Scale: 4000 Unit: A
SE-CUR-CL...20-DC(-S)		Offset: 0 Scale: 10 Unit: A
PA-CTS-2000/5000		Offset: 0 Scale: 1000 Unit: A
PA-IN-1000-S		Offset: 0 Scale: 1500 Unit: A
PA-IT-65		Offset: 0 Scale: 600 Unit: A
PA-IT-205		Offset: 0 Scale: 1000 Unit: A
PA-IT-405		Offset: 0 Scale: 1500 Unit: A
PA-IT-700		Offset: 0 Scale: 1750 Unit: A
PA-IT-700U		Offset: 0 2-point scaled Unit: A
PA-IT-1000		Offset: 0 Scale: 1000 Unit: A
Dytran 3097A2T	00912	Offset: 0 Scale: 10.3541106 Unit: g
Strain Gage		Offset: 0 Bridge scaled Unit: mV/V

Sensor Details:

Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
Voltage					
Voltage					
Voltage					
Voltage					
Voltage					
Current					
Current					
Current					
Current					
Current					
Current					
Current					
Current					
Current					
IEPE	0.3 V	4 mA	Frequency Order 5	Auto Type	0.16
Bridge	3 mV/V	10 V	Frequency Order 8	Auto Type	DC

Buttons: Add sensor, Duplicate, Remove



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ADDING A SENSOR TO THE DATABASE

- 1 Press the *Add* sensor button
- 2 A new sensor will be created at the end of the list
- 3 Enter an appropriate name and an optional serial number of the Sensor
- 4 Press on the scaling column to enter the sensor specific scaling factor or sensitivity
- 5 Proceed with additional options listed on the right; All fields are optional and can also be left blank if not required

System Settings

Sensors

Name	Serial No.	Scaling	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
PNA-CLAMP-10/-20		Unit: 0 Scale: 10 Offset: 0	Voltage					
SE-CUR-CLAMP-1000-DC		Scale: 1000 Offset: 0	Voltage					
SE-CUR-CL...1000-DC-S		Scale: 500 Offset: 0	Voltage					
SE-CUR-CLAMP-200-DC		Scale: 100 Offset: 0	Voltage					
SE-CUR-CLAMP-500-DC		Scale: 250 Offset: 0	Voltage					
PA-LF-310-DC		Scale: 2000 Offset: 0	Current					
PA-LF-1010-DC		Scale: 4000 Offset: 0	Current					
SE-CUR-CL...20-DC(-S)		Scale: 10 Offset: 0	Voltage					
PA-CTS-2000/5000		Scale: 1000 Offset: 0	Current					
PA-IN-1000-S		Scale: 1500 Offset: 0	Current					
PA-IT-65		Scale: 600 Offset: 0	Current					
PA-IT-205		Scale: 1000 Offset: 0	Current					
PA-IT-405		Scale: 1500 Offset: 0	Current					
PA-IT-700		Scale: 1750 Offset: 0	Current					
PA-IT-700U		2-point scaled	Voltage					
PA-IT-1000		Scale: 1000 Offset: 0	Current					
Dytran 3097A2T	00912	Scale: 10.3541106 Offset: 0	IEPE		0.3 V	4 mA	Frequency Order 0	Auto Type Descal
Strain Gage		Bridge scaled	Bridge		3 mV/V	10 V	Frequency Order 0	Auto Type Descal
New Sensor		Scale: 1 Offset: 0						

1 Add sensor 2 Duplicate 3 Remove

System Settings

Sensors

Name	Serial No.	Scaling	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
KS 95B-100	14068	Unit: V Scale: 1 Offset: 0						

3 4 5



APPLYING A SENSOR SETTINGS TO A CHANNEL

- ① Open the Channel Setup and press *Choose sensor*
- ② A popup will open with all sensors defined in the database included; Select the desired sensor and press ok
- ③ The settings will be applied to the Channel
- ④ In case some settings defined in the sensor database are not supported, a warning will appear but the other settings will be applied anyway

AI 2/1@[RemoteBack]120046
TRION-2402-DACC-6-BNC

AI 2/1@[RemoteNode]

Choose sensor

AMPLIFIER OPTIONS
Mode: Voltage
Range: 100 V
Coupling: DC

VOLTAGE SETTINGS
Input type: Differential

SENSOR SCALING
Scaling 2-point Table
 Scaling Sensitivity
Unit: V
Scaling: 1 V/V
Offset: 0 V [Zero]

Sensors

Name	Serial No.	Scaling	Unit
PK-IT-700		Offset: 0	Unit: A
PK-IT-700U		2-point scaled	Unit: A
PK-IT-3000		Scale: 3000 Offset: 0	Unit: A
Dytran 3097A2T	00912	Scale: 30.3541136 Offset: 0	Unit: g
Strain Gage		Bridge scaled	Unit: mV/V
KS 95B-100	14068	Scale: 33.0999112 Offset: 0	Unit: V

Cancel [OK]

AI 2/1@[RemoteBack]120046
TRION-2402-DACC-6-BNC

AI 2/1@[RemoteNode]

KS 95B-... (14068)

AMPLIFIER OPTIONS
Mode: IEPSE
Range: 1 V
Coupling: 3.4 Hz

IEPSE SETTINGS
Excitation: Current 4 mA

SENSOR SCALING
Scaling 2-point Table
 Scaling Sensitivity
Unit: V
Sensitivity: 0.09905 V/V
Offset: 0 V [Zero]

PREVIEW

V

10.0959

-10.0959

0.1127 V MAX
AC RMS 0.2274 V
AVG -0.1194 V
MIN -0.5737 V

Applying configuration change failed! Not able to set LP Mode to Bessel for channel AI 2/1
Applying configuration change failed! Not able to set LP Order to 8 for channel AI 2/1
Applying configuration change failed! Not able to set LP Freq to Auto for channel AI 2/1
WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715) 1400
WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715) 1400
WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715) 1400
WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715) 1400



COPYING THE SENSOR DATABASE TO OTHER SYSTEMS

① The settings from the sensor database are stored to an xml-file called *sensor_db.xml* and can be found in the following directory:
C:\Users\Public\Documents\Dewetron\Oxygen

② As the sensor database is based on a xml-file, the sensor database can also be generated and edited with an xml editor such as Notepad++

CrashDump	1/8/2020 1:50 PM	Dateiordner	
Lock	2/12/2020 2:57 PM	Dateiordner	
Log	8/23/2017 4:17 PM	Dateiordner	
oxygen.lic	1/9/2020 7:08 AM	LIC-Datei	7 KB
sensor_db.xml	2/12/2020 3:24 PM	XML-Dokument	22 KB

```

1  <?xml version="1.0"
2  <SensorDB>
3  <Groups>
4  </Groups>
5  </Groups>
6  <Sensors>
7  <Sensor name="FNA-CLAMP-1000" group="" type="ANALOG">
8  <SensorInfo manufacturer="" serial_number="" calibration_date="" />
9  <Properties>
10 <Property name="Mode">
11 <StringValue>"Current"</StringValue>
12 </Property>
13 <Property name="Neon/PhysicalScaleOffset">
14 <DoubleValue>0</DoubleValue>
15 </Property>
16 <Property name="Neon/PhysicalScaleSensitivity">
17 <DoubleValue>0.001</DoubleValue>
18 </Property>
19 <Property name="Neon/PhysicalScaleType">
20 <EnumValue enum="UserScalingMode">Sensitivity</EnumValue>
21 </Property>
22 <Property name="Neon/PhysicalUnit">
23 <StringValue>"A"</StringValue>
24 </Property>
25 <Property name="Range">
26 <StringValue>"</StringValue>
27 </Property>
28 <Property name="Unit">
29 <StringValue>"A"</StringValue>
30 </Property>
31 </Properties>
32 </Sensor>
33 <Sensor name="SE-CUR-A110_A130" group="" type="ANALOG">
34 <SensorInfo manufacturer="" serial_number="" calibration_date="" />
35 <Properties>
36 <Property name="LP_Filter Order">
37 <DoubleValue>2</DoubleValue>
38 </Property>
39 <Property name="LP_Filter Type">
40 <StringValue>"Bessel"</StringValue>
41 </Property>
42 <Property name="Mode">
43 <StringValue>"Voltage"</StringValue>
44 </Property>
45 <Property name="Neon/PhysicalScaleOffset">
46 <DoubleValue>0</DoubleValue>
47 </Property>
48 <Property name="Neon/PhysicalScaleSensitivity">
49 <DoubleValue>0.001</DoubleValue>
50 </Property>
51 <Property name="Neon/PhysicalScaleType">
52 <EnumValue enum="UserScalingMode">Sensitivity</EnumValue>

```

EXERCISE



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Add the sensors with the following settings to the sensor database

- 1 Accelerometer:
Name: Dytran 3097A2T
Serial No.: 00912
Sensitivity: 96.58 mV/g
Input mode: IEPE
Input Range: +/-0.3 V
Excitation: 4 mA
LP-Filter: Auto, 8th order Bessel
Coupling: 0.16 Hz

- 2 Strain gage sensor
Input mode: Bridge
Wiring: 4-wire quarter bridge (350 Ω)
Input Range: +/-300 mV/V
Excitation: 10 V
LP-Filter: Auto, 8th order Bessel
Coupling: DC
K-factor: 2 μm/m

Name	Serial No.	Scaling	Unit	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
SE-CUR-CLAMP-500-DC		Scale: 250 Offset: 0	Unit: A	Voltage					
PA-LF-310-DC		Scale: 2000 Offset: 0	Unit: A	Current					
PA-LF-1010-DC		Scale: 4000 Offset: 0	Unit: A	Current					
SE-CUR-CL...20-DC(-S)		Scale: 10 Offset: 0	Unit: A	Voltage					
PA-CTS-2000/5000		Scale: 1000 Offset: 0	Unit: A	Current					
PA-IN-1000-S		Scale: 1500 Offset: 0	Unit: A	Current					
PA-IT-65		Scale: 600 Offset: 0	Unit: A	Current					
PA-IT-205		Scale: 1000 Offset: 0	Unit: A	Current					
PA-IT-405		Scale: 1500 Offset: 0	Unit: A	Current					
PA-IT-700		Scale: 1750 Offset: 0	Unit: A	Current					
PA-IT-700U		2-point scaled	Unit: A	Voltage					
PA-IT-1000		Scale: 1000 Offset: 0	Unit: A	Current					
Dytran 3097A2T	00912	Scale: 10.3541106 Offset: 0	Unit: g	IEPE		0.3 V	4 mA	Frequency Order: 8	Auto Type: Bessel 0.16
Strain Gage		Bridge scaled	Unit: μm/m	Bridge	BRQUARTER4W	3 mV/V	10 V	Frequency Order: 8	Auto Type: Bessel DC
KS 95B-100	14068	Scale: 10.0959112 Offset: 0	Unit: V	IEPE		-1 V .. 1 V	4 mA	Frequency Order: 8	Auto Type: Bessel 5