

THE MEASURABLE DIFFERENCE.



DEWETRON



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

Oxygen Setup

Sensors

Search...

Name	Serial No.	Scaling	Unit	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
KMR 0-60 kN	ID 139133	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	<input type="checkbox"/> 5 V		DC
Krafta...0-5 kN	ID 129199	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	<input type="checkbox"/> 10 mA		DC
Krafta...50 kN	ID 129198	Table scaled	Unit: N	Bridge	BRFULL	-1 mV... mV/V	<input type="checkbox"/> 10 mA		DC
Wegs...00mm	ID 137029	Table scaled	Unit: mm	Current		-0.02...02 A	<input type="checkbox"/> Off		
"I" Dr...10 bar	ID 072440	Table scaled	Unit: bar	Current		-20 A...20 A	<input type="checkbox"/> 24 V		DC
"U" Dr...10 bar	ID 072447	Table scaled	Unit: bar	Voltage	Differential	-10 V...10 V	<input type="checkbox"/> 24 V		DC
Dreh...0 RPM	ID 139138	Scale: 1 Offset: 0	Unit: rpm	Voltage		-10 V...10 V	<input type="checkbox"/> Off		
Strom...240 A	ID 139137	Scale: 0.1 Offset: 0	Unit: pere	Voltage		-5 V...5 V	<input type="checkbox"/> Off		DC
Vakuu...00hPa		Scale: 1 Offset: 0	Unit: hPa	Voltage		-10 V...10 V	<input type="checkbox"/> Off		DC
"U" Dr...50 bar	ID 72450	Table scaled	Unit: bar	Voltage	Differential	-10 V...10 V	<input type="checkbox"/> 24 V		DC
"I" Dr...60 bar	ID 136665	Table scaled	Unit: bar	Current		-20 A...20 A	<input type="checkbox"/> 24 V		DC
Krafta...0-5 kN	ID 12...sor 2	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	<input type="checkbox"/> 10 mA		DC

Advanced

Add sensor Duplicate Remove



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

Oxygen Setup Sensors

Name	Serial No.	Scaling	Unit	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
KMR 0-60 kN	ID 139133	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	<input type="checkbox"/> 5 V		DC
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Wegs...00mm	ID 137029	Table scaled	Unit: mm	Current		-0.02...02 A	<input type="checkbox"/> Off		
"I" Dr...10 bar	ID 072440	Table scaled	Unit: bar	Current		-20 A..20 A	<input type="checkbox"/> 24 V		DC
"U" Dr...10 bar	ID 072447	Table scaled	Unit: bar	Voltage	Differential	-10 V..10 V	<input type="checkbox"/> 24 V		DC
Dreh...0 RPM	ID 139138	Scale: 1 Offset: 0	Unit: rpm	Voltage		-10 V..10 V	<input type="checkbox"/> Off		
Strom...240 A	ID 139137	Scale: 0.1 Offset: 0	Unit: pere	Voltage		-5 V..5 V	<input type="checkbox"/> Off		DC
Vakuu...00hPa		Scale: 1 Offset: 0	Unit: hPa	Voltage		-10 V..10 V	<input type="checkbox"/> Off		DC
"U" Dr...50 bar	ID 72450	Table scaled	Unit: bar	Voltage	Differential	-10 V..10 V	<input type="checkbox"/> 24 V		DC
"I" Dr...60 bar	ID 136665	Table scaled	Unit: bar	Current		-20 A..20 A	<input type="checkbox"/> 24 V		DC
Krafta...0-5 kN	ID 12...sor 2	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	<input type="checkbox"/> 10 mA		DC
New Sensor		Scale: 1 Offset: 0	Unit: V				<input type="checkbox"/>		

1 Add sensor Duplicate Remove

Oxygen Setup Sensors

Name	Serial No.	Scaling	Unit	Input mode	Input Type	Input range	Excitation	LP Filter	Coupling
KS 95B-100	14068	Scale: 1 Offset: 0	Unit: V				<input type="checkbox"/>		



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	Unit: A
Dytran 3097A2T	00912	Scale: 30.3541136	Unit: g
Strain Gage		Bridge scaled	Unit: mV/V
KS 95B-100	14068	Scale: 33.0999112	Unit: V
		Offset: 0	

Cancel [2] 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 [3]

SENSOR SCALING

Scaling 2-point Table

Scaling Sensitivity

Unit: V

Sensitivity: 0.09905 V/V

Offset: 0 V [Zero]

PREVIEW

V

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

[4]

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)

WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715)

WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715)

WARNING: board 1 (slot 2)-AI1: WARNING_AI_HPFILTER_VAL_ADJUSTED (-121715)



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>

```



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Channel settings and sensor database interaction

Configure your sensor in the channel list to your desired scaling, offset etc.

- 1 Click on choose sensor to open the sensor database
- 2 Create a new sensor based on the channel settings
- 3 Overwrite the selected sensor with the channel settings
- 4 Shortcut to the sensor database
- 5 To apply the selected sensor setting from the sensor database to the active channel settings

The screenshot shows the DEWETRON software interface with the following elements:

- Channel Settings:** The top panel shows 'Channel' settings for 'CH1' (AI 1/I1) with 'AMPLIFIER OPTIONS' set to 'Voltage' and 'VOLTAGE SETTINGS' set to 'Differential'.
- Sensors Database:** A 'Sensors' window is open, displaying a table of sensors. A red arrow points to the 'CH1 Sensor' row.
- Sensor Table:**

Name	Serial No.	Scaling	Unit
KMR 0-60 kN	ID 139133	Table scaled	N
CH1 Sensor		Scale: 1 Offset: 0	V
- Buttons:** 'Choose sensor' (1), 'New', 'Selected...', 'Switch to DB' (4), 'Close', 'Apply sensor' (5), 'Cancel', and 'Overwrite'.
- Overwrite Dialog:** A dialog box titled 'Overwrite sensor' asks to 'Overwrite existing sensor items with current channel settings'.

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
KMR 0-60 kN	ID 139133	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	5 V		DC
Krafta...0-5 kN	ID 129199	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	10 mA		DC
Krafta...50 kN	ID 129198	Table scaled	Unit: N	Bridge	BRFULL	-1 mV... mV/V	10 mA		DC
Wegs...00mm	ID 137029	Table scaled	Unit: mm	Current		-0.02...02 A	Off		
"I" Dr...10 bar	ID 072440	Table scaled	Unit: bar	Current		-20 A.. 20 A	24 V		DC
"U" Dr...10 bar	ID 072447	Table scaled	Unit: bar	Voltage	Differential	-10 V.. 10 V	24 V		DC
Drehz...0 RPM	ID 139138	Scale: 1 Offset: 0	Unit: rpm	Voltage		-10 V.. 10 V	Off		
Strom...240 A	ID 139137	Scale: 0.1 Offset: 0	Unit: ...pere	Voltage		-5 V.. 5 V	Off		DC
Vakuu...00hPa	ID 12...	Scale: 1 Offset: 0	Unit: hPa	Voltage		-10 V.. 10 V	Off		DC
"U" Dr...50 bar	ID 72450	Table scaled	Unit: bar	Voltage	Differential	-10 V.. 10 V	24 V		DC
"I" Dr...60 bar	ID 136665	Table scaled	Unit: bar	Current		-20 A.. 20 A	24 V		DC
Krafta...0-5 kN	ID 12...sor 2	Table scaled	Unit: N	Bridge	BRFULL	-3 mV... mV/V	10 mA		DC
Dytra...97A2T	00912	Scale: 10.4 Offset: 0	Unit: V	IEPE		-0.3 V.. 0.3 V	4 mA	Frequency Order 8	Auto Type Bessel 0.16
Strai...nsor		Bridge scaled	Unit: μm/m	Bridge	BRQ...R4W	-300 ... mV/V	10 V	Frequency Order 8	Auto Type Bessel DC