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WQS
Nomasense O₂ P6000

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USER GUIDE

CONTENT

- NomaSense or O2 P6000 oxygen analyzer
- USB cable
- USB-Power adapter (5 VDC, min. 1 A) with different connector pieces
- USB stick including the Datamanager Software
- Temperature probe PT100
- Short optical fiber

OPTIONAL

- Oxygen-sensitive chemical optical sensors (PSt3 or PSt6)
- Dipping probe (PSt3 or PSt6)
- Starter kit of accessories: white pen, spatula, silicone glue, one set of syringes, filling level gauge

ADDITIONALLY REQUIRED EQUIPMENT (NOT SUPPLIED)

- PC/notebook for comfortable data transfer and export:

System requirements:

Microsoft® Windows® XP, Vista™, 7, or 8; Processor power according to minimum requirements of the respective operating system

Fig. 1 Case with all delivered equipment

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DESCRIPTION OF THE DEVICE

TOP PANEL

The top panel is equipped with a connector for the fiber optic sensor, a connector for the temperature sensor, and the QR code reader.

Fig. 2 Transmitter top panel

BOTTOM PANEL

The bottom panel is equipped with the USB connector for charging the battery or connecting the device to a PC/notebook. A screw cap gives access to the battery compartment.

Fig. 3 Transmitter bottom panel

Fig. 4 Control panel of the NomaSense O2 P6000

CONTROL PANEL

The NomaSense O2 P6000 are completely stand-alone devices. The LCD display and the buttons allow operating the transmitter without connection to a PC/notebook. In the lower part of the display the functions of the buttons in the respective menu, submenu or window are shown. Use the buttons for navigating on the screen, and to make settings; pressing the respective button will perform the respective function (see Fig. 4).

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GETTING STARTED

1. INSTALLATION – SET-UP

- Remove the red rubber cap from the optical sensorconnector (SMA)

- Remove the protective cap from the male plug on the optical fiber and insert it in the SMA connector of the NomaSense O₂ P6000. The safety nut has to be screwed on.

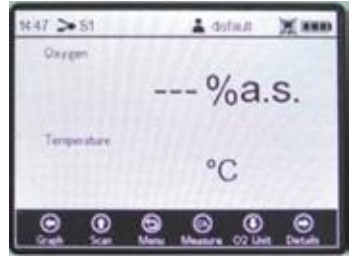- Insert the temperature probe by matching the two red marks of the connector and the plug.

Fig. 5 Measurement screen

2. STARTING THE DEVICE

- Hold the ⬤ button on the control panel to turn on the device, after some automatic tests you reach themeasurement screen directly.

- The navigation bar at the bottom shows the functions of therespective control buttons.

- The status bar at the top shows the time, the name of thecurrent selected sensor, the name of the current user, a symbol indicating if logging is activated or not and the battery status.

Fig. 6 Scanning sensor QR code

3. CREATE A NEW SENSOR WITH A QR CODE

- Activate the QR code reader by pressing the ⬤ (Scan) buttonwhile on the measurement screen.

- Place the respective sensor QR code (delivered with your oxygen sensor) about 10 cm from the NomaSense O₂ P6000 ; the target cross has to be aimed at the QR code. Reducing or increasing the distance between QR code and QR code reader can speed up the scanning process.

- A notification window opens on the screen, when thescanning process is done.

Fig. 7 Keyboard screen to enter Sensor Name

- A keyboard screen opens. Use the navigation arrows to type in the new Sensor Name.

- When you have finished typing go to the Done button and press ⬤.

- The new sensor shows in the sensor list. Press ⬤ once more to select the new sensorand the display will switch to the measurement screen automatically.

4. CREATE A NEW SENSOR MANUALLY

- Use the ⬤ button to switch to the Main menu.
- Select "Sensors" and press the ⬤ button to edit the sensorlist. A window appears; select New Sensor and press⬤ .
- Select Manual and press ⬤.
- In the Sensor Settings you have to choose the Sensor type of your new sensor (NomaSenseO₂ P6000: PSt3 or PSt6). Then move to the upper right of the screen to the Next button and press ⬤.
- Select Humid and press ⬤. Then change the calibration values to the values stated on the sensor´s Final InspectionProtocol.
- ⬤When you have adjusted all the calibration values move to the upper right of the screen to the Next button and press .
- A keyboard screen opens. Use the navigation arrows to typein the new Sensor Name.
- When you have finished typing go to the Done button and press ⬤.
- The new sensor shows in the sensor list. Press ⬤ once moreto select the new sensor and the display will switch to the measurement screen automatically.

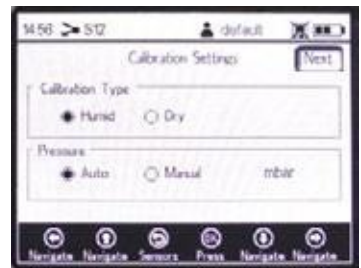Fig. 8 Main menu screen –Sensors selected

Fig. 9 Calibration Data screen

Fig. 10 Measurement Settings screen

5. TUNE THE MEASUREMENT SETTINGS

- Select "Meas. Settings" in the Main menu and changeMeasurement Settings:
- Change settings for Temperature and Pressure compensation. Use the arrow buttons to navigate between input fields. Press ⬤ to get into editing mode and change the respective setting or value (one digit at a time) with the ⬤ and ⬤ buttons. To cancel and leave the editing mode press ⬤When you have adjusted an input field press ⬤ the button again to save the changes.
- Select Single Scan for a single measurement or Intervalfor continuous measurement at a certain time interval

- To save measurements select Logging On and go to Measurement Browser. Use the ⊙ button to create a new measurement file. A keyboard screen opens. Use the navigation arrows to type in the new Measurement Name.
- When you have finished typing go to the Done button and press ⊙.
- The new measurement file shows in the Measurements list. Press ⊙ once more to select the new file and the display will switch to the measurement screen automatically.

6. MEASUREMENT

Start the measurements by pressing the ⊙ button on the measurement screen. When performing interval measurements pressing ⊙ again will stop the measurement process.

7. MEASURE TPO (TOTAL PACKAGE OXYGEN)

Fig. 11 TPO calculation screen

- ▮ Select ▮ in the Main menu.
- Change Bottle Constants by using the arrow buttons to navigate between input fields. Press ⊙ to get into editing mode and change the respective setting or value (one digit at a time) with the ⊙ and ⊙. buttons. When you have adjusted an input field press the ▮ button again to save the changes.
- Press the ⊙ button to go to the next screen. Enter the Miscellaneous Numbers about the bottle if necessary and press the ⊙ button to go to the next screen.
- Put the optical fiber in front of the Dissolved Oxygen sensor and press ⊙ to measure. Press the ⊙ button to calculate the TPO value. Press the ⊙ button one more time to go back in the Main menu and save the calculation if Logging is on.

Fig. 12 NomaSense Datamanager

8. TRANSFER YOUR MEASUREMENT DATA TO A PC / NOTEBOOK

- Connect the NomaSense O$_2$ P6000 to the PC/notebook via USB.

- Insert the supplied USB stick into the respective drive. In the software file click "NomaSense Datamanager_x.x.x.x_Setup_FW.exe". Follow the instructions in the setup wizard for installing the Datamanager software.

- Open the Datamanager software after installation and select a working directory in which your P6000 data is going to be stored.

- The connected device shows automatically in the software; go to the Measurements tab on top.

- Select your measurement file from the list in the Device box on the right side of the screen, and use the `Export` button. A dialog opens in which you can choose the directory to save the measurement file in. The measurement file will be saved as .csv file

Fig. 13 QR code window

9. GENERATE A QR CODE

- Connect the NomaSense O$_2$ P6000 to the PC/notebook via USB.

- Open the Datamanager software and go to the Sensors tab on top.

- Select the respective sensor in the database box and press the `Barcode` button.

- A window opens showing the generated QR code (Fig. 11). Save the QR code and print it. Please make sure the printer resolution is set to at least 600dpi.

10. TUNE THE DEVICE SETTINGS

- Select "Device Settings" in the Main menu

- The Device Settings menu is divided into four screens: Device Settings, Energy Management, Sensor Details and About. Use the ⊙ and ⊙ buttons to switch between screens

- In the device settings screen, you can notably change the backlight off time and the LED intensity, in case the device warns you about too low or too high signal.

- In the Energy Management screen, the Turn device off time and the display brightness can be changed.

- The About screen and Sensor Details screen give information about the device and the current sensor calibration.

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MENU STRUCTURE

Main			
Measurement	→ Simple	→ Oxygen	
		→ Temperature	
	→ Details	→ Oxygen (+ phase angle, amplitude)	
		→ Temperature	
		→ Measurement Name	
		→ General (measurement settings)	
	→ Graph		
Settings	→ Temperature	→ Auto	
		→ Manual	
	→ Pressure	→ Auto	
		→ Manual	
	→ Interval	→ Single Scan	
		→ Interval	
	→ Logging	→ On	
		→ Off	
		→ Measurement Browser	→ Select
			→ Delete
			→ New
Device Settings	→ Device Settings	→ Time	
		→ Date	
		→ Backlight off after	
		→ LED Intensity	
	→ Energy Management	→ Turn device off after…	
		→ Long Term Measurement	
		→ Display Brightness	
	→ Sensor	all sensor data	
	→ About	Serial Number, LED Status, Firmware Version	
User	→ User list	→ Select	
		→ Delete	
		→ New	

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MENU STRUCTURE

Main					
Sensors	→ Sensor list	→ Select			
		→ Edit List	→ Delete Sensor		
			→ New Sensor	→ Barcode	
				→ Manual	→ Sensor Settings
					→ Sensortype
					→ Sensor Constants
				→ Calibration Data	→ Dry / Humid
					→ Cal0 T0
					→ Cal2nd T2nd
					→ O₂-2nd > pATM
				→ Sensor Name	
		→ New	→ Barcode		
			→ Manual	→ Calibration Settings	→ Calibration Type
					→ Dry
					→ Humid
				→ Pressure	→ Auto
					→ Manual
				→ Calibration Temp.	→ T0
					→ Auto
					→ Manual
				→ T2nd	→ Auto
					→ Manual
				→ Calibration	→ Present Values
					Phase Temperature Pressure
				→ Set Cal0	
				→ Set Cal2nd	O₂-2nd
TPO	→ Bottle constants	→ Bottle size			
		→ Headspace size			
		→ Bottle neck diameter			
	→ Misc numbers	→ Bottle number			
		→ Filling head number			
		→ Corking head number			
	→ Measurement Headspace Oxygen				
	→ Measurement Dissolved Oxygen				
	→ TPO Value				

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