



# GRYF

Manufacturer of Measuring Instruments

## Instruction and Maintenance Manual

### GRYF OXY P 0/100/2 PM

#### Contact

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Technical parameters	
Supply Voltage	24 V/dc $\pm$ 10%
Supply current	max. 100 mA
Output signal	4 mA to 20 mA
Oxygen concentration range	0% to 100%
Sensitivity	0.01% (0 - 10%), 0.1% (0 - 100%)
Accuracy	$\pm$ 0.2%
Zero Stability	$\pm$ 0.2% per month
Warm-up time	20 sec (signal READY switch on 5min after)
Measured gas flow	0.1 - 0.3 l / min
Error caused by flow change	max. 0.05% per 0.01 l/min
Inlet pressure	1 bar $\pm$ 0.1bar
Operating temperature	5 ° C to 50 ° C [14 ° F to 122 ° F]
Dimensions	167 x 130 x 65 mm
Weight	450g

## Description

This device is designed to detect oxygen concentration levels in gas. It is designed to be incorporated into oxygen concentrators. The output measurement is in a 4-20mA current loop. The measured gas is fed through a tube into the measuring chamber with the sensor (the sensor and chamber are included). The inlet pressure is about 1 bar, pressure in the measuring chamber is comparable to the atmospheric pressure, measured gas is then discharged into the atmosphere. The gas flow is about 0.3l/min.

Sensor must be used only for clean, dry gases and gas mixtures.



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## Function

After turning on the power supply, the power supply indicator light (ON) will start flashing at 0.5 sec. intervals. This indicates the sensor stabilization. This takes approx. 20 sec., the light will then stay lit and will turn off each time the oxygen concentration level is being measured. This period lasts about 4 seconds. The instrument reaches its best accuracy 10min after turn on.

## Controls:

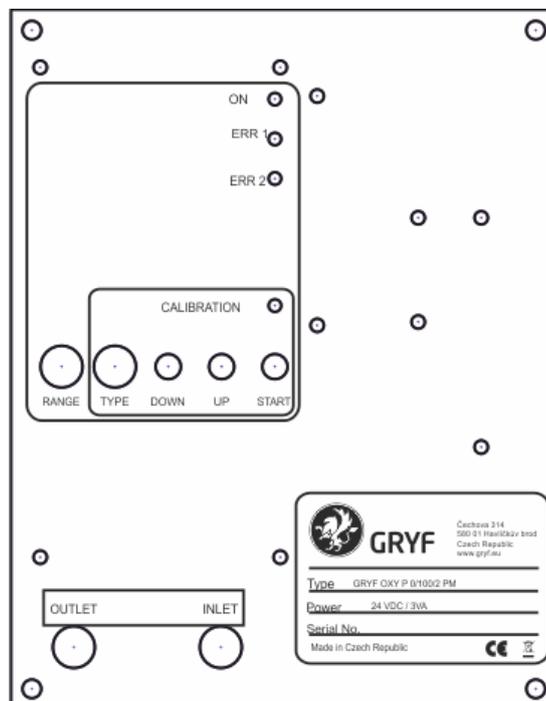
- ON** operation signal
- ERR1** other faults
- ERR2** measurement error (sensor failure)
- CAL** calibration process signalization

## Buttons:

- DOWN** change of calibration constant
- UP** change of calibration constant
- START** calibration initiation and confirmation

## Rotary switches:

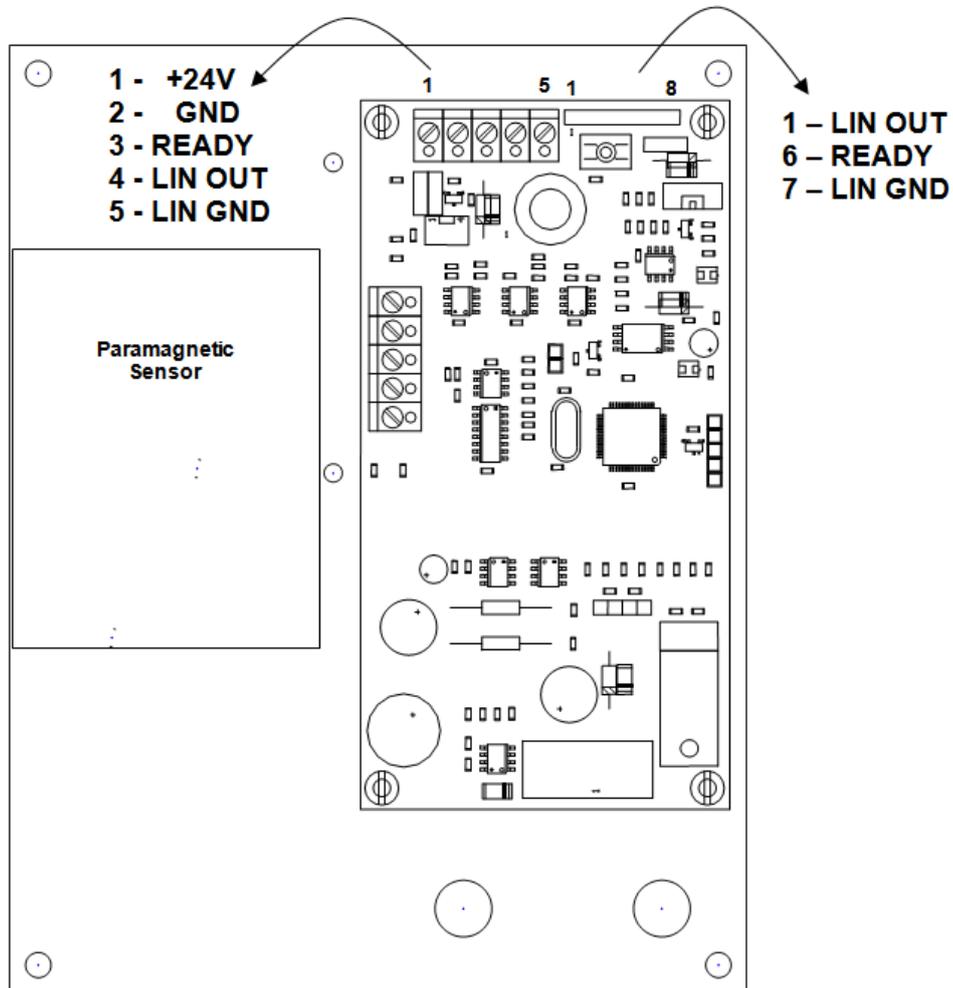
- RANGE** change of the measuring range, test codes
- TYPE** calibration type setting





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## Measurement

Measurements can be performed in two predefined measuring ranges. This corresponds to the current output signal 4-20mA. Setting the measurement range is performed by the rotary switch (RANGE) which is located on the front panel.

### Description of the rotary switch codes RANGE:

1 - range 0.0 – 100.0%	with digital filter
2 - range 0.00 – 10.00%	with digital filter
3 - range 0.0 – 100.0%	without digital filter
9 - range 0.00 – 10.00%	without digital filter

### Test codes:

0 - output 0mA	4 - output 4mA
5 - output 8mA	6 - output 10mA
7 - output 16mA	8 - output 20mA

## Calibration

Calibration can be performed on pre-selected concentration of oxygen. The type of calibration is selected by the rotary switch (TYPE) located on the front panel. The selected calibration gas must then be entered into the inlet of the meter. Calibration is started by pressing START. After pressing the button, the CALIBRATION indicator light will light up green and the instrument is in the calibration mode. The instrument will automatically terminate the calibration and the green light will flash to confirm that calibration has been performed.

Calibration slope or zero can be adjusted (TYPE = 5 or 7) by pressing the START button. After pressing the button, the CALIBRATION indicator light will light up green. At this time, the calibration parameters can be changed using the Up and Down buttons. To end (confirm) the calibration, press the START button. The green light will flash to confirm that calibration has been performed.

Should the CALIBRATION light start flashing red, the calibration has been performed incorrectly and calibration constants are out of range. This can be caused by attendant error or sensor failure.



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## Description of the rotary switch codes TYPE:

0. Calibration ban
1. Dry air, concentration 20.9% - slope
2. concentration 97% - slope
3. concentration 80%- slope
4. concentration 5%- slope
5. edit slope with buttons Down, Up
6. concentration 0.5% - zero
7. edit zero with buttons Down, Up
8. concentration 0.0% - zero

Note: Manual editing of calibration values (TYPE = 5 or 7) is valid only until the next slope or zero point calibration. Calibrating on preset gas will automatically cancel manual slope shift and zero.

It is recommended, the instrument be calibrated at least once every 6 months.

## Analyzer installation:

This analyzer is not equipped with IP coverage and is therefore designed to be installed in a cabinet or case. This analyzer is also recommended to be installed in a vertical position, hose connection on the bottom, terminal plate for power input facing upward. Use the four holes in each corner to install the analyzer to a board or cabinet. Diameter of the holes is 4,3mm.

Connect a 4mm hose with the input gas mixture into the INLET line, located on the right side of the front panel. Output gas is diverted via a 4mm hose. The output hose is connected to the OUTLET line, located on the left side of the front panel. If the cabinet or case is well ventilated, it is not necessary to connect a hose to the OUTLET line.

**WARNING!!!** The output absolute pressure cannot exceed 1.2 bar. The sensor is very sensitive to vibrations and shocks. Please handle with care.

The terminal plate for the input voltage and the current loop is located in the upper part of the analyzer. While looking at the back of the analyzer, the following clips are numbered (from left):

- 1 - +24V
- 2 - GND
- 3 - READY
- 4 - LIN OUT
- 5 - LIN GND



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The READY signal and the current loop are jointed, furthermore, they are also accessible on the 8-pin connector with a lock. The pins are also numbered from the left when looking at the back of the analyzer:

1 – LIN OUT

6 – READY

7 – LIN GND





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