ACS-31 Alecto®

Puls oximeter

Introduction:
The Alecto ACS-31 is a pulse Oximeter which measures the percentage of the amount of oxygen found in the blood.

Intended use:
The Pulse Oximeter is a non-invasive device intended for spot checking of functional oxygen saturation of arterial hemoglobin (SpO2) and pulse rate (PR). This portable device is indicated for use in adult patients in clinical institution and home environments.

Measuring principle:
By shining an infra-red light through the skin, the reflected light will be compared with the emitted light which will in turn analyze the color of the red blood cells. This colour measured will reflect the amount of oxygen in the blood.
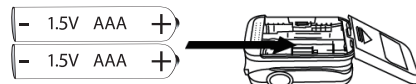
Do not use:
Do not use the ACS-31 with an irregular heart beat (Atrial Fibrillation).

Installation:
The ACS-31 comes with two included batteries, a wrist strap and a protective case.

Install batteries:
1. Slide the battery cover off of the ACS-31
2. Insert the two supplied batteries, be sure to take note of the positive and negative poles (+ and -)
3. Place the battery cover back onto the ACS-31

1.5V AAA
1.5V AAA

Fastening the wristband:
1. Push the thin cord through the hole on the ACS-31 and then make a loop from the cord.
2. Put the thick part of the strap through the loop.
3. Pull the thick part of the cord all the way through the loop tugging slightly to tighten it.
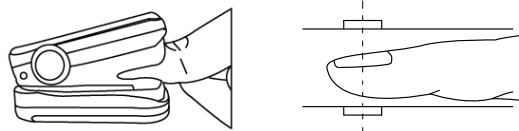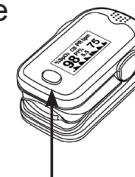
Use:
Preparations & tips:
• Make sure that you are familiar with the operation of the pulse Oximeter.
• Avoid bright lights.
• Remove artificial nails and/or nail polish.
• Wash your hands before using.
• Make sure your hands are warm to ensure a good blood circulation.
• Sit quietly before and during the taking of the measurement.

Measurement:
1. Open the clip and place your finger on the ACS-31 with the nail facing upwards, as shown on the adjacent picture; use your middle finger preferably pushing it gently towards the back of the Oximeter.

2. Turn on the ACS-31 by pressing the on/off button.
3. If necessary, the reading direction of the display can be changed by pressing the on/off button repeatedly.
4. Do not move your finger during the measurement.

5. Readings in the display:
   - The "% SpO2" shows the percentage of oxygen in the blood.
   - The "PRbpm" gives the pulse rate of the pulse per minute.
   - The PI (Perfusion Index) is the ratio of the pulsatile blood flow to the non-pulsatile blood flow. The PI's values range from 0.02% for very weak pulses to 20% for strong pulses.
   - Depending on the selected reading direction, a pulsating bar graph shows the strength of the heartbeat or the heart rate can be seen at the bottom of the display.
6. The ACS-31 will turn off 15 seconds after the clip has been taken off the finger.

Setting an alarm:
You can set alarm tones to give alert signals when the level of the oxygen in your blood, or the pulse rate exceeds the adjustable upper or lower values.
1. Turn on the ACS-31 by quickly pressing the on/off button.
2. Hold down the on/off button for more than one second to open the settings menu.
3. Now release the on/off button. You will see one of the following statements:

Limit Setup	*
SPO2 Hi	100
SPO2 Lo	94
PR Hi	130
PR Lo	50
+/-	+
Exit	

Remind Setup	*
Sound Reminder	on
Beep	off
Demo	off
Restore	Ok
Brightness	4
Exit	

• The line with the star at the end is the active line.
• Press quickly on the on/off button to move the star to the next line.
• Press and hold the on/off button to change the setting of the current line.

Screen 1
- Limit Setup   To go to the other menu
- SpO2 Hi   Set hi levels of oxygen percentage
- SpO2 Lo   Set low levels of oxygen percentage
- PR Hi   Set high levels of pulse rate
- PR Lo   Set low levels of pulse rate
- +/-   Switch between going higher or lower
- Exit   To exit the menu

Screen 2
- Remind Setup   To go to the other menu
- Sound reminder   To switch the alarm on or off
- Beep   To switch the pulse rate alarm on or off
- Demo   to play a demo (power off to start again without the demo)
- Restore   To restore back to factory settings
- Brightness   To set the display intensity
- Exit   To exit the menu

Maintenance:
Cleaning and storage:
• The device is non-sterile and not intended to be sterilized.
• Clean the black rubber finger sleeve before and after using with medicinal alcohol (> 95%).
• The exterior part of the tester can be cleaned using a damp cloth. The ACS-31 is not water-proof, so DO NOT immerse in water.
• Keep the pulse Oximeter out of the reach of children, and preferably inside the included case in a dry place.
• See the technical specifications regarding storage conditions.

Batteries:
• The batteries can power the unit for over 20 hours continuously.
• If the device will not be used for a long period (> 2 months), remove the batteries. Doing so prevent any possible damage from leaking batteries.
• Replace the batteries when the battery indicator shows that the batteries are running low (display: ▭ or ▭).
• Always place two identical batteries, type alkaline, size AAA.
• Rechargeable batteries should not be used due to their lower voltage.

Environment:
• Should the device need to be discarded, hand it over to your supplier. They will dispose of it in an environmentally friendly manner.
• Empty batteries can be returned to the supplier or disposed of in an environmentally-friendly manner according to your local regulations. Do not dispose of used batteries with your normal household waste.

Technical:
• 24 months Warranty ● ACS-31 does not contain any service components/accessories ● maintenance only through the service department of Alecto.

Calibration:
• The ACS-31 does not need to be calibrated.

Declaration of Conformity:
• http://DOC.hesdo.com/ACS-31-DOC.pdf

Specifications:
• Display: Colour, type OLED
• Pulse rate:
  Range: 30bpm ~ 250bpm
  Resolution: 1bpm
  Accuracy: 1bpm
  Strength: bar chart (bpm = beats per minute)
• SpO$_2$:
  Range: 35 -100%
  Resolution: 1%
  Accuracy: 90% -100%: ±2%
              70% - 90%: ±3%
              < 70%: unspecified
• Perfusion Index:
  Range: 0-20%
  Resolution: 0,1%
  Accuracy: 0% - 1%: 0,1%
              1% - 20%: 1%
• Batteries: 2x AAA, 1.5V, Alkaline
  Consumption: 30mA (nominal)
  Battery life: >20 hours continuous use
• Dimensions, weight:
  62,8 x 38 x 29mm / 51 grams (incl. batt)
• Surroundings:
  Operating temperature: 5°C ~ 40°C
  Storage temperature: -10°C ~ 50°C
  Operating humidity: 15% ~ 80%
  Storage Humidity: 10% ~ 93%

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Model: A340

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