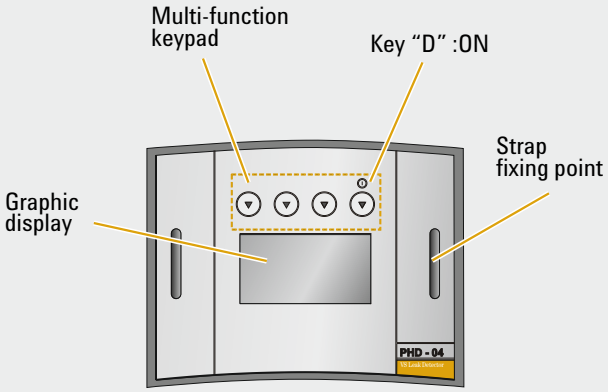
PHD-4 Portable Helium Detector

Quick Reference Card

Code: 87-900-126-01 (A) 05/2011

FRONT PANEL DISPLAY

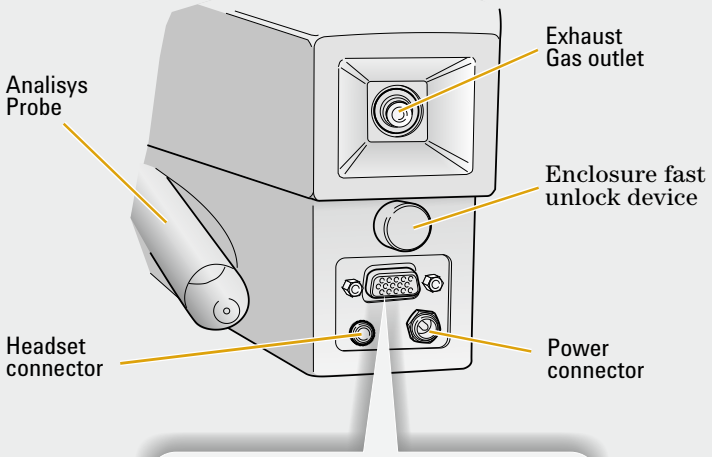


Use only Agilent-provided power supply with a ground connection.
(90 - 240 Vac 50/60 Hz)

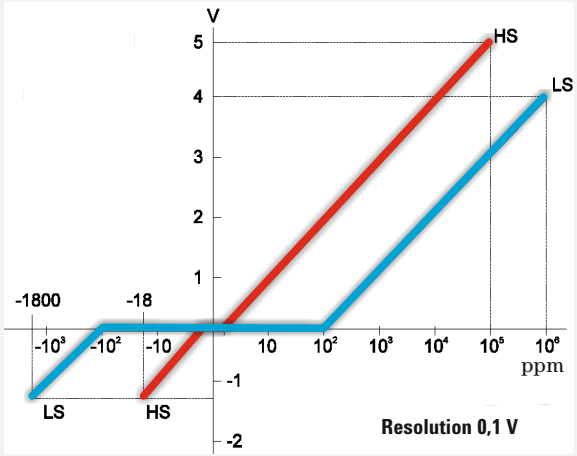
START UP

- Press (and hold down 3 sec) the "D" key.
  Self test will start giving following results:
  - ***V***: Test OK.
  - !: Test fail.
  - ***R***: Test must be repeated.
  - ***PS***: No battery or battery fail.

I/O - RS232 INTERFACE



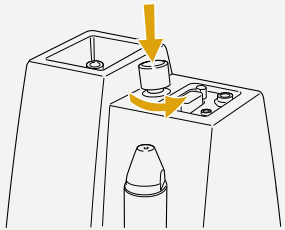
Pin number	Signal
1	Analog out (+)
2	RS232 TX
3	Rs232 RX
4	Remote IN
5	RS232 GND
6	Analog out (-)
11	Relay 1 N.O.
12	Relay 2 N.O.
13	Relay 3 N.O.
14	Relay 4 N.O.
15	Relay common



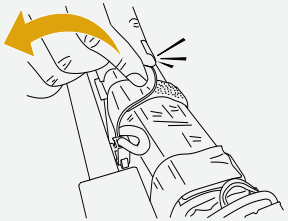
PIN 1-6 ANALOG VOLTAGE

Minimum detectable He concentration	2 PPM	
Minimum detectable He leak rate	$5x10^{-6}$ mbar l/s	
Operating conditions - temperature - humidity	 +5 °C to +35 °C 90 % RH (non cond.)	
Battery operative range	4 h	
Battery auto discharging	0.1% max. / day +20 °C	
Battery life	> 500 charge/discharge cycles (IEC standards)	
Relay contacts data:	24 Vac/cc 1 A (resistive load) 0,3 A (inductive load)	
Protection set-point levels	Low sens.	High sens.
MINIMUM VALUE	200 PPM	2 PPM
DEFAULT VALUE	400 PPM	100 PPM
MAXIMUM VALUE	600 PPM	250 PPM

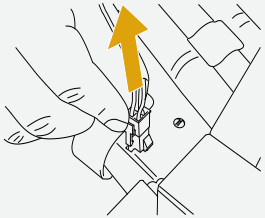
Battery Pack: Removal and Replacement



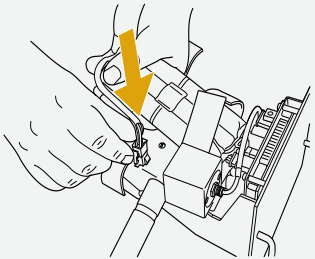
Click and rotate. The enclosure will be released



Release disharged battery

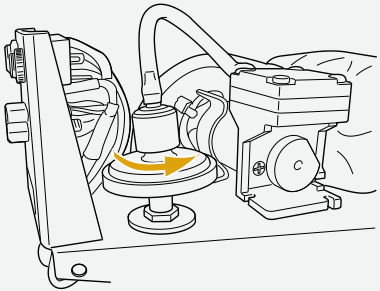


Unplug discharged battery connector



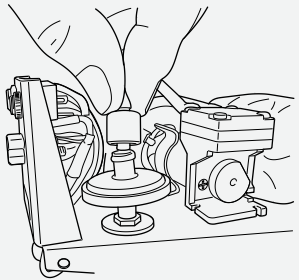
Connect new battery connector and fasten it

Internal Filter: Removal and Replacement



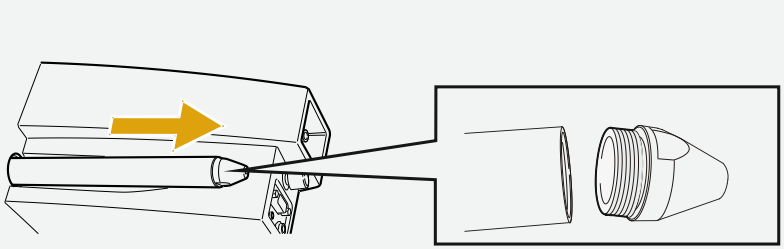
Holding Filter cartridge turn fitting on the top by 1/4 of turn

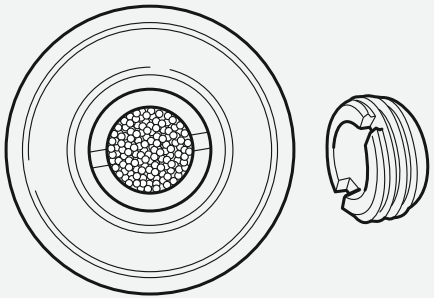
Remove saturated filter



Position new filter and lock sampling line fitting

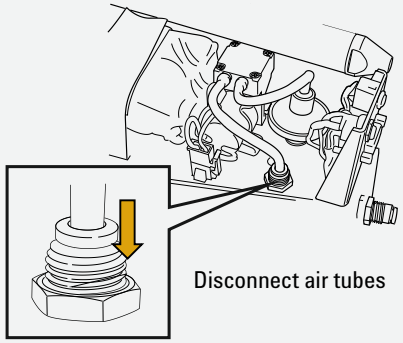
Sintered Filter: Maintenance



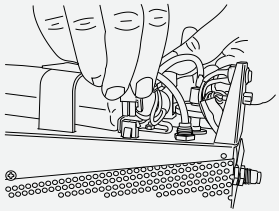


Clean filter with grease remover and dry with compressed air

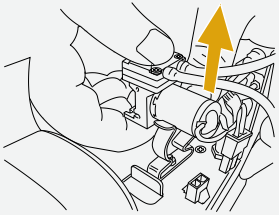
Sampling Pump: Removal and Replacement



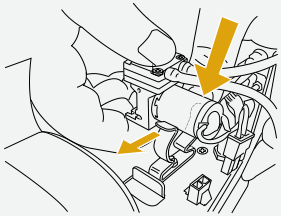
Disconnect air tubes



Disconnect Pump electrical connector



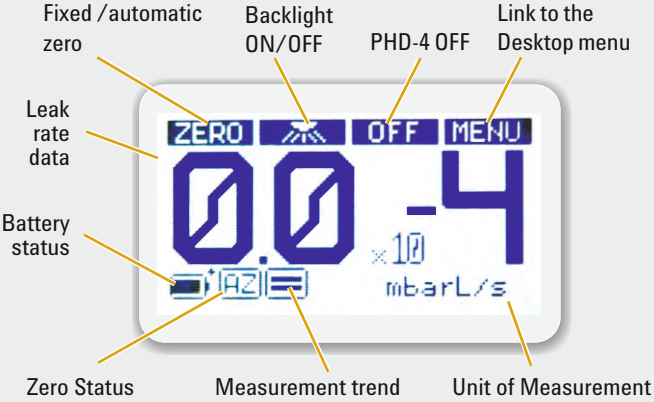
Remove the pump



Reverse procedure for new pump

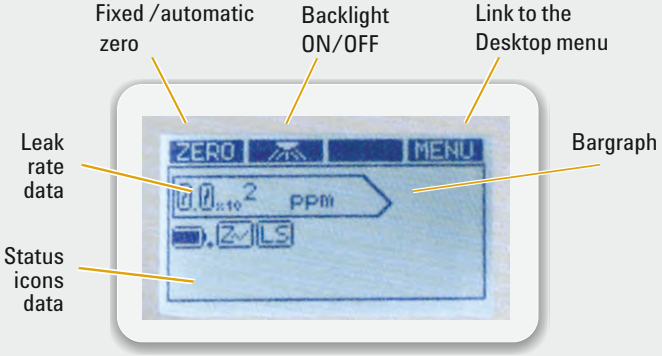
Large Size Measurement screen Page

ENABLING: Menù SETUP/☐ LARGE SCREEN ON
ACTIVATION: Automatic (5 sec delay)
DEACTIVATION: Temporary (Button“OFF” or “MENU”)
INFORMATION:



Complete measurement screen page

ACTIVATION: Default at startup
INFORMATION:



Status icons

Icon	Function	Icon	Function
HS	High sensitivity activated	AZ	Automatic zero activated
	Set-point activated	FZ	Fixed zero activated
	Back-flow valve enabled	LS	Low sensitivity activated

Options

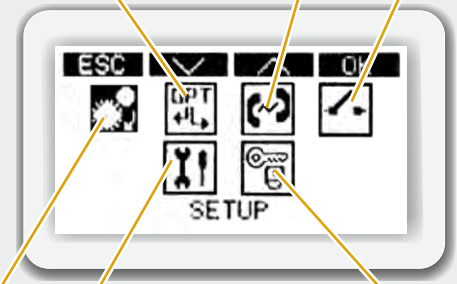
- **Language**
  - English
  - Italiano
  - French
  - Deutsch
- **Unit of Measure**
  - PPM
  - mbarL/sec
  - cm3/sec
  - cm3/min
  - TorrL/sec
  - PaL/sec
  - Pam3/sec
  - SCF/year
  - Kg/h R12
  - g/year R12
- **Helium**
  - Mix value displaying
  - Auto setting

Communications

- **Remote control**
  - Analog control
  - RS232 control
- **Baud rate**
  - 1200
  - 2400
  - 4800
  - 9600
  - 19200

Set-point

- **Set-point 1**
  - Threshold
  - Enable Sp1
- **Set-point 2**
  - Threshold
  - Enable Sp2
- **Set-point 3**
  - Threshold
  - Enable Sp3
- **Set-point 4**
  - Threshold
  - Enable Sp4
- **Safety Set-point**
  - Threshold
  - Enable Safety SP
  - Safety actions
    - Backflow valve
    - Heater OFF



Maintenance

- **Sensor Clean-up** [1]
- **Battery**
  - Battery maintenance [2]
  - Charge level
- **Reading adjustment**
- **PHD-4 Info** [3]
  - Part number
  - Serial number
  - Firmware release
  - Working time

Set-up

- High Sensitivity On
- Pump On
- Audio On
- BackLight On
- Large screen On
- Switch-off!

Locking

- Enable protection
- Change User password

1 Sensor routine maintenance: sensor cleaning
2 Battery routine maintenance: memory effect resetting
3 To access your unit data

Operative info

NOTE

Operative suggestions to get SHORT RECOVERY TIME and LONG PHD-4 LIFETIME:

PHD-4 SETTING:
- Begin Leak Checking with LOW SENS
- Always use SAFETY SET-POINT

CHECKING METHOD:
- Use low He concentr. in tracer gas (e.i. 5%He/N2)
- Use low tracer gas pressure (e.i. 0.5 Bar)
- Avoid overflow of He
- Avoid sniffing oil, dust or water

GENERAL:
- Periodically perform SAMPLING AUTOADJ. and BATTERY CARE

NOTE

Operative suggestions to perform a GOOD LEAK CHECK:
- Limit background of He
- Sweep slowly on suspected areas starting from lower parts
- If He background is variable use AZ mode
- Operate in environments with stable room temperature
- Periodically maintain filtering system
- Periodically check Reading precision

Safety info

The PHD-4 is complete with a rechargeable battery and related Power Supply.
Always recharge the battery in a safe area.

Do not use the PHD-4 in environments containing potentially flammable gases or vapors. If the PHD-4 is used in combination with sampling safety devices (only if marked EEX ia IIAT4), the PHD-4 must be positioned outside the area with a risk of explosion.

Do not cover or obstruct the ventilation slots on the top part of the PHD-4 and the rear discharge duct.