

**DEW POINT HYGROMETER**

***DEWRanger***  
**UNO**

**User guide**

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# Introduction

DEWRanger UNO is a high performance, portable dewpoint hygrometer based on the STORK DEWCom humidity transmitter.

DEWRanger is housed in a robust Peli case, resistant to water, dust and dirt. Designed for longterm operation without external power, equipped with lithium-ion batteries, it can operate continuously for over 16 hours between charges, charged from a 12V DC power source (eg. vehicle cigarette lighter socket)

DEWRanger has been designed with particular regard for the measurement of gases with very low humidities.

DEWRanger is designed for fully portable operation. With the lid closed, it is highly protected against external factors, such as dust and moisture. However, during operation, or when the lid is open, the instruments should be protected from moisture, dirt and other contaminants.

*Caution!*

**The device contains lithium-ion batteries, which may explode if they get hot!**

Therefore, **don't:**

- **Expose the device to direct sunlight, especially in summer time.**
- **Leave the device in direct sunlight in a vehicle without good ventilation.**
- **Place the device near a heat source: furnace, heaters, radiators etc.**

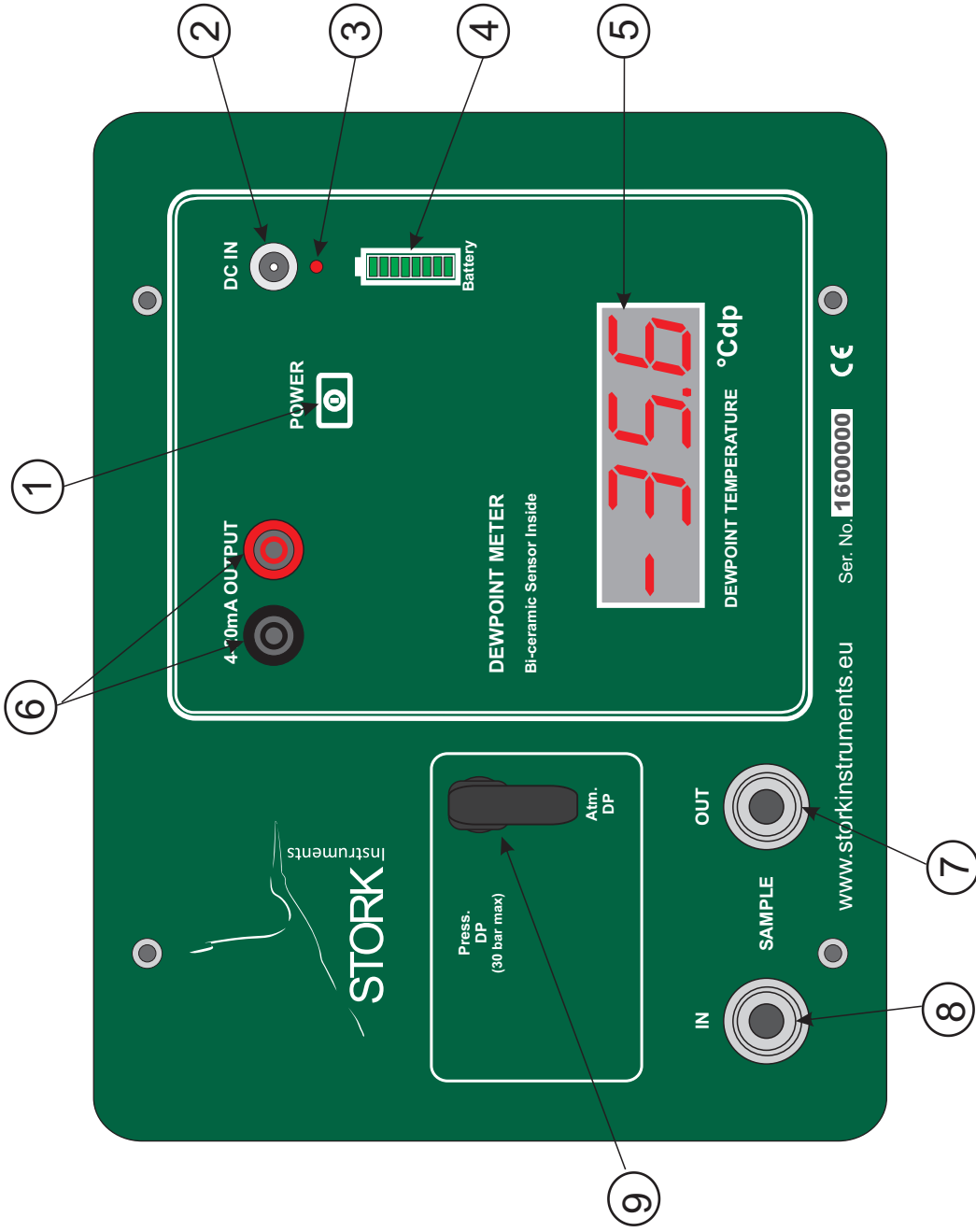
## Power connection

DEWRanger is powered by a DC voltage of 12V. However, it can accept a power supply in the range 10 to 22V.

It is recommended to use the power supply delivered with DEWRanger: AC adapter or automotive power cable. The AC adapter supplied is protected against shorts. The automotive power cable is fused (fuse is located in the cigarette lighter plug).

If you use another power source, be sure that it is equipped with a 5 Amp fuse. The power source requires a center positive connecting plug of 5.5mm diameter and 2.1mm socket.

The manufacturer is not liable for any damage caused if a non-original power cord is used.



# Panel description

## 1 - POWER On/Off button

To power on, press „On/Off” button once. After the initialization process, DEWRanger UNO is ready to measure.

To power off, press „On/Off” button again. In the case of low battery, DEWRanger UNO automatically shuts down.

## 2 - Power socket, 12V DC (see page 3)

## 3 - Charging status LED

- - red light - AC power, charging
- - green light - AC power, charging complete
- - no light - battery power (power from battery)

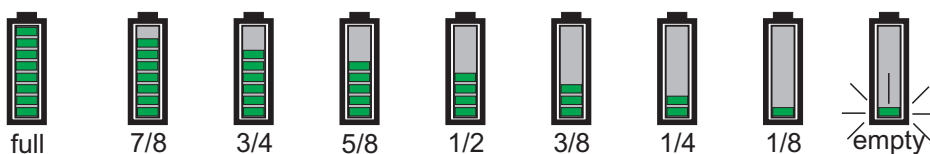
After connecting to an external power supply, charging starts automatically (red light). When charging is complete, the light turns green. **This takes about 3-4 hours.**

## 4 - Battery status indicator

DEWRanger is equipped with an internal li-ion battery. This type of battery has no memory effect. However, a long time spent in a discharged state affects battery life.

DEWRanger's continuous working time on one charge is approximately 16 hours. After a full discharge the device shuts off automatically.

When battery is very low (less than 30 minutes working time), last bar flashes. Connect an external power supply immediately.



## 5 - Display

## 6 - Analogue output sockets (see page 7)

## 7 - Gas outlet connector (see page 6)

## 8 - Gas inlet connector (see page 6)

The inlet connector contains a filter cartridge (see page 6)

## 9 - Pressure valve (see page 6)

# Gas connection

DEWRanger is delivered with a sampling tube of thick-walled 6mm diameter PTFE. Alternative couplings, for example suitable for connecting a stainless steel sampling line can be supplied on request.

The sampled gas should be connected to „IN” port (8, on page 4). Gas vents through the „OUT” port (7, page 4).

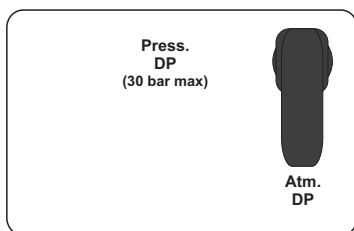
## Replacing Inlet filter

The inlet connector contains a user replaceable filter cartridge.

To replace filter cartridge:

1. Disconnect sampling tube (or any other pipe) from INlet and OUTlet
2. Unscrew INlet connection socket
3. Put on protective glasses
4. Using compressed air (max 8 bar), blow into OUTlet connector
5. Catch the old filter cartridge.
6. Insert the new filter cartridge into INlet connector orifice
7. Screw back INlet connector socket

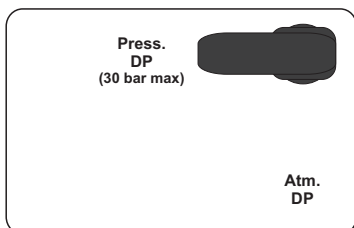
## Pressure valve:



### „Atmospheric Dewpoint”

Measurement of free flowing sample.

This is the standard position for measurement.



### „Pressure Dewpoint”

Measurement under gas pressure.

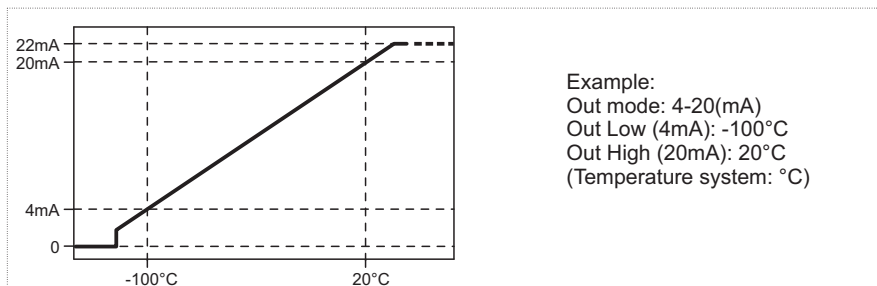
Flush the sampling system using gas to be measured at atmospheric pressure. After the humidity reading has stabilized, turn the pressure valve to „Press. DP” position.

# Analog outputs

DEWRanger is equipped with a current (source type) output. Current is related to the dew point value ( $^{\circ}\text{Cdp}$  or  $^{\circ}\text{Fdp}$ ).

Analogue output sockets is labeled „4-20mA OUTPUT” on the panel.

Current output is protected against overload and short circuits. This output is not galvanically isolated. Negative contacts are at DEWRanger’s ground potential.



*Pic. Analogue output current example*

# Troubleshooting

Problem	Possible reason	Manner procedure
Displayed humidity is not correct	Humidity sensor is out of calibration.	Contact an authorized dealer.
	INlet filter blocked with dirty.	Replace the filter.
Instrument not works from battery power	Battery fuse blown.	Contact an authorized dealer.
	Battery discharged.	Connect an external power supply.

# Package contents

1. **DEWRanger instrument**
2. Power supply (12V DC, 1250mA)
3. Automotive fused power cord (2 m long) (option)
4. PTFE, 6 mm diameter thick wall pipe (1,5 m long)
5. User manual
6. DEWCom Calibration certificate

## Technical specifications

### General

Measurement range	-100 to 20°Cdp
Measurement accuracy	+/-2°Cdp
Mesurement units	°Cdp or °Fdp or ppmV
Resolution	0.1 (°Cdp, °Fdp), automatic (ppmV)
Power supply	12V DC (accepts 10 .. 22V)
Power consumption	max 14 W (when charging)
Analogue output	4-20mA
Filter	HDPE sintered guard
Sample flow rate	max 3l/min
Pressure	max 3 Mpa
Operating temperature	0 to 35°C ambient
Dimensions	270x250x125mm
Case	polypropylene
Weight	3kg
IP (closed case)	67
(open case)	50