

**WL-IV Dew Point In
SF6 & SF6 Moisture Analyzer**



Preface

Dear Users:

If this is the first time you use this product, please note the following points:

At the beginning of measurement, first, open the meter to measure the needle valve on the pipe, then adjust the flow with the flow valve on the panel. When the measurement is finished, then vice versa for the operation.

When **WL-IV the intelligent Dew Point Meter** is not used for a long time, there will be part of the air in the test pipe and gas chamber, so in the first test, the high humidity of the gas will affect the test speed, because the moisture in the air is needed to take away the air before the SF₆ gas is saturated. So we will find that when testing second SF₆ electrical equipment and measuring it later, the speed will be very fast (3-5 minutes).

If in hot weather to do the measurement, we suggest to the measurement in the morning when the temperature is low, because of the higher temperature will affect the measurement accuracy.

Reference standard: People's Republic of China electric power industry standard DL/T506-2007 "six sulfur fluoride electrical equipment insulation gas humidity measurement method"

Requirements for measuring the temperature and humidity of the environment
Environmental temperature: 5°C ~ 35°C (better between 10°C ~ 30°C for measurement)

Thanks for cooperation!

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I 、 Features

1. Portable to carry and easy to use
2. Fast measurement speed: The instrument does not need to wait,measure immediately after starting up, and instantly measures the humidity value quickly.
3. low gas flow, consume 2L(101.2kPa) for one time measurement
4. Adapts imported self-locking joints to prevent leakage,It is safe and reliable and has no air leakage.
5. Can store up to 250 groups of testing results
6. LCD display to indicate dew point, PPM, temperature, humidity, date, battery etc
7. Built in 4Ah lithium rechargeable battery, one time use lasts for 10 hours under full charge

II 、 Parameters



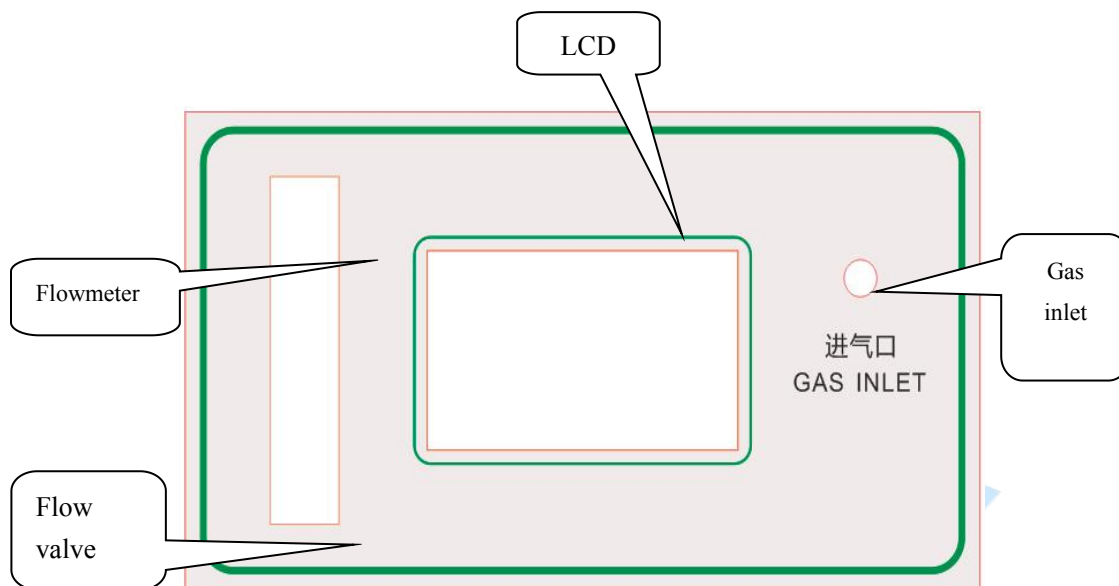
1. Measurement range: dew point - 60°C ~ +20°C
2. Accuracy: $\pm 2^{\circ}\text{C}$
3. Response time:(+20°C) < 3 Minutes
4. Ambient temperature:- 10°C ~ +60°C
5. Environment Humidity: 0 ~ 90% RH
6. Power supply: AC 220V
7. Built in rechargeable battery, over 20 hours charge can be used for about 10 hours
8. Weight: 3KG

9. Dimension: 250×100×300mm³

10. Work Temperature: -40℃ ~ +80℃

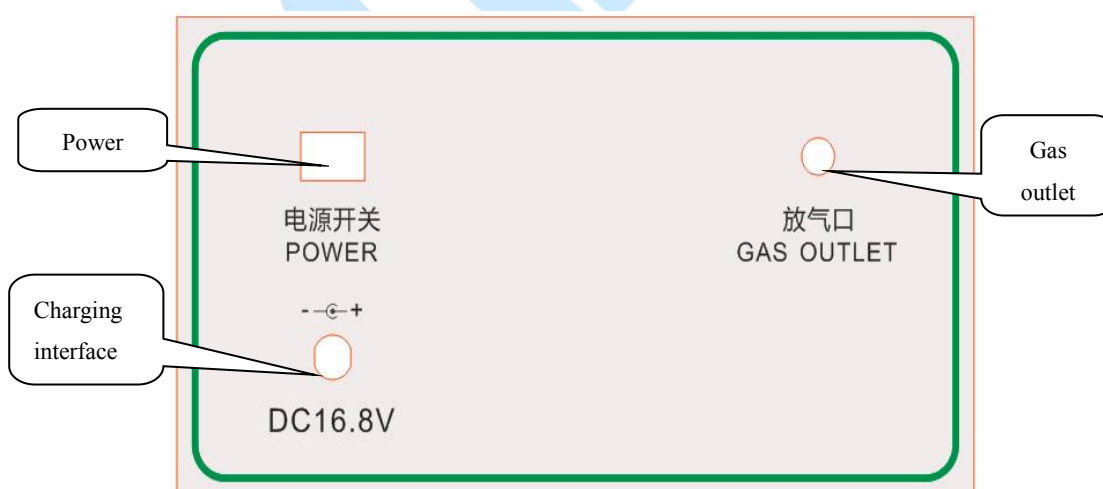
III、 Panel introduction

1. Fron panel

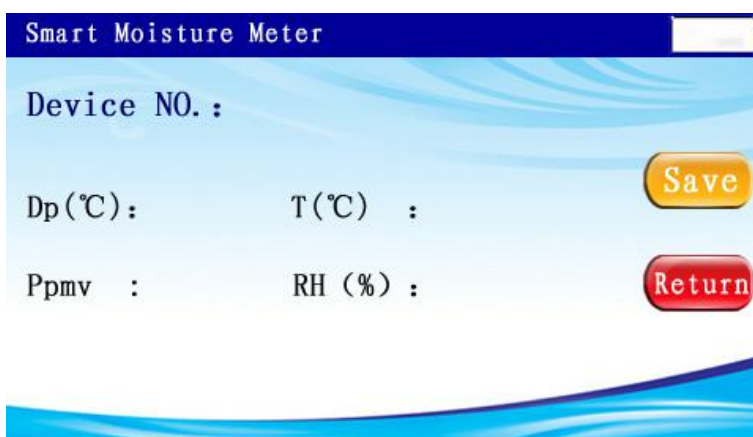


Remark: At the same time press the two sides of the support adjustment button to adjust the angle of the bracket.

2. Back Panel



3. LCD



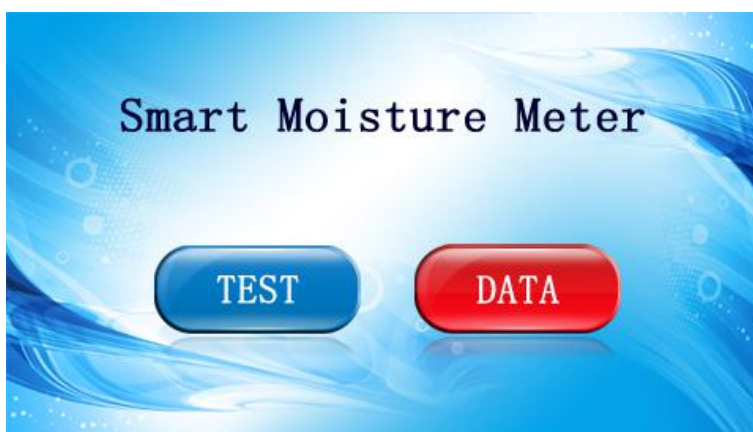
IV、 Measurement method

1. connect SF6 equipment

First of all, find the joint from the accessories of the instrument which suitable to the SF6 electrical equipment ,connects the end of the pipe to the attachment joint and the wrench, and then inserts the fast joint on the test tube into the sampling port on the instrument and connects the exhaust pipe to the air outlet. Finally, the joint and the SF6 electrical equipment are measured. The quantity interface is connected well, and the wrench is tightened.

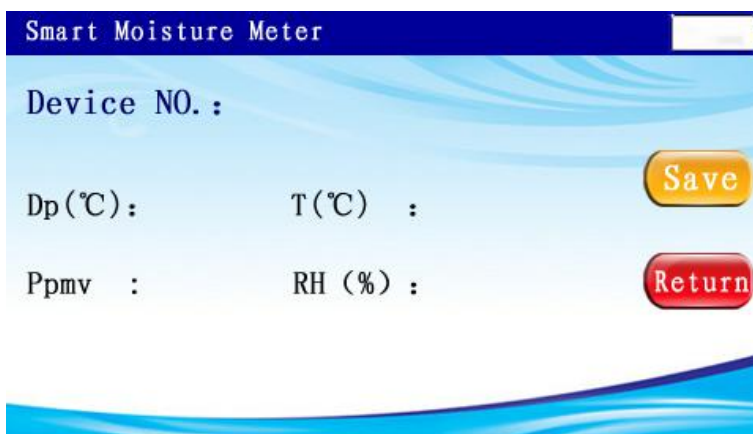
2. Function Selection

Wait a few seconds after you turn on and enter the "function selection" interface, as shown in the following screen.



3. Check electricity

Select "data test" and enter the data test interface, as shown in the following screen. Please check the battery charge shown in the upper right corner. If the power consumption is less than 20%, please switch off and continue to use after charging.



4. Start to measurement

First, open the flow valve on the panel to regulate the flow rate, adjust the flow to about 0.5L/min, and start to measure the SF6 dew point. The first equipment takes 5~10 minutes to measure, and then each equipment takes 3~5 minutes.

5. Instore data

After measurement is completed, click the "equipment number" to change the number, click "save" and save the data in the instrument.

6. Modify time

Click the time display position to modify the system time.

7. check the historical data

At the "function selection" interface, select "data management" and

enter the "data view" interface, as shown in the following picture. You can view the previous saved data at this interface.



After selecting the data, click delete, you can choose whether to delete all data.

8. Measure other equipment

Once an equipment is completed, turn off the flow control valve on this instrument. Remove the adaptor from the SF6 electrical equipment. If you need to continue measuring other equipment, continue to measure other equipment in accordance with the above steps.

9. Measurement over

After all equipments are measured, turn off the power supply of this instrument.

V、Attentions

1. the instruments should be placed in a safe position to prevent the fall. Avoid violent vibration.
2. do not test corrosive gases.
3. when adjusting the gas flow rate, the flow valve should be opened slowly,

so that the flow indication will be about 0.5 litres / minute.

4. equipment should be recharged in time before use. When charging the charger, only the charger is connected to the 220V socket, the charging hole is connected to the instrument, the power switch is not opened, the instrument will be charged automatically, and the charge time usually takes more than 5 hours.

VI、 Packing list

Serial No	Name	QTY
1	Host	1set
2	Gas inlet	1pc
3	Gas outlet	1pc
4	charger 16.8V1A	1pc
5	Aluminum alloy shock proof box	1pc
6	Transition joint (option)	1set
7	manual	1pc
8	Test report	1pc
9	Certificate / warranty card	1pc

Appendix A

Water content measurement requirements for six sulfur fluoride circuit breaker

test content	standard ($\mu\text{l/l}$, 20 $^{\circ}\text{C}$)
<p>SF6 either leave the factory or in overhaul of the FSR circuit breaker (before the whole installation), the moisture content of the breaking unit and the supporting unit should be measured separately</p>	<p>≤ 150</p>
<p>Measuring the moisture content of the circuit breaker by inflating the lower part of the handover. Measuring the moisture content of the circuit breaker by inflating the lower part of the post. Measuring the moisture content of the circuit breaker by inflating the lower part of the post.</p>	<p>≤ 150</p>
<p>The water level of the circuit breaker is measured by the charging interface at the bottom of the support. The test period is stipulated in the "pre test procedure".</p>	<p>≤ 200</p>
<p>In operation, six sulfur fluoride breakers should be measured separately from the self sealing joint of the combined box to measure the water content of the open air chamber when necessary (opening unit leakage and disintegrating the breaking unit).</p>	<p>≤ 300</p>

Appendix B

Moisture/Dew/PPM chart

Dew degree °C	Dew Fahrenheit F	water vapour pressure	PPM Volume ratio of water	relative humidity	PPM The quality ratio of water
-150	-238	7×10^{-15}	9.2×10^{-12}	—	5.7×10^{-12}
-140	-220	3×10^{-10}	4.0×10^{-7}	—	2.5×10^{-7}
-130	-202	7×10^{-8}	9.2×10^{-5}	—	5.7×10^{-5}
-120	-184	10×10^{-8}	1.3×10^{-4}	5.4×10^{-7}	8.1×10^{-5}
-118	-180	0.00000016	0.00021	0.0000009	0.00013
-116	-177	0.00000026	0.00034	0.0000014	0.00021
-114	-173	0.00000043	0.00057	0.0000023	0.00035
-112	-170	0.00000069	0.00091	0.0000037	0.00057
-110	-166	0.0000010	0.00132	0.0000053	0.00082
-108	-162	0.0000018	0.00237	0.0000096	0.0015
-106	-159	0.0000028	0.00368	0.000015	0.0023
-104	-155	0.0000043	0.00566	0.000023	0.0035
-102	-152	0.0000065	0.00855	0.000035	0.0053
-100	-148	0.0000099	0.0130	0.000053	0.0081
-98	-144	0.000015	0.0197	0.000080	0.012
-96	-141	0.000022	0.0289	0.00012	0.018
-94	-137	0.000033	0.0434	0.00018	0.027
-92	-134	0.000048	0.0632	0.00026	0.039
-90	-130	0.000070	0.0921	0.00037	0.057
-88	-126	0.00010	0.132	0.00054	0.082
-86	-123	0.00014	0.184	0.00075	0.11
-84	-119	0.00020	0.263	0.00107	0.16
-82	-116	0.00029	0.382	0.00155	0.24

-80	-112	0.00040	0.526	0.00214	0.33
-78	-108	0.00056	0.737	0.00300	0.46
-76	-105	0.00077	1.01	0.00410	0.63
-74	-101	0.00105	1.38	0.00559	0.86
-72	-98	0.00143	1.88	0.00762	1.17
-70	-94	0.00194	2.55	0.0104	1.58
-68	-90	0.00261	3.43	0.0140	2.13
-66	-87	0.00349	4.59	0.0187	2.84
-64	-83	0.00464	6.11	0.0248	3.79
-62	-80	0.00614	8.08	0.0328	5.01
-60	-76	0.00808	10.6	0.0430	6.59
-58	-72	0.0106	13.9	0.0565	8.63
-56	-69	0.0138	18.2	0.0735	11.3
-54	-65	0.0178	23.4	0.0948	14.5
-52	-62	0.0230	30.3	0.123	18.8
-50	-58	0.0295	38.8	0.157	24.1
-48	-54	0.0378	49.7	0.202	30.9
-46	-51	0.0481	63.3	0.257	39.3
-44	-47	0.0609	80.0	0.325	49.7
-42	-44	0.0768	101	0.410	62.7
-40	-40	0.0966	127	0.516	78.9
-38	-36	0.1209	159	0.644	98.6
-36	-33	0.1507	198	0.804	122.9
-34	-29	0.1873	246	1.00	152
-32	-26	0.2318	305	1.24	189
-30	-22	0.2859	376	1.52	234
-28	-18	0.351	462	1.88	287
-26	-15	0.430	566	2.30	351

-24	-11	0.526	692	2.81	430
-22	-8	0.640	842	3.41	523
-20	-4	0.776	1020	4.13	633
-18	0	0.939	1240	5.00	770
-16	3	1.132	1490	6.03	925
-14	7	1.361	1790	7.25	1110
-12	10	1.632	2150	8.69	1335
-10	14	1.950	2570	10.4	1596
-8	18	2.326	3060	12.4	1900
-6	21	2.765	3640	14.7	2260
-4	25	3.280	4320	17.5	2680
-2	28	3.880	5100	20.7	3170
0	32	4.579	6020	24.4	3640
2	36	5.294	6970	28.2	4330
4	39	6.101	8030	32.5	4990
6	43	7.013	9230	37.4	5730
8	46	8.045	10590	42.9	6580
10	50	9.209	12120	49.1	7530