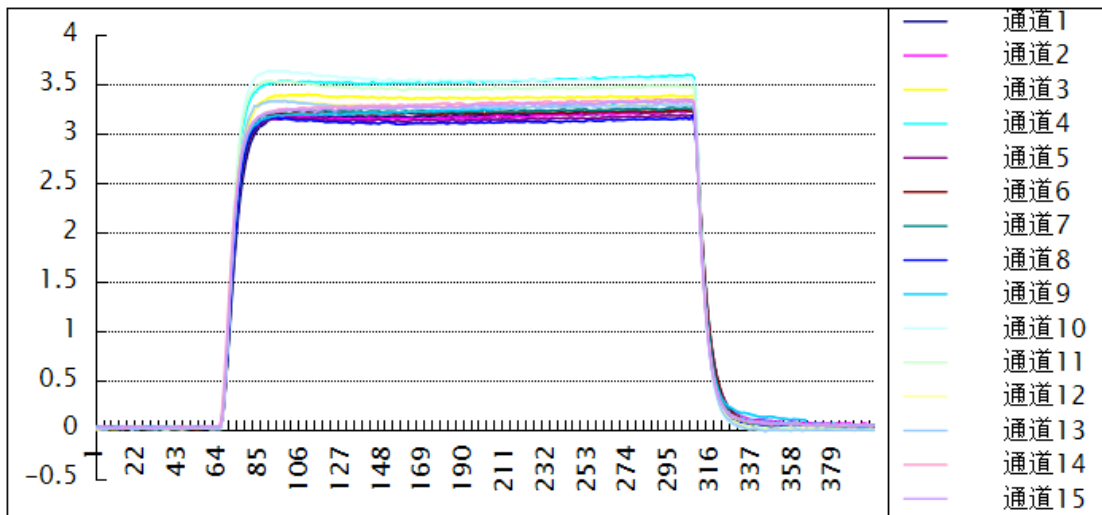


Introduction of Aeri Ammonia Sensor 4NH3-S

Ammonia is a toxic, flammable and explosive gas, which is widely used in refrigeration, fertilizer, chemical industries. There are many security incidents each year due to ammonia leaks. At present most of the ammonia sensors on the market have the problems of slow response, great influence on temperature change, short service life and poor consistency, which can not solve the safety problems caused by the improper use of ammonia. After years of efforts Aeri launched the ammonia sensor. Its performance is far better than similar products on the market, the above problems are solved completely. The following is the details of Aeri ammonia sensor 4NH3-S each performance advantages.

1) Fast response and speed of return to zero, good response speed even at -20 °C. The figure below shows signal changes for 4NH3-S, first tested in the air for one minute, then four minutes with the introduction of ammonia, and returned to the air.



The following table is the result of the treatment.

Channel	S/N	Baseline(nA)	Sensitivity (nA/ppm)	Response Time T90 (S)
CH-1	71G327031	0.109	40.5	15
CH-2	71G327032	0.163	40.3	14
CH-3	71G327033	0.074	42.6	14
CH-4	71G327034	0.143	44.9	13
CH-5	71G327035	0.141	39.9	13
CH-6	71G327036	0.092	40.7	15
CH-7	71G327037	0.105	40.9	14
CH-8	71G327038	0.085	39.6	13
CH-9	71G327039	0.180	41.6	14
CH-10	71G327040	0.053	44.8	12
CH-11	71G327041	0.131	43.7	12
CH-12	71G327042	0.078	41.8	12

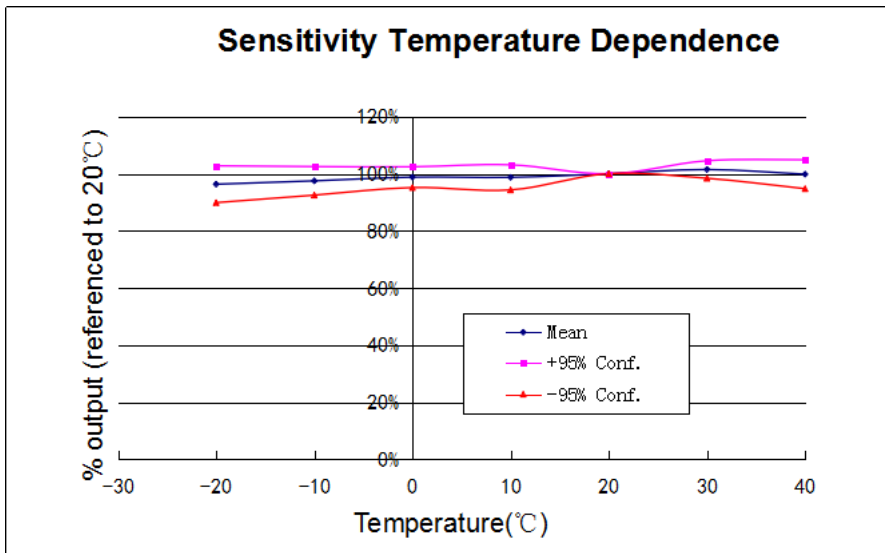
CH-13	71G327043	0.078	41.4	12
CH-14	71G327044	0.194	41.9	15
CH-15	71G327045	0.200	41.7	14
AVERAGE		0.122	41.8	13

Please refer other manufacturers of ammonia sensor response time (T90) as follows.

Manufacturer	Product	T90
CITY	Sensoric NH3 3E 100 SE	< 60 s
ALPHA	NH3-A1	< 60 s
Membrapor	NH3/MR-100	< 40 s
NEMOTO	NE4-NH3-1000	< 120 s

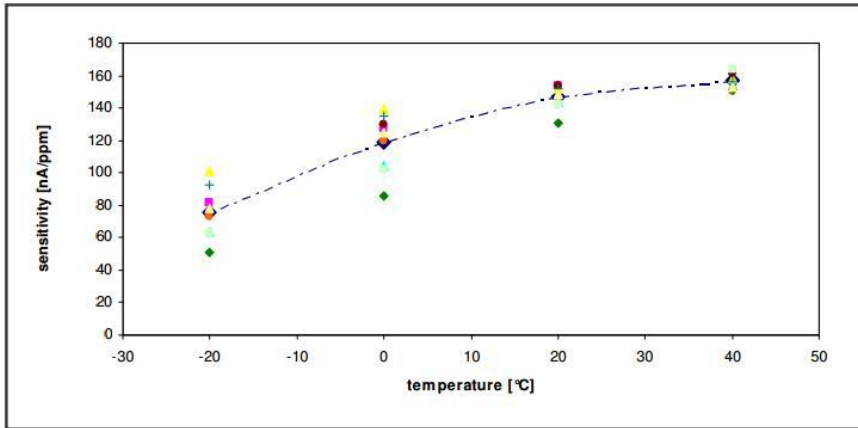
It is clear that Aeri ammonia sensor response speed T90 typical value only 13s, have an absolute advantage compared with other manufacturers.

2) The temperature stability is good, decrease of sensitivity at low temperature is not obvious, increase of the sensitivity is not obvious at high temperatures, the baseline is very stable. Even if not to make temperature compensation the instrument can reach 95% accuracy at least operated in the entire temperature range from -20 °C to 40 °C. The following figure shows the sensitivity of Aeri ammonia sensor 4NH3-S varies with temperature change.

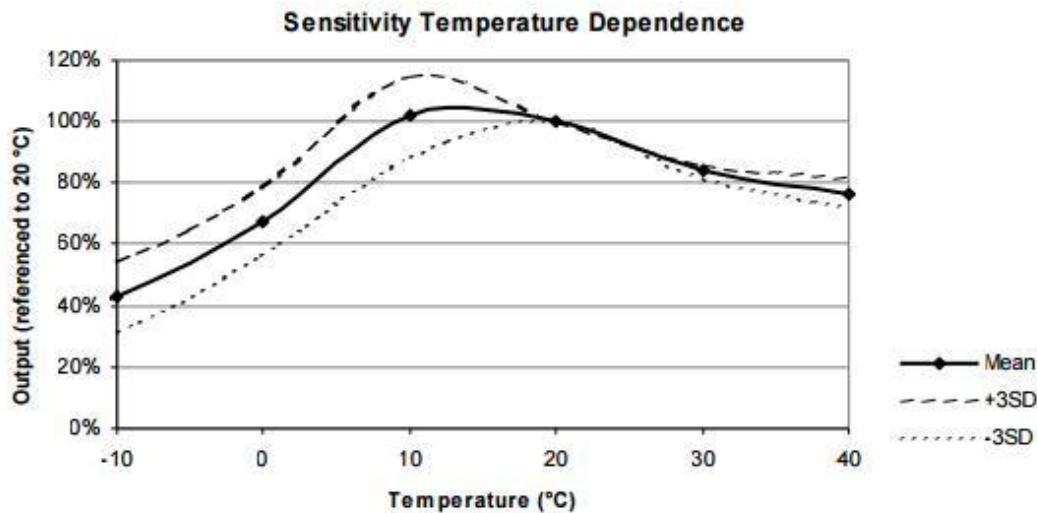


The following figure shows the sensitivity of CITY NH3 3E 100 SE varies with temperature change. We can find that the sensitivity changes obviously with different temperature, and poor consistency, even after making temperature compensation, the reliability is not high. For example, the sensitivity of the green square point shows one sensor sensitivity at -20 °C is about 39% at 20 °C, and the yellow square point shows another sensor sensitivity at -20 °C is about 67% at 20 °C, so we may know the difference between the sensors are very big.

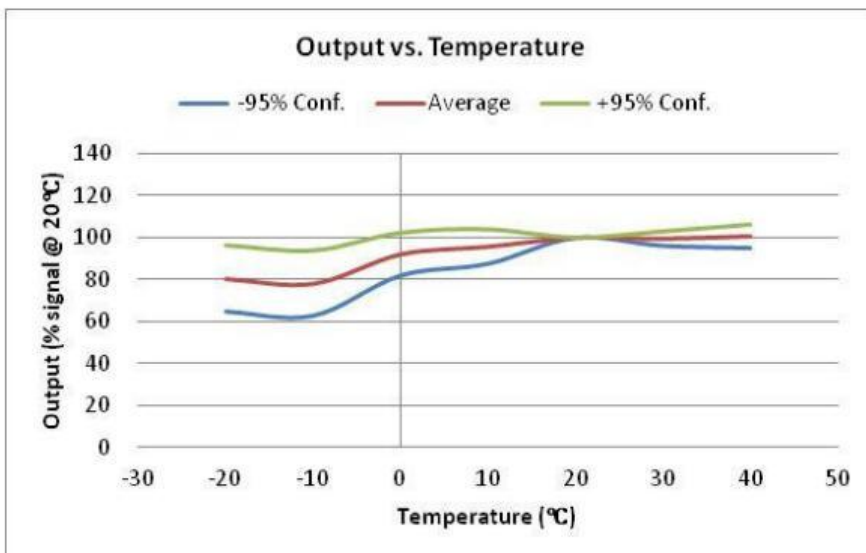
OUTPUT vs. TEMPERATURE:



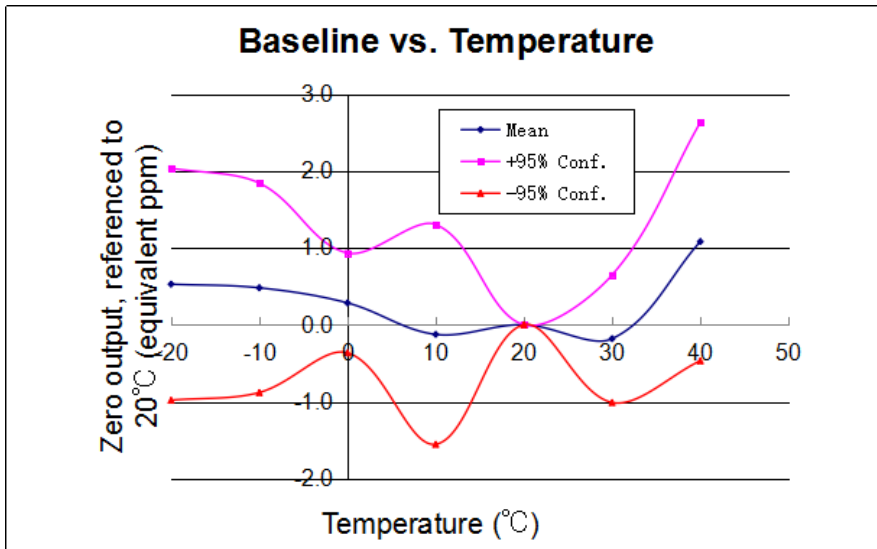
The figure below shows the sensitivity of Membrapor NH3 / CR-200 varies with temperature change. We may find the sensitivity varies with temperature very obviously and complexly, it's difficult to make compensation for temperature.



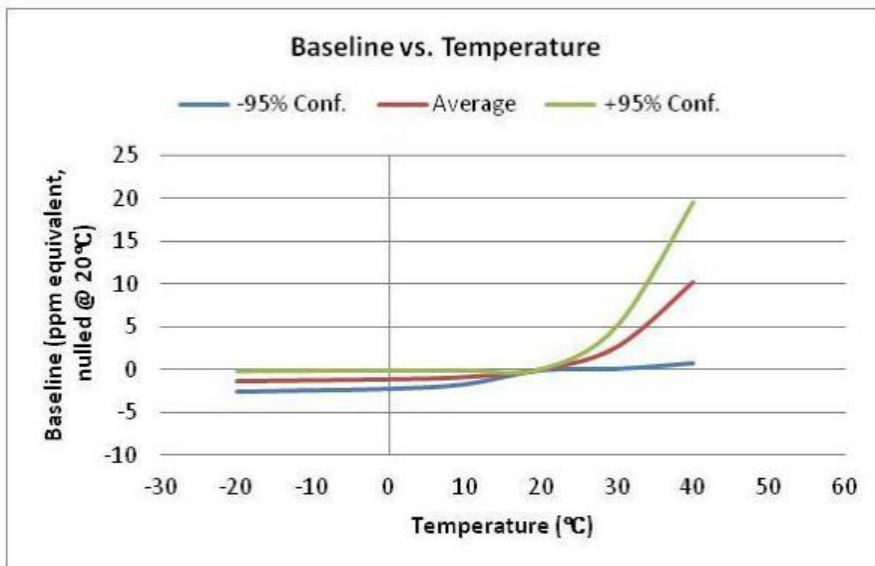
The following figure shows Honeywell 4NH3-500 sensitivity varies with temperature change, we can see that the sensitivity varies with temperature change very obviously and complexly, not easy to make temperature compensation.



The following figure shows Aeri ammonia sensor baseline varies with the temperature change, we can see that the baseline is very stable.



The figure below shows Honeywell 4NH3-500 baseline varies with the temperature change. It can be seen that the baseline varies with temperature change very obviously and the consistency is poor. It's not reliable even if make temperature compensation.



Some sensor manufacturers such as ALPHA, NEMOTO they do not show the influence figure of sensor against temperature on the data sheets, it does not mean that their sensors against the temperature are very stable, maybe because of poor performance and embarrassed to show it.

3) Aeri Ammonia sensor is long life. Ammonia sensor electrolyte is consumed in the operation, so theoretically the life of sensor with same volume of electrolyte is inversely proportional to sensitivity. For example, the ammonia sensors with same

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range 0-100ppm, Aeri 4NH3-S expected life is 2 times of NH3 3E 100, 3 times of 4NH3-100 and NH3 3E 100 SE. In order to reduce the consumption of electrolytes, other brands ammonia sensors are generally recommended for use in leak detection purposes, however Aeri ammonia sensor can be used not only in the leak detector, but also for on-line monitoring of high concentrations of ammonia, especially used for ammonia monitoring in the food factory and cold storage refrigeration.

In summary, Aeri ammonia sensor 4NH3-S performance is excellent. It's to be the first choice for customers. Aeri is professional supplier of electrochemical sensors and your preferred sensor brand, trustworthy manufacturer.