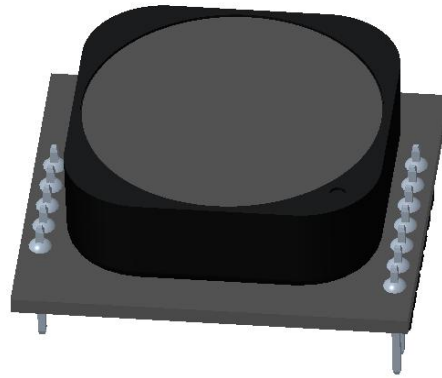


# WZ-HNK-24 Selective & High Temperature Resistant Formaldehyde Module



**ProSense Technologies Co., Ltd.**

## Brief Introduction

WZ-HNK-24 selective formaldehyde module, the upgrade version of WZ-H3-NK, integrated the solid electrolyte with advanced production technique to realize the greatest improvement in performance/cost ratio. As WZ-H3-NK, this new version can convert the electric signal into HCHO concentration directly, but with higher accuracy and stability.

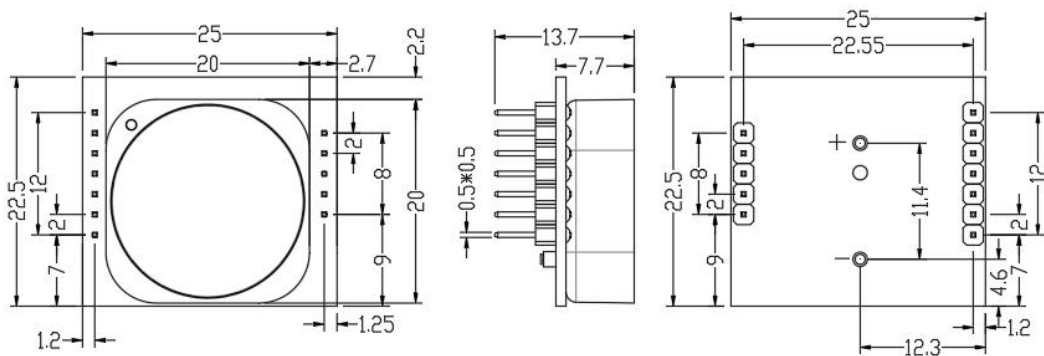
## Typical Applications

HCHO detection in vehicle  
 Air conditioners  
 Smart home  
 Portable devices  
 Wearable devices  
 Air purifier  
 ... ..

## Key Features

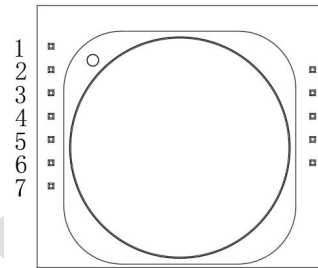
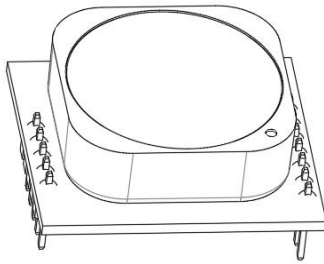
Selective detection  
 High temperature resistance  
 High precision  
 Fast response  
 Long service life  
 Low power consumption  
 High stability

## Diagram



## Definition of Pins

Pin1	RXD	Module receive pin
Pin2	TXD	Module send pin
Pin6	GND	3.3V-5V
Pin7	VCC	



## Technical Specification

<b>MODEL</b>	WZ-HNK-24
Detection Principle	Micro fuel cell
Detectable Gas	HCHO
Detection Range	0-1ppm
Overload	2ppm
Input Voltage	3.3-5V
Response Time (T90)	<90S
Resolution	0.01ppm
Accuracy	±25ppb or ±10%, whichever is greater
Operating temperature range	-40°C~70°C
Operating Humidity Range	10%—90%RH (non-condense)
Lifetime	8 years in air
Warranty Period	24 months
Weight	4g

## Cross Sensitivity

Interference Gas	Concentration of Interference Gas(ppm)	Concentration of HCHO(ppm)
Alcohol	2	<0.01
C6H6	10	0
CH3COOH	10	0
NH3	10	0
CO	1000	6
H2	1000	6

## Communication Protocol

### ➤ General Settings

Module makes use of serial communication.

Communication configuration parameters are:

Baud rate	9600
Data bits	8 bits
Stop bit	1 bit
Parity bit	None

### ➤ Communication Command

There are two communication types: active upload type and Q&A type. The default type is active upload and it sends gas concentration once every second. Commands are as follow:

0	1	2	3	4	5	6	7	8
Start	Gas	Unit ppb	No decimal byte	Concentration (High byte)	Concentration (low byte)	Full range (high byte)	Full range (low byte)	Check sum
0xFF	CH2O=0x17	Ppb=0x04	0x00	0x00	0x25	0xXX	0xXX	0x25

Gas concentration = concentration (high byte)\*256 + concentration (low byte)

**Switch to Q&A mode:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Switch	Q&A	Reserved	Reserved	Reserved	Reserved	Checksum

## Module

		command						
0xFF	0x01	0x78	0x41	0x00	0x00	0x00	0x00	0x46

**Switch to active upload mode:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Switch command	Active upload	Reserved	Reserved	Reserved	Reserved	Checksum
0xFF	0x01	0x78	0x40	0x00	0x00	0x00	0x00	0x47

**To read gas concentration:**

0	1	2	3	4	5	6	7	8
Start	Reserved	Command	Reserved	Reserved	Reserved	Reserved	Reserved	Checksum
0xFF	0x01	0x86	0x00	0x00	0x00	0x00	0x00	0x79

**To return:**

0	1	2	3	4	5	6	7	8
Start	Command	Concentration (High byte) (ug/m3)	Concentration (low byte) (ug/m3)	Reserved	Reserved	Concentration (High byte) (ppb)	Concentration (low byte) (ppb)	Checksum
0xFF	0x86	0x00	0x2A	0x00	0x00	0x00	0x20	0x30

Gas concentration = concentration (high byte)\*256 + concentration (low byte)

## Checksum calibration

/\*\*\*\*\*\*

\*Function name: unsigned char FucCheckSum(unsigned char \*i, unsigned char ln)

\*Function description: checksum calibration[Take Not(Byte1+Byte2+...Byte7) +1]

\*Note: Take Not(Byte1+Byte2+...ByteX (X>2))

\*\*\*\*\*/

unsigned char FucCheckSum(unsigned char \*i, unsigned char ln)


```

{
    unsigned char j, tempq=0;
    i+=1;
    for(j=0; j<(ln-2); j++)
    {
        tempq+=*i;
        i++;
    }
    tempq=(~tempq)+1;
    return(tempq);
}
  
```

## Notes

- Avoid changing or moving sensor on the module.
- Avoid moving or changing electronic elements on PCB.
- Avoid exposure to organic vapour, organic solvent, high gas concentration.
- Protect from excessive vibration and shock.

No recommended for industrial safety/personal monitoring, refer to 2-FP5.

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