QS-FX  360 degree wind sensor

Texture of material

The use of carbon materials, with rain, corrosion, anti-aging, durable and other advantages.
Application scope

The sensor can be measured in outdoor environment can be measured by the north wind, the label as the starting point of the 0-360 of natural wind, has a very high price. This instrument is widely used in environmental protection, meteorology, agriculture, forestry, water conservancy, construction, field research and teaching.

Functional characteristics

◆ The utility model has the advantages of small size, light weight, convenient carrying and installation in the field, and waterproof and shockproof structure.

The utility model can be used in the field all day.

◆ The system has the advantages of high precision, low power consumption, environmental protection and energy saving design.

◆ Wide range, good stability.

◆ The data showed good linearity, long transmission distance and
strong ability to resist external interference

⊙ Fixed mode

The flange mounting method, threaded flange connection enables the direction sensor fittings firmly fixed on the lower flange on the chassis with 66mm, four were mounting holes in the circumferential Phi 6mm Phi 50mm on the use of bolts securely fixed on the bracket, the whole set of instrument is maintained at an optimum level, to ensure the accuracy of wind data flange connection, easy to use, able to withstand greater pressure. The following, please note: in the installation must be upright arrow at North (actually available to assist the compass) so below, black wind sensor affixed with black white and white arrow labels; with wind direction sensor Red arrow。
technical parameter

• Measuring range: 0--360 degrees
• Load capacity: Less than 600 Ω, the general recomm 250 Ω

▲ Voltage type:
  input voltage: 7V～24V DC
  output signal: 0.4～2V (Wind direction = (output voltage -0.4) /16*360

▲ Current type:
  input voltage: 12V～24 V DC
  output signal: 4～20mA
  Wind direction = (output current -4) /16*360

▲ 485type:
  input voltage: 7V～24 V DC
  communication protocol: The wind direction sensor uses the standard Modbus communication protocol,
Can be used to read the direction of the wind number 03 (Note: default 2 station)

**Send data command format:**

```
02 03 00 00 00 00 01 84 39
```

- **02:** Equipment station number
- **03:** Command number, used in standard Modbus protocol to read data from memory
- **00 00:** Read the start address of the data, the wind value exists in memory 000 at the beginning of the address
- **00 01:** Read the number of data, the wind direction in the memory of a data space, Modbus, a data space occupies 2 bytes of space。
- **84 39:** CRC Check value

**Receive command format parsing:**

```
02 03 02 01 45 3C 27
```

- **02:** Equipment station number。
- **03:** Command number
- **02:** Return data length
- **01 45:** Return value, In Modbus, the high 8 bits of data are in the first place, and the lower 8 bits in the behind， so（Wind
direction = wind return value = 0145. According to the actual value of the user can calculate the value of the wind direction, where the figures are 16).

3C 27: CRCCheck value.

Set station number protocol:

Sent: 00 10 10 00 00 00 02 00 05 CRC
00 : Set station number can only use 00 stations
10 : Write command
10 00: Write register start address
00 01: Write register number, fixed can not change
02 : Byte write
00 05: Station No.
CRC : CRCcheck

Receive: 00 10 10 00 00 01 CRC
00 : Set station number can only use 00 stations
10 : Write command
10 00: Write register start address
00 01: Write register number, fixed can not change
CRC : CRC check

附录: CRC check function
int CRC_Check(char *m_Data, short m_Size)
{
    int i0, i1;
    char CRC16Lo, CRC16Hi;  //CRC register
    char SaveHi, SaveLo;
    CRC16Lo = 0xFF;
    CRC16Hi = 0xFF;
    for(i0=0; i0<m_Size; i0++)
    {
        CRC16Lo = CRC16Lo ^ *(m_Data+i0);  //Each data is exclusive to the CRC register
        for(i1=0; i1<8; i1++)
        {
            SaveHi = CRC16Hi;
            SaveLo = CRC16Lo;
            CRC16Hi >>=1;  //Bit shift
            CRC16Lo >>=1;  //Bit shift
            if((SaveHi & 1) == 1)  //If the last bit of the high byte is 1
            {
                CRC16Lo |=0x80;  //The lower byte is shifted to the right and the front 1
            }
            if((SaveLo & 1) == 1)  //If LSB is 1, then the polynomial code
            {
                CRC16Hi ^=0XA0;
                CRC16Lo ^=1;
            }
        }
    }
    return ( CRC16Hi << 8 )| CRC16Lo;
}
Signal output diagram

Line color definition

Current voltage signal output line color definition

<table>
<thead>
<tr>
<th>Name</th>
<th>External line color</th>
<th>or</th>
<th>Brown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>Red</td>
<td></td>
<td>Brown</td>
</tr>
<tr>
<td>Ground</td>
<td>Blue</td>
<td></td>
<td>Black</td>
</tr>
<tr>
<td>signal</td>
<td>Yellow</td>
<td></td>
<td>Bule</td>
</tr>
</tbody>
</table>

485Output line color definition
<table>
<thead>
<tr>
<th>Name</th>
<th>External line color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>brown</td>
</tr>
<tr>
<td>485-A</td>
<td>blue</td>
</tr>
<tr>
<td>485-B</td>
<td>gray</td>
</tr>
<tr>
<td>Ground</td>
<td>black</td>
</tr>
</tbody>
</table>