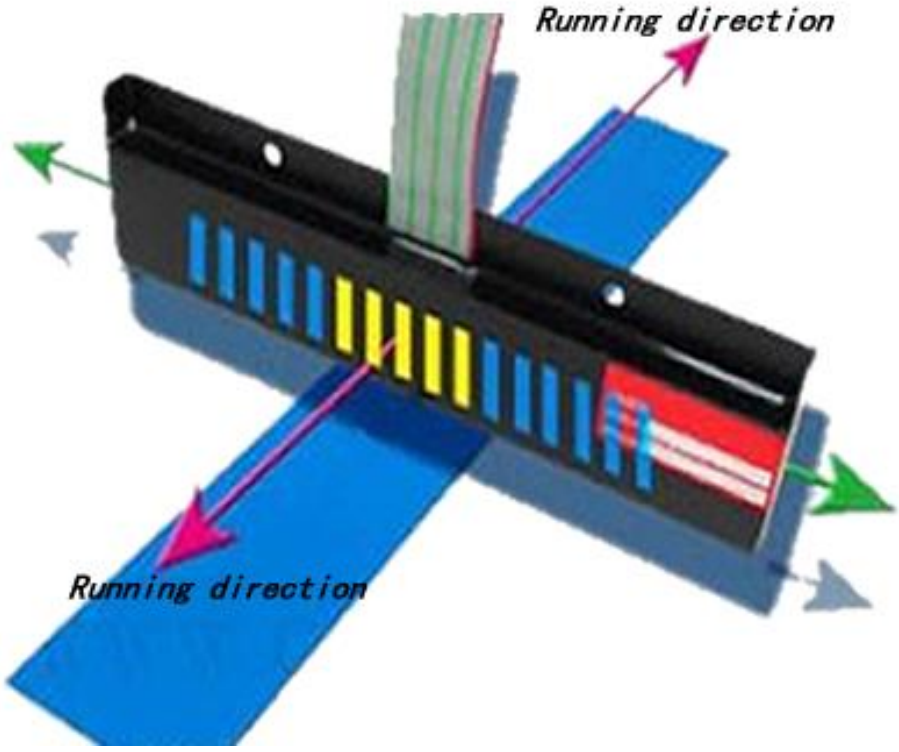
Manual of 16-bit magnetic navigation sensor Can bus protocol

Sensor models applicable to this manual：CCF-NS16-C1



1. Product introduction:

Support can interface output;

Support baud rate setting;

Support output mode setting;

Support can2.0a/b communication protocol;

Support N-pole and S-pole one key switching;

Support one key setting of sensing distance;

The standard 16 points are evenly distributed, and the distance between points is 10 mm;

Signal status indicator display;

Power status indicator display;

Industrial three proofing design, wide voltage, low power consumption;

High sensitivity imported semiconductor Hall sensor;

2． Description of electrical parameters:

Power supply voltage: DC 9-30v;

Maximum current consumption: 80mA;

Output interface: can2.0a/b;

Detection effective distance: 5-85mm;

Recommended installation height: 20-40mm;

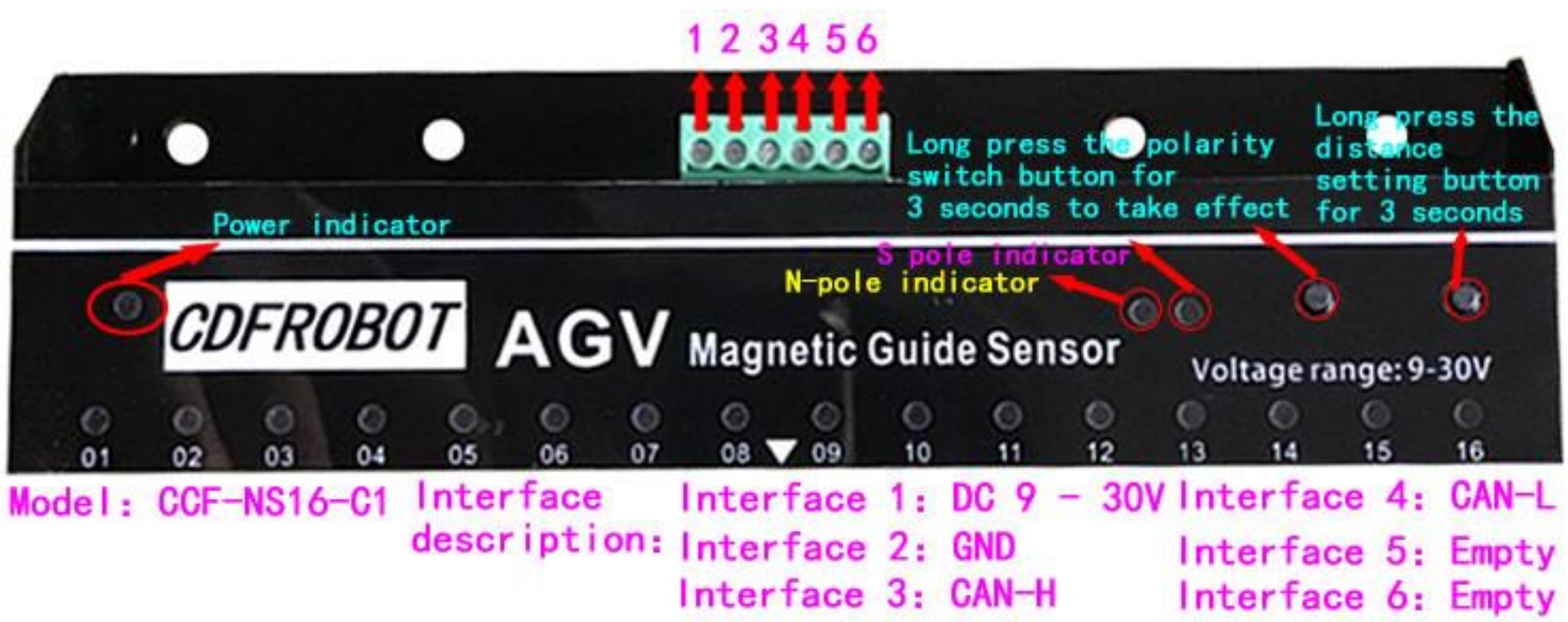
Response speed: 5ms;

Accuracy: 5mm;

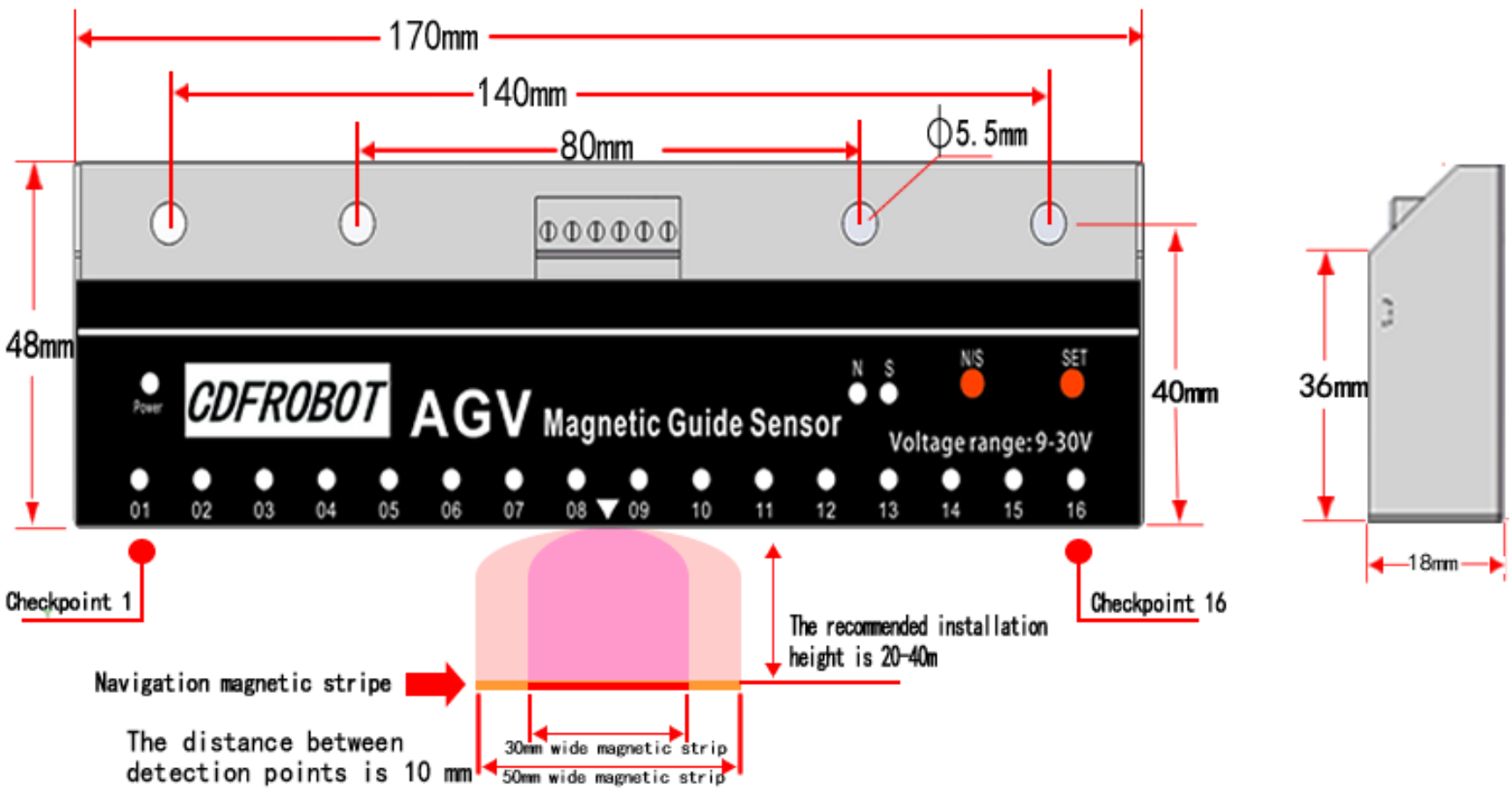
Application temperature range: - 40 ℃ - + 85 ℃;

Working humidity: 10% - 90% relative humidity;

3． Interface definition:



4. Dimension description:



5. Communication format and protocol description:

1. modify the node ID number, the ID bit width is 11 bits, and the default node number is 0x05

Request message format:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x600+0x05	0x40	0x10	0x10	0x00	Node_ID	0x00	0x00	0x00

Format of response message:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x580+0x05	0x40	0x10	0x10	0x00	Node_ID	0x00	0x00	0x00

Note: if the controller sends can-id = 0x600 + 0x05, sends data: 4010 1000 1000 00 00 00, the sensor returns can-id = 0x580 + 0x05 (default), and returns data: 40 10 10 00 100 00 00 00 after re power on, the frame ID received is 0x590 (0x580 + 0x10), indicating that the frame ID is modified successfully.

2. set can baud rate

Request message format:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte

0x600+0x05	0x40	0x20	0x10	0x00	Baud	0x00	0x00	0x00

Format of response message:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x580+0x05	0x40	0x20	0x10	0x00	Baud	0x00	0x00	0x00

Note: the fifth byte (baud) is 0x01, 0x02, 0x03, 0x04, and 0x05. Among them, 0x01 represents setting baud rate of 100kbps, 0x02 represents setting baud rate of 125kbps, 0x03 represents setting baud rate of 250kbps, 0x04 represents setting baud rate of 500kbps (default), and 0x05 represents setting baud rate of 1000kbps. After sending this command and receiving the returned data, the sensor needs to be powered on again before the baud rate modification can take effect.

3． set output mode:

Request message format:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x600+0x05	0x40	0x30	0x10	0x00	Mod	0x00	0x00	0x00

Format of response message:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x580+0x05	0x40	0x30	0x10	0x00	Mod	0x00	0x00	0x00

Note: the fifth byte (MOD) is 0x01 and 0x02. Where, 0x01 represents the change of output mode, and 0x02 represents the setting of continuous output mode (default). After sending this command and receiving the returned data, the sensor needs to be powered on again, and the output mode modification can take effect.

4． set the data output frequency of the sensor in continuous output mode:

Request message format:

CAN-ID	First byte	Second byte	Third byte	Fourth byte	Fifth byte	Sixth byte	Seventh byte	Eighth byte
0x600+0x05	0x40	0x40	0x10	0x00	Fre	0x00	0x00	0x00

Format of response message:

CAN-ID	First	Second	Third	Fourth	Fifth	Sixth	Seventh	Eighth

	byte	byte	byte	byte	byte	byte	byte	byte
0x580+0x05	0x40	0x40	0x10	0x00	Fre	0x00	0x00	0x00

Note: the fifth byte (FRE) is 0x01, 0x02, 0x03, and 0x04. Where, 0x01 represents 10Hz, 0x02 represents 25Hz, 0x03 represents 50Hz (default), and 0x04 represents 100Hz. After sending this command and receiving the returned data, the sensor needs to be powered on again, and the output frequency modification can take effect.

5． data output analysis:

Message format:

CAN-ID	First byte	Second byte	Third byte	Fourth byte
0x580+0x05	Median integer	Median decimal places	High 8-bit position value	Low 8-bit position value

- Intermediate value: display the value of the most intermediate point of the magnetic stripe; for example, when 3,4,5,6 points are sensed, the intermediate value is 4.5; for example, when the sensing point is 3,4,5,6,7, the intermediate value is 5;
- Location value: displays the hexadecimal value of the current point sensed by the magnetic stripe;

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Ordering information：

1. This sensor is divided into different interface output and communication protocol output. Please select the type according to the model specification comparison table when ordering. The applicable models of this specification are CCF-NS16-C1
2. Please use it in strict accordance with the instructions to avoid unnecessary losses;
3. Please cut off the power supply during fixed installation;
4. If the induction signal is not output, please observe whether the signal lamp is on normally. If it is on normally, then check whether the line is connected and connected. If all the above problems can not be solved, please contact our technical personnel for communication and solution;
5. The sensor is guaranteed for one year, and the artificial damage is not covered by the warranty;