

Dk1006 Universal Input-drag N (MAX=6) Acquisition Module

I. Product Introduction



DK1006-N data acquisition module is an intelligent module which integrates signal acquisition, communication and DA output. It has the characteristics of high measurement accuracy, good stability, modular structure, flexible configuration, good linearity and strong anti-interference ability.

This series of N-dragged data acquisition modules support 24 kinds of common industrial standard signal input; various transmission and output modes, up to 6 output channels; 24V DC (+10%) power supply; signal input, power supply, transmission and output three-terminal isolation, isolation voltage 2000V AC; compact size, easy installation, standard 35mm guide installation; optional standard MODBUS RTU communication protocol.

Shape size: (width * height * depth) 45 * 100 * 115 (mm).

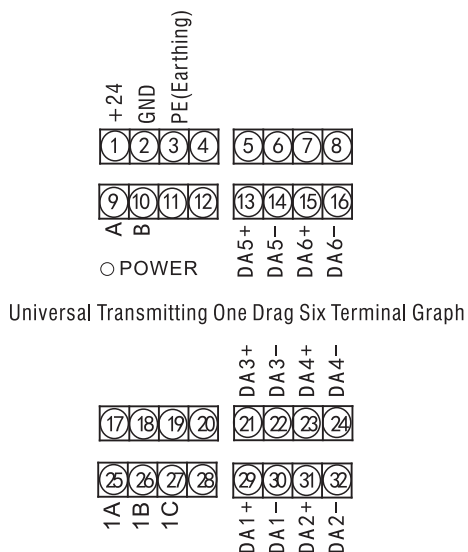
- Comprehensive measurement accuracy 0.2 % FS $\pm$ 1 word
- AD accuracy 22 bit
- AD speed 13 SPS
- Variable precision 16 bit
- DA speed 10M SPS
- Output impedance current output less than 350 Ω , voltage output greater than 500K
- Isolate voltage input, output, and power supply for 2000 V AC 1 minute
- Temperature drift 50 ppm
- Electromagnetic compatibility GB/T 18268(IEC 61326-1)
- Environmental temperature 0 ~ 50 °C
- Relative humidity $\leq$ 85 % RH to avoid strong corrosion gas
- Power DC24V($\pm$ 10 %)
- Power consumption $\leq$ 5W
- Size width * height * depth: 45 * 100 * 115mm
- Install Structure 35mm DIN Rail Installation

II. Display panel and terminal description

2.1 Panel Description:

POWER: Operating indicator light, always on when working normally, flashing when alarming.

2.2 Terminals Description:



1, 2, 3, 4: Power Supply 24V +, Power Supply GND, Ground PE, Empty.

5, 6, 7, 8: empty, empty, empty, empty.

9, 10, 11, 12: RS485 +, RS485-, empty, empty.

13, 14, 15, 16: The fifth variant sends the positive pole, the fifth variant sends the negative pole,
the sixth variant sends the positive pole, and the sixth variant sends the negative pole.

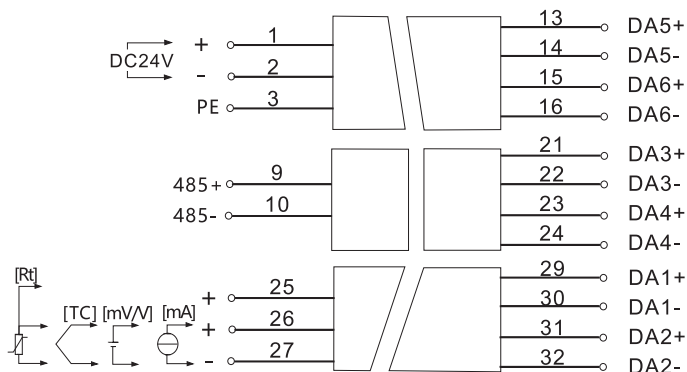
17, 18, 19, 20: empty, empty, empty, empty.

21, 22, 23, 24: The third route changes the output positive, the third route changes the output negative,
the fourth route changes the output positive, and the fourth route changes the output negative.

25, 26, 27, 28: Resistance signal power supply end, signal input positive, signal input negative, empty.

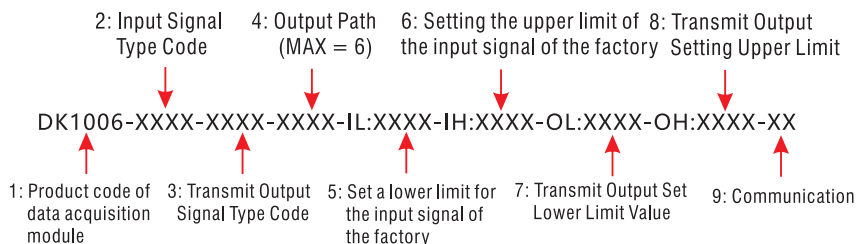
29, 30, 31, 32: The first route changes the output positive, the first route changes the output negative,
the second route changes the output positive, and the second route changes the output negative.

2.3 Wiring schematic diagram



III. Instructions for Order Selection

3.1 Description of Order Type



Examples of type selection:

First cases:

DK1006-K-4MA20-5-IL:-200-IH:1370-OL:4-OH:20-N

The selection is: DK1006 data acquisition module, the input signal is K-type thermocouple, the output is 4-20MA signal, 5 channels of transmitter output. The lower limit of range is -200, the upper limit is 1370, the time-varying output of -200 is 4MA, and the time-varying output of 1370 is 20MA. There is no communication function.

Second cases:

DK1006-PT100-0V10-6-S

The selection is: DK1006 data acquisition module, the input signal is PT100 platinum resistance, the output is 0-10V signal, 6 channels of transducer output, customers have no special requirements for input and transmission, so the measurement range of input signal is the default of the system.

- The 200 degree time-varying output is 0V, 850 degree time-varying output is 10V, with RS485 communication function.

3.2 Input Signal Type Description

Selection code	Signal type	measuring range	Measurement accuracy%
K	K	-200 ~ 1370°C	0.2
S	S	0 ~ 1760°C	0.2
R	R	0 ~ 1760°C	0.2
T	T	-270 ~ 400°C	0.2
E	E	-270 ~ 1000°C	0.2
J	J	-200 ~ 1200°C	0.2
B	B	400 ~ 1820°C	0.2
N	N	-200 ~ 1300°C	0.2
WRE325	WRe3-WRe25	0 ~ 2310°C	0.2
WRE526	WRe5-WRe26	0 ~ 2310°C	0.2
4MA20	4 ~ 20mA	4 ~ 20mA	0.1
0MA20	0 ~ 20mA	0 ~ 20mA	0.1
CU50	Cu50	-50 ~ 150°C	0.2
PT100	PT100	-200 ~ 850°C	0.1
0Ω80	0 ~ 80Ω	0 ~ 80Ω	0.2
0Ω400	0 ~ 400Ω	0 ~ 400Ω	0.1
0MV20	0 ~ 20mV	0 ~ 20mV	0.2

Selection code	Signal type	measuring range	Measurement accuracy%
0MV100	0 ~ 100mV	0 ~ 100mV	0.1
0V1	0 ~ 1V	0 ~ 1V	0.1
1V5	1 ~ 5V	1 ~ 5V	0.1
0V5	0 ~ 5V	0 ~ 5V	0.1
±MV20	-20 ~ +20mV	-20 ~ +20mV	0.1
±MV100	-100 ~ +100mV	-100 ~ +100mV	0.1
±V5	-5V ~ +5V	-5V ~ +5V	0.1

3.3 Transmit Output Type Description

Selection code	type	Selection code	type
0V5	0-5V	0MA20	0-20mA
1V5	1-5V	4MA20	4-20mA
0V10	0-10V	0MA10	0-10mA

IV. Technological Parameters

input				
Input signal	Electric current	Voltage	resistance	Thermocouple
Input impedance	≤250Ω	≥500KΩ	≤0.25mA	≥500KΩ
output				
output signal	Electric current	Voltage	Relay	
Load allowed at output	≤450Ω	≥120KΩ		
Comprehensive parameter				
Comprehensive Measurement Accuracy	0.1%FS + 1 words			
AD accuracy	22 place			
AD speed	13SPS			
Transfer accuracy	16 place			
DA speed	10M SPS			
Isolation voltage	2000V AC 1 minute between input, output and power supply			
temperature drift	50ppm			
electromagnetic compatibility	GB/T 18268 (IEC 61326-1)			
Use environment	Environmental temperature: 0-50 C; Relative humidity: <85% RH;Avoid strong corrosive gases.			
Power Supply	DC24V			
Power waste	Power consumption <6W			
Outline size	Width * height * depth: 45 * 100 * 112 mm			
structure	Installation of 35mm DIN guideway			

V.Communication parameters

Communication instructions

This module has communication function. It can realize data acquisition, parameter setting and communication writing to DA on PC.

Communication mode: serial RS-485, Modbus RTU mode.

Baud rate: 9600 bps.

Data format: one start bit, eight data bit and one stop bit.

Data Check: Dual Check

Description of register range and definition:

number	Read-write registers - 0X03, 0X06, 0X10			
	MODBUS Register address	content	Explain	Default value
1	1	Communication Writes to Da1	0-65535	0
2	2	Communication Writes to Da2	0-65535	0
3	3	Communication Writes to Da3	0-65535	0
4	4	Communication Writes to Da4	0-65535	0
5	5	Communication Writes to Da5	0-65535	0
6	6	Communication Writes to Da6	0-65535	0
7	7	empty		0
8	8	Open DA Output Value	0-1; 0-output lower limit, 1-output upper limit	0
9	9	Mailing address	1-255	1
10	10	Output mode setting	0-1; 0-Measurement Transmitter, 1-Communication Write DA Output	0

number	Read-Only Register-0X04		
	MODBUS Register address	content	Description-bit variable
1	1	measured value	Input Scale Lower Limit-Input Scale Lower Limit
2	2	empty	
3	3	empty	
4	4	empty	
5	5	empty	
6	6	empty	
7	7	empty	
8	8	empty	

VI. Technical support

- List site wiring note:
- 1. reduce electrical interference, low-voltage DC signal and sensor input should be far away from the strong electrical alignment; If this is not possible, single end grounding should be used.
 - 2. Any device connected between the sensor and the terminal may affect the measurement accuracy due to resistance or leakage.
 - 3. Thermocouple input: The compensation wire corresponding to the thermocouple should be used as an extension line, preferably shielded.
 - 4. Resistance input: The resistance of the three wires must be the same, each wire resistance can not exceed 5 Ω.

The product is repaired free of charge for one year (except for man-made damage), and maintained for life.