

COMPANY PROFILE

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Product Categories

I

Analog input module

II

Analog output module

III

AC input module

IV

Weighing module

V

TC/RTD temperature acquisition module

VI

Analog input and output module

VII

Switching/digital module

VIII

Develop custom modules

IX

signal isolator

X

Interface conversion module

Application areas



Automation equipment



Medical electronics



Smart manufacturing



Remote monitoring



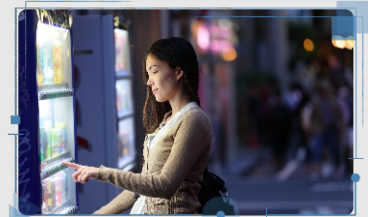
Industrial control



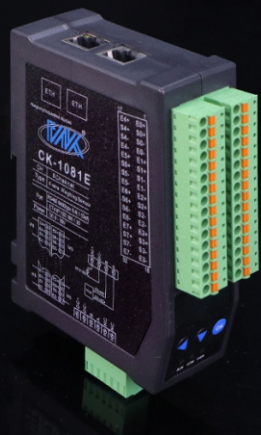
Smart warehousing



Instruments anemometer



new retail



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Four-wire weighing module

Overview

The CK module is a new generation of modular data collector based on embedded system. It adopts standard DIN35 rail installation method, which is simple to install on site and flexible to use. It can cope with various field applications. It supports Modbus RTU protocol, Modbus TCP protocol, and Ethernet interface. The module is equipped with RS485 interface, which can communicate with PC or PLC alone, or be used in network with multiple 485 modules.

CK-1081E weighing sensor transmitter can collect 8-way bridge weighing sensor; the module adopts high-performance 24-bit AD chip, and the measurement accuracy is $\pm 0.1\%$. It is suitable for collecting industrial weighing sensor signals.

CK-1081E uses advanced magnetic technology to effectively ensure reliable and safe data collection.

Technical Parameters

- ◆ Embedded real-time operating system
- ◆ Input channels: 8-way four-wire weighing sensor
- ◆ Input sensitivity: 0.4mV/V~6mV/V
- ◆ Measurement accuracy: $\pm 0.1\%$ (typical value)
- ◆ Conversion rate: 5 times/second (per channel)
- ◆ AD conversion resolution: 24 bits
- ◆ Wide power supply range: DC 10~30V
- ◆ Sensor excitation voltage: 5V
- ◆ Address/ baud rate can be configured by the user
- ◆ Support Modbus TCP/Modbus RTU protocol
- ◆ Support Ethernet/RS485 interface
- ◆ Support module active data transmission mode
- ◆ $\pm 15KV$ ESD protection
- ◆ Isolation withstand voltage: DC 2500V
- ◆ Operating temperature range: $-30^{\circ}C \sim 70^{\circ}C$
- ◆ Industrial grade plastic housing, standard DIN35 rail installation

Application

- Automation equipment
- Remote monitoring and data collection
- Intelligent manufacturing/ smart factory
- Industrial site control
- Smart warehousing and monitoring
- Medical and industrial control product development
- Packaging and material transfer
- Electronic product manufacturing

Function Configuration

Module Model	CK-1021	CK-1041	CK-1081E	CK-1101	CK-1121
Weighing	2-CH	4-CH	8-CH	10-CH	12-CH
RS485	support	support	support	support	support
RS232	support	support	unsupport	unsupport	unsupport
Ethernet	unsupport	unsupport	support	unsupport	unsupport
OLED menu	unsupport	unsupport	support	unsupport	unsupport

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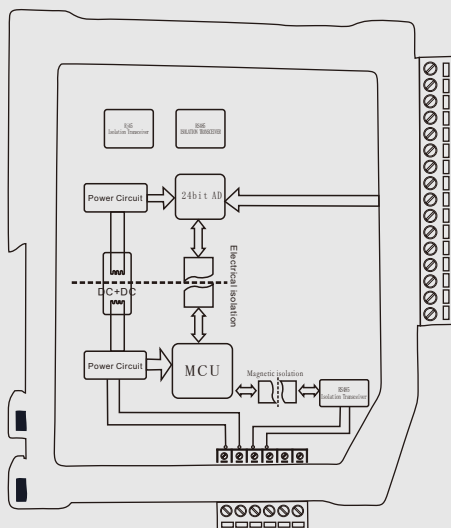
CK-1081E 8-CH Input

Output: Ethernet/RS485
Modbus-TCP/Modbus-RTU

CK-1081E is a weighing sensor transmitter, equipped with 8 24-bit bridge weighing input channels. It is suitable for collecting industrial weighing sensor signals.



Module working principle diagram

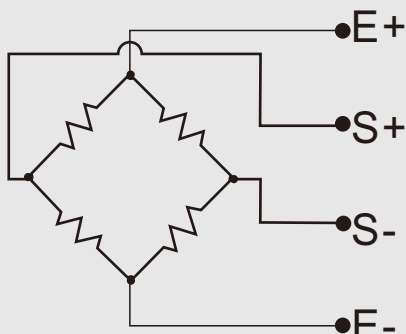


Surge protection

The module is equipped with a transient suppression circuit, which can effectively suppress various surge pulses and protect the module to work reliably in harsh environments.

Load cell input

The CK-1081E module is equipped with up to 8 bridge-type weighing sensor inputs. The analog output is 5V excitation voltage, and the sensor does not require external excitation.



CK-1081E analog input wiring diagram

High-precision data acquisition

CK-1081E uses advanced $\Delta-\Sigma$ high-precision integrated digital-to-analog converters with a resolution of up to 24 bits and a measurement accuracy better than 0.1% (typical value). It can meet the measurement requirements of industrial sites and security, smart buildings, smart homes, power monitoring, process control and other occasions with high measurement requirements.

Input and output isolation

The product is designed for industrial applications: through DC-DC conversion, the measurement circuit and the main control circuit power supply are isolated; at the same time, the control unit and the signal acquisition unit are electrically isolated using magnetic/photoelectric isolation technology, effectively ensuring reliable and safe data acquisition.

The weighing sensor input is a Wheatstone bridge input, and the wiring method is:

Sensor pin definition	Corresponding module terminal definition
Power positive	E+
Negative power supply	E-
Signal Positive	S+
Signal negative	S-

The excitation voltage required by the sensor is provided by the E+ and E- terminals.

Sensor input data format

Modbus RTU Data Format

The sampling value of each channel is combined into a signed 32-bit integer using two modbus input holding registers. The integer is used to represent a fixed-point number with a 4-digit decimal point, that is, the modbus reading result divided by 10000 is the actual sampling value of the channel.

For example: The maximum range of the module analog input channel 0 is 5000Kg, and the input value of channel 0 read by the Modbus protocol is 0x01EBDEc0. The actual acquisition value of the module analog input channel 0 is calculated as follows:

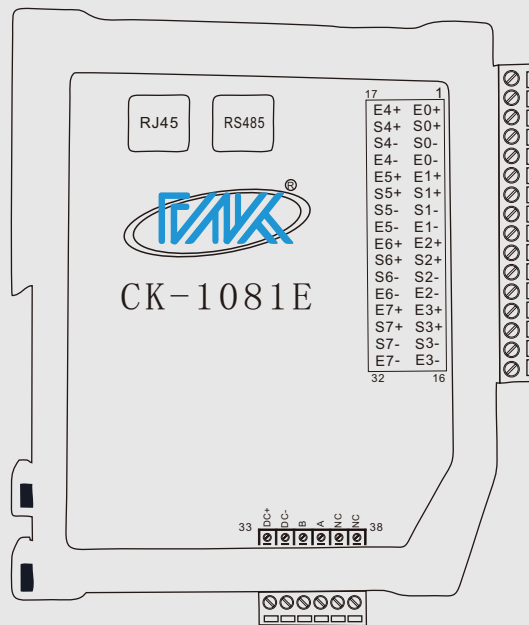
$$0x01EBDEC0 \div 10000 = 32235200 \div 10000 = 3223.52\text{Kg}$$

Bit31	Bit30~Bit0
Sign bit	Data bits

Analog input Modbus 32-bit data format

Sign bit definition: =1: the measured value is negative;
=0: the measured value is positive.

Port Information



CK-1081E Port Description

Port	Port ID	Port Function	Port	Port ID	Port Function
1	E0+	Channel 0 excitation power output +	20	E4-	Channel 4 Excitation Power Output -
2	S0+	Channel 0 signal input +	21	E5+	Channel 5 excitation power output +
3	S0-	Channel 0 signal input -	22	S5+	Channel 5 signal input +
4	E0-	Channel 0 excitation power output -	23	S5-	Channel 5 signal input -
5	E1+	Channel 1 excitation power output +	24	E5-	Channel 5 Excitation Power Output -
6	S1+	Channel 1 signal input +	25	E6+	Channel 6 excitation power output +
7	S1-	Channel 1 signal input -	26	S6+	Channel 6 signal input +
8	E1-	Channel 1 Excitation Power Output -	27	S6-	Channel 6 signal input -
9	E2+	Channel 2 excitation power output +	28	E6-	Channel 6 Excitation Power Output -
10	S2+	Channel 2 signal input +	29	E7+	Channel 7 excitation power output +
11	S2-	Channel 2 signal input -	30	S7+	Channel 7 signal input +
12	E2-	Channel 2 Excitation Power Output -	31	S7-	Channel 7 signal input -
13	E3+	Channel 3 excitation power output +	32	E7-	Channel 7 Excitation Power Output -
14	S3+	Channel 3 signal input +	33	DC+	Power input positive terminal
15	S3-	Channel 3 signal input -	34	DC-	Power Ground
16	E3-	Channel 3 Excitation Power Output -	35	B	RS485 signal negative input terminal
17	E4+	Channel 4 excitation power output +	36	A	RS485 signal positive input terminal
18	S4+	Channel 4 signal input +	37	NC	Null Port
19	S4-	Channel 4 signal input -	38	NC	Null Port

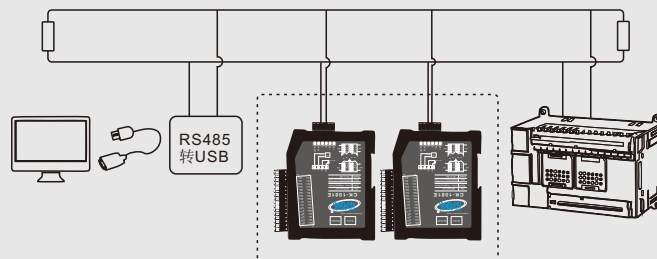
Communication interface

CK-1081E is equipped with 1 RS485; RS485 can be connected to PLC or other host individually, or multiple modules can be networked and connected to PLC or other host.

RS485 Connection

The RS485 interface of the CK series module is a standard RS485 interface, which adopts differential signal logic. The logic "1" is represented by a voltage difference of $+(2\sim6)V$ between the two lines; the logic "0" is represented by a voltage difference of $-(2\sim6)V$ between the two lines. The network connection of RS485 devices is very simple. You only need to connect the positive and negative ends of the device to the bus. When the communication distance is long, you should pay special attention to the network topology. The RS485 network topology generally adopts a terminal matching bus structure, and does not support ring or star networks. The lead-out length from the bus to each node should be as short as possible to minimize the impact of the reflected signal in the lead-out line on the bus signal. For more detailed information, please refer to the relevant information

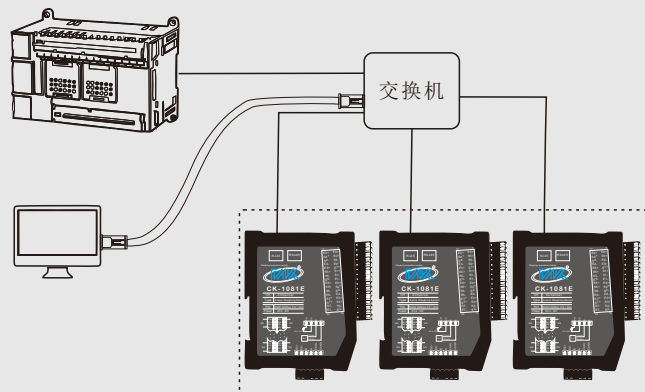
CK series modules support standard RS485 interface (see the figure below)



CK module is connected to other devices through RS485 interface

Ethernet Connection

Some modules of the CK series support 100M/10M standard Ethernet interface. Support Modbus TCP protocol and support automatic polarity identification (AUTO MDIX) of the network port.

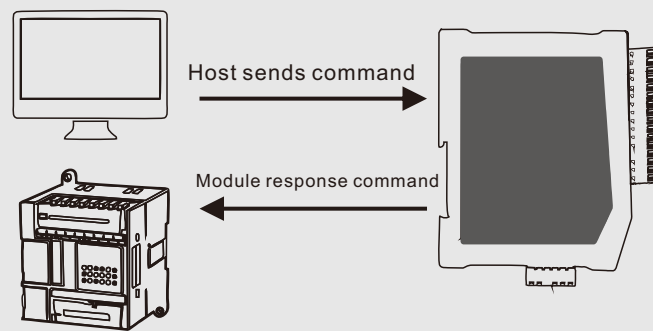


CK module network connection diagram through Ethernet interface device

Module communication mode

Master-slave mode

The communication mode of CK-1081E module is usually master-slave mode (one question and one answer mode); the host sends commands to the module through the communication interface, and the module responds accordingly after receiving the correct command.



Master-slave mode

Communication parameters (default 9600 8, N, 1 address 01)

Mailing address

The communication address range of the CK-1081E module is 01H~F7H (1~247), and the module address is factory set to 01; the module communication address can be modified by the user through commands according to site needs. For specific methods, please refer to the corresponding commands.

Communication rate

CK-1081E module RS485 supports baud rates: 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200bps; the module communication rate can be modified by the user through commands according to site needs. For specific methods, see the corresponding commands.

Communication Protocol

MODBUS-RTU/ MODBUS-TCP PROTOCOL

Modbus protocol is a universal communication protocol that has been widely used in today's industrial control field. Through this protocol, controllers can communicate with each other or with other devices via a network (such as Ethernet).

The CK-1081E module supports the industrial standard MODBUS-RTU (RS485)/MODBUS-TCP (Ethernet) protocol. The module works in the MODBUS slave (server) state. It can communicate with PLCs, RTUs or computers of various brands. The CK-1081E module supports the following MODBUS commands:

For the command analysis of MODBUS read channel conversion results, please refer to the relevant sections of Sensor input data format. For MODBUS calibration, please refer to the relevant sections of Sensor calibration.

Serial number	Command (HEX)	Function	Remark
2	03	Read module AD conversion results and module information	
2	06	Write channel configuration single register	
3	10	Continuous write channel configuration multiple registers	

The CK module MODBUS address allocation table is as follows:

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03	0000	40001	Read module model
03	0001	40002	Read analog input channel switches
03	2000	48193	Read module model
03	2001	48194	Read analog input channel switches
03	2002	48195	Read channel 0 conversion result bit 31~16
03	2003	48196	Read channel 0 conversion result bit 15~0
03	2004	48197	Read channel 1 conversion result bit 31~16
03	2005	48198	Read channel 1 conversion result bit 15~0
03	2006	48199	Read channel 2 conversion result bit 31~16
03	2007	48200	Read channel 2 conversion result bit 15~0
03	2008	48201	Read channel 3 conversion result bit 31~16
03	2009	48202	Read channel 3 conversion result bit 15~0
03	200A	48203	Read channel 4 conversion result bit 31~16
03	200B	48204	Read channel 4 conversion result bit 15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03	200C	48205	Read channel 5 conversion result bits 31~16
03	200D	48206	Read channel 5 conversion result bit 15~0
03	200E	48207	Read channel 6 conversion result bit 31~16
03	200F	48208	Read channel 6 conversion result bit 15~0
03	2010	48209	Read channel 7 conversion result bit 31~16
03	2011	48210	Read channel 7 conversion result bit 15~0
03	2012	48211	Read channel 8 conversion result bit 31~16
03	2013	48212	Read channel 8 conversion result bit 15~0
03	2014	48213	Read channel 9 conversion result bit 31~16
03	2015	48214	Read channel 9 conversion result bit 15~0
03	2016	48215	Read channel 10 conversion result bit 31~16
03	2017	48216	Read channel 10 conversion result bit 15~0
03	2018	48217	Read channel 11 conversion result bit 31~16
03	2019	48218	Read channel 11 conversion result bit 15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	2202	48707	Read and write channel 0 no-load calibration bit31~16
03/06/10	2203	48708	Read and write channel 0 no-load calibration bit15~0
03/06/10	2204	48709	Read and write channel 1 no-load calibration bit31~16
03/06/10	2205	48710	Read and write channel 1 no-load calibration bit15~0
03/06/10	2206	48711	Read and write channel 2 no-load calibration bit31~16
03/06/10	2207	48712	Read and write channel 2 no-load calibration bit15~0
03/06/10	2208	48713	Read and write channel 3 no-load calibration bit31~16
03/06/10	2209	48714	Read and write channel 3 no-load calibration bit15~0
03/06/10	220A	48715	Read and write channel 4 no-load calibration bit31~16
03/06/10	220B	48716	Read and write channel 4 no-load calibration bit15~0
03/06/10	220C	48717	Read and write channel 5 no-load calibration bit31~16
03/06/10	220D	48718	Read and write channel 5 no-load calibration bit15~0
03/06/10	220E	48719	Read and write channel 6 no-load calibration bit31~16
03/06/10	220F	48720	Read and write channel 6 no-load calibration bit15~0
03/06/10	2210	48721	Read and write channel 7 no-load calibration bit31~16
03/06/10	2211	48722	Read and write channel 7 no-load calibration bit15~0
03/06/10	2212	48723	Read and write channel 8 no-load calibration bit31~16
03/06/10	2213	48724	Read and write channel 8 no-load calibration bit15~0
03/06/10	2214	48725	Read and write channel 9 no-load calibration bit31~16
03/06/10	2215	48726	Read and write channel 9 no-load calibration bit15~0
03/06/10	2216	48727	Read and write channel 10 no-load calibration bit31~16
03/06/10	2217	48728	Read and write channel 10 no-load calibration bit15~0
03/06/10	2218	48729	Read and write channel 11 no-load calibration bit31~16
03/06/10	2219	48730	Read and write channel 11 no-load calibration bit15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	2402	49219	Read and write channel 0 full load calibration bit31~16
03/06/10	2403	49220	Read and write channel 0 full load calibration bit15~0
03/06/10	2404	49221	Read and write channel 1 full load calibration bit31~16
03/06/10	2405	49222	Read and write channel 1 full load calibration bit15~0
03/06/10	2406	49223	Read and write channel 2 full load calibration bit31~16
03/06/10	2407	49224	Read and write channel 2 full load calibration bit15~0
03/06/10	2408	49225	Read and write channel 3 full load calibration bit31~16
03/06/10	2409	49226	Read and write channel 3 full load calibration bit15~0
03/06/10	240A	49227	Read and write channel 4 full load calibration bit31~16
03/06/10	240B	49228	Read and write channel 4 full load calibration bit15~0
03/06/10	240C	49229	Read and write channel 5 full load calibration bit31~16
03/06/10	240D	49230	Read and write channel 5 full load calibration bit15~0
03/06/10	240E	49231	Read and write channel 6 full load calibration bit31~16
03/06/10	240F	49232	Read and write channel 6 full load calibration bit15~0
03/06/10	2410	49233	Read and write channel 7 full load calibration bit31~16
03/06/10	2411	49234	Read and write channel 7 full load calibration bit15~0
03/06/10	2412	49235	Read and write channel 8 full load calibration bit31~16
03/06/10	2413	49236	Read and write channel 8 full load calibration bit15~0
03/06/10	2414	49237	Read and write channel 9 full load calibration bit31~16
03/06/10	2415	49238	Read and write channel 9 full load calibration bit15~0
03/06/10	2416	49239	Read and write channel 10 full load calibration bit31~16
03/06/10	2417	49240	Read and write channel 10 full load calibration bit15~0
03/06/10	2418	49241	Read and write channel 11 full load calibration bit31~16
03/06/10	2419	49242	Read and write channel 11 full load calibration bit15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	2442	49283	Read and write channel 0 sensor sensitivity bit31~16
03/06/10	2443	49284	Read and write channel 0 sensor sensitivity bit15~0
03/06/10	2444	49285	Read and write channel 1 sensor sensitivity bit31~16
03/06/10	2445	49286	Read and write channel 1 sensor sensitivity bit15~0
03/06/10	2446	49287	Read and write channel 2 sensor sensitivity bit31~16
03/06/10	2447	49288	Read and write channel 2 sensor sensitivity bit15~0
03/06/10	2448	49289	Read and write channel 3 sensor sensitivity bit31~16
03/06/10	2449	49290	Read and write channel 3 sensor sensitivity bit15~0
03/06/10	244A	49291	Read and write channel 4 sensor sensitivity bit31~16
03/06/10	244B	49292	Read and write channel 4 sensor sensitivity bit15~0
03/06/10	244C	49293	Read and write channel 5 sensor sensitivity bit31~16
03/06/10	244D	49294	Read and write channel 5 sensor sensitivity bit15~0
03/06/10	244E	49295	Read and write channel 6 sensor sensitivity bit31~16
03/06/10	244F	49296	Read and write channel 6 sensor sensitivity bit15~0
03/06/10	2450	49297	Read and write channel 7 sensor sensitivity bit31~16
03/06/10	2451	49298	Read and write channel 7 sensor sensitivity bit15~0
03/06/10	2452	49299	Read and write channel 8 sensor sensitivity bit31~16
03/06/10	2453	49300	Read and write channel 8 sensor sensitivity bit15~0
03/06/10	2454	49301	Read and write channel 9 sensor sensitivity bit31~16
03/06/10	2455	49302	Read and write channel 9 sensor sensitivity bit15~0
03/06/10	2456	49303	Read and write channel 10 sensor sensitivity bit31~16
03/06/10	2457	49304	Read and write channel 10 sensor sensitivity bit15~0
03/06/10	2458	49305	Read and write channel 11 sensor sensitivity bit31~16
03/06/10	2459	49306	Read and write channel 11 sensor sensitivity bit15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	2482	49347	Read and write channel 0 sensor range bit31~16
03/06/10	2483	49348	Read and write channel 0 sensor range bit15~0
03/06/10	2484	49349	Read and write channel 1 sensor range bit31~16
03/06/10	2485	49350	Read and write channel 1 sensor range bit15~0
03/06/10	2486	49351	Read and write channel 2 sensor range bit31~16
03/06/10	2487	49352	Read and write channel 2 sensor range bit15~0
03/06/10	2488	49353	Read and write channel 3 sensor range bit31~16
03/06/10	2489	49354	Read and write channel 3 sensor range bit15~0
03/06/10	248A	49355	Read and write channel 4 sensor range bit31~16
03/06/10	248B	49356	Read and write channel 4 sensor range bit15~0
03/06/10	248C	49357	Read and write channel 5 sensor range bit31~16
03/06/10	248D	49358	Read and write channel 5 sensor range bit15~0
03/06/10	248E	49359	Read and write channel 6 sensor range bit31~16
03/06/10	248F	49360	Read and write channel 6 sensor range bit15~0
03/06/10	2490	49361	Read and write channel 7 sensor range bit31~16
03/06/10	2491	49362	Read and write channel 7 sensor range bit15~0
03/06/10	2492	49363	Read and write channel 8 sensor range bit31~16
03/06/10	2493	49364	Read and write channel 8 sensor range bit15~0
03/06/10	2494	49365	Read and write channel 9 sensor range bit31~16
03/06/10	2495	49366	Read and write channel 9 sensor range bit15~0
03/06/10	2496	49367	Read and write channel 10 sensor range bit31~16
03/06/10	2497	49368	Read and write channel 10 sensor range bit15~0
03/06/10	2498	49369	Read and write channel 11 sensor range bit31~16
03/06/10	2499	49370	Read and write channel 11 sensor range bit15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	24C2	49411	Read and write channel 0 sensor peel value bit31~16
03/06/10	24C3	49412	Read and write channel 0 sensor peel value bit15~0
03/06/10	24C4	49413	Read and write channel 1 sensor peel value bit31~16
03/06/10	24C5	49414	Read and write channel 1 sensor peel value bit15~0
03/06/10	24C6	49415	Read and write channel 2 sensor peel value bit31~16
03/06/10	24C7	49416	Read and write channel 2 sensor peel value bit15~0
03/06/10	24C8	49417	Read and write channel 3 sensor peel value bit31~16
03/06/10	24C9	49418	Read and write channel 3 sensor peel value bit15~0
03/06/10	24CA	49419	Read and write channel 4 sensor peel value bit31~16
03/06/10	24CB	49420	Read and write channel 4 sensor peel value bit15~0
03/06/10	24CC	49421	Read and write channel 5 sensor peel value bit31~16
03/06/10	24CD	49422	Read and write channel 5 sensor peel value bit15~0

Command (HEX)	Register address (HEX)	Corresponding PLC address (DEC)	Data Description
03/06/10	24CE	49423	Read and write channel 6 sensor peel value bit31~16
03/06/10	24CF	49424	Read and write channel 6 sensor peel value bit15~0
03/06/10	24D0	49425	Read and write channel 7 sensor peel value bit31~16
03/06/10	24D1	49426	Read and write channel 7 sensor peel value bit15~0
03/06/10	24D2	49427	Read and write channel 8 sensor peel value bit31~16
03/06/10	24D3	49428	Read and write channel 8 sensor peel value bit15~0
03/06/10	24D4	49429	Read and write channel 9 sensor peel value bit31~16
03/06/10	24D5	49430	Read and write channel 9 sensor peel value bit15~0
03/06/10	24D6	49431	Read and write channel 10 sensor peel value bit31~16
03/06/10	24D7	49432	Read and write channel 10 sensor peel value bit15~0
03/06/10	24D8	49433	Read and write channel 11 sensor peel value bit31~16
03/06/10	24D9	49434	Read and write channel 11 sensor peel value bit15~0

Sensor calibration

The weighing sensor acquisition module needs to calibrate the external sensor before use.

The module has two calibration methods. The first method is to calibrate according to the sensitivity and range on the sensor calibration certificate. The second method is to calibrate the sensor's no-load and full-load values under two load conditions. The user can choose any method to calibrate.

Taking MODBUS protocol as an example, the sensor calibration methods are explained respectively.

The first calibration method

This calibration method is suitable for sensors with a large range, such as several tons or tens of tons. If the sensor range is very small, such as several kilograms or tens of kilograms, the second calibration method is generally used.

To set the sensitivity:

Query the sensor calibration certificate to obtain the sensor sensitivity, and write the value of the sensitivity multiplied by 10000 to the corresponding MODBUS register.

Setting range:

Query the sensor calibration certificate to obtain the sensor range, and write the value of the range multiplied by 10000 to the corresponding MODBUS register.

Calibration example:

Assume that the calibration certificate of the sensor connected to channel 0 shows that the sensitivity of the sensor is 0.8151mV/V and the range is 80 tons.

① Set the sensitivity, write to register 2442H, 2443H 8151 (1FD7H)

Instruction: 01 10 24 42 00 02 04 00 00 1F D7 95 29

② Set the range and write 800000 (C3500H) to

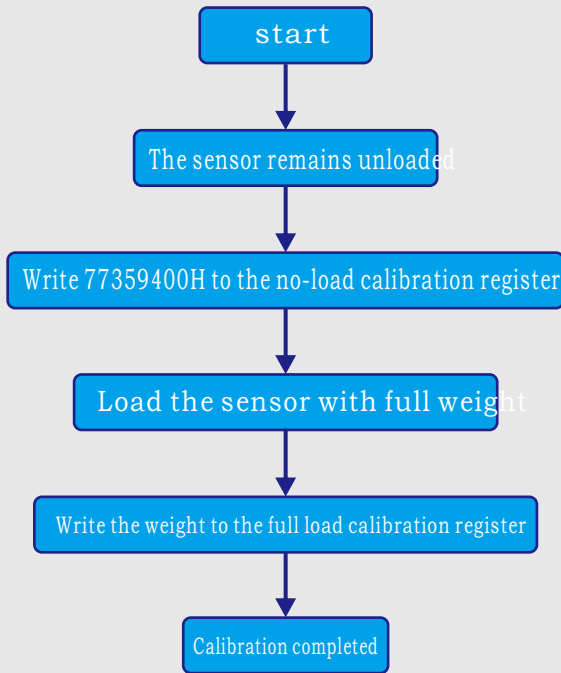
registers 2482H and 2483H. Instruction: 01 10 24 82 00 02 04 00 0C 35 00 06 44

③ Calibration completed.

The second calibration method

This calibration method is suitable for sensors with a small range, such as a few kilograms or tens of kilograms. Use standard weights to calibrate the sensor.

When calibrating, first calibrate the empty load, then add weights to calibrate the full load. The calibration process is as follows:



No-load calibration:

- ① Before calibration, make sure the sensor load is no-load.
- ② Write 7735 9400H to the corresponding sensor channel no-load calibration register (address starts from 2202H).
For example: write channel 0 no-load calibration: 01 10 22 02 00 02 04 77 35 94 00 97 AD
77359400H is a specific mark: used to instruct the sensor to automatically calculate the no-load calibration value.

Full load calibration:

- ① Before calibration, no-load calibration must be completed first.
- ② Before calibration, confirm that the sensor load is fully loaded and record the weight of the weight when fully loaded as x.
- ③ Keep full load, write x integer value to the corresponding sensor channel full load calibration register (address starts from 2402H), and the value shall not be greater than 999999999.
For example: when channel 0 is fully loaded, the weight of the weight recorded when fully loaded is x=20000g, then 20000g is written to the 32-bit register composed of 2202H and 2303H. 20000 corresponds to hexadecimal: 4E20H
Write channel 0 full load calibration: 01 10 24 02 00 02 04 00 00 4E 20 ED 0F

Clear calibration value:

If an error occurs during operation, you can write a specific mark to clear the calibration data and restore the factory calibration settings.

Writing 77359500H to the no-load calibration register can clear the no-load calibration value set by the user.

Writing 77359500H to the full-load calibration register can clear the full-load calibration value set by the user.

For example:

Clear channel 0 no-load calibration: 01 10 22 02 00 02 04 77 35 95 00 96 3D

Clear channel 0 full-load calibration: 01 10 24 02 00 02 04 77 35 95 00 BD 9D

Calibration example:

Assume that the module address is 1 and the rated load of sensor channel 0 is 100000g. Now calibrate sensor channel 0.

- ① Sensor channel 0 is in a no-load state without any heavy objects placed on it.
- ② Query the MODBUS address allocation table to find that the no-load calibration registers of sensor 0 are 2202H and 2203H. Write function code 10H continuously and write 77359400H to 2202H and 2203H respectively. MODBUS communication command: 01 10 22 02 00 02 04 77 35 94 00 97 AD
- ③ Put a standard load of 100,000g into the sensor.
- ④ Query the MODBUS address allocation table to get the full load of sensor 0
The calibration registers are 2402H, 2403H. The standard load weight is 100000g, 100000 converted to hexadecimal: 186A0H
Continuously write function code 2402H, 2403H respectively write 186A0H.
MODBUS communication command: 01 10 24 02 00 02 04 00 01 86 A0 EA AF
- ⑤ The calibration has been completed.

Peeling:

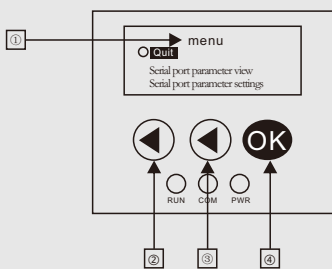
After the sensor calibration operation is completed, the peeling operation can be performed according to the actual needs of the site. If peeling is not required, ignore this section.

- ① Confirm that the sensor has been calibrated before peeling.
- ② Write 77359500H to the peeling register of the corresponding sensor channel (address starts from 24C2H).
77359500H is a specific mark: used to indicate that the sensor automatically calculates the peeling value.

Menu Operation

CK series modules, some models are equipped with OLED menu (see function configuration table for details). Through the OLED menu, you can query and configure serial communication parameters, Ethernet communication parameters, sensor calibration, etc.

Menu Appearance Description



- ① Menu display area;
- ② Left button: select the position to move left, move up, or adjust parameters;
- ③ Down key: select position down, parameter adjustment button;
- ④ OK button: enter the menu and confirm the adjustment parameter button;

Menu Operation

Enter and exit menu

In standby mode, press the OK button to enter the menu settings.

Move the selection items up and down in the menu, select the exit item, and press the OK button to exit the menu settings.

Serial port parameter settings

- ① In standby mode, press the OK button to enter the menu settings, move down to the serial port parameter settings, and press the OK button to enter;
- ② Move up or down to select the parameter you want to set, and press OK to enter. For example: To set the device station number, move the cursor to the device station number and press OK.
- ③ When setting IP, move the cursor to the left to select the parameter to be adjusted, and press the up key to adjust the parameter. After adjustment, press the OK key to confirm the setting parameter;
- ④ Move the cursor to the Exit option and press OK to exit the settings;

After the network parameters are set, they will not take effect immediately. Exit the network parameter settings, restart the device or power on again to make the settings effective.

If DHCP is turned on in the network parameter settings and the series is set to dynamic IP, the IP set in the menu will be invalid, waiting for the router to assign an IP, and the menu related items will be hidden. DHCP is turned off, the system is set to static IP, and the IP set in the menu will take effect.

The factory default settings are DHCP: Off, IP: 192.168.1.30, Subnet Mask: 255.255.255.0, Gateway: 192.168.1.1.

Electrical parameters

Unless otherwise specified, the electrical parameters of the CK-1081E data acquisition module are the values when $T_{amb}=25^{\circ}C$.

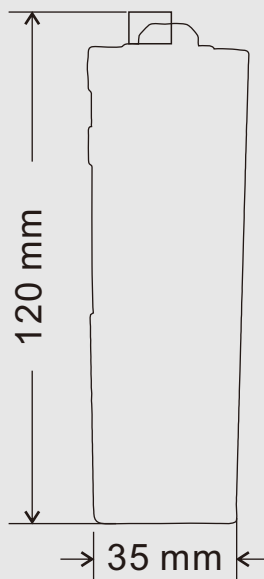
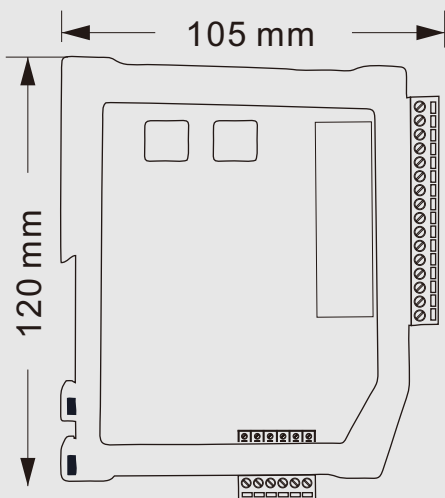
Module parameters

参数	Parameter	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
供电电压	Power Supply	+10	---	+30	V
看门狗复位周期	Watchdog Period		1		S
输入保护	Input Protect		50/30		mA/V

Analog input parameters

参数	Parameter	最小值 Min	典型值 Typ	最大值 Max	单位 Unit
分辨率	Resolution		24		bit
精度	Accuracy		± 0.1		% of SFR
温度系数	Temperature Coefficient			± 50	ppm/ $^{\circ}C$
隔离电压	Isolation Voltage			2500	Vdc
输入阻抗	Load Impedance		2M		Ω

Mechanical Dimensions

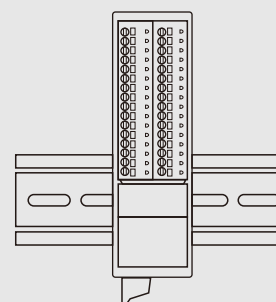
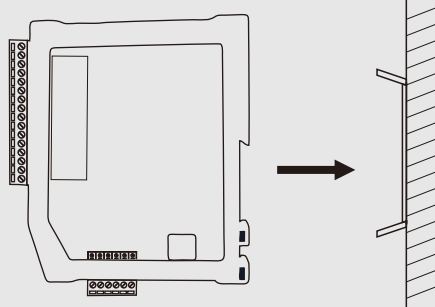


Installation method

CK-1081E supports DIN35 rail installation. Users can easily install or remove the module on the rail, providing assistance for industrial site application and installation.

Three guarantees and maintenance instructions

Within five years from the date of sale, if the product is damaged or the product quality is lower than the technical indicators under the conditions of storage, transportation and use, the user can return it to the factory for free repair. If the damage is caused by violation of operating regulations and requirements, the device fee and repair fee shall be paid.



Disclaimer

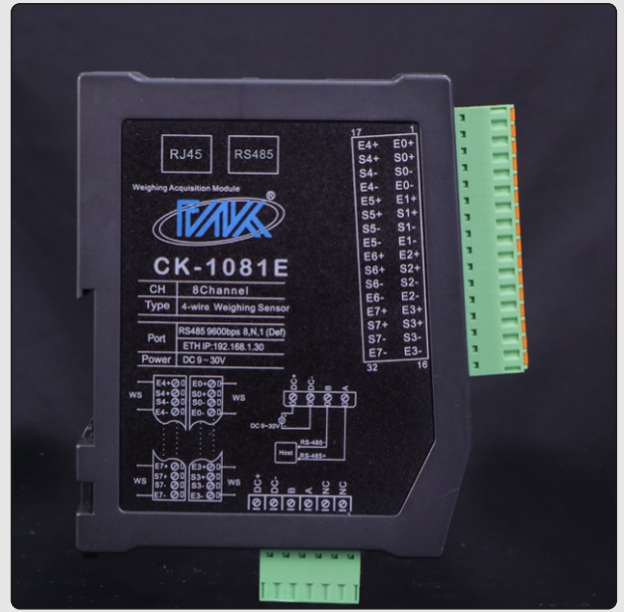
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Product display picture



精工品质
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Wiring Diagram

