



CM-013N

จอเบกสินค้าถ้วยใหม่



CM-013B2



CM-013B4

Description

- Digital Load Cell Indicator With Alarm : CM-013N / CM-013B2 / CM-013B4 Series
A digital weight indicator that receives signals from a load cell (strain-gauge).
- Accepts strain-gauge input 1.5, 2.0, 2.5, 3.0, 3.3 mV/V.
- Selectable excitation voltage 5V or 10V.
- Supports 2 calibration methods:
 - Calibration by load: calibration using actual weights, maximum resolution 2–8 points.
 - Calibration by mV: calibration by setting mV values, 2 points.
- CM-013B2 and CM-013B4 allow selection of weight units by attaching a sticker on the display, such as kg, ton, etc.
- Error code function for abnormal operation; details are in the manual.
- 3 digital inputs for commands such as Tare Zero, Hold, Max Peak Display, Min Peak Display, Show mV, etc.
- 3 alarm relay outputs with 4 selectable functions.
- Transfer output 4–20 mA or 0–10 VDC, both Direct and Inverse.
- Communication with computer via RS-485 Modbus RTU port.
- Display: 6-digit 7-segment, size 0.56 inch (CM-013N), 2.3 inch (CM-013B2), 4 inch (CM-013B4).
- Lock function to prevent changing settings via the display.

Operation

Digital Load Cell Indicator With Alarm : CM-013N / CM-013B2 / CM-013B4 Series is a digital weight indicator that receives signals from a Load Cell (Strain-Gauge), can set 3 weight levels, and control via 3 Alarm Relay Outputs.

Can receive Strain-Gauge input types 1.5, 2.0, 2.5, 3.0, 3.3 mV/V.

It has Excite Voltage 5V and 10V selectable. Standard Excite Voltage is 10V, and if 5V Excite Voltage is required, simply jumper the wires at the terminal.

Calibration before use for effective performance can be done in 2 methods: Calibration by load can be calibrated using standard weights with a maximum resolution of 2–8 points.

Example In case of needing calibration in 3 weight ranges such as 5.0 kg, 12.0 kg, and 20.0 kg.

- Define calibration points at 4 points
 - Point 0 is the starting point, with no weight = 0 kg.
 - Point 1 define the calibration weight = 5.0 kg.
 and place the standard weight at 5.0 kg or the reference weight at 5.0 kg.
 - Point 2 define the calibration weight = 12.0 kg.
 and place the standard weight at 12.0 kg or the reference weight at 12.0 kg.
 - Point 3 define the calibration weight = 20.0 kg
 and place the standard weight at 20.0 kg or the reference weight at 20.0 kg.
- Calibration by mV can be calibrated by setting the mV value at 2 points.

Example: Load cell specifications, capacity 20.0 kg, rated output 3.33 mV, using Excite Voltage = 10V.

 - Method of calculation: Rated Output × Excite Voltage
Weight 0.0 kg, Output 0.00 mV × 10V = 0.00 mV Weight 20.0 kg, Output 3.33 mV × 10V = 33.3 mV

- Point 0: set the mV value = 0.0 - Point 1: set the mV value = 33.3

There is an Error Code function in case of abnormal operation as follows:

- The input signal is higher than the High Limit Setting (SLH) by 5%
The symbol displayed is --HI--.
- The input signal is lower than the Low Limit Setting (SLL) by 5%
The symbol displayed is --Lo--.
- Sensor Break: the sensor is damaged or the input is not connected
The symbol displayed is SEn-br.

Calibration error: calibration is performed in the wrong sequence or the standard weight is not applied during calibration. The symbol displayed is CAL-Er.
Excitation voltage error: excitation voltage is not supplied
The symbol displayed is EHC-Er.

There are 3 Digital Inputs for control functions such as Tare Zero, Hold, Max Peak Display, Min Peak Display, Show mV, etc. There are 3 Alarm Relay Outputs with 4 selectable functions for operation.

Absolute High Low Band Alarm, for example when the weight is lower than the Low Setpoint and higher than the High Setpoint, the Relay Output is activated.

Absolute High Alarm, for example when the weight is higher than the High Setpoint, the Relay Output is activated.

Absolute Low Alarm, for example when the weight is lower than the Low Setpoint, the Relay Output is activated.

Absolute High Low Range Alarm, for example when the weight is higher than the Low Setpoint and lower than the High Setpoint, the Relay Output is activated.

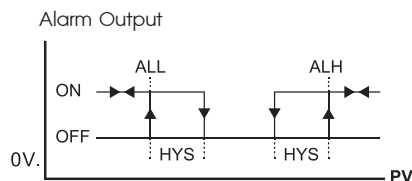
Transfer Output option 4–20 mA or 0–10 VDC can be set to operate in both Direct and Inverse modes, and there is also a Manual Transfer Output function that allows the output signal 4–20 mA / 0–10 VDC to be set as required.

Specification

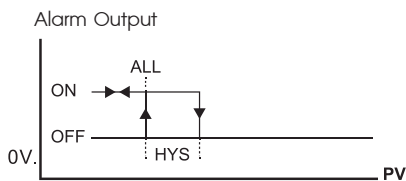
		CM-013N	CM-013B2	CM-013B4
Power Supply		220VAC ±15% 50/60Hz	100-250VAC 50/60Hz	
		24VAC/VDC ±15%		
Power Consumption		Max 10VA		
Display	7-Segment	7-Segment, Size 0.56 Inch, 5 Digits, 1 Raw	7-Segment, Size 2.3 Inch, 5 Digits, 1 Raw	7-Segment, Size 4 Inch, 5 Digits, 1 Raw
	LED	3 Alarm Output, 2 Status, 1 Comm		
Input	Senser	4 strain-gauge (350 Ω) 4wire		
	Excitation Voltage	5VDC, 10VDC 100mA		
	Sensitivity	1.5, 2, 2.5, 3, 3.3 mV/V		
	Max. Sensitivity *	>0.25 μV/D		
	Maximum Count *	60000		
	Resolution *	1/50000		
	Sampling rate	2, 10, 30, 60, 120 msec		
	Accuracy	0.1% FS ±1 Digit		
	Linear scale range	-199999 to 999999		
	Decimal Piont	4		
	Thermal drift	0.0005% F.S./C		
Output	Alarm Relay	3 Relay contact, 5A/250VAC		
	Analog Transmission	0-10VDC Minimum 1kΩ		
		4-20mA Maximum 500 Ω		
	Accuracy	±0.2% of Output Range		
Communication	Protocol	RS-485 Modbus RTU Protocol		
	Baud Rate	4800, 9600, 19200, 38400, 57600 bps		
	Parity	None, Even, Odd		
	Data Bit	8 Bits		
	Stop Bit	1, 2		
	Support Device Node	255 nodes		
Ambient Operation	Temperature	-10°C to 60°C		
	Humidity	85 % RH Non-Condensing		
Ambient Storage	Temperature	-20°C to 80°C		
	Humidity	85 % RH Non-Condensing		
Protection Degree	Front Protection Rating	IP52	IP30	
	Case Protection Rating	IP30		
Installation		Panel, Mounting	Wall Mounting / Top Cabinet	
Material		ABS-V0	Aluminium	
Size (mm.)		96 x 80 x 48	150 x 450 x 100	200 x 850 x 100
Weight (kg.)		215	2.35	5.05

ALARM FUNCTION

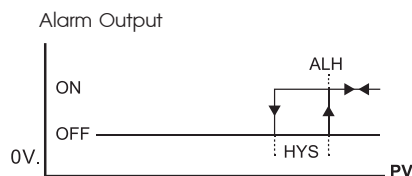
1. Absolute value High Low Band Alarm



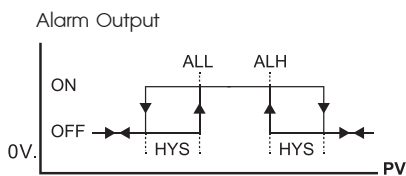
3. Absolute value Low Alarm



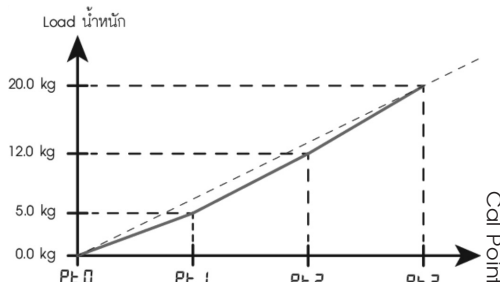
2. Absolute value High Alarm



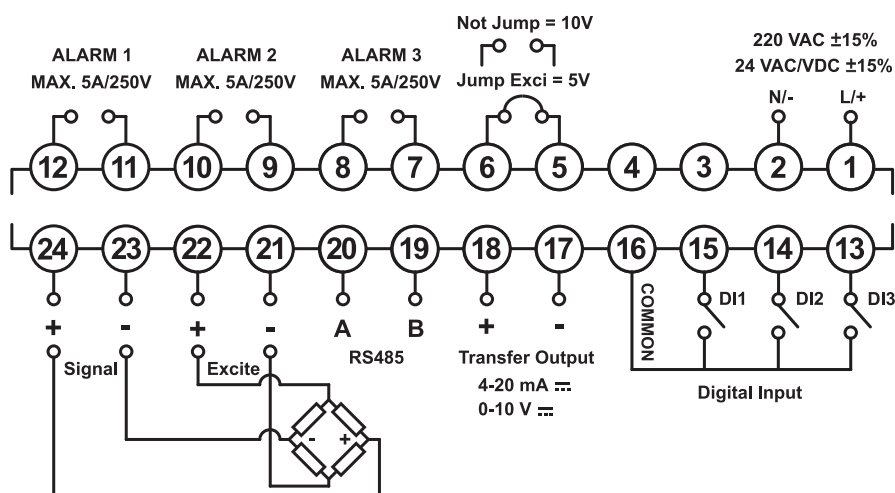
4. Absolute value High Low Range Alarm



- กราฟแสดงความสัมพันธ์ระหว่างการ Calibrate น้ำหนักของแต่ละจุด

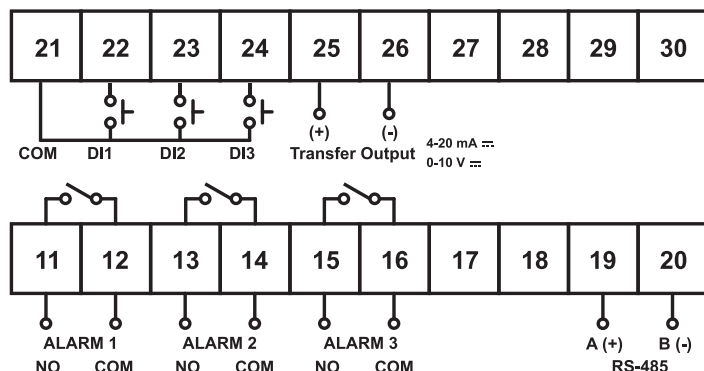


Wiring Diagram



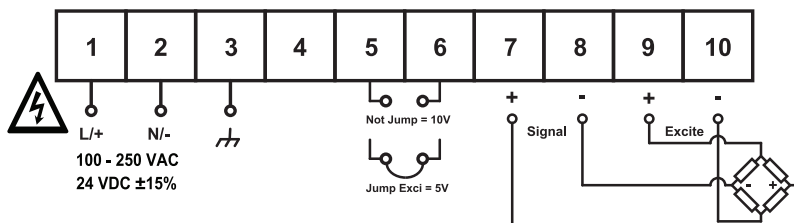
****Connecting a load cell that exceeds the excitation (100 mA).

The setting may cause incorrect operation of the CM-013N.



***Connecting load cells exceeding the specified excitation (100 mA).

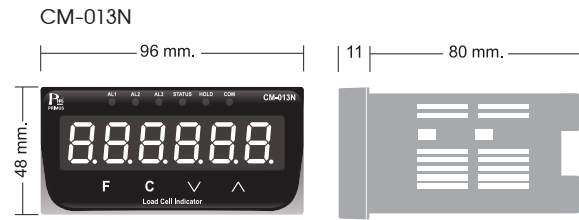
May cause malfunction of CM-013B2, CM-013B4.



WARNING

- Make sure the correct wiring connection before turning on electricity. Mis-wiring may cause malfunction of the unit and fire.
- Never modify the unit to prevent damage or incident such as malfunction and fire etc.

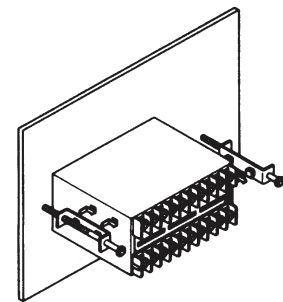
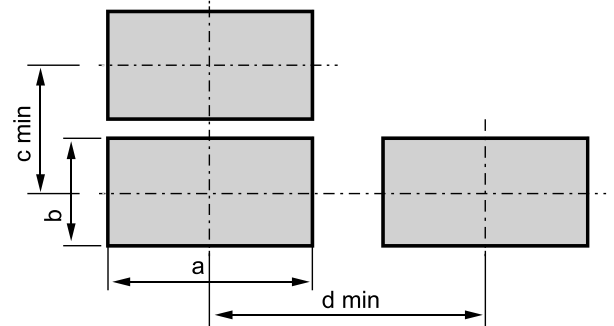
Dimension



Channel Cutting

Model	a	b	c	d
CM-003N	92.0	45.5	54.5	113.3

Unit: ± 0.6 mm.



Ordering Code

CM-013

Size Display

Transfer Output

Communication

Unit

Power Supply

Size Display	
N	0.56 Inch 48 x 96 x 80 mm.
B2	2.3 Inch 150 x 450 x 100 mm.
B4	4 Inch 200 x 850 x 100 mm.

Transfer Output	
None	NONE
G	0-10VDC
I	4-20mA

Communication	
None	None
M	RS-485

Power Supply	
220	100-250VAC
24	24VAC/VDC ±15%

Unit	
None	None Unit
K	kg.
T	Ton

Applicable to CM-013B2 and CM-013B4

Applicable to CM-013B2 and CM-013B4 only.