

CMA-1101 Series

PROFADER™

Non-contact

Long-term stability

Digital output

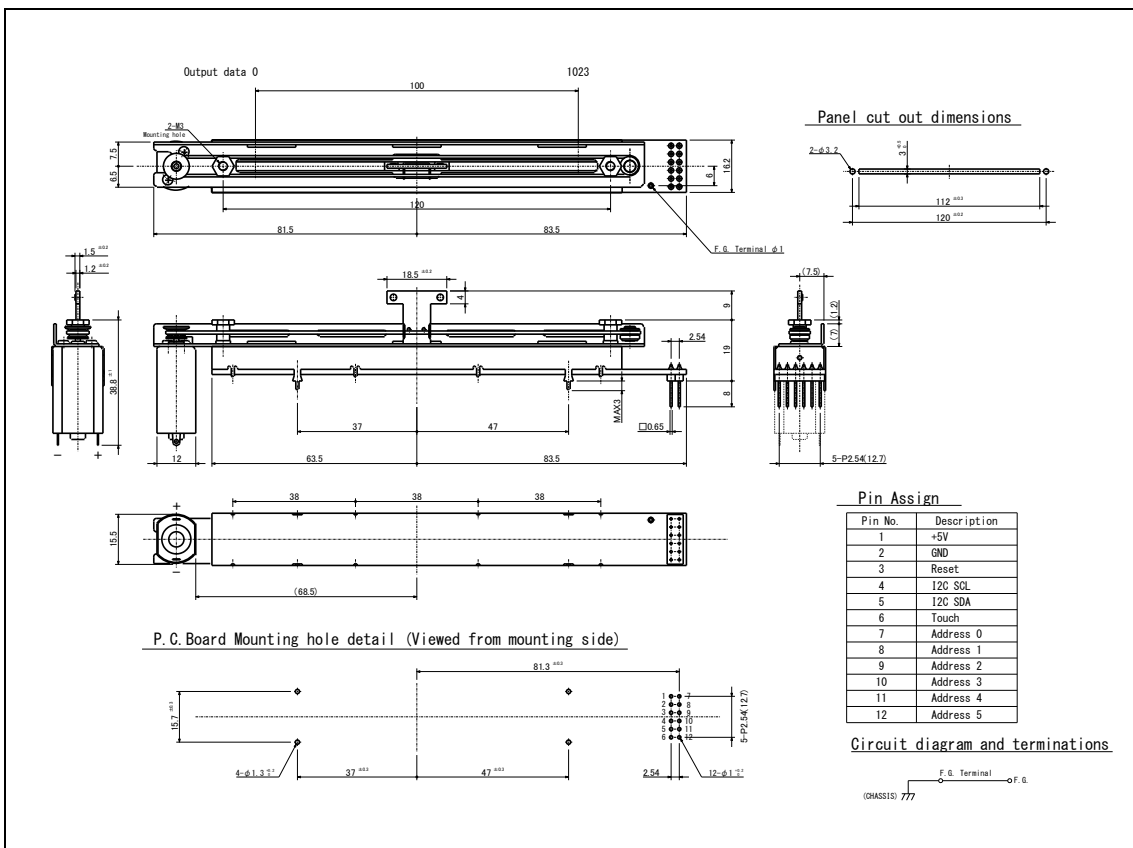
Facilitated in handling

High accuracy

Realized 10bit in 100mm stroke



Dimensions



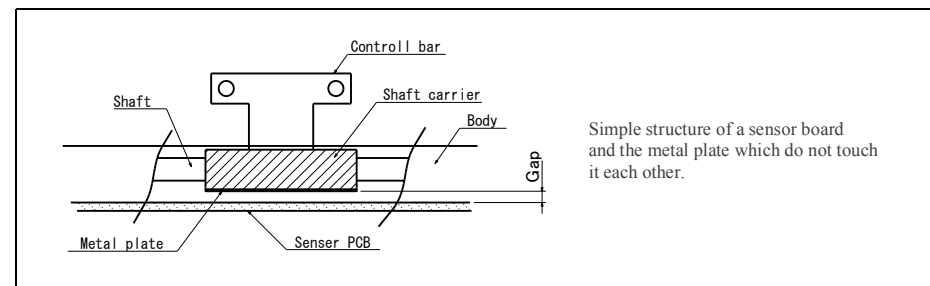
Model number

CMA-1101 - M8V

Product type
CMA-1101: 100mm

DC-motor
M8V: 8V DC motor
(MABUCHI)

Structure



Electrical specifications

CMA-1101	
Sensor system	Electrostatic capacitance type sensor
Output value	Incremental type
Communication system	I ² C Slave
Operating voltage	5V: ±0.25V
Max. operating current	4mA Max. (Motor drive electricity is excluded.)
Resolution	10bit (0~1023)
Output Law	1bit = 100mm/1024 (Linear)
Bit error	±3bit
Voltage proof	1 Min. at AC100V
Insulation resistance	50Mohm or more at DC100V

Mechanical specifications

CMA-1101	
Stroke length	100mm±0.5mm
Operating force	0.1~0.3N
Strength of Nut-Attached	100Ncm
Attached Parts	M3 screw (Length: Panel thickness + 3~4mm)
Stopper strength	30N
Push-pull strength	30N

General specifications

CMA-1101	
Temp.range	-10 to +70 deg C (Operating), -15 to +75 deg C (Storage)
Relative humidity	90%RH (No condensation)

Note

- * Non-waterproof.
- * Solder heat resistance: 350deg C max, 5sec max, 2 times. (Manual soldering only)
- * Do not give severe shocks.
- * Move to one end in Control-bar on the occasion of knob wearing, and can break into it slowly.

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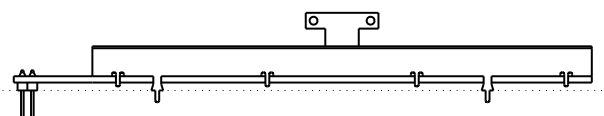
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I²C specifications

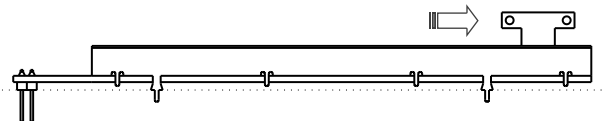
CMA-1101																																																																																																															
I ² C Clock	400kbps / 100kbps / 50kbps																																																																																																														
Slave address	0~63																																																																																																														
General call address	Not Supported																																																																																																														
Transfer data	MSB First																																																																																																														
Response time	1ms or less (I ² C Clock: 400kbps)																																																																																																														
I ² C Communication behavior																																																																																																															
	<table border="1"> <thead> <tr> <th>S</th> <th colspan="7">Slave Address</th> <th>R/W</th> <th>A</th> <th colspan="8">Data Byte</th> <th>A</th> <th>P</th> </tr> </thead> <tbody> <tr> <td>Master</td> <td>S</td> <td>0</td> <td>SA5</td> <td>SA4</td> <td>SA3</td> <td>SA2</td> <td>SA1</td> <td>SA0</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>D9</td> <td>D8</td> <td>1</td> <td>D7</td> <td>D6</td> <td>D5</td> <td>D4</td> <td>D3</td> <td>D2</td> <td>D1</td> <td>D0</td> <td>1</td> <td>P</td> </tr> <tr> <td>CMA-1101</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>D9</td> <td>D8</td> <td>1</td> <td>D7</td> <td>D6</td> <td>D5</td> <td>D4</td> <td>D3</td> <td>D2</td> <td>D1</td> <td>D0</td> <td>1</td> <td>P</td> </tr> <tr> <td>I²C Bus</td> <td>S</td> <td>0</td> <td>SA5</td> <td>SA4</td> <td>SA3</td> <td>SA2</td> <td>SA1</td> <td>SA0</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>D9</td> <td>D8</td> <td>0</td> <td>D7</td> <td>D6</td> <td>D5</td> <td>D4</td> <td>D3</td> <td>D2</td> <td>D1</td> <td>D0</td> <td>1</td> <td>P</td> </tr> </tbody> </table>	S	Slave Address							R/W	A	Data Byte								A	P	Master	S	0	SA5	SA4	SA3	SA2	SA1	SA0	1	1							D9	D8	1	D7	D6	D5	D4	D3	D2	D1	D0	1	P	CMA-1101									0	0	0	0	0	0	0	0	D9	D8	1	D7	D6	D5	D4	D3	D2	D1	D0	1	P	I ² C Bus	S	0	SA5	SA4	SA3	SA2	SA1	SA0	1	0	0	0	0	0	0	0	D9	D8	0	D7	D6	D5	D4	D3	D2	D1	D0	1	P
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S = Start condition P = Stop condition A = Acknowledge SA = Slave address D = Output data bits																																																																																																															

How to use

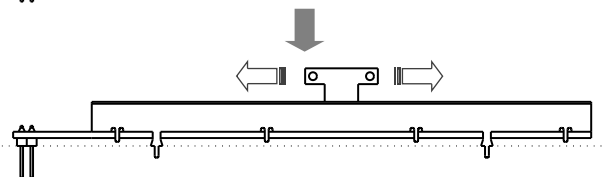
1. Power ON
Output data 0
Touch Stop



2. Reset
Output data 0
Touch Start



3. Operation start
Output data 0~1023
Touch On or Off

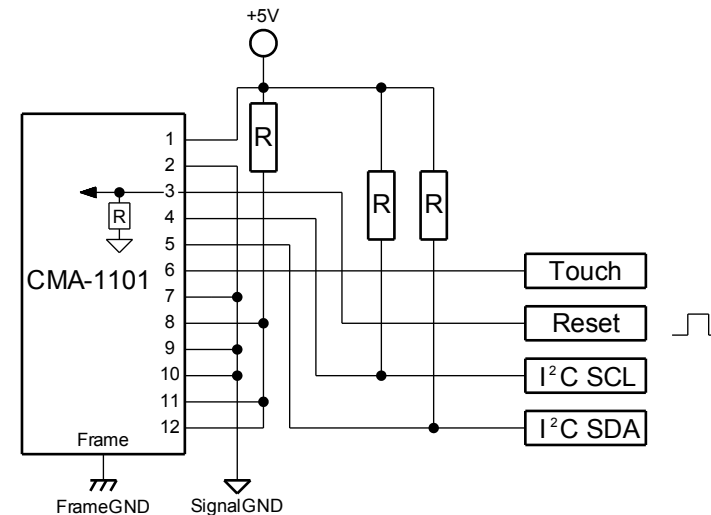


1. At the time of power on, output data are 0, regardless of the position of the control bar. In addition, please keep a finger off the knob.
2. Resets works when the control bar is moved to the edge of the direction of the figure. A touch signal becomes effective at the same time.
3. After reset, position data in proportion to the movement of the control bar are output. A touch signal is output by touching the knob with a finger.

* In power-off, the most recent position data are not retained.

Circuit example

I²C Slave address 50 [decimal]



Connect the frameGND with the frame, otherwise with the F.G. through-hole.

Pin Assign

Pin No.	Description
1	Operating voltage DC+5V
2	Ground connection
3	Active high external reset with internal pull down
4	I2C SCL
5	I2C SDA
6	Touch (On: High Off: Low)
7	I2C Slave address bit0
8	I2C Slave address bit1
9	I2C Slave address bit2
10	I2C Slave address bit3
11	I2C Slave address bit4
12	I2C Slave address bit5