

## Specifications

Graphic Digital Indicator

CSD-912B-EX

Spec. No. EN382912B-EX-B

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### 1 . General

This instrument is the digital indicator with graphic display function suitable for the weighing system such as butcher scale, platform scale, etc.

### 2 . Specifications

#### 2-1 . Analog specifications

- Bridge power supply DC12 V $\pm$ 0.3 V within 140 mA (Changeable to DC3 V or 6 V) with remote sensing function
- Applicable transducer Up to 4 pieces of strain gage based transducer (350 ohm) can be connected in parallel.
- Input sensitivity 0.3  $\mu$ V/d or more (d = the minimum scale)
- Input range -3.1 mV/V to 3.1 mV/V
- Zero point adjustment range  $\pm$ 2.5 mV/V
- Non-linearity 0.01 %F.S.
- Temperature coefficient
  - Zero point  $\pm$ 0.1  $\mu$ V/
  - Sensitivity  $\pm$ 0.000 8 %F.S./
 (When the calibration is made at 0.3  $\mu$ V/d or more of the input sensitivity.)
- Input noise  $\pm$ 0.2  $\mu$ Vp-p or less  
(At the default setting for analog filter, digital filter, stabilization filter and A/D sampling rate)
- Analog filter Approx. 4 Hz (Changeable to approx. 2 Hz, 6 Hz, 8 Hz, 10 Hz or 100 Hz)
- A/D sampling rate 200 times/s(Changeable to 1 000 times /s, 100 times /s, 50 times /s, 20 times/s or 10 times/s)
- A/D internal resolution 24 bit

#### 2-2 . Display specifications

- Display
  - Numbers of dot Wide viewing angle 6.2 inch TFT color LCD unit
  - Pitch of dot 640 $\times$ 240 dots
  - 0.077 mm x 0.231 mm
- Backlight
  - Brightness Approx. 240 cd/m<sup>2</sup> ( TYP. )
  - Life Approx. 40 000 h at 25 (TYP.) before the surface brightness will reach 50 % of initial.
- Load display
  - Range of display -999 999 to 999 999
  - Display increment 1 (Changeable to 2, 5, 10, 20 or 50)
  - Display style 7-segment method with 22 mm character height
  - Over display "-OL" at minus over and "OL" at plus over
  - AD value over display "-OVF" at minus over and "OVF" at plus over
- Decimal point display Changeable to no display, 10<sup>1</sup>, 10<sup>2</sup>, 10<sup>3</sup> and 10<sup>4</sup>
- Unit display Changeable to g, kg, t, lb, N, kN or no sign.
- Condition display GROSS / NET, TARE, PRE.TARE, STABLE, HOLD, Z-ERR, RUN, CZ, F.FLOW/S1, M.FLOW/S2, D.FLOW/S3, OVER/S4, OK, UNDER, FULL, Z-BAND, FINISH, FLOW / DISCH., S-COMP / SEQ. / 4-COMP / MEAS. / OUT / MIX
- Set value display Final, Preliminary-1, Preliminary-2, Over, Under, Free fall
- Brand display Code No.: 00 to 99, Brand name: Up to 15 characters
- Display rate 4 times/s (Changeable to 20 times/s)
- Accumulation display Accumulation value : 0 to 9 999 999 999, Accumulation times : 0 to 999 999
- Graphic display Weighing condition is displayed by waveform.

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### 2-3 . Specifications for setting

- Setting method of operation      Setting by the operation in Analog resistive touch panel  
Also, setting can be made by the communication through RS-485 interface.
- Internal setting value
  - EEP ROM                              Calibration data, and the data that relates to calibration.
  - SRAM                                    Tare weight cancellation data, Zero tracking data, Zero set data, Preset tare data, Accumulation value / Accumulation times data, Recipe set data, Recipe setting data, 4 steps comparator setting data,
  - \* Data for code, mixing and 4-steps comparator can memorize to internal flash ROM.
- Backup time                              Approx. 10 years in 25      (Use of lithium battery)

### 2-4 . External control function

Pin configuration of external control I/O connector

A1	Input-1	B1	Output-1
A2	Input-2	B2	Output-2
A3	Input-3	B3	Output-3
A4	Input-4	B4	Output-4
A5	Input-5	B5	Output-5
A6	Input-6	B6	Output-6
A7	Input-7	B7	Output-1
A8	Input-8	B8	Output-8
A9	Input-9	B9	Output-9
A10	Input-10	B10	Output-10
A11	Input-11	B11	Output-11
A12	COM.1	B12	COM.2

\* Applicable connector: FCN-361J024-AU (by Fujitsu) or N361J024AU (by OTAX) and cover: FCN-360C024-B (by Fujitsu) or N360C024B (by OTAX)

- Input signal of external control 11 points  
11 functions in the following can be arbitrarily selected.  
OFF, Gross / Net, Zero, Zero clear, Tare, Tare clear, Batch start, Recipe start, Discharge start, Mixing start, Manual free fall compensation, Accumulation command, Temporary stop, Restart, Clear the accumulation data of reading out, Clear the accumulation data of all brand code, Clear the accumulation data of reading out recipe, Clear the Accumulation data of all RECIPE code, Clear the last multiplication, Finish the weighing data compulsorily, Finish the recipe compulsorily, Finish the discharge compulsorily, reset the error, printing command,  
\*Above is pulse input, and it is effective once at the pulse width of 50 ms or more.

Changeover the flow and discharge, Code No.1, Code No.2, Code No.4, Code No.8, Code No.10, Code No.20, Code No.40, Code No.80, SAFETY CHECK input No.1, SAFETY CHECK input No.2, SAFETY CHECK input No.3, SAFETY CHECK input No.4, SAFETY CHECK input No.5, SAFETY CHECK input No.6, SAFETY CHECK input No.7, SAFETY CHECK input No.8, Manual full flow, Manual medium flow, Manual dribble flow, Manual discharge, Hold, IN. FOR SIMILAR OUT.

\* Above is level input, and it is effective during the input of shortening for 50 ms or more.

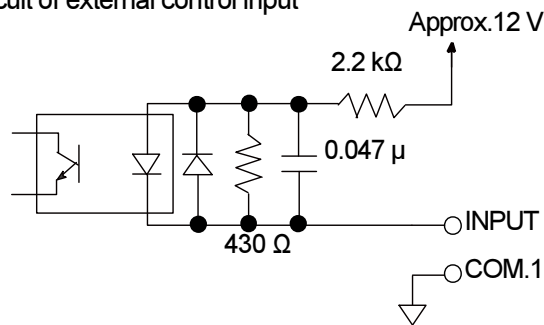
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- Equivalent circuit of external control input



- \* An internal circuit is insulated by photo-coupler.
- \* COM.1 and COM.2 are insulated.
- \* Standard serial interface and common are connected internally.

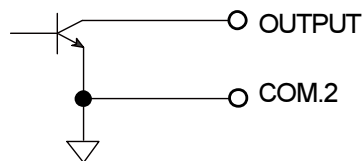
- External control output signal 11 points

11 functions in the following can be arbitrarily selected.

OFF, Stable, Zero band, Full, Full flow, Medium flow, Dribble flow, Over, OK, Under, Mixture, Discharge (between the discharge gate), Finish weighing, Finish flow, Finish mixture, Nozzle descent, During weighing, Measuring sequence error, Abnormal weight, Error, During canceling the tare weight, Center zero, Display of gross, Display of net, During the hold, Hopper-1, Hopper-2, Hopper-3, Hopper-4, Hopper-5, Hopper-6, Hopper-7, Hopper-8, Hopper-9, Hopper-10, Hopper-11, Hopper-12, Hopper-13, Hopper-14, Hopper-15, Hopper-16, Hopper-17, Hopper-18, Hopper-19, Hopper-20,

Full flow to hopper-1, Medium flow to hopper-1, Dribble flow to hopper-1,  
 Full flow to hopper-2, Medium flow to hopper-2, Dribble flow to hopper-2,  
 Full flow to hopper-3, Medium flow to hopper-3, Dribble flow to hopper-3,  
 Full flow to hopper-4, Medium flow to hopper-4, Dribble flow to hopper-4,  
 Full flow to hopper-5, Medium flow to hopper-5, Dribble flow to hopper-5,  
 Full flow to hopper-6, Medium flow to hopper-6, Dribble flow to hopper-6,  
 Full flow to hopper-7, Medium flow to hopper-7, Dribble flow to hopper-7,  
 Full flow to hopper-8, Medium flow to hopper-8, Dribble flow to hopper-8,  
 Full flow to hopper-9, Medium flow to hopper-9, Dribble flow to hopper-9,  
 Full flow to hopper-10, Medium flow to hopper-10, Dribble flow to hopper-10,  
 IN. SIMILARTY OUT.

- Equivalent circuit of external control output



Rated open collector  $V_{CE} = DC35 V_{max}$ ,  $I_C = DC40 mA_{max}$

- \* An internal circuit is insulated by photo-coupler.
- \* COM.1 and COM.2 are insulated.

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### 2-5 . Serial interface

2-wires method serial interface

- Specifications

- Baud rate : 600 bps
- Data bit length : 8 bit
- Parity bit : Odd
- Stop bit : 1 bit
- Start bit : 1 bit
- Sending data : Binary code, BCD
- \* An internal circuit is insulated by photo-coupler.
- \* External control input and common are connected internally
- \* Applicable plug of attached connector : XW4B-06B1-H1 (made by Omron)  
(Common with RS-485 equipped as a standard.)

### 2-6 . RS-485 interface

- Specifications

- Baud rate : Selectable from 1 200, 2 400, 4 800, 9 600, 19 200 or 38 400 bps
- Data bit length : Selectable from 7 bit or 8 bit
- Parity bit : Selectable from none, even or odd
- Stop bit : Selectable from 1 bit or 2 bit
- Terminator : Selectable from CR+LF or CR
- Communication method : Half duplex
- Synchronous method : Start stop synchronous method
- Address : Select one from 0 to 31
- Communication data : ASCII code
- Cable length : Approx. 1 km
- Connectable unit : 32 units at maximum
- \* When the Stream mode is selected in the Data transmission mode, the number that can be connected with CSD-912B-EX becomes only one unit.
- Terminating resistance : Externally
- Data transmission mode : Selectable from command , modbus , stream , Synchronizing with print , Synchronizing with accumulation or Synchronizing with finish ,

- RS-485 terminal configuration

A	Send / Receive A
B	Send / Receive B
S.G.	Signal ground

- \* Common with internal circuit.
- \* Applicable plug : XW4B-06B-H1 (by OMRON)  
(Common with serial interface equipped as a standard.)

- Function

- (1) Reading out the load.
- (2) Reading out the accumulated total value
- (3) Reading out the accumulated frequency value
- (4) Reading out the condition
- (5) Changing the condition
- (6) Reading out the set value of code, mixture and 4-steps comparator
- (7) Changing the set value of code, mixture and 4-steps comparator
- (8) Changing the load calibration
- (9) Reading out the setting of basic function, mixture, 4-step comparator and sequence control
- (10) Changing the setting of basic function, mixture, 4-step comparator and sequence control
- (11) Communication error code (error code as to the communication)

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### 2-7 . Various function

- Zero tracking Stabilize the zero shift in a constant condition
- Digital filter Stabilize the data by operating process in CPU
- Stabilization filter Stabilize by strengthened the digital filter only when the change width of the load is constant.
- Calibration LOCK switch Lock the calibration function by this switch.
- Digital linearize Compensate the non-linearity by 3 points at the maximum.
- Accumulating function Accumulate the loading data, and memorize the times and total value.
- Preset tare Execute the tare weight cancellation by the setting value input in digital
- Net amount offset operation The net amount offset is not cleared when zero sets are executed with gross displayed when the operation of preset tare weight cancellation is set to the amount offset
- Reversal of net amount sign The reversal function of net amount sign is used to reverse the sign of net amount display and net amount data output outside in the simple comparison discharge mode

### 3 . General specifications

- Operating temperature / humidity range
  - Temperature 0 to 40
  - Humidity 85 %RH or less (Non condensing)
- Used elevation Under 2 000 m
- Pollution degree Under 2
- Overvoltage category Category
- Stored temperature range -20 to 60
- Power supply
  - Power supply voltage AC100 V to AC240 V (Permitted variable range AC85 V to AC264 V)
  - Power supply frequency 50/60 Hz
  - Power consumption Approx. 20 VA (Without any option, at AC100 V)  
Approx. 25 VA at maximum (with options, at AC100 V)  
Approx. 30 VA at maximum (with options, at AC230 V)
- Outline dimensions(W x H x D) 192 mm x 96 mm x 132 mm (Excluding protrusion)
- Dustproof waterproof specification During the panel mount is installed, the front panel section becomes IP 65 or equivalent. (When the attached panel mount gasket is installed.)
- Weight Approx. 1.6 kg (without any options)

### 4 . Standard specification at the shipment

- Bridge power supply DC12 V
- Span adjustment 10 000 display at the input of 0.3 mV/V
- Minimum scale 1

### 5 . Accessories

- Instruction manual 1 pad
- Time lag fuse 1 piece (2.5 A)
- I/O connector for external control 1 piece (Connector : FCN-361J024-AU or N361J024AU,  
Connector cover : FCN-360C024-B or N360C024B)
- Connector for standard communication 1 piece (Plug : XW4B-06B1-H1)
- Shortening bar between A-F and C-G 2 pieces
- Panel mount gasket 1 piece
- Connector for BCD output 1 piece (Attached when the optional BCD output is applied.)
- Instruction manual for optional CC-Link 1 pad (Attached when the optional CC-Link interface is applied.)
- Connector for CC-Link 1 piece (Attached when the optional CC-Link interface is applied.)
- Instruction manual for optional PROFIBUS 1 pad (Attached when the optional PROFIBUS interface is applied.)

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### 6 . Options

#### 6-1 . Current output

- P/No. CSD912B-P07
- Specifications
  - Output DC4 mA to 20 mA
  - Load resistance 510 Ω or less
  - Resolution 1/12000 or more
  - Non-linearity Within 0.02 %F.S.
  - Over range [-OL] display at approx. DC2.4 mA, [OL] display at approx. DC21.6 mA
  - Output rate Synchronous with A/D sampling  
\* insulated from internal circuits using a photocoupler.
  - Temperature coefficient
    - Zero point ±0.005 %F.S./
    - Sensitivity ±0.005 %F.S./

#### 6-2 . Voltage output

- P/No. CSD912B-P25
- Specifications
  - Output DC0 V to 10 V
  - Load resistance 5 kΩ or more
  - Resolution 1/12 000 or more
  - Non-linearity Within 0.02 %F.S.
  - Over range [-OL] display at approx.-1 V, [OL] display at approx.11 V
  - Output times Synchronous with A/D sampling  
\* Insulated from internal circuit using a photocoupler.
  - Temperature coefficient
    - Zero point ±0.015 %F.S./
    - Sensitivity ±0.015 %F.S./

#### 6-3 . BCD output

- P/No. CSD912B-P15
- Specifications
  - Output BCD 8 digits Parallel output  
With polarity (POL.) (output ON at minus, output OFF at plus)  
P.C.(Print command)  
Turning on after conversion of BCD output is completed during fixed time  
Decimal point  
ERROR ON when the various error is occurred  
OVER  
STABLE  
Gross weight - ON when BCD output is full.  
\* Above is open collector output  $V_{CE} = DC30 V$ ,  $I_C = DC20 mA MAX$   
\* Output is OFF except in the measurement mode.
  - Input HOLD Hold of BCD output.  
BCD-ENABLE  
Compulsory OFF of the output related to BCD (High impedance)  
\* Above is level input, and effective during input of shortening more than 100 ms.

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• Pin configuration of BCD output connector

In the normal mode			
A1	1×10 <sup>0</sup>	B1	2×10 <sup>0</sup>
A2	4×10 <sup>0</sup>	B2	8×10 <sup>0</sup>
A3	1×10 <sup>1</sup>	B3	2×10 <sup>1</sup>
A4	4×10 <sup>1</sup>	B4	8×10 <sup>1</sup>
A5	1×10 <sup>2</sup>	B5	2×10 <sup>2</sup>
A6	4×10 <sup>2</sup>	B6	8×10 <sup>2</sup>
A7	1×10 <sup>3</sup>	B7	2×10 <sup>3</sup>
A8	4×10 <sup>3</sup>	B8	8×10 <sup>3</sup>
A9	1×10 <sup>4</sup>	B9	2×10 <sup>4</sup>
A10	4×10 <sup>4</sup>	B10	8×10 <sup>4</sup>
A11	1×10 <sup>5</sup>	B11	2×10 <sup>5</sup>
A12	4×10 <sup>5</sup>	B12	8×10 <sup>5</sup>
A13	ERROR	B13	N.C.
A14	Stable	B14	GROSS
A15	Decimal point 10 <sup>1</sup>	B15	Decimal point 10 <sup>2</sup>
A16	Decimal point 10 <sup>3</sup>	B16	Decimal point 10 <sup>4</sup>
A17	OVER	B17	POL.
A18	P.C.	B18	HOLD
A19	COM.3	B19	COM.3
A20	BCD-ENABLE	B20	F.G.

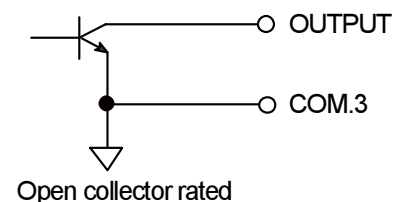
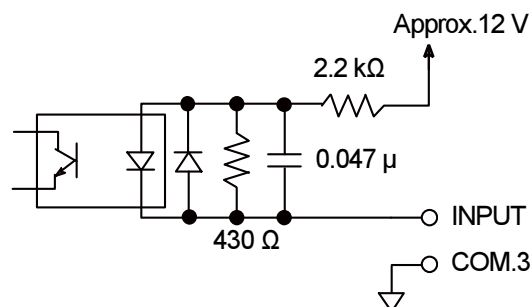
In the accumulation mode			
A1	1×10 <sup>0</sup>	B1	2×10 <sup>0</sup>
A2	4×10 <sup>0</sup>	B2	8×10 <sup>0</sup>
A3	1×10 <sup>1</sup>	B3	2×10 <sup>1</sup>
A4	4×10 <sup>1</sup>	B4	8×10 <sup>1</sup>
A5	1×10 <sup>2</sup>	B5	2×10 <sup>2</sup>
A6	4×10 <sup>2</sup>	B6	8×10 <sup>2</sup>
A7	1×10 <sup>3</sup>	B7	2×10 <sup>3</sup>
A8	4×10 <sup>3</sup>	B8	8×10 <sup>3</sup>
A9	1×10 <sup>4</sup>	B9	2×10 <sup>4</sup>
A10	4×10 <sup>4</sup>	B10	8×10 <sup>4</sup>
A11	1×10 <sup>5</sup>	B11	2×10 <sup>5</sup>
A12	4×10 <sup>5</sup>	B12	8×10 <sup>5</sup>
A13	1×10 <sup>6</sup>	B13	2×10 <sup>6</sup>
A14	4×10 <sup>6</sup>	B14	8×10 <sup>6</sup>
A15	1×10 <sup>7</sup>	B15	2×10 <sup>7</sup>
A16	4×10 <sup>7</sup>	B16	8×10 <sup>7</sup>
A17	OVER	B17	POL.
A18	P.C.	B18	HOLD
A19	COM.3	B19	COM.3
A20	BCD-ENABLE	B20	F.G.

\* Applicable plug: Main body FCN-361J040-AU (by Fujitsu) or N361040AU (by OTAX)  
and cover FCN-360C040-B (by Fujitsu) or N360C040B (by OTAX)

\* Don't connect to N.C. pin.

\* Internal circuit is insulated by photocoupler.

• I/O equivalent circuit



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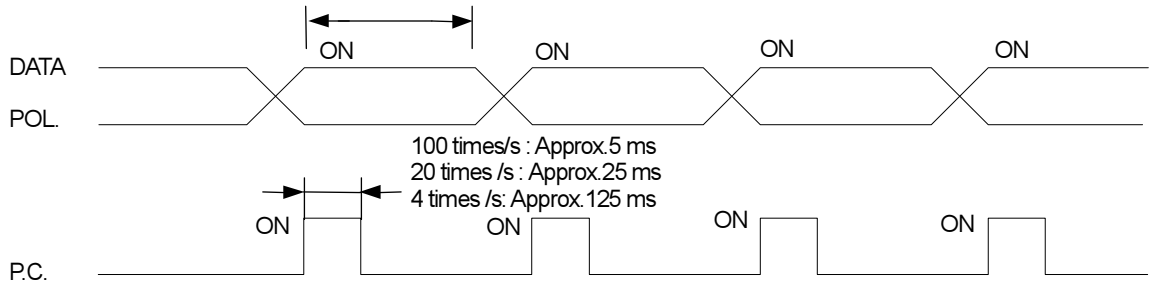
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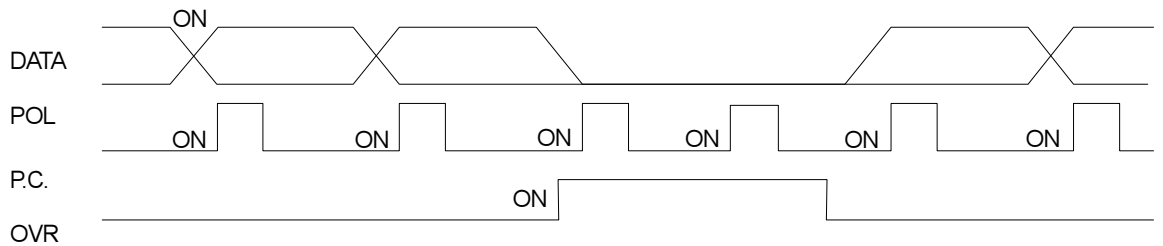
- Timing chart
- (1) Normal

100 times/s : Approx. 10 ms  
 20 times/s : Approx. 50 ms  
 4 times/s : Approx. 250 ms



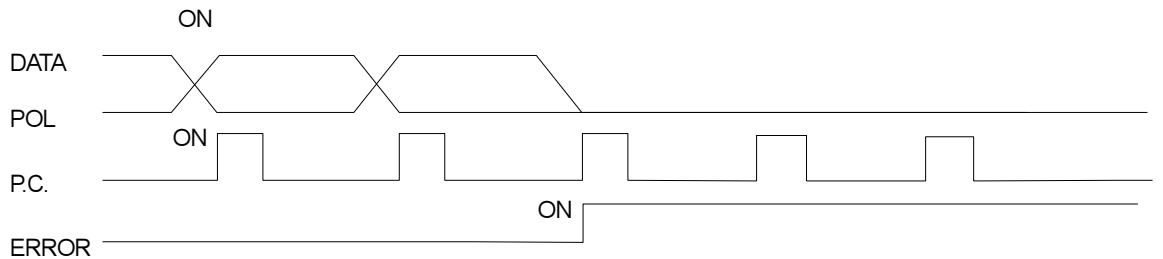
\* When both off P.C., DATA and POL output data, the output transistor turns on. (Negative logic in electric logic)

- (2) When data is over



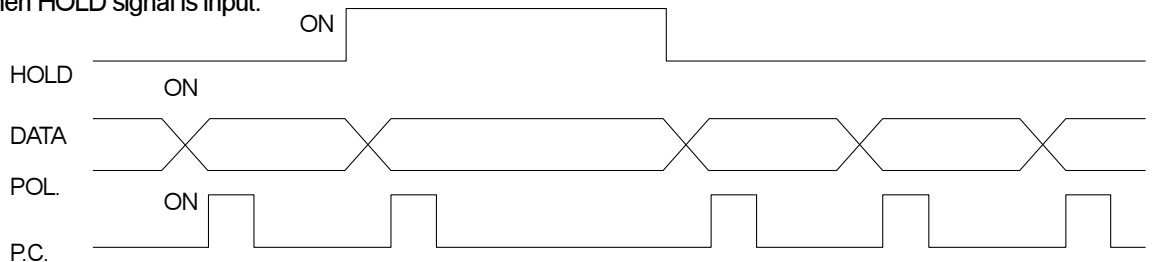
\* When OVER is output, the output transistor of the OVER signal will be ON (Negative logic in electric logic). Moreover, OVER output DATA is all output and transistor will be OFF (positive logic electrically). (However, POL will be OFF during plus over time and ON during minus over time.)

- (3) When error is occurred



\*\* When ERROR is output, the output transistor of ERROR signal turns on. (Negative logic electrically). Moreover, when ERROR is output, all the output transistor of DATA and POL turns off. (Positive logic in electrically).

- (4) When HOLD signal is input.



\* When HOLD signal is input, the output transistor of P.C. turns off. (Positive logic electrically)

\* However, as for P.C, HOLD signal turns off after one shot of operation.



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### 6-4 . RS-232C interface

- P/No. CSD912B-P74
- Specifications
  - Baud rate : Selectable from 1 200, 2 400, 4 800, 9 600, 19 200 or 38 400 bps
  - Data bit length : Selectable from 7 bit or 8 bit
  - Parity bit : Selectable from none, even or odd.
  - Stop bit : Selectable from 1 bit or 2 bit
  - Terminator : Selectable from CR+LF or CR.
  - Communication method : Half duplex
  - Synchronization method : Start stop synchronous method
  - Communication data : ASCII code
  - Data transmission mode : Selectable from command or stream
- Pin configuration of RS-232C connector

Pin No.	Signal name
1	CD
2	TXD
3	RXD
4	N.C.
5	S.G.
6	N.C.
7	RTS
8	CTS
9	N.C.

- \* Applicable plug: DE-9S-NR by JAE or equivalent.
- \* Connector plug is not attached
- \* The screws for the fixing base of plug at the connector is inch type screw.
- \* Do not connect with N.C. pin.
- \* An internal circuit is insulated by photo-coupler

- Function
  - (1) Reading out the load.
  - (2) Reading out the accumulated total value
  - (3) Reading out the accumulated frequency value
  - (4) Reading out the condition
  - (5) Changing the condition
  - (6) Reading out the setting value of code, mixture and 4-steps comparator
  - (7) Changing the setting value of code, mixture and 4-steps comparator
  - (8) Changing the load calibration
  - (9) Reading out the setting of basic function, I/O, measuring operation, sequence control
  - (10) Changing the basic function, I/O, measuring operation, sequence control.
  - (11) Communication error code ( Error code related to the communication)

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### 6-5 . RS-422/485 interface

- Parts No. : CSD912B-P76
- Specifications
  - Baud rate : Selectable from 1 200, 2 400, 4 800, 9 600, 19 200 or 38 400 bps
  - Data bit length : Selectable from 7 bit or 8 bit
  - Parity bit : Selectable from none, even or odd.
  - Stop bit : Selectable from 1 bit or 2 bit
  - Terminator : Selectable from CR+LF or CR.
  - Communication method : Half-duplex
  - Synchronous method : Start stop synchronous method
  - Address : Select one from 0 to 31
  - Transmission data : ASCII code
  - Cable length : Approx. 1 km
  - Number of connections : Up to 32 sets (10 sets with the RS-422.)  
\* Only one unit in the stream mode.
  - Terminator : Build-in type.  
(Selectable from [Yes] or [None] with the terminal board connection.)
  - Data transmission mode : Selectable from command or stream
  - I/O monitor : with LED
  - RS-422/485 changeover : RS-422/485 is selectable by switch setting.

- Terminal configuration of RS422/485

SDA	Differential output(+)
SDB	Differential output(-)
RDA	Differential input(+)
RDB	Differential input(-)
TRM.	Terminal resistance
S.G.	Signal Ground

\* Applicable plug: XW4B-06C1-H1 (by OMRON)

\* The internal circuit is insulated with photocoupler.

- Function

- (1) Reading out the load.
- (2) Reading out the accumulated total value
- (3) Reading out the accumulated frequency value
- (4) Reading out the condition
- (5) Changing the condition
- (6) Reading out the setting value of code, mixture and 4-steps comparator
- (7) Changing the setting of code , mixture and 4-steps comparator.
- (8) Changing the load calibration
- (9) Reading out the setting of basic function, I/O, measurement operation and sequence control.
- (10) Changing the setting of basic function, I/O, measurement operation and sequence control.
- (11) Communication error code(error code related to the communication)

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### 6-6 . CC-Link interface

- Parts No. : CSD912B-P73
- Version of CC-Link : Ver.1.10  
 Numbers of occupied stations : Selectable from 1 station, 2 stations or 4 stations.
- Specifications
  - Baud rate : Selectable from 156 kbps, 625 kbps, 2.5 Mbps, 5 Mbps or 10 Mbps.
  - Communication method : Poling method
  - Synchronous method : Bit synchronous method
  - Transmission route : RS-485 bus
  - Transmission format : HDLC comforming
  - Remote station : In the case of 1 station occupied, No's.01 to 64 can be selectable  
 In the case of 2 stations occupied, No's.01 to 63 can be selectable  
 In the case of 4 stations occupied, No's.01 to 61 can be selectable
  - Connectable unit : In the case of 1 station occupied, 64 units at maximum  
 In the case of 2 stations occupied, 32 units at maximum  
 In the case of 4 stations occupied, 16 units at maximum
  - Connectable cable : Shielded twist pair special cable for "CC-Link"
  - Termination : Resistance externally attached.
  - Status LED : RUN and ERR.

#### • Connector configuration of CC-Link

Pin No.	Signal name	
1	DA	Signal line DA side
2	DB	Signal line DB side
3	DG	Signal ground
4	SLD	Shield
5	FG	Frame ground

\* Applicable plug for CC-Link connector plug : MSTB 2, 5-ST-5, 08 ABGY AU (made by Phoenix Contact.)

\* [SLD] and [FG] are connected inside.

\* An internal circuit is insulated by photo-coupler.

#### • Function

- (1) Reading out the load
- (2) Reading out the accumulated total value
- (3) Reading out the accumulated frequency value
- (4) Reading out the condition
- (5) Changing the condition
- (6) Reading out the set value of code, mixture and 4-steps comparator.
- (7) Changing the set value of code, mixture and 4 steps comparator.
- (8) Changing the setting of basic function, I/O, measurement operation and sequence control.
- (9) Reading out the setting of basic function, I/O, measurement operation and sequence control.
- (10) Actual load calibration

\* CC-Link is abbreviation of Control & Communication Link.

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### 6-7 . PROFIBUS interface

- P/No. CSD912B-P70
- Version PROFIBUS DP
- Specifications
  - Baud rate : Automatically set from 9.6 kbps, 19.2 kbps, 93.75 kbps, 187.5 kbps, 0.5 Mbps, 1.5 Mbps, 3 Mbps, 6 Mbps or 12 Mbps.
  - Communication type RS-485 bus
  - Station address Select one from 0 to 125
  - Cable length
 

Baud rate	Total extension length (m)
9.6 K	1 200 or less
19.2 K	1 200 or less
93.75 K	1 000 or less
187.5 K	1 000 or less
0.5 M	400 or less
1.5 M	200 or less
3 M	100 or less
6 M	100 or less
12 M	100 or less
  - Connectable cable Use the special cable for PROFIBUS
  - Connectable connector Use the special cable for PROFIBUS
  - Termination Use a connector with built-in terminator.
  - Status LED OP and ST.

- PROFIBUS Connector pin configuration

Pin No.	Signal name
1	SHIELD
2	N.C.
3	RXD/TXD-P
4	CNTR-P
5	DGND
6	VP
7	N.C.
8	RXD/TXD-N
9	N.C.

\* Connector plug is not attached.

\* The connector and the cable, etc. must use authorized goods designed for PROFIBUS.

\* Don't connect to N.C. pin.

\* An internal circuit is insulated by photo-coupler.

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### 6-8 . Combination of the options

	P07	P25	P15	P70	P73	P74	P76
P07	-	○	○	○	○	○	○
P25	○	-	○	○	○	○	○
P15	○	○	○	○	○	○	○
P70	○	○	○	-	×	×	×
P73	○	○	○	×	-	×	×
P74	○	○	○	×	×	-	×
P76	○	○	○	×	×	×	-

○ : Possible, × : Impossible

P07 : Current output (DC4 mA to 20 mA)

P25 : Voltage output (DC0 V to DC10 V)

P15 : BCD output

P70 : PROFIBUS interface (Serial communication)

P73 : CC-Link interface (Serial communication)

P74 : RS-232C interface (Serial communication)

P76 : RS-422/485 interface (Serial communication)

\* Up to 3 pieces of optional PC board can be installed.

However, the serial communication interface of PROFIBUS, CC-Link, RS-232C and RS-422/485 is up to one piece.

Two BCD can be mounted. When two BCD is mounted, the second output is the same to the first output. The same plural optional board except BCD cannot mount into the one indicator.

### 6-9 . Optional cable

- CAC-604-1M      BCD output cable
- CAC-604-2M      One side of FCN connector 40P plug, cut off the tip of cable
- CAC-604-5M
- CAC-604-10M
  
- CAC-605-1M      CONTROL I/O cable
- CAC-605-2M      One side of FCN connector 24P plug, cut off the tip of cable
- CAC-605-5M
- CAC-605-10M
  
- CAC-606-0.5M    CSD-912B-EX to CSD-902 BCD output relay cable
- CAC-606-1M      One side of FCN connector 40P plug to one side of 57 series 50P connector
- CAC-606-2M
- CAC-606-5M
  
- CAC-607-0.5M    CSD-912B-EX to CSD-902 CONTROL I/O relay cable
- CAC-606-1M      One side of FCN connector 24P plug to one side of FCN connector 36P plug
- CAC-606-2M
- CAC-606-5M

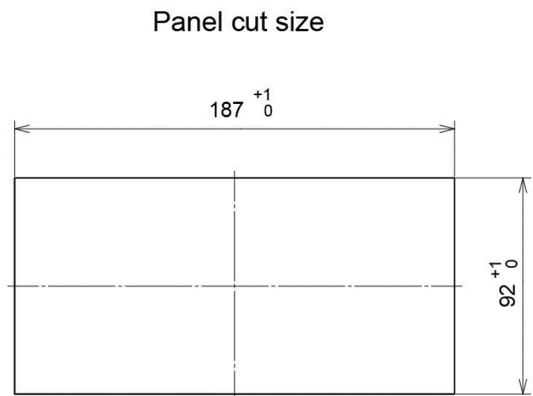
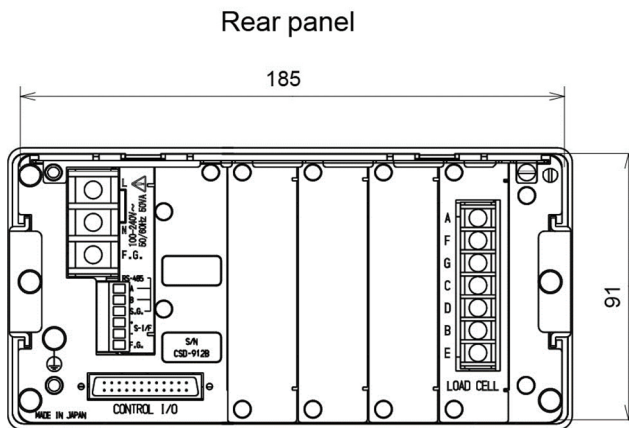
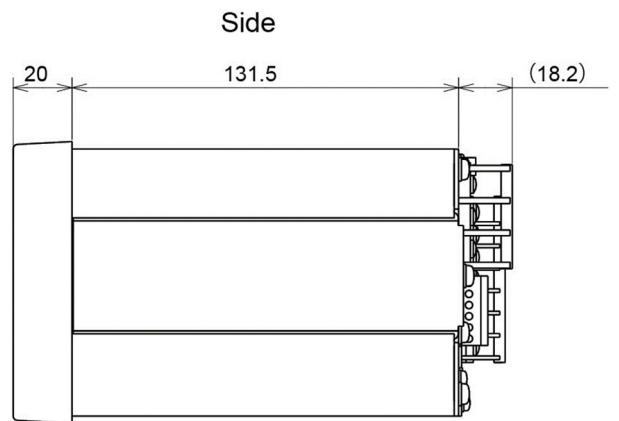
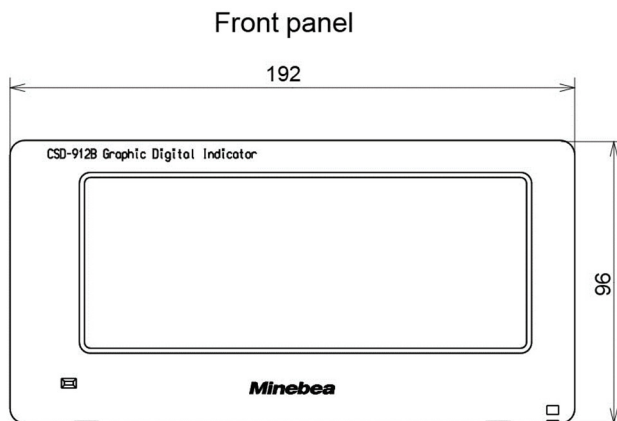
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### 7. Outlines



Unit: mm

### Display sample



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### 8 . Conformed standard

- This instrument has conformed to the following standard.  
EN61326-1 : 2013  
“Electrical equipment for measurement, control, and laboratory - EMC requirement matter”  
EN61010-1 : 2010+A1 : 2019  
“Safety requirement matter of the electrical equipment for measurement, control and laboratory”  
Annex C (Performance level H) of JIS B 7611-2 : 2015  
“Non-automatic weighing instruments - Metrological and technical requirements and tests  
- Part 2: Measuring instruments used in transaction or certification”  
RoHS compliant

The using condition to suit this standard is as follows.

### 8-1 . Wiring

About cable

- Use the shield cables other than the power cable.

#### ②Shield processing

- Connect the cable of load cell with the E terminal on the terminal board of load cell.
- Connect the analog voltage output and the analog current output with the F.G. terminal on the analog output terminal board.
- Connect the shield of BCD output with the F.G. terminal on the BCD output terminal board.
- For the RS-232C interface, contact the shield with the metal shell section of connector directly by using the connector with the metal shell attached.
- Connect the RS-422/485 interface with the F.G. terminal (Power supply terminal board) of the instrument.
- Connect the shield with the F.G. terminal in the terminal board of RS-485 interface and 2 wires method serial interface terminal board.
- Connect the CC-Link interface with the F.G. terminal on the CC-Link interface terminal board.
- Connect the PROFIBUS interface with the PROFIBUS interface terminal board directly by using the special connector for PROFIBUS.

After executing all the items above, process the shield securely including with the installation box by grounded the shield of cable at the side of the instrument and also at the side of resistor (grounded at both ends), or by using the conduit piping.

#### ③Grounding

- The ground of this instrument shall apply the individual ground by using the protective ground terminal.

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### 8-2 . Basic setting of function

Press [VALID] key of batch setting for conforming to JIS B 7611-2:2015 when CSD-912B-EX conforms to JIS B 7611-2:2015.

Set the setting value of basic setting of function below.

Functions	Set value	Remarks
AVD sampling rate	[200 times/s]	Hold the set value when the set value is 200 times/s or less.
Analog filter	[4 Hz]	Hold the set value when the set value is 4 Hz or less.
Digital filter	[16]	Hold the set value when the set value is 16 or more.
Stabilization filter	[40]	Hold the set value when the set value is 40 or more.
Time width of stabilization filter	[0.5]	Hold the set value when the set value is 0.5 or less.
Coefficient of data width for stabilization filter	[2.0]	Hold the set value when the set value is 2.0 or more.
Time to detect stability	[1.0]	Hold the set value when the set value is 1.0 or more.
Coefficient of width for detect stability	[2.0]	Hold the set value when the set value is 2.0 or less.
Effective range of zero set	[2 %]	-
Coefficient of width for zero tracking	[0.0]	-
Time of zero tracking	[0.0]	-
Operating condition of tare weight cancellation	[During stable]	-
Operating range of tare weight cancellation	[0 < Gross ≤ Weighing capacity.]	-
Print command	[During stable]	-
Detect stability of set mode	[Detect only in a weighing display]	-
Condition of OL display	[- 20D ~ 9D]	-

\*Specifications and Outline dimensions and so on which have printed may subject to change for the purpose of improvement without notice.