





Input circuit

Item	Specifications	
Model	ZW-7000□	
Input type *1	NPN	PNP
Input voltage	24 VDC±10% (21.6 to 26.4 V)	24 VDC±10% (21.6 to 26.4 V)
Input current	7 mA Typ. (24 VDC)	7 mA Typ. (24 VDC)
ON voltage/ON current *2	19 V min./3 mA min.	19 V min./3 mA min.
OFF voltage/OFF current *3	5 V max./1 mA max.	5 V max./1 mA max.
ON delay	0.1 ms max.	0.1 ms max.
OFF delay	0.1 ms max.	0.1 ms max.
I/O circuit diagrams *4		

- \*1 For both NPN/PNP. Wire the product properly according to the specifications of the external devices.
- \*2 ON voltage/ON current  
A voltage value or current value that turn the input from OFF to ON.  
An ON voltage value is a potential difference between COM\_IN1/2/3 and input terminals.
- \*3 OFF voltage/OFF current  
A voltage value or current value that turn the input from ON to OFF.  
An OFF voltage value is a potential difference between COM\_IN1/2/3 and input terminals.
- \*4 The table below shows the correspondence between COM\_IN (input common) and input signals.

Name	COM_IN1	COM_IN2	COM_IN3
Input signal name	TIMING	SYNC/TRIG	BANK_SEL1
	RESET		BANK_SEL2
	ZERO		BANK_SEL3
	LIGHT_OFF		LOGGING

Important

- Chattering measures
- The sensor is equipped with a chattering countermeasure function. However, if chattering of 100 μs or higher occurs, it is unable to prevent incorrect input due to chattering. (Variation of input signals less than 100 μs is ignored. Input signals are determined when the same level is kept for 100 μs or more.)
  - Be sure to use contactless input signals such as SSR or PLC transistor output. If contact signals (with relays) are used, TIMING input might occur again due to bounce of the contact while measurement is performed.

Output circuit

Item	Specifications	
Model	ZW-7000□	
Output type *1	NPN	PNP
Output voltage	21.6 to 30 VDC	21.6 to 30 VDC
Load current	50 mA max.	50 mA max.
ON residual voltage	2 V max.	2 V max.
ON leakage current	0.1 mA max.	0.1 mA max.
I/O circuit diagrams *2		

- \*2 For both NPN/PNP. Wire the product properly according to the specifications of external devices.
- \*1 The table below shows the correspondence between COM\_OUT (output common) and each output signal.

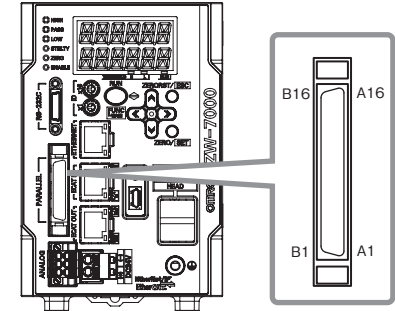
Terminal name	COM_OUT1	COM_OUT2	COM_OUT3
Output signal name	HIGH	BANK_OUT1	STABILITY
	PASS	BANK_OUT2	LOGERR
	LOW	BANK_OUT3	LOGSTAT
	ALARM		SYNCFLG/TRIGBUSY
	BUSY		TASKSTAT
	ENABLE		

Important

- Connect a load corresponding to the output specifications. Short-circuiting the terminals may damage the Sensor.
- Do not allow the load current to exceed the rated value. Exceeding the rated value many damage the output circuit.

32-pole expansion connector

Used for ajudgment output or control input.  
Applicable connector: FX2B series (HIROSE ELECTRIC Co., Ltd.)  
The parallel cable for 32-pole expansion connector (ZW-XCP2E) is bundled.



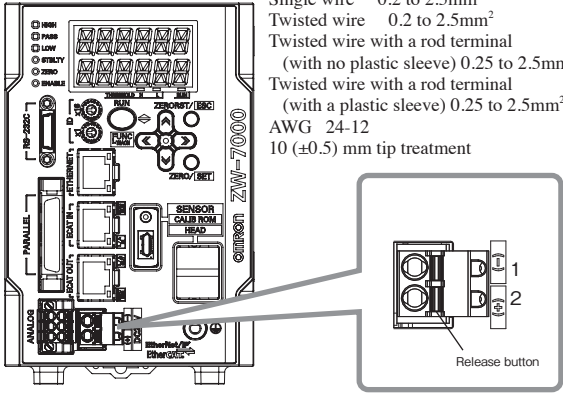
Terminal No.	Signal name	Description	Wire color of ZW-XCP2E
A1	LOGGING	LOGGING input	Brown
A2	BANK_SEL3	Bank selection input	Red
A3	BANK_SEL2		Orange
A4	BANK_SEL1		Yellow
A5	COM_IN3	COM3 for input	Green
A6	TASKSTAT	TASKSTAT output	Blue
A7	SYNCFLG/TRIGBUSY	SYNCFLG/TRIGBUSY input	Purple
A8	LOGSTAT	LOGSTAT output	Gray
A9	LOGERR	LOGERR output	White
A10	STABILITY	STABILITY output	Black
A11	COM_OUT3	COM3 for output	Brown
A12	NC	Not used.	Red
A13	NC		Orange
A14	NC		Yellow
A15	SYNC/TRIG	SYNC/TRIG output	Green
A16	COM_IN2	COM2 for input	Blue
B1	BANK_OUT3	Bank No. output	Brown
B2	BANK_OUT2		Red
B3	BANK_OUT1		Orange
B4	COM_OUT2	COM2 for output	Yellow
B5	ENABLE	ENABLE output	Green
B6	BUSY	BUSY output	Blue
B7	ALARM	ALARM output	Purple
B8	LOW	LOW judgment output	Gray
B9	PASS	PASS judgment output	White
B10	HIGH	HIGH judgment output	Black
B11	COM_OUT1	COM1 for output	Brown
B12	LIGHT_OFF	LIGHT OFF input of sensor head	Red
B13	ZERO	ZERO input of sensor head	Orange
B14	RESET	RESET input of sensor head	Yellow
B15	TIMING	TIMING input of sensor head	Green
B16	COM_IN1	COM1 for input	Blue

Important

- Cut off unnecessary signal cables so as not to contact some other signal cable.

24V input terminal block

Used for 24VDC power supply input.  
Applicable wire specifications:  
Single wire 0.2 to 2.5mm<sup>2</sup>  
Twisted wire 0.2 to 2.5mm<sup>2</sup>  
Twisted wire with a rod terminal (with no plastic sleeve) 0.25 to 2.5mm<sup>2</sup>  
Twisted wire with a rod terminal (with a plastic sleeve) 0.25 to 2.5mm<sup>2</sup>  
AWG 24-12  
10 (±0.5) mm tip treatment



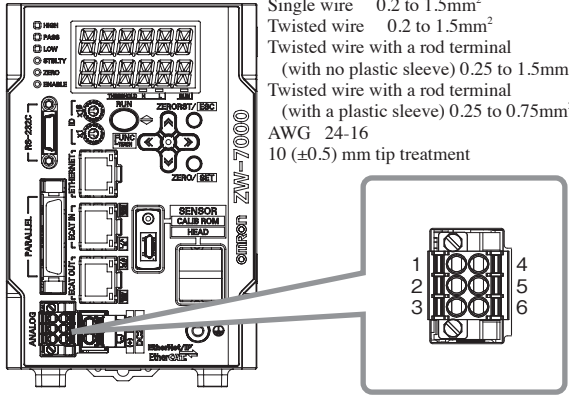
Terminal No.	Signal name	Description
1	24VDC(-)	Terminal for external power supply (0 V)
2	24VDC(+)	Terminal for external power supply (24 V)

Important

- Wiring with the power being supplied may cause short circuit and failure of the product. Wire the power supply without feeding power.
- Do not connect the product with the same power supply as applied to an apparatus which might cause noises. If wiring the product with the same line or duct of other equipment, electromagnetic induction might influence the product, causing malfunction or damage of the sensor.
- Do not turn off the power during the initial processing directly after turning on the power of the sensor controller because the Sensor Controller internal memory is being accessed.
- Hold the terminal block securely to prevent getting injured when pushing in the release button using a screwdriver.
- Keep the length of the wire as short as possible.

Analog output terminal block

Used for analog output.  
Applicable wire specifications:  
Single wire 0.2 to 1.5mm<sup>2</sup>  
Twisted wire 0.2 to 1.5mm<sup>2</sup>  
Twisted wire with a rod terminal (with no plastic sleeve) 0.25 to 1.5mm<sup>2</sup>  
Twisted wire with a rod terminal (with a plastic sleeve) 0.25 to 0.75mm<sup>2</sup>  
AWG 24-16  
10 (±0.5) mm tip treatment



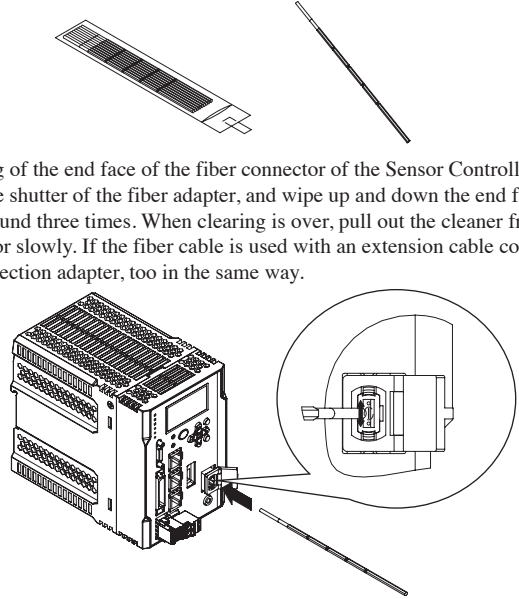
Terminal No.	Signal name	Description
1	OUT(V)	The measured value is outputted as a voltage value of -10 to +10 V. When measurement is impossible: Approx. +10.8 V (This is an initial value and selectable by the user.) When an alarm occurs: Approx. +10.8 V
2	OUT(A)	The measured value is outputted as a current value of 4 to 20 mA. When measurement is impossible: Approx. +20.8 mA (This is an initial value and selectable by the user.) When an alarm occurs: Approx. +20.8 mA
3	OUT 0V	This is the 0V terminal for analog output.
4	NC	Not used.
5	NC	Not used.
6	NC	Not used.

Important

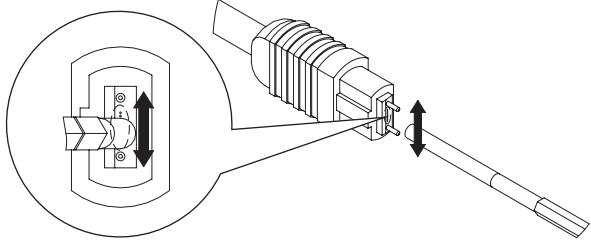
- Keep unnecessary signal cables not contacting with other signal cables. The length of the wire should be kept as short as possible. Do not use it with the length of 30 m or longer.
- Analog signals are not outputted if both the following conditions are satisfied.  
When the measurement period is 40μs or less:  
When the EtherCAT output is enabled:

The cleaning method by using ZW-XCL

- (1) Pulling out the cleaner  
Pull out a cleaner from the bag so as not to make the tip portion of the cleaner dirty.
- (2) Cleaning of the end face of the fiber connector of the Sensor Controller side  
Open the shutter of the fiber adapter, and wipe up and down the end face of the fiber around three times. When clearing is over, pull out the cleaner from the fiber connector slowly. If the fiber cable is used with an extension cable connected, clean the connection adapter, too in the same way.



- (3) Cleaning of the end face of the fiber connector of the sensor head side  
Remove the cap of the fiber connector, and wipe up and down the end face of the fiber connector around three times. Clean around the two guide pins as well.



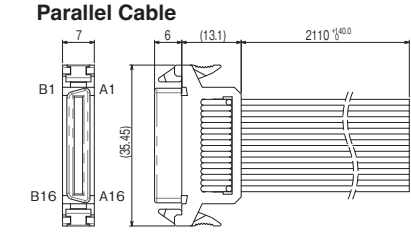
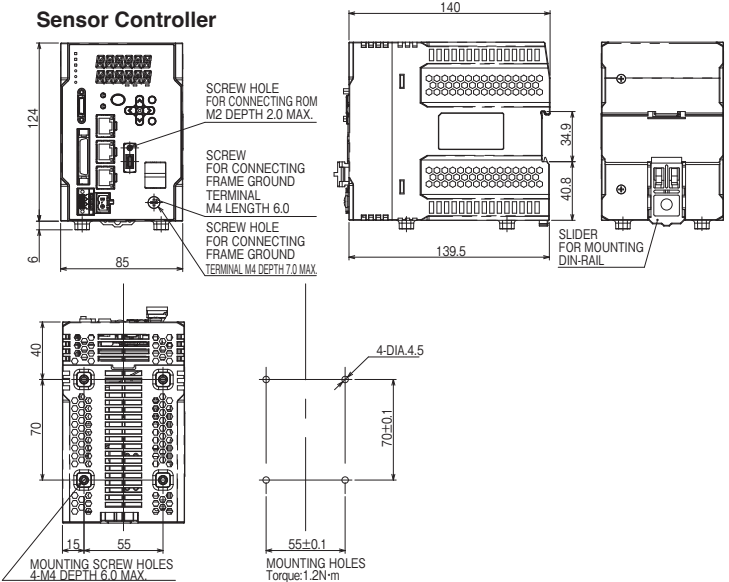
Important

- The cleaner can only be used one time. Reusing the cleaner may result in dirt or scratches on the end surface, causing malfunctions or measurement errors. Discard after use.
- Be sure to clean the fiber cleaner with the cloth for the cleaning part (white end face).

Notice for Korea Radio Law

Please see the following URL for Korean KC mark compliance information.  
<http://www.rra.go.kr/selform/OMR-ZW-7000>

Dimensions



Relevant Manuals

Man. No.	Model	Manual name
Z362	ZW-8000□/7000□/5000□	Confocal Fiber Displacement Sensor ZW-8000/7000/5000 Series User's Manual
Z363	ZW-8000□/7000□/5000□	Confocal Fiber Displacement Sensor ZW-8000/7000/5000 Series User's Manual: Communication Settings
W504	SYSMAC-SE2□□□	Sysmac Studio Version 1 Operation Manual

Suitability for Use

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NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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