

# OPTICAL-PNEUMATIC CONVERTER

The optical-pneumatic converter is used to convert optical signal from master station, etc. to pneumatic signal (0.2 to 1.0kg/cm<sup>2</sup> etc.). It is installed in site when operating pneumatic final control element such as pneumatic positioner or diaphragm valve.

Signals are processed in digital mode with built-in micro-computer, providing high accuracy and intelligent performance, adoption of piezo-electric element (flapper) has realized low-power operation.

This instrument is  $\phi 6$  mm optical fiber cable connection type.



## SPECIFICATIONS

### Functional specifications

**Input signal:** FFI system optical digital signal

**Output signal and air supply pressure:**

Output signal	Air supply pressure
19.6 to 98.1kPa {0.2 to 1.0kgf/cm <sup>2</sup> }	140kPa {1.43kgf/cm <sup>2</sup> }
39.2 to 196.1kPa {0.4 to 2.0kgf/cm <sup>2</sup> }	240kPa {2.45kgf/cm <sup>2</sup> }
3 to 15psi	20±1psi
3 to 27psi	32±1psi
6 to 30psi	35±1psi

**Power supply:** Built-in lithium battery (expected life; about 2 years/cell)

**Self-diagnosis:** Indication on display unit (option) and transmission to host master station

Item	HHC, MS (*1)	Indication
Battery voltage	○	
Converter temperature	○	
Abnormal output (*2)	○	○
Battery voltage drop	○	○

Notes: \*1) HHC: Hand-held communication

MS: Master station

\*2) Output overflow or large offset

**Emergency operation:**

In case of emergency (abnormal input), output operation can be select from remote setting unit (HHC, MS), as specified.

- Output; Less than -10%
- Output; more than +110%

**Explosion proofing:**

Intrinsically safety (JIS i3nG5, safety barriers not required)

**Ambient temperature:**

-20 to +60°C

**Storage temperature:**

-30 to +70°C

**Ambient humidity:**

0 to 95% RH

**Transmission:** Half-duplex bidirectional optical transmission with one-line optical fiber  
Transmission distance; 1.2 km max.  
(free from effect of noise and surge)

### Performance specifications

**Accuracy:** ±0.5% of full scale  
(output ripple; about ±0.1%)

**Response speed:** 1.5 to 2.5 sec (90% response time at load capacity 0.5 l )

**Input/output characteristic:**

Linear

**Standard air consumption:**

12N l /min.(at air supply pressure 140kPa {1.43kgf/cm<sup>2</sup>})

20N l /min.(at air supply pressure 240kPa {2.45kgf/cm<sup>2</sup>})

**Maximum air flow:**

60N l /min.(at air supply pressure 140kPa {1.43kgf/cm<sup>2</sup>})

80N l /min.(at air supply pressure 240kPa {2.45kgf/cm<sup>2</sup>})

**Structure and material**

- Enclosure:** JIS C0920, splash-proof type (equivalent to IEC IP54)
- Finish color:** Epoxy/polyurethane double coating, silver (Case cover ..... blue)
- External dimension (HxWxD):** 257 x 165 x 220 mm
- Mass (weight)** Approx. 5 kg
- Mounting method:** Mounted on 50A (2B) pipe with U-bolt
- Optical cable and connection:** Fuji's specified optical cable (supplied as separate item)  
Connection; Optical connector is used.
- Air piping connection:** Rc 1/4 (PT 1/4)  
1/4-18NPT as specified

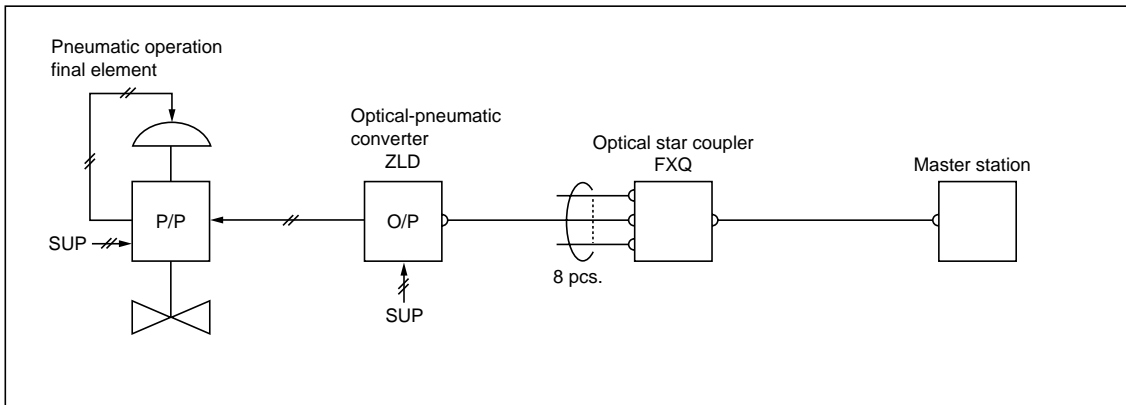
**Additional specifications**

- Display unit:** Indicator ....LCD, 4 digits (-10°C to +60°C)  
Setting unit .... Pushbutton switch (4 switches)
- Output pressure gauge:** JIS Class-3  
Scale; 0 to 2kgf/cm<sup>2</sup> or 0 to 3 kgf/cm<sup>2</sup> (depends on output range)
- Lithium battery (2 batteries, built-in):** Changed over by internal select switch. [Two batteries can be built into the housing (standard specification)]
- Acid/alkali-proofing:** Mounting U-bolts, nuts and washers; Stainless steel (304 stainless steel)

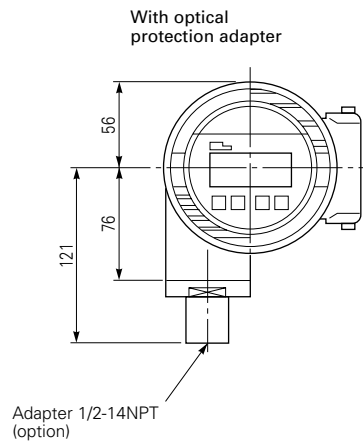
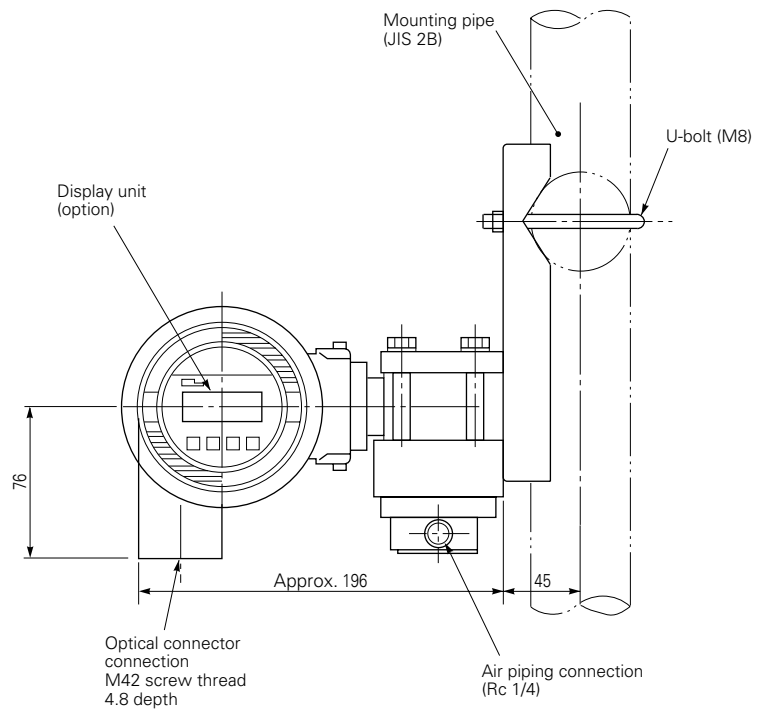
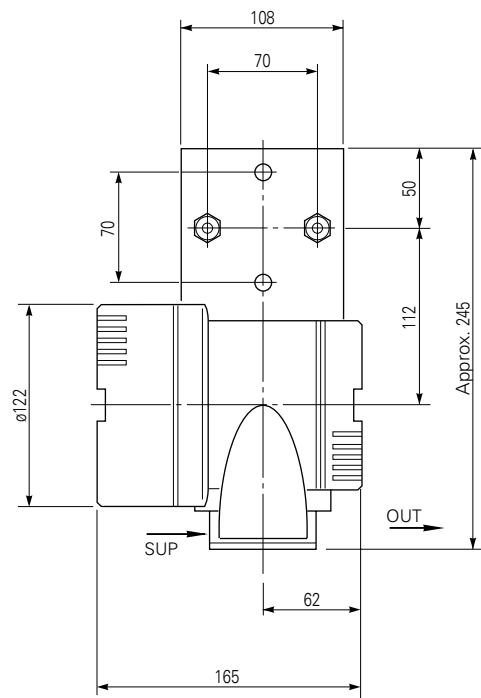
**CODE SYMBOLS**

1 2 3 4 5 6 7 8 9 11 12 13		Description																
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A				<b>Air piping connection</b> Rc 1/4 (PT 1/4) 1/4-18 NPT														
B																		
				<b>φ 6 optical cable protection adapter</b> With Without Notes: φ 9 mm optical cable connection type: manufacture non-standard														
B																		
C																		
				<b>Display unit and output pressure gauge</b> <table border="1"> <thead> <tr> <th>Display unit</th> <th>Output pressure gauge</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>-</td> </tr> <tr> <td>B</td> <td>○ (output % scale)</td> </tr> <tr> <td>C</td> <td>-</td> </tr> <tr> <td>D</td> <td>○ (output % scale)</td> </tr> <tr> <td>E</td> <td>○ (output % scale)</td> </tr> <tr> <td>F</td> <td>○ (output % scale)</td> </tr> </tbody> </table>	Display unit	Output pressure gauge	A	-	B	○ (output % scale)	C	-	D	○ (output % scale)	E	○ (output % scale)	F	○ (output % scale)
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				<b>Explosion-proof specification</b> Standard (non-explosion-proof) 1 Intrinsic safety explosion-proof (JIS i3nG5)														
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				<b>Emergency operation (at abnormal input)</b> B Scale out to less than -10% output C Scale out to more than 110% output														
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C																		
				<b>Treatment</b> Y Standard (non acid/alkali-proof) B Acid/alkali-proof treatment														
Y																		
B																		
				<b>Number of built-in lithium batteries</b> 1 One 2 Two														
1																		
2																		

**SYSTEM CONFIGURATION DIAGRAMS**



## OUTLINE DIAGRAM (Unit:mm)



## SCOPE OF DELIVERY

Converter (excluding the optical items), U-bolt.

## RELATED DEVICES

- Optical star couple (Data sheet No. EDS 8-48)
- HHC (Data sheet No. EDS 8-44)
- Master station (Data sheet No. EDS 11-86)
- Option connector, cable

## ORDERING INFORMATION

1. Product name
2. Code symbols
3. Other necessary items

⚠ Caution on Safety

\*Before using this product, be sure to read its instruction manual in advance.

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