FIBER SENSORS

Digital Pressure Sensor For Gas

特力材料886-3-5753170 胜特力电子(上海) 86-21-34970699 胜特力电子(深圳) 86-755-83298787 Http://www. 100y. com. tw

Related Information

General terms and conditions......F-3

■ Selection guide P.699~

■ Glossary of terms...... P.1563~

■ General precautions P.1566



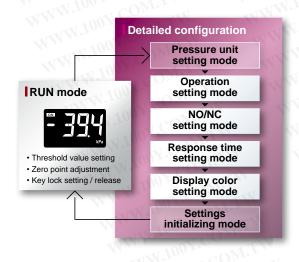


Simple and easy operation Redesigned for improvement of pressure sensor usability from ground up

Simple & easy operation

Two levels of configuration for easy operation of essential functions

The "RUN mode" is for setting the threshold value, the zero point adjustment and key lock/release setting, and the "detailed configuration" allows the basic settings of sensor operation. The two-level configuration enables an easy and immediate use of the product.



Main menu for detailed configuration Operation setting mode* NO/NC setting mode Select from EASY mode. Set the comparative output hysteresis mode or window operation to NO or NC. comparator mode. Display color setting mode Response time setting mode Select the response time from Select the comparative output ON/ 2.5 ms, 25 ms or 250 ms. OFF display color and the normal display color from red or white.

* Refer to p.705 for details of operation setting mode.

Functional design

Black body for enhanced visibility of LCD display

The unit body is completely black to make the LCD display easier to see.

Firm and crisp clicking feel

The buttons offer firm and crisp clicking feel for smooth and reliable setting operations.



LASER **SENSORS** PHOTOELECTRIC MICRO PHOTOELECTRIC SENSORS AREA SENSORS SAFETY LIGHT CURTAINS / SAFETY COMPONENTS INDUCTIVE PROXIMITY **SENSORS** PARTICULAR SENSOR OPTIONS SIMPLE WIRE-SAVING UNITS

STATIC CONTROL DEVICES

WIRE-SAVING SYSTEMS MEASUREMENT SENSORS

LASER MARKERS

PLC

HUMAN MACHINE INTERFACES

FNFRGY MANAGEMENT SOLUTIONS

FA COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

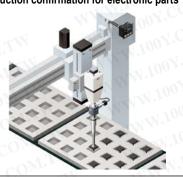
Pressure/

DP-100

DP-M

APPLICATIONS

Suction confirmation for electronic parts

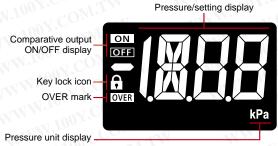




High-quality LCD display

Simple and highly visible display

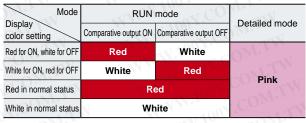
The LCD offers a wide viewing angle so the display is easy to see even from an oblique angle. The alphanumeric display (12-segment display), the key lock mark and the OVER mark are also clear and easy to see.



Low pressure type: kPa, kgf/cm2, bar, psi, mmHg High pressure type: MPa, kgf/cm2, bar, psi

Selection of display color from red or white

The display color can be selected from red or white in accordance with the output operation. Since the detailed setting mode display is pink (unchangeable), the pressure sensor status can be easily recognized by color.







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UV CURING SYSTEMS

Compact & light weight design

Extra-short depth and light weight

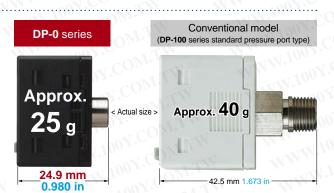
The unit body measures only 24.9 mm 0.980 in in depth to allow installation in a shallow space. The main unit weighs only about 25 g. The lightweight unit means minimal load when mounted on a moving part such as a robot arm.

Comparison with conventional model /DP-100 series standard

Depth

dimension : Approx. 41% shorter!

Main unit Approx. 38% lighter! weight



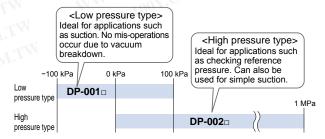
Selection Guide Pressure/ Head-separate Flow

DP-100

Low pressure type and high pressure type available

Two types to choose from depending on your application

The low pressure type can be used with positive or negative pressure, while the high pressure type is suitable for positive pressure of up to 1 MPa.



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Pressure/

DP-100

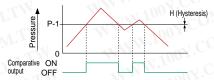
DP-M

Three output modes

Equipped with three output modes for use in a wide range of applications

(1) EASY mode

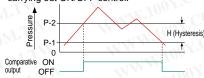
This mode is used for comparative output ON/ OFF control



*H: 4 digits (fixed) (10 digits or more when using psi unit)

(2) Hysteresis mode

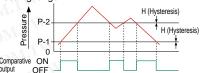
This mode is used for setting comparative output hysteresis to the desired level and for carrying out ON/OFF control.



*H: 2 digits or more (5 digits or more when using psi unit)

(3) Window comparator mode

This mode is used for setting comparative output ON and OFF at pressures within the setting range.

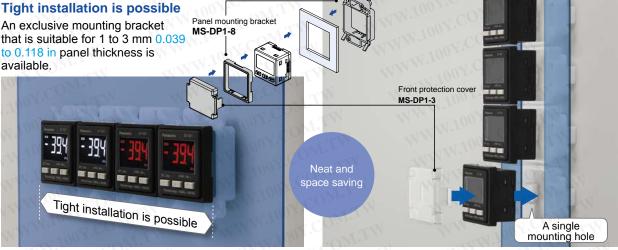


*H: 4 digits or more (10 digits or more when using psi unit)

Designed for easy installation

Panel mounting bracket

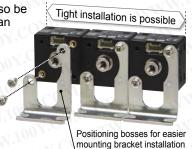
An exclusive mounting bracket that is suitable for 1 to 3 mm 0.039 to 0.118 in panel thickness is available.



Exclusive mounting bracket

Supports tight installation

Space savings can also be achieved even when an L-shaped mounting bracket is used.



Connection cable

Cable can be connected with one-touch

Connector attached cable (2 m 6.562 ft), as an accessory, can be connected easily with one-touch connection.



Options: 1 m 3.281 ft / 3 m 9.843 ft / 5 m 16.404 ft types are also available.



MS-DP1-5



Types without connector attached cable are also available DP-00□-J

Commercially-available connectors can be used for cable connections. Cables in required length can be used, so this contributes to reduction in waste of unwanted cables.



^{*} Refer to p.706 for recommended commercially-available connectors.

ORDER GUIDE

Model No.

DP-00 1 - P - J

Rated pressure range

1: -100.0 to +100.0 kPa (Low pressure type)

2: 0.000 to +1.000 MPa (High pressure type)

Cable

None: Connector attached cable 2 m 6.562 ft

J: Type without connector attached cable

Comparative output

		N.COM.TW	None:	NPN output type PNP output type	
Type	Appearance	Rated pressure range	Model No.	Pressure port	Comparative output
Low pressure		-100.0 to +100.0 kPa	DP-001	A'TON COM	NPN open-collector transistor
type	Y 79 - 394	-100.0 to +100.0 kPa	DP-001-P	M5 female thread	PNP open-collector transistor
High pressure	*CN-14A-C2	0.000 to +1.000 MPa	DP-002	- Mis lernale triread	NPN open-collector transistor
type	(Connector attached cable 2 m 6.562 ft) is attached.	0.000 to +1.000 MPa	DP-002-P	12N.100Y.	PNP open-collector transistor

Type without connector attached cable

Type without connector attached cable CN-14A-C2 is available. When ordering this type, suffix "-J" to the Model No.

(e.g.) Type without connector attached cable of DP-001-P is "DP-001-P-J"

Accessory

CN-14A-C2 (Connector attached cable 2 m 6.562 ft)



OPTIONS

Designation	Model No.	Description		Recomm
Mari	CN-14A-C1	Length: 1 m 3.281 ft	200124 (10011)	Contact:
Connector	CN-14A-C2 (Note)	Length: 2 m 6.562 ft	0.2 mm ² 4-core cabtyre cable with connector on one end	Housing: (Manufac
attached cable	CN-14A-C3	Length: 3 m 9.843 ft	Cable outer diameter: ø3.7 mm ø0.146 in	W
	CN-14A-C5	Length: 5 m 16.404 ft	Ø0.140 III	Recomm
0	CN-14A-R-C1	Length: 1 m 3.281 ft	0.2 mm ² 4-core bending-resistant	Model No
Connector attached cable	CN-14A-R-C2	Length: 2 m 6.562 ft	cabtyre cable with connector on	(Manufac
Bending-resistant cable	CN-14A-R-C3	Length: 3 m 9.843 ft	Cable outer diameter: ø3.7 mm	W.
loane /	CN-14A-R-C5	Length: 5 m 16.404 ft	ø0.146 in	Recomm
Connector	CN-14A	Set of 10 housings and 40 contacts		Applicabl (Manufac
Sensor mounting	MS-DP1-1	Allows sensors to be installed on the flooring or ceiling. Multiple sensors can also be mounted closely.		V.I.
oracket	MS-DP1-5	Allows sensors to be installed on the wall. Multiple sensors can also be mounted closely.		Note: Co
Panel mounting bracket	MS-DP1-8	Allows installation to pa to 0.118 in. Multiple ser		
Front protection cover	MS-DP1-3	Protects the adjustmen (Can be attached when		
Conversion	MS-DP1-7	Pressure port can be co		

Recommended connector

Contact: SPHD-001T-P0.5, Housing: PAP-04V-S

(Manufactured by J.S.T. Mfg. Co., Ltd.)

Recommended crimping tool

Model No.: YC-610R

(Manufactured by J.S.T. Mfg. Co., Ltd.)

Recommended connector (e-CON)

Applicable connector: 37104-3122-000 FL (Manufactured by 3M Japan Limited)

Note: Contact the manufacturer for details of the recommended products.

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MEASURE-MENT SENSORS

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FA COMPONENTS MACHINE

VISION SYSTEMS

Pressure/ Head-separa

DP-100

DP-M

Flow

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COMPONENTS

MACHINE VISION SYSTEMS

UV CURING SYSTEMS

Selection Guide Pressure/ Digital Display Pressure/ Head-separated

DP-0 DP-100 DP-M

SPECIFICATIONS

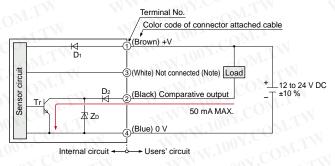
/	\	Type	Low pressure	High pressure		
	\ :	S NPN output	DP-001	DP-002		
ltem	10	NPN output PNP output	DP-001-P	DP-002-P		
CE m		irective compliance	EMC Directive, Ro	HS Directive		
Туре	of press	sure	Gauge pres	ssure		
Rated pressure range		ire range	−100.0 to +100.0 kPa	0.000 to +1.000 MPa		
Set pressure range		range	-101.0 to +101.0 kPa (-1.030 to +1.030 kgf/cm²) -1.010 to + 1.010 bar -14.65 to +14.65 psi -756 to +756 mmHg	-0.010 to +1.010 MPa (-0.1 to +10.30 kgf/cm² -0.1 to + 10.10 bar -0.1 to +146.5 psi		
Pressure withstandability		nstandability	500 kPa	1.5 MPa		
Appli	cable flu	ıid	Air, non-corro	sive gas		
Selec	ctable u	nit	Low pressure type: kPa, kgf/cm², bar, psi, mmHg	High pressure type: MPa, kgf/cm², bar, psi		
Supp	ly volta	ge	12 to 24 V DC ±10 % Ripp	ole P-P 10 % or less		
owe	er consu	mption	30 mA or	less		
Comparative output		output		PNP output type> NP open-collector transistor		
		Output operation	Selectable either NO or N	IC by key operation		
	MIN.	Hysteresis	Minimum 2 digits	(variable)		
		Repeatability	±0.2 % F.S. (within ±4 digits)	±0.4 % F.S. (within ±4 digits)		
		Response time	2.5 ms, 25 ms, 250 ms, selectable by key operation			
		Short-circuit protection	Incorporated			
Displa	ay	W.100Y.	3 + 1/2 digits, 3-color (white / red / pink) LCD display (Display update period: 250 ms)			
Displayable pressure range		pressure range	-101.0 to +101.0 kPa -1.030 to +1.030 kgf/cm² -1.010 to + 1.010 bar -14.65 to +14.65 psi -756 to +756 mmHg	-0.010 to +1.010 MPa (-0.1 to +10.30 kgf/cm²) {-0.1 to +10.10 bar -0.1 to +146.5 psi		
JCe	Prote	- 10 V	IP40 (IEC)			
ental resistance		ent temperature	0 to +50 °C +32 to +122 °F (No dew condensation allowed), Storage: -10 to +60 °C +14 to +140 °F			
E E		ent humidity	35 to 85 % RH, Storage: 35 to 85 % RH			
	-	ge withstandability	500 V AC for one min. between all supply terminals connected together and enclosure			
Environm		ation resistance	50 MΩ or more with 500 V DC megger between all supply terminals connected together and enclosure			
Env	-	tion resistance	10 to 150 Hz frequency, double amplitude 0.75 mm 0.030 in or maximum acceleration 49 m/s², in X, Y and Z directions for two hours each			
Pallut	tion deg	k resistance	100 m/s² acceleration (10 G approx.) in X, Y and Z directions three times each			
		category	2	TCO. 100XC		
			2,000 m 6,562 ft or less			
Usable altitude Temperature characteristics			+10 to +40 °C +50 to +104 °F: Within ±1 % F.S. +10 to +40 °C +50 to +104 °F: Within ±2 % F.S.			
		°F standard)	0 to +50 °C +32 to +122 °F: Within ±2.5 % F.S.	0 to +50 °C +32 to +122 °F: Within ±5 % F.S.		
Groui	nding m	ethod	Floating			
Press	sure por	t	M5 female t	hread		
Matei	rial		Enclosure: PBT (glass fiber reinforced), LCD display: Acrylic, Pressure port: Brass (nickel plated) Mounting threaded part: Brass, O-ring: Nitrile rubber (NBR), Key section: Polycarbonate			
Weigl	ht		25 g appr	rox.		
	ssory		CN-14A-C2 (Connector attached	d cable 2 m 6.562 ft): 1 pc.		

Note: Where measurement conditions have not been specified precisely, the conditions used were an ambient temperature of +20 °C +68 °F.

I/O CIRCUIT AND WIRING DIAGRAMS

NPN output type

I/O circuit diagram



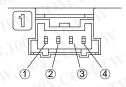
Note: Open or, connect to 0 V.

Symbols...D1, D2: Reverse supply polarity protection diode

ZD: Surge absorption zener diode

Tr: NPN output transistor

Terminal arrangement diagram

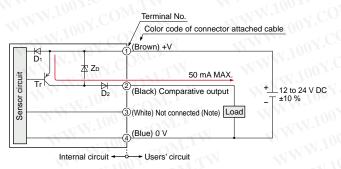


Terminal No.	Designation
1	V. COMPTY-V
2	Comparative output
3	Not connected (Note)
4	0V

Note: Open or, connect to 0 V.

PNP output type

I/O circuit diagram



Note: Open or, connect to 0 V.

Symbols...D1, D2: Reverse supply polarity protection diode

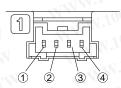
WWW.100Y.COM.

ZD: Surge absorption zener diode

Tr: PNP output transistor

WWW.100Y

Terminal arrangement diagram



Terminal No.	Designation
1	+V
2	Comparative output
3	Not connected (Note)
4	0V
te: Open or, connect	to 0 V.

FIBER SENSORS

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AREA SENSORS

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MACHINE VISION SYSTEMS

Pressure/ Head-separ Flow

DP-0 DP-100

DP-M

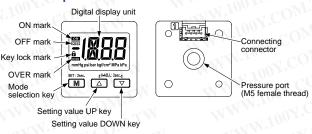
PRECAUTIONS FOR PROPER USE

Refer to p.1566 for general precautions.

Never use this product as a sensing device for personnel protection.

- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.
- This product is used for non-corrosive gas. The product shall not be used for liquid or corrosive gas. Never use fluids having inflammability, toxicity, etc., that affect the human body, either.

Part description



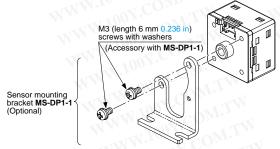
Piping

 When using this product, connect a joint available in the market to the pressure port. At the time, the tightening torque should be 1.0 N·m or less.

Mounting

 Use sensor mounting bracket MS-DP1-1 prepared independently.

When mounting this product with sensor mounting bracket, etc., the tightening torque should be $0.5~N\cdot m$ or less.



- Panel mounting bracket MS-DP1-8 (optional) and front protection cover MS-DP1-3 (optional) are available.
- For the method for mounting panel mounting bracket, refer to the instruction manual that came with the MS-DP1-8.

Wiring

- Make sure that the power supply is OFF while performing the wiring operation.
- Verify that the supply voltage variation is within the rating.
- If power is supplied from a commercial switching regulator, ensure that the frame ground (F.G.) terminal of the power supply is connected to an actual ground.
- In case noise generating equipment (switching regulator, inverter motor, etc.) is used in the vicinity of this product, connect the frame ground (F.G.) terminal of the equipment to an actual ground.
- When extending the cable, use a cable whose conductor cross-section area is 0.3 mm² or more. The cable can be extended to up to 10 m 32.808 ft in total length.
- Do not run the wires together with high-voltage lines or power lines or put them in the same raceway. This can cause malfunction due to induction.
- Do not apply stress directly to the connection cable leader or to the connector.

Connection

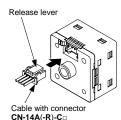
How to connect

 Insert the cable with connector CN-14A(-R)-C

into this product's connection connector section as shown in the right figure.

How to disconnect

 Pressing the release lever of the cable with connector, pull out the connector.



Note: Do not pull by holding the cable without pressing the release lever, as this can cause cable break or connector break.

Factory setting

Type	Low pressure type	High pressure type
Operation setting	EASY	mode
NO/NC setting	NC COM	NO
Threshold value	-50.0	0.500
Pressure unit	kPa	MPa
Display color	Red when ON, White when OFF	
Response speed	2.5	ms

Error indication

Error indication	Description	Remedy	
片()	The load is short-circuited causing an overcurrent to flow.	Turn OFF the power and check the load.	
詳	Pressure is applied during zero point adjustment.	Applied pressure at the pressure port should be brought to atmospheric pressure and zero-point adjustment should be don again.	
-jo¦ú	The applied pressure exceeds the upper limit of the displayed pressure range.	Applied pressure range	
<u>-</u> jo¦.(The applied pressure exceeds the lower limit (back pressure) of the displayed pressure range.	should be brought within the rated pressure range.	

When other error massage is displayed, contact us.

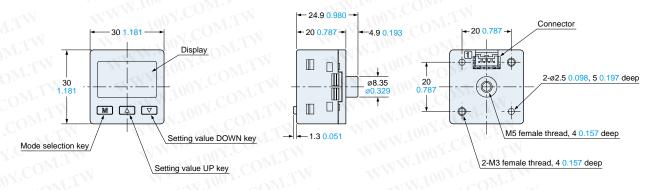
Others

- This product has been developed / produced for industrial use only.
- The product shall be used only within the rated pressure range.
- Do not apply pressure exceeding the pressure resistance.
 Otherwise, destruction of diaphragm occurs, preventing the product to perform normal operation.
- Do not use during the initial transient time (0.5 sec.) after the power supply is switched ON.
- The specification may not be satisfied in a strong magnetic field.
- This product is suitable for indoor use only.
- Take care that strong impact such as fall is not given to this product. Otherwise, it may be destroyed.
- · Avoid dust, dirt, and steam.
- Take care that the product does not come into contact with organic solvents such as thinner.
- Take care that the product does not come into contact with oil or grease.
- Take care that the product does not come into contact with strong acid or alkaline.
- Do not insert wire into the pressure port. Otherwise, destruction of diaphragm occurs, preventing the product to perform normal operation.

DIMENSIONS (Unit: mm in)

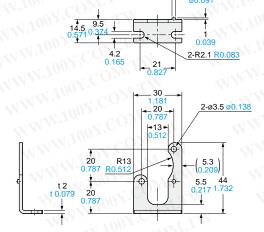
The CAD data can be downloaded from the website.

DP-00□ Sensor



MS-DP1-1

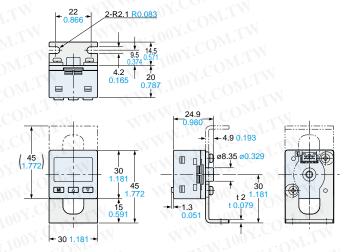
Sensor mounting bracket (Optional)



Material: Cold rolled carbon steel (SPCC)
(Trivalent uni-chrome plated)

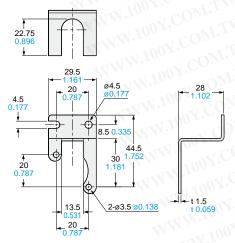
Two M3 (length 6 mm 0.236 in) screws with washers are attached.

Assembly dimensions



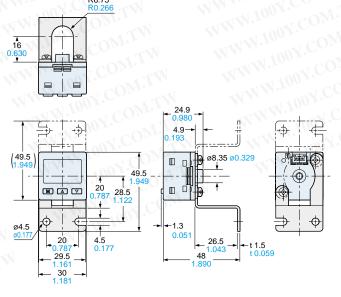
MS-DP1-5

Sensor mounting bracket (Ontional)



Material: Stainless steel (SUS304)
Two M3 (length 6 mm 0.236 in) screws with washers are attached.

Assembly dimensions



FIBER

LASER SENSORS

PHOTO-ELECTRIC SENSORS MICRO PHOTO-ELECTRIC

AREA SENSORS

SAFETY LIGHT CURTAINS / SAFETY COMPONENTS PRESSURE / FLOW

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MACHINE VISION SYSTEMS

UV CURING

CURING SYSTEMS

Selection Guide Pressure/ Digital Display

DP-0

DP-100

DP-M

(15.8) (0.622)

M5 male thread

Rc1/8 female thread

Gasket

勝 特 力 材 料 886-3-5753170 胜特力电子(上海) 86-21-34970699 胜特力电子(深圳) 86-755-83298787 Http://www.100y.com.tw

FIBER SENSORS

MS-DP1-7

LASER SENSORS

PHOTO-ELECTRIC SENSORS

AREA SENSORS COMPONENTS

INDUCTIVE PROXIMITY SENSORS PARTICULAR USE SENSORS

SENSOR OPTIONS

MEASURE-MENT SENSORS

STATIC CONTROL DEVICES

MS-DP1-8

LASER MARKERS PLC

HUMAN MACHINE INTERFACES ENERGY MANAGEMENT SOLUTIONS

FA COMPONENTS MACHINE VISION SYSTEMS

CURING SYSTEMS

Pressure Head-separated Flow

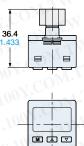
> DP-100 DP-M

DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from the website.

Conversion bushing (Optional)





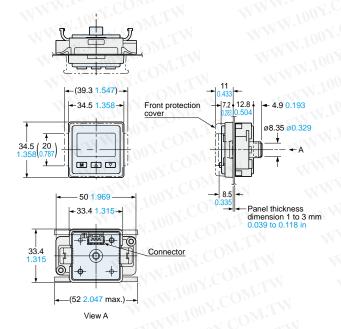
Assembly dimensions

Material: Brass (Nickel plated) Weight: 10 g approx.

MS-DP1-3 Mounting drawing with DP-000

0.5

10

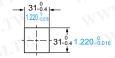


Material: Polyacetal (Panel mounting bracket) Polycarbonate (Front protection cover)

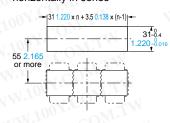
Panel mounting bracket (Optional), Front protection cover (Optional)

Panel cut-out dimensions

When 1 unit is installed

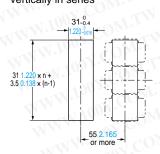


When "n" units are installed horizontally in series



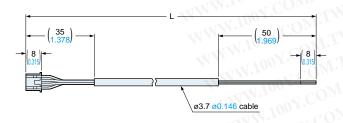
Note: The panel thickness should be 1 to 3 mm 0.039 to 0.118 in.

When "n" units are installed vertically in series



Note: The panel thickness should be 1 to 3 mm 0.039 to 0.118 in.

CN-14A(-R)-C□



4 N V V	
Model No.	Cable length L (mm in)
CN-14A(-R)-C1	1,000 39.370
CN-14A(-R)-C2	2,000 78.740
CN-14A(-R)-C3	3,000 118.110
CN-14A(-R)-C5	5,000 196.850