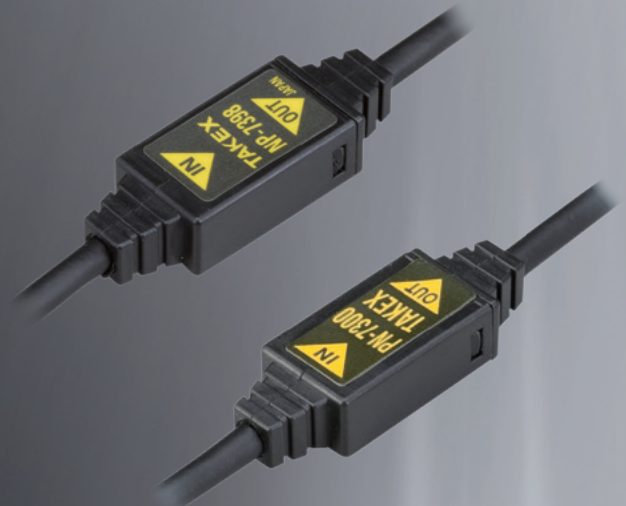


Integrating sensor controller  
and power supply  
All-in-one sensor controller



Rich functionality and  
easy operation  
Analog output sensor  
comparator

Convert NPN  $\Rightarrow$  PNP  
Convert PNP  $\Rightarrow$  NPN  
Extremely practical  
output conversion unit



# Sensor Controller

## PS300



Equipped with high-capacity sensor power supply  
Sensor controller specifically designed for sensor input

### Equipped with simple logic

Input from two sensors permits simple output logic conditions to be set, such as AND operation and timer operation  
Fine-adjustment of delay and timing can be made on the main unit, eliminating the need for troublesome PLC program changes

### High-capacity

400 mA high-capacity sensor power supply (for 24V DC sensors)  
Power supply is selectable, either 24 or 12V DC

### Connectable to various sensors

Connectable to DC 2-wire sensors, while also supporting DC 3-wire NPN/PNP inputs

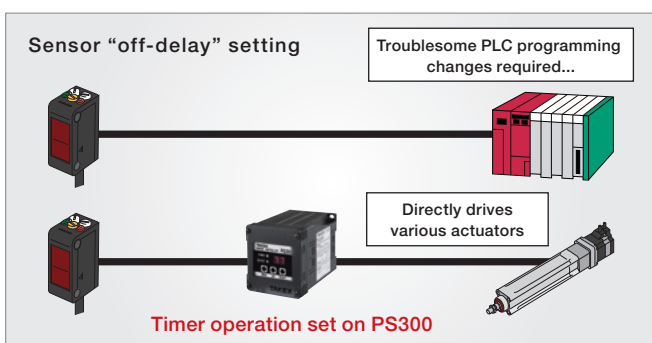
### Equipped with both transistor and relay outputs

Possible to replace with the latest units by connecting this unit to older control equipment that has mechanical contact inputs

### Mounted on a DIN rail / Attached under the housing

One-touch DIN rail mounting or direct attaching under the housing using M4 screws

### Applications



### Specification

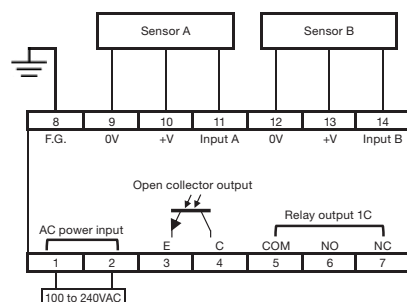
Model	PS300
Operation power	100 to 240VAC, ±10% 50/60Hz
Power consumption	16W 38VA
Input	<ul style="list-style-type: none"> <li>Sensor input: 2 systems NPN open collector input or PNP open collector input (selectable) (Note 1) Active input level: LO side/HI side selectable (Note 2)</li> <li>Conditions for the sensor to connect: Residual voltage at ON: 4V or less, Leakage current OFF: 1mA or less Load current of 15mA or more</li> <li>Minimum input time: 0.5ms (Note 3)</li> </ul>
Operation modes	AND operation, CLOCK AND operation
Timer operations	ON-delay, OFF-delay, One-shot, None
Timer time	0.0 to 9.9s
Output	<ul style="list-style-type: none"> <li>NPN open collector output (photocoupler isolated) Rating: 30VDC 100mA or less. Residual ON voltage: 1.5V or less. Response time: 1ms or less</li> <li>Relay output Contact: 1C, Rating: 250VAC 2A or less, Response time: 10ms or less</li> </ul>
Power supply for sensor	24VDC / 12VDC selectable (Note 4)
Indicator	7-segment LED, 2-digit indicator, red
Indicator	POWER: Power indicator (green LED), OUTPUT: Operation indicator (orange LED)
Connection method	Terminal block (screw: M3, terminal width: 6.4mm)
Mounting method	DIN rail (35mm) or M4 screws (mounting with 2 holes)
Weight	Approx. 260 g
Material	Case: PC, Terminal block cover: PC
Accessory	Instruction manual

### Environmental specification

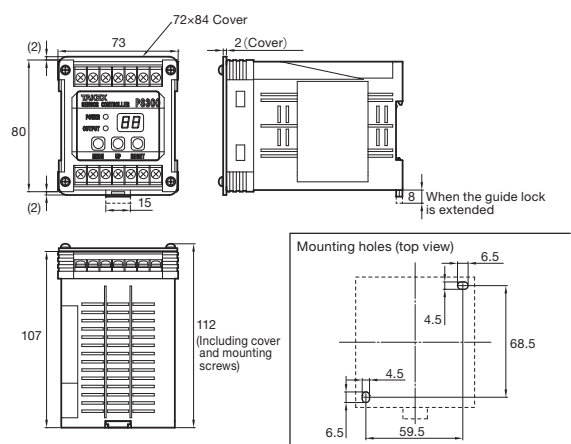
Ambient temperature	-10 to +55°C (non-freezing)
Ambient humidity	35 to 85%RH (non-condensing)
Protection	IP 20
Operating environment	Indoor use, Overvoltage category: II, Pollution level: 2, Maximum altitude: 2000m
Vibration	Compliant with IEC61131-2 5-8.4Hz (double-amplitude 3.5mm) 8.4-150Hz (1G) X, Y, Z directions, each 2 hours
Impact resistance	Compliant with IEC61131-2 147m/s <sup>2</sup> (15G) X, Y, Z directions, 3 times each
Dielectric withstand voltage	2kVAC, 1 minute (Note 5)
Insulation resistance	500VDC, 20MΩ or more (Note 5)

Note 1: Selection of NPN/PNP type for sensor input is common to the two systems.  
Note 2: Active input level can be individually set for the two systems.  
Note 3: Minimum time necessary for acquiring input signals.  
Note 4: Voltage selection is common to the two systems.  
The indicated current values are the sum of two electric systems.  
Note 5: Between the primary power and the case, between the primary power and the sensor power, between the primary power and F.G., between the primary power and the relay output, between the primary power and NPN open collector output.

### Wiring and output circuit



### Dimensions (in mm)



# Comparator

## DMC-A4A



### Converts analog signals (voltage/current input) to digital signals

#### Supports analog inputs for voltage and current

Selectable from 0 to 5V, 0 to 10V, and 4 to 20mA  
Can be used in combination with analog output sensors  
Realizes on-site “visualization”

#### Converts analog input signals

- “Visualization” realized by the digital display
- Open collector output supports the setting of four arbitrary thresholds

#### Easy operation

Easy push-button operation  
Manual setting in increments of either 0.01V or 0.1mA units

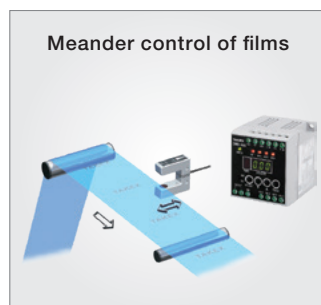
#### Averaging process for 1 to 200 times

Averaging of noisy input signals enables smooth display and stable control

#### Reduced malfunctions

Hysteresis can be set for each output, enabling reduction of chattering near the threshold

#### Applications



#### Specification

Model	DMC-A4A
Power supply	DC24V±10%
Current consumption	40mA or less
A/D conversion method	Sequential comparison system 10bit (1024)
Measurement range (input mode)	DC 0 to 5V/0 to 10V/0 to 20mA (selectable)
Display resolution	DC 0 to 5V : 0.01V/0 to 10V : 0.01V/0 to 20mA : 0.1mA
Output mode	NPN open collector output, Rating: 50mA (DC30V) or less, 4 outputs
Sensor power supply	DC24V (200mA or less) *1
Indication method	3 digits, 0 to 5V : 0.00 to 5.50/0 to 10V : 0.00 to 11.0/0 to 20mA : 0.00 to 22.0
Indication size	7 segments, Red×1, Green×3, Font size: 8×4mm
Sampling speed	2000 times/sec
Averaging	1 to 200 counts (selectable)
Output delay	On delay/Off delay (1 to 999msec, selectable)
Operation mode	HI ON (Han) / LO ON (Lon) (selectable)
Connection	Terminal block, Tightening torque: 0.3N·m or less
Material	Case: PPE Panel: PET
Mounting method	DIN rail (35mm) and screw tightening method
Weight	Approx. 130g
Accessories	Instruction manual

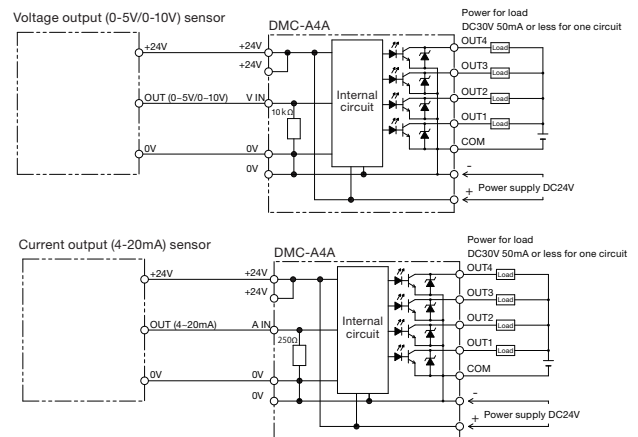
\*1 Power supply directly connected

#### Environmental specification

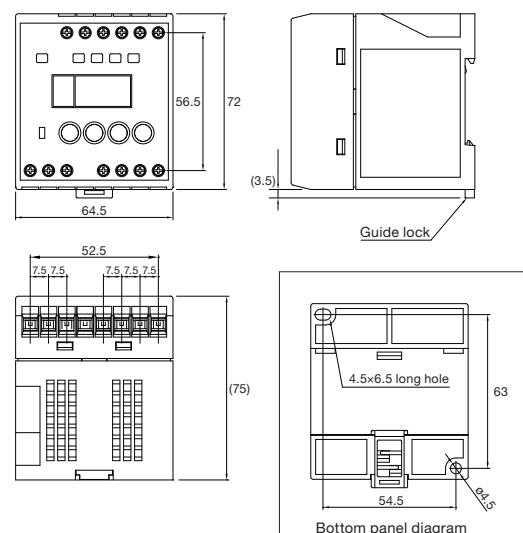
Ambient temperature	-10 to +55°C (non-freezing)	
Ambient humidity	35 to 85%RH (non-condensing)	
Vibration	When mounting directly	10 to 55Hz when tested with double amplitude of 0.75mm in X, Y, and Z directions, 2 hours for each direction *2
	When mounting to DIN	
Shock	When mounting directly	500m/s <sup>2</sup> when tested in X, Y, and Z directions, 3 times for each direction
	When mounting to DIN	300m/s <sup>2</sup> when tested in X, Y, and Z directions, 3 times for each direction
Dielectric tolerance	1000VAC for 1 minute between whole live part and case	
Insulation resistance	20MΩ or more when tested with 500VDC megger	

\*2 When mounting to the DIN rail, attach the stopper (end unit) to the product.  
End unit (option) model : FA7EU

#### Wiring and output circuit



#### Dimensions (in mm)



# Output Conversion Unit

## PN-7300 NP-7398

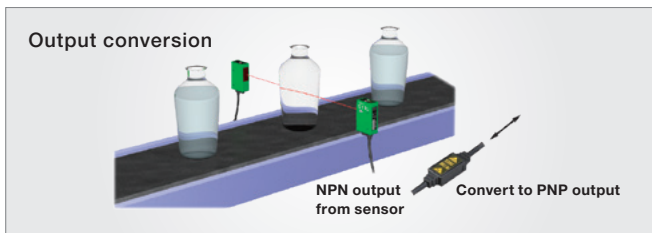


NPN → PNP    **Straightforward**  
 PNP → NPN    **output conversion**

### Easy introduction into existing facilities

Ultra-compact unit that can be used as simple as a cable  
 Ready for use by simply connecting between a sensor and input device

### Applications



### Typical use scenario

- For global I/O matching of various peripheral devices
- Ideal for maintenance of facilities and unification of machines/equipment

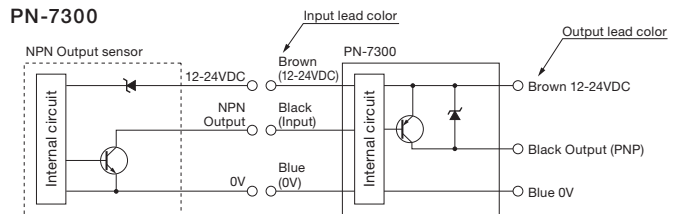
### Specification

Model	PN-7300	NP-7398
Power supply	12 to 24VDC ±10% Ripple 10% max.	
Current consumption	10mA max.	5mA max.
Input mode	NPN open collector	PNP open collector
Output mode	PNP open collector Rating : Source current 80mA (30VDC) max.	NPN open collector Rating : Sink current 80mA (30VDC) or less
Material	Polybutylene terephthalate (PBT)	
Connection	Permanently attached cord (outer dimension : dia.2.8mm) Input side : 0.15mm <sup>2</sup> ×3core 500mm Output side : 0.15mm <sup>2</sup> ×3core 2000mm	
Mass	30g	
Accessory	Instruction manual	

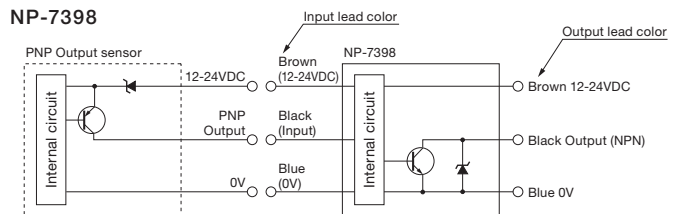
### Environmental Specification

Ambient temperature	-25 to +55°C (non-freezing)
Ambient humidity	35 to 85%RH (non-condensing)
Protective structure	IP 64
Vibration	10 to 55Hz/1.5mm amplitude/2 hours each in 3 direction
Dielectric withstanding	1,000VAC for 1minute
Insulation resistance	500VDC mega, 20MΩ or higher
Shock	500m/s <sup>2</sup> /3 times each in 3 directions

### Wiring and output circuit

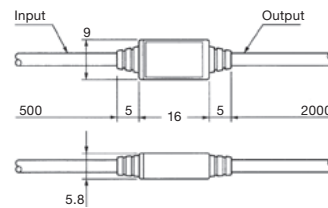


- This product is not equipped with short protection.  
The output transistor is damaged when short-circuited.



- This product is not equipped with short circuit protection.  
The output transistor is damaged when short-circuited.

### Dimensions (in mm)



- This product is designed for industrial applications to detect a various kinds of objects. It has no function to prevent disasters, accidents, death or injuries.
- TAKEX will not held responsible for any damage or loss incurred due to accidents, faulty installation, abuse, misuse, improper maintenance or acts of God including lightning surge.
- This product cannot be used as safety equipment.
- This product is designed and manufactured for industrial use. It cannot be used where there is a requirement for a high degree of reliability or considerable care or attention to safety.
- Read this instruction manual carefully and use the product properly according to it.
- This instruction manual including the specifications and dimensions may be subject to change without notice.



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