KEYENCE

Cat. No. PS01-C

One-touch Calibration Separate Amplifier Photoelectric Sensor

PS01

The new PS01 series amplifier in TURBO MODE provides twice the detecting distance when used with a TURBO-ready sensor head.

A powerful beam makes optical axis alignment easier and ensures rock-solid detection, even in dusty environments.

CE

Stable detection in a variety of harsh environments

Innovative design and high performance for stable detection in harsh environments

Teflon®-sheathed
PS-201/PS-201C (Connector type)

The sensor head and cable are covered with a Teflon® sheath ensuring trouble-free operation in areas exposed to chemicals, solvents, or oil splashes.

Max. detecting distance: 4 m

Teflon®-sheathed, visible spot
PS-206

The housing is highly resistant to chemicals and the 6 mm red beam spot simplifies sensor positioning.

Max. detecting distance: 70 mm

Long-range, definite-reflective
PS-49 / PS-49C (Connector type)

The 1.5 mm diameter beam spot simplifies sensor positioning. Targets as small as 0.1 mm diameter can be detected from a distance of 50 mm.

Max. detecting distance: 50 mm

Long-range
PS-55/PS-55C (Connector type)

The powerful and highly directional beam penetrates dirt or dust. The unit is compact, yet allows detection at distances of up to 4 m.

Max. detecting distance: 4 m

Superb ease-of-use in setup operation

Fully automatic calibration for precise detection

Anyone can calibrate easily and reliably. Fully automatic, positioning, or external calibration can be selected, based on the application.

Fine adjustment of every sensor head

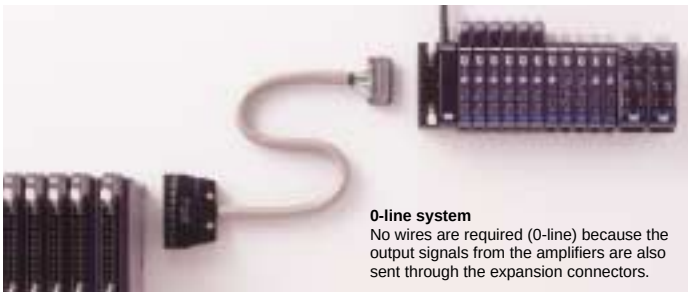
If the FS-V1 digital calibration fiberoptic sensor is configured as the main unit with several expansion units connected to it, the light quantity and sensitivity of the expansion units can be checked on the FS-V1's monitor. While viewing the monitor, the sensitivity of the expansion units can be finely adjusted.

Precise adjustment & sensitivity monitoring
The sensitivity of 3rd PS-T2 (Photo) is shown on the FS-V monitor.

Fine adjustment of the expansion units
After set-up is complete, additional minute sensitivity adjustments can be made using the UP/DOWN keys.

Quick wiring with a single cable

0-line sensors* can be used without wiring.
By connecting an FS-R0 unit, the output signals from the sensors will be sent through this connector. Therefore, no wiring is required for each amplifier. A cable with a MIL connector enables connection to the I/O card of a PLC or a special board without complicated conventional wiring.
** Model: PS-T0, FS-T0, FS-M0*

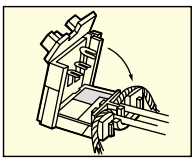


0-line system
No wires are required (0-line) because the output signals from the amplifiers are also sent through the expansion connectors.

Simple plug-in sensor head

The PS01 series employs a snap-on connector which improves the reliability of the connection to the sensor head. The secure connector eliminates problems such as connection failures and the sensor head can be easily replaced for maintenance.

The sensor cable can be cut to any length.
After the sensor cable is cut to the required length, the newly designed crimp connector allows simple snap-on connection. (Patent-pending)



Specifications

Sensor head

Model [1]		Teflon®-sheathed				Definite reflective		Long-range			Thin, small				
		Thrubeam		Reflective				Thrubeam		Reflective	Thrubeam			Reflective	
		PS-201(C)	PS-202	PS-205	PS-206	PS-47(C)	PS-49(C)	PS-55(C)	PS-05	PS-45	PS-58	PS-52(C)	PS-56	PS-46	PS-48
Light source		Infrared LED			Red LED			Infrared LED							
Detecting distance (mm)	FINE	2,000	500	200	70	10 ± 4	32 to 53	2,000			200	700	300	100	25
	TURBO [2]	4,000	1,000	400	—			4,000		400	—	600	—		
Smallest detectable object [3] (mm)	FINE	0.8 dia.	0.5 dia.	—				1.0 dia.	—		0.5 dia.	0.3 dia.		—	
	TURBO	1.2 dia.	0.5 dia.	—				2.0 dia.	—		0.3 dia.	—			
Enclosure rating		IP-67				—		IP-64			IP-67	—			IP-67
Mutual interference suppression [4] (When expansion units are connected)		Built-in				No interference (side-by-side mounting)		Built-in			—	Built-in	—		
Ambient temperature		-10 to +60°C													
Relative humidity		35 to 85%													
Weight (including 2-m cable)		Approx. 40 g		Approx. 60 g		Approx. 30 g									Approx. 40 g

1. Models with a (C) come with plug-in connectors. (For other models, use the connector included with the amplifier.)
2. Use FINE MODE for models which do not feature TURBO MODE.
3. Gives the size of the object which can be detected at the maximum detecting distance.
4. Mutual interference suppression function: Up to three expansion units used without mutual interference. Models without mutual interference suppression function: Even when several expansion units are used in close proximity, chattering will not occur . However, sensitivity may vary due to mutual interference. Check the performance using actual machines before performing detection.

Amplifier

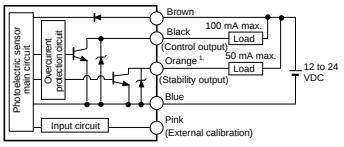
Model	NPN	PS-T1	PS-T2	PS-T0
	PNP	PS-T1P	PS-T2P	—
Response time		500 µs		660 µs to 1.2 ms [1]
Operation mode		LIGHT ON/DARK ON (switch-selectable)		
Indicators		Output indicator: Red LED, Stable operation indicator: Green LED, Calibration indicator: Yellow LED		
Timer function		ON-delay: 40 ms, OFF-delay: 40 ms, Timer OFF (switch-selectable)		
External calibration input signal		Non-voltage input (contact, solid state)		—
Output	Control output	100 mA max. (40 V max.) Residual voltage: 1 V max. [2]		
	Stability output	50 mA max. (40 V max.) Residual voltage: 1 V max. [3]		
Protection circuit		Reverse polarity protection, Over-current protection, Serge absorber		
Power supply voltage		12 to 24 VDC ±10%, Ripple (P-P) 10% max.[4]		
Current consumption		35 mA max.		
Ambient temperature		-10 to +55°C [5]		
Relative humidity		35 to 85%		
Vibration		10 to 55 Hz, 1.5 mm double amplitude in X, Y and Z directions, 2 hours respectively		
Shock immunity		500 m/s² {Approx. 50 G} in X, Y and Z directions, 3 times respectively		
Housing material		Body/Cover: Polycarbonate		
Weight (including 2 m cable)		Approx. 75 g	Approx. 40 g	Approx. 20 g [6]

1. The response speed varies depending on the number of units connected.
2. There is no control output cable for the PS-T0. Control output for the PS-T0 is sent from the FS-R0.
3. Stability output is only provided by the PS-T1. Stability output for the PS-T2/T0 is sent from the PS-T1, FS-T1, FS-M1 or FS-R0.
4. Power for the PS-T2/T0 is supplied through the PS-T1, FS-T1, FS-M1 or FS-R0.
5. When several units are connected, the ambient temperature requirement varies depending on the total number of units connected.
   When 3 to 10 units: -10 to +50°C When 11 to 16 units: -10 to +45°C
   When connecting several units, be sure to mount the units to a metallic DIN rail. Make sure that the output current does not exceed 20 mA.
6. The PS-T0 has no cable.

I/O Circuit

NPN

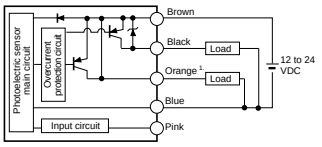
PS-T1



1. When the external calibration input is not used, cut the pink cable at the root, or connect this cable to the positive terminal of the power supply.

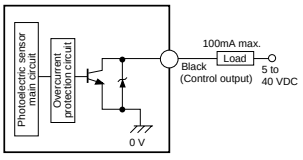
PNP

PS-T1P



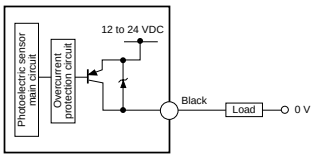
1. When the stability output is not used, cut the orange cable at the root, or connect this cable to the 0 V terminal of the power supply.

PS-T2



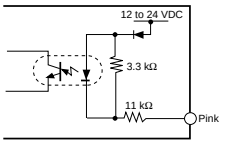
Power to the PS-T2 is supplied through the PS-T1, FS-T1 or FS-M1.

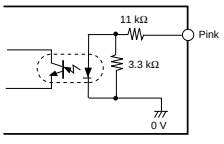
PS-T2P



Power to the PS-T2P is supplied through the PS-T1P, FS-T1P or FS-M1P.

(External calibration input circuit)

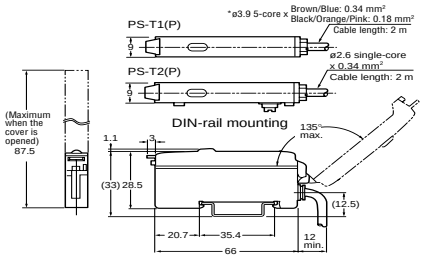




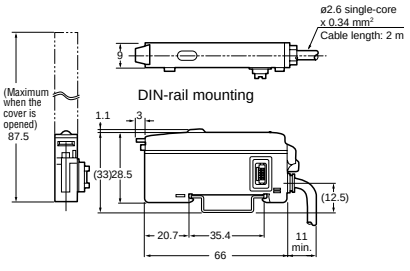
Dimensions: Amplifier

Unit: mm

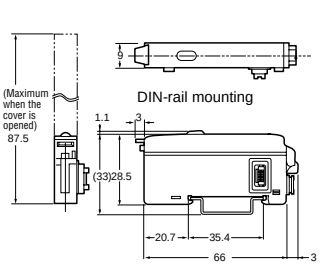
PS-T1(P)



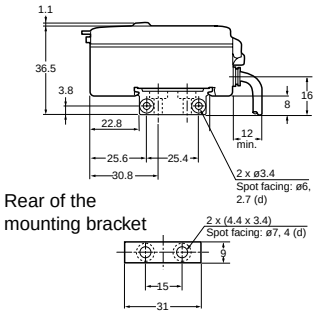
PS-T2(P)



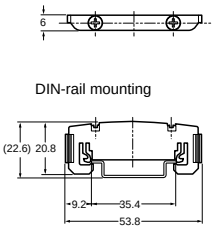
PS-T0



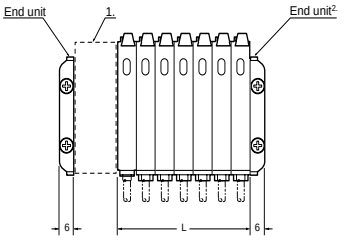
When the mounting bracket [included in the PS-T1(P)] is attached:



End unit [Included in the PS-T2(P)]



When several units are connected:



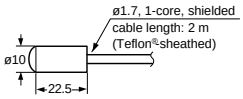
1. The PS-T1(P), FS-T1(P), FS-M1(P), or FS-R0 is mounted in [ ].
2. When using expansion units, be sure to use the end unit [accessory to the PS-R0, T1(P), T2(P)].

No. of units	L
1	9
2	18
3	27
4	36
5	45
6	54
7	63
8	72
9	81
10	90
11	99
12	108
13	117
14	126
15	135
16	144

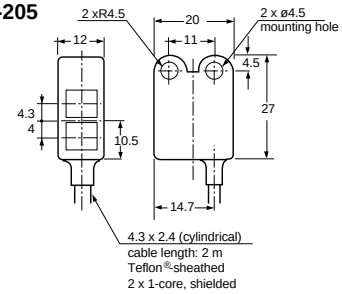
Dimensions: Sensor head

Unit: mm

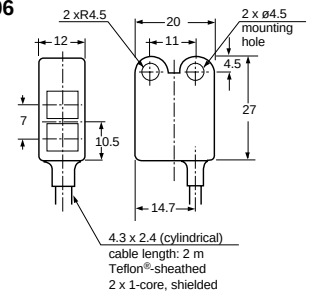
PS-201(C) / PS-202



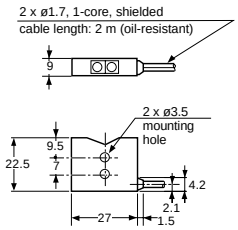
PS-205



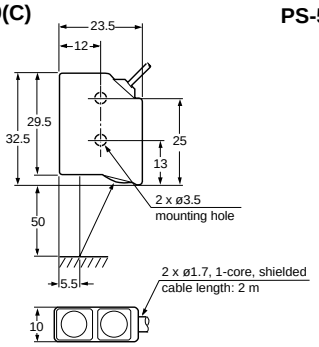
PS-206



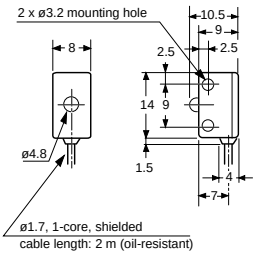
PS-47(C)



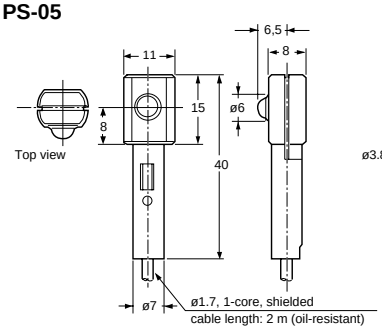
PS-49(C)



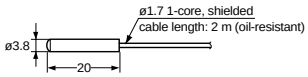
PS-55(C)



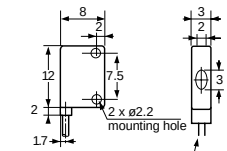
PS-05



PS-58

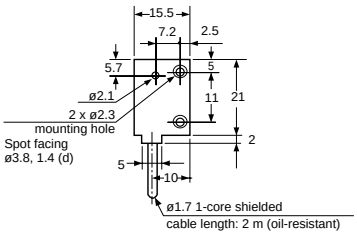


PS-52(C)



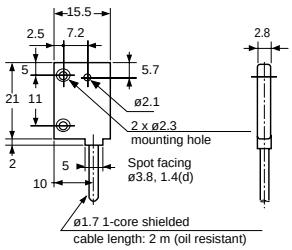
M2 x 10 screw : 4
Nut, spring washer, flat washer: 4 each

PS-56(R)

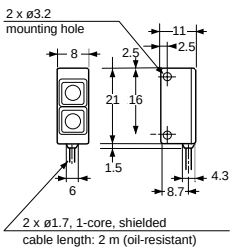


M2 x 10 screw : 4
Nut, spring washer, flat washer: 4 each

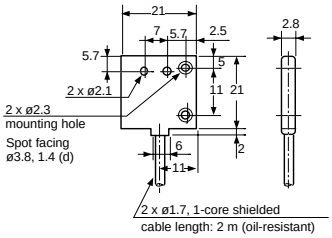
PS-56(T)



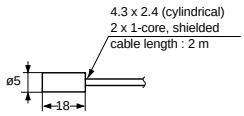
PS-45



PS-46



PS-48



Teflon® is a trademark of E.I. du Pont de Nemours & Company.

Amplifier Selection For The FS01 Series Fiberoptic Sensors

One-touch Calibration FS-T1(P)

Fully automatic calibration with extraordinarily high resolution

Manual Calibration FS-M1(P)

Manual calibration with fine sensitivity adjustment indicator

Digital Calibration FS-V1(P)

LCD display and digital calibration for 1-line connection units.

Terminal Block FS-R3

Terminal block unit for input devices such as sensors other than FS01/ PS01 series or limit switches.

Specifications are subject to change without notice.

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