TAKEX

Phase Differential Detection DISTANCE SENSOR

DX-S35F/DX-S33C

Phase Differential Detection achieves 3m detection range with high accuracy and reliability.

Color or glossy surface of objects are of no concern.



DX-S35F (5 optical axis)
Detection area setting feature



DX-S33C
(3 optical axis)

Features

Phase Differential Detection

Calculates the distance to an object by measuring the time that the PE beam takes to travel between the sensor and the object. Regardless of the color, shape or material the sensor maintains complete accuracy even for mirror type objects.

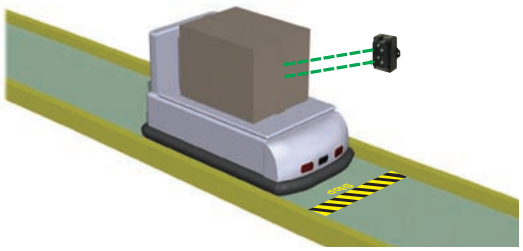
Multi-beam Composition

Wide detection area with multi-beam composition (3/5 optical axis) ensures reliable detection even across a curved surface. Unnecessary beam(s) can be disabled. (DX-S35F)

3m Long Detection Range

Accurate, safe and low cost sensor covers long distance by using an LED for light source.

Suitable for detecting various objects or shiny surfaces.





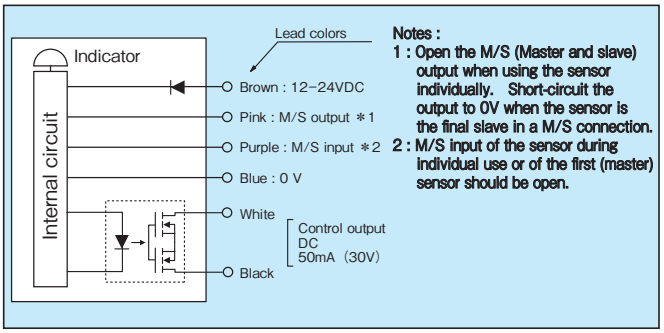
Specifications

Model	DX-S35F	DX-S35F-Y5	DX-S33C	DX-S33C-Y5
Detection method	Reflective / Phase differential detection			
Detecting distance	0.1 – 3m			
Standard detecting object	300 × 900 white paper			
No. of optical axes	5 (w/ area setting function)		3 (w/o area setting function)	
Power supply	12 – 24VDC ± 10% Ripple 10% max.			
Power consumption	1.7W or less		1.5W or less	
Output mode	PhotoMOS output (short circuit protection) Load current 50mA (30VDC) max. Residual voltage : 2V or less			
Operation mode	Light-ON			
Anti Interference	Provided (when connected to Master/Slave : up to 4 units)			
Response time	ON : 0.1s OFF : 0.3s max.			
Light source (wavelength)	Infrared LED (850nm)			
Indicator	Operation indicator (3-color emitting LED) At Master w/ detection ON : orange LED lit ; detection OFF : blue LED lit At Slave w/ detection ON : orange LED lit ; detection OFF : green LED lit			
Volume (VR)	Distance adjuster (1 to 3m)			
Rotary switch (SW)	Detection area setting switch		——	
Additional functions	Power reverse connection protection, output short-circuit protection			
Material Case	Heat-resistant ABS			
Material Front cover	Polycarbonate			
Connection	Pull out cord (OD : ϕ 4.8)			
	0.2mm², 6 core, 2m (sheath : black)	0.2mm², 6 core, 5m (sheath : black)	0.2mm², 6 core, 5m (sheath : black)	0.2mm², 6 core, 5m (sheath : black)
Weight	Approx. 170 g			
Accessory	Operation manual			

Environmental Specification

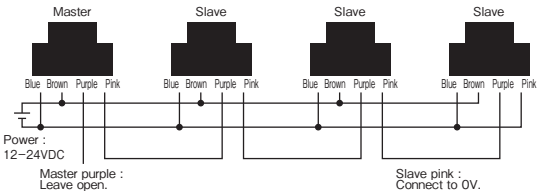
Ambient light	20,000 l x max.
Ambient temperature	– 20 – + 55℃ (Storage : – 40 – + 70℃) non-freezing
Ambient humidity	35 – 85% RH (non-condensing)
Protective rating	IP40
Vibration resistance	10 – 55Hz / 1.5 amplitude / 2 hours each in 3 directions
Dielectric withstanding	1,000VAC for 1 minute
Insulation resistance	500V mega DC, 20MΩ or higher
Shock resistance	500 m/s² / 3 times each in 3 directions

Input/Output Circuit Diagrams



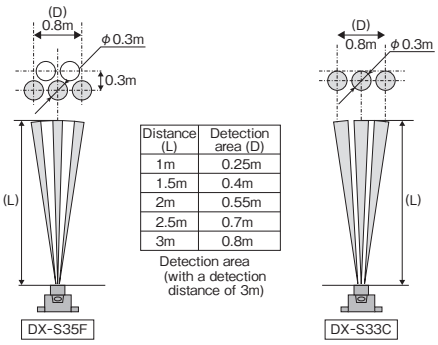
Notes :
1 : Open the M/S (Master and slave) output when using the sensor individually. Short-circuit the output to 0V when the sensor is the final slave in a M/S connection.
2 : M/S input of the sensor during individual use or of the first (master) sensor should be open.

Master - Slave connection to avoid interference



Detection Area

Sensor output turns on when any one of the optical axes detects an object.

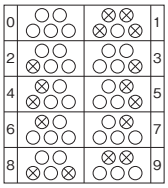


Distance (L)	Detection area (D)
1m	0.25m
1.5m	0.4m
2m	0.55m
2.5m	0.7m
3m	0.8m

Detection area (with a detection distance of 3m)

Detection Area Settings (DX-S35F)

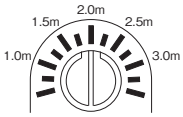
The following 10 detection area settings are possible with the detection area selection.
Note : This function is not available with the DX-S33C.



⊗ ··· Non-detection area

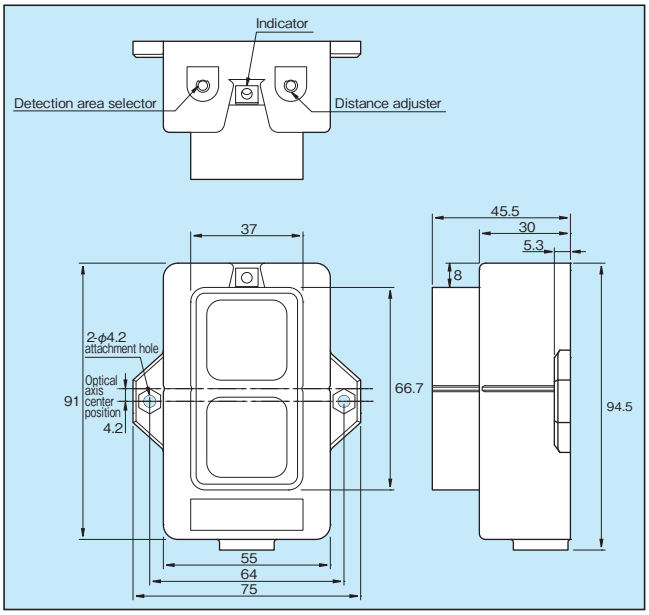
Distance Adjustment

Distance adjustment is illustrated in the diagram below.



Notes : If a background object exists in the sensor's detection area, be sure to adjust the distance to a point at least 0.75m in front of that background. Also, be aware that the distance scale is only a benchmark and does not ensure accuracy.

Dimensions (unit : mm)



CAUTION

- This sensor is designed to detect a specific object. It is not provided with control functions for prevention of injuries or accidents in itself.
- 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.
- Specifications and dimensions may be subject to change without notice.

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