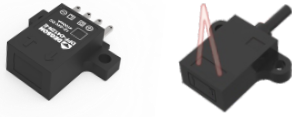


## Photoelectric Sensors DPF Series






### User Manual

Thank you for choosing Degson products. Please read this instruction manual carefully before using the product.

- It is intended to be used by personnel with certain electrical knowledge.
- Before using this product, please read this manual carefully and use it correctly after fully understanding the product.
- For your convenience, please keep this manual properly so that you can refer to it at any time.

### symbol

The following symbols are important reminders in this manual. Please be sure to comply with the following.

	There is a risk of malfunction or fire. Please do not exceed the rated voltage when using.
	Do not use AC power as there is a risk of rupture.
	There is a risk of burns due to high temperatures.

### Safety Tips

To ensure your safety, please be sure to follow the following.

- Do not use in an environment with flammable or explosive gases.
- Do not use the product in an environment with water, oil, chemical droplets, or in contact with steam.
- Do not disassemble, repair, or modify the product without authorization.
- Do not exceed the rated voltage and current range during use.
- Do not use in environments beyond the rated value.
- Please pay attention to the polarity of the working power supply and do not connect the wrong wires.
- Please connect the load correctly.
- Do not short-circuit the load.
- Do not use if the casing is damaged.
- When disposing of it, please treat it as industrial waste.
- Do not use in direct sunlight.
- Due to the use conditions (ambient temperature, power supply voltage, etc.), the sensor surface temperature may rise. Please be careful when operating or cleaning it, as there is a risk of burns.

### Instructions for use

- Do not use in the following places:
  - Locations exposed to direct sunlight
  - Places with high humidity and easy condensation
  - Places containing corrosive gases
  - Locations where vibration and shock are directly transmitted to the product body
- When the lead wires of this product are installed in the same conduit as the power wires and electric power wires, they may be interfered with, malfunction or even be damaged.
- The forces applied to the conductors are as follows: tension less than 40 N, torque less than 0.1 N·m, pressure less than 20 N, bending less than 3 kg.
- After the power is turned on, the product is in a detectable state within 200ms. Therefore, if the load and the product are connected to different power supplies, the power of the product must be turned on first.
- After cutting off the power supply, output pulses may occur, so please cut off the power supply of the load or load line first.
- Please do not use solvents such as thinner, gasoline, acetone, kerosene, etc. to clean

### Confirmation of packaging contents

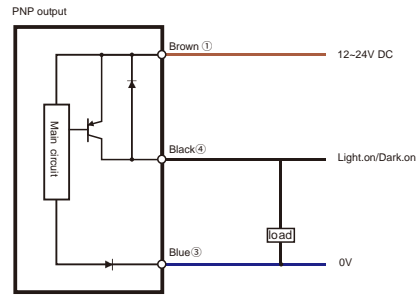
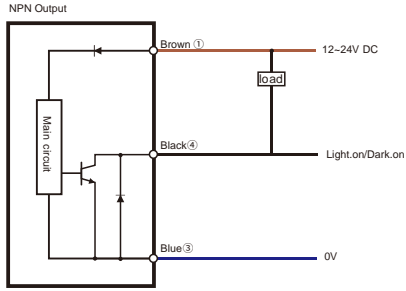
- sensor one
- User Manual one
- Mounting Screws One set (for some models)

### Technical specifications

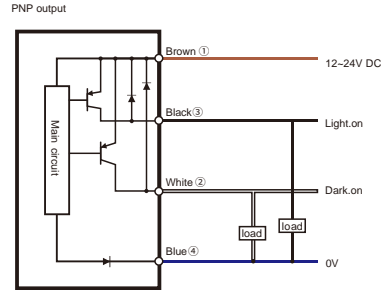
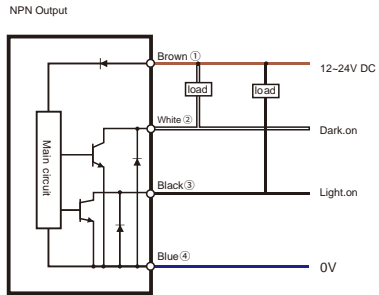
model	DPF-410N/P-WD/WL	MP2-412N/P-WD/WL	MP2-410N/PE	MP2-412N/PE
Detection surface	front	head	front	head
Detection method	Diffuse			
Detection distance	2.5~8mm (black object 3mm)		40mm (50×50 white matte paper)	
Hysteresis	<20%			
lightsource	Infrared LED(880nm)		Infrared LED(850nm)	
Response time	<1ms			
Operating voltage	12~24V DC			
Consumption voltage	-	-	< 20mA	< 25mA
Residual voltage	<2.5V (at 100mA load current)			
Residual voltage	3V or less (load current 100mA/wire length 2m)		-	
Indicator Lights	Red LED		-	
Output Mode	-		NPN/PNP collector switch	
Switch mode	L.on (light-on action) / D.on (light-off action) models are available			
Protection Circuit	Surge protection, reverse polarity protection		-	
Load current	-		< 100mA(24V DC)	
Ambient temperature	Working: -10°C~55°C, Storage: -25°C~80°C(no freezing)		Working: -20°C~+55°C, Storage: -25°C~+80°C(no freezing)	
Ambient humidity	Working: 45%~85%RH, Storage: 35%~90%RH (non-condensing)		Working: 45%~+85%RH, Storage: 35%~90%RH (non-condensing)	
Ambient illumination	≤3500Lux		Incandescent lamp ≤3000Lux, Sunlight ≤10000Lux	
Voltage influence	When the rated power supply voltage fluctuates within ±15%, The detection distance varies within ±1%.		-	
Dielectric strength	> 50MΩ/500V DC		> 20MΩ/500V DC	
Withstand voltage	AC1000V, 50/60Hz, 1 minute			
Vibration resistance	10-55Hz, up and down amplitude 1.5mm, X, Y, Z direction 2 hours each		-	
Impact resistance	500m/s² X, Y, Z directions 10 times each		-	
Protection level	IP50			
Housing Material	PC			
Outlet mode	2 m 3-core cable		Plug-in	
Accessories	-		Mounting Screws	

## Circuit Diagram

DPF-410N/P-WD/WL  
DPF-412N/P-WD/WL

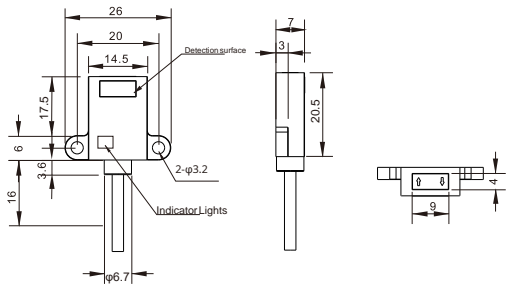


DPF-410N/PE  
DPF-412N/PE

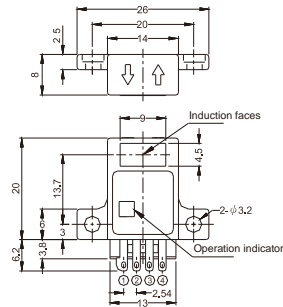


## Dimensions

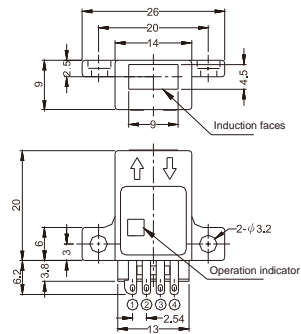
DPF-410N/P-WD/WL



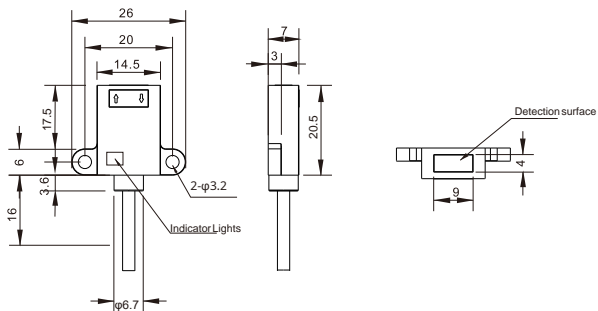
DPF-410N/PE



DPF-412N/PE



DPF-412N/P-WD/WL



① : Brown  
② : OUT1 White  
③ : OUT2 Black  
④ : Blue

Connection cable: DME-1007

## Product Commitment

Degson's products undergo strict factory inspection. If a fault occurs, please contact the nearest Gaosong office and provide detailed information so that we can solve it as soon as possible.

### Warranty

- The product warranty period is one year, starting from the date the product is shipped to the place designated by the purchaser.

### Warranty coverage

(1) If a fault occurs during the warranty period stated above and caused by Degson, Degson will repair the product free of charge. However, the following situations are not covered by the warranty.

- Failure caused by improper operation or improper use under the conditions or environment not specified in the operating instructions, user manual or technical requirements specially agreed upon between the purchaser and Degson.
- The failure is not due to a product defect but is caused by the design of the purchaser's equipment or software.
- The failure is caused by modification or repair performed by someone other than Degson.
- Failures that can be completely avoided by properly repairing or replacing wearing parts in accordance with the operating instructions or user manual.
- Failures caused by unforeseen changes in the level of science and technology after the product is shipped from Degson.
- Failures caused by natural disasters such as fire, earthquake and flood, or external factors such as abnormal voltage are not covered by Degson.

(2) The warranty covers only the situations specified in Article (1). Degson shall not be liable for any indirect losses (damage to equipment, loss of opportunity, loss of profits, etc.) or other losses caused to the purchaser by its equipment.

### Product Suitability

Degson's products are designed and manufactured as general-purpose products for general industries. Therefore, Degson's products must not be used for the following applications and are not suitable for their use. However, if the purchaser consults Degson in advance about the use of the product with a responsible attitude and understands the technical specifications, grades and performance of the product, and takes necessary safety measures, the product can be used. In this case, the product warranty scope is the same as above.

- Uses that may result in chemical contamination or electrical interference, or use under conditions or environments not described in the product catalog, instruction manual, etc.
- Atomic energy control equipment, incineration equipment, railway, aviation, vehicle equipment, safety devices, and administrative agencies and equipment manufactured in accordance with the regulations of individual industries.
- Machinery, systems and devices that may endanger life or property.
- Gas, water, and electricity supply systems require highly reliable equipment that operates continuously 24 hours a day.