

# TECHNICAL DATA SHEET

---

Capacitive Proximity Switches

Proximity Sensors

**High/Low Temperature Resistance Series**

## Contents

- Functional Description
- Application Scenarios
- Technical Parameters
- Size Parameters
- Wiring Diagram



## Proximity sensors: solutions for multiple scenarios

Proximity sensors are widely used in many fields due to their non-contact detection, high accuracy and fast response.

### Inductive series for oil-resistant and corrosion-resistant machine tool industry

Many times we are faced with harsh operating environments, compact installation spaces, and conditions with both movement and corrosion during use, such as the machine tool manufacturing industry, which has such diverse needs - the number of materials, processes and molds involved is huge and varied. During the production process, cutting fluids and abrasives are required to process workpieces, so various sensor solutions that are not affected by harsh environmental conditions are required. dadisick's product series, which uses different manufacturing processes, can even provide fully suitable sensor solutions for high-speed applications or applications involving corrosive coolants and lubricants.



### All-metal integrated housing anti-washing series



Due to the stainless steel integrated housing, this series of sensors not only has good impact resistance, but also can withstand the corrosion of detergents and solvents. It can be used in environments that require frequent high-pressure washing, and can achieve long-term sealing that meets the IP69K protection level. At the same time, it is compatible with the installation method of conventional sensors, which can be replaced and replaced conveniently and practically. It includes a variety of models with a diameter of 8mm...30mm, all with direct cable output and M12 standard connector. Operating distance 2...8mm.

### Low-temperature -40°C inductive series for wind power generation

Wind power generation has become one of the world's recognized main clean energy generation methods because it does not require the use of fuel and does not produce radiation or air pollution. Different sensors are used in the operation of the variable pitch yaw generator reducer of the wind turbine to detect the correction of the control movement and rotation process. Most of the installation locations of wind turbines are in places with severe temperature changes such as mountains, oceans and plateaus, which require higher temperature environments for sensors. Our low-temperature -40°C product series launched for this use environment is perfectly adapted to the application here.



### Solutions for high-temperature series long-distance products in steelmaking and rolling



Steelmaking and rolling equipment produces complex oil, gas and water erosion and flushing sensors for various raw materials under high temperature of oil and gas in a high-temperature 2000° radiation environment, which puts higher requirements on the stability of sensors. In the position control detection of multiple processes of steel billets, coils and wires, DADISICK has a variety of series of products with high temperature resistance of 250°C, DC two-wire, AC 250V, etc., which are widely used in this complex environment to ensure normal production.

## Anti-welding slag adhesion, high temperature resistance and anti-interference series

Whether it is stamping, welding, painting, or assembly processes in automobile manufacturing, long distance, anti-welding slag adhesion, strong current magnetic field interference, or high temperature environment, DADISICK sensors can be used for fixtures, molds and other equipment. Reliable performance and perfect solutions bring a smooth production process to automobile manufacturing. In the welding of various high-current welding machines, the strong magnetic field interference generated by the current and the high-temperature heat conduction generated by the arc will affect the sensors in the fixture molds. Reliable performance products must be selected to ensure normal operation.



## All-metal integrated housing anti-washing series

A large number of intelligent warehousing and logistics facilities, such as AGV trolleys and rail-to-rail stackers, are equipped with our sensors to realize the control of rotating positioning and lifting devices, etc., providing very stable and durable high-reliability products. Under the high requirements of small installation space and long detection distance, this series of products is the best choice for customers with strict cost control. Choosing this series of products is the best choice for customers with strict cost control.

## High-pressure 1000Bar hydraulic cylinder series

The stable and reliable hydraulic cylinder telescopic more often uses DADISICK's inductive proximity sensors with a high pressure resistance of up to 1000Bar to achieve the control of the origin. Ceramic chips are used as high-voltage products at the induction level and stainless steel integrated housings are used to achieve high-pressure resistant applications. DC10-30V two-wire and three-wire products are also provided.



## Analog output series for position correction and control devices



In detecting the offset position of the controlled parts of the fixture, analog output proximity sensors are often used in wire reel correction, and the size of the offset is controlled by the size of the detection distance. This use can be installed and tested in a very small position space. We have successfully provided stable and accurate products for many parts manufacturers and wire rope winding equipment, including 0-10V voltage output and 4-20mA current output and current + voltage output products. The detectable distance can be adjusted between 0-50mm.

## Shoemaking, textile and papermaking machinery series products

Whichever manufacturer of shoemaking machines, textile machines and papermaking machines has long equipped the mechanical equipment they produce with more automated operation technologies, these control technologies are also equipped with high-quality sensors to achieve their control conditions. They require products with higher switching frequency accuracy and better stability, and they need a variety of products with unconventional dimensions. We tailor new outer shell dimensions for them one by one to meet their needs.



# Proximity Sensor Model Specifications

**C G 0 8 - 0 1 N O - Z A A - 3 A - H 1 2 0 (CG08-01NO-ZAA-3A-H120)**

**Special Instructions:** Highest 120°C

**Shell material:**

H: nickel-plated brass; S: stainless steel; SS: Split Type;  
P: plastic; T: Teflon; L: aluminum alloy

**Short circuit protection:**

A: Standard type with short circuit protection  
M: Short type with short circuit protection  
S: Standard type without short circuit protection  
R: Ultra short type with short circuit protection

**Wiring method:**

2: 2-wire    5: 5-wire type    2E: 2 wire+M8 connector    2T: 2 wire+M12 connector  
3: 3-wire    E: M8 connector    3E: 3 wire+M8 connector    3T: 3 wire+M12 connector  
4: 4-wire    T: M12 connector    4E: 4 wire+M8 connector    4T: 4 wire+M12 connector

**Voltage:**

A:DC10-30V    B:DC5-36V    C:DC10-55V    D:DC10-60V  
E:DC18-30V    F:DC6-12V    G:AC20-250V    H:AC/DC20-250V

**Installation method:** A: Shielded B: Non-shielded

**Connection method:** Y: Plug-in type Z: Cable type

**Output mode:**

NC: NPN NC;	NO: NPN NO
PC: PNP NC;	PO: PNP NO
NS: NPN NO&NC;	PS: PNP NO&NC
HC: DC NC;	HO: DC NO
AC: AC NC;	AO: AC NO
HS: DC NO&NC;	AS: AC NO&NC
I: analog current;	U: analog voltage
TC: AC&DC NC;	TO: AC&DC NO
TS: AC/DC NO&NC;	V: Current + voltage output
NA: Explosion-proof type	

**Detection distance:** 1mm-50mm

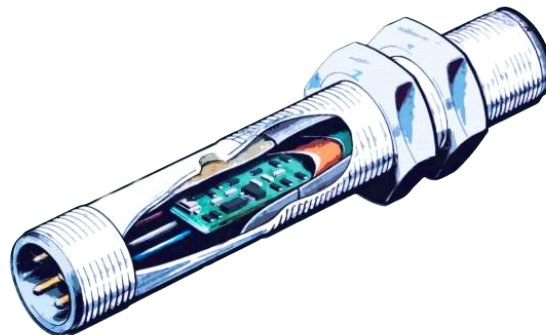
**Specification(mm):** φ3, φ4, M4, M5, φ6.5, M8, M12, M18, M30

**Type:**

R: Standard type;  
X: Ultra-small;  
B: Explosion-proof type;  
J: All-metal type;  
P: High-pressure resistant type;  
G: High-temperature resistant;  
Z: Low-temperature resistant type;  
C: Limit switch type;  
D: Anti-welding slag and high-magnetic type;  
F: Corrosion-resistant type;  
A: Analog type;  
I: Ring type;  
E: Square type

**Series:**

L: Inductive sensor  
C: Capacitive sensor



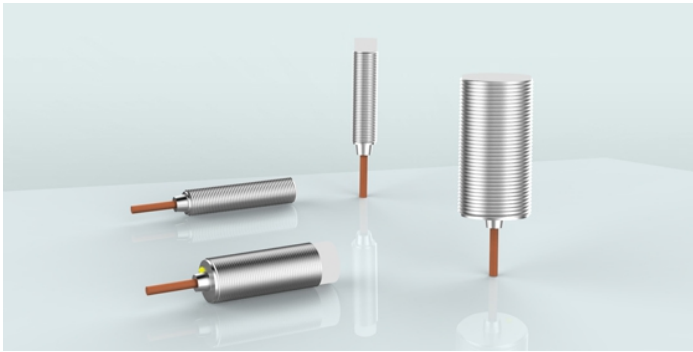
## High/low temperature resistance Series

### Proximity sensors

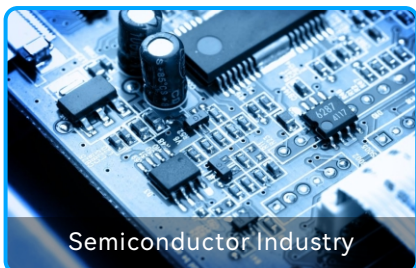
This series features special design for  $-40^{\circ}\text{C}$  low temperature or  $+180^{\circ}\text{C}$  high temperature harsh environment.

### Features:

- Temperature range:  $-40^{\circ}\text{C}$ -- $+180^{\circ}\text{C}$ ;
- Size: M8, M12, M18, M30;
- Sensing distance: 10-25mm;
- Frequency: 100-500 HZ;
- Cable material: teflon or silicon;
- Certificates: CE, ROHS.

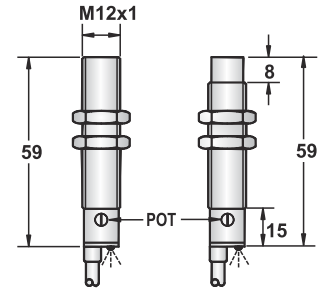
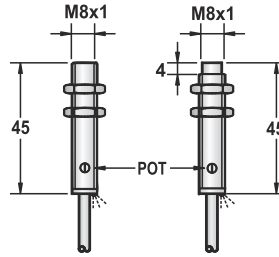


## Application Industry



# Product Parameters

## High Temperature Resistance Series



### Size category

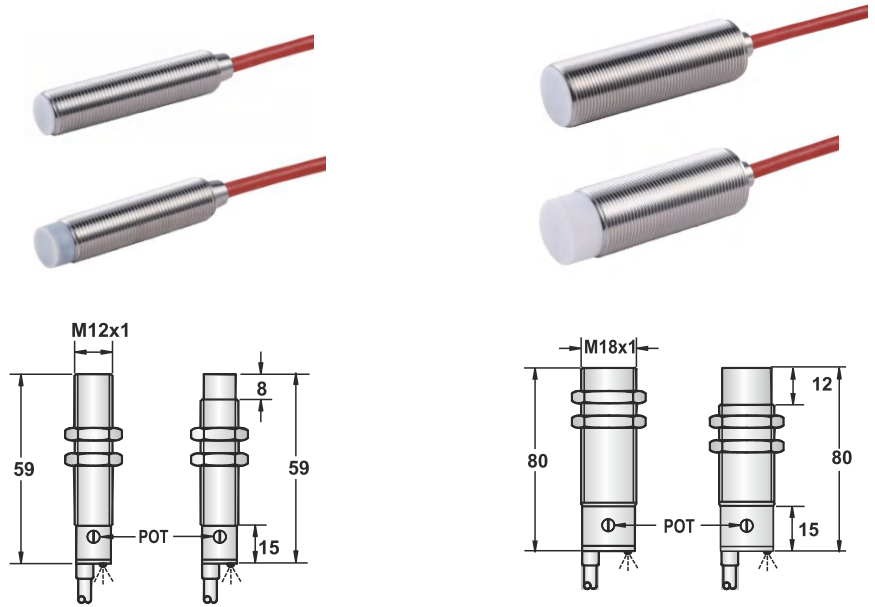
### M8

### M12

● Shielded ○ Non-shielded	● ○		● ○	
	Sn: mm		1-3mm Adjustable	1-6mm Adjustable
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	PTFE		PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	120mA		120mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<1.0%(Sr)		<1.0%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-25°C - +120°C		-25°C - +120°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	150mA		150mA	
Reverse polarity protection	Yes		Yes	
Connection method	Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4		Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4	
Product Model				
DC 3 wire 10-30V NPN NO	CG08-01NO-ZAA-3A-H120	CG08-02NO-ZBA-3A-H120	CG12-03NO-ZAA-3A-H120	CG12-06NO-ZBA-3A-H120
DC 3 wire 10-30V NPN NC	CG08-01NC-ZAA-3A-H120	CG08-02NC-ZBA-3A-H120	CG12-03NC-ZAA-3A-H120	CG12-06NC-ZBA-3A-H120
DC 3 wire 10-30V PNP NO	CG08-01PO-ZAA-3A-H120	CG08-02PO-ZBA-3A-H120	CG12-03PO-ZAA-3A-H120	CG12-06PO-ZBA-3A-H120
DC 3 wire 10-30V PNP NC	CG08-01PC-ZAA-3A-H120	CG08-02PC-ZBA-3A-H120	CG12-03PC-ZAA-3A-H120	CG12-06PC-ZBA-3A-H120
DC 4 wire 10-30V Convertible PNP (NO&NC)				
DC 4 wire 10-30V Convertible NPN (NO&NC)				
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

High Temperature  
Resistance Series



## Size category

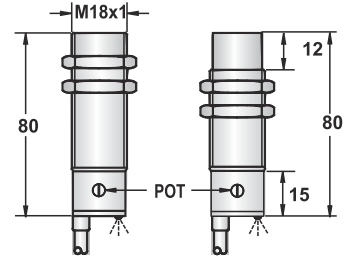
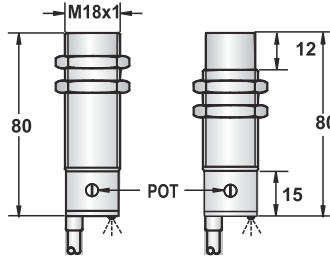
### M12

### M18

● Shielded ○ Non-shielded	M12		M18	
	Sn: mm	● 1-3mm Adjustable	○ 1-6mm Adjustable	● 2-8mm Adjustable
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	PTFE		PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	100mA		120mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<1.0%(Sr)		<1.0%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-25°C — +150 °C		-25°C - +120 °C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	120mA		150mA	
Reverse polarity protection	Yes		Yes	
Connection method	Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4		Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4	
Product Model				
DC 3 wire 10-30V NPN NO	CG12-03NO-ZAA-3A-H150	CG12-06NO-ZBA-3A-H150	CG18-08NO-ZAA-3A-H120	CG18-15NO-ZBA-3A-H120
DC 3 wire 10-30V NPN NC	CG12-03NC-ZAA-3A-H150	CG12-06NC-ZBA-3A-H150	CG18-08NC-ZAA-3A-H120	CG18-15NC-ZBA-3A-H120
DC 3 wire 10-30V PNP NO	CG12-03PO-ZAA-3A-H150	CG12-06PO-ZBA-3A-H150	CG18-08PO-ZAA-3A-H120	CG18-15PO-ZBA-3A-H120
DC 3 wire 10-30V PNP NC	CG12-03PC-ZAA-3A-H150	CG12-06PC-ZBA-3A-H150	CG18-08PC-ZAA-3A-H120	CG18-15PC-ZBA-3A-H120
DC 4 wire 10-30V Convertible PNP (NO&NC)			CG18-08PS-ZAA-4A-H120	CG18-15PS-ZBA-4A-H120
DC 4 wire 10-30V Convertible NPN (NO&NC)			CG18-08NS-ZAA-4A-H120	CG18-15NS-ZBA-4A-H120
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

High Temperature  
Resistance Series



## Size category

### M18

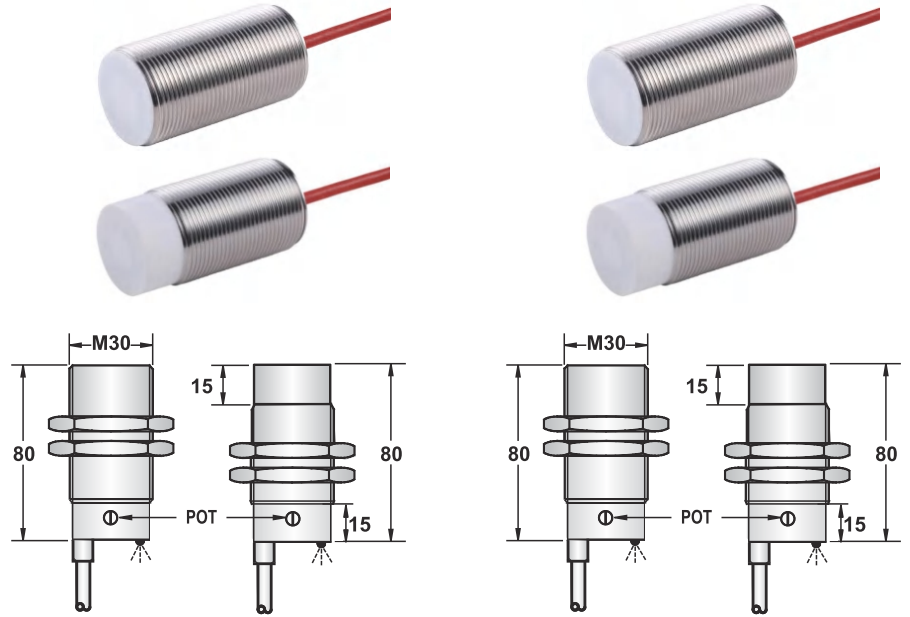
### M18

● Shielded ○ Non-shielded	M18		M18	
	●	○	●	○
Sn: mm	2-8mm Adjustable	2-15mm Adjustable	2-8mm Adjustable	2-15mm Adjustable
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	PTFE		PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	100mA		80mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<5%(Sr)		<5%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-25°C— +150 °C		-25°C— +180°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	120mA		100mA	
Reverse polarity protection	Yes		Yes	
Connection method	Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4		Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4	
Product Model				
DC 3 wire 10-30V NPN NO	CG18-08NO-ZAA-3A-H150	CG18-15NO-ZBA-3A-H150	CG18-08NO-ZAA-3A-H180	CG18-15NO-ZBA-3A-H180
DC 3 wire 10-30V NPN NC	CG18-08NC-ZAA-3A-H150	CG18-15NC-ZBA-3A-H150	CG18-08NC-ZAA-3A-H180	CG18-15NC-ZBA-3A-H180
DC 3 wire 10-30V PNP NO	CG18-08PO-ZAA-3A-H150	CG18-15PO-ZBA-3A-H150	CG18-08PO-ZAA-3A-H180	CG18-15PO-ZBA-3A-H180
DC 3 wire 10-30V PNP NC	CG18-08PC-ZAA-3A-H150	CG18-15PC-ZBA-3A-H150	CG18-08PC-ZAA-3A-H180	CG18-15PC-ZBA-3A-H180
DC 4 wire 10-30V Convertible PNP (NO&NC)	CG18-08PS-ZAA-4A-H150	CG18-15PS-ZBA-4A-H150	CG18-08PS-ZAA-4A-H180	CG18-15PS-ZBA-4A-H180
DC 4 wire 10-30V Convertible NPN (NO&NC)	CG18-08NS-ZAA-4A-H150	CG18-15NS-ZBA-4A-H150	CG18-08NS-ZAA-4A-H180	CG18-15NS-ZBA-4A-H180
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				



# Product Parameters

## High Temperature Resistance Series



### Size category

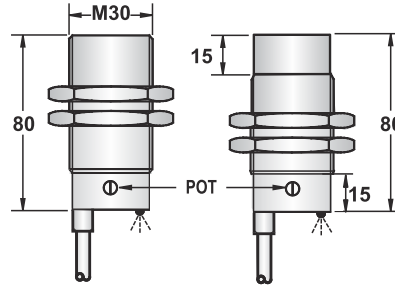
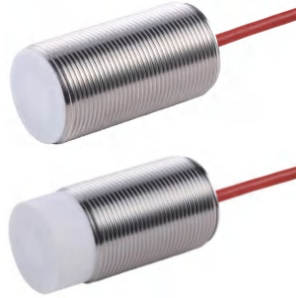
### M30

### M30

● Shielded ○ Non-shielded	● ○		● ○	
	2-20mm Adjustable	2-30mm Adjustable	2-20mm Adjustable	2-30mm Adjustable
Sn: mm				
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	PTFE		PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	120mA		100mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<5%(Sr)		<5%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-25°C—+120°C		-25°C—+150°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	120mA		120mA	
Reverse polarity protection	Yes		Yes	
Connection method	Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4		Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4	
Product Model				
DC 3 wire 10-30V NPN NO	CG30-20NO-ZAA-3A-H120	CG30-30NO-ZBA-3A-H120	CG30-20NO-ZAA-3A-H150	CG30-30NO-ZBA-3A-H150
DC 3 wire 10-30V NPN NC	CG30-20NC-ZAA-3A-H120	CG30-30NC-ZBA-3A-H120	CG30-20NC-ZAA-3A-H150	CG30-30NC-ZBA-3A-H150
DC 3 wire 10-30V PNP NO	CG30-20PO-ZAA-3A-H120	CG30-30PO-ZBA-3A-H120	CG30-20PO-ZAA-3A-H150	CG30-30PO-ZBA-3A-H150
DC 3 wire 10-30V PNP NC	CG30-20PC-ZAA-3A-H120	CG30-30PC-ZBA-3A-H120	CG30-20PC-ZAA-3A-H150	CG30-30PC-ZBA-3A-H150
DC 4 wire 10-30V Convertible PNP (NO&NC)	CG30-20PS-ZAA-4A-H120	CG30-30PS-ZBA-4A-H120	CG30-20PS-ZAA-4A-H150	CG30-30PS-ZBA-4A-H150
DC 4 wire 10-30V Convertible NPN (NO&NC)	CG30-20NS-ZAA-4A-H120	CG30-30NS-ZBA-4A-H120	CG30-20NS-ZAA-4A-H150	CG30-30NS-ZBA-4A-H150
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

## High Temperature Resistance Series



### Size category

### M30

● Shielded    ○ Non-shielded

Sn: mm

● 2-20mm Adjustable    ○ 2-30mm Adjustable

Housing material **Nickel Plated Brass**

Detection head material **PTFE**

Operating voltage **10-30VDC**

Allowable pulsating voltage **<10%**

No-load current **<10mA**

Maximum load current **80mA**

Leakage current **<0.01mA**

Voltage drop **<2VDC**

Switching frequency **100HZ**

Response time **1.5ms**

Switching hysteresis **<15%(Sr)**

Repeat accuracy **<5%(Sr)**

Protection level **IP67**

Operating temperature **-25°C—+180 °C**

Temperature drift **<10%(Sr)**

Short circuit protection **Yes**

Overload protection current **100 mA**

Reverse polarity protection **Yes**

Connection method **Teflon 3.5Φ3x0.34 or silicone 4.8Φ3x3.4**

Product Model

DC 3 wire 10-30V NPN NO      CG30-20NO-ZAA-3A-H180      CG30-30NO-ZBA-3A-H180

DC 3 wire 10-30V NPN NC      CG30-20NC-ZAA-3A-H180      CG30-30NC-ZBA-3A-H180

DC 3 wire 10-30V PNP NO      CG30-20PO-ZAA-3A-H180      CG30-30PO-ZBA-3A-H180

DC 3 wire 10-30V PNP NC      CG30-20PC-ZAA-3A-H180      CG30-30PC-ZBA-3A-H180

DC 4 wire 10-30V Convertible PNP (NO&NC)      CG30-20PS-ZAA-4A-H180      CG30-30PS-ZBA-4A-H180

DC 4 wire 10-30V Convertible NPN (NO&NC)      CG30-20NS-ZAA-4A-H180      CG30-30NS-ZBA-4A-H180

DC 2 wire 10-60V NO

DC 2 wire 10-60V NC

DC 3 wire 10-55V NPN NO

DC 3 wire 10-55V NPN NC

DC 3 wire 10-55V PNP NO

DC 3 wire 10-55V PNP NC

DC 3 wire 5-36V NPN NO

DC 3 wire 5-36V NPN NC

DC 3 wire 5-36V PNP NO

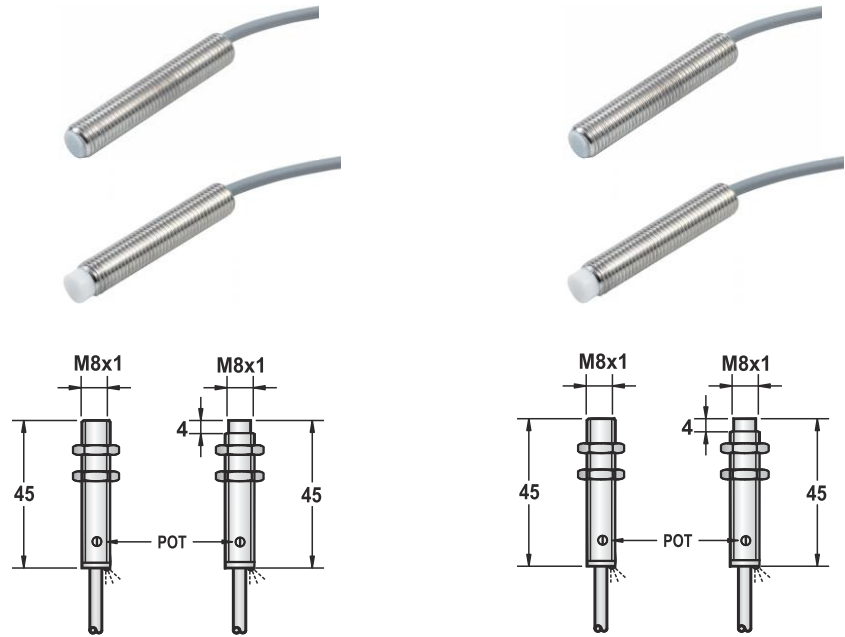
DC 3 wire 5-36V PNP NC

DC 4 wire 5-36V Convertible PNP (NO&NC)

DC 4 wire 5-36V Convertible NPN (NO&NC)

# Product Parameters

Low Temperature  
Resistance Series



## Size category

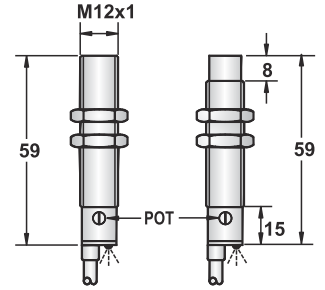
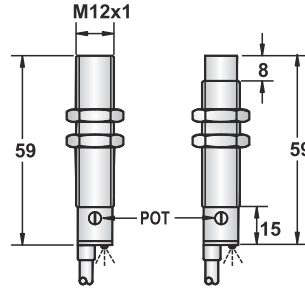
### M8

### M8

● Shielded ○ Non-shielded	● ○		● ○	
	0.1-1mm Adjustable		0.1-2mm Adjustable	
Sn: mm	0.1-1mm Adjustable		0.1-2mm Adjustable	
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	POM / PTFE		POM / PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	200mA		200mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<5%(Sr)		<5%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-30°C - +70°C		-40°C - +70°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	220mA		220mA	
Reverse polarity protection	Yes		Yes	
Connection method	2m oil resistant PUR cable, 3.0 φ 3x0.15		2m oil resistant PUR cable, 3.0 φ 3x0.15	
Product Model				
DC 3 wire 10-30V NPN NO	CZ08-01NO-ZAA-3A-H30	CZ08-02NO-ZBA-3A-H30	CZ08-01NO-ZAA-3A-H40	CZ08-02NO-ZBA-3A-H40
DC 3 wire 10-30V NPN NC	CZ08-01NC-ZAA-3A-H30	CZ08-02NC-ZBA-3A-H30	CZ08-01NC-ZAA-3A-H40	CZ08-02NC-ZBA-3A-H40
DC 3 wire 10-30V PNP NO	CZ08-01PO-ZAA-3A-H30	CZ08-02PO-ZBA-3A-H30	CZ08-01PO-ZAA-3A-H40	CZ08-02PO-ZBA-3A-H40
DC 3 wire 10-30V PNP NC	CZ08-01PC-ZAA-3A-H30	CZ08-02PC-ZBA-3A-H30	CZ08-01PC-ZAA-3A-H40	CZ08-02PC-ZBA-3A-H40
DC 4 wire 10-30V Convertible PNP (NO&NC)				
DC 4 wire 10-30V Convertible NPN (NO&NC)				
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

Low Temperature  
Resistance Series



## Size category

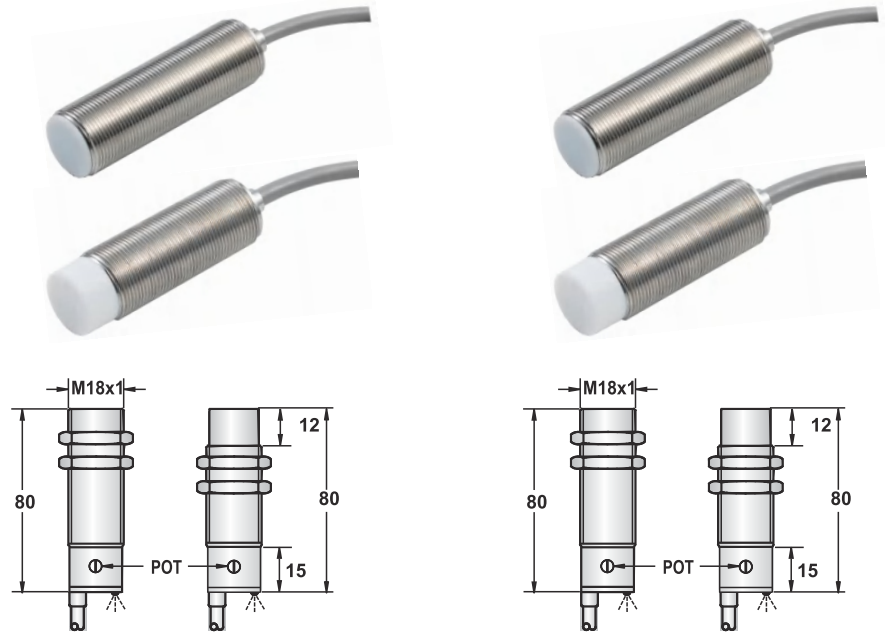
### M12

### M12

● Shielded    ○ Non-shielded	●	○	●	○
Sn: mm	1-3 mm Adjustable	1-6mm Adjustable	1-3 mm Adjustable	1-6mm Adjustable
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	POM / PTFE		POM / PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	200mA		200mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<5%(Sr)		<5%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-30°C - +70°C		-40°C - +70°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	220mA		220mA	
Reverse polarity protection	Yes		Yes	
Connection method	2m oil resistant PUR cable, 4.0 φ 3x0.15		2m oil resistant PUR cable, 4.0 φ 3x0.15	
Product Model				
DC 3 wire 10-30V NPN NO	CZ12-03NO-ZAA-3A-H30	CZ12-06NO-ZBA-3A-H30	CZ12-03NO-ZAA-3A-H40	CZ12-06NO-ZBA-3A-H40
DC 3 wire 10-30V NPN NC	CZ12-03NC-ZAA-3A-H30	CZ12-06NC-ZBA-3A-H30	CZ12-03NC-ZAA-3A-H40	CZ12-06NC-ZBA-3A-H40
DC 3 wire 10-30V PNP NO	CZ12-03PO-ZAA-3A-H30	CZ12-06PO-ZBA-3A-H30	CZ12-03PO-ZAA-3A-H40	CZ12-06PO-ZBA-3A-H40
DC 3 wire 10-30V PNP NC	CZ12-03PC-ZAA-3A-H30	CZ12-06PC-ZBA-3A-H30	CZ12-03PC-ZAA-3A-H40	CZ12-06PC-ZBA-3A-H40
DC 4 wire 10-30V Convertible PNP (NO&NC)				
DC 4 wire 10-30V Convertible NPN (NO&NC)				
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

## Low Temperature Resistance Series



### Size category

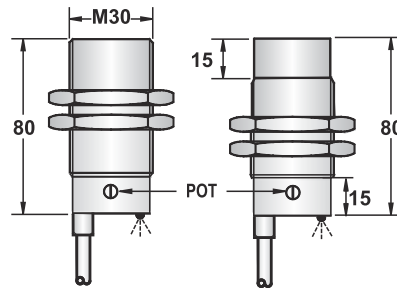
### M18

### M18

● Shielded ○ Non-shielded	● ○		● ○	
	2-8mm Adjustable		2-15mm Adjustable	
Sn: mm	2-8mm Adjustable		2-15mm Adjustable	
Housing material	Nickel Plated Brass		Nickel Plated Brass	
Detection head material	POM / PTFE		POM / PTFE	
Operating voltage	10-30VDC		10-30VDC	
Allowable pulsating voltage	<10%		<10%	
No-load current	<10mA		<10mA	
Maximum load current	200mA		200mA	
Leakage current	<0.01mA		<0.01mA	
Voltage drop	<2VDC		<2VDC	
Switching frequency	100HZ		100HZ	
Response time	1.5ms		1.5ms	
Switching hysteresis	<15%(Sr)		<15%(Sr)	
Repeat accuracy	<5%(Sr)		<5%(Sr)	
Protection level	IP67		IP67	
Operating temperature	-30°C - +70°C		-40°C - +70°C	
Temperature drift	<10%(Sr)		<10%(Sr)	
Short circuit protection	Yes		Yes	
Overload protection current	220mA		220mA	
Reverse polarity protection	Yes		Yes	
Connection method	2m oil resistant PUR cable, 5.0 φ 3x0.34		2m oil resistant PUR cable, 5.0 φ 3x0.34	
Product Model				
DC 3 wire 10-30V NPN NO	CZ18-08NO-ZAA-3A-H30	CZ18-15NO-ZBA-3A-H30	CZ18-08NO-ZAA-3A-H40	CZ18-15NO-ZBA-3A-H40
DC 3 wire 10-30V NPN NC	CZ18-08NC-ZAA-3A-H30	CZ18-15NC-ZBA-3A-H30	CZ18-08NC-ZAA-3A-H40	CZ18-15NC-ZBA-3A-H40
DC 3 wire 10-30V PNP NO	CZ18-08PO-ZAA-3A-H30	CZ18-15PO-ZBA-3A-H30	CZ18-08PO-ZAA-3A-H40	CZ18-15PO-ZBA-3A-H40
DC 3 wire 10-30V PNP NC	CZ18-08PC-ZAA-3A-H30	CZ18-15PC-ZBA-3A-H30	CZ18-08PC-ZAA-3A-H40	CZ18-15PC-ZBA-3A-H40
DC 4 wire 10-30V Convertible PNP (NO&NC)	CZ18-08PS-ZAA-4A-H30	CZ18-15PS-ZBA-4A-H30	CZ18-08PS-ZAA-4A-H40	CZ18-15PS-ZBA-4A-H40
DC 4 wire 10-30V Convertible NPN (NO&NC)	CZ18-08NS-ZAA-4A-H30	CZ18-15NS-ZBA-4A-H30	CZ18-08NS-ZAA-4A-H40	CZ18-15NS-ZBA-4A-H40
DC 2 wire 10-60V NO				
DC 2 wire 10-60V NC				
DC 3 wire 10-55V NPN NO				
DC 3 wire 10-55V NPN NC				
DC 3 wire 10-55V PNP NO				
DC 3 wire 10-55V PNP NC				
DC 3 wire 5-36V NPN NO				
DC 3 wire 5-36V NPN NC				
DC 3 wire 5-36V PNP NO				
DC 3 wire 5-36V PNP NC				
DC 4 wire 5-36V Convertible PNP (NO&NC)				
DC 4 wire 5-36V Convertible NPN (NO&NC)				

# Product Parameters

## Low Temperature Resistance Series



### Size category

### M30

● Shielded ○ Non-shielded

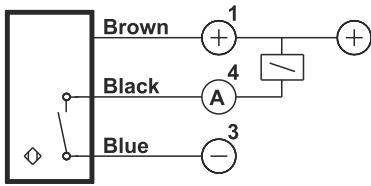
Sn: mm

● 2-20mm Adjustable ○ 2-30mm Adjustable

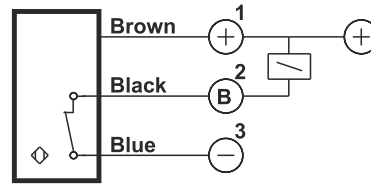
Housing material	Nickel Plated Brass	
Detection head material	POM / PTFE	
Operating voltage	10-30VDC	
Allowable pulsating voltage	<10%	
No-load current	<10mA	
Maximum load current	200mA	
Leakage current	<0.01mA	
Voltage drop	<2VDC	
Switching frequency	100HZ	
Response time	1.5ms	
Switching hysteresis	<15%(Sr)	
Repeat accuracy	<5%(Sr)	
Protection level	IP67	
Operating temperature	-40°C — + 70°C	
Temperature drift	<10%(Sr)	
Short circuit protection	Yes	
Overload protection current	220mA	
Reverse polarity protection	Yes	
Connection method	2m oil resistant PUR cable, 5.0 $\phi$ 3x0.34	
Product Model		
DC 3 wire 10-30V NPN NO	CZ30-20NO-ZAA-3A-H40	CZ30-30NO-ZBA-3A-H40
DC 3 wire 10-30V NPN NC	CZ30-20NC-ZAA-3A-H40	CZ30-30NC-ZBA-3A-H40
DC 3 wire 10-30V PNP NO	CZ30-20PO-ZAA-3A-H40	CZ30-30PO-ZBA-3A-H40
DC 3 wire 10-30V PNP NC	CZ30-20PC-ZAA-3A-H40	CZ30-30PC-ZBA-3A-H40
DC 4 wire 10-30V Convertible PNP (NO&NC)	CZ30-20PS-ZAA-4A-H40	CZ30-30PS-ZBA-4A-H40
DC 4 wire 10-30V Convertible NPN (NO&NC)	CZ30-20NS-ZAA-4A-H40	CZ30-30NS-ZBA-4A-H40
DC 2 wire 10-60V NO		
DC 2 wire 10-60V NC		
DC 3 wire 10-55V NPN NO		
DC 3 wire 10-55V NPN NC		
DC 3 wire 10-55V PNP NO		
DC 3 wire 10-55V PNP NC		
DC 3 wire 5-36V NPN NO		
DC 3 wire 5-36V NPN NC		
DC 3 wire 5-36V PNP NO		
DC 3 wire 5-36V PNP NC		
DC 4 wire 5-36V Convertible PNP (NO&NC)		
DC 4 wire 5-36V Convertible NPN (NO&NC)		

# Wiring Diagram

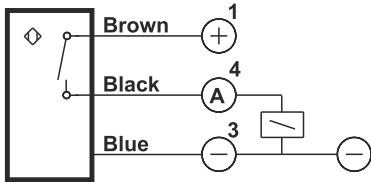
**DC NPN NO**



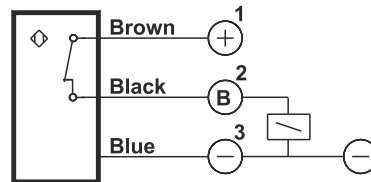
**DC NPN NC**



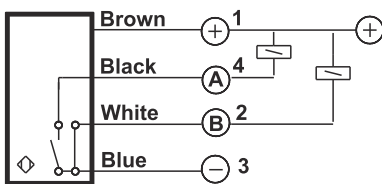
**DC PNP NO**



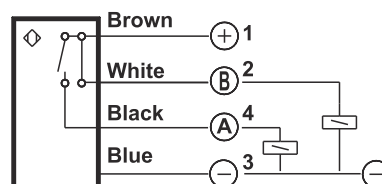
**DC PNP NC**



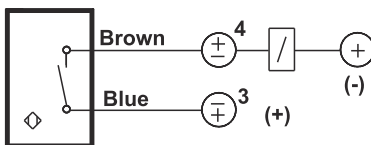
**DC NPN NO&NC**



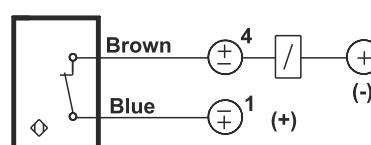
**DC PNP NO&NC**



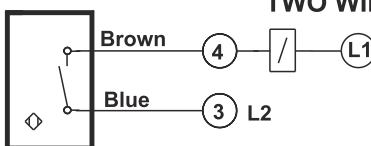
**DC 2 wire NO**



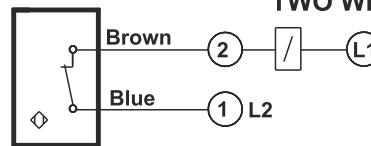
**DC 2 wire NC**



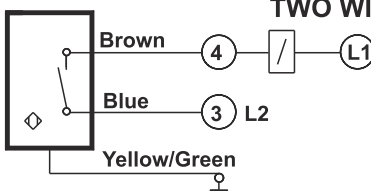
**Plastic housing AC/DC 20-250V or AC 20-250V TWO WIRE-NO**



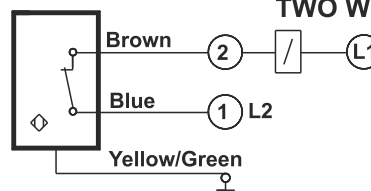
**Plastic housing AC/DC 20-250V or AC 20-250V TWO WIRE-NC**



**Metal housing AC/DC 20-250V or AC 20-250V TWO WIRE-NO**

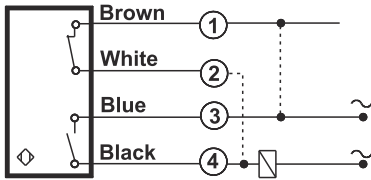


**Metal housing AC/DC 20-250V or AC 20-250V TWO WIRE-NC**

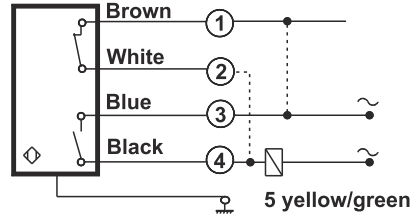


# Wiring Diagram

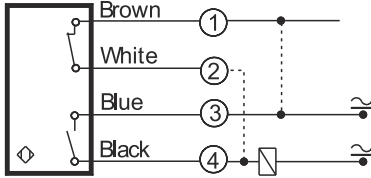
**Plastic housing** AC 20-250V  
NO,NC Changeable



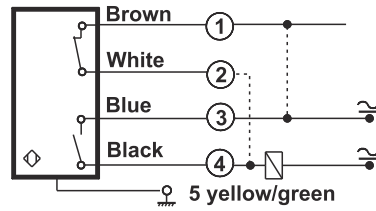
**Metal housing** AC 20-250V  
NO,NC Changeable



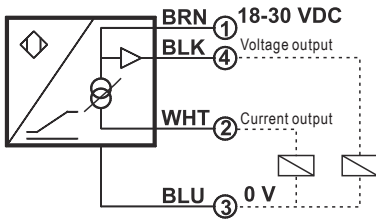
**Plastic housing** AC 20-250V  
NO,NC Changeable



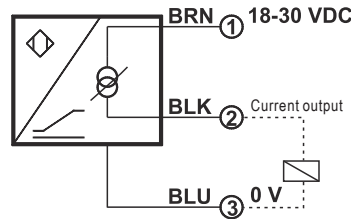
**Metal housing** AC 20-250V  
NO,NC Changeable



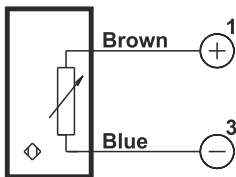
**Analog (current + voltage output type)**



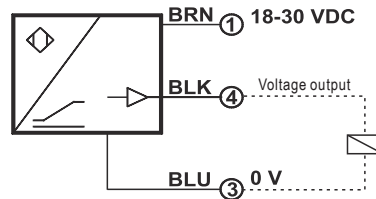
**Analog (current output type)**



**Riot-proof DC 6-12V**

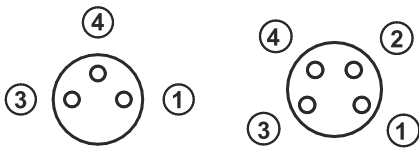


**Analog (voltage output type)**

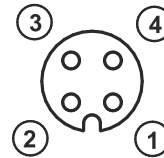


## Connector Diagram

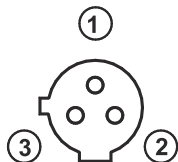
Used for M8 DC  
M8



Used for M12 DC  
M12



Used for M12 AC  
M12



Used for M18 M30 DC or AC

