

# SELECTION GUIDE

OCN	1	-	12	04	N	-	A	3	S	0.3	/	P12	/	40
1	2	3	4	5	6	7	8	9	10	11				

## 1、Housing Shape and Type

**OCN:** Cylindrical, high torque

## 2、Mounting

**1:** Shielded

**2:** Non-shielded

## 3、Housing Size

**08:** 8 mm

**12:** 12 mm

**18:** 18 mm

**30:** 30 mm

## 4、Sensing Distance (mm)

**1.5:** 1.5 mm


**02:** 2 mm

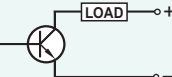
**04:** 4 mm

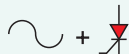
**18:** 18 mm

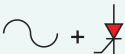
## 5、Output Function

**P:** PNP → 

**N:** NPN → 

**C:** DC, 2-wire output → 

**A:** AC → 

**U:** AC/DC MOSFET output (20-250V) → 

## 6、Operation Mode

**A:** Normally open (N.O.)

**B:** Normally closed (N.C.)

**S:** Changeover (N.O. & N.C.)

## 7、Connection

**2:** 2-wire

**3:** 3-wire

**4:** 4-wire

**C:** Pico style connector



**R:** Euro style connector



**Z:** Mini style connector



**U:** Micro style connector (for AC only)



**B:** Connector type with plug RSE-B series (for AC only)



## 8、Protection

**S:** Short body with short circuit protection

**L:** Long body with short circuit protection

**M:** Short body without short circuit protection

**N:** Long body without short circuit protection

## 9、Cable length or connector pin number

Cable type: **2=** 2M, **5=** 5M, **9=** 9M, **0.3=** 0.3M

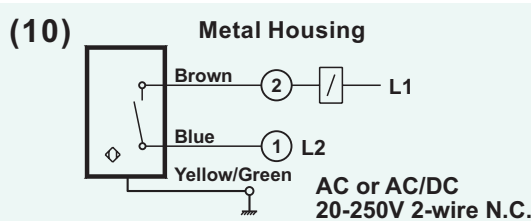
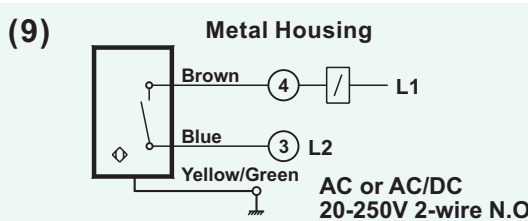
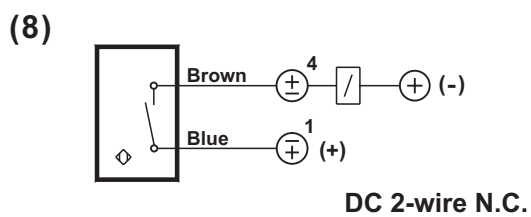
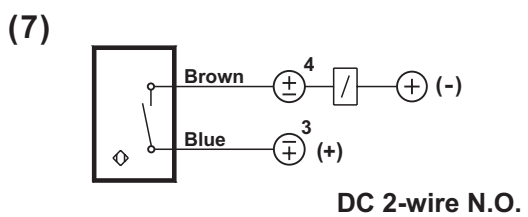
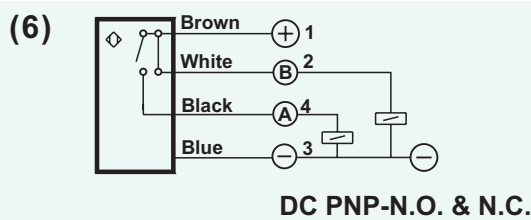
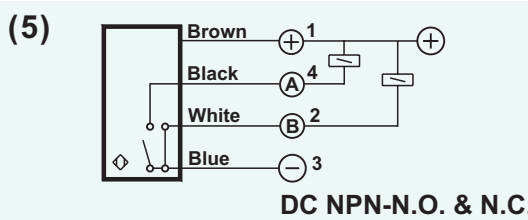
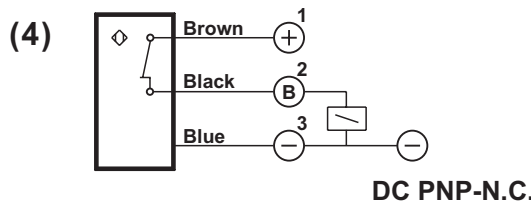
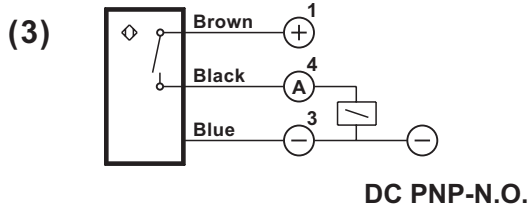
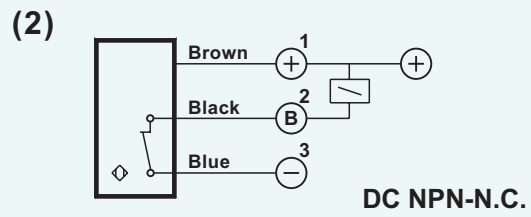
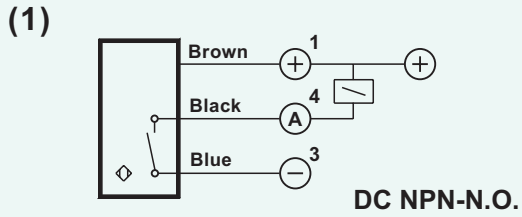
Connector type: **3=** 3Pin, **4=** 4Pin

## 10、Special option codes

**P8:** M8 pigtail mode

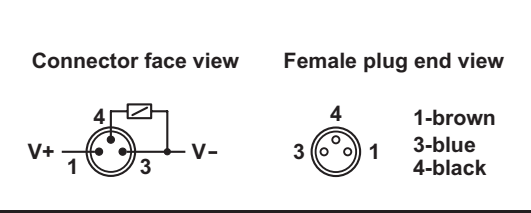
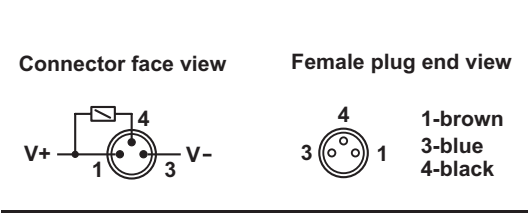
**P12:** M12 pigtail mode

# TERMINAL CONNECTION



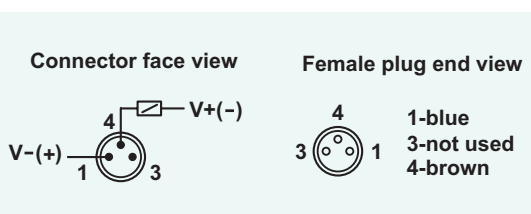
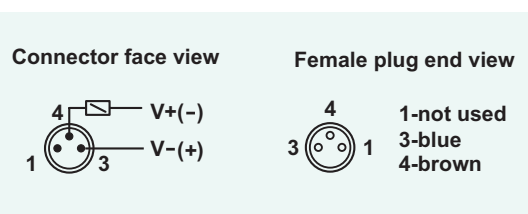
(11) M8 DC 3-wire NPN-N.O. or N.C.

(12) M8 DC 3-wire PNP-N.O. or N.C.



(13) M8 DC 2-wire NPN(PNP)-N.O.

(14) M8 DC 2-wire NPN(PNP)-N.C.

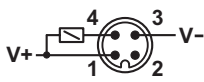


# TERMINAL CONNECTION

**(15) M12**

**DC 3-wire  
NPN-N.O.**

Connector face view



Female plug end view



1-brown  
2-not used  
3-blue  
4-black

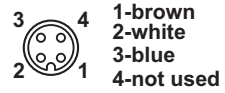
**(16) M12**

**DC 3-wire  
NPN-N.C.**

Connector face view



Female plug end view



1-brown  
2-white  
3-blue  
4-not used

**(17) M12**

**DC 3-wire  
PNP-N.O.**

Connector face view



Female plug end view

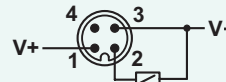


1-brown  
2-not used  
3-blue  
4-black

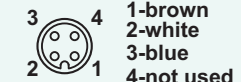
**(18) M12**

**DC 3-wire  
PNP-N.C.**

Connector face view



Female plug end view



1-brown  
2-white  
3-blue  
4-not used

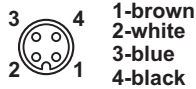
**(19) M12**

**DC 4-wire  
NPN-N.O. & N.C.**

Connector face view



Female plug end view

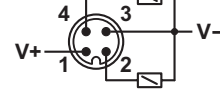


1-brown  
2-white  
3-blue  
4-black

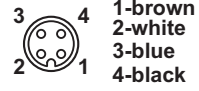
**(20) M12**

**DC 4-wire  
PNP-N.O. & N.C.**

Connector face view



Female plug end view

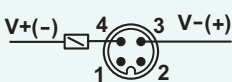


1-brown  
2-white  
3-blue  
4-black

**(21) M12**

**DC 2-wire  
NPN(PNP)-N.O.**

Connector face view



Female plug end view

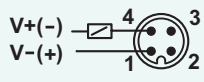


1-not used  
2-not used  
3-blue  
4-brown

**(22) M12**

**DC 2-wire  
NPN(PNP)-N.C.**

Connector face view



Female plug end view



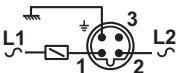
1-blue  
2-not used  
3-not used  
4-brown

**(23) M12**

**AC or AC/DC 20-250V  
2-wire N.O. or N.C.**

**Metal housing**

Connector face view



Female plug end view



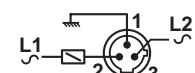
1-black  
2-blue  
3-not used  
⊕-yellow/green

**(24) M12**

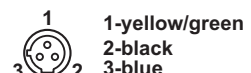
**AC or AC/DC 20-250V  
2-wire N.O. or N.C.**

**Metal housing**

Connector face view



Female plug end view



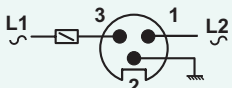
1-yellow/green  
2-black  
3-blue

**(25) 7/8"-16UNF-2A**

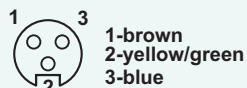
**AC/DC 20-250V  
2-wire N.O. or N.C.**

**Metal housing**

Connector face view



Female plug end view



1-brown  
2-yellow/green  
3-blue

Diameter	M8		M8	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	1.5	2.0	1.5	2.0
Housing Material	Stainless steel		Stainless steel	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	8x8x1 mm		8x8x1 mm	
Switching Frequency	2,000Hz		2,000Hz	
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current(DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-081.5N-A3S2	1	OCN2-0802N-A3S2	11
DC 3 wire 10-30V NPN N.C.	OCN1-081.5N-B3S2	2	OCN2-0802N-B3S2	11
DC 3 wire 10-30V PNP N.O.	OCN1-081.5P-A3S2	3	OCN2-0802P-A3S2	12
DC 3 wire 10-30V PNP N.C.	OCN1-081.5P-B3S2	4	OCN2-0802P-B3S2	12
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—	—	—
DC 2 wire 10-30V N.O.	OCN1-081.5C-A2S2	7	OCN2-0802C-A2S2	13
DC 2 wire 10-30V N.C.	OCN1-081.5C-B2S2	8	OCN2-0802C-B2S2	14
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-081.5N-A3S0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-081.5N-A3S0.3/P12 M12 pigtail mode <input type="checkbox"/></p>			
Cable 2M (PVC)	3 φ 3x0.15			
Weight	Approx.65 g		Approx.15 g	

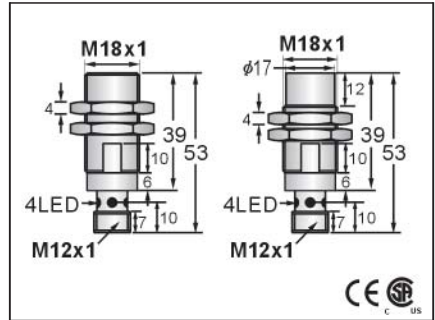
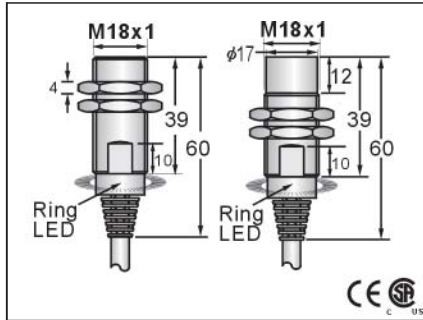
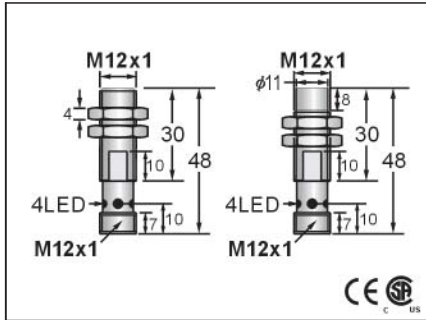
# M8, M12

## DC HIGH TORQUE, STANDARD SENSING RANGE

### SHORT BODY

Diameter	M8		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	1.5	2.0	2.0	5.0
Housing Material	Stainless steel		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	8x8x1 mm		12x12x1 mm	15x15x1 mm
Switching Frequency	2,000Hz		2000Hz	1000Hz
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current(DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-081.5N-ARS4	15	OCN2-0802N-ARS4	1
DC 3 wire 10-30V NPN N.C.	OCN1-081.5N-BRS4	16	OCN2-0802N-BRS4	2
DC 3 wire 10-30V PNP N.O.	OCN1-081.5P-ARS4	17	OCN2-0802P-ARS4	3
DC 3 wire 10-30V PNP N.C.	OCN1-081.5P-BRS4	18	OCN2-0802P-BRS4	4
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—	OCN1-1202P-S4S2	6
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—	OCN1-1202N-S4S2	5
DC 2 wire 10-30V N.O.	OCN1-081.5C-ARS4	21	OCN2-0802C-ARS4	7
DC 2 wire 10-30V N.C.	OCN1-081.5C-BRS4	22	OCN2-0802C-BRS4	8
Remark			<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1202N-A3S0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-1202N-A3S0.3/P12 M12 pigtail mode <input type="checkbox"/>	
Cable 2M (PVC)			4 φ3x0.15	
Weight	Approx.20 g		Approx.85 g	

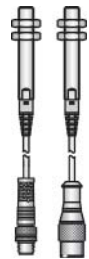
M12		M18		M18	
●	○	●	○	●	○
2.0	5.0	5.0	10.0	5.0	10.0
Nickel plated brass		Nickel plated brass		Nickel plated brass	



10-30 VDC		10-30 VDC		10-30 VDC	
10% max.		10% max.		10% max.	
12x12x1 mm	15x15x1 mm	18x18x1 mm	30x30x1 mm	18x18x1 mm	30x30x1 mm
2000 Hz	1000Hz	1000 Hz	500Hz	1000Hz	500Hz
10mA max.		10mA max.		10mA max.	
200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
0.8mA max.		0.8mA max.		0.8mA max.	
2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
≤ 15% of sensing distance		≤ 15% of sensing distance		≤ 15% of sensing distance	
IP67		IP67		IP67	
-25°C to 70°C		-25°C to 70°C		-25°C to 70°C	
Operating: 35% to 95%		Operating: 35% to 95%		Operating: 35% to 95%	
<10%		<10%		<10%	
YES		YES		YES	
YES (Except DC 2-wire type)		YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
PBT		PBT		PBT	

OCN1-1202N-ARS4	15	OCN2-1205N-ARS4	1	OCN2-1810N-A3S2	15	OCN2-1810N-ARS4
OCN1-1202N-BRS4	16	OCN2-1205N-BRS4	2	OCN2-1810N-B3S2	16	OCN2-1810N-BRS4
OCN1-1202P-ARS4	17	OCN2-1205P-ARS4	3	OCN2-1810P-A3S2	17	OCN2-1810P-ARS4
OCN1-1202P-BRS4	18	OCN2-1205P-BRS4	4	OCN2-1810P-B3S2	18	OCN2-1810P-BRS4
OCN1-1202P-SRS4	20	OCN2-1205P-SRS4	6	OCN2-1810P-S4S2	20	OCN2-1810P-SRS4
OCN1-1202N-SRS4	19	OCN2-1205N-SRS4	5	OCN2-1810N-S4S2	19	OCN2-1810N-SRS4
OCN1-1202C-ARS4	21	OCN2-0802C-ARS4	7	OCN2-1810C-A2S2	21	OCN2-1810C-ARS4
OCN1-1202C-BRS4	22	OCN2-0802C-BRS4	8	OCN2-1810C-B2S2	22	OCN2-1810C-BRS4

Pigtail types



Note:  
The standard cable length is 300mm.  
Any other length can be made by request.  
The relevant part number is with suffix "P8, P12", for example:  
OCN1-1805N-A3S0.3/P8  
M8 pigtail mode  
OCN1-1805N-A3S0.3/P12  
M12 pigtail mode

Approx.35 g	5.0 φ 44x0.1 Approx.160 g	Approx.70 g
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# M30

DC HIGH TORQUE, STANDARD SENSING RANGE

## SHORT BODY

Diameter	M30		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance S <sub>n</sub> mm	10.0	18.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	30x30x1 mm	54x54x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	400Hz	150Hz	400Hz	150Hz
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current(DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-3010N-A3S2	1	OCN2-3018N-A3S2	15
DC 3 wire 10-30V NPN N.C.	OCN1-3010N-B3S2	2	OCN2-3018N-B3S2	16
DC 3 wire 10-30V PNP N.O.	OCN1-3010P-A3S2	3	OCN2-3018P-A3S2	17
DC 3 wire 10-30V PNP N.C.	OCN1-3010P-B3S2	4	OCN2-3018P-B3S2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	OCN1-3010P-S4S2	6	OCN2-3018P-S4S2	20
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	OCN1-3010N-S4S2	5	OCN2-3018N-S4S2	19
DC 2 wire 10-30V N.O.	OCN1-3010C-A2S2	7	OCN2-3018C-A2S2	21
DC 2 wire 10-30V N.C.	OCN1-3010C-B2S2	8	OCN2-3018C-B2S2	22
Remark	<b>Pigtail types</b> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3010N-A3S0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-3010N-A3S0.3/P12 M12 pigtail mode <input type="checkbox"/></p>			
Cable 2M (PVC)	5.8φ3x0.5			
Weight	Approx.280 g		Approx.200 g	

M8		M8		M8	
●	○	●	○	●	○
1.5	2.0	1.5	2.0	1.5	2.0
Stainless steel		Stainless steel		Nickel plated brass	
●		●		●	
10-30 VDC		10-30 VDC		10-30 VDC	
10% max.		10% max.		10% max.	
8x8x1 mm		8x8x1 mm		8x8x1 mm	
2,000Hz	2,000Hz	2,000Hz	2,000Hz	2,000Hz	2,000Hz
10mA max.		10mA max.		10mA max.	
200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
0.8mA max.		0.8mA max.		0.8mA max.	
2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
≤ 15% of sensing distance		≤ 15% of sensing distance		≤ 15% of sensing distance	
IP67		IP67		IP67	
-25°C to 70°C		-25°C to 70°C		-25°C to 70°C	
Operating: 35% to 95%		Operating: 35% to 95%		Operating: 35% to 95%	
<10%		<10%		<10%	
YES		YES		YES	
YES (Except DC 2-wire type)		YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
PBT		PBT		PBT	
OCN1-081.5N-A3L2		1	OCN2-0802N-A3L2	OCN1-081.5N-ARL4	
OCN1-081.5N-B3L2		2	OCN2-0802N-B3L2	15	OCN2-0802N-ARL4
OCN1-081.5P-A3L2		3	OCN2-0802P-A3L2	16	OCN2-0802N-BRL4
OCN1-081.5P-B3L2		4	OCN2-0802P-B3L2	17	OCN2-0802P-ARL4
---		---	---	18	OCN2-0802P-BRL4
---		---	---	---	---
OCN1-081.5C-A2L2		7	OCN2-0802C-A2L2	OCN1-081.5C-ARL4	21
OCN1-081.5C-B2L2		8	OCN2-0802C-B2L2	OCN1-081.5C-BRL4	22
OCN1-081.5C-ACL3		11	OCN2-0802C-ACL3		
OCN1-081.5C-BCL3		12	OCN2-0802C-BCL3		
OCN1-081.5C-ACL3		13	OCN1-0802C-ACL3		
OCN1-081.5C-BCL3		14	OCN1-0802C-BCL3		
<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-081.5N-A3L0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-081.5N-A3L0.3/P12 M12 pigtail mode <input type="checkbox"/></p>					
3 φ 3x0.15					
Approx.65 g		Approx.15 g		Approx.20 g	



### LONG BODY

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	2.0	5.0	2.0	5.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	12x12x1 mm	15x15x1 mm	12x12x1 mm	15x15x1 mm
Switching Frequency	2,000Hz	1,000Hz	2,000Hz	1,000Hz
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current (DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-1202N-A3L2	1	OCN2-1205N-A3L2	15
DC 3 wire 10-30V NPN N.C.	OCN1-1202N-B3L2	2	OCN2-1205N-B3L2	16
DC 3 wire 10-30V PNP N.O.	OCN1-1202P-A3L2	3	OCN2-1205P-A3L2	17
DC 3 wire 10-30V PNP N.C.	OCN1-1202P-B3L2	4	OCN2-1205P-B3L2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	OCN1-1202P-S4L2	6	OCN2-1205P-S4L2	20
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	OCN1-1202N-S4L2	5	OCN2-1205N-S4L2	19
DC 2 wire 10-30V N.O.	OCN1-1202C-A2L2	7	OCN2-1205C-A2L2	21
DC 2 wire 10-30V N.C.	OCN1-1202C-B2L2	8	OCN2-1205C-B2L2	22
Remark	<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1202N-A3L0.3/P8 M8 pigtail mode OCN1-1202N-A3L0.3/P12 M12 pigtail mode			
Cable 2M (PVC)	4 φ 3x0.15			
Weight	Approx.85 g		Approx.35 g	

Diameter	M18		M18	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	5.0	10.0	5.0	10.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	18x18x1 mm	30x30x1 mm	18x18x1 mm	30x30x1 mm
Switching Frequency	1,000Hz	500Hz	1,000Hz	500Hz
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current (DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-1805N-A3L2	1	OCN2-1810N-A3L2	15
DC 3 wire 10-30V NPN N.C.	OCN1-1805N-B3L2	2	OCN2-1810N-B3L2	16
DC 3 wire 10-30V PNP N.O.	OCN1-1805P-A3L2	3	OCN2-1810P-A3L2	17
DC 3 wire 10-30V PNP N.C.	OCN1-1805P-B3L2	4	OCN2-1810P-B3L2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	OCN1-1805P-S4L2	6	OCN2-1810P-S4L2	20
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	OCN1-1805N-S4L2	5	OCN2-1810N-S4L2	19
DC 2 wire 10-30V N.O.	OCN1-1805C-A2L2	7	OCN2-1810C-A2L2	21
DC 2 wire 10-30V N.C.	OCN1-1805C-B2L2	8	OCN2-1810C-B2L2	22
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1805N-A3L0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-1805N-A3L0.3/P12 M12 pigtail mode <input type="checkbox"/></p>			
Cable 2M (PVC)	5.0 φ 44x0.1			
Weight	Approx.160 g		Approx.70 g	

# M30

## DC HIGH TORQUE, STANDARD SENSING RANGE

### LONG BODY

Diameter	M30		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	10.0	18.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	30x30x1 mm	54x54x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	400Hz	150Hz	400Hz	150Hz
Current consumption(DC 3-Wire)	10mA max.		10mA max.	
Max. Load Current	200mA max.(DC 2-wire type:100mA max.)		200mA max.(DC 2-wire type:100mA max.)	
Leakage Current (DC 2-Wire)	0.8mA max.		0.8mA max.	
Residual voltage	2V max.(DC 2-wire type: 6V max.)		2V max.(DC 2-wire type: 6V max.)	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES (Except DC 2-wire type)		YES (Except DC 2-wire type)	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-3010N-A3L2	1	OCN2-3018N-A3L2	15
DC 3 wire 10-30V NPN N.C.	OCN1-3010N-B3L2	2	OCN2-3018N-B3L2	16
DC 3 wire 10-30V PNP N.O.	OCN1-3010P-A3L2	3	OCN2-3018P-A3L2	17
DC 3 wire 10-30V PNP N.C.	OCN1-3010P-B3L2	4	OCN2-3018P-B3L2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	OCN1-3010P-S4L2	6	OCN2-3018P-S4L2	20
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	OCN1-3010N-S4L2	5	OCN2-3018N-S4L2	19
DC 2 wire 10-30V N.O.	OCN1-3010C-A2L2	7	OCN2-3018C-A2L2	21
DC 2 wire 10-30V N.C.	OCN1-3010C-B2L2	8	OCN2-3018C-B2L2	22
Remark	<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3010N-A3L0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-3010N-A3L0.3/P12 M12 pigtail mode <input type="checkbox"/>			
Cable 2M (PVC)	5.8φ3x0.5			
Weight	Approx.370 g		Approx.260 g	



# M12

## DC HIGH TORQUE, EXTENDED SENSING RANGE

### SHORT BODY

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	4.0	8.0	4.0	8.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	12x12x1 mm	24x24x1 mm	12x12x1 mm	24x24x1 mm
Switching Frequency	1,000Hz	500Hz	1,000Hz	500Hz
Current consumption	10mA max.		10mA max.	
Max. Load Current	200mA max.		200mA max.	
Leakage Current	—		—	
Residual voltage	2V max.		2V max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-1204N-A3S2	1	OCN2-1208N-A3S2	15
DC 3 wire 10-30V NPN N.C.	OCN1-1204N-B3S2	2	OCN2-1208N-B3S2	16
DC 3 wire 10-30V PNP N.O.	OCN1-1204P-A3S2	3	OCN2-1208P-A3S2	17
DC 3 wire 10-30V PNP N.C.	OCN1-1204P-B3S2	4	OCN2-1208P-B3S2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—	—	—
DC 2 wire 10-30V N.O.	—	—	—	—
DC 2 wire 10-30V N.C.	—	—	—	—
Remark	<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1204N-A3S0.3/P8 M8 pigtail mode OCN1-1204N-A3S0.3/P12 M12 pigtail mode			
Cable 2M (PVC)	4 φ3x0.15			
Weight	Approx.85 g		Approx.35 g	



# M30

## DC HIGH TORQUE, EXTENDED SENSING RANGE

### SHORT BODY

Diameter	M30	
● Shielded ○ NON-Shielded	●	○
Switching Distance Sn mm	15.0	20.0
Housing Material	Nickel plated brass	
● With LED ○ Without LED	●	
Dimensions (Unit: mm)		
Operating Voltage	10-30 VDC	
Ripple(P-P)	10% max.	
Standard target	48x48x1 mm	75x75x1 mm
Switching Frequency	150Hz	100Hz
Current consumption	10mA max.	
Max. Load Current	200mA max.	
Leakage Current	—	
Residual voltage	2V max.	
Switching Hysteresis	≤ 15% of sensing distance	
Protection Category	IP67	
Ambient air temperature	-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%	
Temperature Drift	<10%	
Short Circuit Protection	YES	
Reverse polarity protection	YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-3015N-ARS4	15 OCN2-3020N-ARS4
DC 3 wire 10-30V NPN N.C.	OCN1-3015N-BRS4	16 OCN2-3020N-BRS4
DC 3 wire 10-30V PNP N.O.	OCN1-3015P-ARS4	17 OCN2-3020P-ARS4
DC 3 wire 10-30V PNP N.C.	OCN1-3015P-BRS4	18 OCN2-3020P-BRS4
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—
DC 2 wire 10-30V N.O.	—	—
DC 2 wire 10-30V N.C.	—	—
Remark		
Cable 2M (PVC)		
Weight	Approx.200 g	

M8		M8		M8	
●	○	●	○	●	○
2.0	4.0	2.0	4.0	2.0	4.0
Nickel plated brass		Nickel plated brass		Nickel plated brass	
●		●		●	
10-30 VDC		10-30 VDC		10-30 VDC	
10% max.		10% max.		10% max.	
8x8x1 mm	12x12x1 mm	8x8x1 mm	12x12x1 mm	8x8x1 mm	12x12x1 mm
2,000Hz	1,000Hz	2,000Hz	1,000Hz	2,000Hz	1,000Hz
10mA max.		10mA max.		10mA max.	
200mA max.		200mA max.		200mA max.	
2V max.		2V max.		2V max.	
≤ 15% of sensing distance		≤ 15% of sensing distance		≤ 15% of sensing distance	
IP67		IP67		IP67	
-25°C to 70°C		-25°C to 70°C		-25°C to 70°C	
Operating: 35% to 95%		Operating: 35% to 95%		Operating: 35% to 95%	
<10%		<10%		<10%	
YES		YES		YES	
YES		YES		YES	
RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
PBT		PBT		PBT	
OCN1-0802N-A3L2		1	OCN2-0804N-A3L2	OCN1-0802N-ARL4	
OCN1-0802N-B3L2		2	OCN2-0804N-B3L2	15	OCN2-0804N-ARL4
OCN1-0802P-A3L2		3	OCN2-0804P-A3L2	16	OCN2-0804N-BRL4
OCN1-0802P-B3L2		4	OCN2-0804P-B3L2	17	OCN2-0804P-ARL4
---		---	---	18	OCN2-0804P-BRL4
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<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-0802N-A3L0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-0802N-A3L0.3/P12 M12 pigtail mode <input type="checkbox"/></p>					
3 ∅ 3x0.15					
Approx.65 g		Approx.15 g		Approx.20 g	



# M12

## DC HIGH TORQUE, EXTENDED SENSING RANGE

### LONG BODY

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	4.0	8.0	4.0	8.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	12x12x1 mm	24x24x1 mm	12x12x1 mm	24x24x1 mm
Switching Frequency	1,000Hz	500Hz	1,000Hz	500Hz
Current consumption	10mA max.		10mA max.	
Max. Load Current	200mA max.		200mA max.	
Leakage Current	—		—	
Residual voltage	2V max.		2V max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-1204N-A3L2	1	OCN2-1208N-A3L2	15
DC 3 wire 10-30V NPN N.C.	OCN1-1204N-B3L2	2	OCN2-1208N-B3L2	16
DC 3 wire 10-30V PNP N.O.	OCN1-1204P-A3L2	3	OCN2-1208P-A3L2	17
DC 3 wire 10-30V PNP N.C.	OCN1-1204P-B3L2	4	OCN2-1208P-B3L2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—	—	—
DC 2 wire 10-30V N.O.	—	—	—	—
DC 2 wire 10-30V N.C.	—	—	—	—
Remark	<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1204N-A3L0.3/P8 M8 pigtail mode — OCN1-1204N-A3L0.3/P12 M12 pigtail mode —			
Cable 2M (PVC)	4 φ 3x0.15			
Weight	Approx.85 g		Approx.35 g	

LONG BODY

M18		M18		M30	
●	○	●	○	●	○
8.0	16.0	8.0	16.0	15.0	30.0
Nickel plated brass		Nickel plated brass		Nickel plated brass	
10-30 VDC		10-30 VDC		10-30 VDC	
10% max.		10% max.		10% max.	
24x24x1 mm	48x48x1 mm	24x24x1 mm	48x48x1 mm	48x48x1 mm	90x90x1 mm
500Hz	150Hz	500Hz	150Hz	150Hz	100Hz
10mA max.		10mA max.		10mA max.	
200mA max.		200mA max.		200mA max.	
2V max.		2V max.		2V max.	
≤ 15% of sensing distance		≤ 15% of sensing distance		≤ 15% of sensing distance	
IP67		IP67		IP67	
-25°C to 70°C		-25°C to 70°C		-25°C to 70°C	
Operating: 35% to 95%		Operating: 35% to 95%		Operating: 35% to 95%	
<10%		<10%		<10%	
YES		YES		YES	
YES		YES		YES	
RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
PBT		PBT		PBT	
OCN1-1808N-A3L2	1	OCN2-1816N-A3L2	15	OCN1-3015N-A3L2	1
OCN1-1808N-B3L2	2	OCN2-1816N-B3L2	16	OCN1-3015N-B3L2	2
OCN1-1808P-A3L2	3	OCN2-1816P-A3L2	17	OCN1-3015P-A3L2	3
OCN1-1808P-B3L2	4	OCN2-1816P-B3L2	18	OCN1-3015P-B3L2	4
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1808N-A3L0.3/P8 M8 pigtail mode OCN1-1808N-A3L0.3/P12 M12 pigtail mode		<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3015N-A3L0.3/P8 M8 pigtail mode OCN1-3015N-A3L0.3/P12 M12 pigtail mode		<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3015N-A3L0.3/P8 M8 pigtail mode OCN1-3015N-A3L0.3/P12 M12 pigtail mode	
5.0 φ 44x0.1		5.8 φ 44x0.1		5.8 φ 3x0.5	
Approx.160 g		Approx.70 g		Approx.370 g	

# M30

DC HIGH TORQUE, EXTENDED SENSING RANGE

## LONG BODY

Diameter	M30	
● Shielded ○ NON-Shielded	●	○
Switching Distance Sn mm	15.0	30.0
Housing Material	Nickel plated brass	
● With LED ○ Without LED	●	
Dimensions (Unit: mm)		
Operating Voltage	10-30 VDC	
Ripple(P-P)	10% max.	
Standard target	48x48x1 mm	90x90x1 mm
Switching Frequency	150Hz	100Hz
Current consumption	10mA max.	
Max. Load Current	200mA max.	
Leakage Current	—	
Residual voltage	2V max.	
Switching Hysteresis	≤ 15% of sensing distance	
Protection Category	IP67	
Ambient air temperature	-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%	
Temperature Drift	<10%	
Short Circuit Protection	YES	
Reverse polarity protection	YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-3015N-ARL4	15 OCN2-3030N-ARL4
DC 3 wire 10-30V NPN N.C.	OCN1-3015N-BRL4	16 OCN2-3030N-BRL4
DC 3 wire 10-30V PNP N.O.	OCN1-3015P-ARL4	17 OCN2-3030P-ARL4
DC 3 wire 10-30V PNP N.C.	OCN1-3015P-BRL4	18 OCN2-3030P-BRL4
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—
DC 2 wire 10-30V N.O.	—	—
DC 2 wire 10-30V N.C.	—	—
Remark		
Cable 2M (PVC)		
Weight	Approx.260 g	

M8		M8		M8	
●	○	●	○	●	○
3.0	6.0	3.0	6.0	3.0	6.0
Stainless steel		Nickel plated brass		Nickel plated brass	
●		●		●	
CE		CE		CE	
10-30 VDC		10-30 VDC		10-30 VDC	
10% max.		10% max.		10% max.	
9x9x1 mm	18x18x1 mm	9x9x1 mm	18x18x1 mm	9x9x1 mm	18x18x1 mm
1,000Hz	1,000Hz	1,000Hz	1,000Hz	1,000Hz	1,000Hz
10mA max.		10mA max.		10mA max.	
200mA max.		200mA max.		200mA max.	
2V max.		2V max.		2V max.	
≤ 15% of sensing distance		≤ 15% of sensing distance		≤ 15% of sensing distance	
IP67		IP67		IP67	
-25°C to 70°C		-25°C to 70°C		-25°C to 70°C	
Operating: 35% to 95%		Operating: 35% to 95%		Operating: 35% to 95%	
<10%		<10%		<10%	
YES		YES		YES	
YES		YES		YES	
RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
PBT		PBT		PBT	
OCN1-0803N-A3S2	1	OCN2-0806N-A3S2	11	OCN1-0803N-ARS4	15
OCN1-0803N-B3S2	2	OCN2-0806N-B3S2	11	OCN1-0803N-BRS4	16
OCN1-0803P-A3S2	3	OCN2-0806P-A3S2	12	OCN1-0803P-ARS4	17
OCN1-0803P-B3S2	4	OCN2-0806P-B3S2	12	OCN1-0803P-BRS4	18
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-0803N-A3S0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-0803N-A3S0.3/P12 M12 pigtail mode <input type="checkbox"/></p>					
3 ∅ 3x0.15		Approx.15 g		Approx.20 g	
Approx.65 g					

# M12

## DC HIGH TORQUE, LONG SENSING RANGE

### SHORT BODY

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	6.0	10.0	6.0	10.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	10-30 VDC		10-30 VDC	
Ripple(P-P)	10% max.		10% max.	
Standard target	18x18x1 mm	30x30x1 mm	18x18x1 mm	30x30x1 mm
Switching Frequency	1,000Hz	500Hz	1,000Hz	500Hz
Current consumption	10mA max.		10mA max.	
Max. Load Current	200mA max.		200mA max.	
Leakage Current	—		—	
Residual voltage	2V max.		2V max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient air temperature	-25°C to 70°C		-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<15%		<15%	
Short Circuit Protection	YES		YES	
Reverse polarity protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-1206N-A3S2	1	OCN2-1210N-A3S2	15
DC 3 wire 10-30V NPN N.C.	OCN1-1206N-B3S2	2	OCN2-1210N-B3S2	16
DC 3 wire 10-30V PNP N.O.	OCN1-1206P-A3S2	3	OCN2-1210P-A3S2	17
DC 3 wire 10-30V PNP N.C.	OCN1-1206P-B3S2	4	OCN2-1210P-B3S2	18
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—	—	—
DC 2 wire 10-30V N.O.	—	—	—	—
DC 2 wire 10-30V N.C.	—	—	—	—
Remark	<b>Pigtail types</b>  Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1206N-A3L0.3/P8 M8 pigtail mode OCN1-1206N-A3L0.3/P12 M12 pigtail mode			
Cable 2M (PVC)	4 φ 3x0.15			
Weight	Approx.85 g		Approx.35 g	

M18		M18		M30	
●	○	●	○	●	○
11.0	20.0	11.0	20.0	20.0	40.0
Nickel plated brass		Nickel plated brass		Nickel plated brass	
<p>10-30 VDC</p> <p>10% max.</p> <p>36x36x1 mm      60x60x1 mm</p> <p>300Hz              100Hz</p> <p>10mA max.</p> <p>200mA max.</p> <p>—</p> <p>2V max.</p> <p>≤ 15% of sensing distance</p> <p>IP67</p> <p>-25°C to 70°C</p> <p>Operating: 35% to 95%</p> <p>&lt;10%</p> <p>YES</p> <p>YES</p> <p>RFI&gt;3V/m / EFT&gt;1KV / ESD&gt;4KV (contact)</p> <p>IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2</p> <p>PBT</p>		<p>10-30 VDC</p> <p>10% max.</p> <p>36x36x1 mm      60x60x1 mm</p> <p>300Hz              100Hz</p> <p>10mA max.</p> <p>200mA max.</p> <p>—</p> <p>2V max.</p> <p>≤ 15% of sensing distance</p> <p>IP67</p> <p>-25°C to 70°C</p> <p>Operating: 35% to 95%</p> <p>&lt;10%</p> <p>YES</p> <p>YES</p> <p>RFI&gt;3V/m / EFT&gt;1KV / ESD&gt;4KV (contact)</p> <p>IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2</p> <p>PBT</p>		<p>10-30 VDC</p> <p>10% max.</p> <p>66x66x1 mm      120x120x1 mm</p> <p>300Hz              100Hz</p> <p>10mA max.</p> <p>200mA max.</p> <p>—</p> <p>2V max.</p> <p>≤ 15% of sensing distance</p> <p>IP67</p> <p>-25°C to 70°C</p> <p>Operating: 35% to 95%</p> <p>&lt;10%</p> <p>YES</p> <p>YES</p> <p>RFI&gt;3V/m / EFT&gt;1KV / ESD&gt;4KV (contact)</p> <p>IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2</p> <p>PBT</p>	
OCN1-1811N-A3S2	1	OCN2-1820N-A3S2	15	OCN1-3020N-A3S2	1
OCN1-1811N-B3S2	2	OCN2-1820N-B3S2	16	OCN1-3020N-B3S2	2
OCN1-1811P-A3S2	3	OCN2-1820P-A3S2	17	OCN1-3020P-A3S2	3
OCN1-1811P-B3S2	4	OCN2-1820P-B3S2	18	OCN1-3020P-B3S2	4
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
—	—	—	—	—	—
<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1811N-A3S0.3/P8 M8 pigtail mode OCN1-1811N-A3S0.3/P12 M12 pigtail mode</p>				<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3020N-A3S0.3/P8 M8 pigtail mode OCN1-3020N-A3S0.3/P12 M12 pigtail mode</p>	
5.0 ∅ 44x0.1		Approx.70 g		5.8 ∅ 3x0.5	
Approx.160 g				Approx.280 g	

# M30

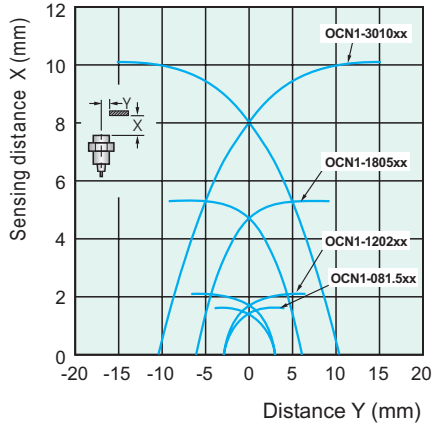
## DC HIGH TORQUE, LONG SENSING RANGE

### SHORT BODY

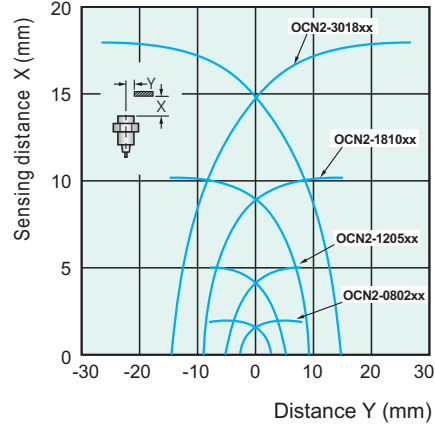
Diameter	M30	
● Shielded ○ NON-Shielded	●	○
Switching Distance Sn mm	20.0	40.0
Housing Material	Nickel plated brass	
● With LED ○ Without LED	●	
Dimensions (Unit: mm)		
Operating Voltage	10-30 VDC	
Ripple(P-P)	10% max.	
Standard target	66x66x1 mm	120x120x1 mm
Switching Frequency	300Hz	100Hz
Current consumption	10mA max.	
Max. Load Current	200mA max.	
Leakage Current	—	
Residual voltage	2V max.	
Switching Hysteresis	≤ 15% of sensing distance	
Protection Category	IP67	
Ambient air temperature	-25°C to 70°C	
Ambient humidity	Operating: 35% to 95%	
Temperature Drift	<10%	
Short Circuit Protection	YES	
Reverse polarity protection	YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT	
DC 3 wire 10-30V NPN N.O.	OCN1-3020N-ARS4 15	OCN2-3040N-ARS4
DC 3 wire 10-30V NPN N.C.	OCN1-3020N-BRS4 16	OCN2-3040N-BRS4
DC 3 wire 10-30V PNP N.O.	OCN1-3020P-ARS4 17	OCN2-3040P-ARS4
DC 3 wire 10-30V PNP N.C.	OCN1-3020P-BRS4 18	OCN2-3040P-BRS4
DC 4 wire 10-30V Changeover PNP (N.O. & N.C.)	—	—
DC 4 wire 10-30V Changeover NPN (N.O. & N.C.)	—	—
DC 2 wire 10-30V N.O.	—	—
DC 2 wire 10-30V N.C.	—	—
Remark		
Cable 2M (PVC)		
Weight	Approx.200 g	

■ Sensing Range (Typical)

Shielded Modes

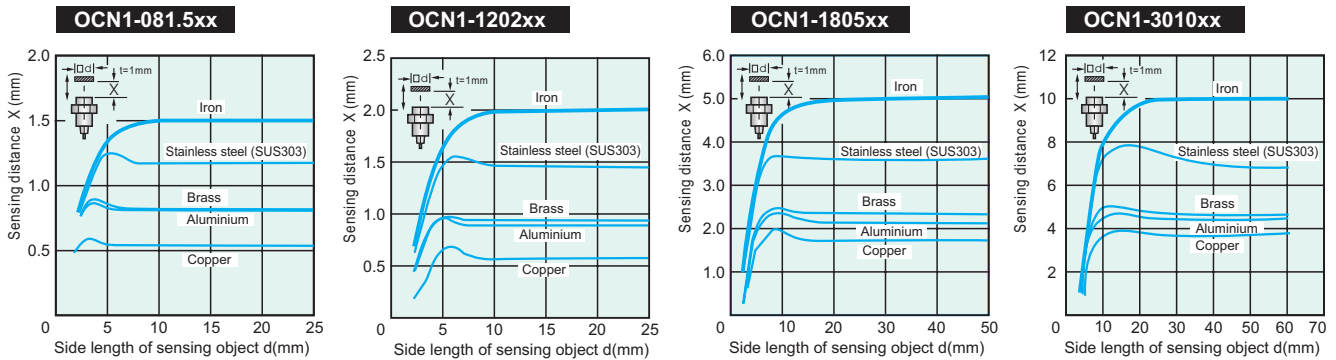


Non-Shielded Modes

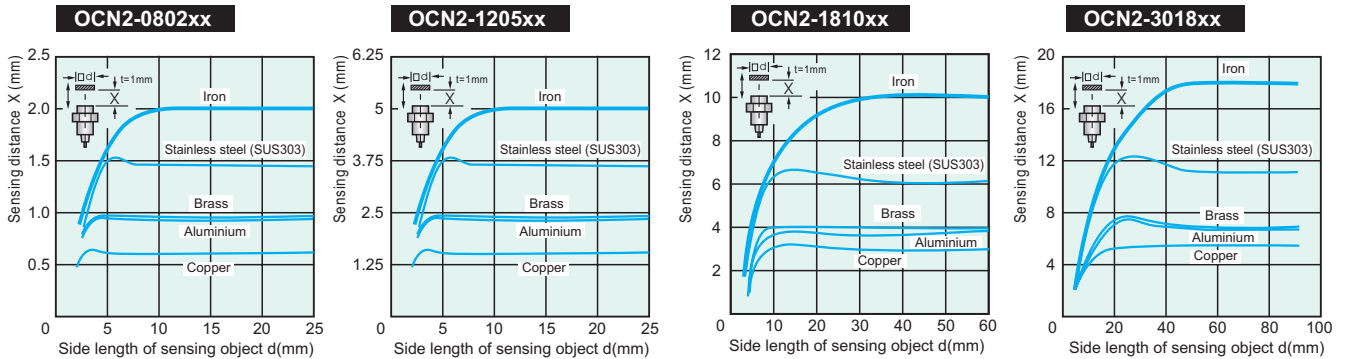


■ Influence of Sensing Object Size and Materials

Shielded Modes



Non-Shielded Modes

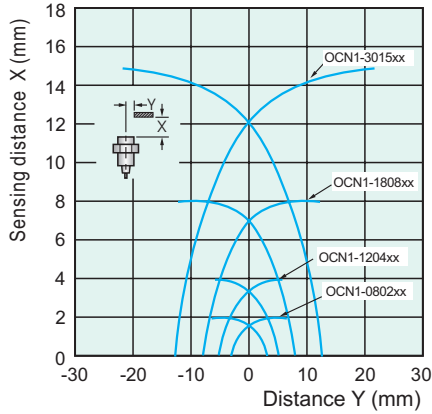




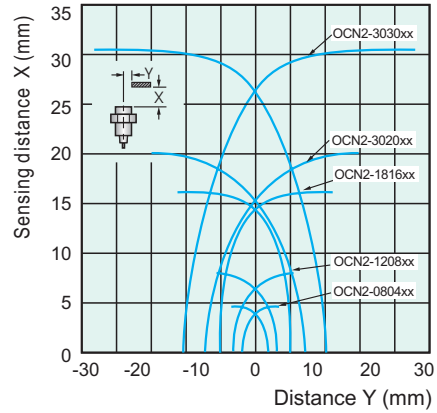
SHORT BODY and LONG BODY

Sensing Range (Typical)

Shielded Modes



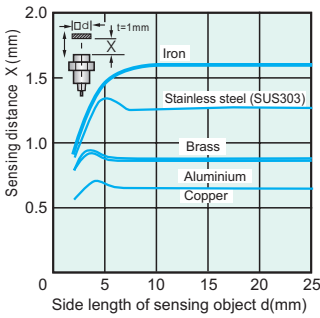
Non-Shielded Modes



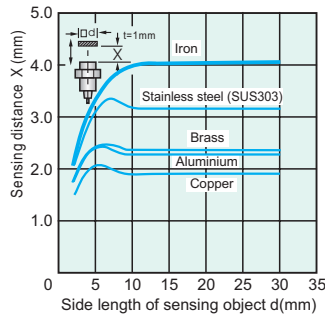
Influence of Sensing Object Size and Materials

Shielded Modes

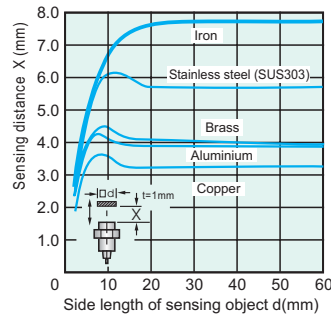
OCN1-0802xx



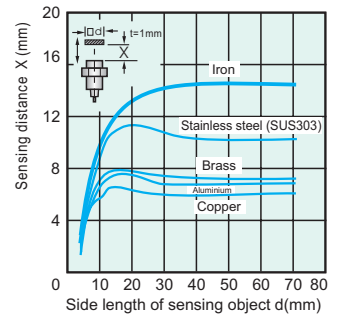
OCN1-1204xx



OCN1-1808xx

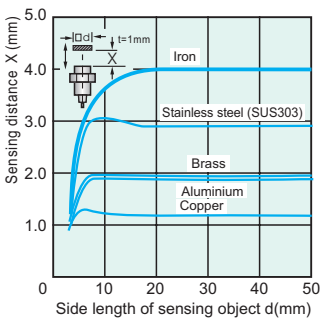


OCN1-3015xx

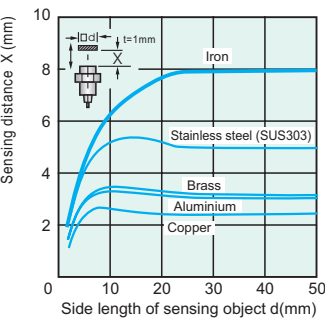


Non-Shielded Modes

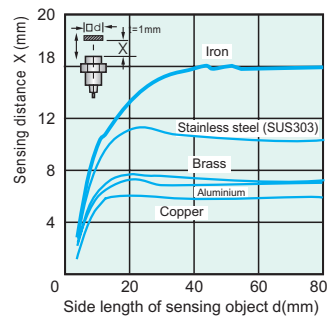
OCN2-0804xx



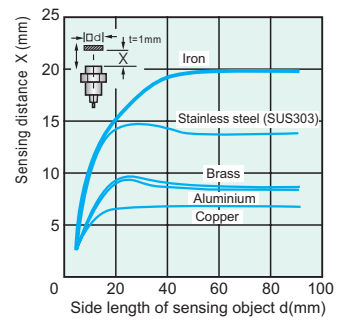
OCN2-1208xx



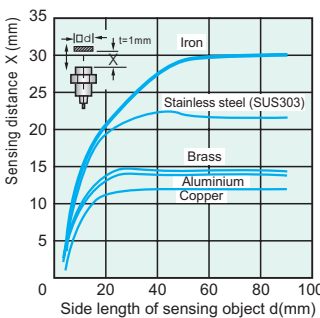
OCN2-1816xx



OCN2-3020xx

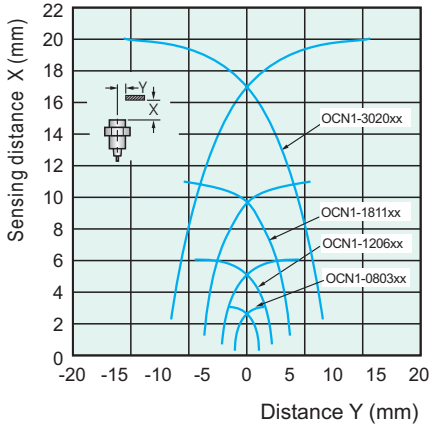


OCN2-3030xx

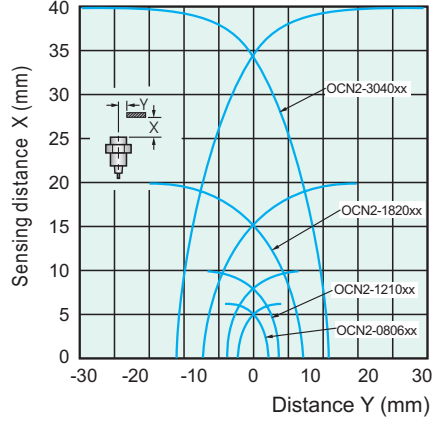


■ Sensing Range (Typical)

Shielded Modes



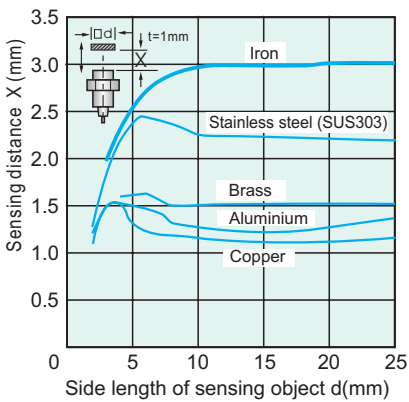
Non-Shielded Modes



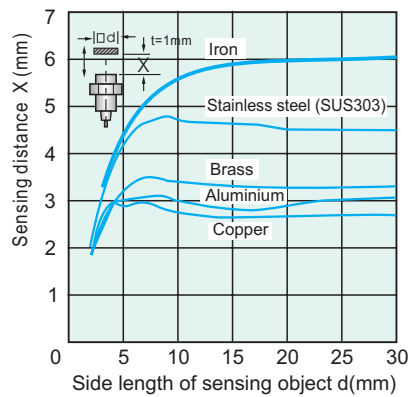
■ Influence of Sensing Object Size and Materials

Shielded Modes

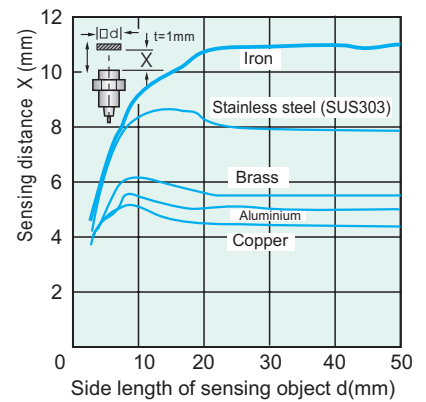
OCN1-0803xx



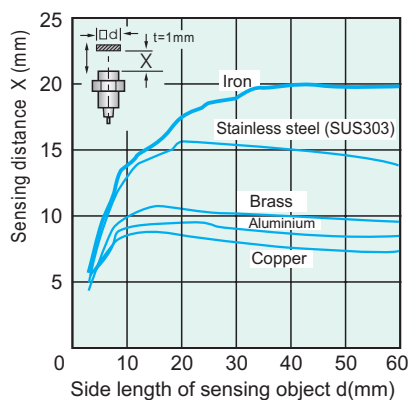
OCN1-1206xx



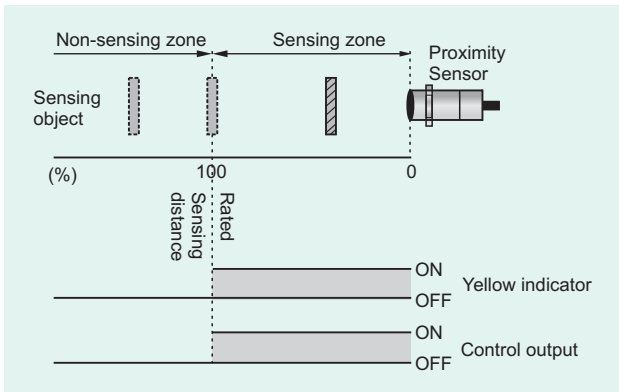
OCN1-1811xx



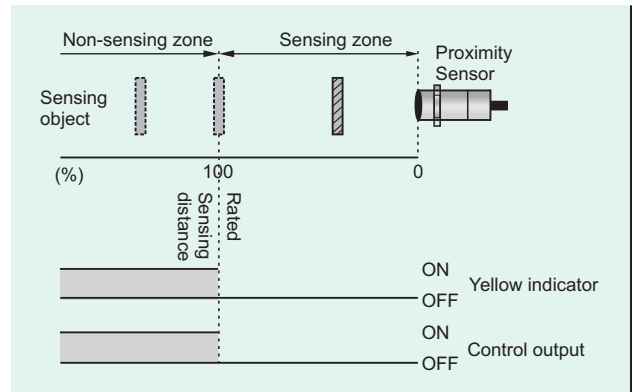
OCN1-3020xx



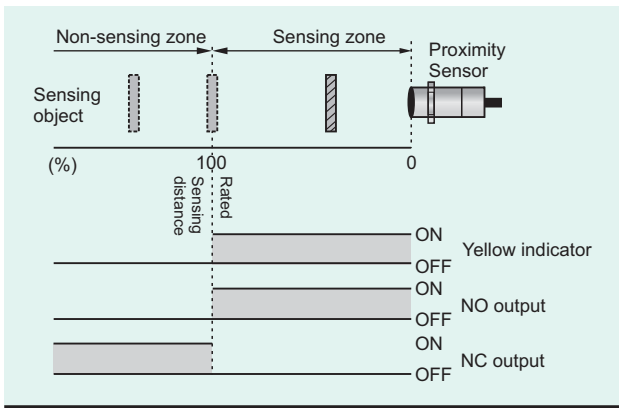
■ PNP(NPN) output-N.O.



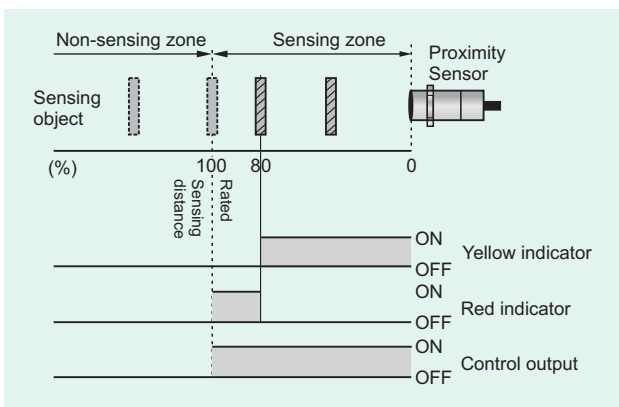
■ PNP(NPN) output-N.C.



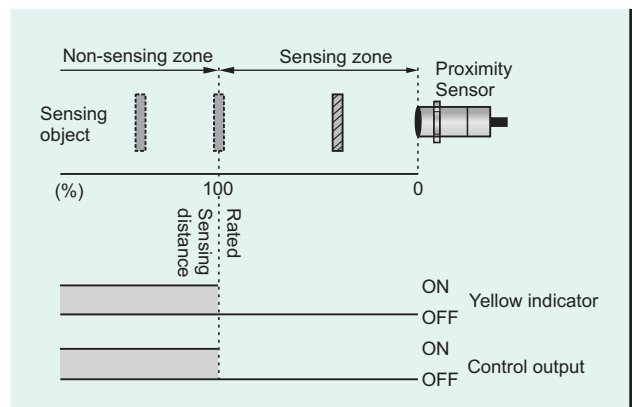
■ PNP(NPN) output-N.O. & N.C.



■ DC 2-wire output-N.O.

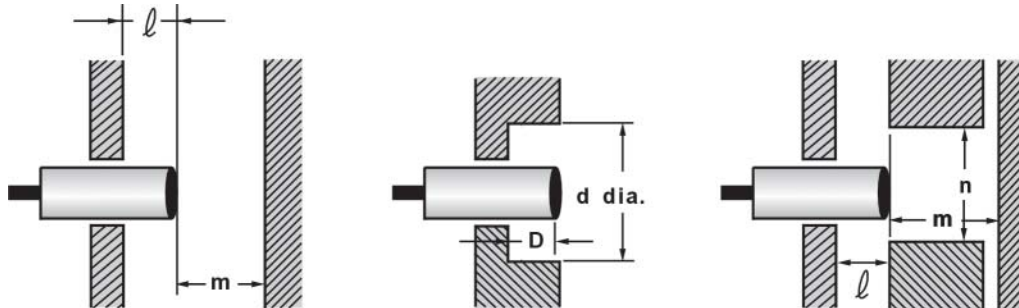


■ DC 2-wire output-N.C.



■ Effects of surrounding metal

when mounting the OCN within a metal panel, ensure that the clearances given in the following table are maintained.



(Unit: mm)

● Standard sensing distance

Type	Dimension	M8	M12	M18	M30
Shielded	<i>l</i>	0	0	0(See note 1)	0 (See note 2)
	<i>m</i>	4.5	8	20	40
	<i>d</i>	5	12	18	30
	<i>D</i>	0	0	0	0
	<i>n</i>	12	18	27	45
Non-shielded	<i>l</i>	6	15	22	30
	<i>m</i>	8	20	40	70
	<i>d</i>	24	40	55	90
	<i>D</i>	6	15	22	30
	<i>n</i>	24	36	54	90

● Extended sensing distance

Type	Dimension	M8	M12	M18	M30	
					Short body	Long body
Shielded	<i>l</i>	0	0	0(See note 1)	0 (See note 2)	
	<i>m</i>	4.5	12	24	45	
	<i>d</i>	-	-	27	45	
	<i>D</i>	0	0	1.5	4	
	<i>n</i>	12	18	27	45	
Non-shielded	<i>l</i>	12	15	22	30	40
	<i>m</i>	8	20	48	70	90
	<i>d</i>	24	40	70	90	120
	<i>D</i>	12	15	22	30	40
	<i>n</i>	24	40	70	90	120

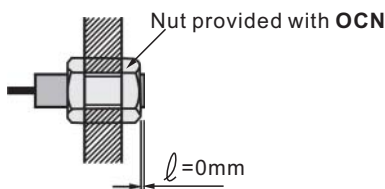
Note 1. In the case of using the supplied nuts. If true flash mounting is necessary, apply a free zone of 1.5 mm.

2. In the case of using the supplied nuts. If true flash mounting is necessary, apply a free zone of 4 mm.

● Long sensing distance

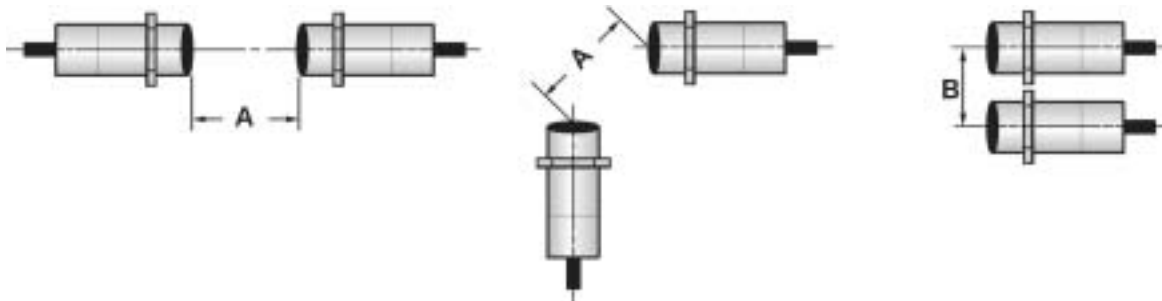
Model	Dimension Material of surrounding metal	M8		M12		M18		M30	
		Ferrous metal	Non- ferrous metal	Ferrous metal	Non- ferrous metal	Ferrous metal	Non- ferrous metal	Ferrous metal	Non- ferrous metal
Shielded	<i>l</i>	0.5(*)	2(*)	2(*)	1(*)	4(*)	2.5(*)	6(*)	4(*)
	<i>m</i>	9		18		33		60	
	<i>d</i>	24		36		54		90	
	<i>D</i>	0.5	2	2	1	4	2.5	6	4
	<i>n</i>	24		36		54		90	

\* Using the nuts provided with the OCN (long sensing distance) allows mounting in the way shown below.



**Mutual Interference**

When installing two or more Sensors face-to-face or side-by-side, ensure that the minimum distances given in the following table are maintained.



(Unit: mm)

**Standard sensing distance**

Type	Dimension	M8	M12	M18	M30
Shielded	A	20	30	50	100
	B	15	20	35	70
Non-shielded	A	80	120	200	300
	B	60	100	110	200

**Extended sensing distance**

Type	Dimension	M8	M12	M18	M30	
					Standard body	Long body
Shielded	A	20	30	50	110	
	B	15	20	35	70	
Non-shielded	A	80	120	200	300	300
	B	60	100	120	200	300

**Long sensing distance**

Type	Dimension	M8	M12	M18	M30
Shielded	A	25	35	70	110
	B	20	25	45	70

**Mounting**

The Proximity Sensor must not be subjected to excessive shock with a hammer when it is installed, otherwise the Proximity Sensor may be damaged or lose its water resistivity.

Do not tighten the nut with excessive force. A washer must be used with the nut.



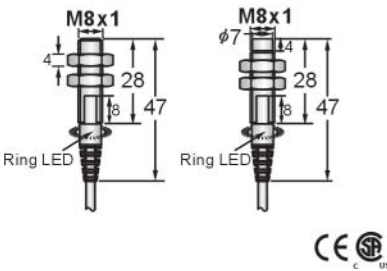
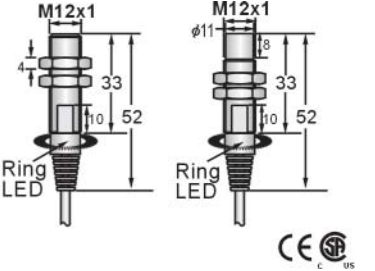
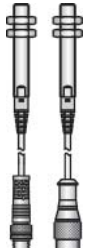

**Standard and Extended sensing distance**

Type	Torque
M8	4 N · m
M12	30 N · m
M18	70 N · m
M30	180 N · m

**Long sensing distance**

Type	Torque
M8	---
M12	20 N · m
M18	60 N · m
M30	150 N · m

SHORT BODY

Diameter	M8		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	1.5	2.0	2.0	5.0
Housing Material	Stainless steel		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC		20-250 V AC	
Standard target	8x8x1 mm	12x12x1 mm	12x12x1 mm	15x15x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 100mA max.		5... 200mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	NO		NO	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC 2 wire 20-250V N.O.	OCN1-081.5A-A2M2	9	OCN2-0802A-A2M2	9
AC 2 wire 20-250V N.C.	OCN1-081.5A-B2M2	10	OCN2-0802A-B2M2	10
Remark	<p><b>Pigtail types</b></p>  <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8、P12", for example: OCN1-081.5A-A2M0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-081.5A-A2M0.3/P12 M12 pigtail mode <input type="checkbox"/></p>		<p><b>Pigtail types</b></p>  <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8、P12", for example: OCN1-1202A-A2M0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-1202A-A2M0.3/P12 M12 pigtail mode <input type="checkbox"/></p>	
Cable 2M (PVC)	3 φ 3x0.15		4 φ 3x0.15	
Weight	Approx.45 g		Approx.120 g	

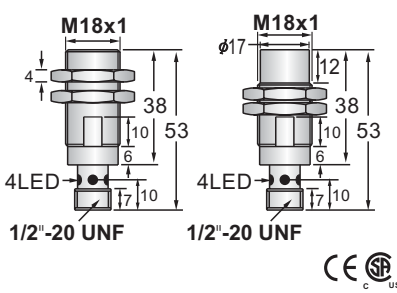
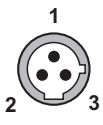
SHORT BODY

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	2.0	5.0	2.0	5.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC		20-250 V AC	
Standard target	12x12x1 mm	15x15x1 mm	12x12x1 mm	15x15x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 200mA max.		5... 200mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	NO		NO	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
AC 2 wire 20-250V N.O.	OCN1-1202A-ABM4	23	OCN2-1205A-ABM4	23
AC 2 wire 20-250V N.C.	OCN1-1202A-BBM4	23	OCN2-1205A-BBM4	23
OCN1-1202A-AUM3	24	OCN2-1205A-AUM3	24	
OCN1-1202A-BUM3	24	OCN2-1205A-BUM3	24	
Remark	<p>M12 Connector face view</p> <p>1-black 2-blue 3-not used 4-yellow/green(⊕)</p>		<p>1/2"-20 UNF Connector face view</p> <p>1-yellow/green(⊕) 2-black 3-blue</p>	
Cable 2M (PVC)				
Weight	Approx.25 g		Approx.25 g	

SHORT BODY

Diameter	M18		M18	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	5.0	10.0	5.0	10.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC		20-250 V AC	
Standard target	18x18x1 mm	30x30x1 mm	18x18x1 mm	30x30x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	NO		NO	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC 2 wire 20-250V N.O.	OCN1-1805A-A2M2	9	OCN2-1810A-A2M2	23
AC 2 wire 20-250V N.C.	OCN1-1805A-B2M2	10	OCN2-1810A-B2M2	23
OCN1-1805A-ABM4			OCN2-1810A-ABM4	
OCN1-1805A-BBM4			OCN2-1810A-BBM4	
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1805A-A2M0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-1805A-A2M0.3/P12 M12 pigtail mode <input type="checkbox"/></p>		<p><b>M12 Connector face view</b></p> <p>1-black 2-blue 3-not used 4-yellow/green(±)</p>	
Cable 2M (PVC)	5.0 φ 44x0.1			
Weight	Approx.160 g		Approx. 45 g	



Diameter	M18	
● Shielded ○ NON-Shielded	●	○
Switching Distance Sn mm	5.0	10.0
Housing Material	Nickel plated brass	
● With LED ○ Without LED	●	
Dimensions (Unit: mm)		
Operating Voltage	20-250 V AC	
Standard target	18x18x1 mm	30x30x1 mm
Switching Frequency	25 Hz	
Current consumption	1.7mA max.	
Control output (switching capacity)	5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance	
Protection Category	IP67	
Ambient temperature	Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%	
Temperature Drift	<10%	
Short Circuit Protection	NO	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT	
AC 2 wire 20-250V N.O.	OCN1-1805A-AUM3	24 OCN2-1810A-AUM3
AC 2 wire 20-250V N.C.	OCN1-1805A-BUM3	24 OCN2-1810A-BUM3
Remark	<p>1/2"-20 UNF Connector face view</p>  <p>1-yellow/green(±) 2-black 3-blue</p>	
Cable 2M (PVC)		
Weight	Approx.45 g	

With Short Circuit Protection

SHORT BODY

Diameter	M30		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	10.0	18.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC/DC		20-250 V AC/DC	
Standard target	30x30x1 mm	54x54x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
AC/DC 2 wire 20-250V N.O.	OCN1-3010U-A2S2	9	OCN2-3018U-A2S2	23
AC/DC 2 wire 20-250V N.C.	OCN1-3010U-B2S2	10	OCN2-3018U-B2S2	23
OCN1-3010U-ABS4			OCN2-3018U-ABS4	
OCN1-3010U-BBS4			OCN2-3018U-BBS4	
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8.P12", for example: OCN1-3010U-A2S0.3/P8 M8 pigtail mode OCN1-3010U-A2S0.3/P12 M12 pigtail mode</p>		<p><b>M12 Connector face view</b></p> <p>1-black 2-blue 3-not used 4-yellow/green(±)</p>	
Cable 2M (PVC)	5.8φ 3x0.5			
Weight	Approx.270 g		Approx. 125 g	

With Short Circuit Protection

SHORT BODY

Diameter	M30		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	10.0	18.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC/DC		20-250 V AC/DC	
Standard target	30x30x1 mm	54x54x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC/DC 2 wire 20-250V N.O.	OCN1-3010U-AUS3	24	OCN2-3018U-AUS3	25
AC/DC 2 wire 20-250V N.C.	OCN1-3010U-BUS3	24	OCN2-3018U-BUS3	25
Remark	<p>1/2''-20 UNF Connector face view</p> <p>1-yellow/green(⊕) 2-black 3-blue</p>		<p>7/8''-16UNF-2A Connector face view</p> <p>1-brown 2-yellow/green(⊕) 3-blue</p>	
Cable 2M (PVC)				
Weight	Approx. 125 g		Approx. 135 g	

Diameter	M12		M12	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	2.0	5.0	2.0	5.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC		20-250 V AC	
Standard target	12x12x1 mm	15x15x1 mm	12x12x1 mm	15x15x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 200mA max.		5... 200mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	NO		NO	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC 2 wire 20-250V N.O.	OCN1-1202A-A2N2	9	OCN2-1205A-A2N2	24
AC 2 wire 20-250V N.C.	OCN1-1202A-B2N2	10	OCN2-1205A-B2N2	24
OCN1-1202A-AUN3			OCN2-1205A-AUN3	
OCN1-1202A-BUN3			OCN2-1205A-BUN3	
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8.P12", for example: OCN1-1202A-A2N0.3/P8 M8 pigtail mode OCN1-1202A-A2N0.3/P12 M12 pigtail mode</p>		<p><b>1/2"-20 UNF Connector face view</b></p> <p>1-yellow/green(⊥) 2-black 3-blue</p>	
Cable 2M (PVC)	4 φ 3x0.15			
Weight	Approx. 65 g			

With Short Circuit Protection

Long BODY

Diameter	M18		M18	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	5.0	10.0	5.0	10.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC/DC		20-250 V AC/DC	
Standard target	18x18x1 mm	30x30x1 mm	18x18x1 mm	30x30x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2		IEC 60947-5-2,Part 7.4.1 / IEC 60947-5-2,Part 7.4.2	
Material active face	PBT		PBT	
AC/DC 2 wire 20-250V N.O.	OCN1-1805U-A2L2	9	OCN2-1810U-A2L2	24
AC/DC 2 wire 20-250V N.C.	OCN1-1805U-B2L2	10	OCN2-1810U-B2L2	24
OCN1-1805U-AUL3			OCN2-1810A-AUL3	
OCN1-1805U-BUL3			OCN2-1810A-BUL3	
Remark	<p><b>Pigtail types</b></p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-1805U-A2L0.3/P8 M8 pigtail mode <input type="checkbox"/> OCN1-1805U-A2L0.3/P12 M12 pigtail mode <input type="checkbox"/></p>		<p><b>1/2"-20 UNF Connector face view</b></p> <p>1-yellow/green(⊕) 2-black 3-blue</p>	
Cable 2M (PVC)	5.0 φ 44x0.1			
Weight	Approx.150 g			

With Short Circuit Protection

Long BODY

Diameter	M18		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	5.0	10.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC/DC		20-250 V AC/DC	
Standard target	18x18x1 mm	30x30x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC/DC 2 wire 20-250V N.O.	OCN1-1805U-AZL3	25 OCN2-1810U-AZL3	OCN1-3010U-A2L2	9 OCN2-3018U-A2L2
AC/DC 2 wire 20-250V N.C.	OCN1-1805U-BZL3	25 OCN2-1810U-BZL3	OCN1-3010U-B2L2	10 OCN2-3018U-B2L2
Remark	<p>7/8"-16UNF-2A Connector face view</p> <p>1-brown 2-yellow/green(⊥) 3-blue</p>		<p>Pigtail types</p> <p>Note: The standard cable length is 300mm. Any other length can be made by request. The relevant part number is with suffix "P8, P12", for example: OCN1-3010U-A2L0.3/P8 M8 pigtail mode OCN1-3010U-A2L0.3/P12 M12 pigtail mode</p>	
Cable 2M (PVC)			5.8φ3x0.5	
Weight			Approx.220 g	

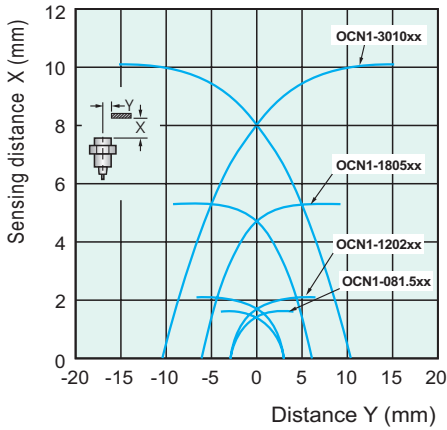
With Short Circuit Protection

Long BODY

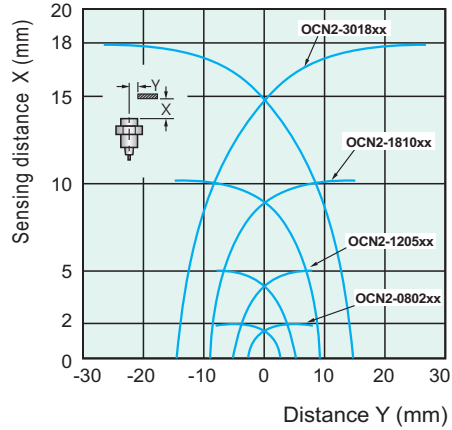
Diameter	M30		M30	
● Shielded ○ NON-Shielded	●	○	●	○
Switching Distance Sn mm	10.0	18.0	10.0	18.0
Housing Material	Nickel plated brass		Nickel plated brass	
● With LED ○ Without LED	●		●	
Dimensions (Unit: mm)				
Operating Voltage	20-250 V AC/DC		20-250 V AC/DC	
Standard target	30x30x1 mm	54x54x1 mm	30x30x1 mm	54x54x1 mm
Switching Frequency	25 Hz		25 Hz	
Current consumption	1.7mA max.		1.7mA max.	
Control output (switching capacity)	5... 300mA max.		5... 300mA max.	
Switching Hysteresis	≤ 15% of sensing distance		≤ 15% of sensing distance	
Protection Category	IP67		IP67	
Ambient temperature	Operating: -25°C to 70°C		Operating: -25°C to 70°C	
Ambient humidity	Operating: 35% to 95%		Operating: 35% to 95%	
Temperature Drift	<10%		<10%	
Short Circuit Protection	YES		YES	
EMC	RFI>3V/m / EFT>1KV / ESD>4KV (contact)		RFI>3V/m / EFT>1KV / ESD>4KV (contact)	
Shock / Vibration	IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2		IEC 60947-5-2, Part 7.4.1 / IEC 60947-5-2, Part 7.4.2	
Material active face	PBT		PBT	
AC/DC 2 wire 20-250V N.O.	OCN1-3010U-AUL3	24	OCN2-3018U-AUL3	25
AC/DC 2 wire 20-250V N.C.	OCN1-3010U-BUL3	24	OCN2-3018U-BUL3	25
OCN1-3010U-AZL3			OCN1-3010U-AZL3	
OCN1-3010U-BZL3			OCN1-3010U-BZL3	
OCN2-3018A-AZL3			OCN2-3018A-AZL3	
OCN2-3018A-BZL3			OCN2-3018A-BZL3	
Remark	<p>1/2''-20 UNF Connector face view</p> <p>1-yellow/green(⊕) 2-black 3-blue</p>		<p>7/8''-16UNF-2A Connector face view</p> <p>1-brown 2-yellow/green(⊕) 3-blue</p>	
Cable 2M (PVC)				
Weight				

**Sensing Range (All type sensor)**

**Shielded Modes**



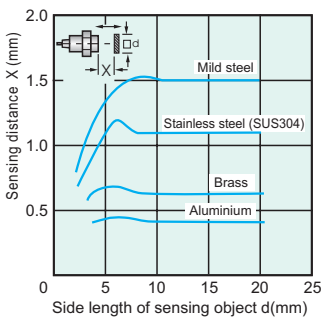
**Non-Shielded Modes**



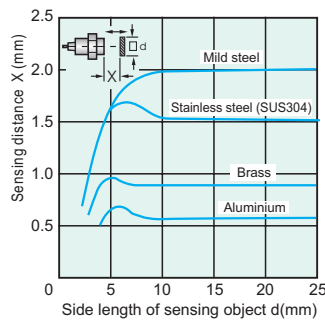
**Sensing Distance VS. Sensing Object**

**Shielded Modes**

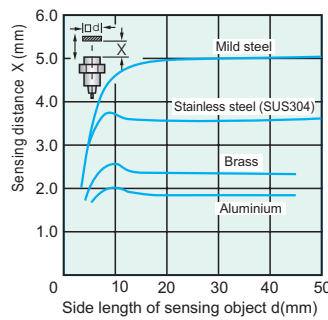
**OCN1-081.5xx**



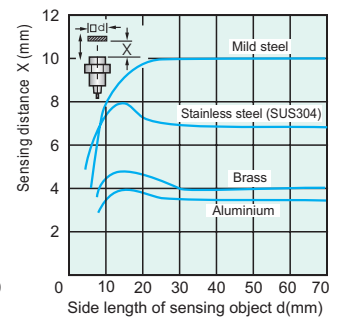
**OCN1-1202xx**



**OCN1-1805xx**

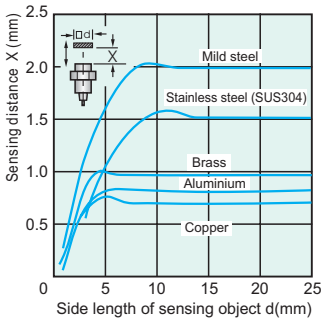


**OCN1-3010xx**

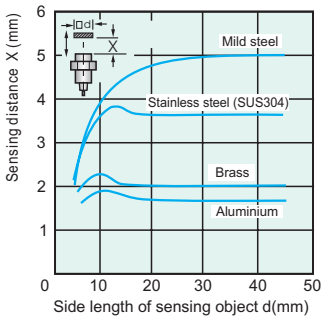


**Non-Shielded Modes**

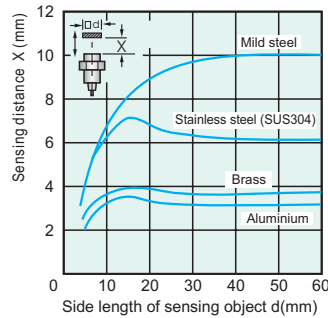
**OCN2-0802xx**



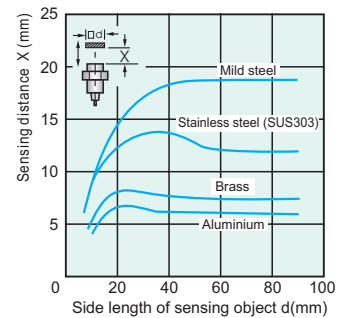
**OCN2-1205xx**



**OCN2-1810xx**



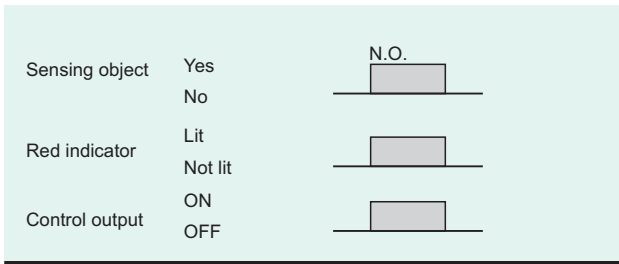
**OCN2-3018xx**



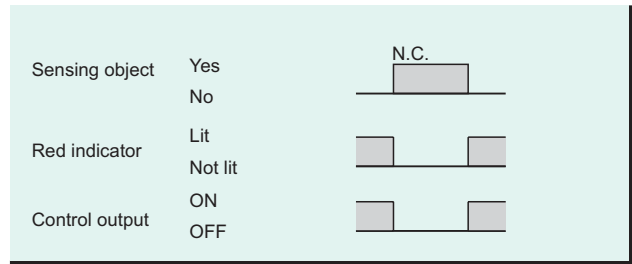


■ Timing Chart

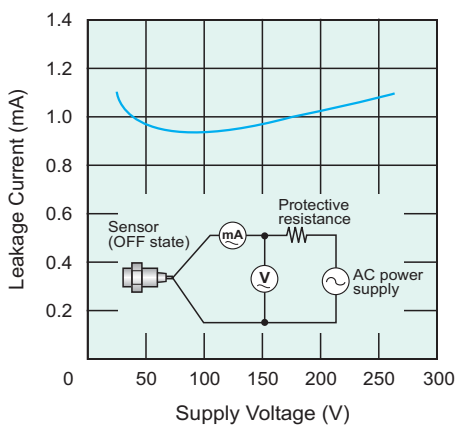
AC or AC/DC 2-wire N.O.



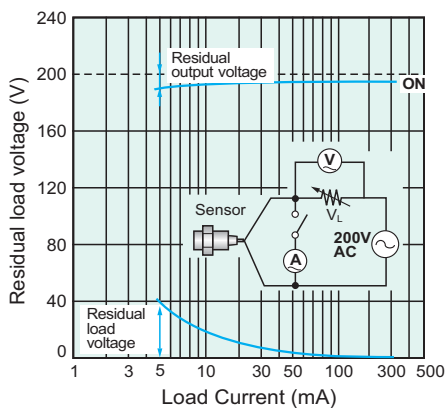
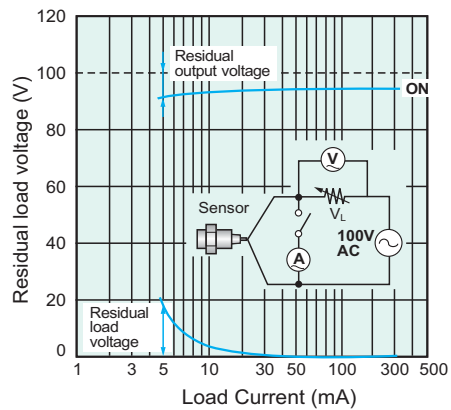
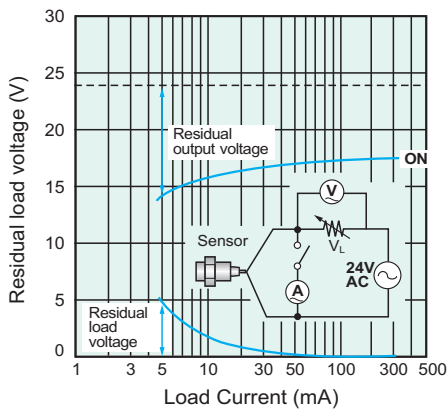
AC or AC/DC 2-wire N.C.



■ Leakage Current (Typical)



■ Residual Output Voltage

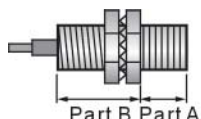


■ **Mounting**

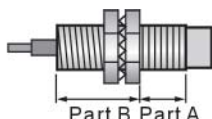
Do not tighten the nut with excessive force. A washer must be used with the nut.



Shielded type



Shielded type

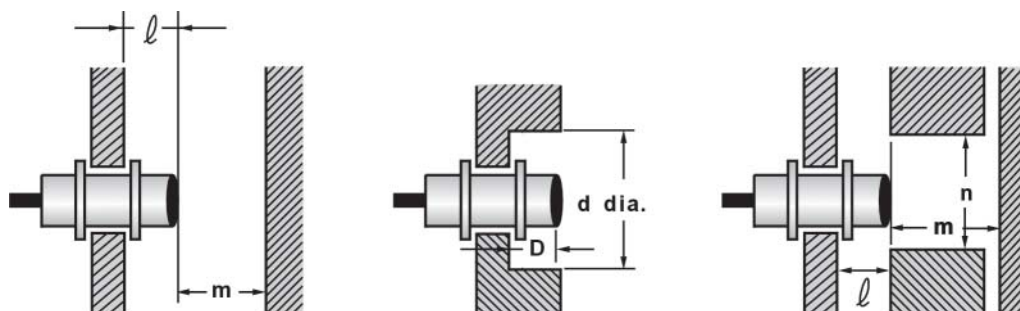


Type		Part A		Part B
		Length	Torque	Torque
M8	Shielded	9 mm	9 N · m	12 N · m
	Non-shielded	3mm		
M12		30 N · m		
M18		70 N · m		
M30		180 N · m		

Note: The tabel above righth shows the tightening torques for part A and part B nuts. In the previous examples, the nut is on the sensor head side (part B) and hence the tightening torque for part B applies. If this nut is in part A, the tightening torque for part A applies instead.

■ **Effects of surrounding metal**

when mounting the **OCN** within a metal panel, ensure that the clearances given in the following table are maintained. Failure to maintain these distances may cause deterioration in the performance of the sensor.

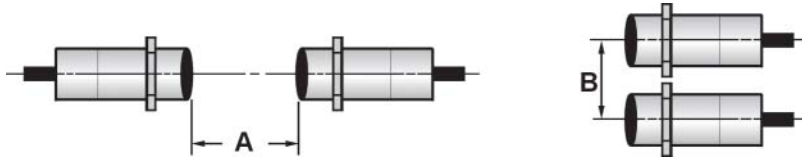


(Unit: mm)

Type	Dimension	M8	M12	M18	M30
Shielded	<i>l</i>	0	0	0	0
	<i>m</i>	4.5	8	20	40
	<i>d</i>	5	12	18	30
	<i>D</i>	0	0	0	0
	<i>n</i>	12	18	27	45
Non-shielded	<i>l</i>	6	15	22	30
	<i>m</i>	8	20	40	70
	<i>d</i>	24	40	55	90
	<i>D</i>	6	15	22	30
	<i>n</i>	24	36	54	90

**Mutual Interference**

When installing two or more Sensors face-to-face or side-by-side, ensure that the minimum distances given in the following table are maintained.



(Unit: mm)

**Short Body type sensor**

Type	Dimension	M8	M12	M18	M30
Shielded	A	20	30 (20)	50 (30)	100 (50)
	B	15	20 (12)	35 (18)	70 (35)
Non-shielded	A	80	120 (60)	200 (100)	300 (100)
	B	60	100 (50)	110 (60)	200 (100)

**Long Body type sensor**

Type	Dimension	M12	M18	M30
Shielded	A	30	50	100
	B	20	35	70
Non-shielded	A	120	200	300
	B	100	110	200

Note: The figures in parentheses refer to sensor's operating at different frequencies.