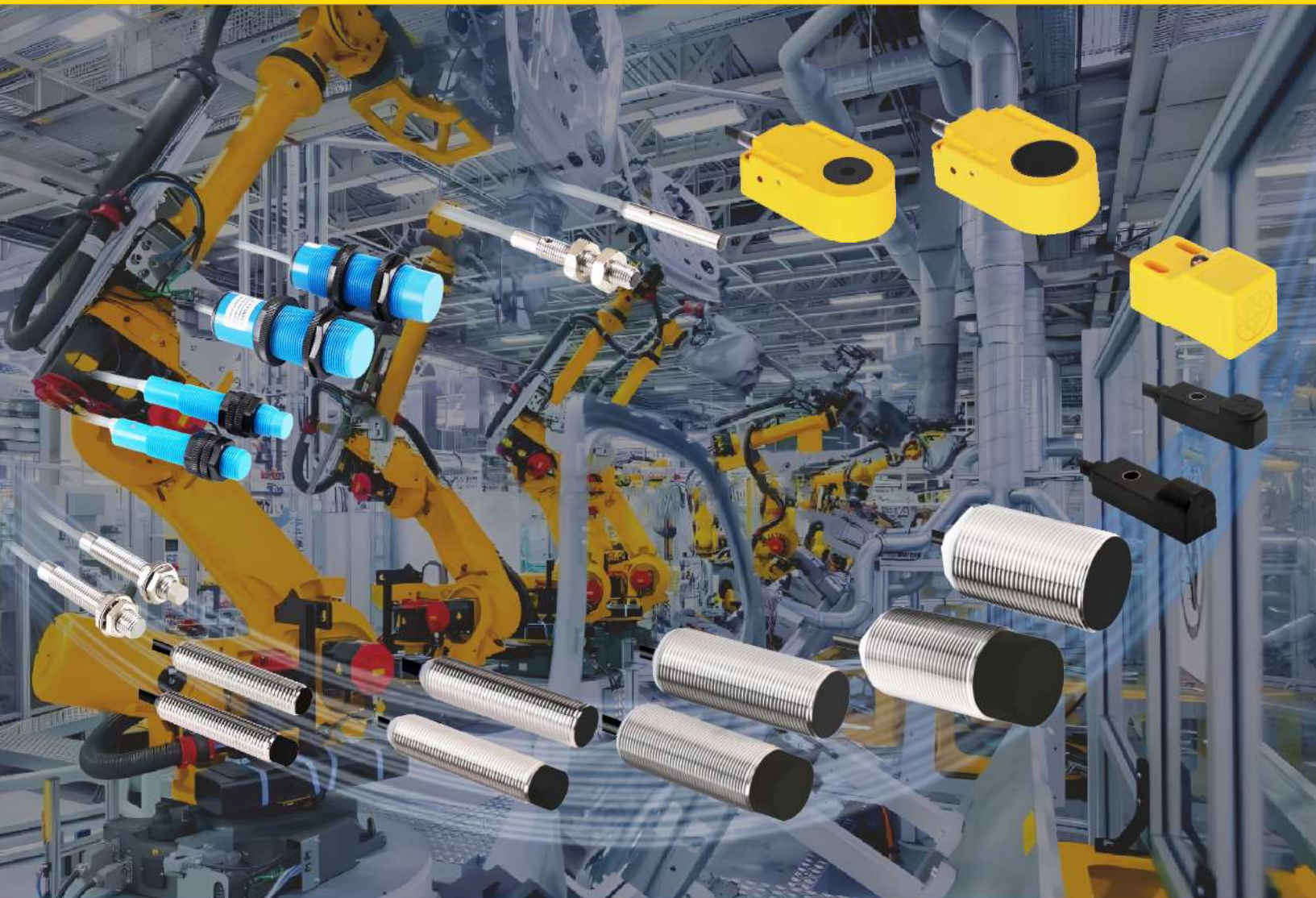


Proximity sensors DS-P series

Circular/Square/Subminiature/Annular proximity sensors



Circular inductive proximity sensors DS-PG/PL series

Selection Guide

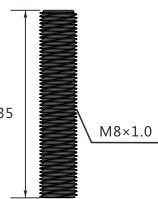
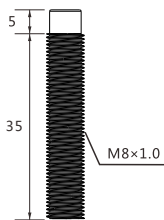
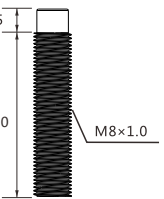
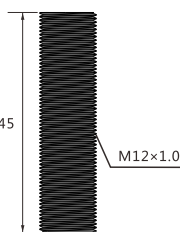
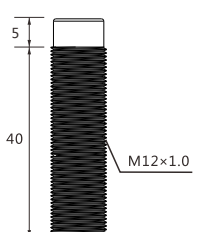
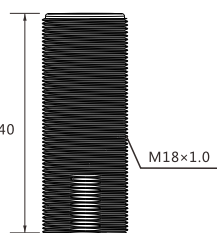
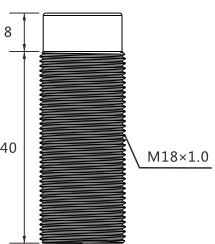
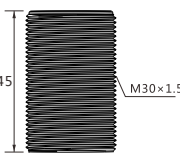
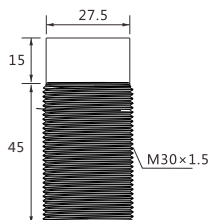
Size			Sensing distance	Connecting method	Output configuration	Operation mode NO	Operation mode NC
M8 	Standard distance	Shielded	1mm	Pre-wired	NPN	DS-PG0801SN1	DS-PG0801SN2
					PNP	DS-PG0801SP1	DS-PG0801SP2
		Unshielded	2mm	Pre-wired	NPN	DS-PG0802UN1	DS-PG0802UN2
					PNP	DS-PG0802UP1	DS-PG0802UP2
	Double distance	Shielded	2mm	Pre-wired	NPN	DS-PL0802SN1	DS-PL0802SN2
					PNP	DS-PL0802SP1	DS-PL0802SP2
		Unshielded	4mm	Pre-wired	NPN	DS-PL0804UN1	DS-PL0804UN2
					PNP	DS-PL0804UP1	DS-PL0804UP2
M12 	Standard distance	Shielded	2mm	Pre-wired	NPN	DS-PG1202SN1	DS-PG1202SN2
					PNP	DS-PG1202SP1	DS-PG1202SP2
		Unshielded	4mm	Pre-wired	NPN	DS-PG1204UN1	DS-PG1204UN2
					PNP	DS-PG1204UP1	DS-PG1204UP2
	Double distance	Shielded	4mm	Pre-wired	NPN	DS-PL1204SN1	DS-PL1204SN2
					PNP	DS-PL1204SP1	DS-PL1204SP2
		Unshielded	8mm	Pre-wired	NPN	DS-PL1208UN1	DS-PL1208UN2
					PNP	DS-PL1208UP1	DS-PL1208UP2
M18 	Standard distance	Shielded	5mm	Pre-wired	NPN	DS-PG1805SN1	DS-PG1805SN2
					PNP	DS-PG1805SP1	DS-PG1805SP2
		Unshielded	8mm	Pre-wired	NPN	DS-PG1808UN1	DS-PG1808UN2
					PNP	DS-PG1808UP1	DS-PG1808UP2
	Double distance	Shielded	8mm	Pre-wired	NPN	DS-PL1808SN1	DS-PL1808SN2
					PNP	DS-PL1808SP1	DS-PL1808SP2
		Unshielded	12mm	Pre-wired	NPN	DS-PL1812UN1	DS-PL1812UN2
					PNP	DS-PL1812UP1	DS-PL1812UP2
M30 	Standard distance	Shielded	10mm	Pre-wired	NPN	DS-PG3010SN1	DS-PG3010SN2
					PNP	DS-PG3010SP1	DS-PG3010SP2
		Unshielded	15mm	Pre-wired	NPN	DS-PG3015UN1	DS-PG3015UN2
					PNP	DS-PG3015UP1	DS-PG3015UP2
	Double distance	Shielded	15mm	Pre-wired	NPN	DS-PL3015SN1	DS-PL3015SN2
					PNP	DS-PL3015SP1	DS-PL3015SP2
		Unshielded	25mm	Pre-wired	NPN	DS-PL3025UN1	DS-PL3025UN2
					PNP	DS-PL3025UP1	DS-PL3025UP2

Circular inductive proximity sensors DS-PG/PL series

Technical Parameter

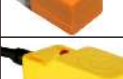
Differential travel	10% max. of sensing distance
Detectable object	Ferrous metal (The sensing distance decreases with non-ferrous metal.)
Standard sensing object	iron
Power supply voltage	10~30VDC
Leakage current	0.8mA max.
Operation mode	NO : Normally Open NC : Normally Closed
Control output	Load current 200 mA max. (Residual voltage 1V max.)
Indicator	Operation indicator (Red LED)
Protection circuit	Surge protection circuit, Short circuit protection, Polarity reversal protection
Ambient air temperature	Operation & storage : -25 to 70°C (with no icing or condensation)
Ambient humidity	Operation & Storage: 35 to 95% (with no condensation)
Temperature influence	±10% max. of sensing distance every 20°C with temperature range of -20 to 70°C
Voltage influence	±1% max. of sensing distance when Rated power supply voltage ±15%
Insulation resistance	50 MΩ min. (at 500 VDC) (between current-carrying parts and case)
Dielectric strength	1,000 VAC at 50/60 Hz for 1 min (between current-carrying parts and case)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions
Shock resistance	500 m/s ² , 10 times each in X, Y and Z directions
IP Grade	IP67
Connecting method	Pre-wired models (standard cable length=2m)
Case Material	Case:Brass-nickel plated Sensing surface:PBT

Dimensions (mm)

M8 Shielded DS-PG0801S□□ DS-PL0802S□□ 	M8 Unshielded DS-PG0802U□□ 	M8 Unshielded DS-PL0804U□□ 	M12 Shielded DS-PG1202S□□ DS-PL1204S□□ 	M12 Unshielded DS-PG1204U□□ DS-PL1208U□□ 
M18 Shielded DS-PG1805S□□ DS-PL1808S□□ 	M18 Unshielded DS-PG1808U□□ DS-PL1812U□□ 	M30 Shielded DS-PG3010S□□ DS-PL3015S□□ 	M30 Unshielded DS-PG3015U□□ DS-PL3025U□□ 	

Square inductive proximity sensors DS-PQ/PW series

Selection Guide

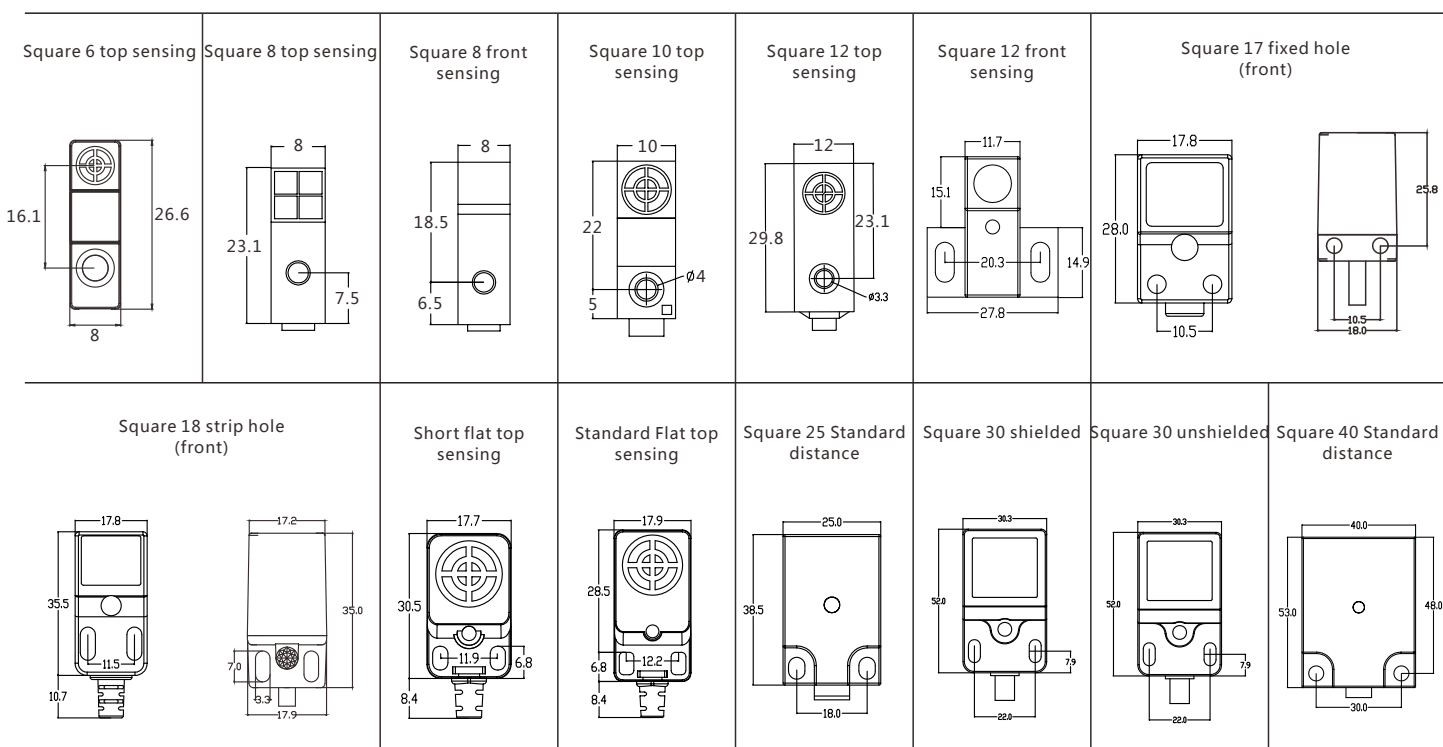
Type		Sensing distance	Output configuration	Operation mode NO	Operation mode NC
Square 6 top sensing		1.5mm	NPN	DS-PW061.5N1	DS-PW061.5N2
			PNP	DS-PW061.5P1	DS-PW061.5P2
Square 8 top sensing		2mm	NPN	DS-PW0802N1	DS-PW0802N2
			PNP	DS-PW0802P1	DS-PW0802P2
Square 8 front sensing		2mm	NPN	DS-PQ0802N1	DS-PQ0802N2
			PNP	DS-PQ0802P1	DS-PQ0802P2
Square 10 top sensing		3mm	NPN	DS-PW1003N1	DS-PW1003N2
			PNP	DS-PW1003P1	DS-PW1003P2
Square 12 top sensing		4mm	NPN	DS-PW1204N1	DS-PW1204N2
			PNP	DS-PW1204P1	DS-PW1204P2
Square 12 front sensing		4mm	NPN	DS-PQ1204N1	---
			PNP	DS-PQ1204P1	---
Square 17 fixed hole(front)		5mm	NPN	DS-PFQ1705N1	DS-PFQ1705N2
			PNP	DS-PFQ1705P1	DS-PFQ1705P2
		5mm	NPN	DS-PHQ1705N1	DS-PHQ1705N2
			PNP	DS-PHQ1705P1	DS-PHQ1705P2
Square 18 fixed hole(front)		5mm	NPN	DS-PFQ1805N1	DS-PFQ1805N2
			PNP	DS-PFQ1805P1	DS-PFQ1805P2
		5mm	NPN	DS-PHQ1805N1	DS-PHQ1805N2
			PNP	DS-PHQ1805P1	DS-PHQ1805P2
Short flat top sensing		5mm	NPN	DS-PFW1805N1	DS-PFW1805N2
			PNP	DS-PFW1805P1	DS-PFW1805P2
Standard Flat top sensing		5mm	NPN	DS-PHW1805N1	DS-PHW1805N2
			PNP	DS-PHW1805P1	DS-PHW1805P2
Square 25 Standard distance		7mm	NPN	DS-PQ2507N1	DS-PQ2507N2
			PNP	DS-PQ2507P1	DS-PQ2507P2
Square 30 shielded		10mm	NPN	DS-PQ3010N1	DS-PQ3010N2
			PNP	DS-PQ3010P1	DS-PQ3010P2
Square 30 unshielded		15mm	NPN	DS-PQ3015N1	DS-PQ3015N2
			PNP	DS-PQ3015P1	DS-PQ3015P2
Square 40 Standard distance		20mm	NPN	DS-PQ4020N1	DS-PQ4020N2
			PNP	DS-PQ4020P1	DS-PQ4020P2

Square inductive proximity sensors DS-PQ/PW series

Technical Parameter

Differential travel	10% max. of sensing distance
Detectable object	Ferrous metal (The sensing distance decreases with non-ferrous metal.)
Standard sensing object	iron
Power supply voltage	10~30VDC
Leakage current	0.8mA max.
Operation mode	NO : Normally Open NC : Normally Closed
Control output	Load current 200 mA max. (Residual voltage 1V max.)
Indicator	Operation indicator (Red LED)
Protection circuit	Surge protection circuit, Short circuit protection, Polarity reversal protection
Ambient air temperature	Operation & storage : -25 to 70°C (with no icing or condensation)
Ambient humidity	Operation & Storage: 35 to 95% (with no condensation)
Temperature influence	±10% max. of sensing distance every 20°C with temperature range of -20 to 70°C
Voltage influence	±1% max. of sensing distance when Rated power supply voltage ±15%
Insulation resistance	50 MΩ min. (at 500 VDC) (between current-carrying parts and case)
Dielectric strength	1,000 VAC at 50/60 Hz for 1 min (between current-carrying parts and case)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions
Shock resistance	500 m/s ² , 10 times each in X, Y and Z directions
IP Grade	IP67
Connecting method	Pre-wired models (standard cable length=2m)
Case Material	ABS+PC alloy material

Dimensions (mm)



Subminiature inductive proximity sensors DS-PS/PMS series

Selection Guide

Size	Type	Sensing distance	Output configuration	Operation mode NO	Operation mode NC
$\phi 3$ 	Shielded	0.6mm	NPN	DS-PS06SN1	DS-PS06SN2
			PNP	DS-PS06SP1	DS-PS06SP2
$\phi 4$ 	Shielded	0.8mm	NPN	DS-PS08SN1	DS-PS08SN2
			PNP	DS-PS08SP1	DS-PS08SP2
		1.5mm	NPN	DS-PS15SN1	DS-PS15SN2
			PNP	DS-PS15SP1	DS-PS15SP2
$\phi 6.5$ 	Shielded	1mm	NPN	DS-PS10SN1	DS-PS10SN2
			PNP	DS-PS10SP1	DS-PS10SP2
	Unshielded	2mm	NPN	DS-PS20UN1	DS-PS20UN2
			PNP	DS-PS20UP1	DS-PS20UP2
	Shielded	3mm	NPN	DS-PS30SN1	DS-PS30SN2
			PNP	DS-PS30SP1	DS-PS30SP2
	Unshielded	6mm	NPN	DS-PS60UN1	DS-PS60UN2
			PNP	DS-PS60UP1	DS-PS60UP2
M4 	Shielded	0.6mm	NPN	DS-PMS06SN1	DS-PMS06SN2
			PNP	DS-PMS06SP1	DS-PMS06SP2
		1mm	NPN	DS-PMS10SN1	DS-PMS10SN2
			PNP	DS-PMS10SP1	DS-PMS10SP2
M5 	Shielded	0.8mm	NPN	DS-PMS08SN1	DS-PMS08SN2
			PNP	DS-PMS08SP1	DS-PMS08SP2
		1.2mm	NPN	DS-PMS12SN1	DS-PMS12SN2
			PNP	DS-PMS12SP1	DS-PMS12SP2

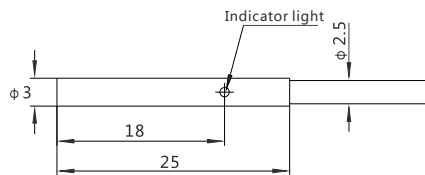
Subminiature inductive proximity sensors DS-PS/PMS series

Technical Parameter

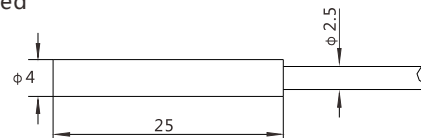
Case Material	Stainless steel
Operation indicator	LED light
Operating voltage	DC10~30V
Continuous wave	<10%
No load current	<10mA
Maximum load current	150mA
Leakage current	<0.01mA
Output configuration	N-type: NPN collector open circuit, P-type: NPN collector open circuit
Operation mode	Normally Open/Normally Closed
Voltage drop	<1.5V
Switching lag	<15%(Sr)
Repetitive accuracy	<5.0%(Sr)
IP Grade	IP67
Operating temperature	-25'C-+70°C
Temperature drift	<10%(Sr)
Protection circuit	Short circuit protection
Overload current protection point	180mA
EMC	RFI>3V/M / EFT>1KV / ESD>4KV(contact)
Vibration/Shock	IEC 60947-5-2,Part7.4.1 / IEC 60947-5-2,Part7.4.2
Sensing surface	Pa66
Connecting method	3 wire type 2M PVC cable

Dimensions (mm)

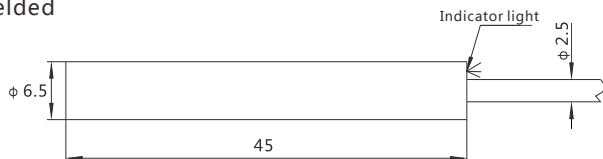
φ3
Shielded



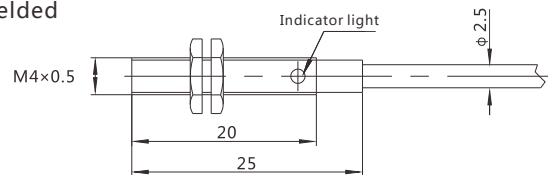
φ4
Shielded



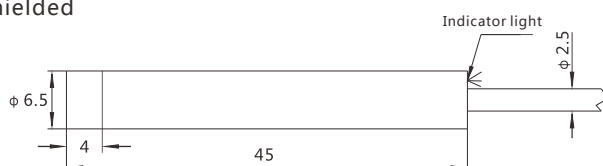
φ6.5
Shielded



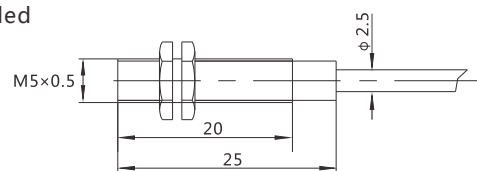
M4
Shielded



φ6.5
Unshielded



M5
Shielded



High speed annular proximity sensors DS-PHB series

Selection Guide

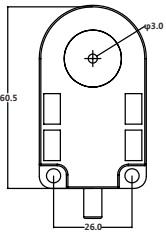
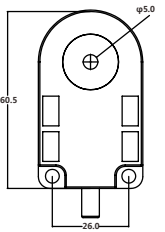
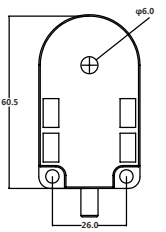
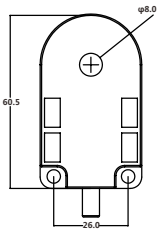
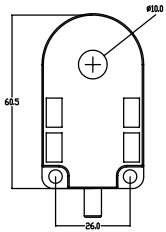
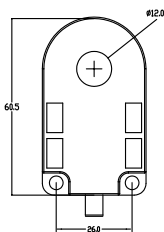
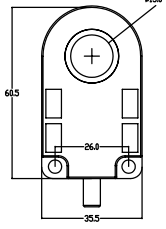
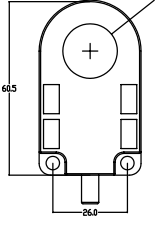
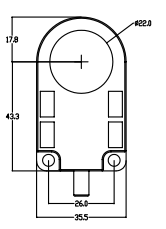
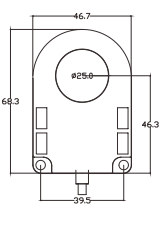
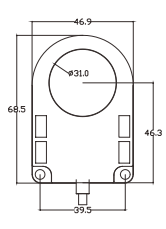
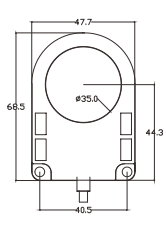
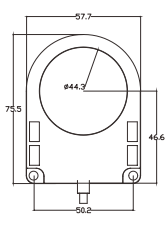
Type		Detection diameter	Output configuration	Operation mode NO	Operation mode NC
3 High speed annular		3mm	NPN	DS-PHB03N(NO / NC)	
			PNP	DS-PHB03P(NO / NC)	
5 High speed annular		5mm	NPN	DS-PHB05N(NO / NC)	
			PNP	DS-PHB05P(NO / NC)	
6 High speed annular		6mm	NPN	DS-PHB06N(NO / NC)	
			PNP	DS-PHB06P(NO / NC)	
8 High speed annular		8mm	NPN	DS-PHB08N(NO / NC)	
			PNP	DS-PHB08P(NO / NC)	
10 High speed annular		10mm	NPN	DS-PHB10N(NO / NC)	
			PNP	DS-PHB10P(NO / NC)	
12 High speed annular		12mm	NPN	DS-PHB12N(NO / NC)	
			PNP	DS-PHB12P(NO / NC)	
15 High speed annular		15mm	NPN	DS-PHB15N(NO / NC)	
			PNP	DS-PHB15P(NO / NC)	
19 High speed annular		19mm	NPN	DS-PHB19N(NO / NC)	
			PNP	DS-PHB19P(NO / NC)	
22 High speed annular		22mm	NPN	DS-PHB22N(NO / NC)	
			PNP	DS-PHB22P(NO / NC)	
25 High speed annular		25mm	NPN	DS-PHB25N1	DS-PHB25N2
			PNP	DS-PHB25P1	DS-PHB25P2
30 High speed annular		30mm	NPN	DS-PHB30N1	DS-PHB30N2
			PNP	DS-PHB30P1	DS-PHB30P2
35 High speed annular		35mm	NPN	DS-PHB35N1	DS-PHB35N2
			PNP	DS-PHB35P1	DS-PHB35P2
44 High speed annular		44mm	NPN	DS-PHB44N1	DS-PHB44N2
			PNP	DS-PHB44P1	DS-PHB44P2

High speed annular proximity sensors DS-PHB series

Technical Parameter

Sensing object	Ferrous metal
Sensitivity adjustment	Multi turn precision potentiometer
Testing method	Free fall or blowing type
Pulse broadening	Built in fixed pulse extension 150ms
Response time	< 0.5ms
Power supply voltage	10~30VDC
Leakage current	0.8mA max.
Operation mode	NO : Normally Open NC : Normally Closed
Control output	Load current 200 mA max. (Residual voltage 2V max.)
Indicator	Operation indicator (Red /Green)
Protection circuit	Surge protection circuit, short circuit protection, polarity reversal protection
Ambient air temperature	Operation & storage : -25 to 70°C (with no icing or condensation)
Ambient humidity	Operation & Storage: 35 to 95% (with no condensation)
Insulation resistance	50 MΩ min. (at 500 VDC) (between current-carrying parts and case)
Dielectric strength	1,000 VAC at 50/60 Hz for 1 min (between current-carrying parts and case)
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y and Z directions
Shock resistance	500 m/s ² , 10 times each in X, Y and Z directions
IP Grade	IP67
Connecting method	standard cable length=2m
Case Material	Case:PBT

Dimensions (mm)

3 High speed annular 	5 High speed annular 	6 High speed annular 	8 High speed annular 	10 High speed annular 	12 High speed annular 	
15 High speed annular 	19 High speed annular 	22 High speed annular 	25 High speed annular 	30 High speed annular 	35 High speed annular 	44 High speed annular 

Circular capacitive proximity sensors DS-PCG/PCL series

Selection Guide

Size			Sensing distance	Output configuration	Operation mode NO	Operation mode NC
M8 	Standard distance	Shielded	1mm	NPN	DS-PCG0801SN1	DS-PCG0801SN2
				PNP	DS-PCG0801SP1	DS-PCG0801SP2
		Unshielded	2mm	NPN	DS-PCG0802UN1	DS-PCG0802UN2
				PNP	DS-PCG0802UP1	DS-PCG0802UP2
M12 	Standard distance	Shielded	2mm	NPN	DS-PCG1202SN1	DS-PCG1202SN2
				PNP	DS-PCG1202SP1	DS-PCG1202SP2
		Unshielded	4mm	NPN	DS-PCG1204UN1	DS-PCG1204UN2
				PNP	DS-PCG1204UP1	DS-PCG1204UP2
	Double distance	Shielded	3mm	NPN	DS-PCL1203SN1	DS-PCL1203SN2
				PNP	DS-PCL1203SP1	DS-PCL1203SP2
		Unshielded	6mm	NPN	DS-PCL1206UN1	DS-PCL1206UN2
				PNP	DS-PCL1206UP1	DS-PCL1206UP2
M18 	Standard distance	Shielded	5mm	NPN	DS-PCG1805SN1	DS-PCG1805SN2
				PNP	DS-PCG1805SP1	DS-PCG1805SP2
		Unshielded	8mm	NPN	DS-PCG1808UN1	DS-PCG1808UN2
				PNP	DS-PCG1808UP1	DS-PCG1808UP2
	Double distance	Shielded	8mm	NPN	DS-PCL1808SN1	DS-PCL1808SN2
				PNP	DS-PCL1808SP1	DS-PCL1808SP2
		Unshielded	15mm	NPN	DS-PCL1815UN1	DS-PCL1815UN2
				PNP	DS-PCL1815UP1	DS-PCL1815UP2
M30 	Standard distance	Shielded	10mm	NPN	DS-PCG3010SN1	DS-PCG3010SN2
				PNP	DS-PCG3010SP1	DS-PCG3010SP2
		Unshielded	15mm	NPN	DS-PCG3015UN1	DS-PCG3015UN2
				PNP	DS-PCG3015UP1	DS-PCG3015UP2
	Double distance	Shielded	20mm	NPN	DS-PCL3020SN1	DS-PCL3020SN2
				PNP	DS-PCL3020SP1	DS-PCL3020SP2
		Unshielded	30mm	NPN	DS-PCL3030UN1	DS-PCL3030UN2
				PNP	DS-PCL3030UP1	DS-PCL3030UP2

Note: M8 capacitive proximity sensor case: stainless steel, M12、M18、M30 case: ABS plastic

Circular capacitive proximity sensors DS-PCG/PCL series

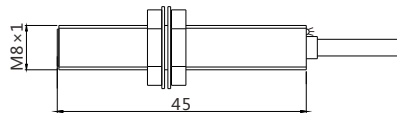
Technical Parameter

Operation indicator	Yellow LED
Operating voltage	DC10~30V
Continuous wave	<10%
No load current	<10mA
Maximum load current	150mA
Leakage current	<0.01mA
Output configuration	N-type: NPN collector open circuit, P-type: NPN collector open circuit
Operation mode	Normally Open/Normally Closed
Voltage drop	<1.5V
Response time	1.5ms
Switch hysteresis	<15%(Sr)
Repetitive accuracy	<5.0%(Sr)
IP Grade	IP67
Operating temperature	-25'C-+70°C
Temperature drift	<10%(Sr)
Protection circuit	Short circuit protection
Overload current protection point	180mA
EMC	RFI>3V/M / EFT>1KV / ESD>4KV(contact)
Vibration/Shock	IEC 60947-5-2,Part7.4.1 / IEC 60947-5-2,Part7.4.2
Sensing surface	ABS
Connecting method	Wire type 2M PVC cable

Dimensions (mm)

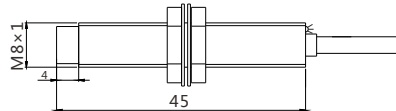
M8 Shielded

DS-PCG0801S□□



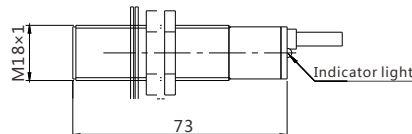
M8 Unshielded

DS-PCG0802U□□



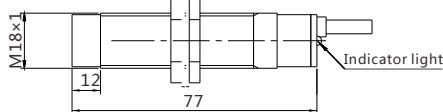
M18 Shielded

DS-PCG1805S□□
DS-PCL1808S□□



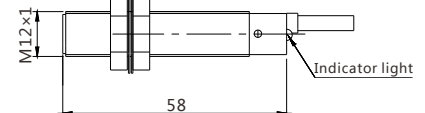
M18 Unshielded

DS-PCG1808U□□
DS-PCL1815U□□



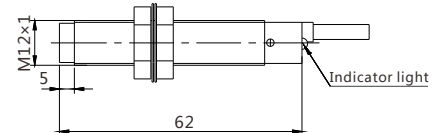
M12 Shielded

DS-PCG1202S□□
DS-PCL1203S□□



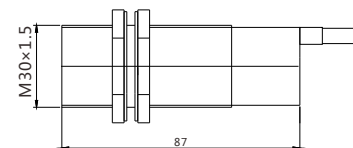
M12 Unshielded

DS-PCG1204U□□
DS-PCL1206U□□



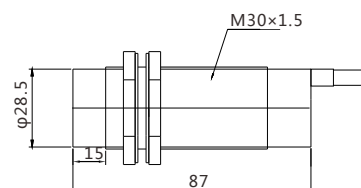
M30 Shielded

DS-PCG3010S□□
DS-PCL3015S□□



M30 Unshielded

DS-PCG3015U□□
DS-PCL3030U□□





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