

















# General sensor



## Zhejiang Hechuan Technology Co.LTD https://www.hcfaglobal.com/

#### Headquarters address

No.9, Fucai Road, Longyou industrial Zone, Quzhou City, Zhejiang Province, PR China

#### Headquarters address

No. 299, Lixin Road, Qingshanhu Sci-Tech City, Lin'an District, Hangzhou City, Hangzhou R&D Centre Zhejiang Province

EtherCAT® is owned by Beckhoff Automation Co., Ltd.; MECHATROLINK® is owned by the MECHATROLINK Association, which is an open field network; The other products, product names, and product trademarks or registered trademarks described in this manual are owned by each company.





All information in this document is subject to change without notice.

Manual No.: Feb. 2023 Issue No. 3

 $\label{eq:Due to the delay} Due to the delay in updating the paper version, please refer to the official website for the latest product information$ 



 Become the most valuable industrial automation core components and solutions provider

HCFA was established in 2011. Its headquarters and production base are located in Longyou, Zhejiang Province. It has established five R&D centers in Longyou, Hangzhou, Shenzhen, Dalian and Suzhou. It is a company focusing on the research and development of industrial automation products, Manufacturing, sales and application integration, an enterprise dedicated to providing core components and system integration solutions for smart factories. The products cover five major parts: control, drive, sensor, electromechanical, and information, including servo system, controller (PLC), vision system, encoder, frequency converter, touch screen, etc. There are nearly 500 models of products, and they have passed CE, RoHS product certification. Products are widely used in OEM fields such as photovoltaic electronics, 3C electronics, lithium batteries, robots, packaging, textiles, logistics, lasers, and metal processing.













The company has successively won the "National High-tech Enterprise", "Provincial Key Enterprise Research Institute", "Provincial High-tech Enterprise Research and Development Center", "Provincial Industrial Design Center", "Provincial Enterprise Technology Center", "Zhejiang Province "Invisible Champion "Enterprise", "Zhejiang Famous Firm" and many other honors.

**R&D Center** 

Set up nationally

**Global distributors** 

400+

Products sell well overseas

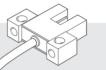
**Sales office** 

40+

Gathering of sales elites

01 Lead-wire type slot photoelectric sensor (25 series)

03 Dimensions for Lead-wire type slot photoelectric sensor (25 series)



**05** Lead-wire type slot photoelectric sensor (45 series)

O7 Dimensions for Lead-wire type slot photoelectric sensor (45 series)



Plug-in slot photoelectric sensor (67 series)

Dimensions for plug-in slot photoelectric sensor (67 series)



13 Square photoelectric sensor

16 Dimensional drawing of square photoelectric sensor



17 / Proximity sensor

20 Proximity Sensor Dimensions drawing

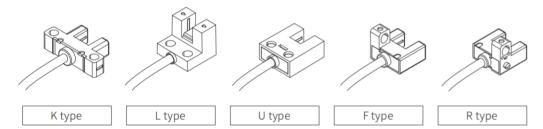


25 series lead type groove type photoelectric sensor

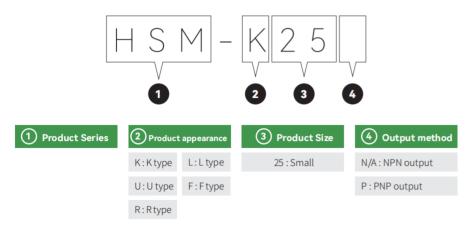


## Various models to choose

5 different types available, from which you can select a model that meets your installation conditions.



## **Naming Rules**



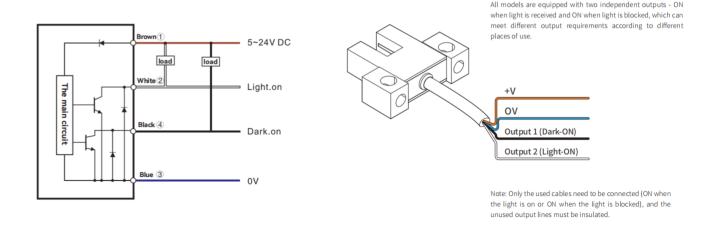
T	C	Appearance					
Туре	Groove width	K type	L type	U type	F type	R type	
Lead-wire type	5mm	HSM-K25	HSM-L25	HSM-U25	HSM-F25	HSM-R25	

## Technical Parameters

Туре	K type	L type	U type	F type	R type			
Detection distance	5mm (Groove width)							
Standard test substance	Opaque objects above 0.8×1.2mm							
Repeatability			Below 0.03mm					
Output mode			NPN open collector					
Switch mode		Can be switchab	le between L.on(Light-ON) ar	nd D.on(Dark-ON)				
Indicator		The light is off when an obje	ect is detected, and the light i	s on when there is no object	:			
Response frequency			3KHz					
Light source			Infrared light					
Operating Voltage			5~24V DC					
Residual voltage	Below 1V (when the load current is 100mA)							
Current consumption	≤8mA							
Circuit protection	Surge protection, reverse polarity protection							
Ambient light	Light-receiving surface illuminance Incandescent lamp: below 1000lux							
Ambient temperature	Working: -25°C~+55°C Storage: -30°C~+80°C, no freezing							
Environment humidity	Working: 5%~85%RH Storage: 5%~95%RH, no condensation							
Withstand voltage	AC, 1000V for 1 minute, between all power connection terminals and the shell							
Vibration resistance	10~55Hz, amplitude 1.5mm, 2 hours each in X, Y, Z directions							
Insulation resistance	More than 20M $\Omega$ between all power connection terminals and the shell (based on DC250V)							
Material	PC							
Wiring			2M4 core cable					
Model NPN	HSM-K25	HSM-L25	HSM-U25	HSM-F25	HSM-R25			

## Wiring diagram

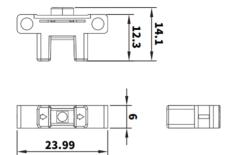
#### DC 4-wire NPN output



## **External dimensions**

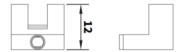
Unit: mm

## [ HSM-K25 ]



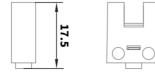
## [ HSM-L25 ]



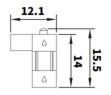


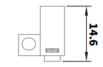
## [ HSM-U25 ]





## [ HSM-F25 ]







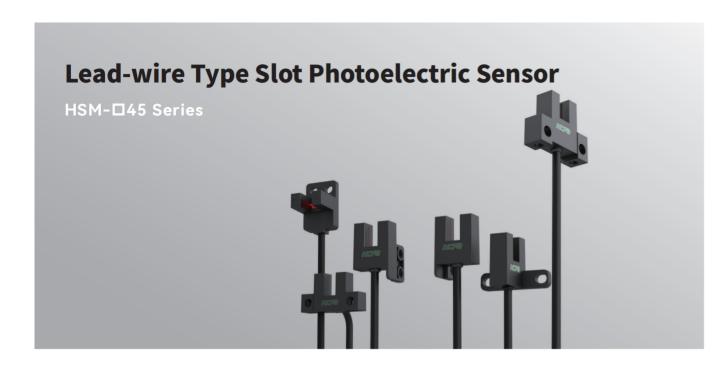
## [ HSM-R25 ]





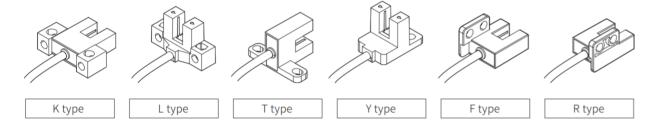


45 series wire type groove type photoelectric sensor

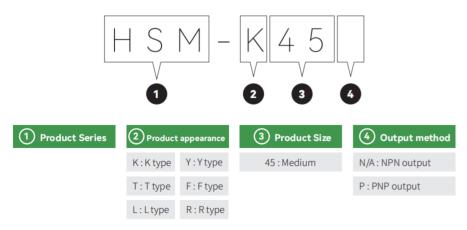


## Various models to choose from

6 different types available, from which you can select a model that meets your installation conditions.



## **Naming Rules**



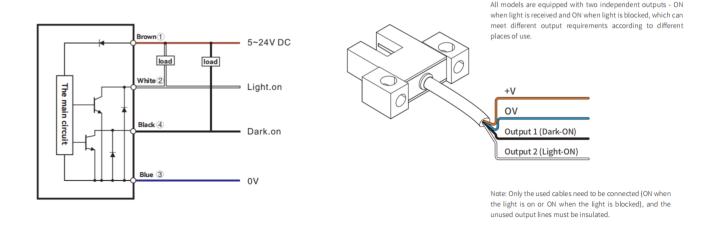
T	C	Appearance					
Туре	Groove width	K type	L type	T type	Y type	F type	R type
Lead-wire type	5mm	HSM-K45	HSM-L45	HSM-T45	HSM-Y45	HSM-F45	HSM-R45

#### Technical Parameters

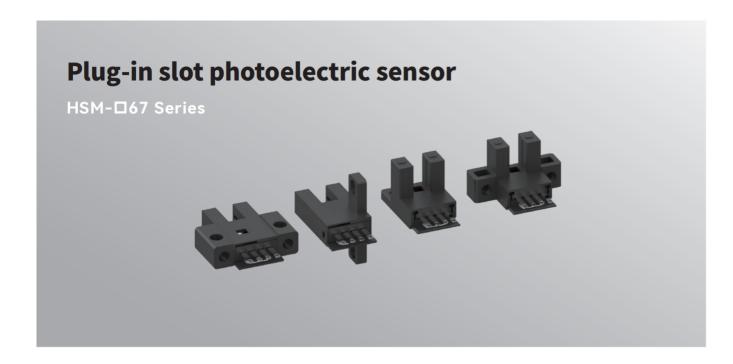
Туре	K type	L type	T type	Y type	F type	R type	
	Ктуре	L type		71	1 type	Ктуре	
Detection distance				ove width)			
Standard test substance			Opaque objects a	bove 0.8×1.2mm			
Repeatability			Below (	0.03mm			
Output mode			NPN oper	n collector			
Switch mode		Can be	switchable between L.o	n(Light-ON) and D.on([	Dark-ON)		
Indicator light		The light is off whe	en an object is detected,	and the light is on whe	en there is no object		
Response frequency			3K	Hz			
Light source			Infrare	ed light			
Operating Voltage	5~24V DC						
Residual voltage	Below 1V (when the load current is 100mA)						
Current consumption	≤8mA						
Circuit protection	Surge protection, reverse polarity protection						
Ambient light	Light-receiving surface illuminance Incandescent lamp: below 1000lux						
Ambient temperature	Working: -25°C~+55°C Storage: -30°C~+80°C, no freezing						
Environment humidity	Working: 5%~85%RH Storage: 5%~95%RH, no condensation						
Withstand voltage	AC, 1000V for 1 minute, between all power connection terminals and the shell						
Vibration resistance	10~55Hz, amplitude 1.5mm, 2 hours each in X, Y, Z directions						
Insulation resistance	More than $20M\Omega$ between all power connection terminals and the shell (based on DC250V)						
Material	PC						
Wiring			2M4 cor	re cable			
Model NPN	HSM-K45	HSM-L45	HSM-T45	HSM-Y45	HSM-F45	HSM-R45	

## Wiring diagram

#### DC 4-wire NPN output

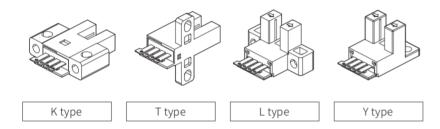


# **External dimensions** Unit: mm [ HSM-K45 ] [ HSM-Y45 ] [ HSM-L45 ] [ HSM-F45 ] 10.95 [ HSM-T45 ] [ HSM-R45 ] 13.02 26.53

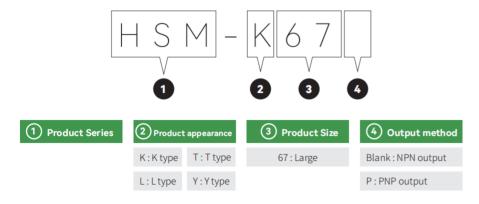


## Various models to choose from

There are as many as 4 types of shapes available, from which you can select a model that meets your installation conditions.



## **Product Model Naming Rules**



Туре	Groove width	Appearance				
туре	Groove width	K type	T type	L type Y type		
Plug-in type	5mm	HSM-K67	HSM-T67	HSM-L67	HSM-Y67	

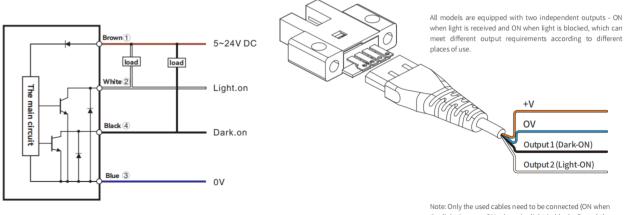
Туре	Line length	Model
Wire	2m	HSM-J1006

#### Technical Parameters

Туре	K type	T type	L type	Y type		
Detection distance	5mm (Groove width)					
Standard test substance		Opaque objects a	bove 0.8×1.2mm			
Repeatability		Below 0	).03mm			
Output mode		NPN oper	collector			
Switch mode		L.on (light receiving action)/D.o	on (shading action) switchable			
Indicator light	The lig	ght is off when an object is detected,	and the light is on when there is no	object		
Response frequency		3K	Hz			
Light source		Infrare	d light			
Operating Voltage	5~24V DC					
Residual voltage	Below 1V (when the load current is 100mA)					
Current consumption	≤8mA					
Circuit protection	Surge protection, reverse polarity protection					
Ambient light	Light-receiving surface illuminance Incandescent lamp: below 1000lux					
Ambient temperature	Working: -25°C~+55°C Storage: -30°C~+80°C, no freezing					
Environment humidity	Working: 5%~85%RH Storage: 5%~95%RH, no condensation					
Withstand voltage	AC, 1000V for 1 minute, between all power connection terminals and the shell					
Vibration resistance	10~55Hz, amplitude 1.5mm, 2 hours each in X, Y, Z directions					
Insulation resistance	More than $20M\Omega$ between all power connection terminals and the shell (based on DC250V)					
Material	PC					
Wiring		conn	ector			
Model NPN	HSM-K67	HSM-T67	HSM-L67	HSM-Y67		

## Wiring diagram

#### DC 4-wire NPN output

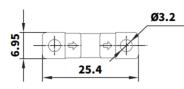


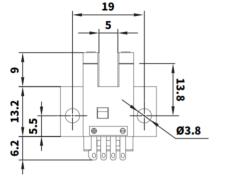
Note: Only the used cables need to be connected (ON when the light is on or ON when the light is blocked), and the unused output lines must be insulated.

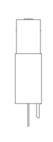


Unit: mm

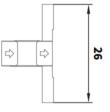
## [ HSM-K67 ]

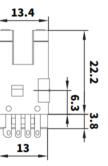


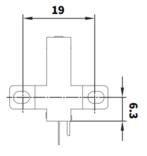




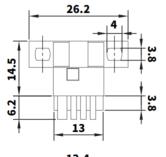
## [ HSM-T67 ]

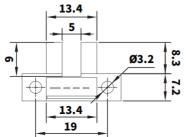


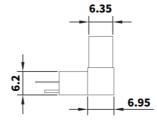




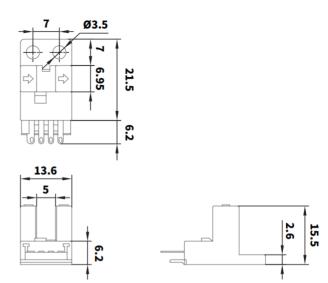
## [ HSM-L67 ]







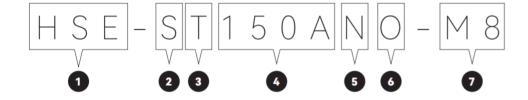
[ HSM-Y67 ]



Square photoelectric sensor



## **Naming Rules**

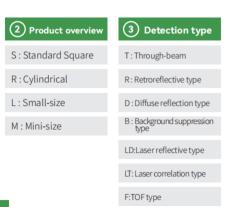




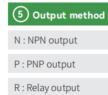
Wiring

N/A: Lead-wire

M8: M8 connector relay
M12: M12 connector relay



4 Detection distance
150 : Indicate directly
A: Indicate 00



6 Normally open normally closed
N/A : normally open + normally closed
O : Normally open
C : Normally closed

## Specifications

Туре			Detection distance	Output method (NPN)	Output method (PNP)	Light source
Through-beam	Standard type		15m	HSE-ST150AN	HSE-ST150AP	Red LED
Diffuse reflection	Diffuse reflection Standard type	•	100mm	HSE-SD0100N	HSE-SD0100P	Red LED
type	Diffuse reflection Long range	•	300mm	HSE-SD0300N	HSE-SD0300P	Red LED
Retroreflective type	Standard type Without MSR		4m	HSE-SR4000N	HSE-SR4000P	Red LED
Correlation type	Through-beam		50m	HSE-SLT5AAN	HSE-SLT5AAP	Red laser
Diffuse reflection type	Diffuse reflection Laser type	-	500mm	HSE-SLD500N	HSE-SLD500P	Red laser
Background	BGS Standard type	•	100mm	HSE-SB0100N	HSE-SB0100P	Red LED
suppression type	BGS Long range	•	300mm	HSE-SB0300N	HSE-SB0300P	Red LED
TOE Type	Standard type	_	1500mm	HSE-SF1500N	HSE-SF1500P	Infrared laser
TOF Type	Long range		4000mm	HSE-SF4000N	HSE-SF4000P	Infrared laser

## Technical Parameters

		Detection method	Through-beam	Retroreflective type	Reflect	ive type
Model NPN Output			HSE-ST150AN	HSE-SR4000N	HSE-SD0100N	HSE-SD0300N
Items	PNP Output	Lead-wire	HSE-ST150AP	HSE-SR4000P	HSE-SD0100P	HSE-SD0300P
Object dete	ction		Diameter ≥ 5mm opaque	Diameter ≥ 12mm opaque	100×100mm wh	ite drawing paper
Light source	e (wavele	ngth)		Red L	.ED	
Voltage				12-24VDC, ripple (P-P)	10% max (DC10-30)	
Current con	sumption	1	≤2	5mA	≪4	5mA
Control out	put		Load	power supply current below 1	00mA (residual voltage bel	ow 1V)
Circuit prot	ection		Surge pr	otection circuit, short circuit p	rotection, reverse polarity p	protection
Response ti	me		1.0 ms or less for both operation and response			
Indicator lig	jht			Action indicate	or light (red)	
Ambient ter	nperatur	е	Operation: -25~+55°C (r	no freezing, no condensation) S	Storage: -40°C~+70°C (no fre	eezing, no condensation)
Ambient lig	ht		:	Sunlight: below 10000LX Incan	descent lamp: below 30001	X
Environmen	t humidit	ty	When operat	ing: 45%~85% (no freezing) RH	When saving: 35%~85% (n	o freezing) RH
Effect of vol	ltage		When the rated power s	upply voltage fluctuates within	$\pm 15\%$ , the detection dista	nce changes within ±19
Insulation re	esistance		More than 2	20MΩ (DC500 megohmmeter) t	petween the charging part	and the shell
Dielectric st	trength		Above AC	1000V, at 50/60Hz for 1min, be	tween the charging part an	d the shell
Vibration (d	lurable)		10~50Hz, 1.5mm double amplitude, up to 1h in X, Y, Z directions			
Impact (dur	able)		500m/s <sup>2</sup> double amplitude, 3 times in each direction of X, Y, Z			
Connection	method		Lead-wire type lead type (standard 2m)			
Shell materi	al			PC		

Square photoelectric sensor

## Technical Parameters

	Detection method	Through-beam	Reflective type		
Model NPN Output		HSE-SLT5AAN	HSE-SLD500N		
Items PNP Output	Lead-wire	HSE-SLT5AAP	HSE-SLD500P		
Object detection		Diameter ≥ 2mm opaque	10×10mm white drawing paper		
Light source (wavele	ength)	660nm F	Red laser		
Voltage		DC12-24V ripple (P-P)	below 10% (DC10-30)		
Current consumption	n	≤45mA	≤55mA		
Control output		Load power supply current below	150mA (residual voltage below 1V)		
Circuit protection		Surge protection circuit, short circuit protection, reverse polarity protection			
Response time		1.0 ms or less for both operation and response			
Indicator light		Action indica	itor light (red)		
Ambient temperatur	е	Operation: -25~+55°C (no freezing, no condensation)	Storage: -40°C~+70°C (no freezing, no condensation)		
Ambient light		Sunlight: below 10000LX Inca	ndescent lamp: below 3000LX		
Environment humidi	ty	When operating: 45%~85% (no freezing) R	H When saving: 35%~85% (no freezing) RH		
Effect of voltage		When the rated power supply voltage fluctuates with	in $\pm 15\%$ , the detection distance changes within $\pm 1\%$		
Insulation resistance	•	More than $20M\Omega$ (DC500 megohmmeter) between the charging part and the shell			
Dielectric strength		Above AC1000V, at 50/60Hz for 1min, between the charging part and the shell			
Vibration (durable)		10~50Hz, 1.5mm double amplitude, up to 1h in X, Y, Z directions			
Impact (durable)		500 m/s² double amplitude, 3 times in each direction of X, Y, Z			
Connection method	ion method Lead-Wire type (standard 2m)				
Shell material	aterial ABS				

## Technical Parameters

Detection method	Background	suppression	
Model NPN Output	HSE-SB0100N	HSE-SB0300N	
Items PNP Coutput Lead-wire	HSE-SB0100P	HSE-SB0300P	
Object detection	100×100mm wh	te drawing paper	
Light source	Red LED		
Operating Voltage	10∼30V DC±10%		
Current consumption	≤30mA		
Output mode	NPN/PNP integrated electrode open circuit, ≤100mA/30V DC		
Switch mode	L. on (light received) / D.on (shading action) can be switched		
Response time	<2ms		
Indicator light	Working indicator light: green, output indicator light: orange		
Ambient temperature	-25°C:	±55°C	
Ambient light	Sunlight: below 10000LX Incandescent lamp: below 3000LX		
Environment humidity	35%∼85% no freezing		
Sensitivity adjustment	Single turn potentiometer		
Shell material	ABS (housing); PC (lens)		

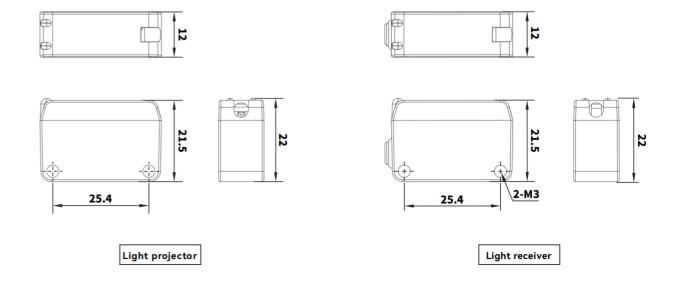
## Technical Parameters

	Detection method	тоғ тур	oe .		
Model NPN Output		HSE-SF1500N	HSE-SF4000N		
Items PNP Output	Lead-wire	HSE-SF1500P	HSE-SF4000P		
Detect object		100×100mm white drawing paper			
Light source (wavelength)		Infrared laser (940nm) IEC CLASS1			
Voltage		DC12~24V±10%			
Current consumption	1	≤20m/	A		
Control output		Load power supply current below 150	mA (residual voltage below 1V)		
Circuit protection		Surge protection circuit, short circuit prof	tection, reverse polarity protection		
Response time		1.0 ms or less for both operation and response			
Indicator light		Action indicator light (red)			
Ambient temperature	е	Operation: -25~+55°C (no freezing, no condensation) Storage: -40°C~+70°C (no freezing, no condensation			
Ambient light		Sunlight: Below	v 10000LX		
Environment humidit	ty	When operating: 45%~85% (no freezing) RH When saving: 35%~85% (no freezing) RH			
Effect of voltage		When the rated power supply voltage fluctuates within $\pm$	=15%, the detection distance changes within $\pm 1$		
Insulation resistance		More than $20 M\Omega$ (DC500 megohmmeter) between the charging part and the shell			
Dielectric strength		Above AC1000V, at 50/60Hz for 1min, between the charging part and the shell			
Vibration (durable)		10~50Hz, 1.5mm double amplitude, up to 1h in X, Y, Z directions			
Impact (durable)		500m/s² double amplitude, 3 times in each direction of X, Y, Z			
Connection method		Lead-wire type(standard 2m)			
Shell material		ABS			

## Dimensions Unit: mm

## [ HSE-ST150AN/P . HSE-SLT5AAN/P ]

Wiring sequence	Specification
Brown	+24V
White	Normally closed switch
Blue	0V
Black	Normally open output



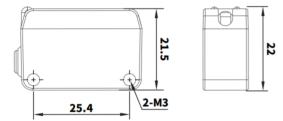
Wiring definition diagram of square photoelectric sensor



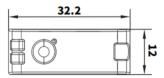
#### Dimensions Unit: mm

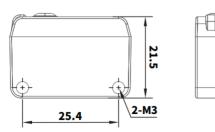
## [HSE-SD01/300N/P, HSE-SR4000N/P, HSE-SLD500N/P, HSE-SB01/300N/P]



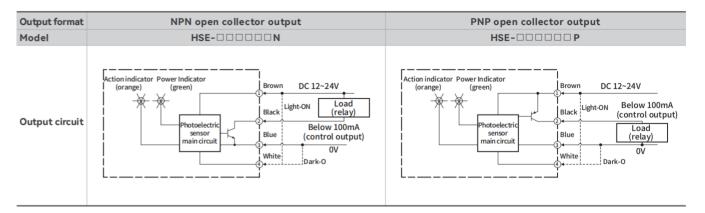


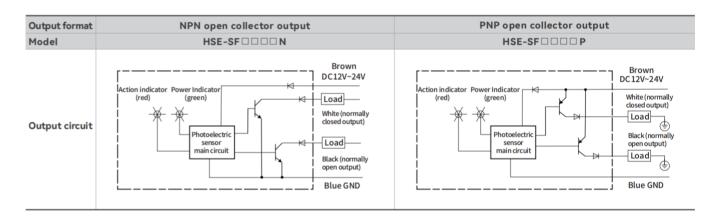
## [HSE-SF1500N/P、HSE-SF4000N/P]



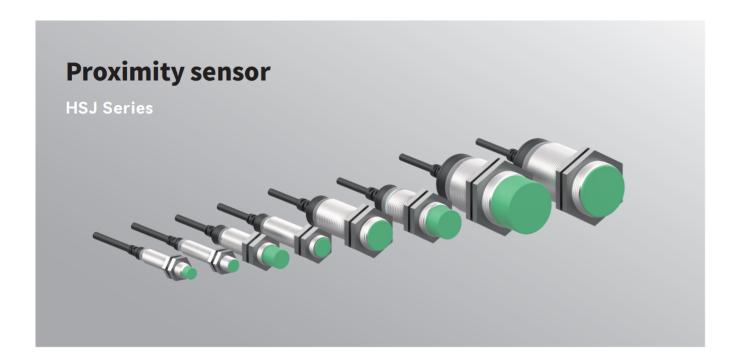


## Wiring definition diagram

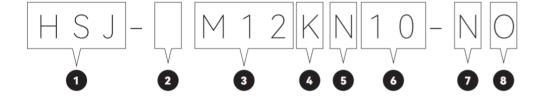




HSJ series proximity sensor HSJ series proximity sensor



## **Naming Rules**



Product Series
Draduat Carias
Product Series

2 Product overview Blank: Cylindrical S : Square

3 Product Size M8:8mm M12:12mm

M18:18mm M30:30mm 4 Thread length

K:Standard type L:Long thread type 5 Shielded/Unshielded S: Shielded N : Unshielded

6 Detection distance 10: Indicate directly

7 Output method

8 Normally open normally closed

N: NPN Output

O: Normally open P: PNP Output C : Normally closed

A:AC

D:DC

## Specifications

Туре		Detection distance	NPN Normally open	NPN Normally closed	PNP Normally open	PNP Normally closed	
M8	Shield	- 2mm	HSJ-M8KS02-NO	HSJ-M8KS02-NC	HSJ-M8KS02-PO	HSJ-M8KS02-PC	
close to double distance	Unshield •	<b>4</b> mm	HSJ-M8KN04-NO	HSJ-M8KN04-NC	HSJ-M8KN04-PO	HSJ-M8KN04-PC	
M12 dose to double	Shield	<b>4</b> mm	HSJ-M12KS04-NO	HSJ-M12KS04-NC	HSJ-M12KS04-PO	HSJ-M12KS04-PC	
distance	Unshield •	8mm	HSJ-M12KN08-NO	HSJ-M12KN08-NC	HSJ-M12KN08-PO	HSJ-M12KN08-PC	
M18 close to double	Shield	8mm	HSJ-M18KS08-NO	HSJ-M18KS08-NC	HSJ-M18KS08-PO	HSJ-M18KS08-PC	
distance	Unshield •	16mm	HSJ-M18KN16-NO	HSJ-M18KN16-NC	HSJ-M18KN16-PO	HSJ-M18KN16-PC	
M30	Shield	15mm	HSJ-M30KS15-NO	HSJ-M30KS15-NC	HSJ-M30KS15-PO	HSJ-M30KS15-PC	
close to double distance	Unshield •	25mm	HSJ-M30KN25-NO	HSJ-M30KN25-NC	HSJ-M30KN25-PO	HSJ-M30KN25-PC	
Туре		<b>Detection distance</b>	DC two-wire normally open	DC two-wire normally closed	AC two lines normally open	AC two-wire normally closed	
M8 close to double	Shield	2mm	HSJ-M8KS02-DO	HSJ-M8KS02-DC	-	-	
distance							
	Unshield •	4mm	HSJ-M8KN04-DO	HSJ-M8KN04-DC	-	-	
M12	Shield •	4mm 4mm	HSJ-M8KN04-DO HSJ-M12KS04-DO	HSJ-M8KN04-DC HSJ-M12KS04-DC	- HSJ-M12KS04-AO	- HSJ-M12KS04-AC	
M12 close to double distance		<b>4</b> mm			- HSJ-M12KS04-AO HSJ-M12KN08-AO	- HSJ-M12KS04-AC HSJ-M12KN08-AC	
close to double distance M18	Shield •	<b>4</b> mm	HSJ-M12KS04-DO	HSJ-M12KS04-DC			
close to double distance	Shield • Unshield •	4mm 8mm	HSJ-M12KS04-DO HSJ-M12KN08-DO	HSJ-M12KS04-DC HSJ-M12KN08-DC	HSJ-M12KN08-AO	HSJ-M12KN08-AC	
close to double distance M18 close to double	Shield Unshield Shield	- 4mm - 8mm - 8mm	HSJ-M12KS04-DO HSJ-M12KN08-DO HSJ-M18KS08-DO	HSJ-M12KS04-DC HSJ-M12KN08-DC HSJ-M18KS08-DC	HSJ-M12KN08-AO HSJ-M18KS08-AO	HSJ-M12KN08-AC HSJ-M18KS08-AC	

## Technical Parameters

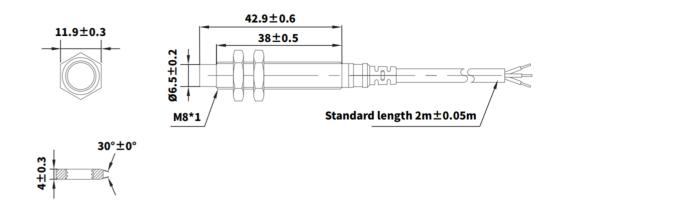
	Size	M	18	M	12	
Items	Туре	Shielded type	Unshielded type	Shielded type	Unshielded type	
	Model	HSJ-M8KS02	HSJ-M8KN04	HSJ-M12KS04	HSJ-M12KN08	
Detection dista	ance	2mm±10%	4mm±10%	4mm±10%	8mm±10%	
Set distance		0~1.6mm	0~3.2mm	0~3.2mm	0~6.4mm	
Shock distance	•	Within 5% of the detection distance				
Detectable obj	ects	Magnetic metal (non-magnetic metal detection distance will be reduced)				
Standard test	object (mild steel)	8×8×1mm	12×12×1mm	12×12×1mm	24×24×1mm	
Response frequ	uency	1500Hz	1000Hz	1000Hz	800Hz	
Voltage	10~30VDC					
Current consur	mption		Below	10mA		
Output type N type: NPN; P type: PNP			P type: PNP			
Control output	Load current	Below 200mA				
control output	Residual voltage	Below 2V				
Indicator light		Action Indicator (Red LED)				
Action mode		O type: normally open C type: normally closed				
Circuit protecti	ion	Output polarity reverse connection protection, power supply polarity reverse connection protection, surge absorption, short circuit protection			absorption, short circuit protection	
Ambient temp	erature	Working and storage: -25~+70°C (no freezing, no condensation)			ion)	
Environment h	umidity		Working and st	orage: 35~95%		
Insulation resis	tance	Under the condition	n of DC500V, more than 50MΩ	(between the power suppl	y part and the shell)	
Insulation stre	ngth	50/60Hz, 1 minut	te under the condition of AC1	.000V (between the power p	part and the shell)	
Vibration resist	tance	10~5	5Hz, up and down amplitude	e 1.5mm, X, Y, Z each directi	on 2h	
Connection me	ethod	Lead-wire type (2m wire is reserved for standard type)				
Degree of prot	ection	IP66				
	Shell	Nickel-plated brass				
Material	detection surface		PE	ВТ		
	fastening nut	Nickel-plated brass				

HSJ series proximity sensor

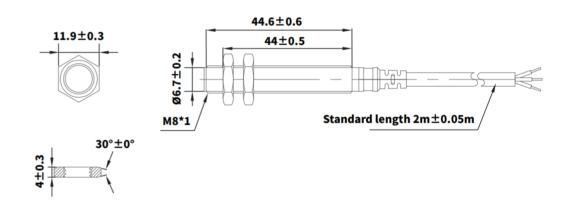
	Size	M1	8	M	30	
Item	Туре	Shielded type	Unshielded type	Shielded type	Unshielded type	
	Model	HSJ-M18KS08	HSJ-M18KN16	HSJ-M30KS15	HSJ-M30KN25	
Detection distance		8mm±10%	16mm±10%	15mm±10%	25mm±10%	
et distance		0~6.4mm	0~12.8mm	0~12mm	0~22mm	
hock distance		Within 5% of the detection distance				
Detectable obje	ects	Magnetic metal (non-magnetic metal detection distance will be reduced)			reduced)	
tandard test o	bject (mild steel)	24*24*1mm	48*48*1mm	45*45*1mm	90*90*1mm	
esponse frequ	iency	500Hz	400Hz	250Hz	100Hz	
/oltage	10~30VDC					
Current consun	nption		Below	10mA		
Output type		N Type: NPN				
Control output	Load current	Below 200mA				
one or output	Residual voltage	Below 2V				
Indicator light		Action Indicator (Red LED)				
Action mode			O type: normally open	C type: normally closed		
Circuit protecti	on	Output polarity reverse connection	protection, power supply polarity re	everse connection protection, surge a	bsorption, short circuit protecti	
mbient tempe	erature	Wor	king and storage: -25~+70°C	(no freezing, no condensati	on)	
Environment hu	umidity		Working and st	orage: 35~95%		
nsulation resist	tance	Under the condition	of DC500V, more than 50MC	(between the power supply	y part and the shell)	
nsulation stren	gth	50/60Hz, 1 minute	e under the condition of AC	1000V (between the power p	art and the shell)	
/ibration resist	ance	10~55	Hz, up and down amplitude	e 1.5mm, X, Y, Z each direction	on 2h	
Connection me	thod		Lead-wire type (2m wire is	reserved for standard type)		
Degree of prote	ection	IP66				
	Shell		Nickel-pla	ated brass		
Material	detection surface	PBT				
	fastening nut		Nickel-pla	ated brass		

Dimensions Unit: mm

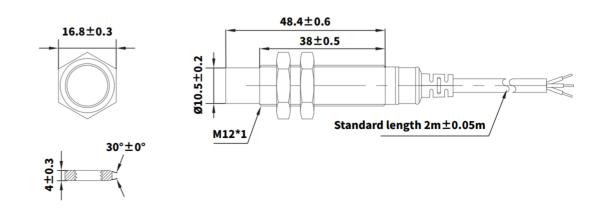
## [ HSJ-M8 KN ]



## [ HSJ-M8 KS ]

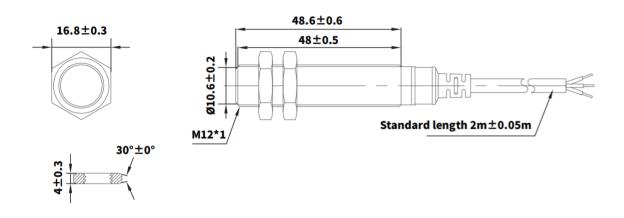


## [ HSJ-M12 KN ]

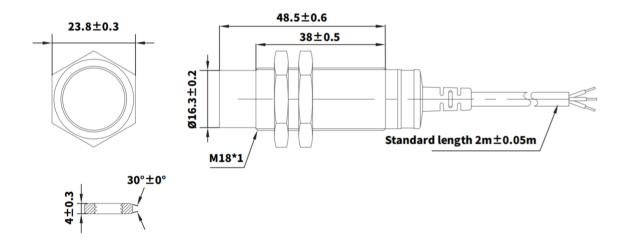


HSJ series proximity sensor

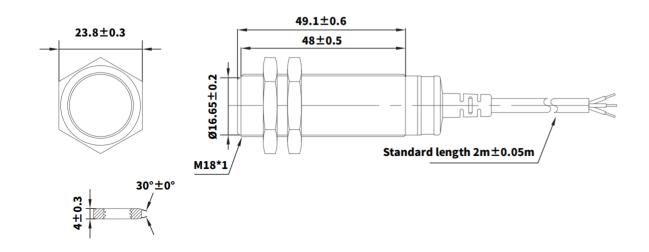
#### [ HSJ-M12 KS ]



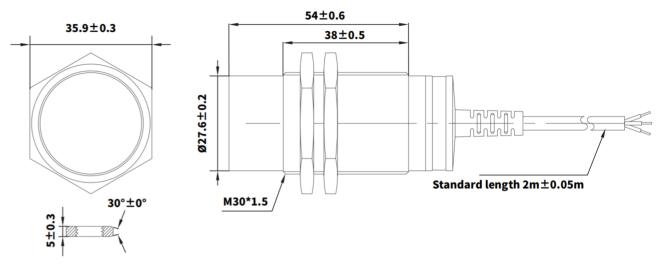
## [ HSJ-M18 KN ]



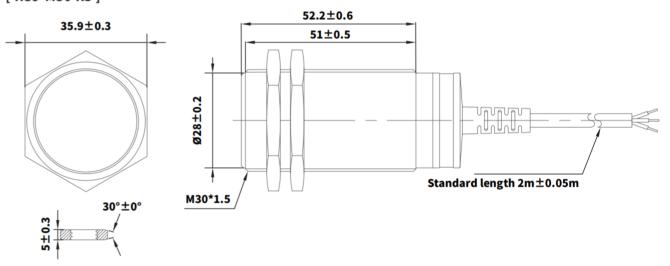
## [ HSJ-M18 KS ]



#### [ HSJ-M30 KN ]



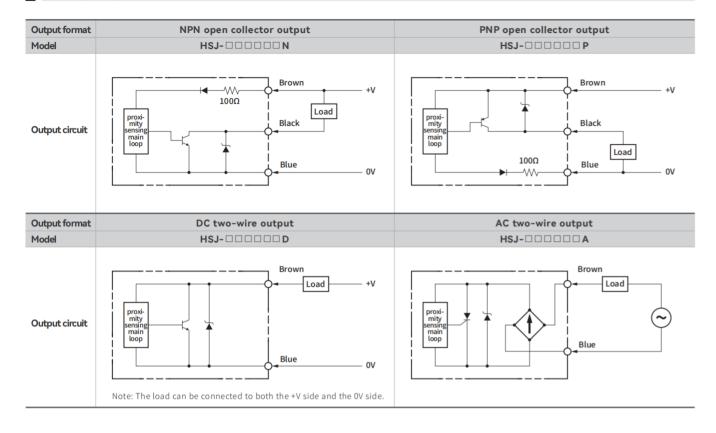
## [ HSJ-M30 KS ]





HSJ series proximity sensor wiring definition diagram

## Wiring diagram



## MEMO

ஒ-ஃ Protocol

# COMPLETE PRODUCT SERIES TO HELP PRODUCT UPGRADES

## Multithreading 🚔

Up to 4 tasks can be executed in parallel, making programming more convenient

