



## Clamp Cylinder - Series CKP

### Specification

Series	CKP
Bore	Ø40, Ø50, Ø63
Operating fluid	Air
Proof pressure	1.5Mpa (15kgf/cm <sup>2</sup> )
Max. operating pressure	1.0Mpa (10kgf/cm <sup>2</sup> )
Min. operating pressure	0.05Mpa (0.5kgf/cm <sup>2</sup> )
Temperature range	-10°C~ +60°C
Piston speed range	50~500mm/s
Cushion	Air cushion
Speed controller	Equipped on both ends
Lubrication	Not required (non-lube)
Thread tolerance	JIS class 2
Stroke length tolerance	+1.0 0



### Standard stroke

Bore (mm)	Standard stroke (mm)
Ø40 Ø50 Ø63	50, 75, 100, 125, 150



### Theoretical output

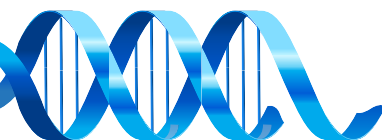
Bore (mm)	Rod (mm)	Operating direction	Piston area (mm <sup>2</sup> )	Operating pressure(MPa)			
				0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
		IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
		IN	2800	840	1120	1400	1680

### Weight list

Bore (mm)		40	50	63
AKP	Basic weight	0.77	1.03	1.34
	Additional weight per 25 mm of stroke	0.11	0.12	0.14
I / single knuckle joint		0.20		
Y/ double knuckle joint (knuckle pin, cotter pin, and flat washer are equipped as standard)		0.34		

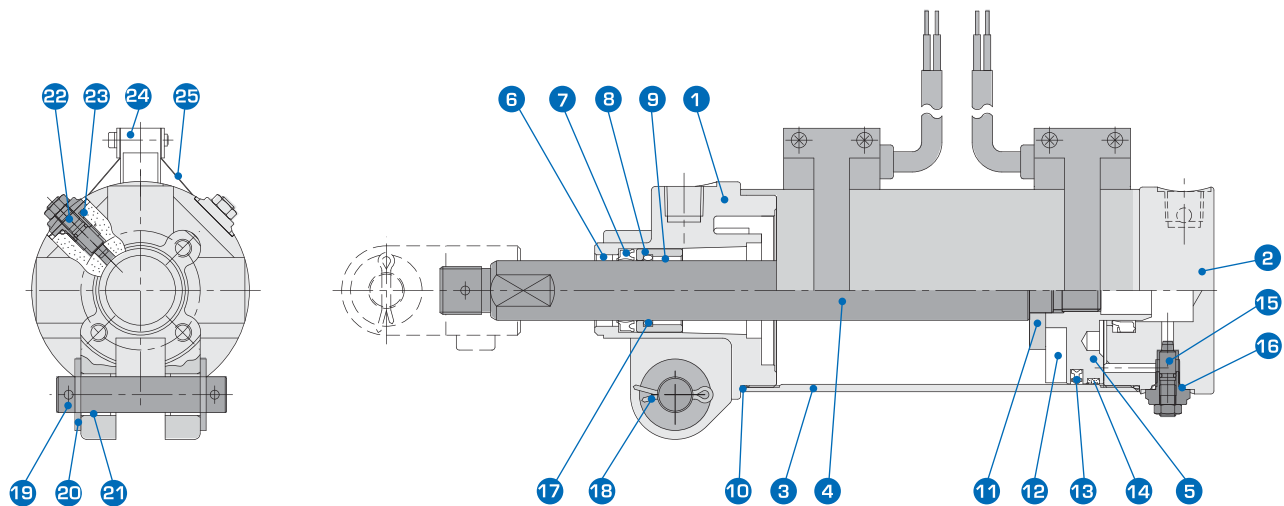
### How to order

<b>CKP</b>	<b>A</b>	<b>A</b>	<b>40</b>	<b>-</b>	<b>75</b>	<b>I</b>	<b>-</b>	<b>SM-10R-M12</b>	<b>-</b>	<b>2</b>
<b>Series</b>	<b>Clevis width</b>	<b>Installed hole</b>	<b>Bore</b>		<b>Stroke</b>	<b>Accessories</b>		<b>Reed switch</b>		<b>Switch quantity</b>
CKP built-in strong magnetic type 	A 16.5mm B 19.5mm	Nil Without M6 holes A With M6 holes	Ø40 Ø50 Ø63		50 75 100 125 150	I Single knuckle joint (without M6 holes) IA Single knuckle joint (with M6 holes) Y Double knuckle joint (without M6 holes) YA Double knuckle joint (with M6 holes)		SM-10R-M12  Page 4		1 1PC 2 2PCS

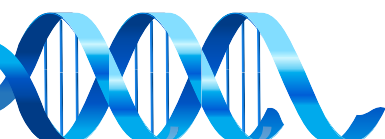


### Internal construction

- CKP 40, 50, 63 Built-in strong magnetic type / Magnetic field resistant reed switch (SM-P74)



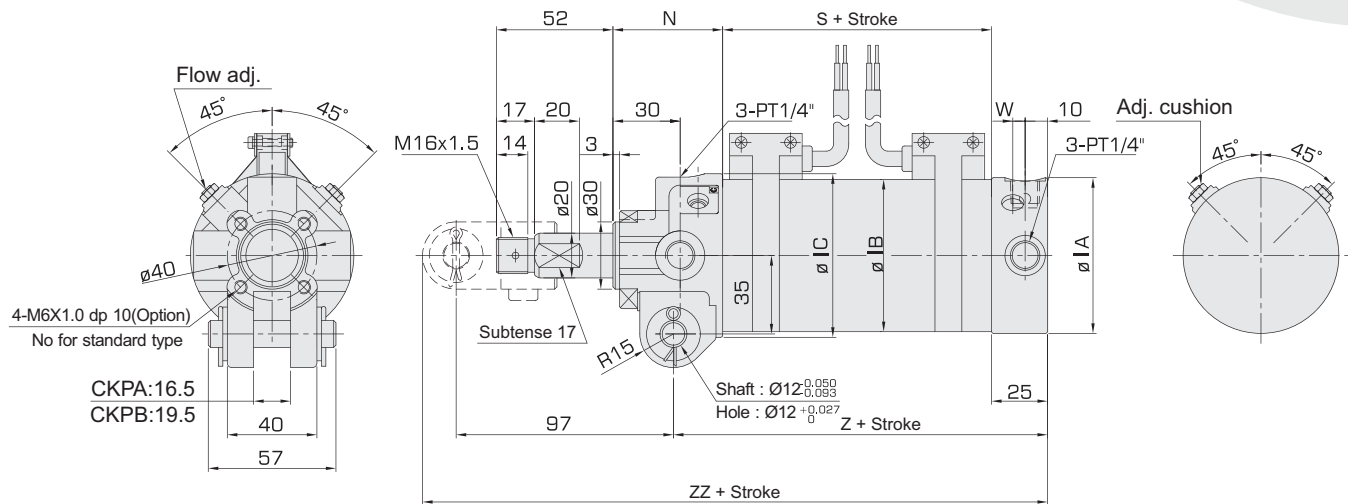
NO	Description	Material	Qty	NO	Description	Material	Qty
1	Front end cover	ADC12	1	14	Wear ring	POM	1
2	Rear end cover	A6061	1	15	Cushion screw	A6061	2
3	Barrel	A6061S-T6	1	16	O-ring	NBR	2
4	Piston rod	S45C	1	17	O-ring	NBR	1
5	Piston	A6061	1	18	Cotter pin	SS41	2
6	Oil bushing	Brass	1	19	Pin	S45C	1
7	End cover seal	NBR	1	20	Washer	A6061	2
8	Bush	A6061	1	21	Oil bushing	Brass	2
9	Self-lubricating bearing	Oil filled sintered bronze	1	22	Cushion screw	A6061	2
10	O-ring	NBR	2	23	O-ring	NBR	2
11	Washer	A6061	1	24	Reed switch	-	2
12	Strong magnet	Magnetic material	1	25	Reed switch band	Carbon steel	2
13	Rod seal	NBR	1				



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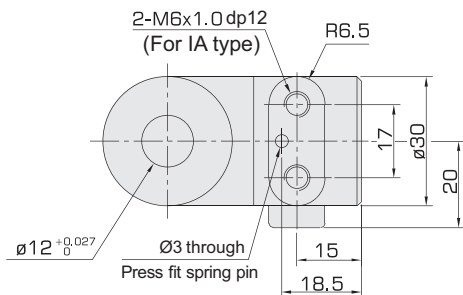
### External dimensions

- CKP 40, 50, 63 Built-in strong magnet type / Magnetic field resistant reed switch (SM-P74)

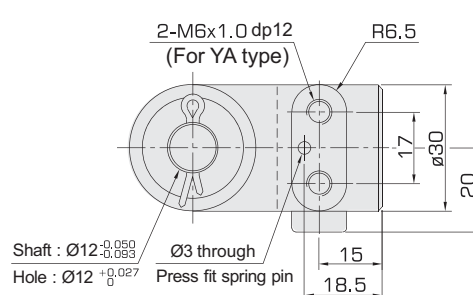


Bore	$\varnothing IA$	$\varnothing IB$	$\varnothing IC$	N	S	W	Z	ZZ
$\varnothing 40$	49.5	45	60	49	44	5.5	91	203
$\varnothing 50$	59.5	55	60	49	44	5.5	91	203
$\varnothing 63$	69.5	68	73	49	44	5.5	91	203

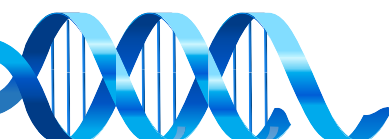
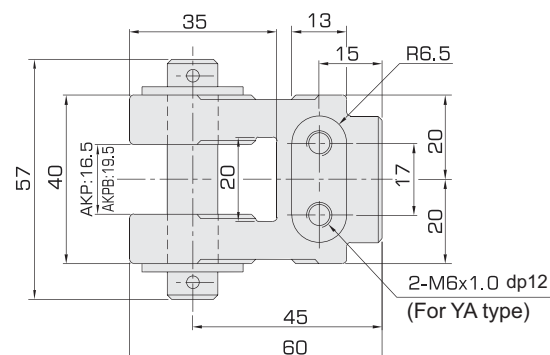
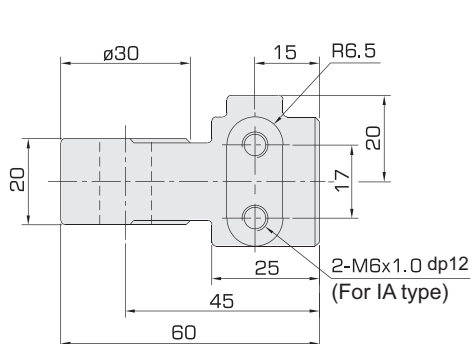
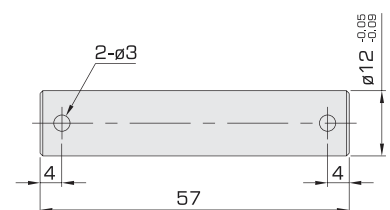
### ● Rod clevis I



### ● Rod clevis Y



### ● Abutting pin

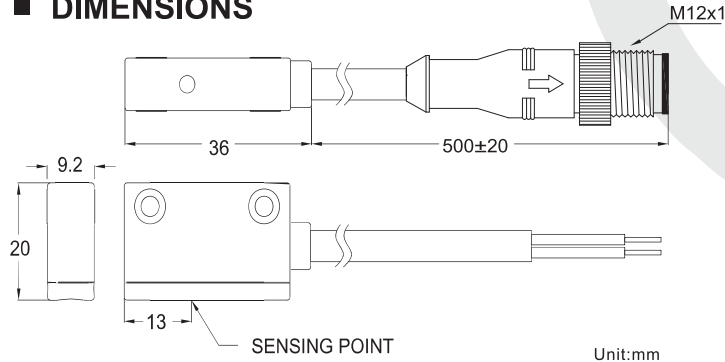


## Weld Field Immune Sensor - Model SM10R-M12

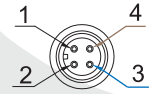


Dual Color LED allow more precise positioning

### ■ DIMENSIONS



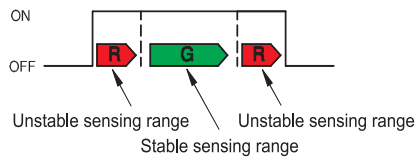
### ■ PINOUT



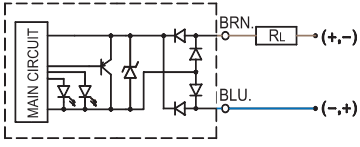
1: N/C (NO connect)  
2: N/C (NO connect)  
3: Blue  
4: Brown

Unit:mm

### ■ SW OUT

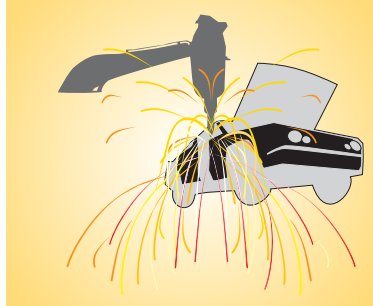


### ■ SPECIFICATIONS

TYPE	SM-10R-M12
CONNECT DIAGRAM	
CHARACTERISTICS	
Wiring Method	2-Wire Type
Switching Logic	Solid State Output, Normally Open
Sensor Type	-
Operating Voltage	10~28V DC
Switching Current	5-50mA max.
Contact Rating (*1)	1.5W max.
Current Consumption	-
Voltage Drop	5V max.
Leakage Current	1mA max.
Indicator	Red LED : unstable sensing range    Green LED : stable sensing range
Cable	ø5.4, 2C, PVC
Operating Time	50ms max.
Magnetic Field Resistance (*2)	16000A
Magnet Requirement (*3)	85Gauss
Temperature Range	-10~60°C
Shock (*4)	30G
Vibration (*5)	9G
Enclosure Classification	IEC 60529 IP67
Protection Circuit (*6)	3,4

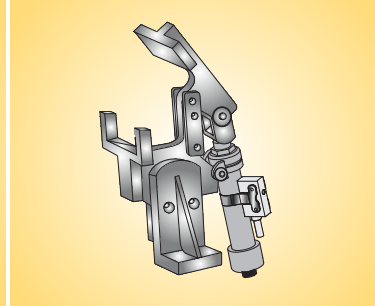
NOTE: 1. WARNING: Never exceed rating (Watt=Voltage x Amperage). Permanent damage to sensor will occur.  
2. The operational distance can be 0 mm between SM-10R-M12 and welding gun (welding conductor or cable) when the welding current less than 16000 A.  
3. Measuring standard target: ø15.5Xø8X5t (Anisotropy rubber magnet)  
4. Sin wave / X, Y, Z 3 directions / 3 times each direction / 11 ms each time.  
5. Double amplitude 1.5 mm / 10Hz~55Hz~10Hz (Sweep 1 min) / X, Y, Z 3 directions / 1 hour each time.  
6. 1=None / 2=Short-circuit / 3=Power Source Reverse polarity / 4=Surge Suppression

### ■ APPLICATION ENVIRONMENT



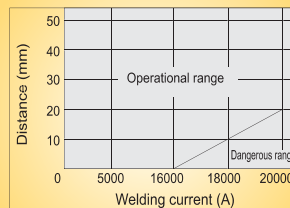
The SM-10R-M12 can be applied in the strong magnetic field environment such as automotive manufacturing or areas near welding machine. When SM-10R-M12 detects the magnetic AC field (50 or 60Hz) it will keep the status of output and will not be effected.

### ■ APPLICATION MOUNTING



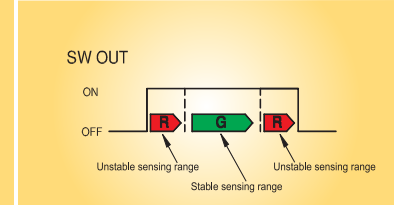
The SM-10R-M12 detects the position of the cylinder piston and it is especially suitable for clamp cylinder.

### ■ WELD-FIELD IMMUNE



The operational distance can be 0mm between SM-10R-M12 and welding gun (welding conductor or cable) when the welding current less than 16000 A.

### ■ SENSOR OUTPUT / INDICATOR



The function of three sensing range indicators ensures the preciseness of setting position.

Unstable sensing range : Red LED lights up  
Stable sensing range : Green LED lights up

