ELECTRICAL ROTATING CONNECTOR

旋轉連接器 水銀滑環

- Very low electric noise
- Very low cost
- Very low contact resistance (Less than 1mΩ)
- No maintenance and better reliability than traditional slig rings
- Suitable for signal and power transfer of rotating devices or instruments

Asiantool®

- 無雜訊
- 低單價
- 小於1mΩ之接觸電阻
- 不必保養，比傳統式滑環更耐用
- 適合用於任何旋轉體之信號及電力接續

Construction and Function 構造&功能

The Asiantool rotating electrical connectors are using the special insulation, sealing, and conductive technologies. The out case material is the aluminum alloy or stainless steel.
They are used for any kind of rotating objects of signals like micro voltage, current, EMF, thermo couple, strain gauge, audio, video, high frequency etc. and electric power connections.

All types of our liquid metal rotary connectors support CE RoHS compliance.
Please contact us for detail.

Asiantool 旋轉連接器利用特殊密封，絕緣及導電技術製成，其外殼為陽極處理鋁合金或不鏽鋼材料。

用於任何旋轉之信號如微小電壓、電流、EMF、熱電偶、Strain gauge、影音訊號、高頻、電腦訊號及電力的接續。

我們所有旋轉連接器類型支持並且符合 CE RoHS規格之產品。請來電洽談。

Application 用途

- Index table for signal and power connection
- Resistor cutting machine
- Electro plating line
- Rotary stage
- Cable wheel
- Circle knitting machine
- Coloring device
- Robots
- Rotary lamp box
- Surgical lamp
- Reel to reel plating line equipment
- Speed dome camera
- Package machine
- Heating roller
- Laminating machine
- Winding machine
- Spinning LED sign board
- Wind Turbines
- Pipe inspection Camera
- Welding machines

- 旋轉工作盤之信號及電力之連接
- 電阻切割機
- 水平鍍銅線
- 旋轉舞台
- 電纜捲筒
- 圓形針織機
- 染色設備
- 機器手臂
- 旋轉燈箱
- 手術燈
- 旋轉鍍銀線
- 旋轉攝影機
- 包裝機
- 熱滾輪
- 壓模機
- 繞線機
- LED廣告燈
- 風力發電機
- 管內攝影機
- 電焊機

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出線式多極旋轉連接器

Non-mercury slip rings 非水銀滑環 鎵合金液態金屬旋轉連接器
CE RoHS compliance gallium alloy liquid metal rotary connectors

SINGLE CONDUCTOR 單極旋轉連接器 P17 – P20

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THROUGH BORE MULTI CONDUCTORS (16.2mm) P28 – P29

過孔式多極旋轉連接器 (16.2mm)

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過孔式多極旋轉連接器 (10.2mm)

ELECTRICAL ROTATING CONNECTOR 旋轉連接器 水銀滑環

SINGLE CONDUCTOR單極旋轉連接器

Specification 規 格

Model 型 號	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
A1M	1	10	N/A	200	3600	60/-30	35	N/A
A1MT	1	10	N/A	200	3600	60/-30	35	N/A
A1M2	1	20	N/A	200	2000	60/-30	50	N/A
A1M5	1	50	N/A	200	1800	60/-30	70	N/A
A1M12	1	120	N/A	200	1500	60/-30	150	N/A
A1HH	1	250	N/A	200	1200	60/-30	250	N/A
A1H25S	1	250	N/A	200	1200	60/-30	250	N/A
A1H25PS	1	250	N/A	200	1200	60/-30	250	N/A
A1H35S	1	350	N/A	200	800	60/-30	300	N/A
A1H50S	1	500	N/A	200	300	60/-30	700	N/A
A1H50PS	1	500	N/A	200	300	60/-30	700	N/A
A1H65S	1	650	N/A	200	200	60/-30	1000	N/A
A1H65PS	1	650	N/A	200	200	60/-30	1000	N/A
A1H90PS	1	900	N/A	200	200	60/-30	1100	N/A
A1H150PS	1	1500	N/A	200	100	60/-30	2000	N/A
A1H300PS	1	3000	N/A	200	60	60/-30	3000	N/A
A1H500FS	1	5000	N/A	200	30	60/-30	5000	N/A
A1H750FS	1	7500	N/A	200	20	60/-30	7000	N/A

Model, Size, accessories 型號、尺寸及附件

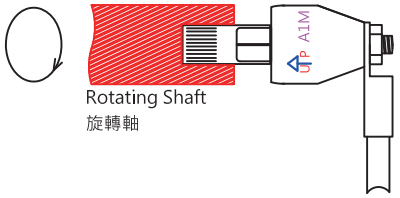
A1M 1pole 10A

A1MS

SUS body + SUS bearing

◀AIM-1
Receptacles
金屬接頭

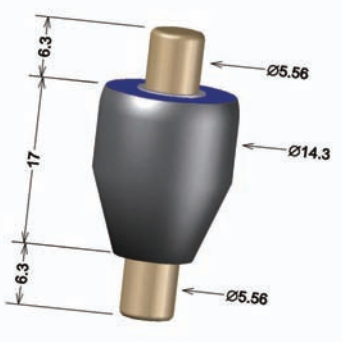
● Mounting 安裝



A1MT 1pole 10A

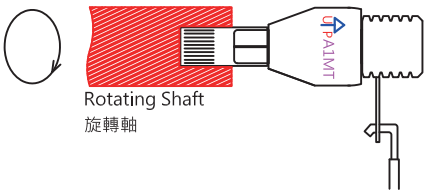
A1MTS

SUS body + SUS bearing

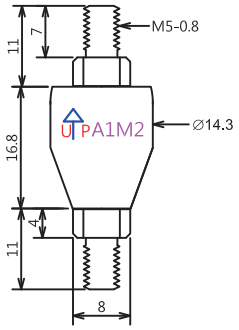


◀AIM-5
Plastic cap
塑膠插頭

● Mounting 安裝



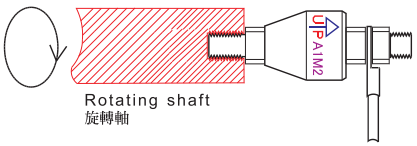
A1M2 1pole 20A



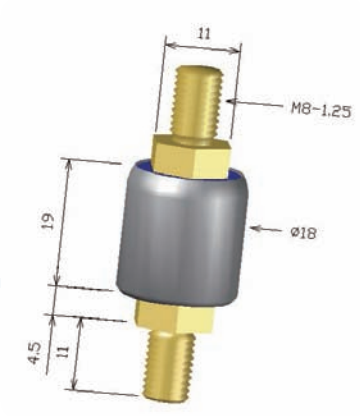
A1M2S

SUS body + SUS bearing

● Mounting 安裝



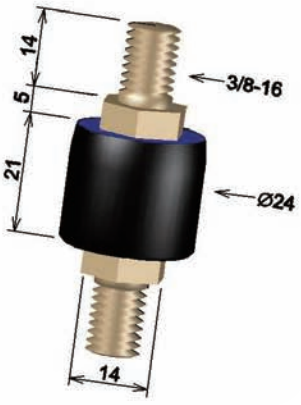
A1M5 1pole 50A



A1M5S

SUS body + SUS bearing

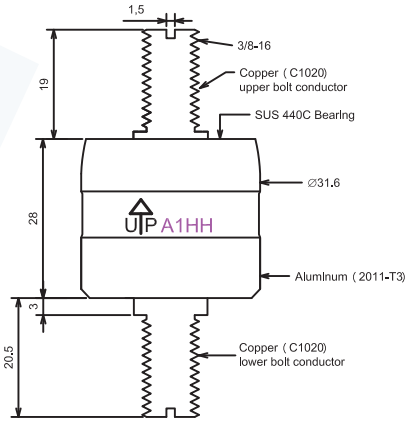
A1M12 1pole 120A



A1M12S

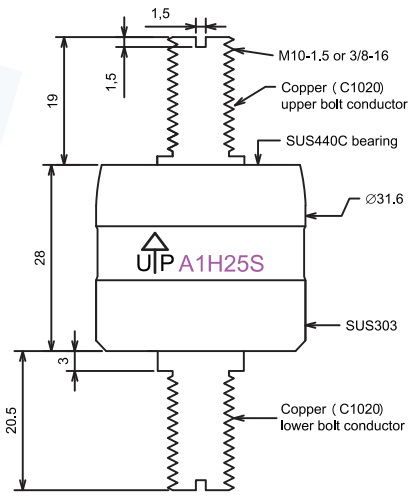
SUS body + SUS bearing

A1HH 1pole 250A

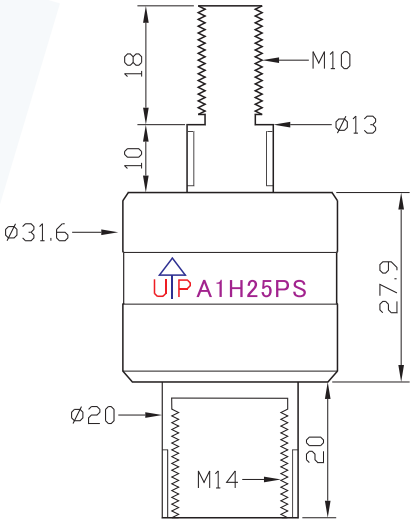


Model, Size, accessories 型號、尺寸及附件

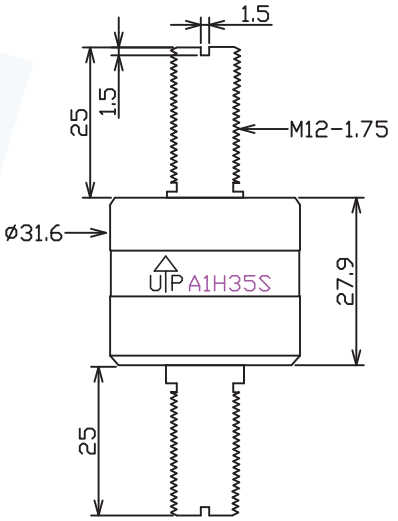
A1H25S 1pole 250A



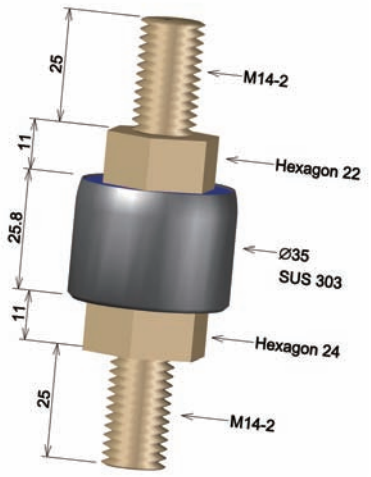
A1H25PS 1pole 250A



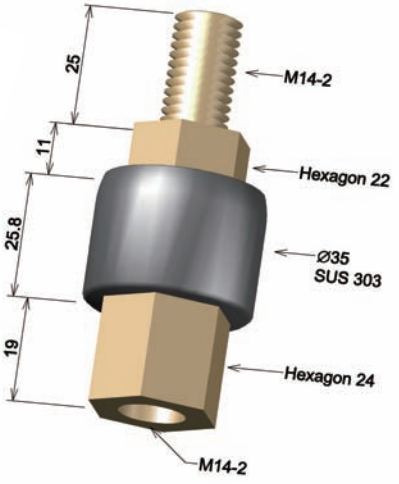
A1H35S 1pole 350A



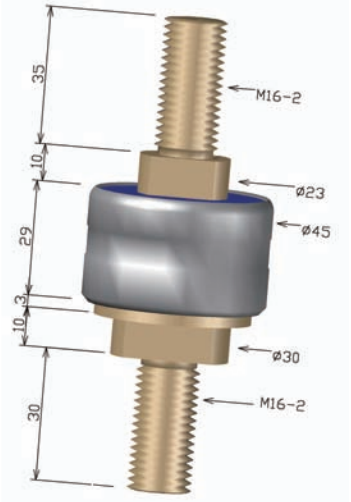
A1H50S 1pole 500A



A1H50PS 1pole 500A

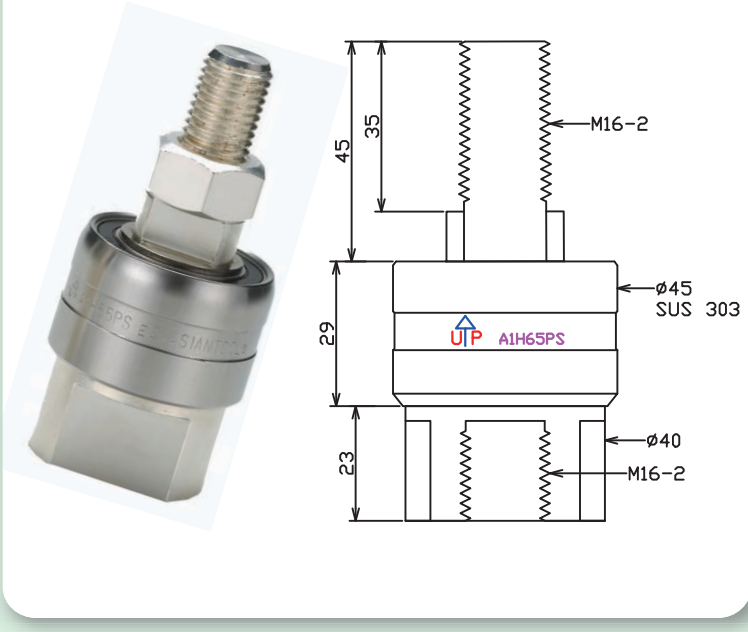


A1H65S 1pole 650A

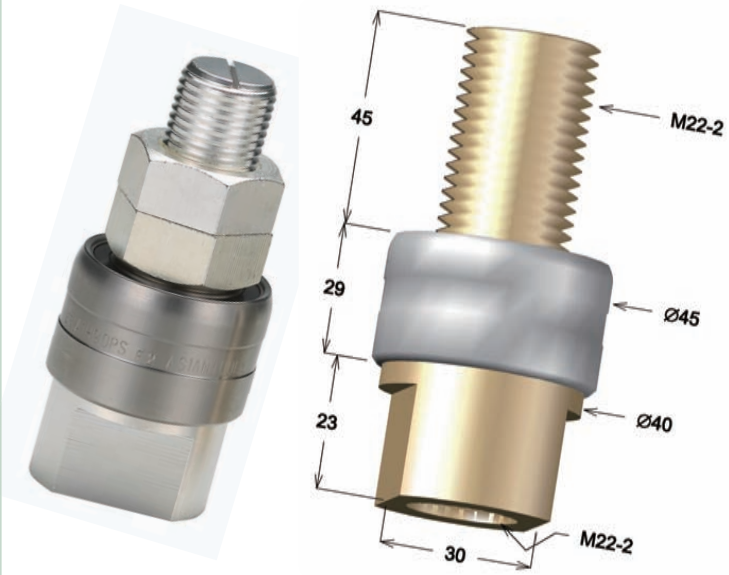


Model, Size, accessories 型號、尺寸及附件

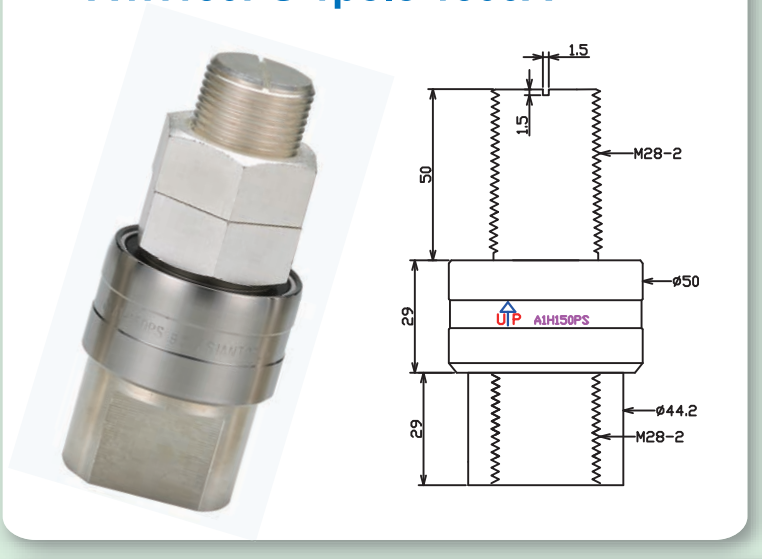
A1H65PS 1pole 650A



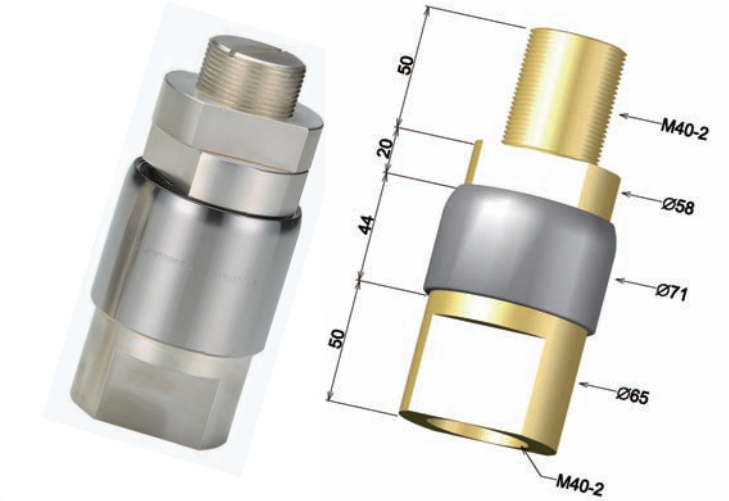
A1H90PS 1pole 900A



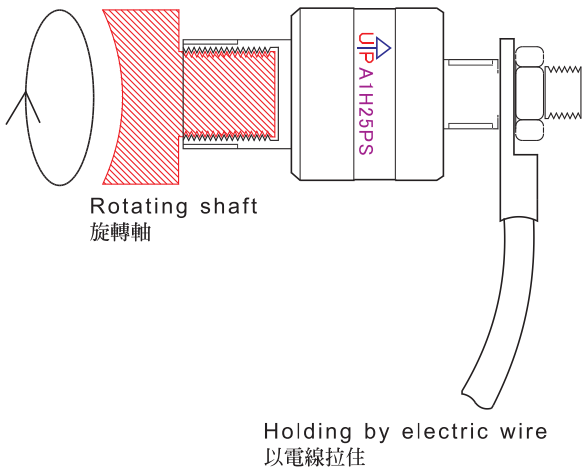
A1H150PS 1pole 1500A

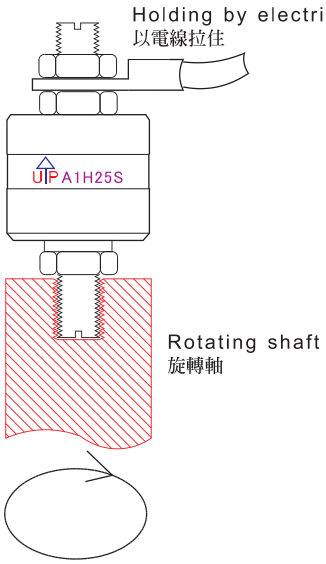


A1H300PS 1pole 3000A



Mounting 安裝





MULTI CONDUCTORS 多極旋轉連接器

Specification 規 格

Model 型 號	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
A2S	**2**	**4**	250	200	2000	60/-30	75	> 25MΩ
A3S	**3**	**4**	250	200	1800	60/-30	100	> 25MΩ
A2H	**2**	**30**	250	200	1800	60/-30	200	> 25MΩ
A3M	**3**	**30/4**	250	200	1800	60/-30	200	> 25MΩ
A3H	**3**	**30**	250	200	1200	60/-30	400	> 25MΩ
A4H	**4**	**30/4**	250	200	1200	60/-30	400	> 25MΩ
A6H	**6**	**30/4**	250	100	300	60/-30	700	> 25MΩ
A8H	**8**	**30/4**	250	100	200	60/-30	1000	> 25MΩ
A1030	**10**	**30/4**	250	100	100	60/-30	1500	> 25MΩ
A1230	**12**	**30/4**	250	100	60	60/-30	2000	> 25MΩ
A1430	**14**	**30/4**	250	100	40	60/-30	3000	> 25MΩ

Model, Size, accessories 型號、尺寸及附件

A2S 2poles/4A/AC250V

▲A2S-2
Receptacles
金屬接頭

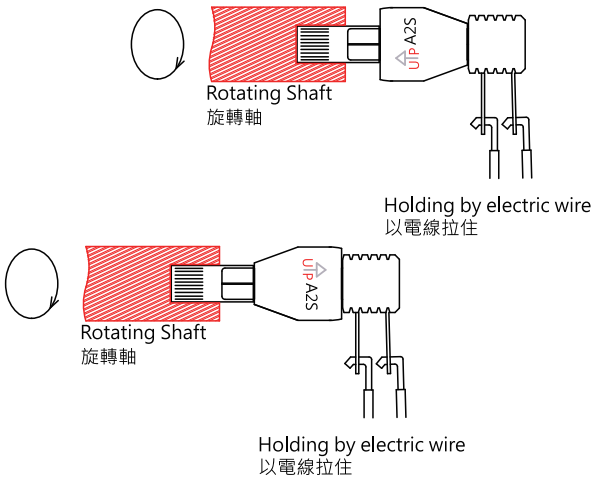
▲A2S-5
Plastic cap
塑膠插頭

A3S 3pole/4A/AC250V

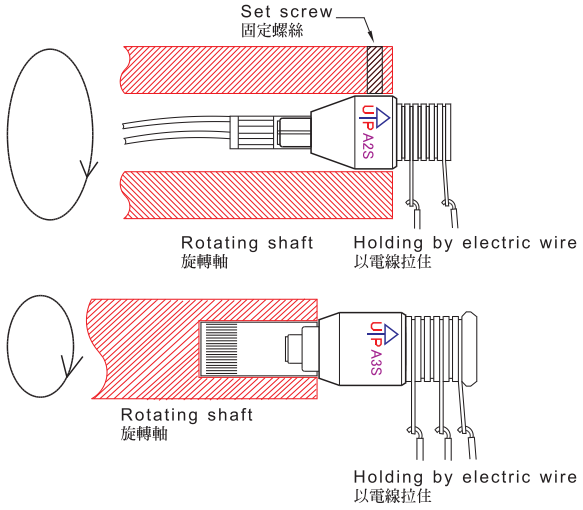
▲A3S-3
Receptacles
金屬接頭

▲A3S-5
Plastic cap
塑膠插頭

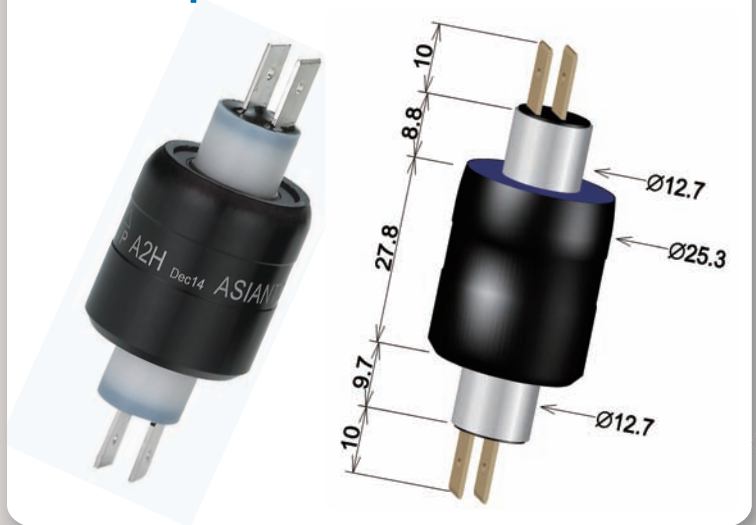
Mounting 安裝



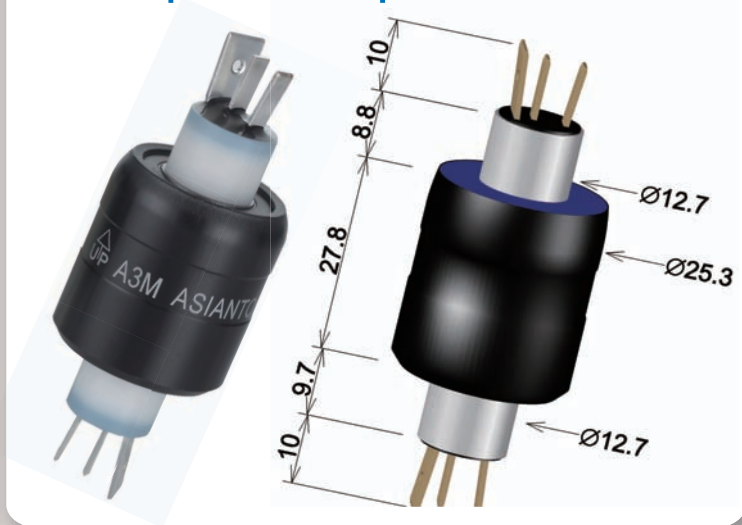
Mounting 安裝



A2H 2poles/30A/AC250V

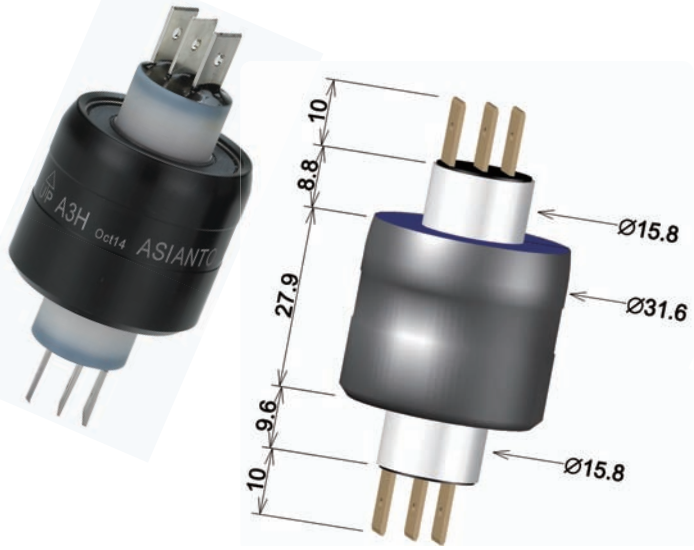


A3M 1pole/30A & 2poles/4A AC250V

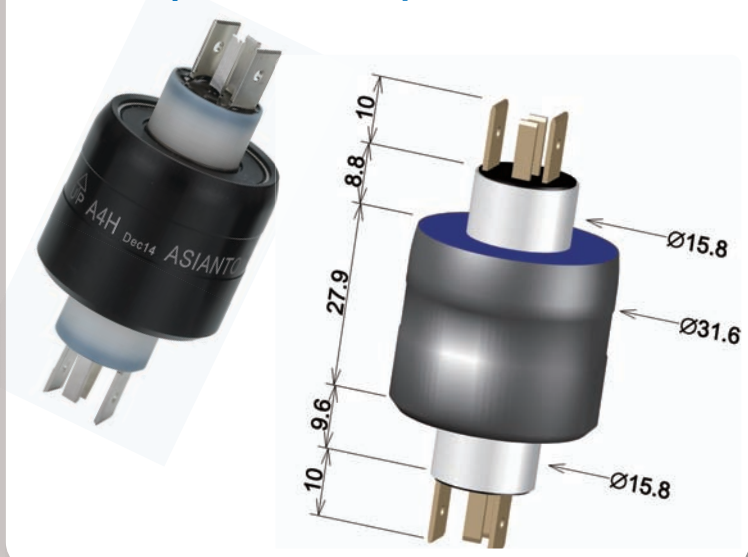


Model, Size, accessories 型號、尺寸及附件

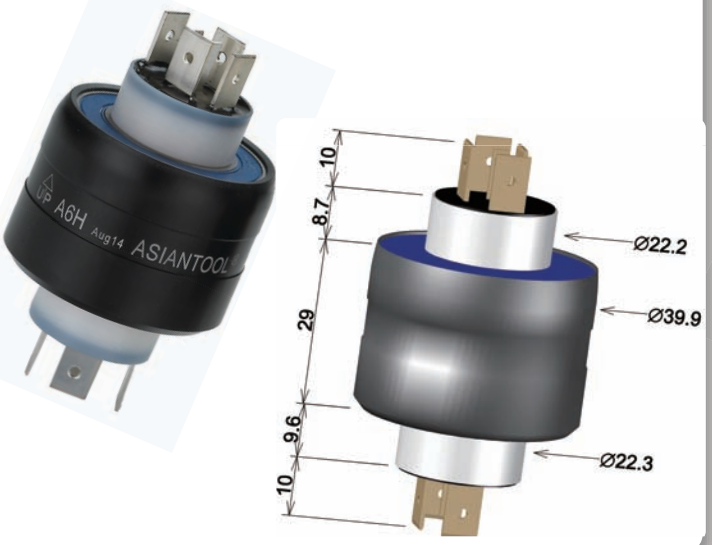
A3H 3poles/30A/AC250V



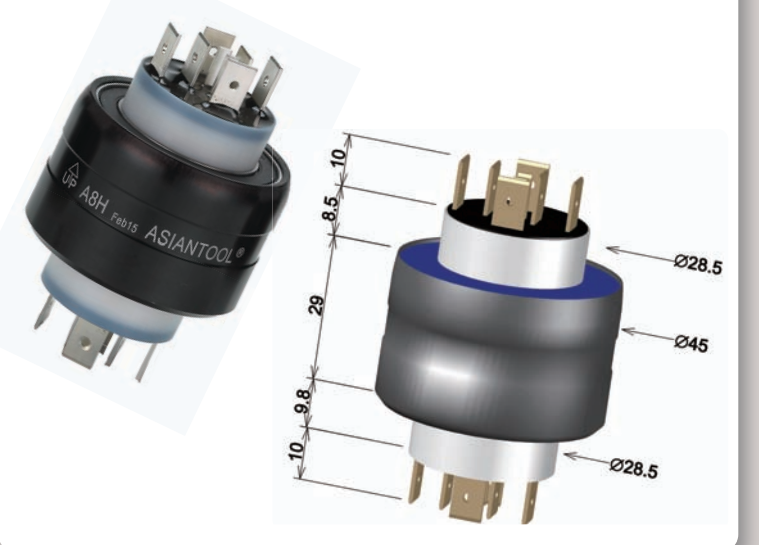
A4H 2poles/30A & 2poles/4A AC250V



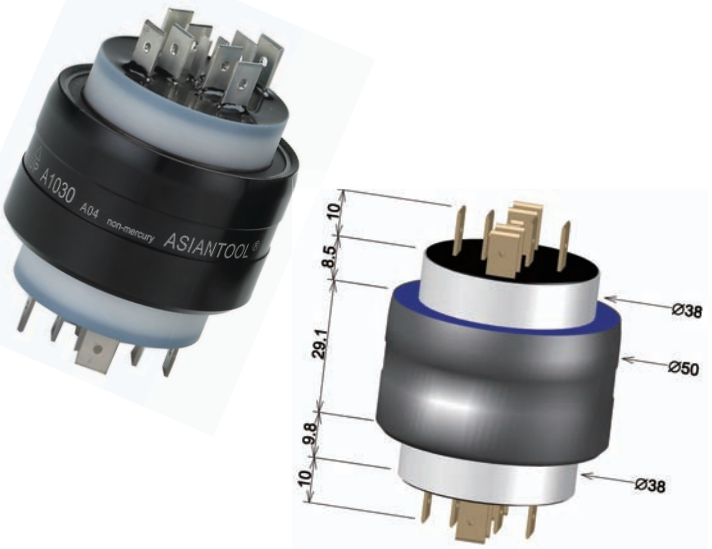
A6H 4poles/30A& 2poles/4A AC250V



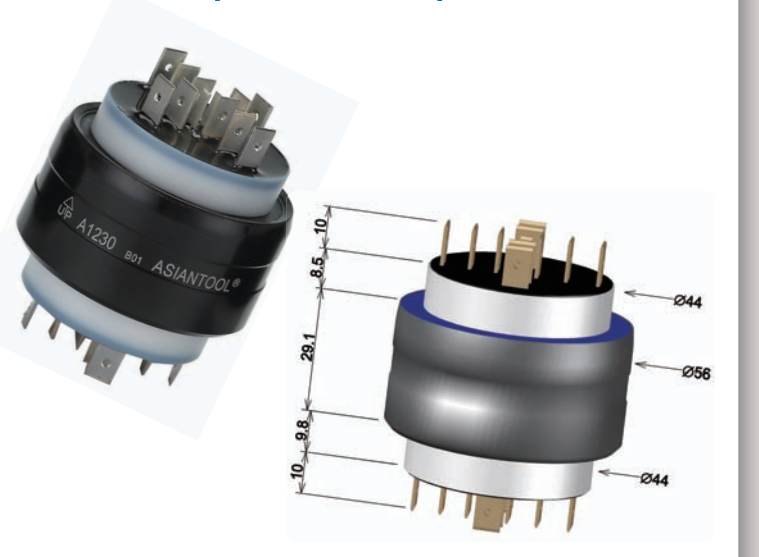
A8H 6poles/30A & 2poles/4A AC250V



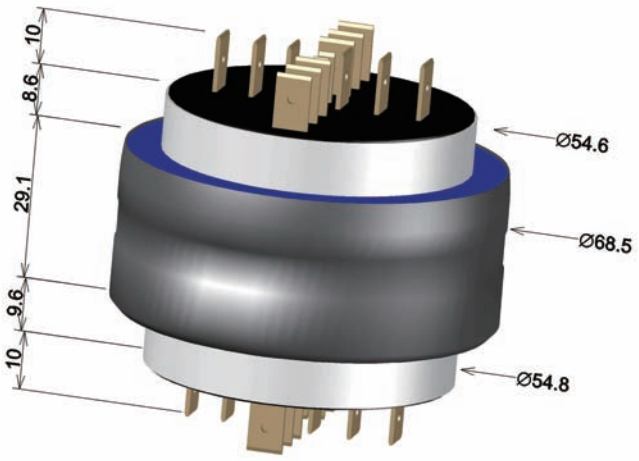
A1030 8poles/30A& 2poles/4A AC250V



A1230 10poles/30A & 2poles/4A AC250V

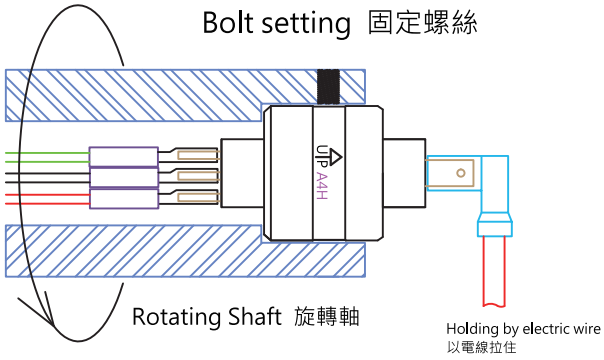


A1430 12poles/30A & 2poles/4A AC250V



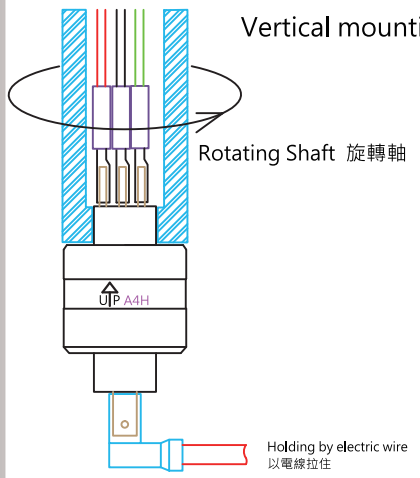
Horizontal mounting 水平安裝

Horizontal mounting 水平安裝



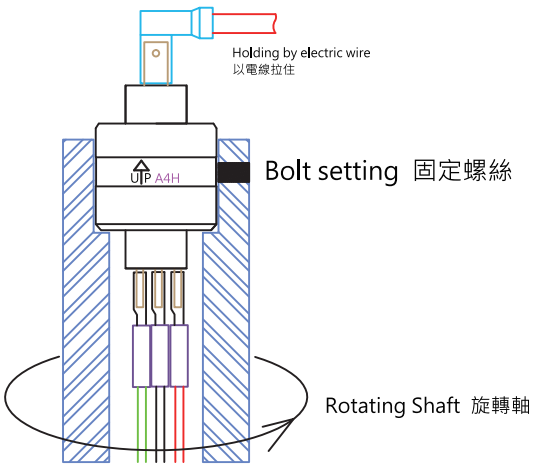
Vertical mounting (bottom) 垂直底部安裝

Vertical mounting (bottom) 垂直底部安裝



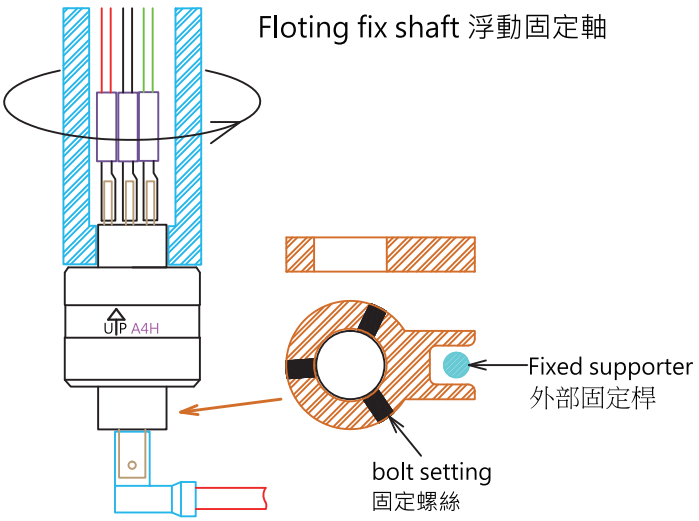
Vertical mounting (Top) 垂直上部安裝

Vertical mounting (Top) 垂直上部安裝



Floting fix shaft 浮動固定軸

Floting fix shaft 浮動固定軸

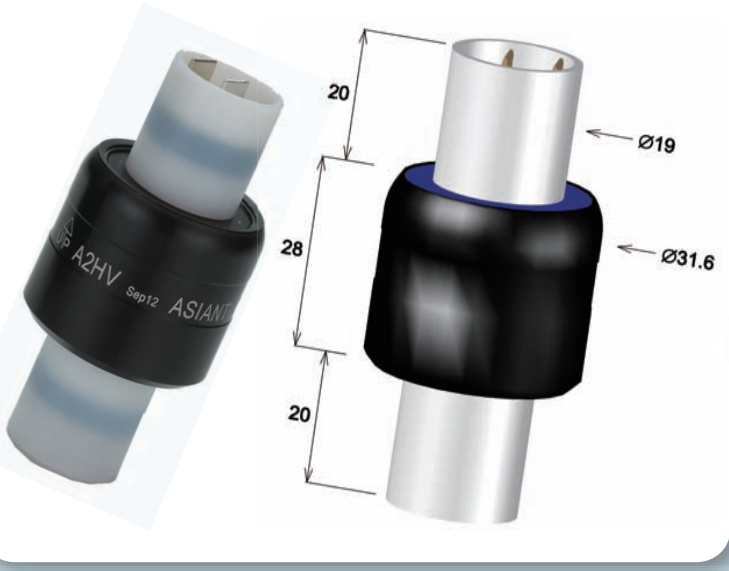


HIGH VOLTAGE MULTI CONDUCTORS 高電壓多極旋轉連接器

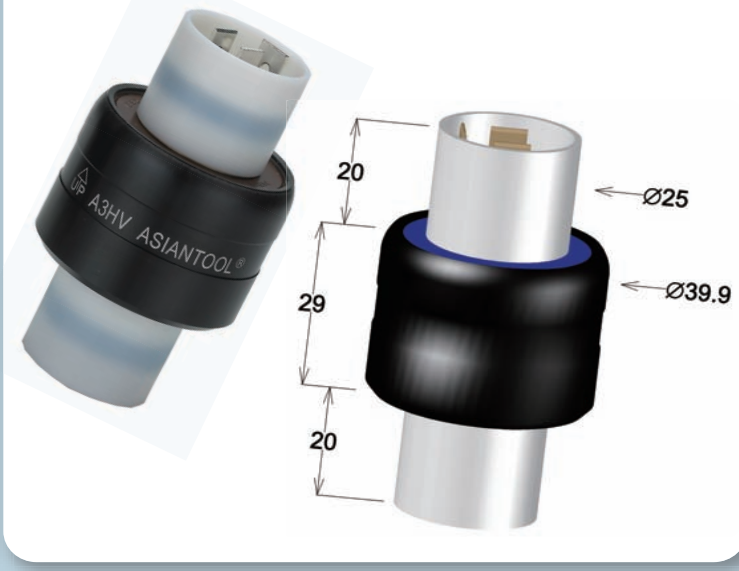
Specification 規 格

Model 型 號	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
A2HV	**2**	**30**	500	200	400	60/-30	400	> 50MΩ
A3HV	**3**	**30**	500	200	300	60/-30	700	> 50MΩ
A4HV	**4**	**30**	500	200	200	60/-30	1000	> 50MΩ
A5HV	**5**	**30**	500	200	100	60/-30	1500	> 50MΩ
A6HV	**6**	**30**	500	200	60	60/-30	2000	> 50MΩ
A7HV	**7**	**30**	500	200	40	60/-30	3000	> 50MΩ
A2V2S	**2**	**4**	250	200	300	60/-30	700	> 25MΩ
	2	**30**	500	200				> 50MΩ
A3V4S	**2**	**4**	250	200	100	60/-30	1500	> 25MΩ
	2	**30**	250	200				> 25MΩ
	2	**30**	500	200				> 50MΩ

A2HV 2poles/30A/AC500V



A3HV 3poles/30A/AC500V

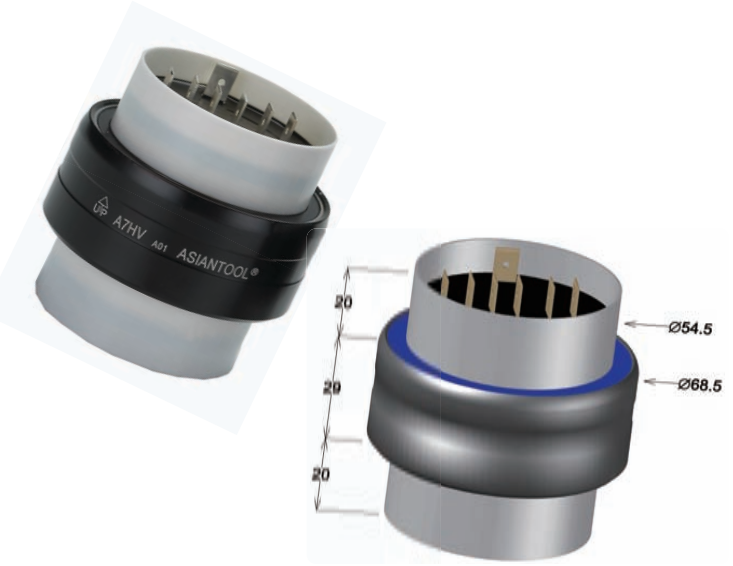


A4HV 4poles/30A/AC500V

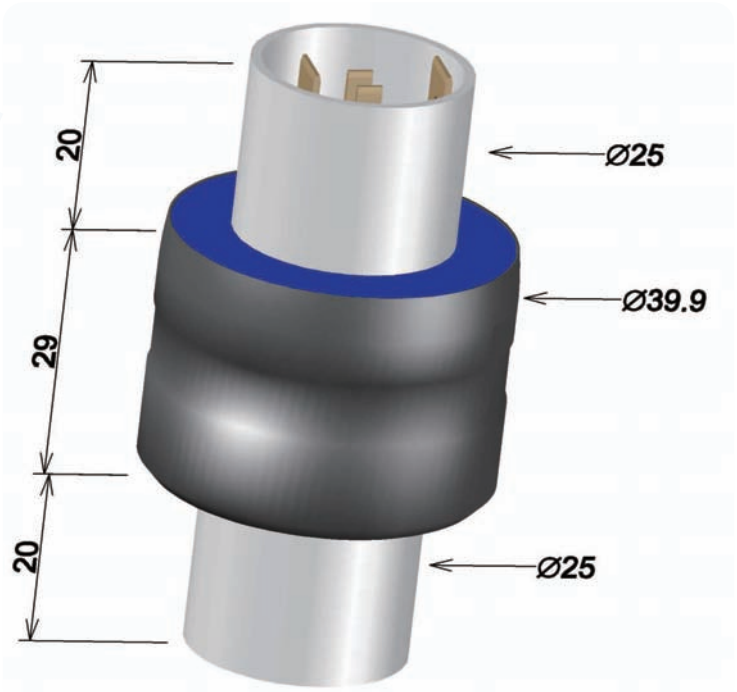
A5HV 5poles/30A/AC500V

A6HV 6poles/30A/AC500V

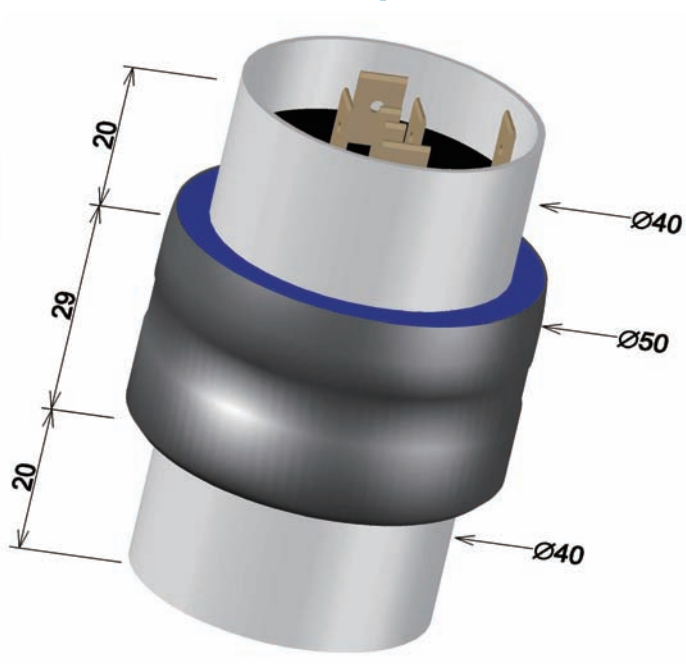
A7HV 7poles/30A/AC500V



A2V2S 2poles/4A/AC250V + 2poles/30A/AC500V



A3V4S 2poles/4A/AC250V + 2poles/30A/AC250V + 2poles/30A/AC500V

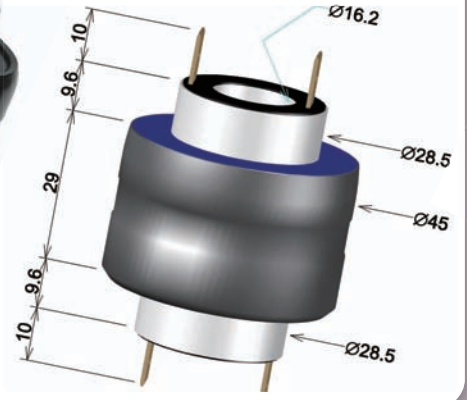


THROUGH BORE MULTI CONDUCTORS (16.2mm)
過孔式多極旋轉連接器(16. 2mm)

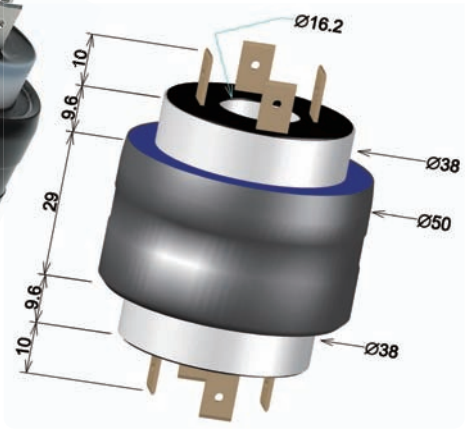
Specification 規 格

Model 型 號	Through - bore ψ 中空孔徑	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
H23016	**16.2mm**	**2**	**30**	250	100	100	60/-30	1000	> 25MΩ
H43016	**16.2mm**	**4**	**30**	250	100	60	60/-30	1500	> 25MΩ
H63016	**16.2mm**	**6**	**30**	250	100	40	60/-30	2000	> 25MΩ
H83016	**16.2mm**	**8**	**30**	250	100	20	60/-30	3000	> 25MΩ

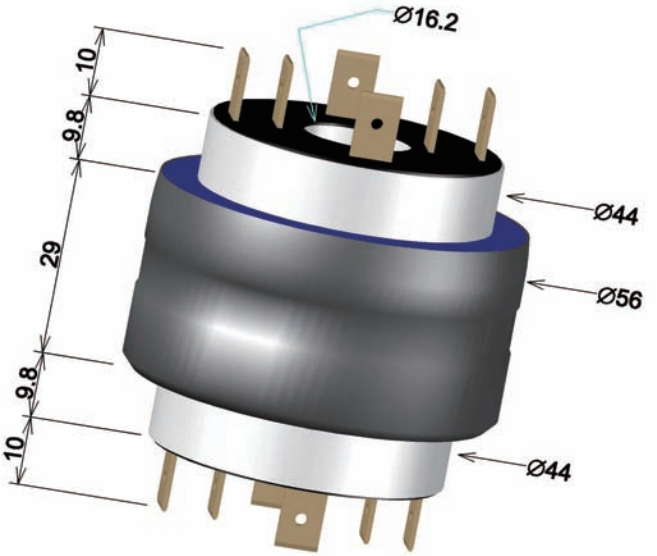
H23016 2poles/30A/AC250V Through-bore:16.2mm



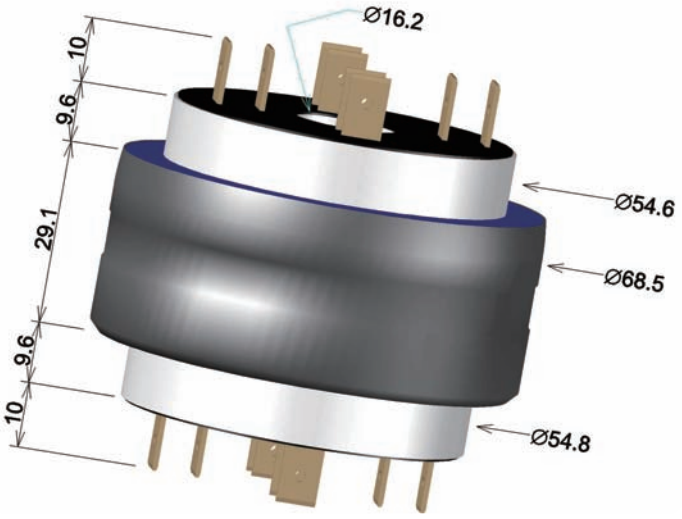
H43016 4poles/30A/AC250V Through-bore:16.2mm



H63016 6poles/30A/AC250V Through-bore:16.2mm



H83016 8poles/30A/AC250V Through-bore:16.2mm

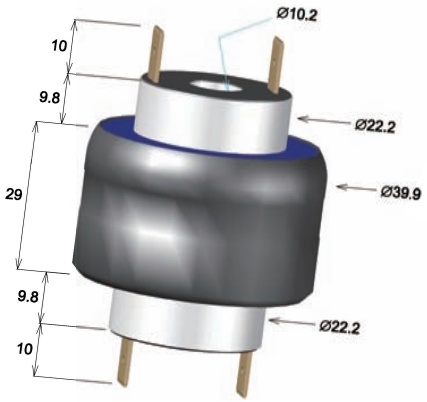


THROUGH BORE MULTI CONDUCTORS (10.2mm)
過孔式多極旋轉連接器(10. 2mm)

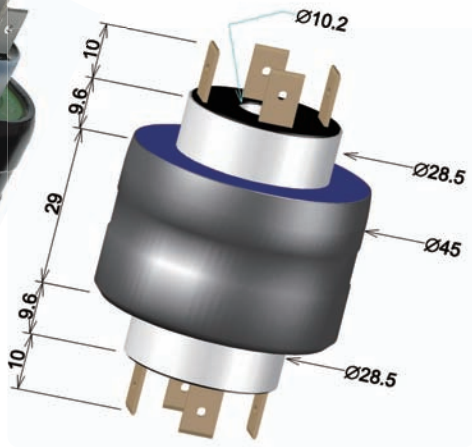
Specification 規 格

Model 型 號	Through - bore ψ 中空孔徑	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/ V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
H23010	**10.2mm**	**2**	**30**	250	100	150	60/-30	700	> 25MΩ
H43010	**10.2mm**	**4**	**30**	250	100	100	60/-30	1000	> 25MΩ
H63010	**10.2mm**	**6**	**30**	250	100	60	60/-30	1500	> 25MΩ
H83010	**10.2mm**	**8**	**30**	250	100	40	60/-30	2000	> 25MΩ
H103010	**10.2mm**	**10**	**30**	250	100	20	60/-30	3000	> 25MΩ

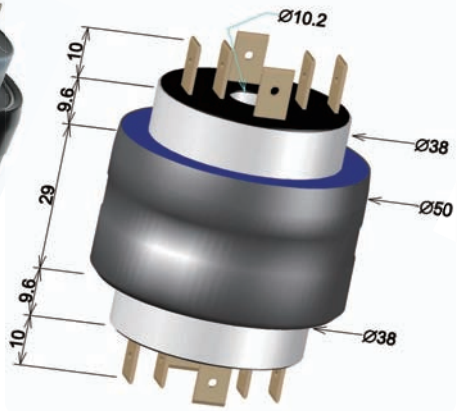
H23010 2poles/30A/AC250V Through-bore:10.2mm



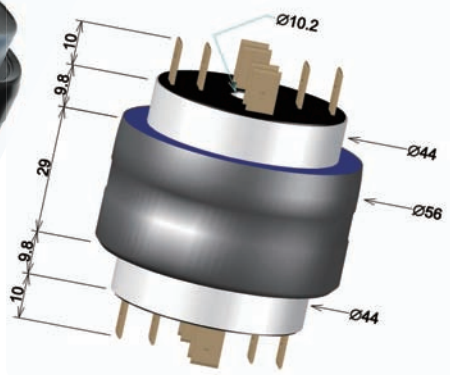
H43010 4poles/30A/AC250V Through-bore:10.2mm



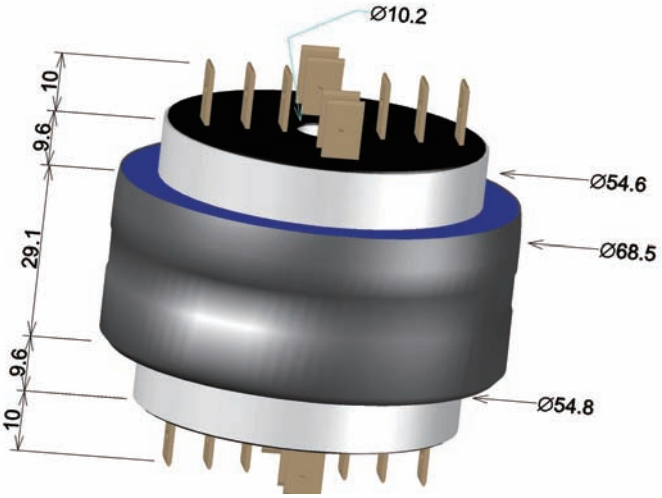
H63010 6poles/30A/AC250V Through-bore:10.2mm



H83010 8poles/30A/AC250V Through-bore:10.2mm



H103010 10poles/30A/AC250V Through-bore:10.2mm



Specification 規 格

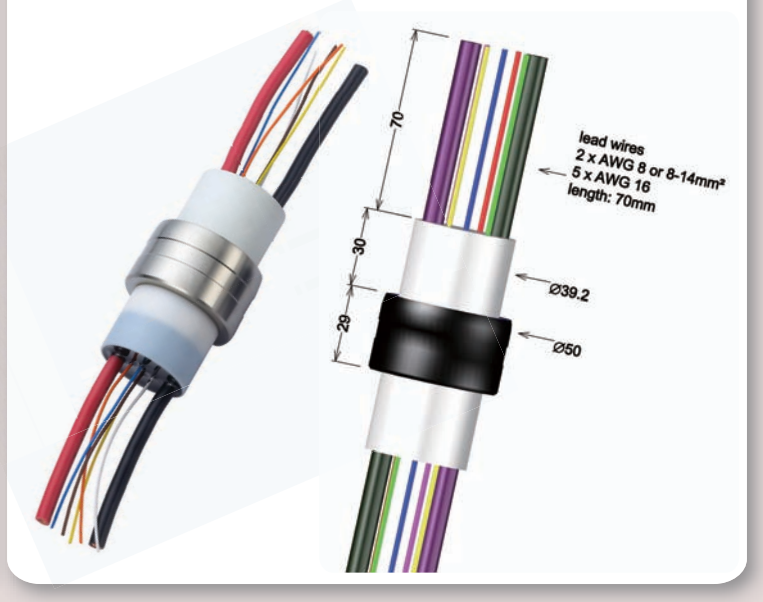
Model 型 號	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
A2T	**2**	**1**	DC30V	200	50	60/-30	30	> 2MΩ
A3M-W	**3**	**4**	250	200	1800	60/-30	200	> 25MΩ
A2H6	**2**	**60**	250	100	300	60/-30	700	> 25MΩ
21005W	**7**	**100/4**	250	100	100	60/-30	1500	> 25MΩ

A2T 2poles/1A/DC30V

A3M-W 3poles/4A/AC250V

A2H6 2poles/60A/AC250V

21005W 2poles/80-150A/AC250V 5poles/4-10A/AC250V



Non-mercury slip rings 非水銀滑環 鎵合金液態金屬旋轉連接器
CE RoHS compliance gallium alloy liquid metal rotary connectors

SINGLE CONDUCTOR
單極旋轉連接器

Specification 規 格

Model 型 號	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min °C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
A1M NM	1	10	N/A	20	1000	+80 / +8 - 0*	35	N/A
A1MT NM	1	10	N/A	20	1000	+80 / +8 - 0*	35	N/A
A1M2 NM	1	20	N/A	20	1000	+80 / +8 - 0*	50	N/A
A1M5 NM	1	50	N/A	20	800	+80 / +8 - 0*	70	N/A
A1M12 NM	1	120	N/A	20	600	+80 / +8 - 0*	150	N/A
A1HH NM	1	150	N/A	20	600	+80 / +8 - 0*	250	N/A
A1H25S NM	1	250	N/A	20	600	+80 / +8 - 0*	250	N/A
A1H25PS NM	1	250	N/A	20	600	+80 / +8 - 0*	250	N/A
A1H35S NM	1	350	N/A	20	500	+80 / +8 - 0*	300	N/A
A1H50S NM	1	500	N/A	20	200	+80 / +8 - 0*	700	N/A
A1H50PS NM	1	500	N/A	20	200	+80 / +8 - 0*	700	N/A
A1H65S NM	1	650	N/A	20	100	+80 / +8 - 0*	1000	N/A
A1H65PS NM	1	650	N/A	20	100	+80 / +8 - 0*	1000	N/A
A1H90PS NM	1	900	N/A	20	100	+80 / +8 - 0*	1100	N/A
A1H150PS NM	1	1500	N/A	20	80	+80 / +8 - 0*	2000	N/A
A1H300PS NM	1	3000	N/A	20	20	+80 / +8 - 0*	3000	N/A
A1H500FS NM	1	5000	N/A	20	10	+80 / +8 - 0*	5000	N/A
A1H750FS NM	1	7500	N/A	20	10	+80 / +8 - 0*	7000	N/A

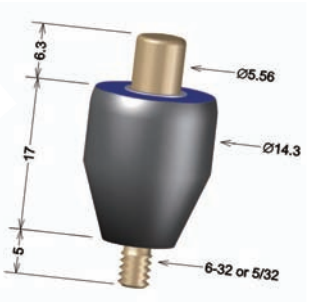
*

- The minimum temperature for liquid metal 46L
- Solid temp is : + 7.6℃
- There is a “super cool” effect, when a slip ring contain liquid metal 46L put in the room temp. 0℃, the liquid metal will not be solid immediately, there will have a 2 – 4 days range the liquid metal 46L will keep in liquid status, just like the river water still run in the 0℃
- The liquid metal slip rings are recommended to be used within 3 months after shipping. If the slip ring has rotation not smooth condition after 3 months storage in the room temp. undertemp. +8℃. Please put it in the warm room (over 50 ℃) to recover the liquid metal status.
- The liquid metal is not so sticky like mercury which can be sticky (touched) on the silver plated conductor surface. The liquid metal slip rings’vibration resistance ability is much less than mercury types. Any light vibration, impact, shock will make the liquid metal to move out from the main conductor chamber to another conductor’s room. That will make short circuit easily.

Model, Size, accessories 型號、尺寸及附件

A1M NM (non-mercury)
1pole 10A

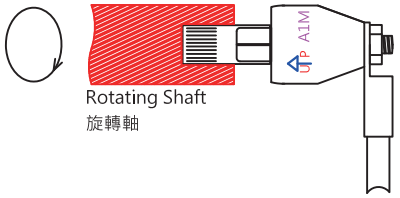
A1MS NM



SUS body + SUS bearing

◀AIM-1
Receptacles
金屬接頭

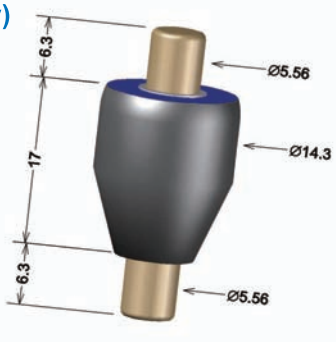
● Mounting 安裝



Holding by electric wire
以電線拉住

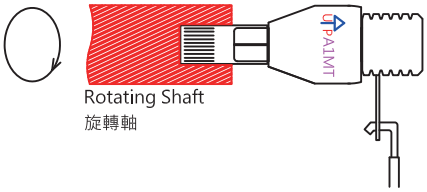
A1MT NM (non-mercury)
1pole 10A

A1MTS NM
SUS body + SUS bearing



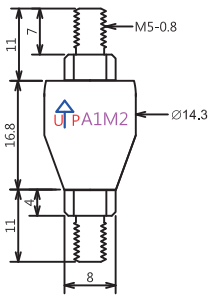
◀AIM-5
Plastic cap
塑膠插頭

● Mounting 安裝



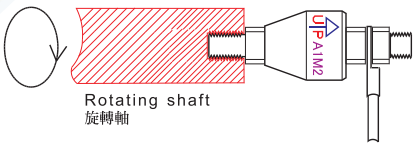
Holding by electric wire
以電線拉住

A1M2 NM (non-mercury)
1pole 20A



A1M2S NM

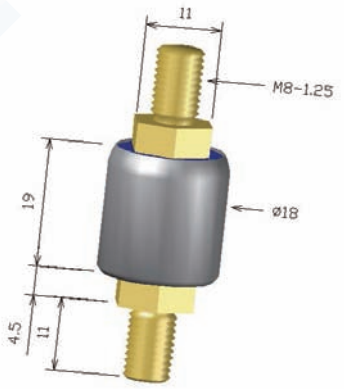
● Mounting 安裝



Holding by electric wire
以電線拉住

SUS body + SUS bearing

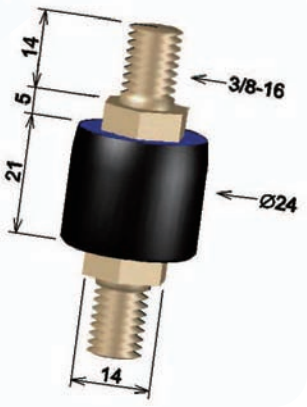
A1M5 NM (non-mercury)
1pole 50A



A1M5S NM

SUS body + SUS bearing

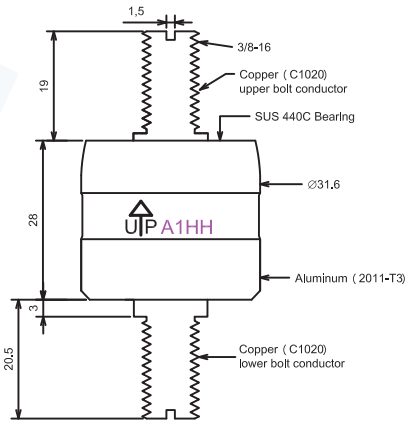
A1M12 NM (non-mercury)
1pole 120A



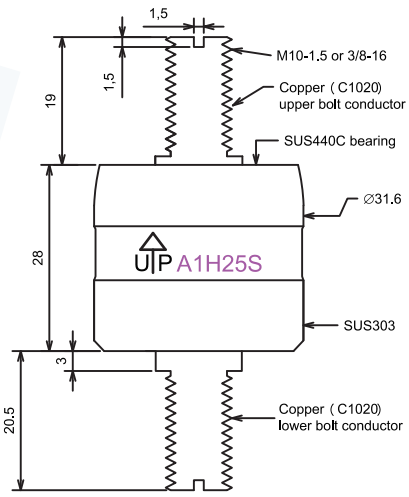
A1M12S NM

SUS body + SUS bearing

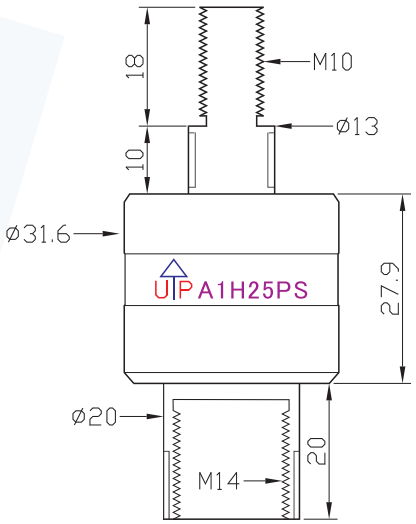
A1HH NM (non-mercury)
1pole 250A



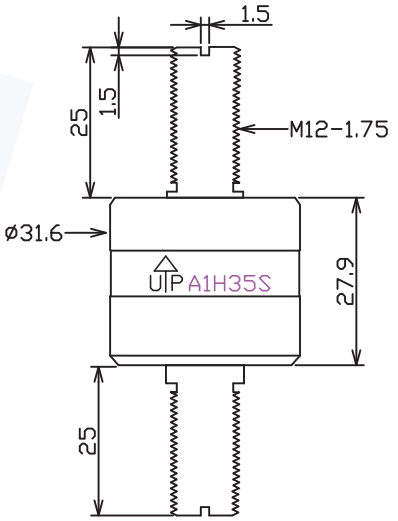
A1H25S NM (non-mercury)
1pole 250A



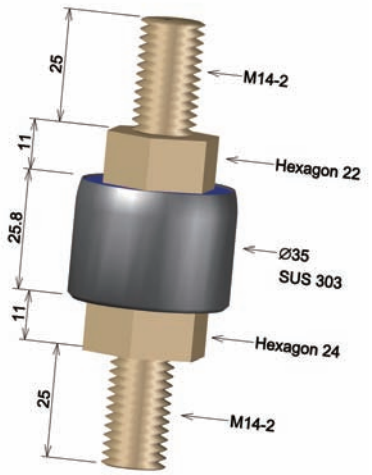
A1H25PS NM (non-mercury)
1pole 250A



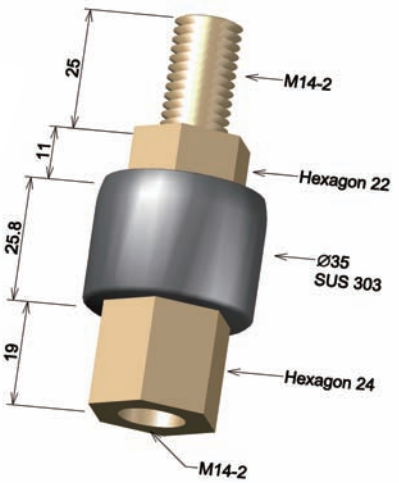
A1H35S NM (non-mercury)
1pole 350A



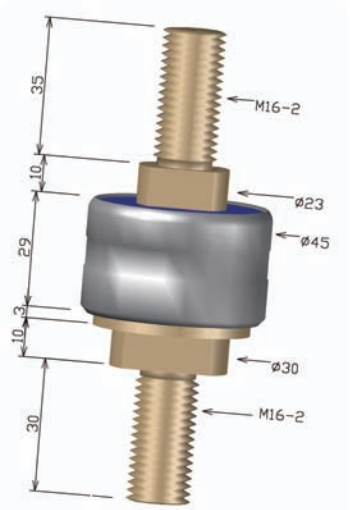
A1H50S NM (non-mercury)
1pole 500A



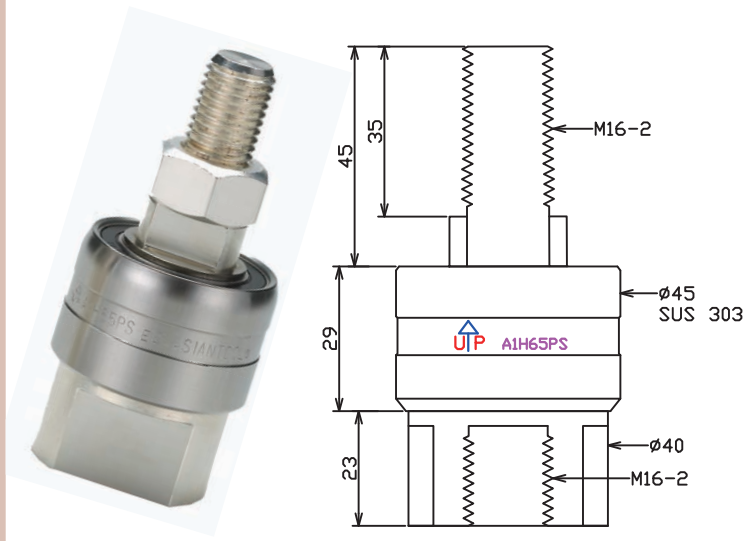
A1H50PS NM (non-mercury)
1pole 500A



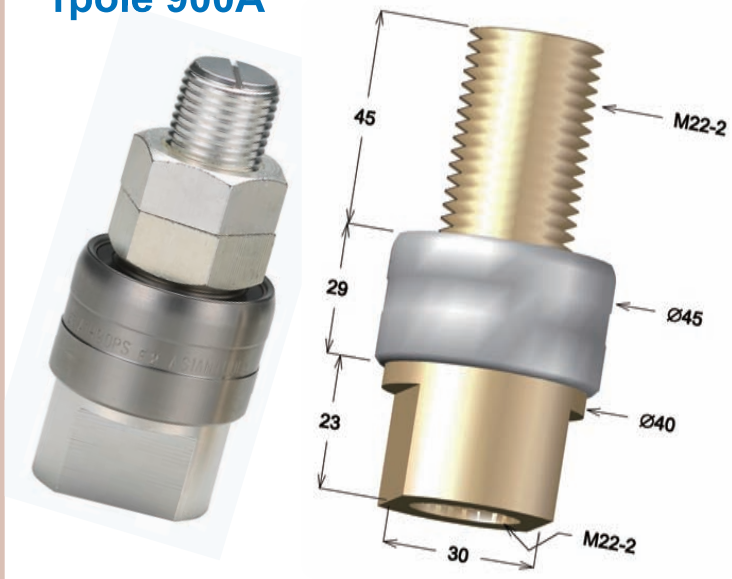
A1H65S NM (non-mercury)
1pole 650A



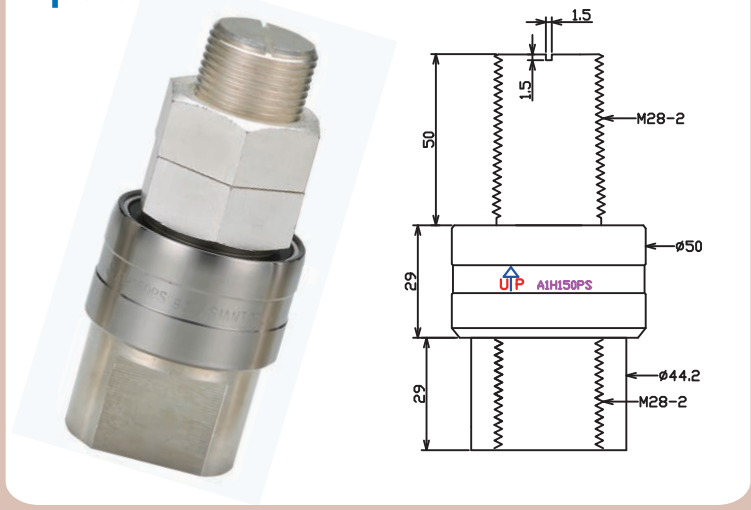
A1H65PS NM (non-mercury)
1pole 650A



A1H90PS NM (non-mercury)
1pole 900A

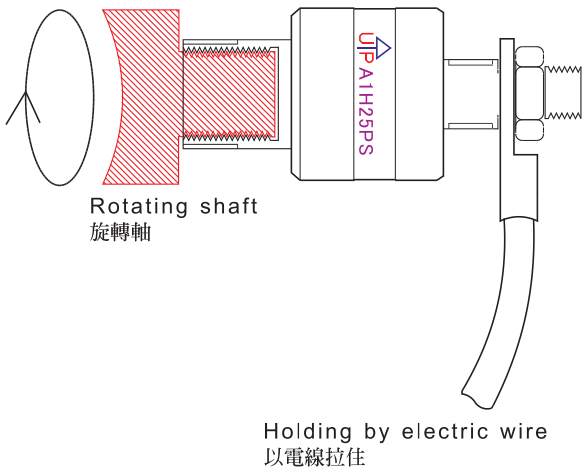


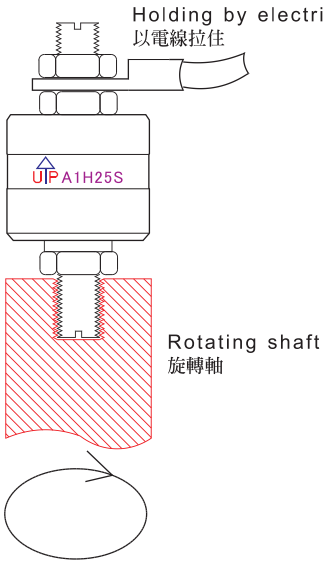
A1H150PS NM (non-mercury)
1pole 1500A



A1H300PS NM (non-mercury)
1pole 3000A

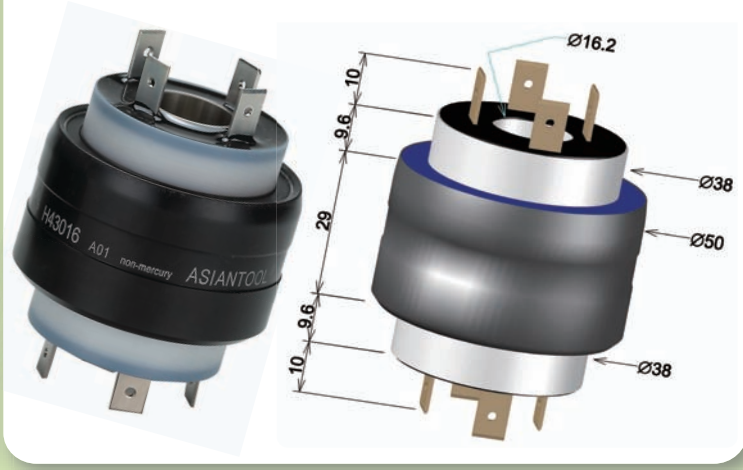
Mounting 安裝



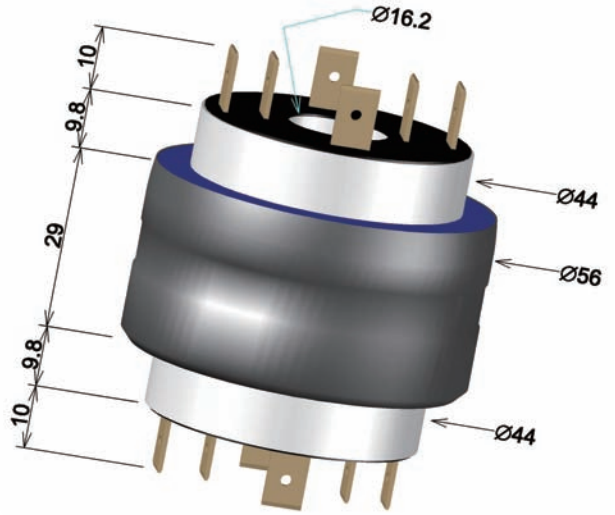


H23016 NM (non-mercury)
2poles/30A/AC250V
Through-bore:16.2mm

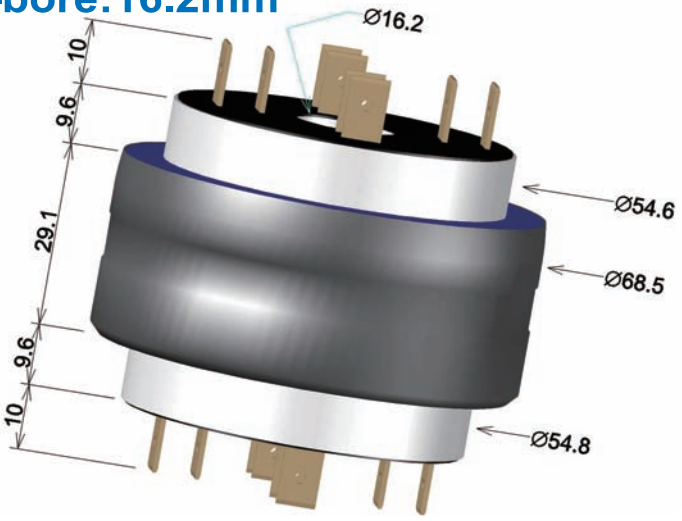
H43016 NM (non-mercury)
4poles/30A/AC250V
Through-bore:16.2mm



H63016 NM (non-mercury)
6poles/30A/AC250V Through-bore:16.2mm



H83016 NM (non-mercury)
8poles/30A/AC250V Through-bore:16.2mm



Non-mercury slip rings 非水銀滑環 鎵合金液態金屬旋轉連接器

CE RoHS compliance gallium alloy liquid metal rotary connectors

THROUGH BORE MULTI CONDUCTORS (10.2mm)過孔式多極旋轉連接器(10. 2mm)

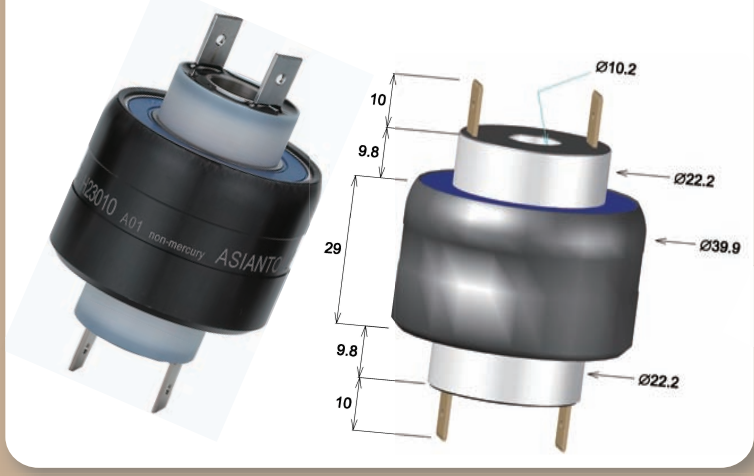
Specification 規 格

Model 型 號	Through - bore ψ 中空孔徑	Conductor Poles 極 數	Current Amp. 電 流	Voltage AC/ V 耐 壓	Max. Freq. MHZ 頻 率	Max. RPM 最大轉速	Operating Temp. Max/Min ˚C 使用溫度	Rotating Torque (gm-cm) 轉 矩	Insulation Resistance 絕緣阻抗
H23010 NM	**10.2mm**	**2**	**30**	250	20	100	+80 / +8 - 0*	700	> 25MΩ
H43010 NM	**10.2mm**	**4**	**30**	250	20	80	+80 / +8 - 0*	1000	> 25MΩ
H63010 NM	**10.2mm**	**6**	**30**	250	20	30	+80 / +8 - 0*	1500	> 25MΩ
H83010 NM	**10.2mm**	**8**	**30**	250	20	20	+80 / +8 - 0*	2000	> 25MΩ
H103010 NM	**10.2mm**	**10**	**30**	250	20	10	+80 / +8 - 0*	3000	> 25MΩ

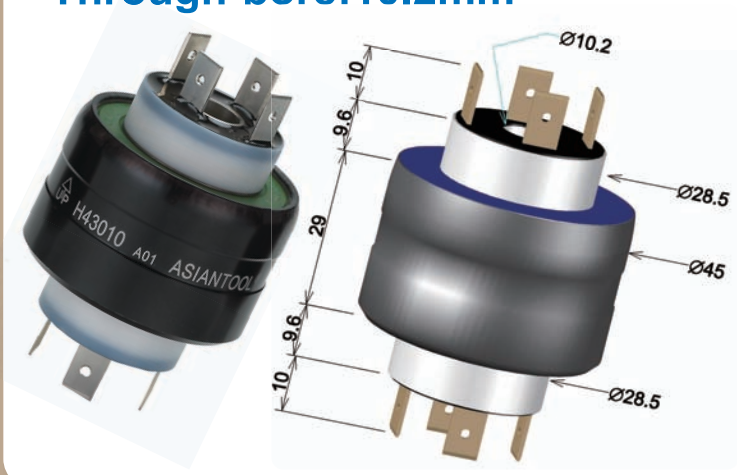
*

- The minimum temperature for liquid metal 46L
- Solid temp is : + 7.6℃
- There is a “super cool” effect, when a slip ring contain liquid metal 46L put in the room temp. 0℃, the liquid metal will not be solid immediately, there will have a 2 – 4 days range the liquid metal 46L will keep in liquid status, just like the river water still run in the 0℃
- The liquid metal slip rings are recommended to be used within 3 months after shipping. If the slip ring has rotation not smooth condition after 3 months storage in the room temp. undertemp. +8℃. Please put it in the warm room (over 50 ℃) to recover the liquid metal status.
- The liquid metal is not so sticky like mercury which can be sticky (touched) on the silver plated conductor surface. The liquid metal slip rings’vibration resistance ability is much less than mercury types. Any light vibration, impact, shock will make the liquid metal to move out from the main conductor chamber to another conductor’s room. That will make short circuit easily.

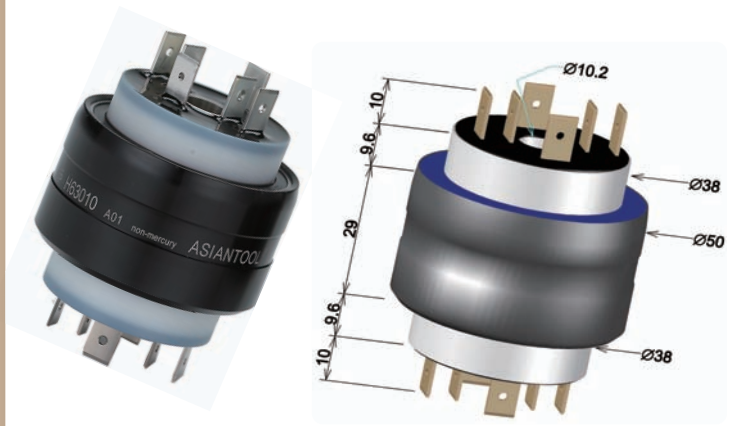
H23010 NM (non-mercury)
2poles/30A/AC250V
Through-bore:10.2mm



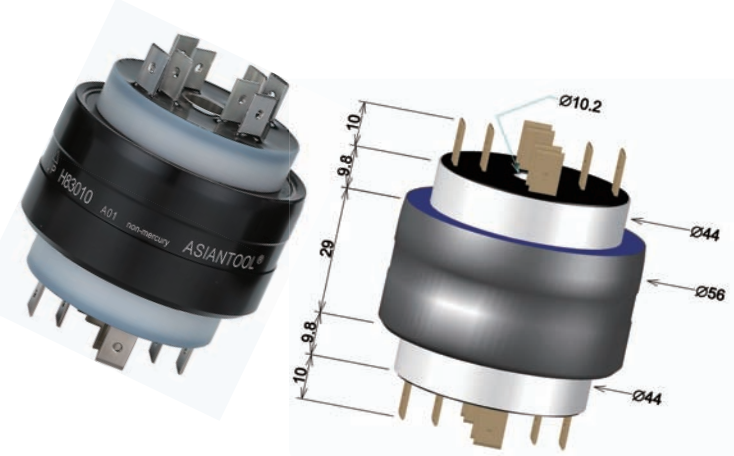
H43010 NM (non-mercury)
4poles/30A/AC250V
Through-bore:10.2mm



H63010 NM (non-mercury)
6poles/30A/AC250V
Through-bore:10.2mm



H83010 NM (non-mercury)
8poles/30A/AC250V
Through-bore:10.2mm



H103010NM (non-mercury)
10poles/30A/AC250V Through-bore:10.2mm

Boots Kit 保護套

- A4H-BK for A4H, A3H
- A6H-BK for A6H
- A8H-BK for A8H

Terminals&Shrink Tube 端子&熱縮套管

- SY28
- SR28
- SB63
- S63
- LB63
- LLB63
- LLB63C
- SK3

Notice 注意事項

- Not exceed the Max. temperature 60˚C(140˚F), room temperature + self heating. (rotate + electric connection)
- Vertical mounting and storage should keep the UP in the up direction.
- Mounting into a shaft should keep no eccentricity.
- Do not solder on the connector and terminal.
- Connect the connector on the terminal only a few times, losing connection will cause heating when apply electric power.
- Vibration will cause service life shorter.
- The rotary connector can be mounted by the body or plastic collar but it can not carry mechanical loads. Another end should be conneted floating hold by electric wire.
- The uppers notice should be kept, otherwise it will cause the rotary connector failure or shorten service life.

- 使用溫度不超過60˚C，周圍溫度＋自體發熱（旋轉＋通電）。
- 垂直方向安裝時，要保持標誌 UP 向上，保存時亦需保持向上。
- 安裝旋轉連接器於軸心時不可偏心，裝上止扣螺絲時最好採用 3 點止扣方式。
- 不可對旋轉連接器本體或銅端子焊接加熱。
- 專用之連接端子不可重覆使用多次，鬆動後接觸不良而發熱。
- 旋轉體如振動會降低使用壽命。
- 此連接器可以鋁外殼或塑膠部份裝入軸心固定後，再以插入端子電線拉住轉動部即可，一頭固定於軸心，一頭浮拉於外固定部，但決不可以承受重量。
- 以上事項如不遵守會對旋轉連接器產生不同程度之損壞或降低使用壽命。

We also produce any other customers made slip rings. Please contact us.
我們亦承製任何客製化旋轉連接器 ，請和我們連絡。

Asian Tool Technologies Ltd.
www.asiantool.com.tw

Non-mercury slip rings 非水銀滑環

CE RoHS compliance gallium alloy liquid metal rotary connectors

符合CE RoHS規範鎵合金液態金屬旋轉連接器

Asiantool®