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STEIMEX[®]

德國施德利

- 堅硬金屬外殼，極大搖臂角度±95°
- 特長2000萬次機械壽命
- 不銹鋼滾輪，沖頭及彈簧
- 可選配PG 11索頭

LSA -

系列行程開關
Series Limit Switches



型號 Version	LSA-		001	003	012	021	027	031	061	071	081
操作力 Operating Force	(最大) (Max.)	OF	1000g	1000g	1000g	400g-cm	800g	400g-cm at L=30mm	150g	150g	150g
回彈力 Release Force	(最小) (Min.)	RF	400g	400g	400g	100g-cm	400g	100g-cm at L=30mm	50g	50g	50g
前預行程 Pre-Travel	(最大) (Max.)	PT	2.0mm	2.0mm	2.0mm	22°	2.0mm	22°	30mm	30mm	30mm
差動 Movement Differential	(最大) (Max.)	MD	1.2mm	1.2mm	1.2mm	10°	1.2mm	10°	-	-	-
超程 Over Travel	(最小) (Min.)	OT	4.0mm	4.0mm	4.0mm	75°	4.0mm	75°	20mm	20mm	20mm
總行程 Total Travel	(最小) (Min.)	TT	5.8mm	5.8mm	5.8mm	95°	5.8mm	95°	50mm	50mm	50mm
搖臂轉動分角度 Rotary Indexing						22.5°		22.5°			

Electrical Parameters 電性參數

Double Break Mechanism
雙斷開機械功用

INO+INC Force Break snap action 強迫斷開快速機芯

Rated Voltage / Current :
額定電壓 / 電流

10(4)A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻

Initial < 10mΩ, after testing < 30mΩ

Insulation Voltage

絕緣電壓

Min. 100MΩ at 500VDC

Dielectric Strength

電介強度

AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命

500,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命

20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度

240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力

IP66 (防壓力水柱級)

Ambient Temperature Rised

上升溫度

Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準

Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度

-25 °C ~ + 80 °C

Storage Temperature

保存溫度

-25 °C ~ + 80 °C

Humidity

濕度

95° R.H. Max (No dewing)

Shock Resistance

沖擊系數

Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率

55Hz Max

Terminal screw Locking Force

端子螺絲扭力

6-8 kgf-cm

Other Forces

其他螺絲扭力

Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

Bare Wire Gauge

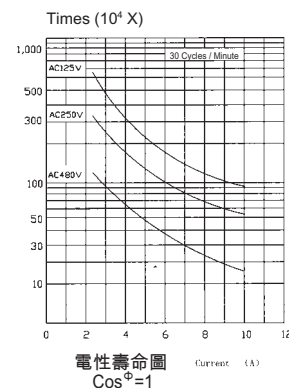
裸銅線尺寸

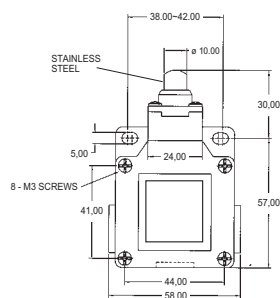
Ø2mm Max

Cable Diameter

電纜尺寸

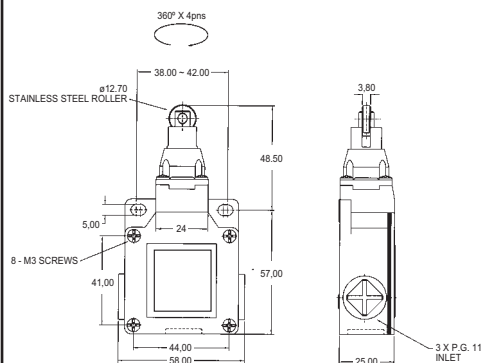
Ø12mm Max





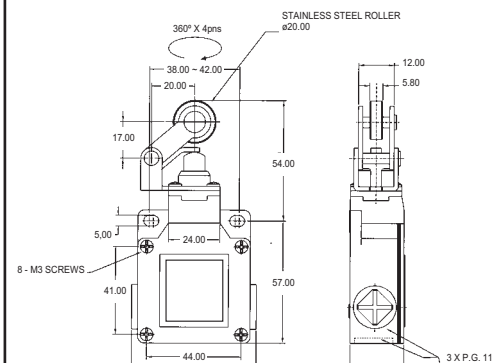
OVER TRAVEL PLUNGER
推壓塞柱型

LSA-001



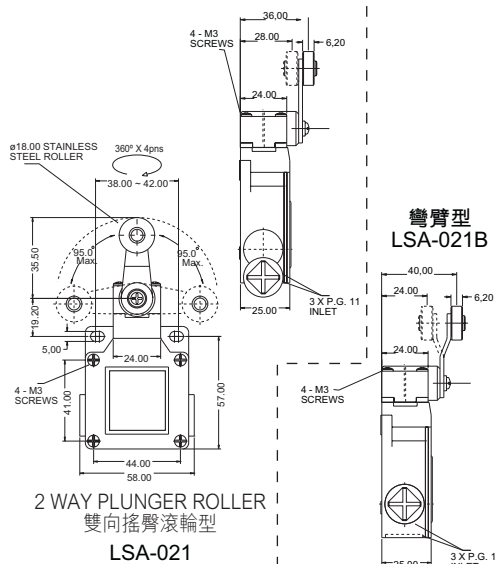
ROLLER PLUNGER
滾輪塞柱型

LSA - 003



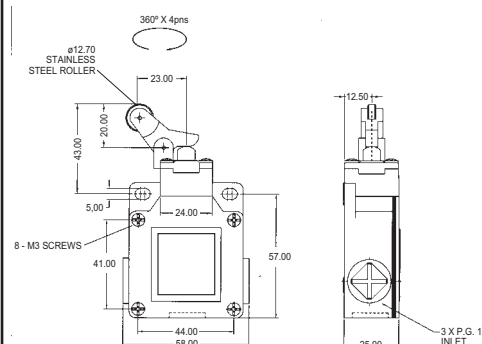
HINGE ROLLER PLUNGER
鏈滾輪塞柱型

LSA - 012



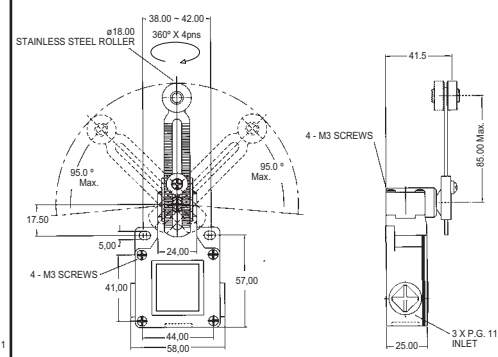
2 WAY PLUNGER ROLLER
雙向搖臂滾輪型

LSA-021



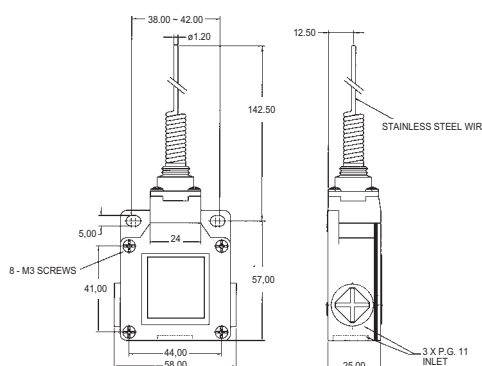
ONE WAY PLUNGER ROLLER
單向鏈塞滾輪型

LSA - 027



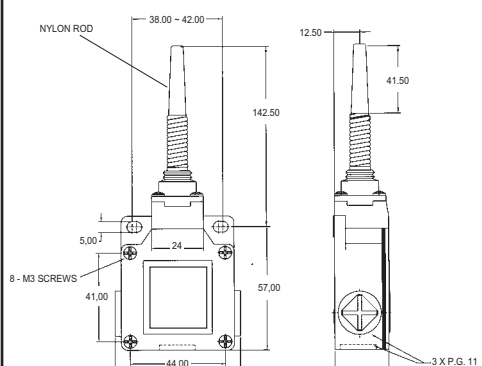
ADJUSTABLE ROLLER ARM
可調式雙向搖臂滾輪型

LSA - 031



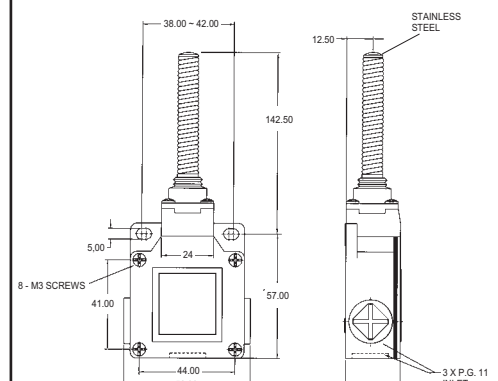
SPRING WIRE
彈簧線

LSA - 061



NYLON ROD
尼龍棒

LSA - 071



SPRING ROD
彈簧棒

LSA - 081

STEIMEX[®]

德國施德利

- 門門式緊鎖機芯機械，方便取出機芯配線
- 門軸面蓋設計，簡易裝配
- 堅硬金屬外殼，極大搖臂角度±95°
- 特長2000萬次機械壽命
- 不銹鋼滾輪，沖頭及彈簧
- 可選配PG 11索頭

LSB -

系列行程開關
Series Limit Switches



型號 Version	LSB-		901	903	912	921	927	931	961	971	981
操作力 Operating Force	(最大) (Max.)	OF	1000g	1000g	1000g	400g-cm	800g	400g-cm at L=30mm	150g	150g	150g
回彈力 Release Force	(最小) (Min.)	RF	400g	400g	400g	100g-cm	400g	100g-cm at L=30mm	50g	50g	50g
前預行程 Pre-Travel	(最大) (Max.)	PT	2.0mm	2.0mm	2.0mm	22°	1.8mm	22°	30mm	30mm	30mm
差動 Movement Differential	(最大) (Max.)	MD	1.2mm	1.2mm	1.2mm	10°	1.2mm	10°	-	-	-
超程 Over Travel	(最小) (Min.)	OT	4.0mm	4.0mm	4.0mm	75°	4.0mm	75°	20mm	20mm	20mm
總行程 Total Travel	(最小) (Min.)	TT	5.8mm	5.8mm	5.8mm	95°	5.8mm	95°	50mm	50mm	50mm
搖臂轉動分角度 Rotary Indexing						22.5°		22.5°			

Electrical Parameters 電性參數

Double Break Mechanism
雙斷開機械功用

INO+INC Force Break snap action 強迫斷開快速機芯

Rated Voltage / Current :
額定電壓 / 電流

10(4)A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻

Initial < 10mΩ, after testing < 30mΩ

Insulation Voltage

絕緣電壓

Min. 100MΩ at 500VDC

Dielectric Strength

電介強度

AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命

500,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命

20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度

240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力

IP66 (防壓力水柱級)

Ambient Temperature Rised

上升溫度

Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準

Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度

-25 °C ~ + 80 °C

Storage Temperature

保存溫度

-25 °C ~ + 80 °C

Humidity

濕度

95° R.H. Max (No dewing)

Shock Resistance

沖擊系數

Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率

55Hz Max

Terminal screw Locking Force

端子螺絲扭力

6-8 kgf-cm

Other Forces

其他螺絲扭力

Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

Bare Wire Gauge

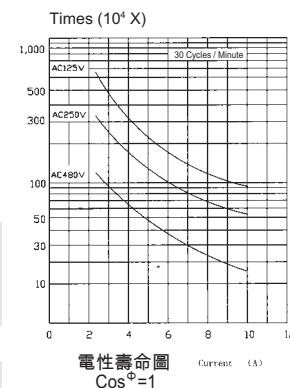
裸銅線尺寸

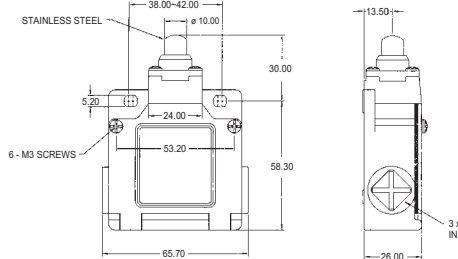
Ø2mm Max

Cable Diameter

電纜尺寸

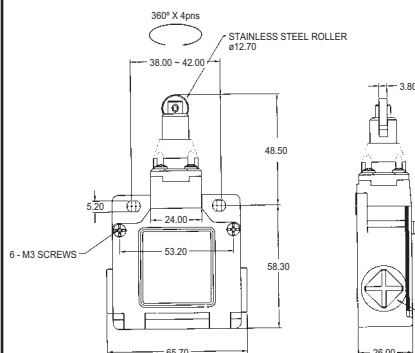
Ø12mm Max





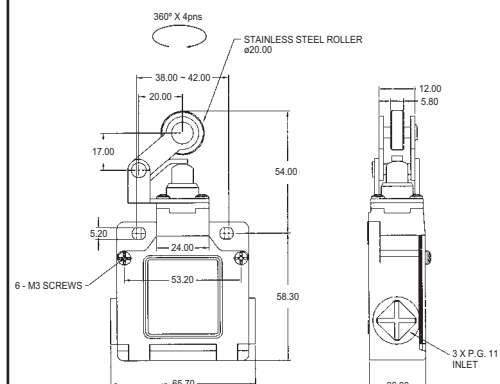
OVER TRAVEL PLUNGER
推壓塞柱型

LSB-901



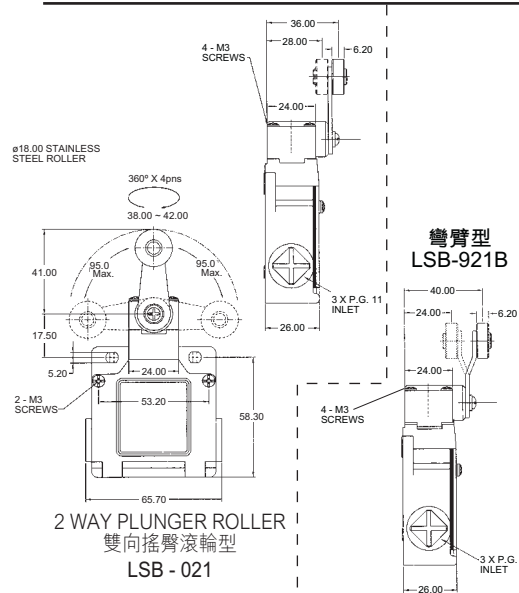
ROLLER PLUNGER
滾輪塞柱型

LSB - 903



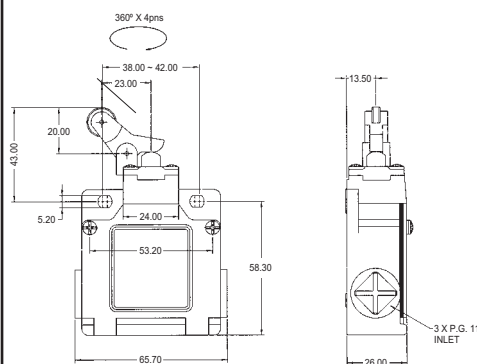
HINGE ROLLER PLUNGER
鏈滾輪塞柱型

LSB - 912



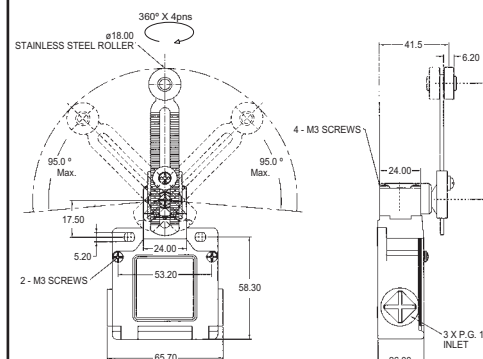
2 WAY PLUNGER ROLLER
雙向搖臂滾輪型

LSB - 021



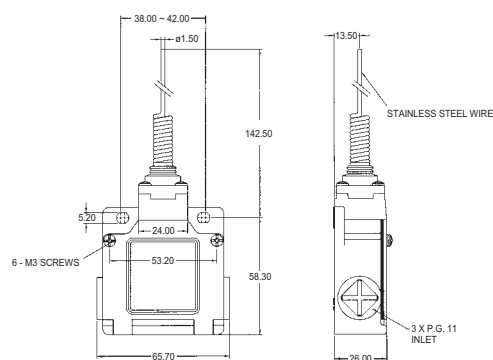
ONE WAY PLUNGER ROLLER
單向鏈塞滾輪型

LSB - 927



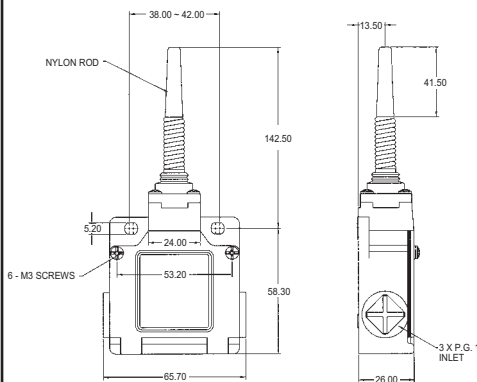
ADJUSTABLE ROLLER ARM
可調式雙向搖臂滾輪型

LSB - 931



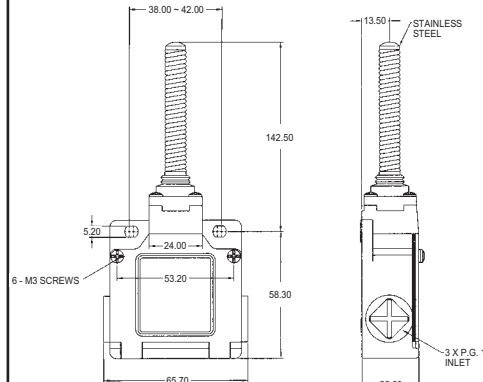
SPRING WIRE
彈簧線

LSB - 961



NYLON ROD
尼龍棒

LSB - 971



SPRING ROD
彈簧棒

LSB - 981

STEIMEX®

德國施德利

- 纖小型，金屬底壳
- 不銹鋼滾輪，沖頭及彈簧
- 特長2000萬次機械壽命
- 高電性>50萬次10A 250V
- 獨特雙螺絲作軸緊鎖(8107/8108/8191)，堅固耐用

LSM -

系列行程開關
Series Limit Switches



型號 Version	LSM-		8104	8107	8108	8111	8112	8122	8166	8169	8181	8191
操作力 Operating Force	(最大) (Max.)	OF	800g-cm	800g-cm at L=30mm 250g-cm at L=118mm	800g-cm at L=25mm 350g-cm at L=80mm	900g	900g	900g	90g	90g	90g	400g-cm at L=35mm 200g-cm at L=70mm
回彈力 Release Force	(最小) (Min.)	RF	50g-cm	50g-cm at L=30mm 60g-cm at L=118mm	50g-cm at L=30mm 30g-cm at L=70mm	150g	200g	200g	30g	30g	30g	100g-cm at L=35mm 60g-cm at L=70mm
前預行程 Pre-Travel	(最大) (Max.)	PT	22°	22°	22°	2.0mm	2.0mm	2.0mm	30mm	30mm	30mm	22°
差動 Movement Differential	(最大) (Max.)	MD	10°	10°	10°	1.2mm	1.2mm	1.2mm	-	-	-	10°
超程 Over Travel	(最小) (Min.)	OT	75°	75°	75°	4.0mm	4.0mm	4.0mm	20mm	20mm	20mm	75°
總行程 Total Travel	(最小) (Min.)	TT	95°	95°	95°	5.8mm	5.8mm	5.8mm	50mm	50mm	50mm	95°

Electrical Parameters 電性參數

Double Break Mechanism
雙斷開機械功用

INO+INC Force Break snap action 強迫斷開快速機芯

Rated Voltage / Current :
額定電壓 / 電流

10(4)A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻 Initial < 10mΩ, after testing < 30mΩ

Insulation Voltage

絕緣電壓 Min. 100MΩ at 500VDC

Dielectric Strength

電介強度 AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命 Min. 500,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命 Min. 20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度 240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力 IP66 (防壓力水柱級)

Ambient Temperature Rised

上升溫度 Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準 Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度 -25 °C ~ + 80 °C

Storage Temperature

保存溫度 -25 °C ~ + 80 °C

Humidity

濕度 95° R.H. Max (No dewing)

Shock Resistance

沖擊系數 Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率 55Hz Max

Terminal screw Locking Force

端子螺絲扭力 6-8 kgf-cm

Other Forces

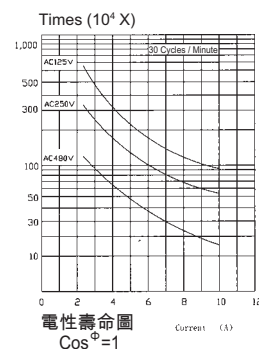
其他螺絲扭力 Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

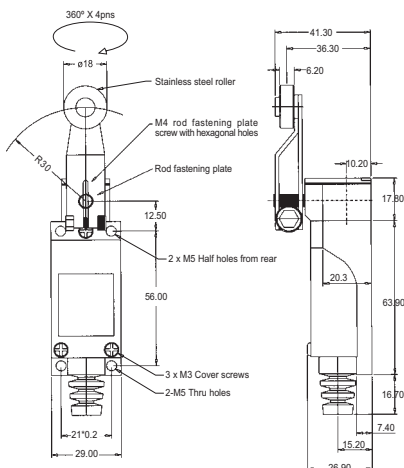
Bare Wire Gauge

裸銅線尺寸 Ø2mm Max

Cable Diameter

電纜尺寸 Ø9mm Max (IP 66 If Ø = 8-9)

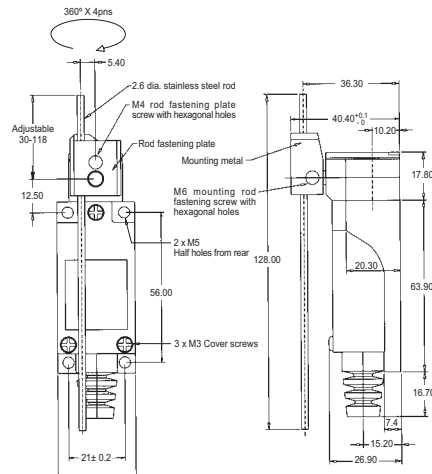




2 WAY PLUNGER ROLLER
雙向搖臂滾輪型

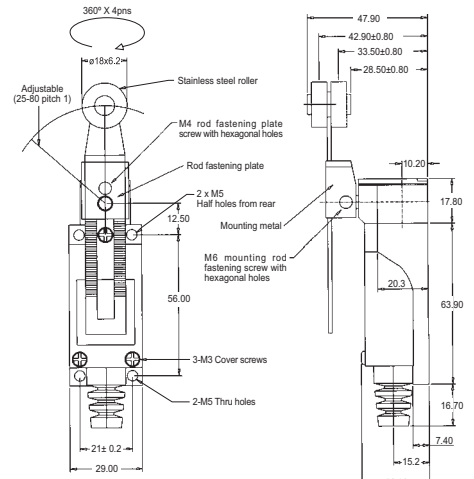
LSM-8104

可選配尼龍滾輪 Nylon Roller LSM-8104P



ADJUSTABLE STEEL ROD
可調不銹鋼棒

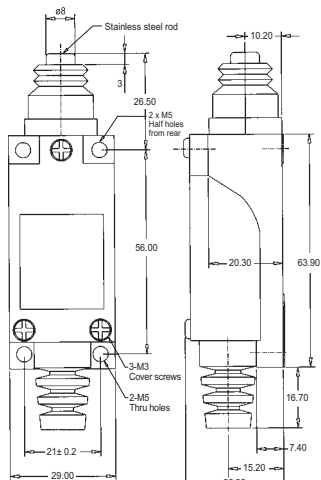
LSM-8107



ADJUSTABLE ROLLER PLUNGER
可調搖臂滾輪

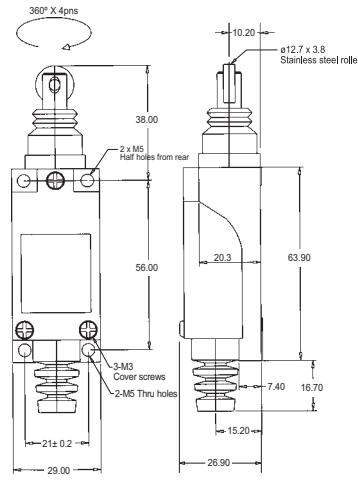
LSM-8108

可選配尼龍滾輪 Nylon Roller LSM-8108P



PLUNGER
塞柱型

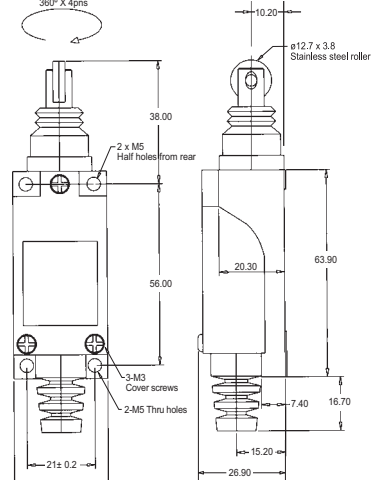
LSM-8111



ROLLER PLUNGER
滾輪塞柱型

LSM-8112

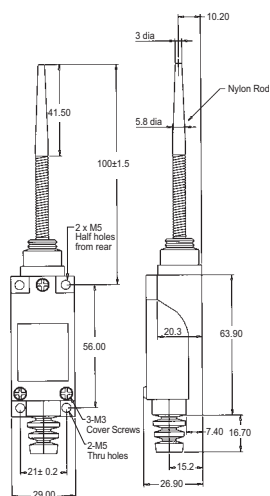
可轉換頭方向成為LSM-8122



CROSS ROLLER PLUNGER
橫滾輪塞柱型

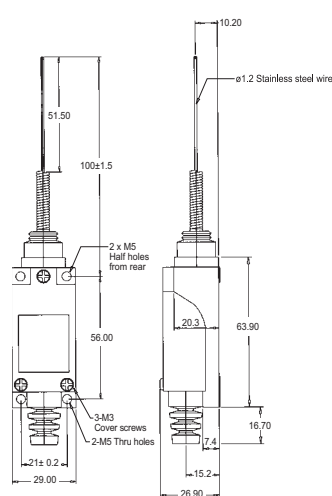
LSM-8122

可轉換頭方向成為LSM-8112



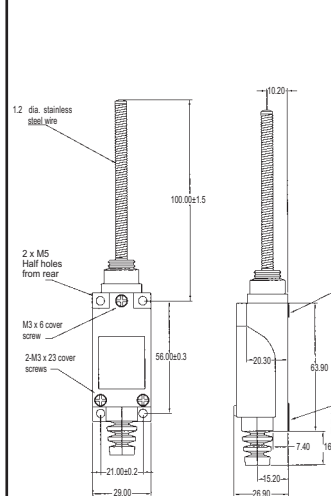
NYLON ROD
尼龍棒

LSM-8166



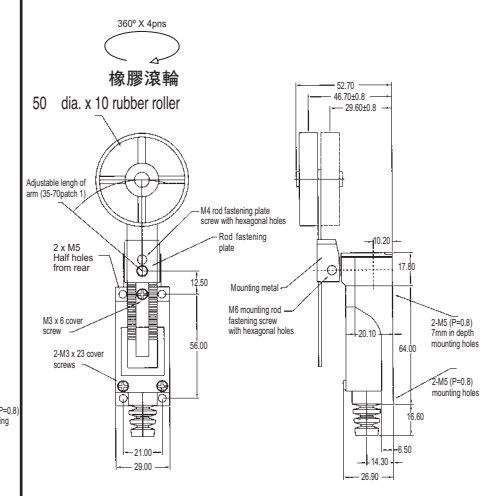
SPRING WIRE
彈簧線

LSM-8169



SPRING ROD
彈簧棒

LSM-8181



2 WAY RUBBER ROLLER PLUNGER
雙向搖臂橡膠滾輪

LSM-8191

STEIMEX[®]

德國施德利

- 金屬底壳
- 不銹鋼滾輪，沖頭及彈簧
- 高電性10A 250V, 50萬次

LSN -

系列行程開關

Series Limit Switches



型號 Version	LSN-		5000	5030	5050	5100	5200	5220	5300	5330	5381
操作力 Operating Force	(最大) (Max.)	OF	750g-cm	750g-cm at L=30mm	750g-cm at L=30mm	750g-cm	900g-cm	900g-cm	150g	150g	150g
回彈力 Release Force	(最小) (Min.)	RF	100g-cm	100g-cm at L=70mm	100g-cm at L=70mm	200g	200g	200g	30g	30g	30g
前預行程 Pre-Travel	(最大) (Max.)	PT	22°	22°	22°	2.0mm	2.0mm	2.0mm	30mm	30mm	30mm
差動 Movement Differential	(最大) (Max.)	MD	10°	10°	10°	1.2mm	1.2mm	1.2mm	-	-	-
超程 Over Travel	(最小) (Min.)	OT	75°	75°	75°	4.0mm	4.0mm	4.0mm	20mm	20mm	20mm
總行程 Total Travel	(最小) (Min.)	TT	95°	95°	95°	5.8mm	5.8mm	5.8mm	50mm	50mm	50mm

Electrical Parameters 電性參數

Double Break Mechanism
雙斷開機械功用

INO+INC Force Break snap action 強迫斷開快速機芯

Rated Voltage / Current :
額定電壓 / 電流

10(4)A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻 Initial < 10mΩ, after testing < 30mΩ

Insulation Voltage

絕緣電壓 Min. 100MΩ at 500VDC

Dielectric Strength

電介強度 AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命 500,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命 20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度 240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力 IP66 (防壓力水柱級)

Ambient Temperature Rised

上升溫度 Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準 Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度 -25 °C ~ + 80 °C

Storage Temperature

保存溫度 -25 °C ~ + 80 °C

Humidity

濕度 95° R.H. Max (No dewing)

Shock Resistance

沖擊系數 Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率 55Hz Max

Terminal screw Locking Force

端子螺絲扭力 6-8 kgf-cm

Other Forces

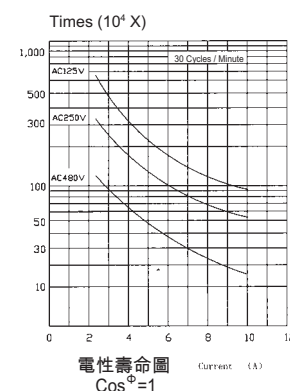
其他螺絲扭力 Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

Bare Wire Gauge

裸銅線尺寸 Ø2mm Max

Cable Diameter

電纜尺寸 Ø9mm Max (IP 66 If use cable Ø8-9mm)





LSN-5000

可選配尼龍滾輪 Nylon Roller LSN-5000P



LSN-5100



LSN-5300



LSN-5030

可選配尼龍滾輪 Nylon Roller LSN-5030



LSN-5200

可轉頭方向成為LSN-5220



LSN-5330



LSN-5050



LSN-5220

可轉頭方向成為LSN-5200



LSN-5381

STEIMEX®

德國施德利

- 經濟耐用
- 金屬面壳/塑料主體
- 高電性10A 250V，25萬次

AZ -

系列行程開關
Series Limit Switches



型號 Version	AZ-	7120	7140	7121	7141	7124	7144	7100	7110	7105	7310	7311	7312
操作力 Operating Force	(最大) (Max.)	OF	150g-cm	220g-cm	180g-cm	240g	200g	280g	600g	600g	600g	600g	600g-cm
回彈力 Release Force	(最小) (Min.)	RF	40g-cm	60g-cm	50g-cm	80g	60g	100g	100g	100g	100g	100g	100g-cm
前預行程 Pre-Travel	(最大) (Max.)	PT	13.5mm	8.5mm	11mm	6.5mm	11mm	6.5mm	2.0mm	2.0mm	2.0mm	2.0mm	2.0mm
差動 Movement Differential	(最大) (Max.)	MD	3.2mm	2.0mm	2.4mm	1.5mm	2.4mm	1.5mm	0.8mm	0.8mm	0.8mm	0.8mm	0.8mm
超程 Over Travel	(最小) (Min.)	OT	4.0mm	2.5mm	3.0mm	2.0mm	3.0mm	2.0mm	0.8mm	5.0mm	5.0mm	6.0mm	6.0mm
觸動位置 Operating Position			25 ±2mm	25 ±1.3mm	40 ±1.9mm	40 ±1.6mm	50 ±2mm	50 ±1.6mm	30 ±0.8mm	44 ±1.2mm	41 ±1.0mm	21.8 ±0.8mm	33.3 ±1.2mm

Electrical Parameters 電性參數

Single Break Mechanism
單斷機械功用

INO+INC Single Break snap action 單斷開快速機芯

Rated Voltage / Current :
額定電壓 / 電流

10(4)A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻

Initial < 10mΩ, after testing < 30mΩ

Insulation Voltage

絕緣電壓

Min. 100MΩ at 500VDC

Dielectric Strength

電介強度

AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命

250,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命

20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度

240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力

Front Panel IP65

Ambient Temperature Rised

上升溫度

Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準

Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度

-25 °C ~ + 80 °C

Storage Temperature

保存溫度

-25 °C ~ + 80 °C

Humidity

濕度

95° R.H. Max (No dewing)

Shock Resistance

沖擊系數

Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率

55Hz Max

Terminal screw Locking Force

端子螺絲扭力

6-8 kgf-cm

Other Forces

其他螺絲扭力

Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

Bare Wire Gauge

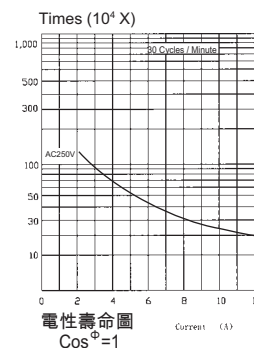
裸銅線尺寸

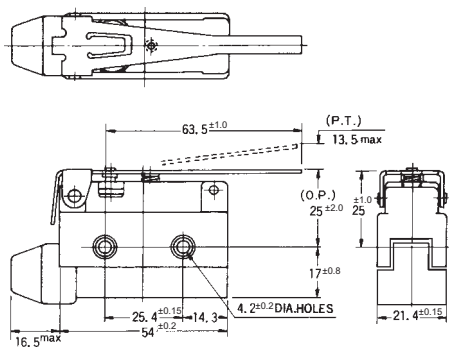
Ø2mm Max

Cable Diameter

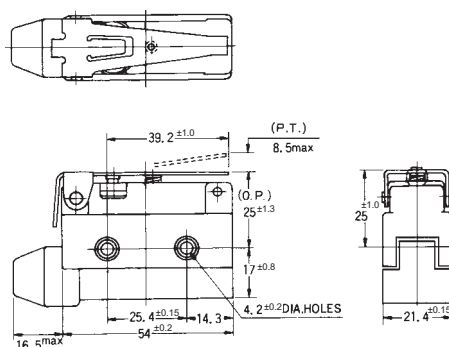
電纜尺寸

Ø6-9

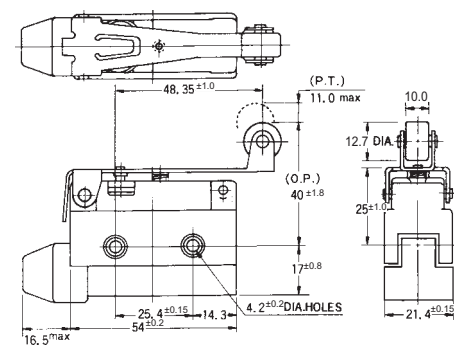




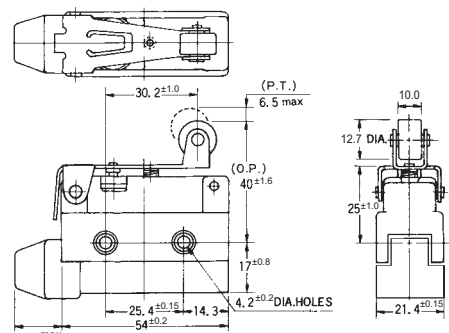
HINGE LEVER
鏈接杆型
AZ7120



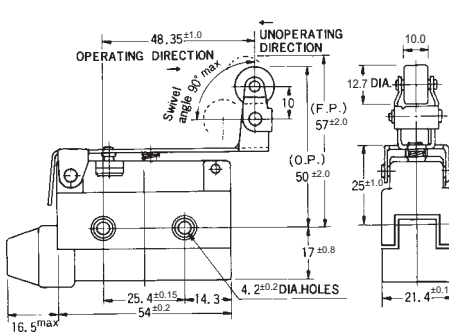
HINGE SHORT LEVER
鏈接短杆型
AZ7140



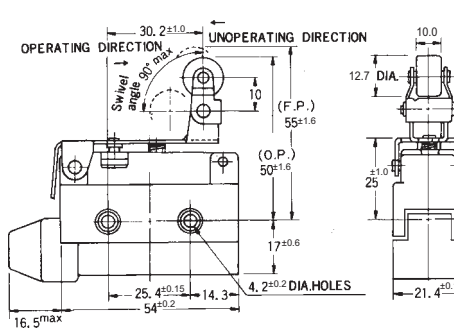
HINGE ROLLER LEVER
滾軸杆型
AZ7121



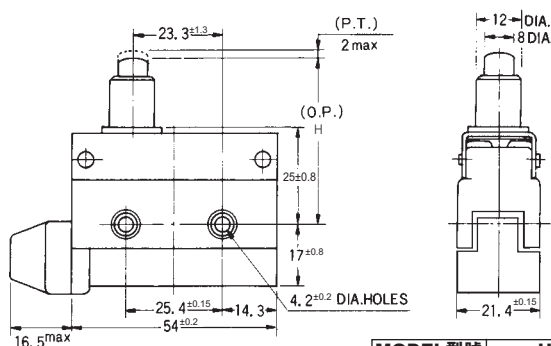
HINGE SHORT ROLLER LEVER
滾軸短杆型
AZ7141



ONE WAY ROLLER LEVER
單向滾軸杆型
AZ7124

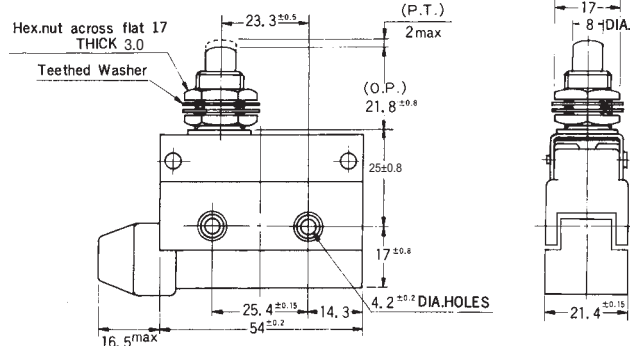


ONE WAY ROLLER SHORT LEVER
單向滾軸短杆型
AZ7144

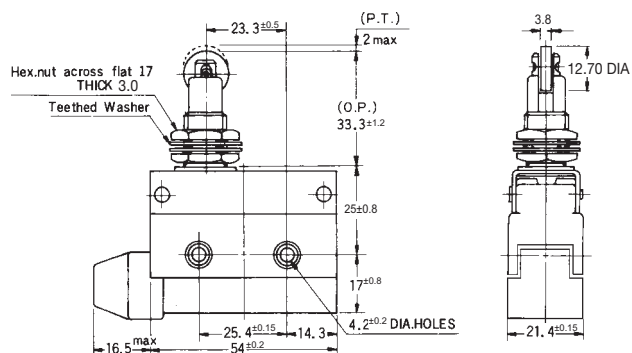


OVER TRAVEL PLUNGER
推壓塞柱型
AZ7110 / AZ7100 / AZ7105

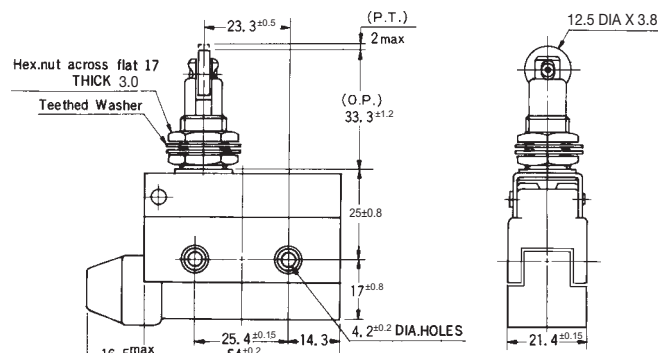
MODEL 型號	H
AZ7110	44 ± 1.2
AZ7100	30 ± 0.8
AZ7105	41 ± 1.0



PANEL MOUNT TYPES
塞柱型(面板式)
AZ7310



PANEL MOUNT ROLLER PLUNGER
滾輪塞柱型(面板式)
AZ7311



PANEL MOUNT CROSS ROLLER PLUNGER
橫滾輪塞柱型(面板式)
AZ7312

STEIMEX®

德國施德利

- 經濟型微動開關
- 高電性 15A, 250V
- 可選配尾座 H1 ，如 1308H1

AM-

系列行程開關
Series Limit Switches



型號 Version	AM-		1300	1301	1303	1305	1306	1307	1308	1309	1701	1703	1704
操作力 Operating Force	(最大) (Max.)	OF	350g	150g	150g	350g	350g	350g	350g	350g	70g	100g	160g
回彈力 Release Force	(最小) (Min.)	RF	114g	16g	16g	114g	114g	114g	114g	114g	14g	21g	42g
前預行程 Pre-Travel	(最大) (Max.)	PT	0.5mm	4mm	4mm	0.5mm	0.5mm	0.5mm	0.5mm	0.5mm	10mm	7.5mm	4.5mm
差動 Movement Differential	(最大) (Max.)	MD	0.05mm	1.3mm	1.3mm	0.05mm	0.05mm	0.05mm	0.05mm	0.05mm	1.5mm	1.3mm	0.7mm
超程 Over Travel	(最小) (Min.)	OT	0.13mm	1.6mm	1.6mm	1.6mm	1.3mm	3.6mm	3.6mm	3.6mm	4.5mm	3.6mm	2.3mm

Electrical Parameters 電性參數

Single Break Mechanism
單斷機械功用

INO+INC Single Break snap action 單斷快速機芯

Rated Voltage / Current :
額定電壓 / 電流

15A, 125, 250VAC
6(2)A, 380VAC
For inductance Load, $\cos\phi=0.4$

Contact Resistance

接觸電阻

Initial $< 10m\Omega$, after testing $< 30m\Omega$

Insulation Voltage

絕緣電壓

Min. 100M Ω at 500VDC

Dielectric Strength

電介強度

AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles

Electrical Life

電性壽命

150,000 at 15A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm

Mechanical Life

機械壽命

20,000,000 AT Tripping PT 2.5mm - 3.0mm

Operating Speed

操作速度

240 Cycles / Minute Max; 1-160mm / second (Mech)
30 Cycles / Minute Max; 1-20mm / second (Rated Elect.)

Degree of Protection

防水防塵能力

IP62/IP60 at Front Panel

Ambient Temperature Rised

上升溫度

Max 30 °C over ambient temperature at rated voltage / current

Conformed Standards

合乎標準

Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660

Operating Temperature

操作溫度

-25 °C ~ + 80 °C

Storage Temperature

保存溫度

-25 °C ~ + 80 °C

Humidity

濕度

95° R.H. Max (No dewing)

Shock Resistance

沖擊系數

Free Position 10G
Overtravel Position 30G

Vibration Frequency

振動頻率

55Hz Max

Terminal screw Locking Force

端子螺絲扭力

6-8 kgf-cm

Other Forces

其他螺絲扭力

Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm

Bare Wire Gauge

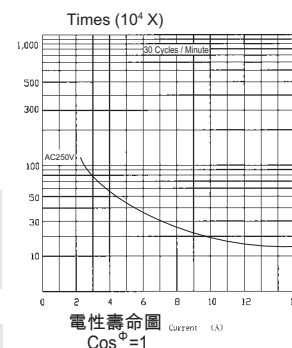
裸銅線尺寸

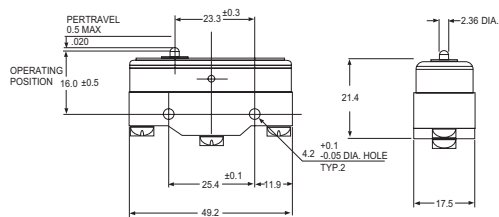
Ø2mm Max

Cable Diameter

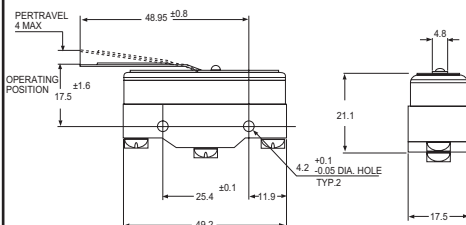
電纜尺寸

Ø6-9

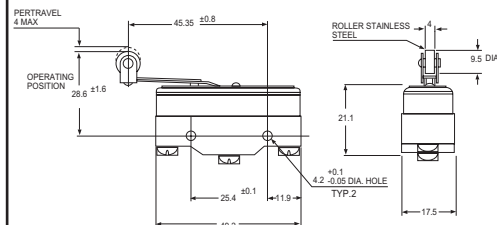




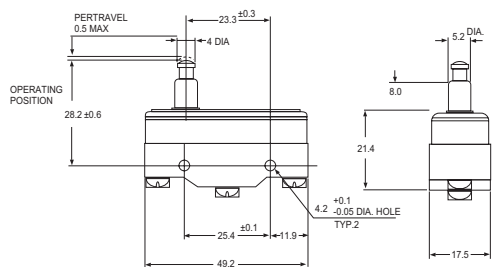
PIN PLUNGER
針塞柱
AM1300



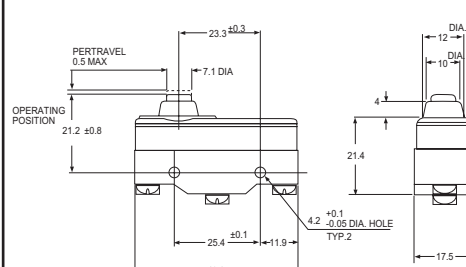
FLEXIBLE LEAF LEVER
柔性葉片臂
AM1301



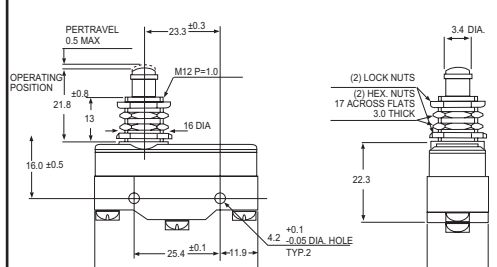
FLEXIBLE ROLLER LEAF LEVER
柔性葉片滾輪
AM1303



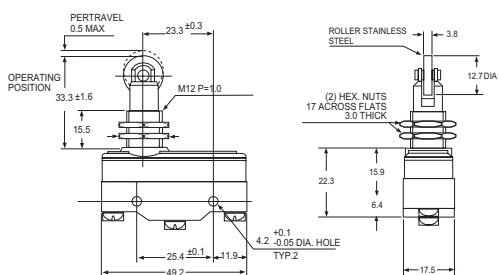
OVERTRAVEL PLUNGER
塞柱型
AM1305



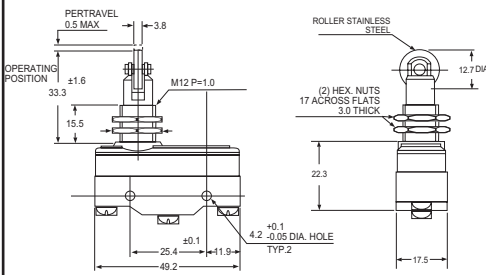
COMPACT OVERTRAVEL PLUNGER
精確塞柱型
AM1306



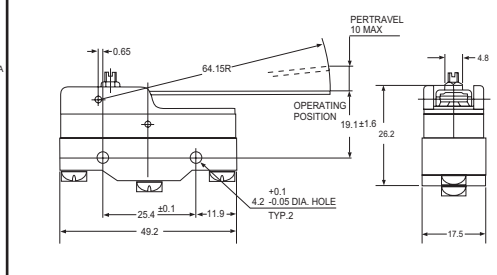
PANEL MOUNT PLUNGER
表面安裝塞柱
AM1307



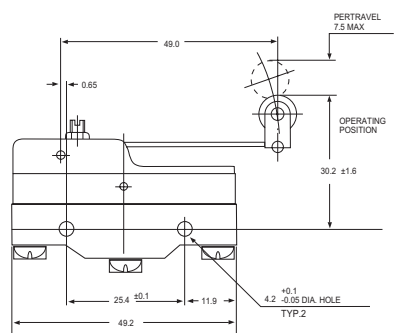
PANEL MOUNT ROLLER PLUNGER
表面安裝塞柱滾輪
AM1308



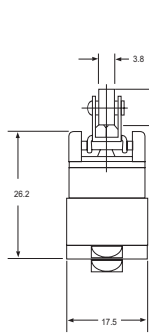
PANEL MOUNT ROLLER PLUNGER
表面安裝塞柱滾輪
AM1309



RIGID LEVER
長搖臂
AM1701



RIGID ROLLER LEVER
長滾輪搖臂
AM1703



RIGID SHORT ROLLER LEVER
長滾輪搖臂
AM1704

STEIMEX®

德國施德利

- 經濟塑料型
- 不銹鋼滾輪，沖頭及彈簧
- 特大±95° 搖臂擺幅
- LS系列可選配PG13.5索頭 / LSK系列可選配PG11索頭

LS - LSK-

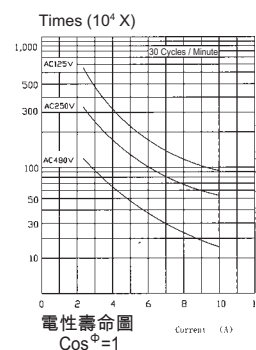
系列行程開關
Series Limit Switches

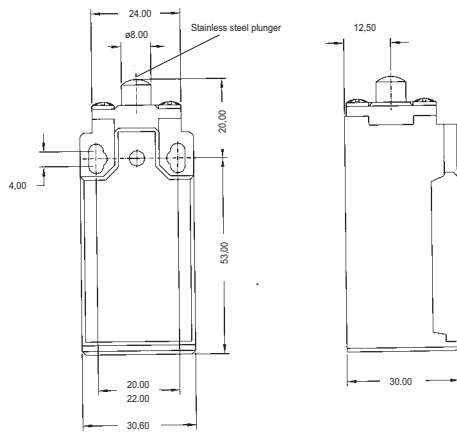


型號 Version	LS- LSK-		101 301	103 303	111 311	121 321	127 327	131 331	161 361	171 371	181 381
操作力 Operating Force	(最大) (Max.)	OF	700g	700g	700g	500g	700g	500g-cm at L=25mm	100g	100g	100g
回彈力 Release Force	(最小) (Min.)	RF	200g	200g	200g	100g-cm	200g	100g-cm at L=85mm	40g	40g	40g
前預行程 Pre-Travel	(最大) (Max.)	PT	2.0mm	2.0mm	2.0mm	22°	2.0mm	22°	30mm	30mm	30mm
差動 Movement Differential	(最大) (Max.)	MD	1.2mm	1.2mm	1.2mm	10°	1.2mm	10°	-	-	-
超程 Over Travel	(最小) (Min.)	OT	4.0mm	4.0mm	4.0mm	75°	4.0mm	75°	20mm	20mm	20mm
總行程 Total Travel	(最小) (Min.)	TT	5.8mm	5.8mm	5.8mm	95°	5.8mm	95°	50mm	50mm	50mm
搖臂轉動分角度 Rotary Indexing						22.5°		22.5°			

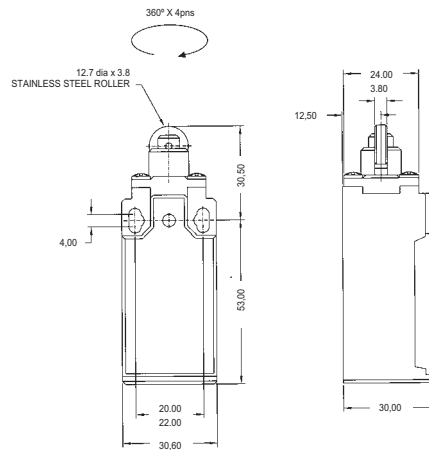
Electrical Parameters 電性參數

Double Break Mechanism 雙斷開機械功用	INO+INC Force Break snap action 強迫斷開快速機芯
Rated Voltage / Current : 額定電壓 / 電流	2NO Force Break snap action 10(4)A, 125, 250VAC 6(2)A, 380VAC For inductance Load, Cos Φ =0.4
Contact Resistance	接觸電阻 Initial < 10m Ω , after testing < 30m Ω
Insulation Voltage	絕緣電壓 Minute 100M Ω at 500VDC
Dielectric Strength	電介強度 AC 2000 VAC 1 Minute for exposed metal / terminals, ground and between opposite poles
Electrical Life	電性壽命 500,000 at 10A 250VAC Resistive AT Tripping PT 2.5mm - 3.0mm
Mechanical Life	機械壽命 20,000,000 AT Tripping PT 2.5mm - 3.0mm
Operating Speed	操作速度 240 Cycles / Minute Max; 1-160mm / second (Mech) 30 Cycles / Minute Max; 1-20mm/ second (Rated Elect.)
Degree of Protection	防水防塵能力 IP66 (防壓力水柱級)
Ambient Temperature Rised	上升溫度 Max 30 °C over ambient temperature at rated voltage / current
Conformed Standards	合乎標準 Cenelec EN 60.947.5.1, IEC 947.5.1, VDE 0660
Operating Temperature	操作溫度 -25 °C ~ + 80 °C
Storage Temperature	保存溫度 -25 °C ~ + 80 °C
Humidity	濕度 95° R.H. Max (No dewing)
Shock Resistance	沖擊系數 Free Position 10G Overtravel Position 30G
Vibration Frequency	振動頻率 55Hz Max
Terminal screw Locking Force	端子螺絲扭力 6-8 kgf-cm
Other Forces	其他螺絲扭力 Cover 12-14 kgf-cm / Head 8-9 kgf-cm / Mounting 50-60 kgf-cm
Bare Wire Gauge	裸銅線尺寸 Ø2mm Max
Cable Diameter	電纜尺寸 Ø12mm Max

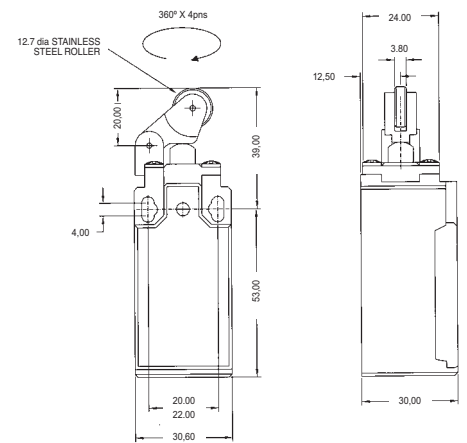




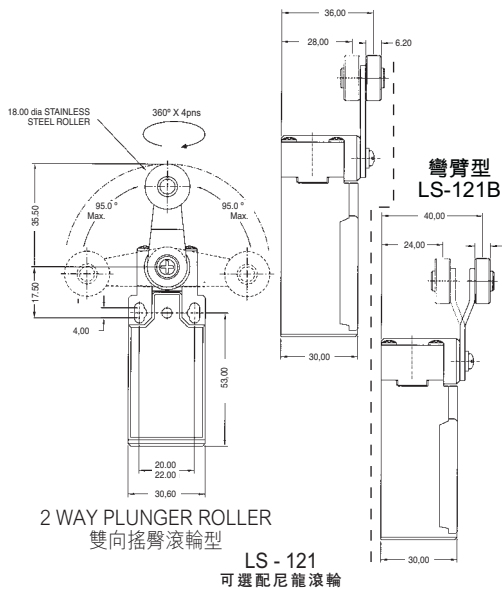
PLUNGER
塞柱型
LS - 101



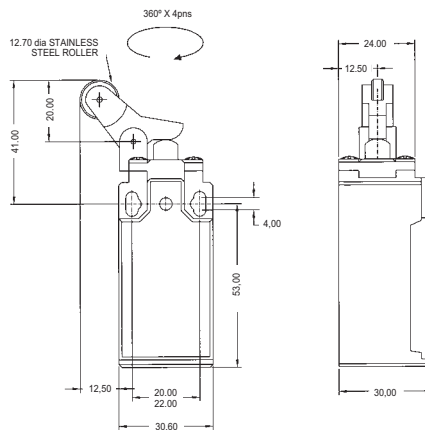
ROLLER PLUNGER
滾輪塞柱型
LS - 103



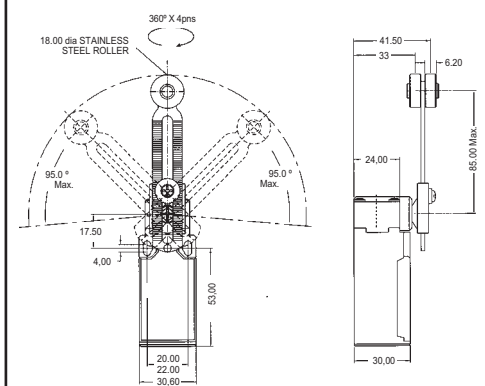
HINGE ROLLER PLUNGER
鏈滾輪塞柱型
LS - 111



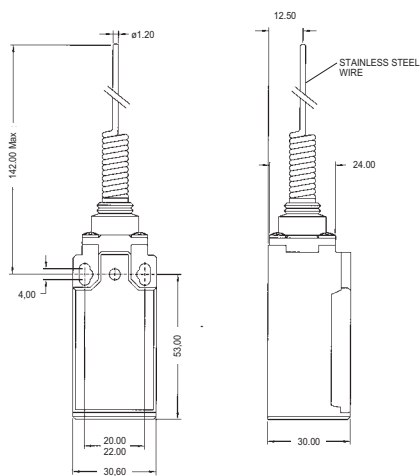
2 WAY PLUNGER ROLLER
雙向搖臂滾輪型
LS - 121
可選配尼龍滾輪



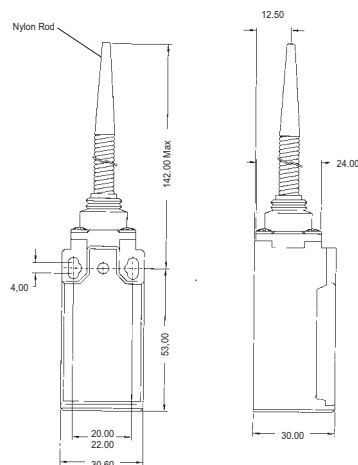
ONE WAY PLUNGER ROLLER
單向鏈塞滾輪型
LS - 127



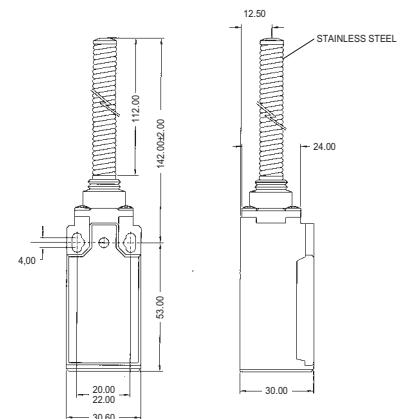
ADJUSTABLE 2 WAY ROLLER PLUNGER
可調式雙向搖臂滾輪型
LS - 131
可選配尼龍滾輪 Nylon Roller LS-131P



SPRING WIRE
彈簧線
LS 161

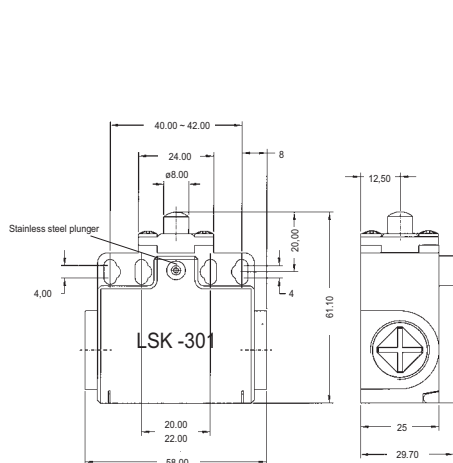


NYLON ROD
尼龍棒
LS 171

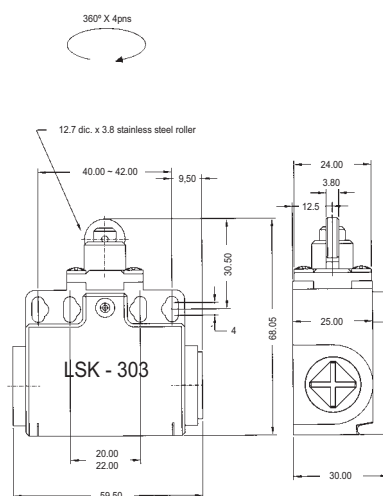


SPRING ROD
彈簧棒
LS - 181

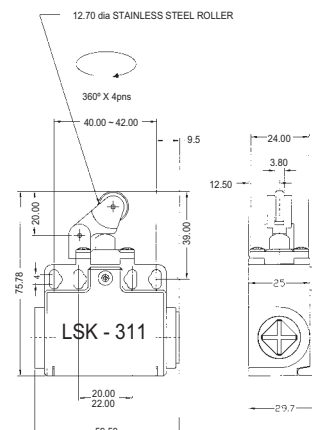
* Dimensions are for reference only



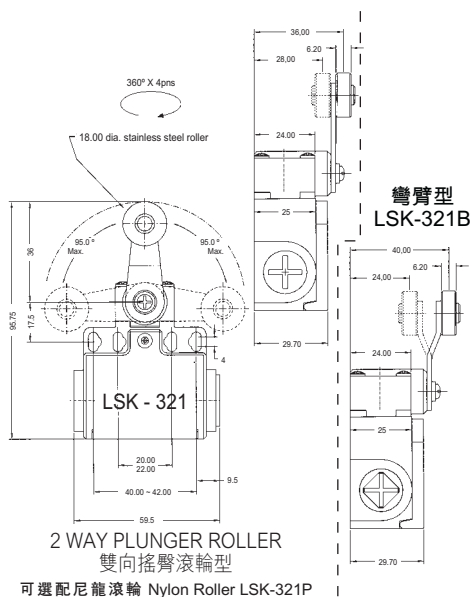
PLUNGER
塞柱型



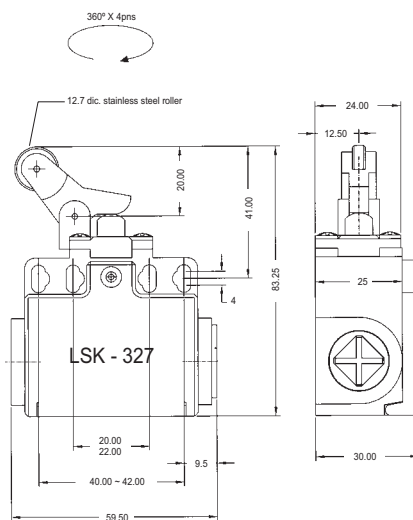
ROLLER PLUNGER
滾輪塞柱型



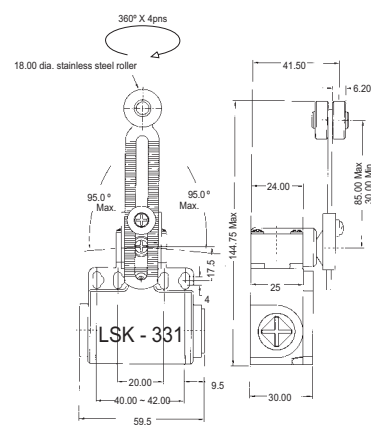
HINGE ROLLER PLUNGER
鏈滾輪塞柱型



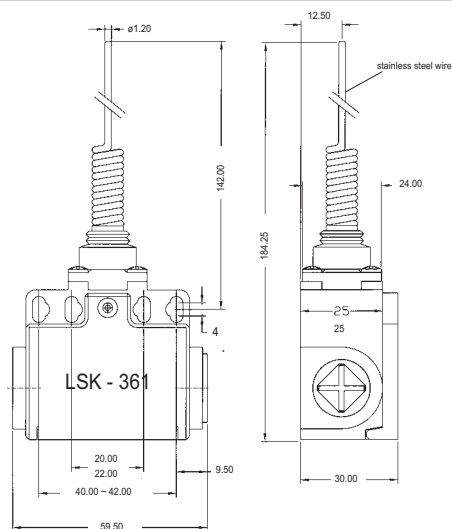
2 WAY PLUNGER ROLLER
雙向搖臂滾輪型
可選配尼龍滾輪 Nylon Roller LSK-321P



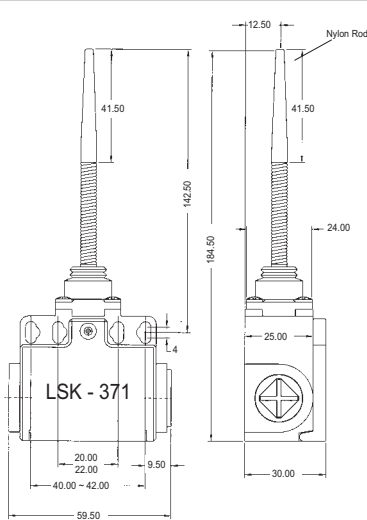
ONE WAY PLUNGER ROLLER
單向鏈塞滾輪型



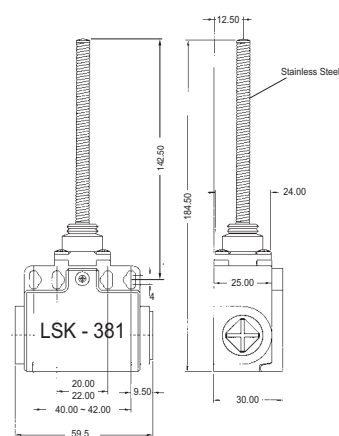
ADJUSTABLE 2 WAY ROLLER PLUNGER
可調式雙向搖臂滾輪型
可選配尼龍滾輪 Nylon Roller LSK-331P



SPRING WIRE
彈簧線



NYLON ROD
尼龍棒

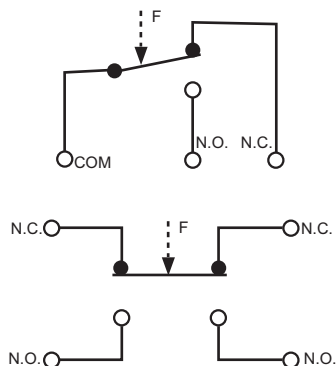


SPRING ROD
彈簧棒

* Dimensions are for reference only

1. 接觸結構

限位開關一般輸出方式如下：



2. 最大(額定)控制電壓

可由控制輸出進行安全控制的最大開路電壓。A C和D C電壓最大值可能不同。

3. 最大(額定)控制電流

可由控制輸出進行安全控制的最大電流。

4. 起始擊穿電壓（高壓或電介強度）

通常與測量絕緣電阻同一地方測得的限位開關所能承受的在特定時間內不產生損壞的最大電壓。通常額定值以一分鐘為限，單位為V A C (Vrms)。

5. 起始絕緣電阻

限位開關的所有相互絕緣的導電部分之間的電阻，即加壓的與未加壓的金屬零件之間，接觸點之間，以及觸點之間的電阻。由於材料的老化、污物積累，該值會隨著時間變小。

6. 期望壽命/機械壽命

「機械」在控制輸出無負載的額定工作條件下，限位開關接點輸出型所能工作的最低次數。

7. 電性壽命

「電動」在額定控制能力受控制情況下，限位開關在額定工作條件下所能工作的最低次數。

8. 衝擊系數

在運輸、安裝過程中，額定範圍內，在不產生損壞、不產生異常工作的情況下，限位開關所能承受的加速度，通常以“G”表示。

9. 抗震動性能

「功能性」在大於指定時間時，限位元開關能夠工作而不產生工作異常，期間所能承受的振動。

1. Contact construction

The construction of the electrical input/output circuit depending on use.

2. Maximum rating operating voltage (Ue)

The maximum rated voltage for switch operation. This must never exceed the maximum ratings insulation voltage (Ui).

3. Maximum rating operating current (Ie)

The maximum rated current for switch operation.

4. Maximum rating insulation voltage (Ui)

The maximum rated current value which guards the switch's insulation functions, forming the parameters for the resistance values and the mounting distance.

5. Maximum rating impulse resistance (Uimp)

The peak impulse current value which enables the switch to resist without insulation breakdown.

6. Life Expectancy / Mechanical Life

It refers to the minimum actuation working life of the limit switch without load (zero current load)

7. Electrical Life

It refers th the maximum actuation working life of the limit switch at the rated maximum voltage and current load.

8. Shock Resistance

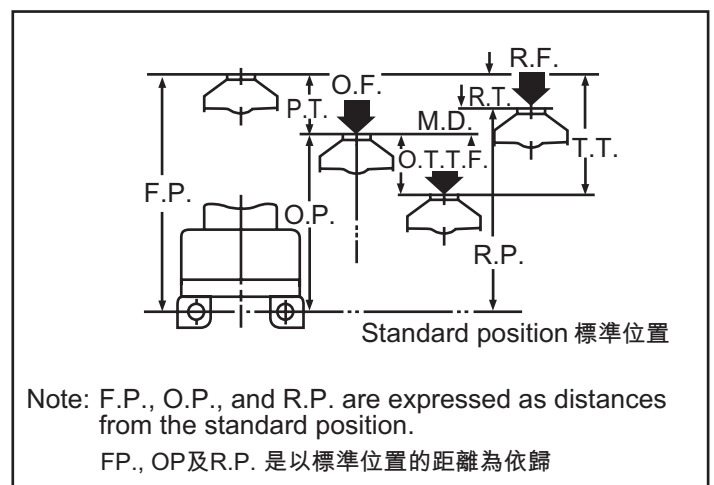
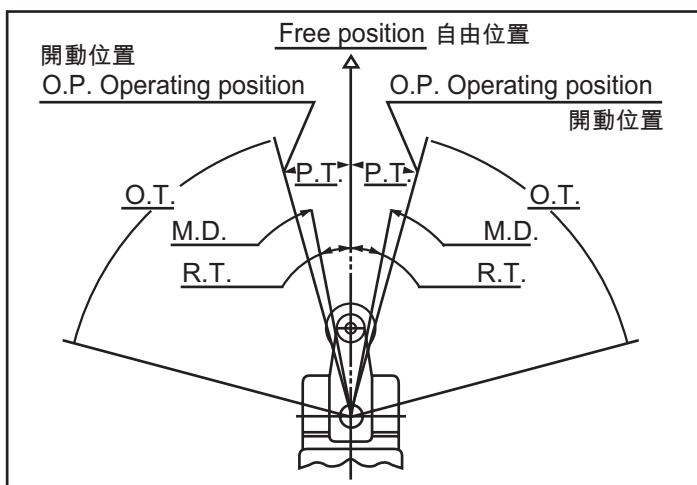
It refers to the maximum acceleration which is expressed in G, that the limit switch being under tested and works normally.

9. Vibration Frequency

It relates to the maximum vibration frequency that the limit switch works normally.

1. 操作力 (O.F.)
使觸點產生迅速閉合動作所需的強度。加給激勵器的力來表示。
2. 回彈力 (R.F.)
觸點迅速由工作狀態回覆時，對激勵器所施加的力。
3. 總力 (F.F.)
使激勵器達到超程狀態所需的力。
4. 前預行程 (P.T.)
激勵器由自由狀態到達工作狀態的距離。
5. 超程 (O.T.)
激勵器在產生激勵以後在未給開關裝置造成破壞的情況下，所允許的行程。
6. 總行程 (T.T.)
激勵器在未對控制裝置造成任何損害情況下，允許以自由位置通過的距離。
7. 差動 (M.D.)
激勵器由工作狀態到恢復狀態的距離。
8. 動狀態 (O.P.)
運動觸點迅速到達固定觸點時激勵器所處的狀態。
9. 自由狀態 (F.P.)
激勵器未受力時的狀態。
10. 超程狀態 (O.T.P.)
激勵器走完總行程後所處的停止狀態。
11. 回覆狀態 (R.P.)
運動的觸點由工作狀態迅速回到初始狀態時激勵器所處的狀態。

1. Operating Force (O.F.)
The force required to cause contact snap-action. It is expressed in terms of force applied to the actuator.
2. Release Force (R.F.)
The force to be applied to the actuator, at the moment contact snaps back from the operated position to unoperated position.
3. Total Force (T.F.)
The force required to make the actuator travel to overtravel position.
4. Pretravel (P.T.)
Distance of the actuator movement from free position to operating position.
5. Overtravel (O.T.)
The distance which the actuator is permitted to travel after actuation without any damage to the switching mechanism.
6. Total Travel (T.T.)
The distance which the actuator is permitted to travel from free position without any damage to the switching mechanism.
7. Movement Differential (M.D.)
The distance from operating to release position of the actuator.
8. Operating Position (O.P.)
The position of the actuator when the traveling contact snaps to the fixed contact.
9. Free Position (F.P.)
Position of the actuator when no force is applied to it.
10. Over travel position is the point when the switch travel all allowable distance (O.T.P.)
11. Release Position (R.P.)
The position of the actuator when the traveling contact snaps back from the operating position to its original position.



德國施德利

1. 採用輸出保護電路，可以抑制反電勢，及保護限位開關觸點。

The ON/OFF circuit for the guidance load may suffer contact damage due to surges or inrushes when the power is turned either ON or OFF. Consequently, insertion of a protective circuit as per the following diagram is recommended, in order to protect the contacts.

2. 如果負載與圖所示電源的兩側都相接，那麼，當較緊密的觸點短路時，電源會有短路的危險。

Do not connect either irregular poles or power sources to a switch contact.

Power connection examples (irregular pole connection)

3. 負載和接觸點的連接

將負載接至圖中所示電源的側面。這樣可以防止觸點之間產生高壓。

Example of unsuitable power connection (abnormal power connection)

4. 不要將交流和直流電源接到限位開關的觸點上。

Avoid circuits where power may find a way between the contact points (as this may cause welding.)

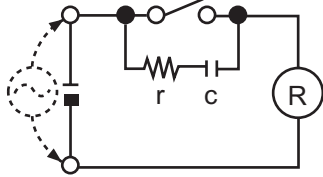
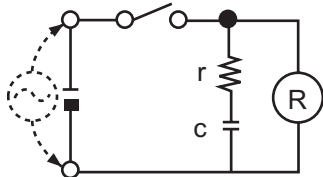
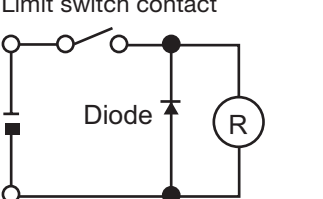
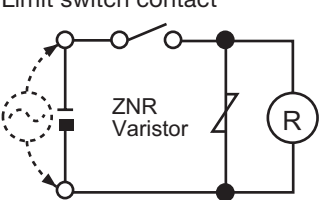
5. 避免使用 N.O (常開) 和 N.C (常閉) 的觸點之間產生短路。

6. 在電路中的應用

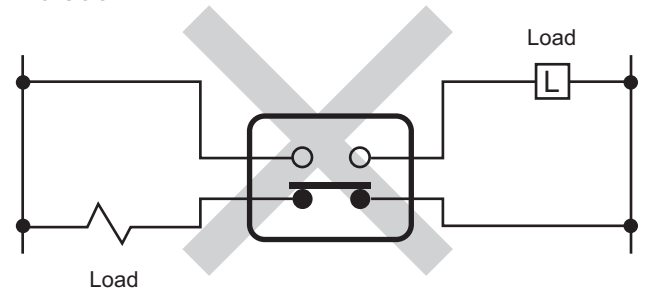
如果該限位開關用於帶有電子元件的電路，那麼限位開關的噪聲和振動可能會造成不正常運行。在設計這個帶有電子元件的電路時，增加這個 C R 電路或其他保護電路，以避免不正常運行。

Using electronic switch circuits (low power, low current)
Bouncing and chattering are generated due to collision between the contacts when the limit switch is switching between them, and this sometimes causes such problems as white noises and error pulses in both the electronic circuit and the reverberation equipment.

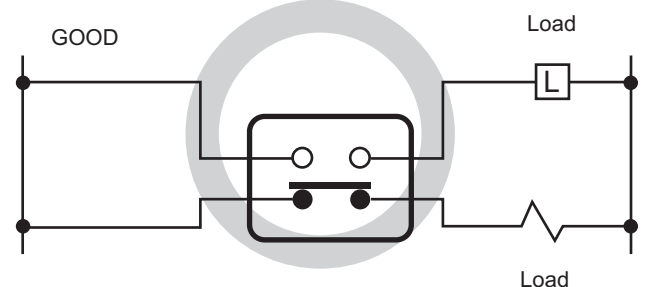
If the generation of bouncing and chattering becomes a problem, it is necessary to consider installing a CR circuit or other absorption circuit given the circuit design. This is particularly necessary when high contact reliability is needed, and is unsuitable for silver contact switches. Switches with silver contacts possess excellent performance.

Circuit	Cautions for use
Limit switch contact 	(1) r must be a minimum of 10ohm (2) When using AC power: · Impossible when R impedance is large. · Possible when c, r impedance is sufficiently small compared with R impedance. 用於交流電時，要保證負載 R 的阻抗充分小於 c.r. 之阻抗。
Limit switch contact 	Can be used with both AC and DC as appropriate. $r \simeq R$ C: 0.1.F 此適用於 A C 或 D C
Limit switch contact 	(1) Dedicated DC use. (2) AC is impossible 只適用於低壓 D C 負載
Limit switch contact 	Can be used with both AC and DC as appropriate. 適用於低壓 AC 及 D C 負載

NO GOOD

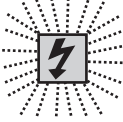


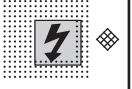
GOOD

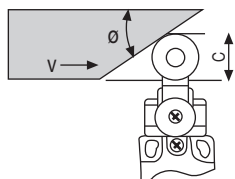


Load connected to same pole

IP 6 5

4		不論從那方向來的水沫都不會有有害的影響 Protected against water splashed from all directions. Limited ingress permitted. Splashing from all directions.
5		不論從那個方向來的直接噴水也不受影響 Protected against jets of water. Limited ingress permitted. Hosing jets from all directions.
6		不論從那個方向來的在一定壓力下直接噴水，內部也不進水的 Protected against strong jets of water. Limited ingress permitted. Strong hosing jets from all directions.
7		在設定的水壓條件下放入水中，內部不進水，而歷時30分鐘(物件在水深15公分－1米) Protected against the effects of immersion between 15cm and 1m. Temporary immersion for 30minutes.
8		可以在指定壓力的水中長時間的使用開關 Protected against long periods of immersion under pressure. Continuous immersion.

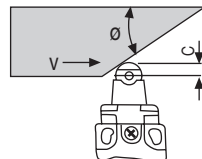
4		ø1.0mm外物不能穿透 The access probe of 1,0mm diameter shall not penetrate. Protection against access with a wire.
5		只有微量塵埃滲入，但不影響設備操作 Limited ingress of dust permitted (no harmful deposit). Protection against access with a wire.
6		能完全阻隔塵粒進入 Total protection against ingress of dust. Protection against access with a wire.



Roller lever 雙向搖臂滾輪型

Driver cam operating parameters 參數

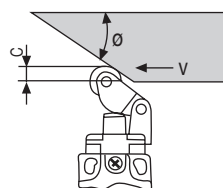
θ	V max (m/s)	C (% of total travel)%超程
30°	1,5	80
45°	1	
60°	0,75	
60°-90°	0,25	



Plunger, side travel 滾輪塞柱型

Driver cam operating parameters 參數

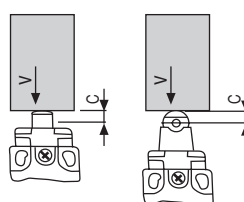
θ	V max (m/s)	C (% of total travel)%超程
30°	1,5	60.80
45°	1	50.70



Roller lever, side travel 鏈滾輪塞柱型

Driver cam operating parameters 參數

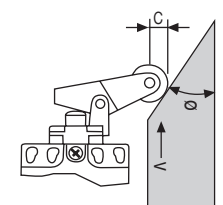
θ	V max (m/s)	C (% of total travel)%超程
30°	1	80
20°	1	



Roller plunger, vertical travel 滾輪塞柱型

Driver cam operating parameters 參數

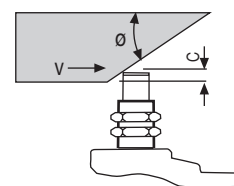
V max (m/s)	C (% of total travel)%超程
1	80



Roller lever, Vertical travel 半向鏈塞滾輪型

Driver cam operating parameters 參數

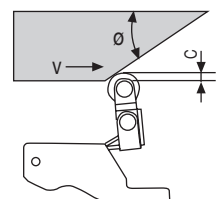
θ	V max (m/s)	C (% of total travel)%超程
30°	1	80
20°	1	



Plunger, side travel 塞柱型(面板式)

Driver cam operating parameters 參數

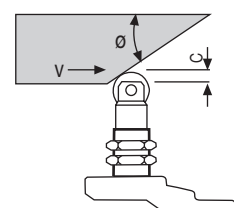
θ	V max (m/s)	C (% of total travel)%超程
30°	0,5	60.80
45°	1	50.70



Roller lever, side action 單向滾輪桿型

Driver cam operating parameters 參數

θ	V max (m/s)	C (% of total travel)%超程
30°	1	80
45°	0,75	
60°	0,5	
60°-90°	0,5	



Roller plunger, side travel 滾輪塞柱型 Actuators; M...05-06

Driver cam operating parameters 參數

θ	V max (m/s)	C (% of total travel)%超程
30°	0,5	60.80
20°	1	50.70