



NS22 SERIES

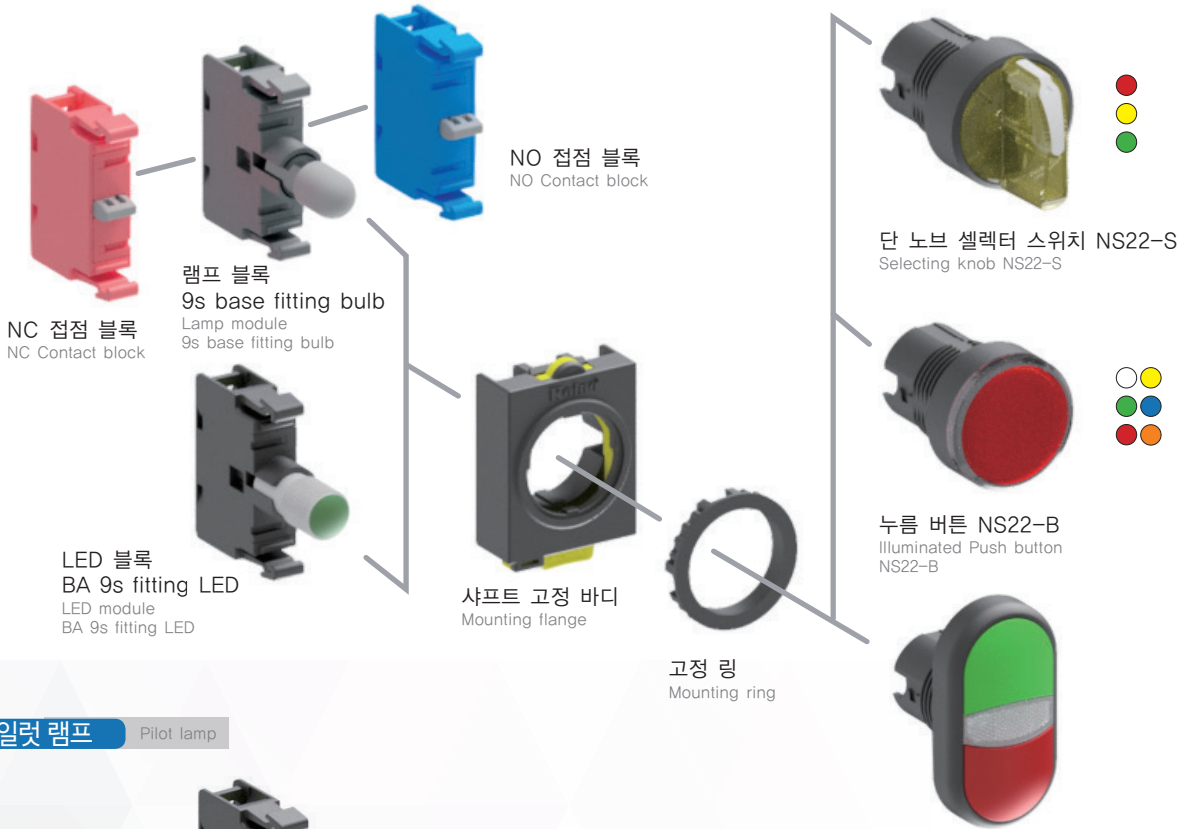
CONTROL COMPONENT



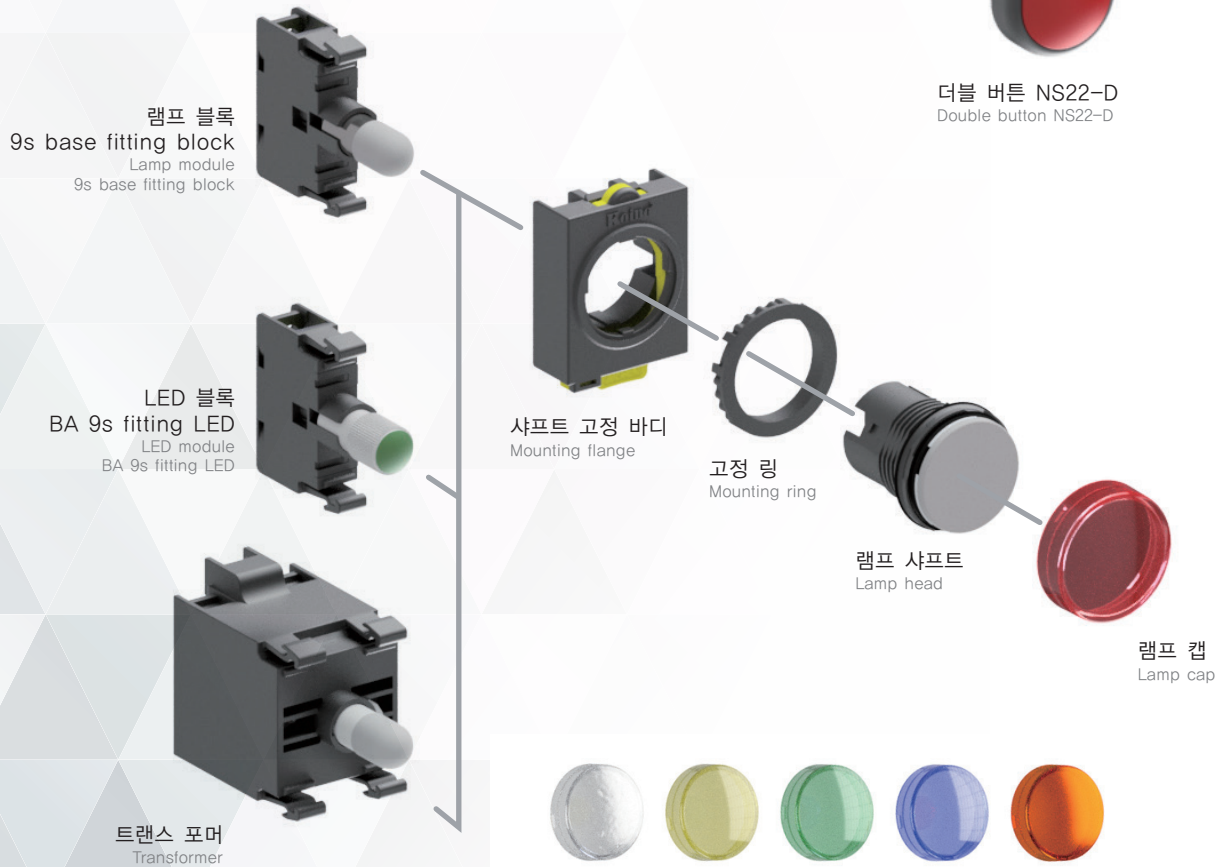
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20

조광 스위치 Illuminated push button switch

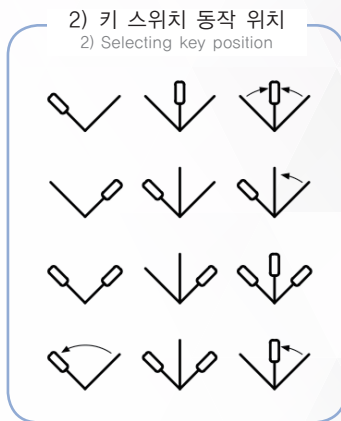
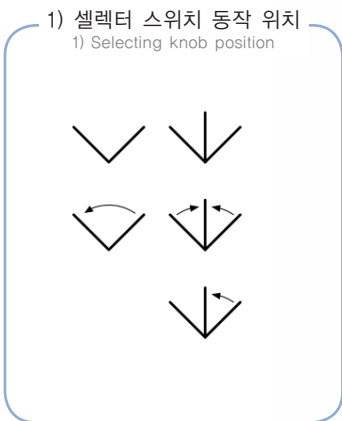
Kun-Hung Electric Co., Ltd.



파일럿 램프 Pilot lamp



비 조광 스위치 Non-illuminated Switches



키 빠짐 위치



더블 버튼 스위치 NS22-D
Double Push button switch NS22-D



버섯 누름 버튼 스위치 NS22-PEM
Mushroom push button switch NS22-PEM



장 노브 셀렉터 스위치 NS22-SL
Long knob selector NS22-SL

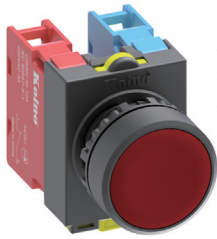


단 노브 셀렉터 스위치 NS22-S
Short knob selector NS22-S



키 셀렉터 스위치 NS22-K
Key selector NS22-K

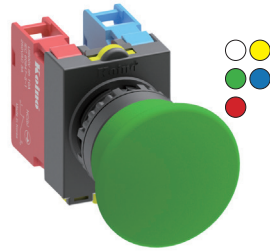
비 조광 스위치 Non-LED Switches



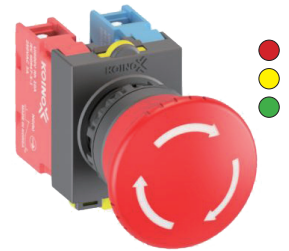
누름 버튼 스위치 Push button
(Momentary)
NS22-PM



누름 버튼 스위치 Push button
(Alternate)
NS22-PA



버섯형 누름 버튼 스위치
Mushroom push button switch
NS22-PEM



버섯형 비상 스위치
Mushroom emergency switch
NS22-PER



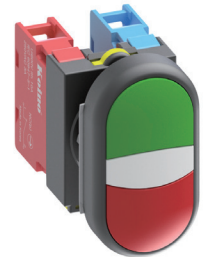
단 노브 셀렉터 스위치
Short knob selector
NS22-S



장 노브 셀렉터 스위치
Long knob selector
NS22-SL



키 셀렉터 스위치
Key selector
NS22-K

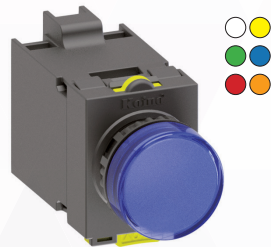


더블 버튼 스위치
Double push button
NS22-DM

조광 스위치 Illuminated switches



조광 전용 램프 (전 전압형)
Pilot lamp
NS22-L
BA 9s base Bulb



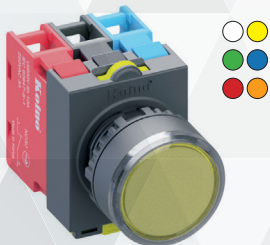
조광 전용 램프(트랜스포머형)
Pilot lamp
NS22-L
BA 9s base Bulb



버섯형 조광 비상스위치
Mushroom Illuminated emergency
NS22-BER
BA 9s base Bulb



조광 더블 버튼 스위치
Illuminated double button
NS22-DM
BA 9s base Bulb



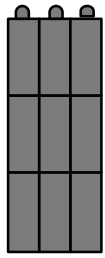
조광 누름 버튼 스위치
Illuminated push button
(Momentary)
NS22-BM
BA 9s base Bulb



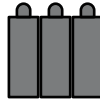
조광 누름 버튼 스위치
Illuminated push button
(Alternate)
NS22-BA
BA 9s base Bulb



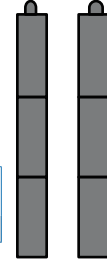
조광 단 노브 셀렉터 스위치
Illuminated selector (Short knob)
NS22-S
BA 9s base Bulb



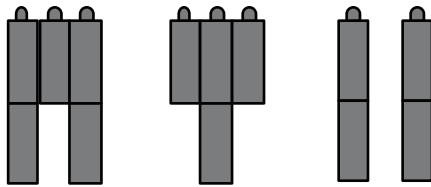
누름 버튼 스위치 Push button
(Momentary)
NS22-PM



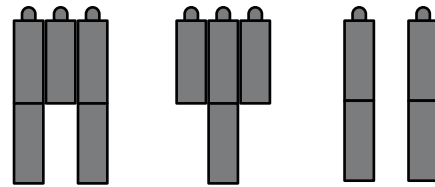
누름 버튼 스위치 Push button
(Alternate)
NS22-PA



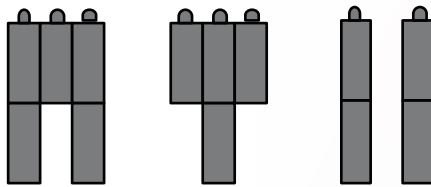
더블 버튼 스위치
Double push button
NS22-DM



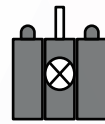
단 노브 셀렉터 스위치
Short knob selector
NS22-S



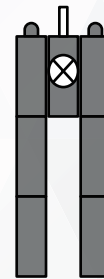
장 노브 셀렉터 스위치
Long knob selector
NS22-SL



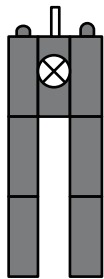
키 셀렉터 스위치
Key selector
NS22-K



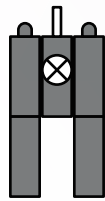
조광 단 노브 셀렉터 스위치
Illuminated short knob selector
NS22-S



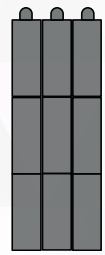
조광 누름 버튼 스위치
Illuminated push button
(Momentary)
NS22-BM



조광 더블 버튼 스위치
Illuminated double button
NS22-DM



조광 단 노브 셀렉터 스위치
Illuminated selector (Short knob)
NS22-S



버섯형 누름 버튼스위치
Mushroom push button switch
NS22-PEM

접점블록 명칭
Legend



접점블록
(A/B 선택)
Contact block
(A, B)

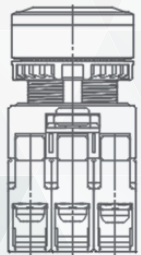


조광 블록
Lamp module

*접점 블록은 2단이상 연결하며 사용 할 경우 제품 조작 하중 증가 및 개폐 횟수의 저하가 발생 할수 있으므로 사용시 주의 바랍니다.

NS22-□□-□□□□□□□□

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1열-2열-3열

ex) LED 적색 조광 푸쉬버튼
120VAC 트랜스 부착형
1열 NO접점블록 1개
2열 조광 램프 블록
3열 NC접점블록 2개
→ NS22-BM-L12AR 1A02B

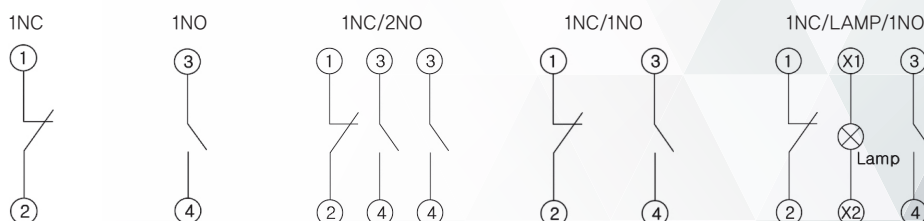
- 키 셀렉터는 조광형이 없습니다.
- 버섯형 누름 버튼은 조광형이 없습니다.
- 더블 버튼은 걸림 타입이 없습니다.
- 더블 버튼 도금 가드 타입은 별도 문의 바랍니다.
- 더블 버튼 조광 타입은 기본 적색, 기타 색상은 별도 주문 시 가능 합니다.
- 접점블록 A, B는 IEC규격에 따른 접점 표기X(NO), Y(NC)를 대신한 것임.

제품 분류	NS22	Ø22mm 용 제어용 스위치 Ø22mm control switch	
제품형태 Type	L	조광 램프 Pilot lamp	
	P	비 조광 누름 버튼 스위치 Non-illuminated Push button	
	B	조광 누름 버튼 스위치 Illuminated push button	
	S	셀렉터 스위치(단 노브) Short knob selector	
	SL	셀렉터 스위치(장 노브) Long knob selector	
	K	키 셀렉터 스위치 Key selector	
	D	더블 버튼 스위치 Double button	
조작방식 Actuator	M	누름 버튼 자동 복귀 형 스위치 Momentary	
	A	누름 걸림 누름 복귀 형 스위치 Alternate (Push-Push)	
	EM	버섯형 누름버튼 자동 복귀형 스위치	
	ER	버섯형 누름걸림 돌림 복귀형 스위치	
	2	2단 수동 셀렉터 스위치 2steps manual return	
	3	3단 수동 셀렉터 스위치 3steps manual return	
	A2	2단 자동 셀렉터 스위치 2steps auto(spring) return	
	A3	3단 자동 셀렉터 스위치 3steps auto(spring) return	
	3R	3단 좌 걸림, 우 자동 3steps, left-manual / right-auto return	
램프 형태 Lamp	무표시 None	필라멘트 Filament	
	L	LED	
입력전압 Input voltage	1AL	110 VAC	전 전압 형 (LED 램프만 가능) LED type only
	2AL	220 VAC	
	1A	110V AC 50/60Hz	
	12A	120V AC 50/60Hz	트랜스 부착 형 Transformer
	2A	220V AC 50/60Hz	
	3A	230V AC 50/60Hz	
	24A	240V AC 50/60Hz	
	4A	380V AC 60Hz	
	5A	440V AC 60Hz	
	1C	6V AC/DC	전 전압 형 (LED 램프는 DC만 가능) DC volt.: LED only
	2C	12V AC/DC	
	3C	24V AC/DC	
	1D	48V DC	트랜스 부착 형 (LED 램프만 가능) LED type only
	2D	110V DC	
	12D	120V DC	
	3D	125V DC	
4D	220V DC		
24D	240V DC		
캡 색상	R	적색 Red	
	G	녹색 Green	
	Y	황색 Yellow	
	B	청색 Blue	
	W	백색(조광 타입만 해당) White (Lamp only)	
	O	오렌지색 Orange (Amber)	
	BK	검정색(비 조광 타입만 해당) Black (Not available with lamp type)	
	C	투명(램프 타입만 해당)	
1열	블록 개수	NO 일 경우 A / NC 일 경우 B / 없을 경우 0 기입	
2열	블록 개수	NO 일 경우 A / NC 일 경우 B / 없을 경우 0 기입	
3열	블록 개수	NO 일 경우 A / NC 일 경우 B / 없을 경우 0 기입	

형 명 Type	조광 램프 Pilot lamp	누름 버튼 Push button	셀렉터 Selector	키 셀렉터 Key selector	더블 버튼 Double button	버섯형 누름 버튼 Mushroom push button
구 분	NS22-L	NS22-PM NS22-PA NS22-BM NS22-BA	NS22-S2 NS22-S3 NS22-SA2 NS22-SA3 NS22-S3R NS22-SL2 NS22-SL3 NS22-SLA2 NS22-SLA3 NS22-SL3R	NS22-K2 NS22-K3 NS22-KA2 NS22-KA3 NS22-K3R	NS22-DM	NS22-PEM NS22-PER NS22-BER
접점 정격 Contact rating	AC15:125V 6A, 250V 3A / DC13 : 250V 0.27A					
절연 저항 Insulation resistance	100MΩ (DC500V 절연 저항계) 100MΩ (DC500V)					
내 전압 Withstand voltage	2,500Vac(50Hz/60Hz에서 1분간) 2,500Vac(50Hz/60Hz for 1 minute)					
접촉 저항 Contact resistance	30mΩ 이하(초기 치) 30mΩ Max.					
전기적 수명 Electrical durability	50만회 이상 (개폐빈도 30회/분 최대)(250VAC 2A, 유도부하, cos θ=0.4) 500,000 operations Minimum(30ops./ 1 minute Max.)					
기계적 수명 Mechanical durability	<ul style="list-style-type: none"> 버섯 누름 버튼 / 누름 자동 복귀 형 : 500만회 이상 Push button(Momentary):5 million operations 누름 걸림, 누름 복귀 형 : 100만회 이상 Push button(Alternate):1 million operations 셀렉터 스위치 : 100만회 이상(조광형은 50만회이상) Selector:1 million(Illuminating type: 0.5 million) operations 키 셀렉터 스위치 : 50만회이상 Key selector:0.5 million operations 더블 버튼 스위치 : 100만회 이상 Double button:1 million operations <p style="text-align: right;">*1a1b 장착 기준 *1NO+1NC</p>					
내 진동 Vibration resistance	10~55Hz 복진폭 1.5mm X, Y, Z 각 방향 1시간 10~55Hz 3 axis 1.5mm X, Y, Z each direction for 1 h					
내 충격 Shock resistance	내구성 : 50G 이상, 오동작 : 10G 이상 (내구성과 오 동작 구분 적용) Destruction at 50G minimum, Malfunction at 10G minimum					
보호 구조 Protection degrees	IP66(더블버튼:IP40-부츠 씬 장착시: IP66) IP66(Double button:IP40, IP66-with boots seal)					
사용주위 온도 Operating ambient temperature	-25℃~+70℃ (결빙되지 않은 상태에서 조건) -25℃~+70℃ (not frozen condition) -25℃~+55℃ (전구 사용시, 결빙되지 않은 상태에서 조건) -25℃~+55℃ (lamp, not frozen condition)					
보관주위 온도 Ambient temperature	-40℃~+70℃ (결빙되지 않은 상태에서 조건) -40℃~+70℃ (not frozen condition)					
사용주위 습도 Operating ambient humidity	45~85% RH					
정격 절연 전압 Rated insulation voltage	600V					
정격 임펄스 내전압 Rated impulse withstand voltage	6KV					
봉입 열 전류(Ith) Thermal current(Ith)	10A					

*최소적용부하 : 5Vdc 5mA(저항부하)

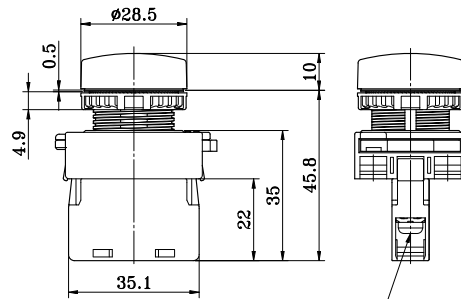
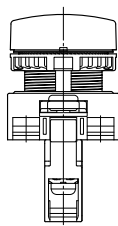
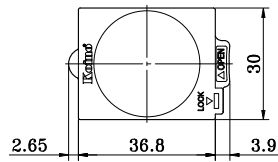
터미널 연결 다이어그램 Terminal wiring diagram



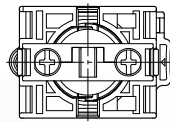
조광 램프 (전 전압형)

Pilot lamp (Full voltage)

NS22-L



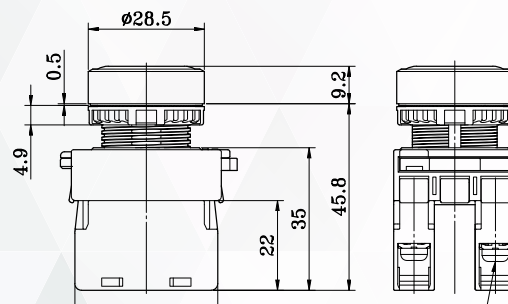
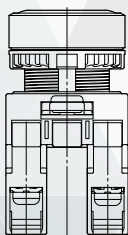
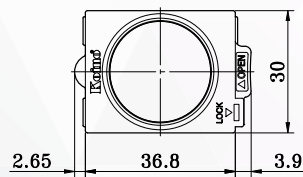
M3.5x7 Terminal Screw



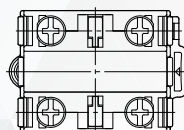
누름 버튼 스위치

Push button (Momentary, Alternate)

NS22-PM ,NS22-PA

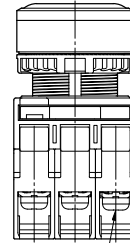
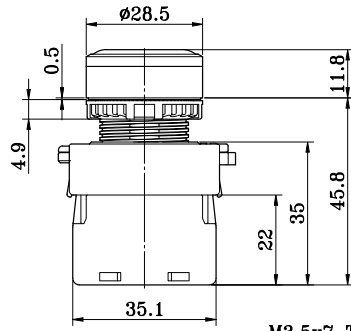
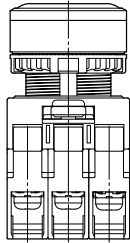
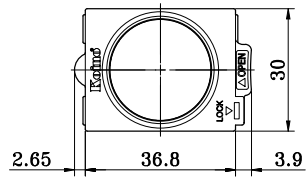


M3.5x7 Terminal Screw

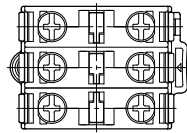


조광 누름 버튼 스위치 Illuminated push button (Momentary, Alternate)

NS22-BM, NS22-BA

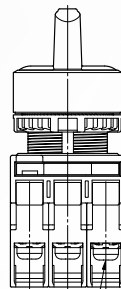
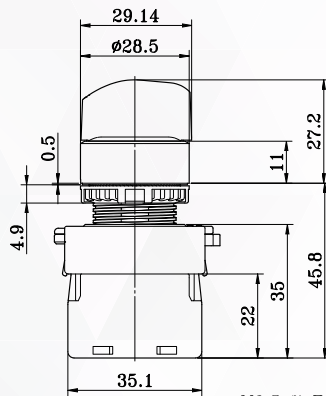
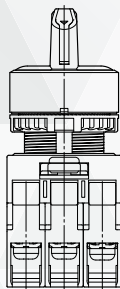
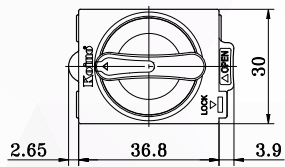


M3.5x7 Terminal Screw

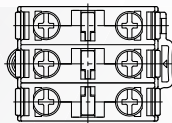


단 노브 조광 셀렉터 스위치 Short knob illuminated selector

NS22-S



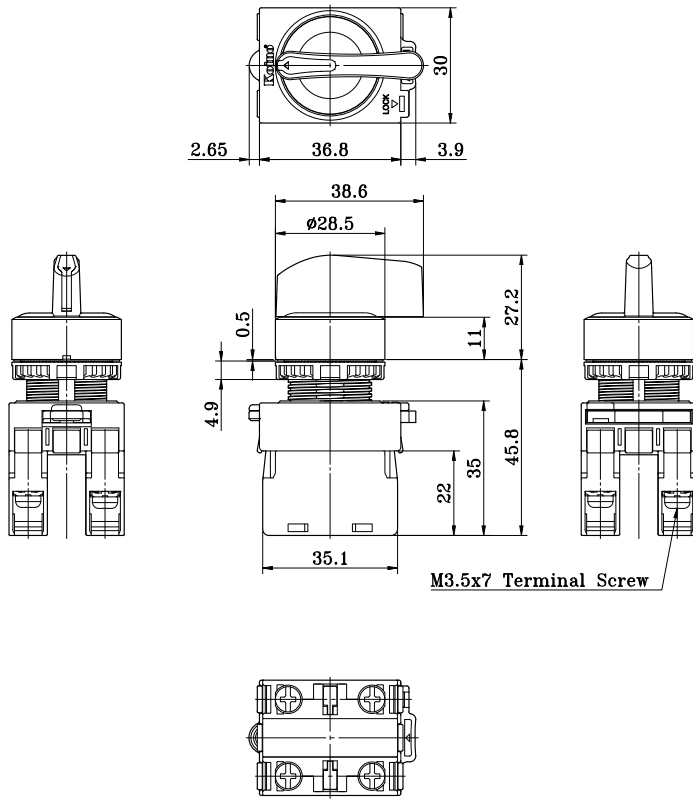
M3.5x7 Terminal Screw



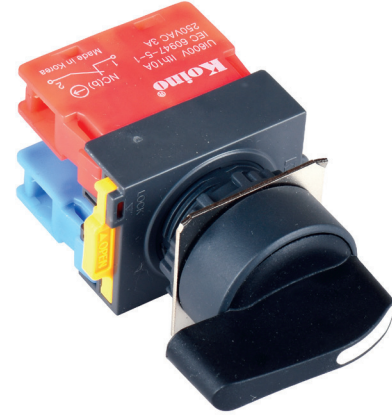
장 노브 셀렉터 스위치

Long knob selector

NS22-SL



M3.5x7 Terminal Screw

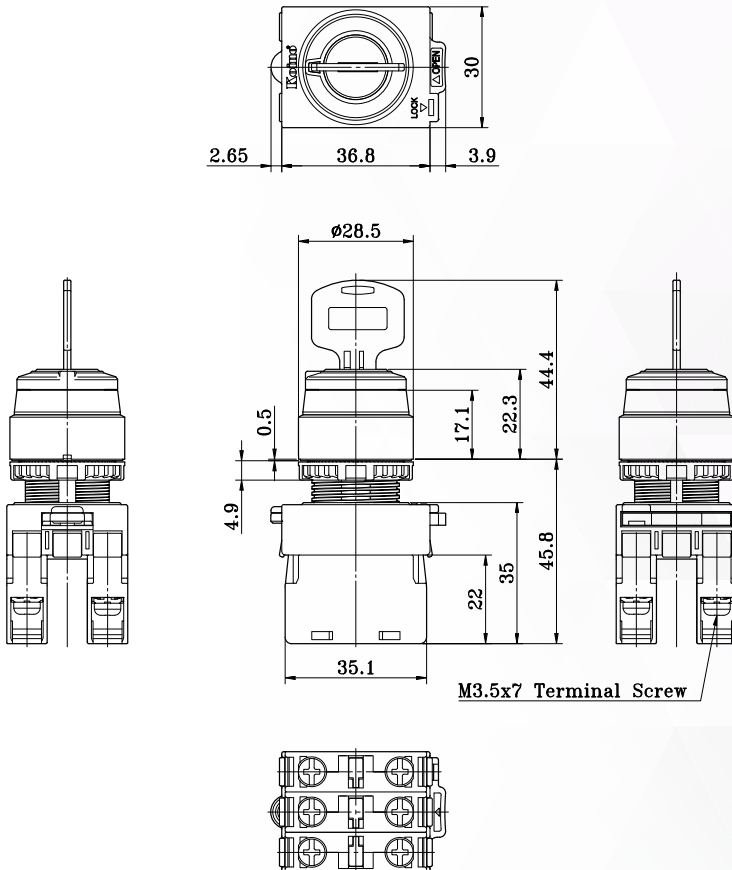


NS22 SERIES

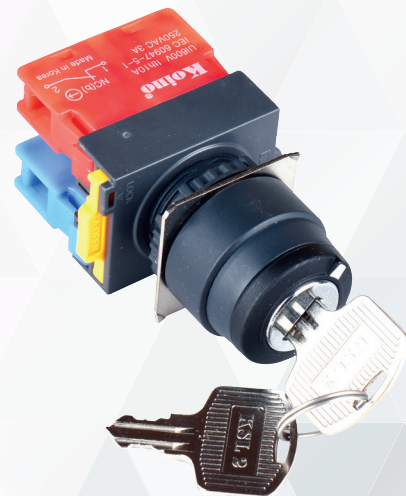
키 셀렉터 스위치

Key selector

NS22-K



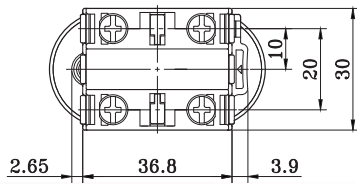
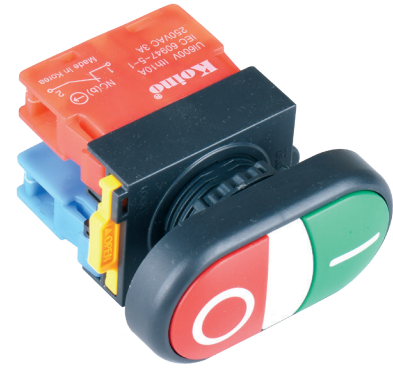
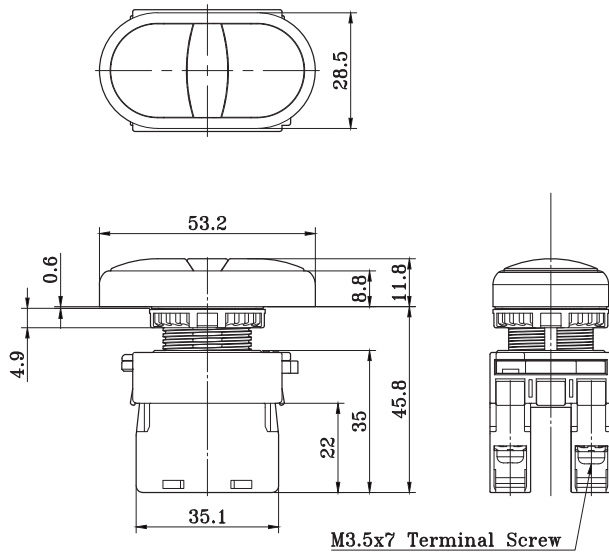
M3.5x7 Terminal Screw



11

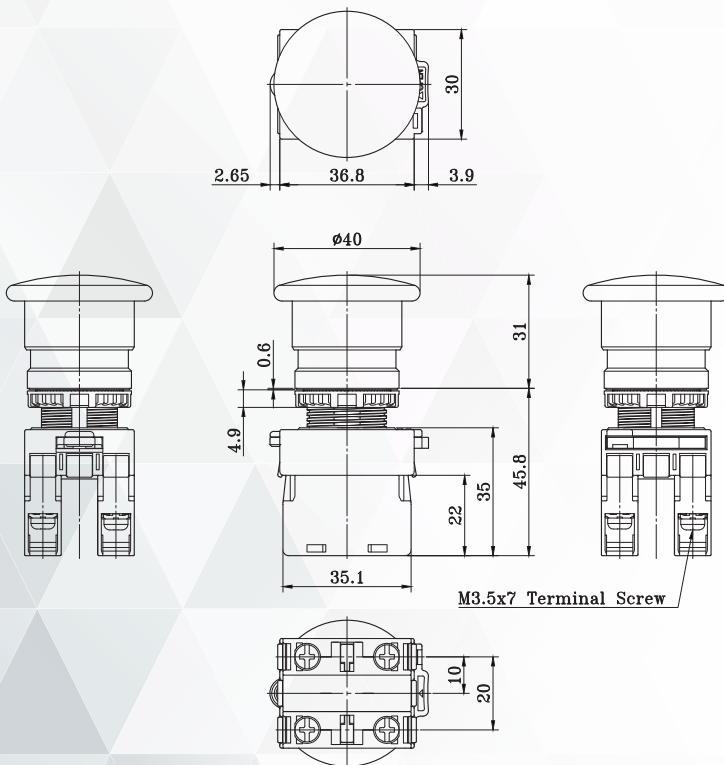
더블 버튼 스위치 Double push button

NS22-DM

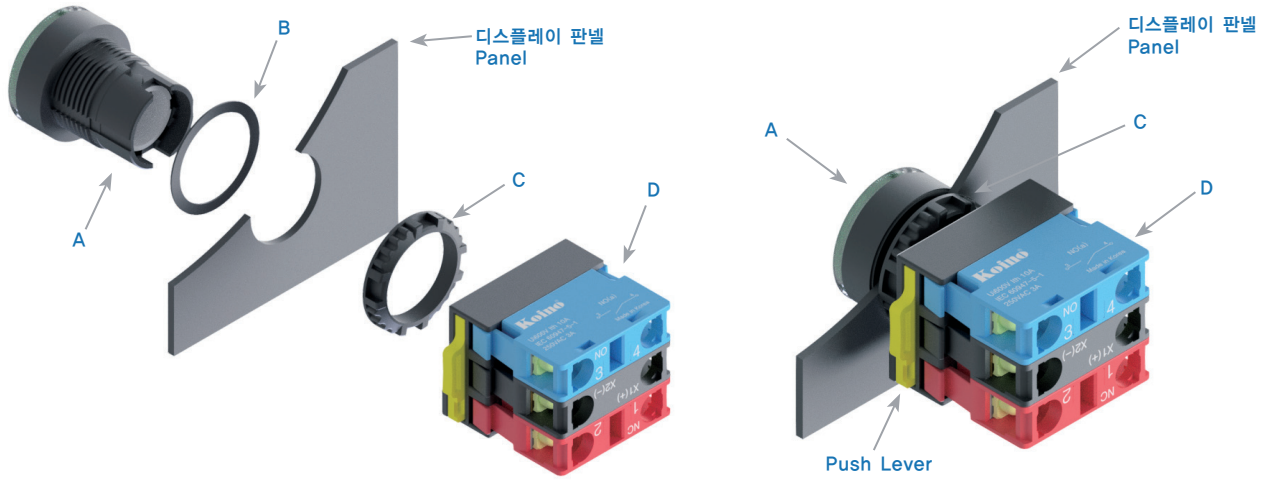


버섯형 누름 버튼 스위치 Mushroom push button

NS22-PEM, PER, BER



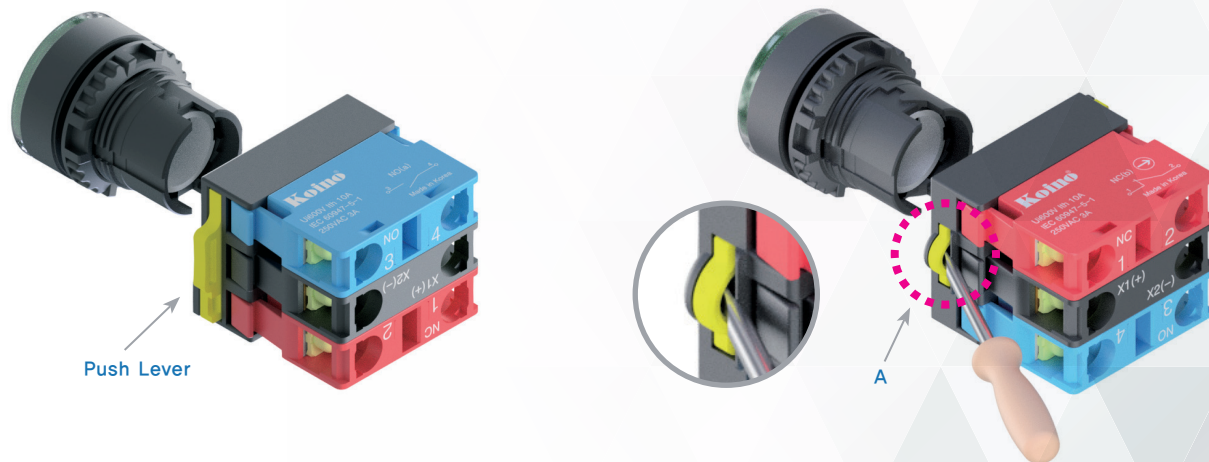
일반형 Normal



- ① A와 B를 디스플레이 패널 앞쪽에서 함께 밀어 넣는다.
- ② C를 디스플레이 패널 뒤쪽에서 A의 나사에 체결한다.
- ③ D를 A의 홈에 맞게 방향을 맞추어 홈을 끼우고 '탁' 소리가 날때 까지 집어 넣어 고정한다.
- ④ 분리시에는 D를 잡은 상태에서 Push Lever를 누른 후 당겨 분리한다.

- ① Push A+B into the panel
- ② Fasten with C
- ③ Place D into the groove of A
- ④ Push until it clicks
- ⑤ Separate D pushing "Push lever"

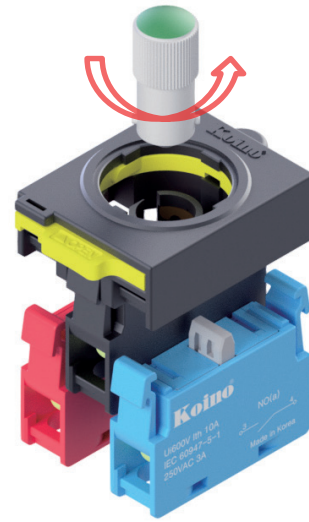
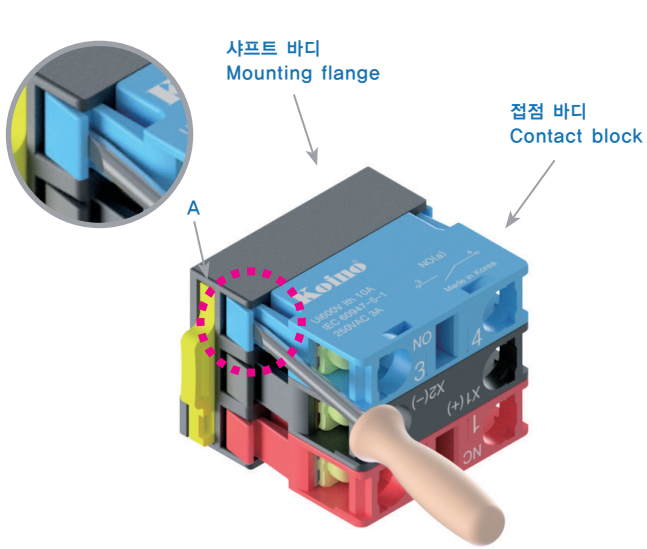
조작부 분리 Actuator



1. Push Lever 누른 후 당겨 분리한다.
1. Using push lever

2. 드라이버를 A 부의 홈에 끼워 젓힌 후 분리한다.
2. Pull "A"

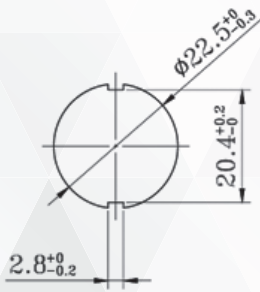
접점 바디 분리 Contact block



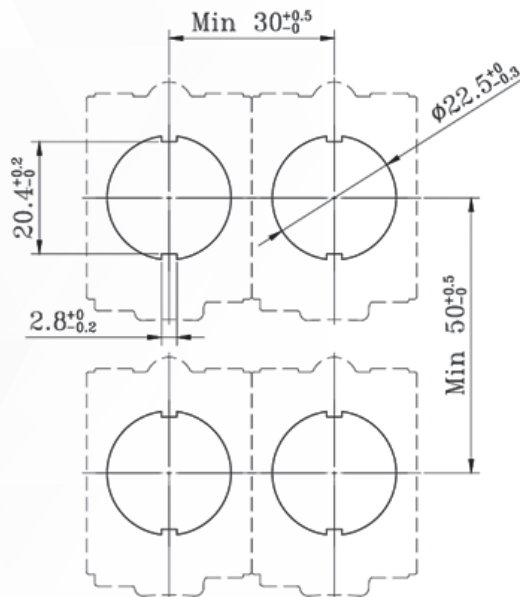
드라이버를 그림에 표시된 A부의 홈에 끼워 넣은 후 드라이버를 살짝 젖혀 접점바디와 샤프트 바디를 분리한다.
 (드라이버는 일자 드라이버, 1mm 이하 두께 팁 사용 권장)
 (주의: 드라이버를 과도하게 젖힐 경우 파손의 원인이 됩니다.)
 Using slotted screw driver (<1mm)

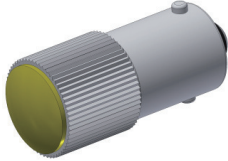
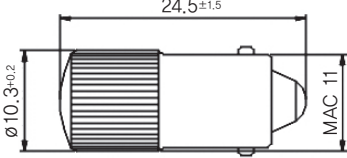


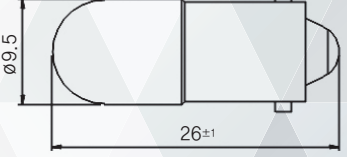
램프를 살짝 누르면서 반 시계 방향으로 돌려 분리한다.
 Push and turn the lamp to counterclockwise direction

판넬 취부 홀 가공 사이즈
 Panel cut-out



판넬 취부 간격
 Panel mounting guide

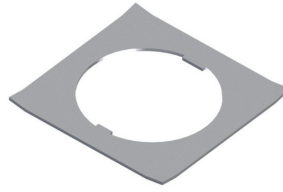


외관 Shape	종류 Type		외형 치수도 Dimension
LED 램프 LED bulb 	6V DC	적색 (Red) – AC 가능 Red-AC voltage available	 24.5±1.5 Ø10.3±0.2 MAC-11 BA 9S BASE
		녹색 Green	
		황색 Yellow	
		청색 Blue	
		백색 White	
		오렌지색 Orange	
	12V DC	적색 Red	
		녹색 Green	
		황색 Yellow	
		청색 Blue	
		백색 White	
		오렌지색 Orange	
	24V DC	적색 Red	
		녹색 Green	
		황색 Yellow	
		청색 Blue	
		백색 White	
		오렌지색 Orange	
	110V AC/DC	적색 Red	 24.5±1.5 Ø10.3±0.6 BA 9S BASE
		녹색 Green	
황색 Yellow			
청색 Blue			
백색 White			
오렌지색 Orange			
220V AC/DC	적색 Red		
	녹색 Green		
	황색 Yellow		
	청색 Blue		
	백색 White		
	오렌지색 Orange		
필라멘트 램프 Filament bulb 	6.3V 1W	 Ø9.5 26±1 BA 9S BASE	
	12V 1W		
	24V 1W		

취부용 조임 공구
Fastening tool



회전 방지 링
Anti-rotation ring



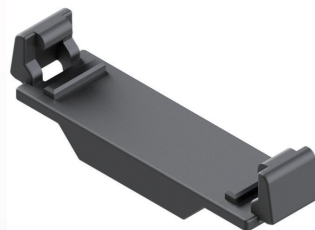
고정링
Fasten ring



명판
Name plate



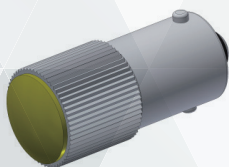
보조블록
Support block



NS22-D 부츠 씬
NS22-D boots Seal



LED
LED
(BA9S Base)



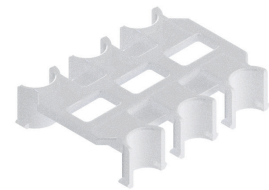
필라멘트 전구
Filament bulb
(BA9S Base)



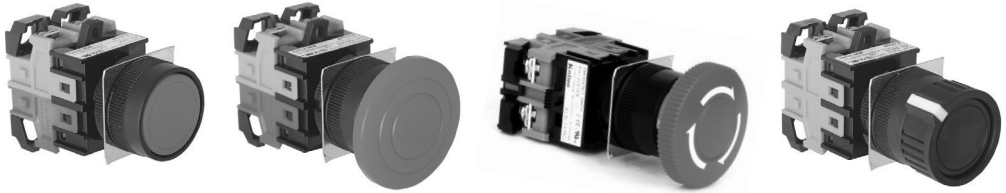
접점 커버
Contact cover



접점 블록 클립
Contact block clip



PUSHBUTTON SWITCH KH-2201 Series

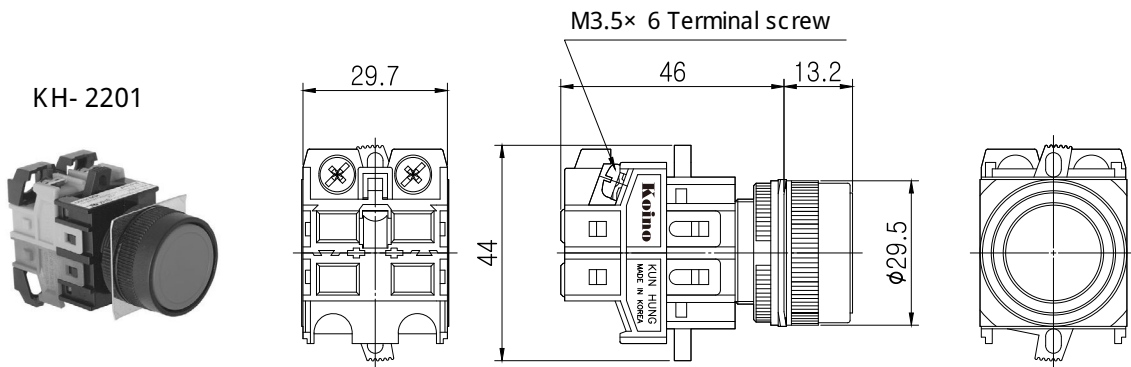


CLASSIFICATION

KH- 2201 AT - 1 1 R
 ① ② ③ ④

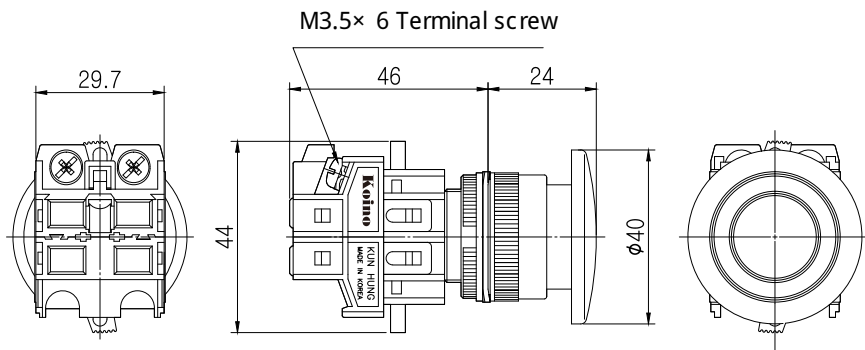
① ACTUATOR	NONE	MOMENTARY
	AT	MAINTAINED
	EB	MUSHROOM SHAPE
	ER	EMERGENCY STOP
	S	SELECTABLE PUSHBUTTON
② CONTACT	NUMBER OF NO CONTACT	
③ CONTACT	NUMBER OF NC CONTACT	
④ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	MW	MILKY WHITE
	W	WHITE
	BK	BLACK

Dimensions



Dimensions

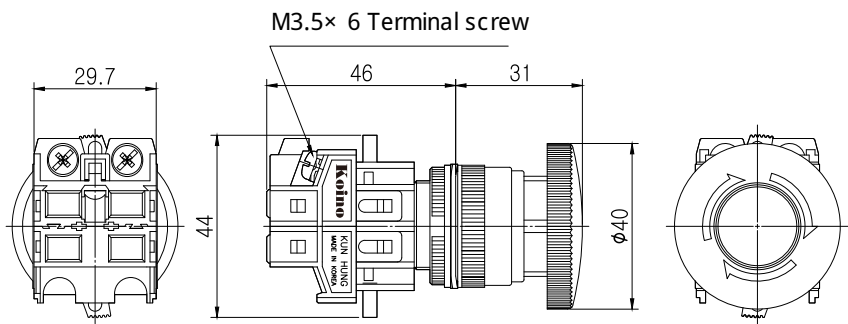
KH- 2201EB



CONTROL COMPONENTS

MICRO SWITCH

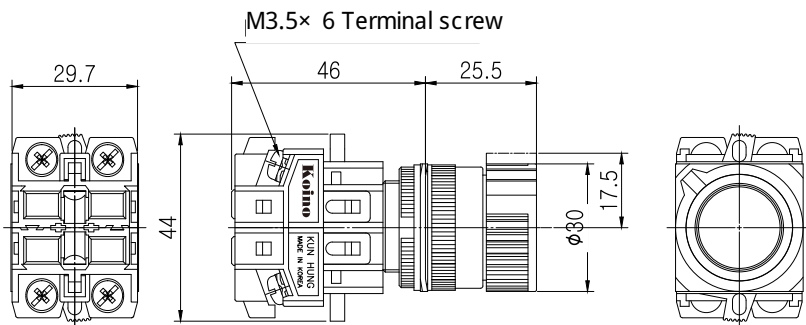
KH- 2201ER



FOOT SWITCH

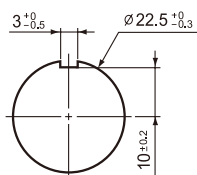
LIMIT SWITCH

KH- 2201S



POWER SWITCH

HOIST SWITCH



Panel Cut

CAM SWITCH

Specification

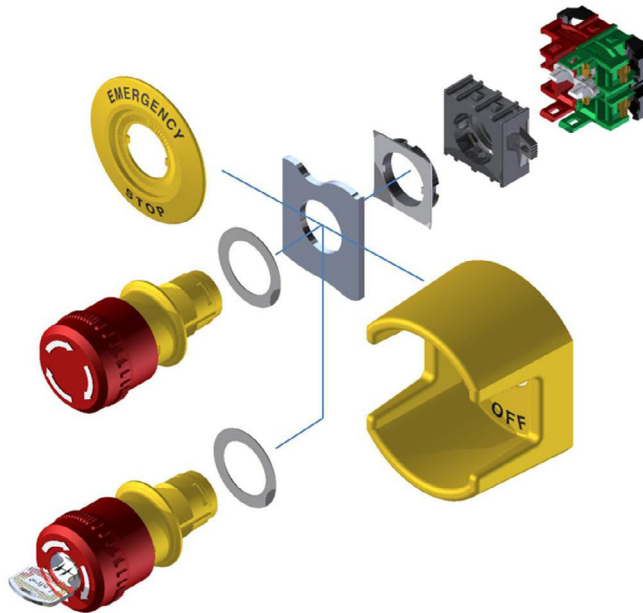
Switching System	The switching element of KH- 2201 is equipped with normally open contact and normally closed contact. 1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled					
Material	Contact	Silver alloy + Copper	Housing	BODY: Nylon glass CONTACT HOUSING: Nylon glass	Buttons	Acetal
Mechanical Lifetime	Momentary and maintained : 1,000,000 Cycles of operation EB, ER and S type: 100,000 Cycles of operation					
Standards	This product comply with “ Standards for low- voltage switching devices” EN IEC 60947- 5- 1					
Contact Ratings	125VAC 10A, 250VAC 6A (resistive load)					
Insulation Resistance	Minimum 100MΩ (500VDC)					
Contact Resistance	Maximum 30mΩ					
Electrical Lifetime	100,000 cycles of operation					
Dielectric Strength	Between Live Parts: 1,500VAC(50/60Hz) for 1 minute Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute					
Operational Temperature	- 15° C □+50° C					
Operational Humidity	45 □85%RH					
Protection Degree	IP56 ER and S type: IP50					
Shock Resistance	Approximately 50G					
Vibration Resistance	10 □55Hz double amplitude 1.5mm (at X, Y and Z axis)					
Approbations	UL, CCC, KC					
Declaration of Conformity	CE					

KEPB22ER

Mounting cut- out : $\varnothing 22.5\text{mm}$
 Front dimension : $\varnothing 36\text{mm}$
 Marking: Arrows
 Weight: 70g
 IP- Rating : IP65
 Switching action : Maintained
 Function : Emergency STOP Switch
 Twist to unlock clockwise



Assembly



CONTROL
COMPONENTS

MICRO
SWITCH

FOOT
SWITCH

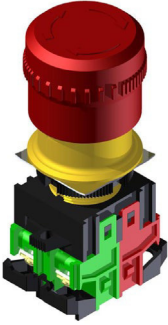
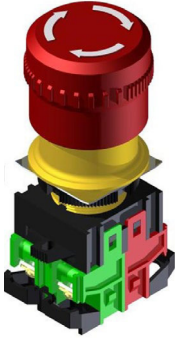
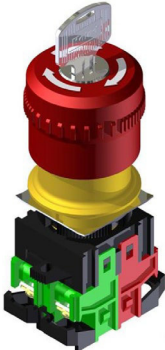
LIMIT
SWITCH

POWER
SWITCH

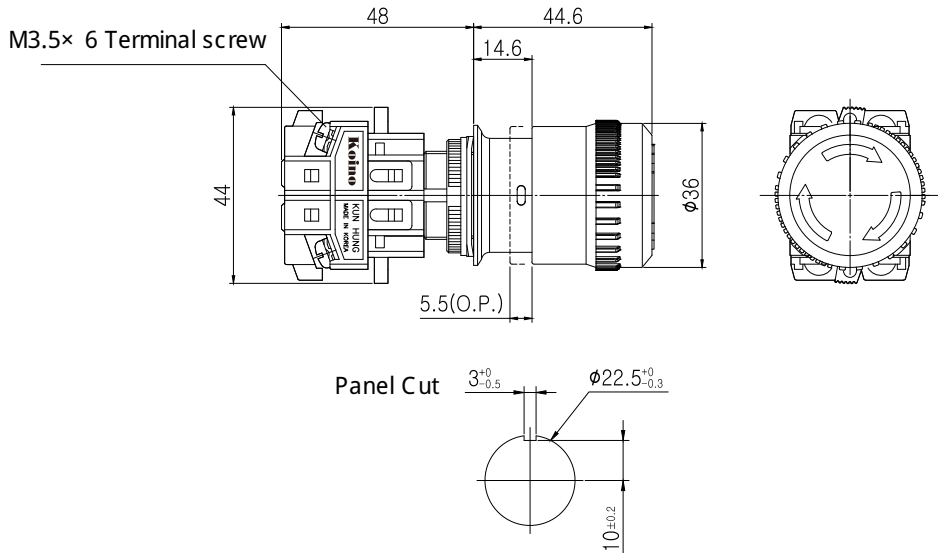
HOIST
SWITCH

CAM
SWITCH

Selection Guide

MODEL NUMBER	APPEARANCE	FEATURE
KEPB22ER- 11		
KEPB22ERS- 11		White arrows
KEPB22ERK- 11		Rebound by key

Dimensions



Specification

Switching System	The switching element of KEPB22ER, KEPB22ERS and KEPB22ERK is equipped with normally open contact or normally closed contact. The normally closed contact has direct opening or forced opening structure.			
Material	Contact	Silver alloy + Copper	Housing	Nylon
Mechanical Lifetime	300,000 Cycles of operation			
Terminals	Screw Terminals Maximum wire cross section : 2.5 mm ² Tightening torque : 25–30 Ncm			
Standards	This product comply with " Standards for low- voltage switching devices" EN IEC 60947- 5- 1			
Contact Ratings	125VAC 10A, 250VAC 6A (resistive load)			
Insulation Resistance	Minimum 100MΩ (500VDC)			
Contact Resistance	Maximum 30mΩ			
Electrical Lifetime	100,000 cycles of operation			
Operational Temperature	- 15°C □ + 50°C			
Protection Degree	IP65			
Shock Resistance	Approximately 100G(1,000m/s ²)			
Vibration Resistance	10 □ 55Hz double amplitude 1.5mm (at X, Y and Z axis)			
Approbations	UL			
Declaration of Conformity	CE			

Accessories

LP22-1



LP22-2



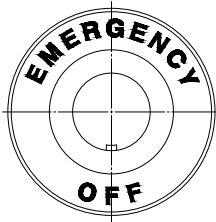
SC-22



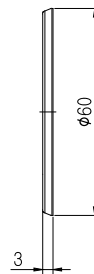
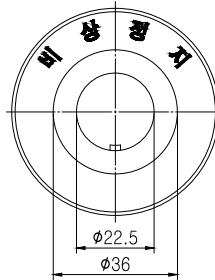
LP22-1



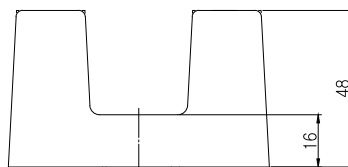
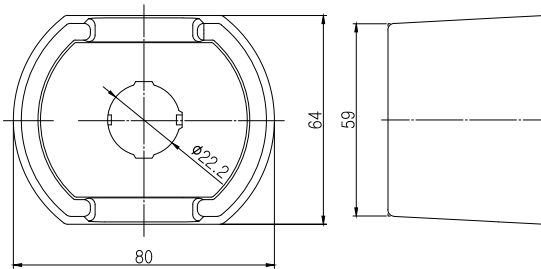
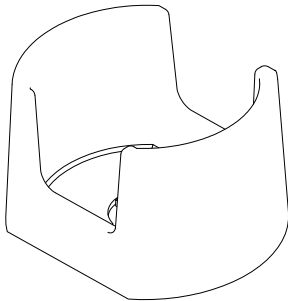
LP22-2



LP22-3



SC-22



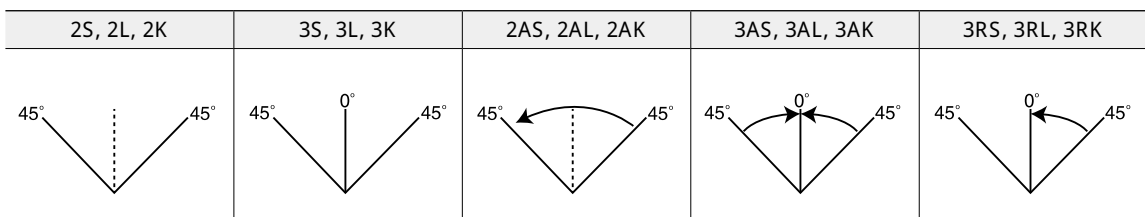
SELECTOR SWITCH KH-2202 Series



CLASSIFICATION

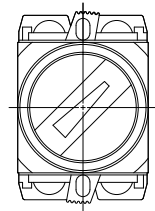
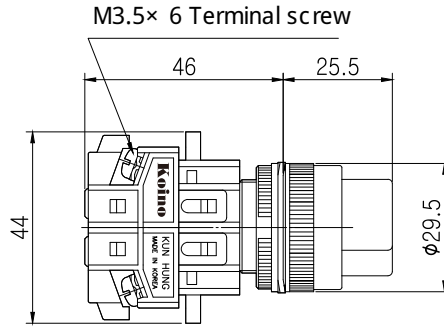
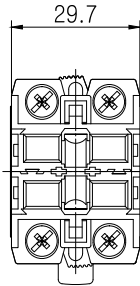
KH-2202- 2S - 1 1
① ② ③

① ACTUATOR	2S	2 STEP MAINTAINED / SHORT LEVER
	3S	3 STEP MAINTAINED / SHORT LEVER
	2L	2 STEP MAINTAINED / LONG LEVER
	3L	3 STEP MAINTAINED / LONG LEVER
	2AS	2 STEP SPRING RETURN / SHORT LEVER
	3AS	3 STEP SPRING RETURN / SHORT LEVER
	3RS	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/SHORT LEVER
	2AL	2 STEP SPRING RETURN / LONG LEVER
	3AL	3 STEP SPRING RETURN / LONG LEVER
	3RL	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/LONG LEVER
	2K	2 STEP MAINTAINED / KEY SWITCH
	3K	3 STEP MAINTAINED / KEY SWITCH
	2AK	2 STEP SPRING RETURN / KEY SWITCH
	3AK	3 STEP SPRING RETURN / KEY SWITCH
3RK	3 STEP/LEFT: MAINTAINED, RIGHT: SPRING RETURN/KEY SWITCH	
② CONTACT	NUMBER OF NO CONTACT	
③ CONTACT	NUMBER OF NC CONTACT	

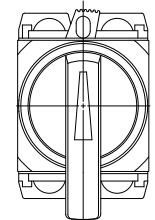
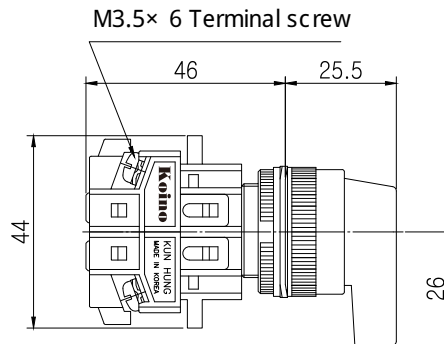
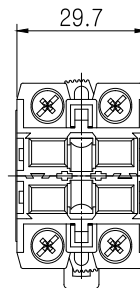


Dimensions

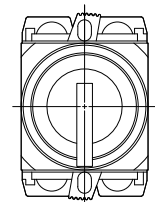
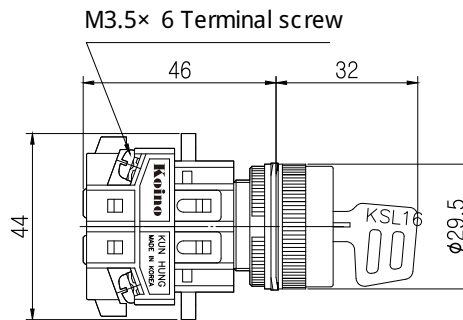
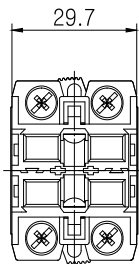
KH- 2202- 2S,2AS
KH- 2202- 3S,3AS,3RS



KH- 2202- 2L,2AL
KH- 2202- 3L,3AL,3RL



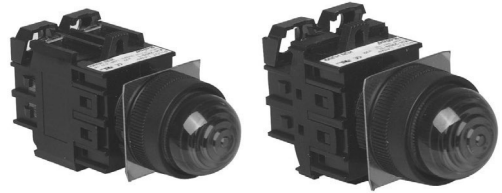
KH- 2202- 2K,2AK
KH- 2202- 3K,3AK,3RK



Specification

Switching System	The switching element of KH- 2201 is equipped with normally open contact and normally closed contact. 1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled					
Material	Contact	Silver alloy + Copper	Housing	BODY: Nylon glass CONTACT HOUSING: Nylon glass	Knobs	Acetal
Mechanical Lifetime	100,000 Cycles of operation					
Standards	This product comply with “ Standards for low- voltage switching devices” EN IEC 60947- 5- 1					
Contact Ratings	125VAC 10A, 250VAC 6A (resistive load)					
Insulation Resistance	Minimum 100MΩ (500VDC)					
Contact Resistance	Maximum 30mΩ					
Electrical Lifetime	100,000 cycles of operation					
Dielectric Strength	Between Live Parts: 1,500VAC(50/60Hz) for 1 minute Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute					
Operational Temperature	- 15° C □+ 50° C					
Operational Humidity	45 □85%RH					
Protection Degree	IP50					
Shock Resistance	Approximately 50G					
Vibration Resistance	10 □5Hz double amplitude 1.5mm (at X, Y and Z axis)					
Approbations	UL, CCC, KC					
Declaration of Conformity	CE					

PILOT LAMP KH-2203 Series



CLASSIFICATION

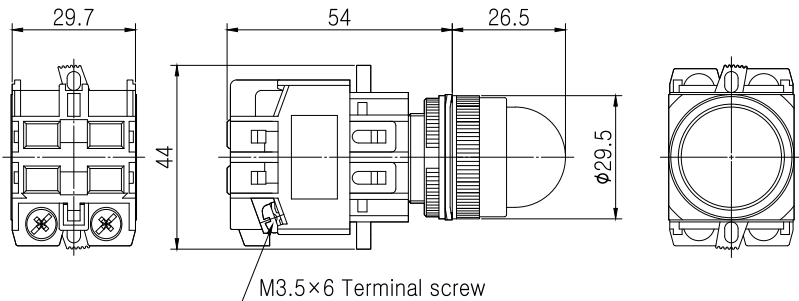
KH- 2203 - 1 R (R)
① ② ③

① LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
② INPUT VOLTAGE	1	110VAC 50/60 Hz
	2	220VAC 50/60 Hz
	3	230VAC 50/60 Hz
	TL	6, 12, 24 AC/DC
③ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	O	ORANGE
	W	WHITE
	B	BLUE

Dimensions

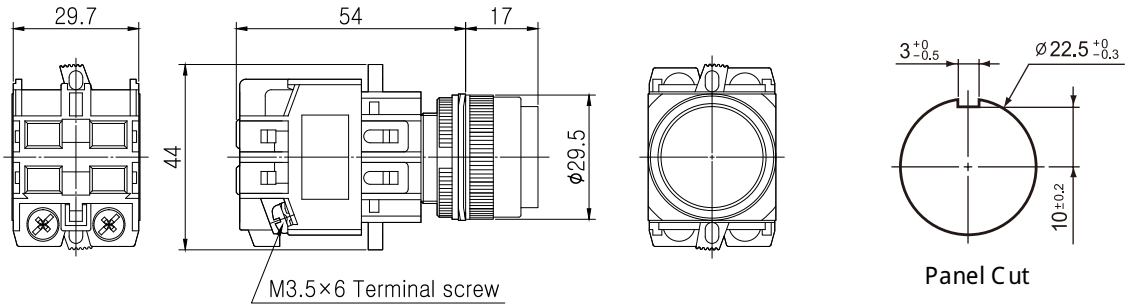
- KH- 2203- 1
- KH- 2203- 2
- KH- 2203- 3
- KH- 2203L- 1
- KH- 2203L- 2
- KH- 2203L- 3

KH- 2203(R Cap)- Model

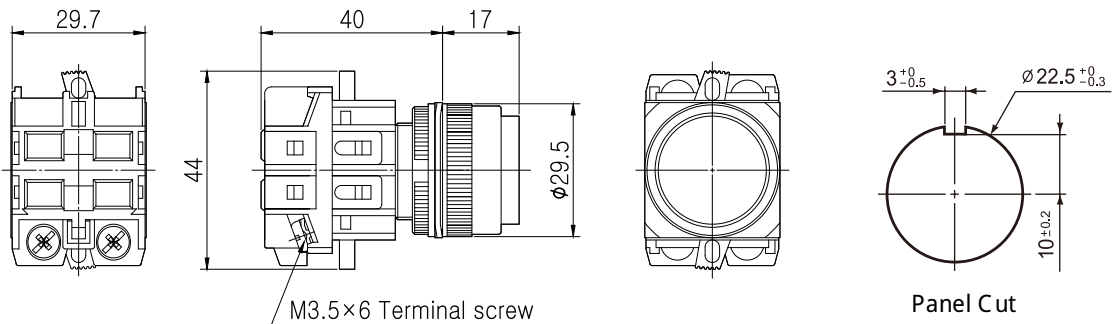
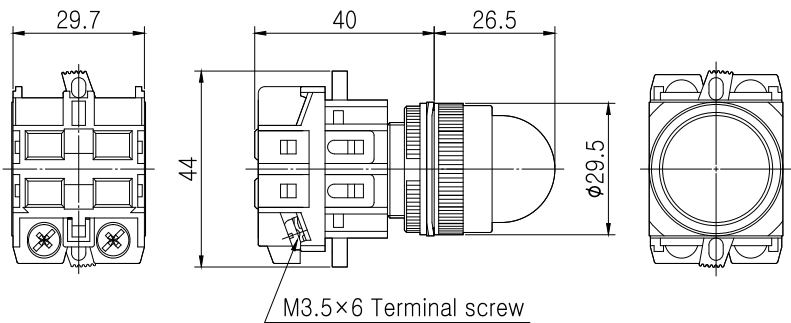


Dimensions

KH- 2203(F Cap)- Model



KH- 2203- TL
KH- 2203L- TL



CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

Specification

Material	Contact	Silver alloy + Copper	Housing	BODY: Nylon glass	Ring	Nylon glass	Cap	AS
Standards	This product comply with " Standards for low- voltage switching devices" EN IEC 60947- 5- 1							
Insulation Resistance	Minimum 100MΩ (500VDC)							
Contact Resistance	Maximum 30mΩ							
Dielectric Strength	Between Live Parts: 1,500VAC(50/60Hz) for 1 minute Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute							
Operational Temperature	- 15° C □+50° C							
Operational Humidity	45 □85%RH							
Protection Degree	IP56							
Shock Resistance	Approximately 50G							
Vibration Resistance	10 □5Hz double amplitude 1.5mm (at X, Y and Z axis)							
Approbations	UL, CCC, KC							
Declaration of Conformity	CE							

ILLUMINATED PUSHBUTTON SWITCH KH-2204 Series



CLASSIFICATION

KH- 2204 P - $\frac{1}{1}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ R

① LAMP	NONE	FILAMENT LAMP
	L	LED LAMP
② ACTUATOR	NONE	MOMENTARY
	AT	MAINTAINED
	P	MOMENTARY/PROTECTIVE RING
	AP	MAUINTAINED/PROTECTIVE RING
	EB	MOMENTARY/MUSHROOM HEAD
	ER	MAINTAINED/TURN- TO- RESET/MUSHROOM HEAD
③ INPUT VOLTAGE	1	110VAC 50/60Hz
	2	220VAC 50/60Hz
	3	230VAC 50/60Hz
	TL	6, 12, 24 AC/DC
④ CONTACT	NUMBER OF NO CONTACT	
⑤ CONTACT	NUMBER OF NC CONTACT	
⑥ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	MW	MILKY WHITE
	W	WHITE
	BK	BLACK

CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

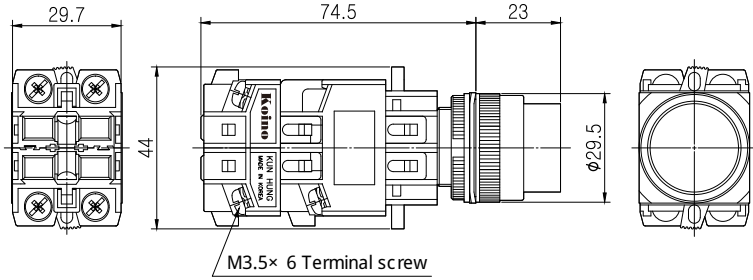
POWER SWITCH

HOIST SWITCH

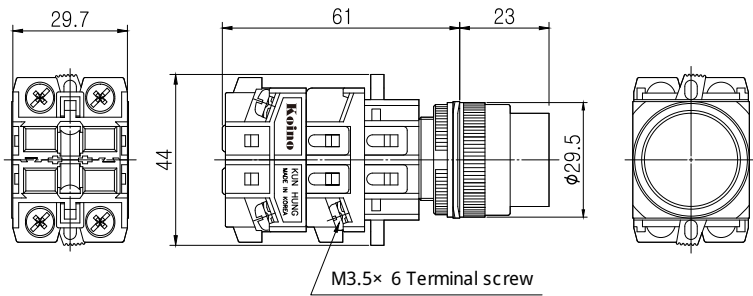
CAM SWITCH

Dimensions

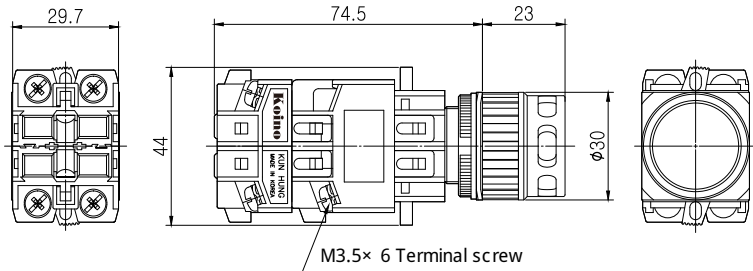
KH- 2204



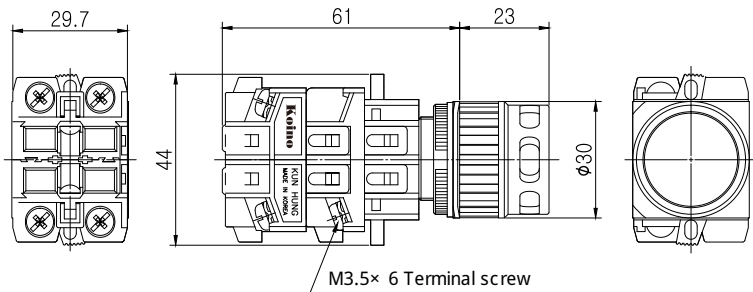
KH- 2204- TL



KH- 2204P

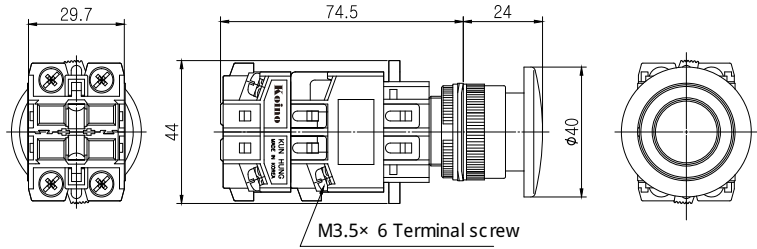


KH- 2204P- TL

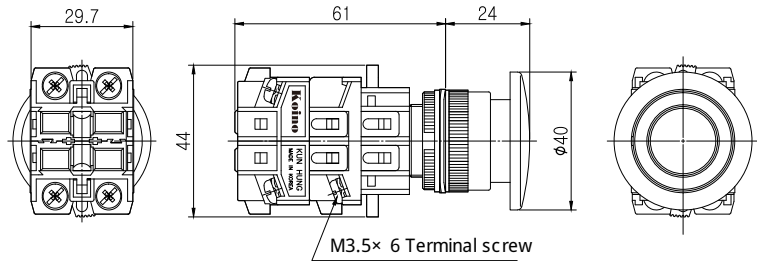


Dimensions

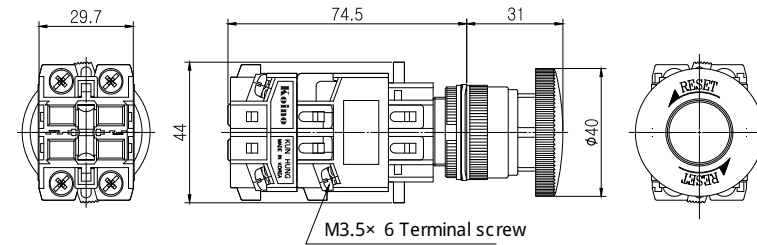
KH- 2204EB



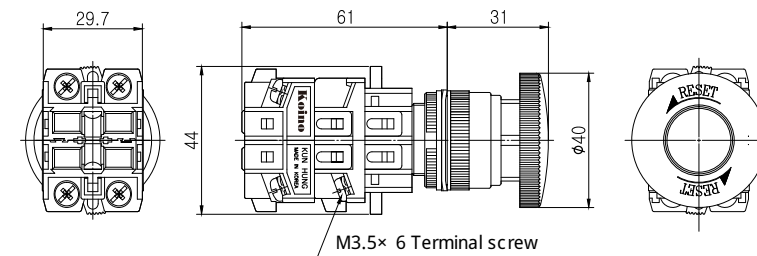
KH- 2204EB- TL



KH- 2204ER



KH- 2204ER- TL



CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

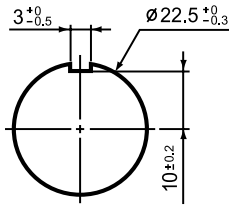
LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

Dimensions



Panel Cut

Specification

Switching System	The switching element of KH- 2201 is equipped with normally open contact and normally closed contact. 1A, 1B, 2A, 2B 1A1B, 2A2B 3A1B and 1A3B contacts are available. Normally 4 contact blocks can be assembled					
Material	Contact	Silver alloy + Copper	Housing	BODY: Nylon glass CONTACT HOUSING: Nylon glass	Buttons	Acetal
Mechanical Lifetime	Momentary and maintained : 1,000,000 Cycles of operation EB and ER type: 100,000 Cycles of operation					
Standards	This product comply with " Standards for low- voltage switching devices" EN IEC 60947- 5- 1					
Contact Ratings	125VAC 10A, 250VAC 6A (resistive load)					
Insulation Resistance	Minimum 100M Ω (500VDC)					
Contact Resistance	Maximum 30m Ω					
Electrical Lifetime	100,000 cycles of operation					
Dielectric Strength	Between Live Parts: 1,500VAC(50/60Hz) for 1 minute Between Live and Dead Parts: 1,500VAC(50/60Hz) for 1 minute					
Operational Temperature	- 15 $^{\circ}$ C \square +50 $^{\circ}$ C					
Operational Humidity	45 \square 85%RH					
Protection Degree	IP56 ER and S type: IP50					
Shock Resistance	Approximately 50G					
Vibration Resistance	10 \square 55Hz double amplitude 1.5mm (at X, Y and Z axis)					
Approbations	UL, CCC, KC					
Declaration of Conformity	CE					

NF22 Series

OVERVIEW

Mounting cut-out: Ø22mm

FLUSH MOUNTING TYPE



CLASSIFICATION

NF22 - L M 1C R 1
 ① ② ③ ④ ⑤

① CATEGORY	L	PILOT LAMP	
	P	PUSHBUTTON SWITCH	
	B	ILLUMINATED PUSHBUTTON SWITCH	
	S	SELECTOR SWITCH	
	K	KEY SWITCH	
② ACTUATOR	M	MOMENTARY	FOR PUSH BUTTON SWITCH
	A	MAITAINED	
	2	2 STEP MAITAINED	FOR SELECTOR & KEY SWITCH
	3	3 STEP MAITAINED	
	A2	2 STEP SPRING RETURN	
	A3	3 STEP SPRING RETURN	
③ INPUTVOLTAGE	1C	6V	
	2C	12V	
	3C	24V	
④ COLOR	R	RED	
	G	GREEN	
	Y	YELLOW	
	W	WHITE	
	B	BLUE	
	O	ORANGE	
⑤ CONTACTS	1	1C	
	2	2C	

CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

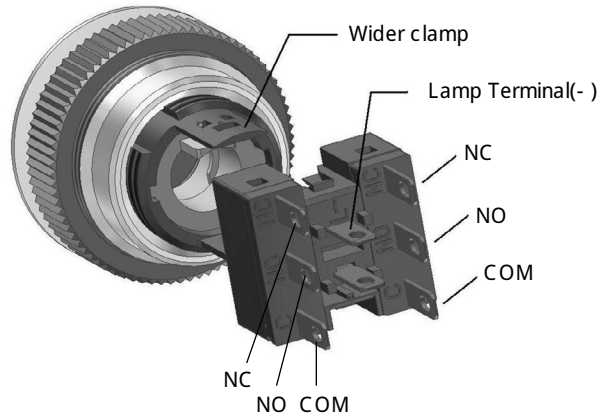
LIMIT SWITCH

POWER SWITCH

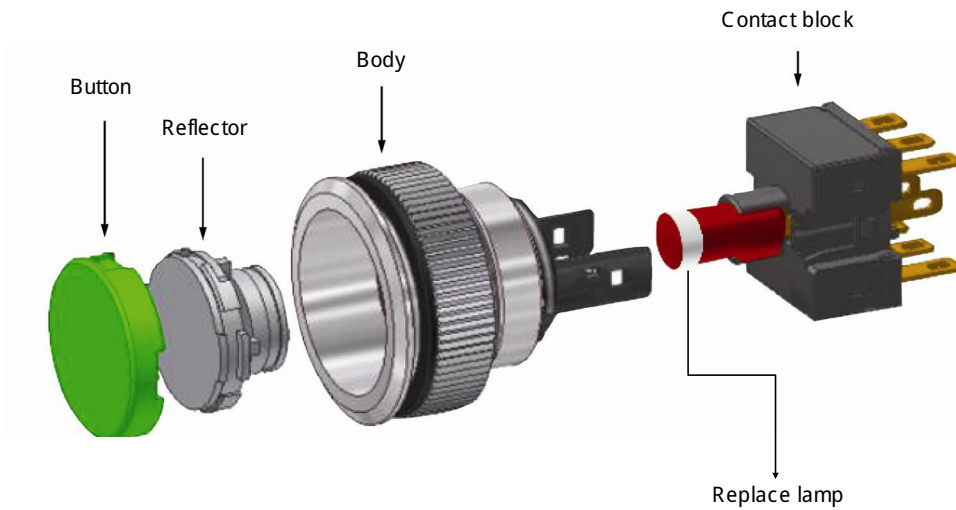
HOIST SWITCH

CAM SWITCH

Terminals



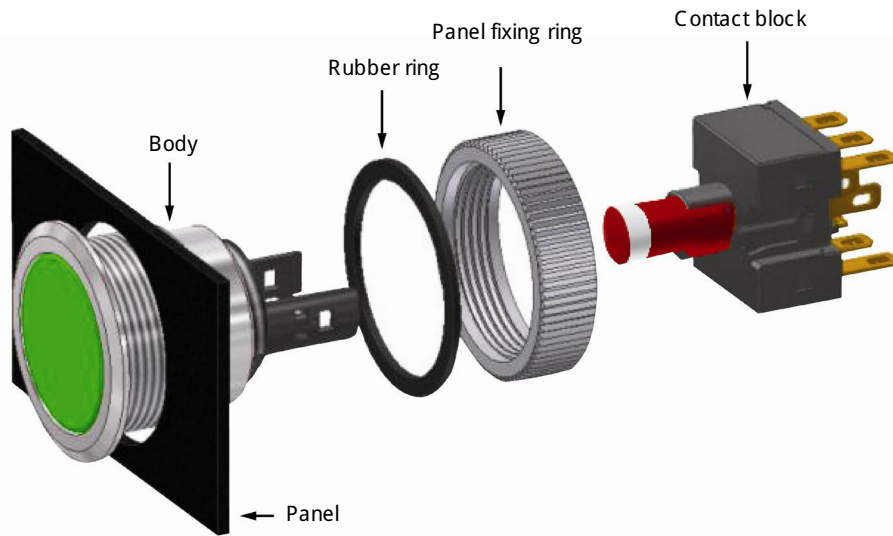
How to replace lamp



1. Widen the clamps which binds to contact block.
2. Detach contact block.
3. Detach lamp from contact block

*Button can be detached by pushing button with shallow instrument like screw driver.

Installation



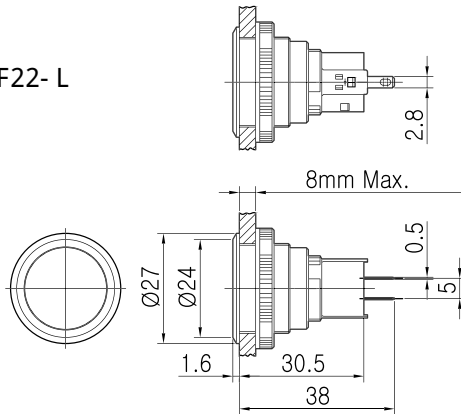
CONTROL COMPONENTS

MICRO SWITCH

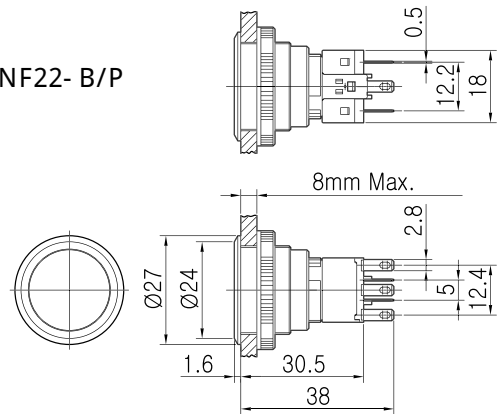
FOOT SWITCH

Dimensions

NF22- L



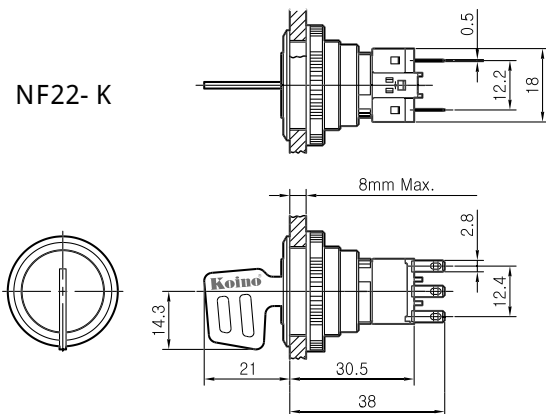
NF22- B/P



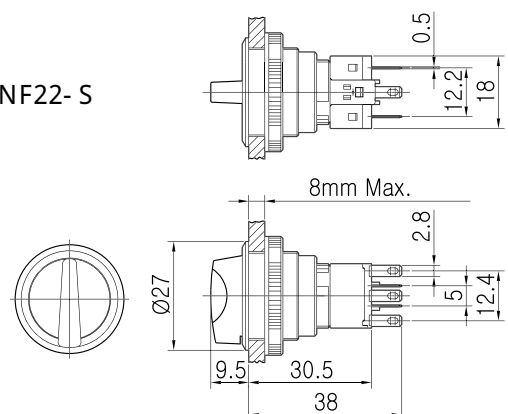
LIMIT SWITCH

POWER SWITCH

NF22- K



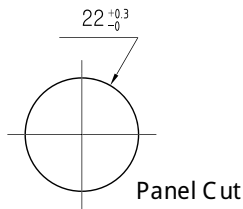
NF22- S



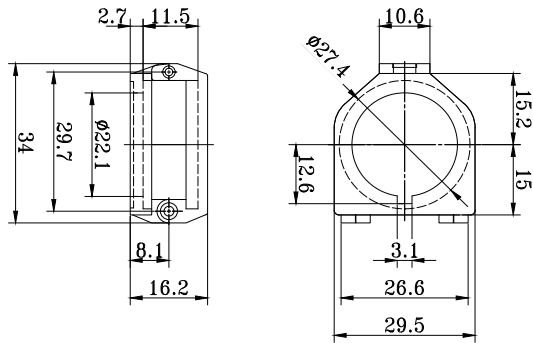
HOIST SWITCH

CAM SWITCH

Dimensions



SAFETY COVER



Specification

Switching System	The switching element of NF22 SERIES is equipped with normally open contact or normally closed contact.					
Material	Contact	Silver alloy + Copper	Contact Housing	Nylon	Body	Aluminum
Mechanical Lifetime	PUSHBUTTON (momentary): 1,000,000 Cycles of operation PUSHBUTTON (maintained): 200,000 Cycles of operation SELECTOR: 100,000 Cycles of operation					
Standards	This product comply with " Standards for low- voltage switching devices" EN IEC 60947- 5- 1					
Contact Ratings	250VAC 3A (resistive load)					
Insulation Resistance	Minimum 100M Ω (500VDC)					
Contact Resistance	Maximum 30m Ω					
Electrical Lifetime	100,000 cycles of operation					
Operational Temperature	- 25° C □+ 55° C					
Protection Degree	IP40					
Shock Resistance	Approximately 10G					
Vibration Resistance	10 □55Hz double amplitude 1.5mm (at X, Y and Z axis) for 1 hour					
Approbations	UL					
Declaration of Conformity	CE					