

CLASSIFICATION

NS22-□□-□□□□□□

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	NS22	Ø22mm control switch	
② Type	L	Pilot lamp	
	P	Non-illuminated Push button	
	B	Illuminated push button	
	S	Short knob selector	
	SL	Long knob selector	
	K	Key selector	
	D	Double button	
③ Actuator	M	Momentary	
	A	Alternate (Push-Push)	
	EM	Mushroom head push button (Momentary)	
	2	2steps manual return	
	3	3steps manual return	
	A2	2steps auto(spring) return	
	A3	3steps auto(spring) return	
④ Lamp	None	Filament	
	L	LED	
⑤ Input voltage	1AL	110V AC/DC 50/60Hz	LED type only
	2AL	220V AC/DC 50/60Hz	
	1A	110V AC 50/60Hz	Transformer
	12A	120VAC 50/60Hz	
	2A	220V AC 50/60Hz	
	3A	230V AC 50/60Hz	
	4A	380V AC 60Hz	
	5A	440V AC 60Hz	
	1C	6V AC/DC	DC volt.: LED only
	2C	12V AC/DC	
	3C	24V AC/DC	
	1D	48V DC	Transformer LED only
	2D	110V DC	
	12D	120V DC	
	3D	125V DC	
	4D	220V DC	
⑥	R	Red	
	G	Green	
	Y	Yellow	
	B	Blue	
	W	White (Lamp only)	
	O	Orange (Amber)	
	BK	Black (Not available with lamp type)	
⑦ 1st column	Number of blocks	NO=A, NC=B, None=0	
⑧ 2nd column			
⑨ 3rd column			

CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

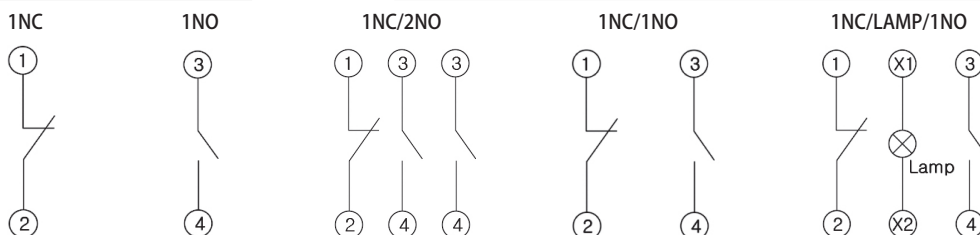
HOIST SWITCH

CAM SWITCH

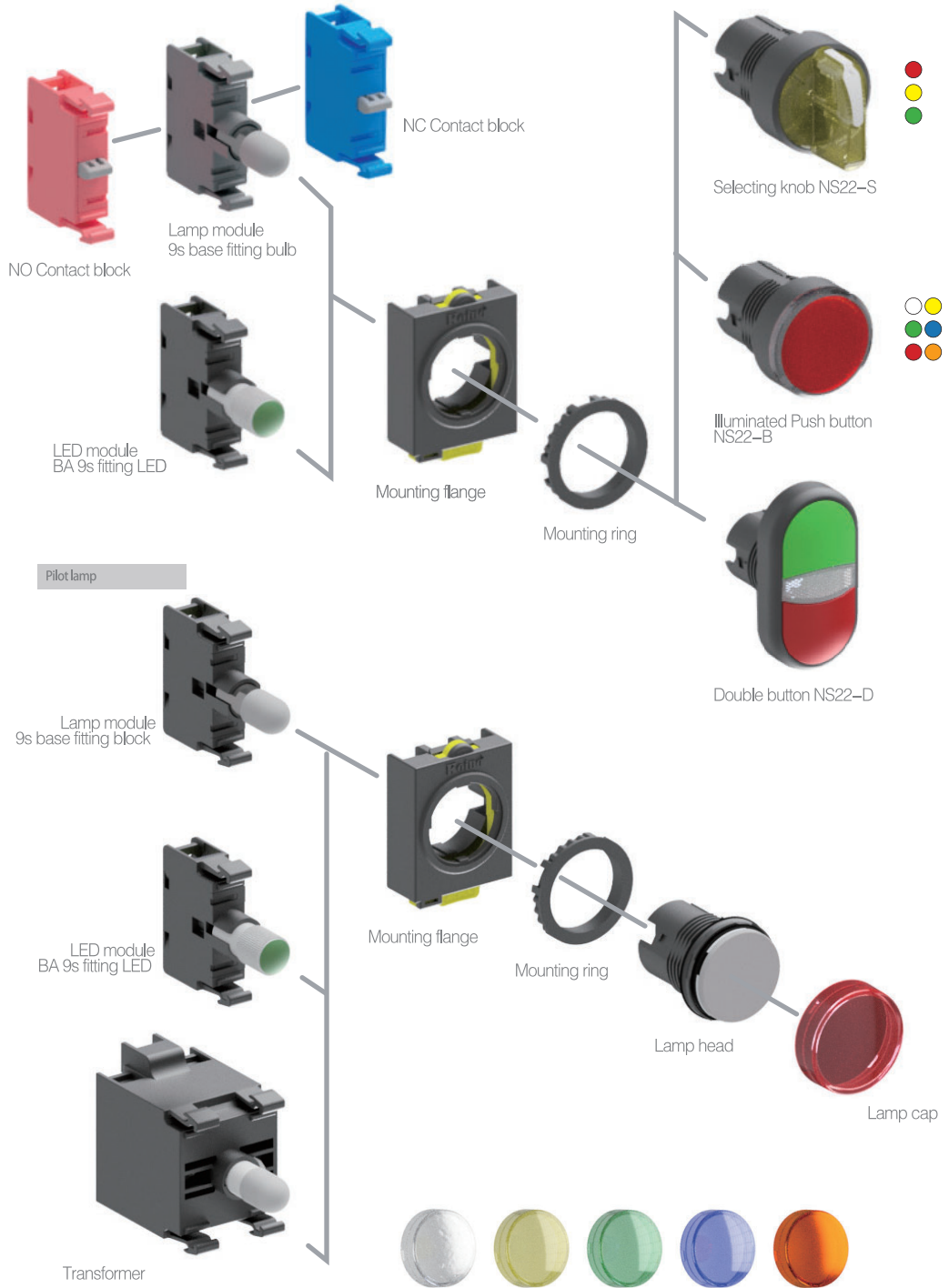
Specification

Type	Pilot lamp	Push button	Selector	Key selector	Double button	Mushroom push button
	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
Contact rating	AC15:125V 6A, 250V 3A / DC13 : 250V 0.27A					
Insulation resistance	100MΩ(DC500V)					
Withstand voltage	2,500Vac(50Hz/60Hz for 1 minute)					
Contact resistance	30mΩ Max.					
Electrical durability	500,000 operations Minimum(30ops./ 1 minute Max.)					
Mechanical durability	Push button(Momentary):5 million operations Push button(Alternate):1 million operations Selector:1 million(Illuminating type: 0.5 million) operations Key selector:0.5 million operations Double button:1 million operations *1NO+1NC					
Vibration resistance	10~55Hz 3 axis 1.5m X, Y, Z each direction for 1 h					
Shock resistance	Destruction at 50G minimum, Malfunction at 10G minimum					
Protection degrees	IP66(Double button:IP40, IP66-with boots seal)					
Operating ambient temperature	-25°C ~+70°C (not frozen condition) -25°C ~+55°C (lamp, not frozen condition)					
Ambient temperature	-40°C ~+70°C (not frozen condition)					
Operating ambient humidity	45~85% RH					
Rated insulation voltage	600V					
Rated impulse withstand voltage	6KV					
Thermal current(Ith)	10A					
Rated insulation voltage (Ui)	AC600V DC250V					
Rated operational voltage (Ue)	AC250V DC250V					
Continuous current (Ith)	10A					
Rated operational Current Ie	(A, Resistive) 125VAC 6A 250VAC 3A 250VDC 0.27A					
Surrounding Temp. Rating	40 °C					
Lighting part class	Class 2 (NS22L, NS22B)					
Contact Rating Type	A300 and Resistive					

Terminal wiring diagram

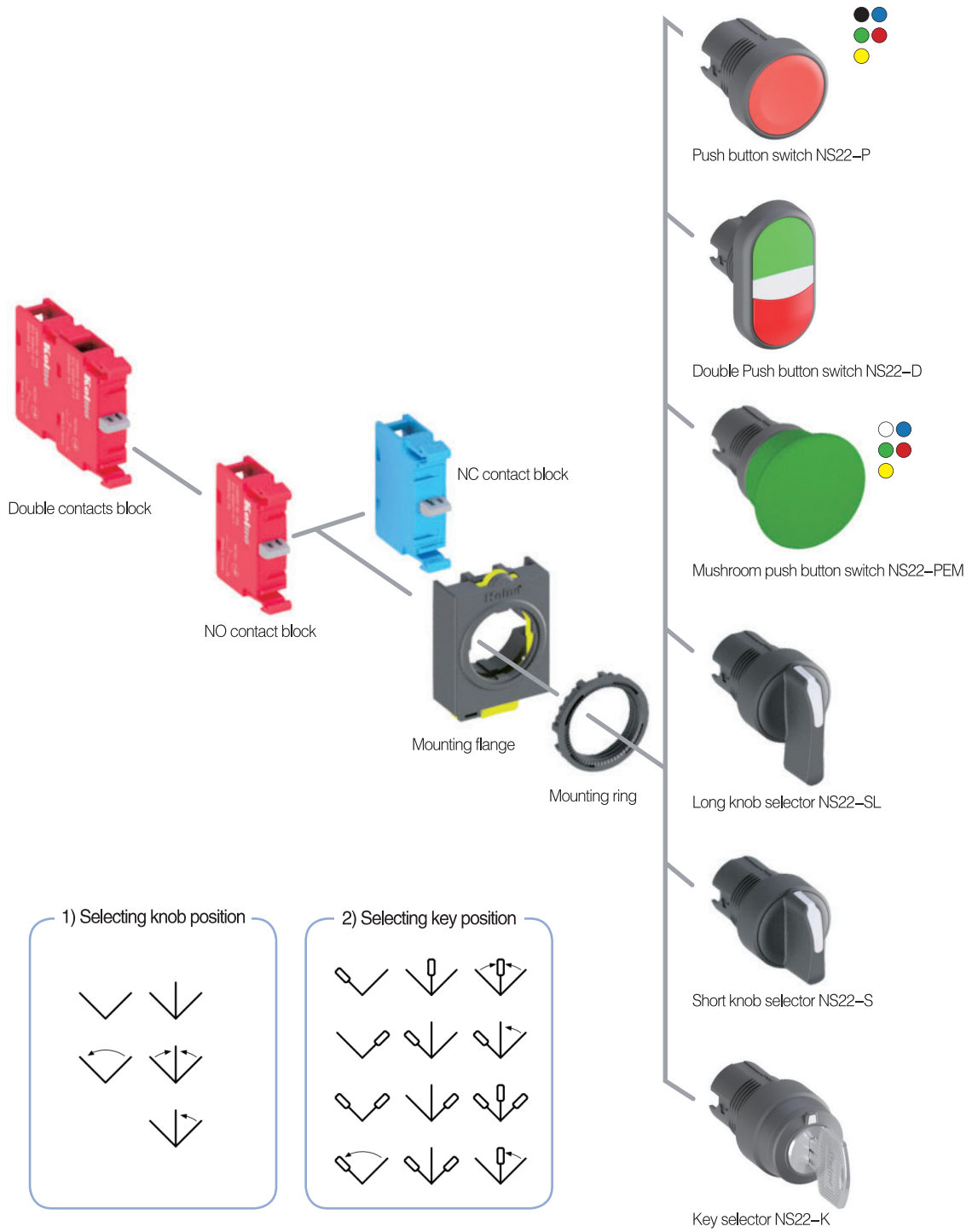


Illuminated push button switch

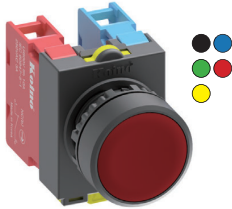


- CONTROL COMPONENTS
- MICRO SWITCH
- FOOT SWITCH
- LIMIT SWITCH
- POWER SWITCH
- HOIST SWITCH
- CAM SWITCH

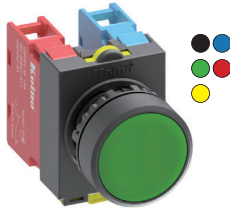
Non-illuminated Switches



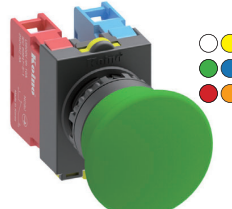
Non-LED Switches



Push button
(Momentary)
NS22-PM



Push button
(Alternate)
NS22-PA



Mushroom push button switch
NS22-PEM



Double push button
NS22-DM



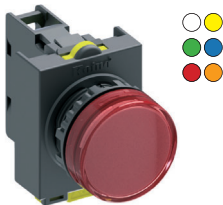
Short knob selector
NS22-S



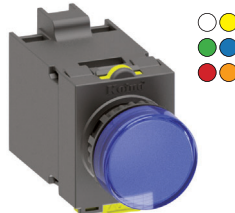
Long knob selector
NS22-SL



Key selector
NS22-K



Pilot lamp
NS22-L
BA 9s base Bulb



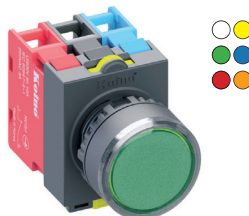
Pilot lamp
NS22-L
BA 9s base Bulb



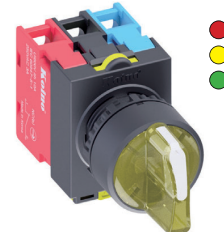
Illuminated double button
NS22-DM
BA 9s base Bulb



Illuminated push button
(Momentary)
NS22-BM
BA 9s base Bulb



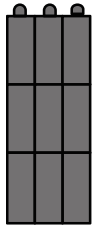
Illuminated push button
(Alternate)
NS22-BA
BA 9s base Bulb



Illuminated selector (Short knob)
NS22-S
BA 9s base Bulb

- CONTROL COMPONENTS
- MICRO SWITCH
- FOOT SWITCH
- LIMIT SWITCH
- POWER SWITCH
- HOIST SWITCH
- CAM SWITCH

Contact Blocks Assembly



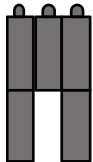
Push button
(Momentary)
NS22-PM



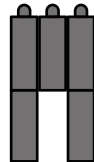
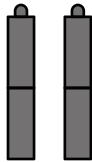
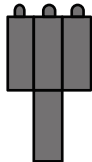
Push button
(Alternate)
NS22-PA



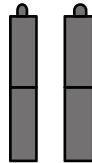
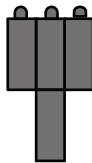
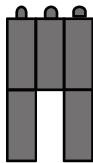
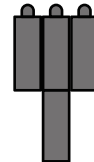
Double push button
NS22-DM



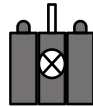
Short knob selector
NS22-S



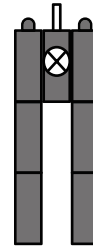
Long knob selector
NS22-SL



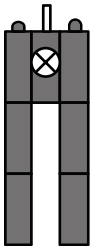
Key selector
NS22-K



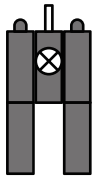
Illuminated short knob selector
NS22-S



Illuminated push button
(Momentary)
NS22-BM



Illuminated double button
NS22-DM



Illuminated selector (Short knob)
NS22-S



Mushroom push button switch
NS22-PEM

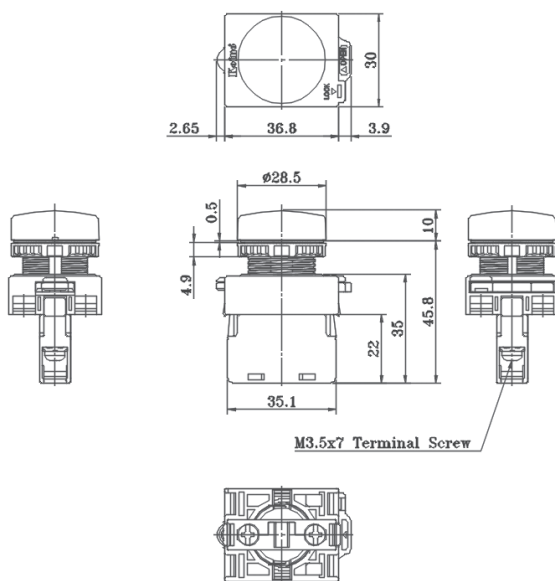
Legend



Contact block (A, B) Lamp module

Dimensions

Pilot lamp (Full voltage)
NS22-L



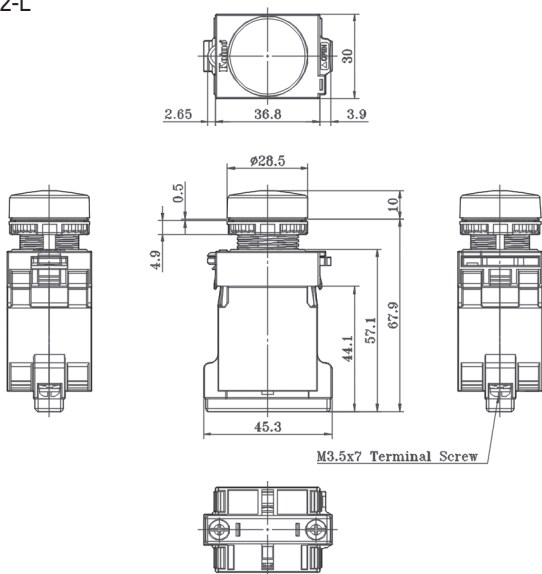
CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

Pilot lamp (Transformer)
NS22-L



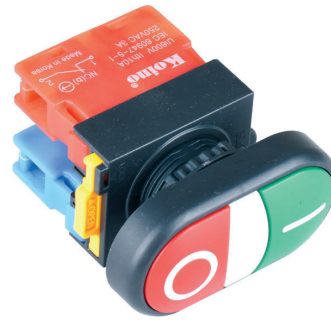
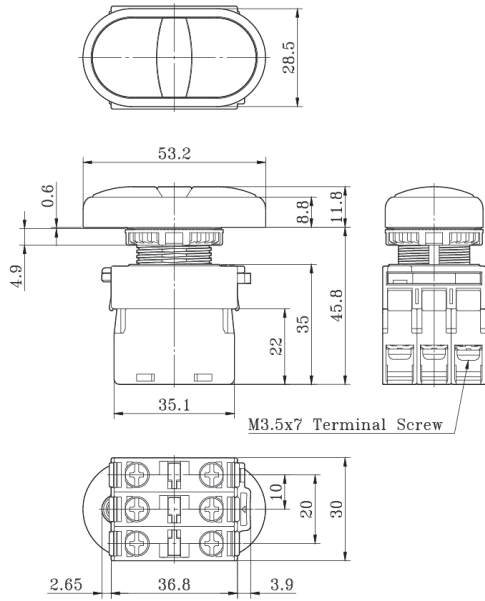
POWER SWITCH

HOIST SWITCH

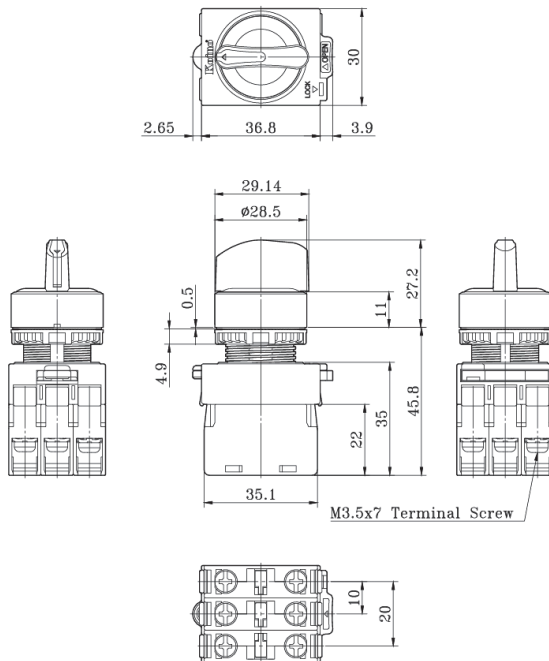
CAM SWITCH

Dimensions

Double push button
NS22-DM



Short knob illuminated selector
NS22-S



CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

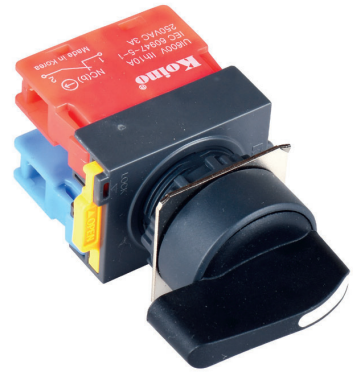
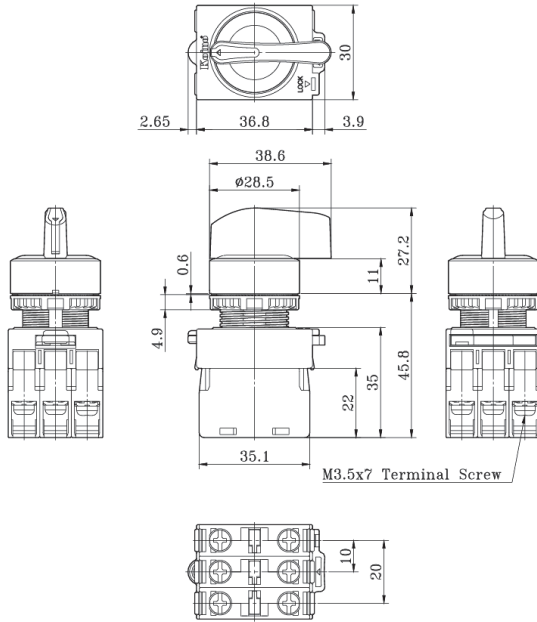
POWER SWITCH

HOIST SWITCH

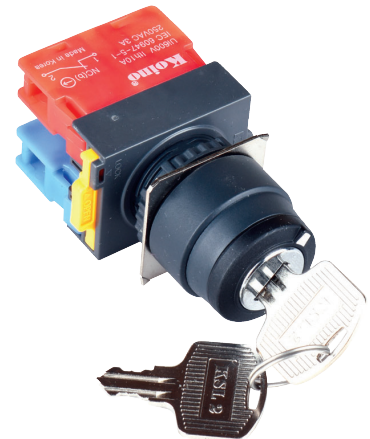
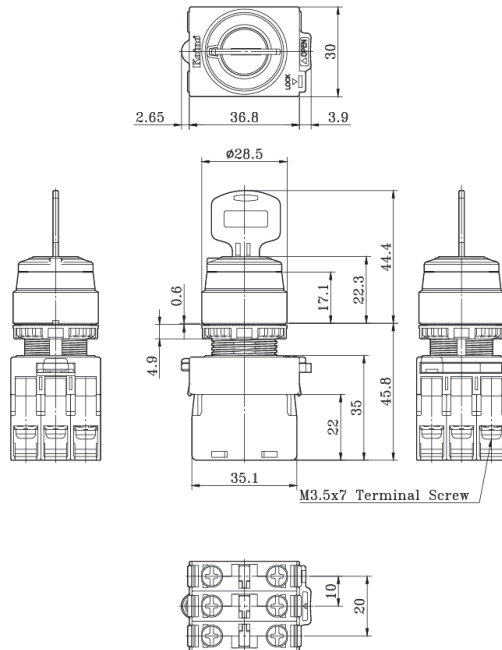
CAM SWITCH

Dimensions

Long knob selector
NS22-SL

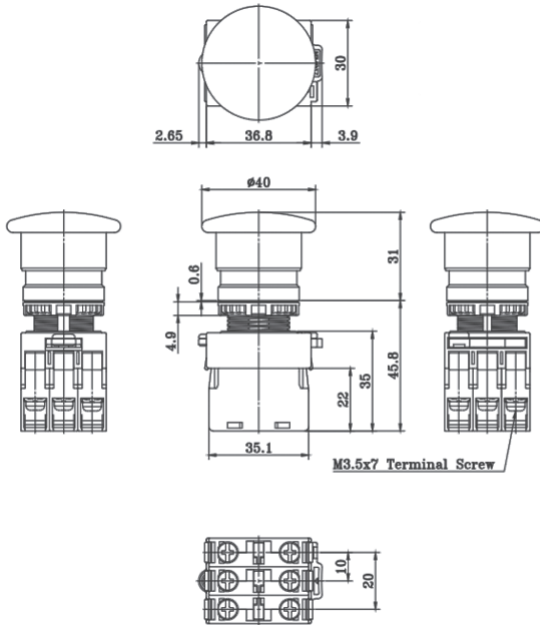


Key selector
NS22-K

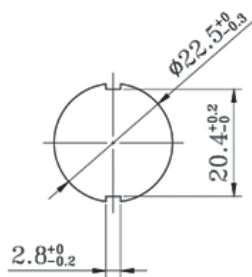


Dimensions

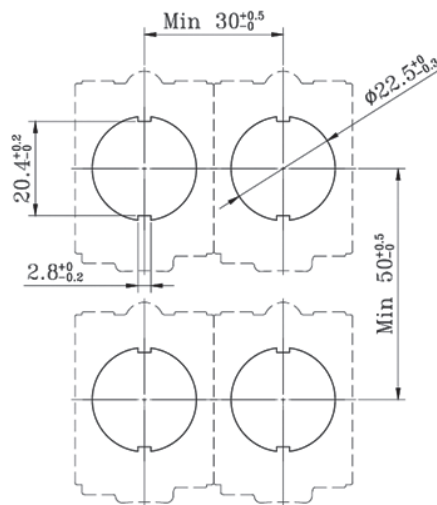
Mushroom push button
NS22-PEM



Panel cut-out



Panel mounting guide



CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

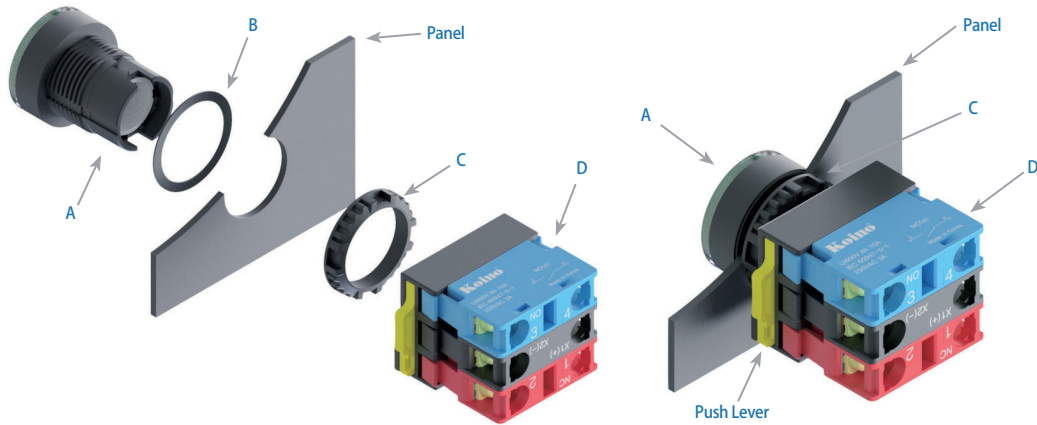
POWER SWITCH

HOIST SWITCH

CAM SWITCH

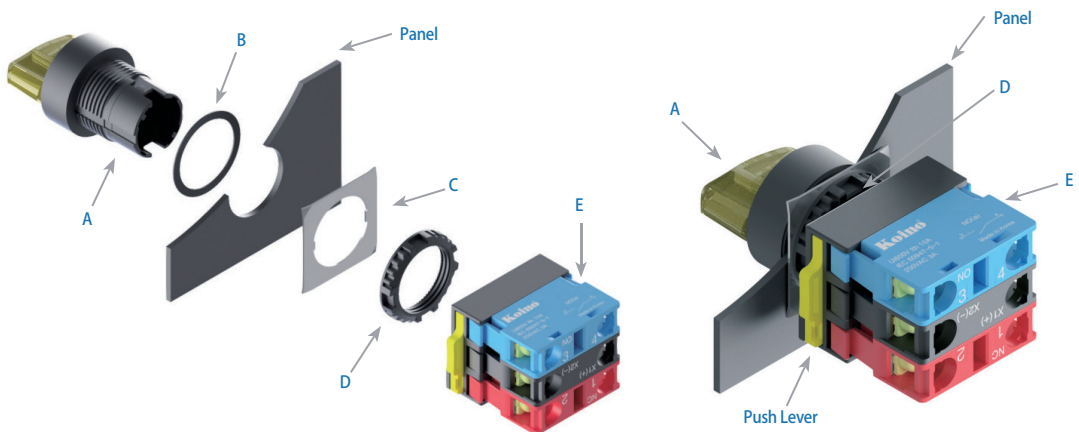
Assembly sample

Normal



- 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"

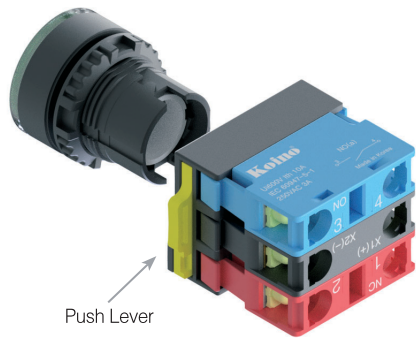
Selector



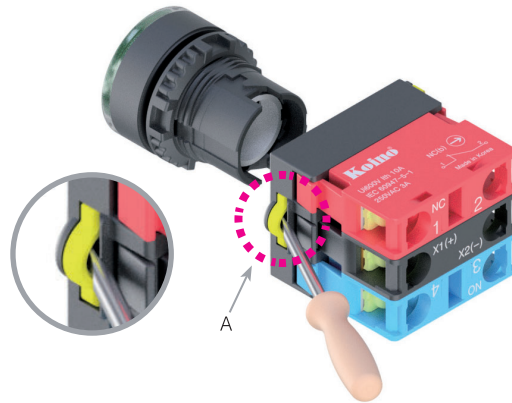
- ① Push A+B into the panel
- ② Fasten with C & D
- ③ Place E into the groove of A
- ④ Push until it clicks
- ⑤ Separate E pushing "Push lever"

Assembly sample

Actuator

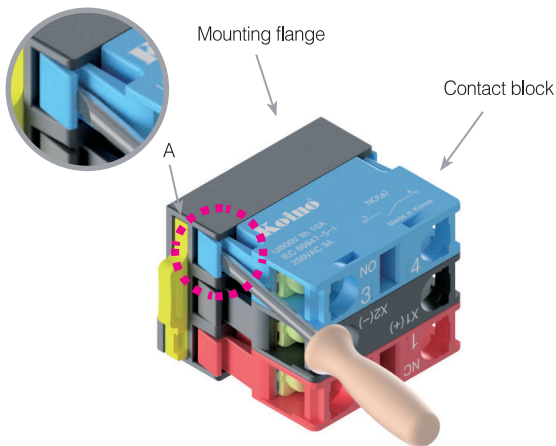


1. Using push lever



2. Pull "A"

Contact block



Using slotted screw driver (<1mm)



Push and turn the lamp to counterclockwise direction

CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

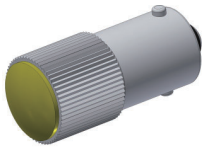
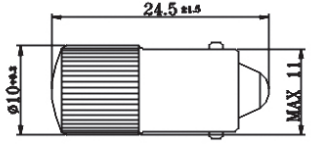

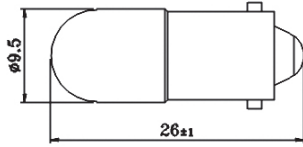
LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

Bulb

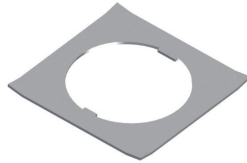
Shape	Type		Dimension	
	6V DC	Red-AC voltage available	 <p>BA 9S BASE</p>	
		Green		
		Yellow		
		Blue		
		White		
		Orange		
		12V DC		Red
				Green
				Yellow
				Blue
	White			
	24V DC	Orange		
		Red		
		Green		
		Yellow		
		Blue		
	110V AC/DC	White		
		Orange		
		Red		
		Green		
Yellow				
220V AC/DC	Blue			
	White			
	Orange			
	Red			
	Green			
	6.3V 1W	 <p>BA 9S BASE</p>		
	12V 1W			
	24V 1W			

Accessories

Fastening tool



Anti-rotation ring



Fasten ring



Name plate



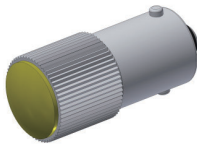
Support block



NS22-D boots Seal



LED
(BA9S Base)



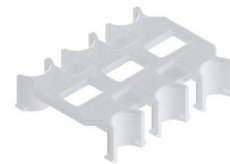
Filament bulb
(BA9S Base)



Contact cover



Contact block clip



CONTROL COMPONENTS

MICRO SWITCH

FOOT SWITCH

LIMIT SWITCH

POWER SWITCH

HOIST SWITCH

CAM SWITCH

PUSHBUTTON SWITCH KH-2201 Series



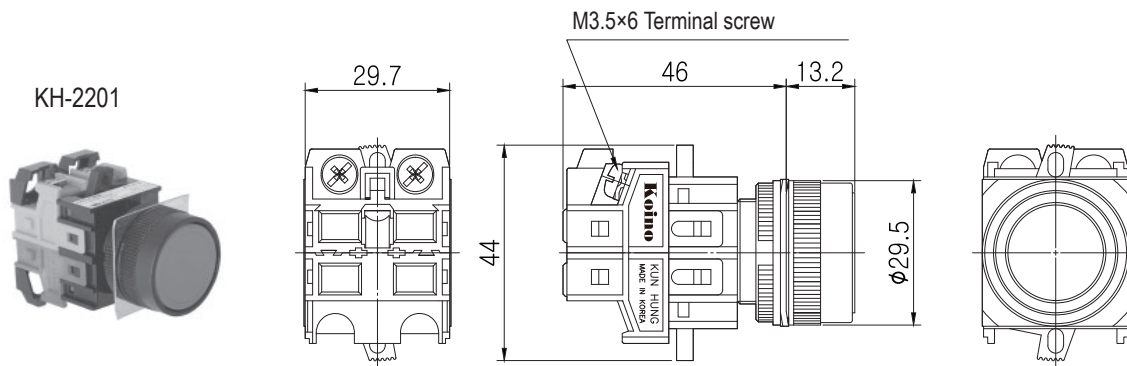
CLASSIFICATION

KH-2201 AT - 1 1 R

① ② ③ ④

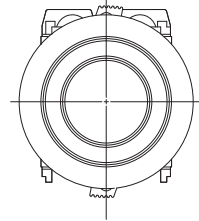
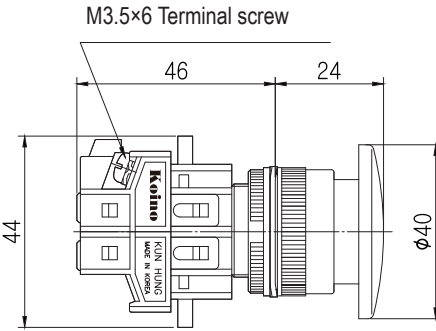
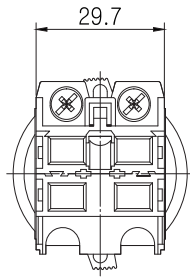
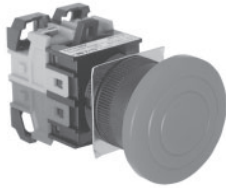
① ACTUATOR	NONE	MOMENTARY
	AT	MAINTAINED
	EB	MUSHROOM SHAPE
	ER	EMERGENCY STOP
	S	SELECTABLE PUSHBUTTON
② CONTACT	NUMBER OF NO CONTACT	
③ CONTACT	NUMBER OF NC CONTACT	
④ COLOR	R	RED
	G	GREEN
	Y	YELLOW
	B	BLUE
	MW	MILKY WHITE
	W	WHITE
	BK	BLACK

Dimensions



Dimensions

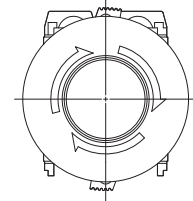
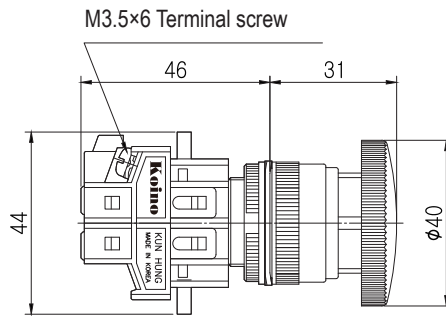
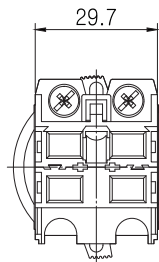
KH-2201EB



CONTROL COMPONENTS

MICRO SWITCH

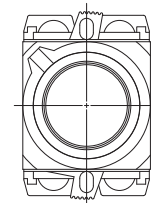
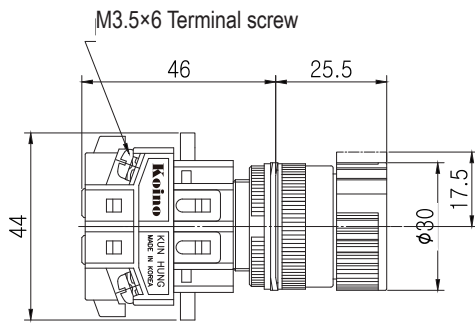
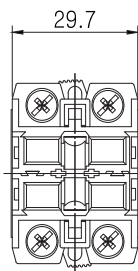
KH-2201ER



FOOT SWITCH

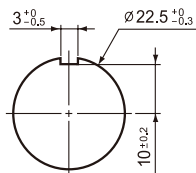
LIMIT SWITCH

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 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 $^{\circ}$ ~+50 $^{\circ}$					
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					