



MR series Control switch

LED Control switch



- Snap-action contact unit
- Bright and durable due to use of LED light
- Aluminum guard / Plastic guard
- Assembling type (actuator and contact part)
- IP65 protective structure
(Push button, Pilot lamp, Emergency stop)

Flush aluminum guard (MR□ - A)



Ø30

Flush aluminum guard (MR□ - N)



Ø25

Extended aluminum guard (MR□ - R)



Ø22

Flush plastic guard (MR□ - K)



Ø25

Extended plastic guard (MR□ - T)



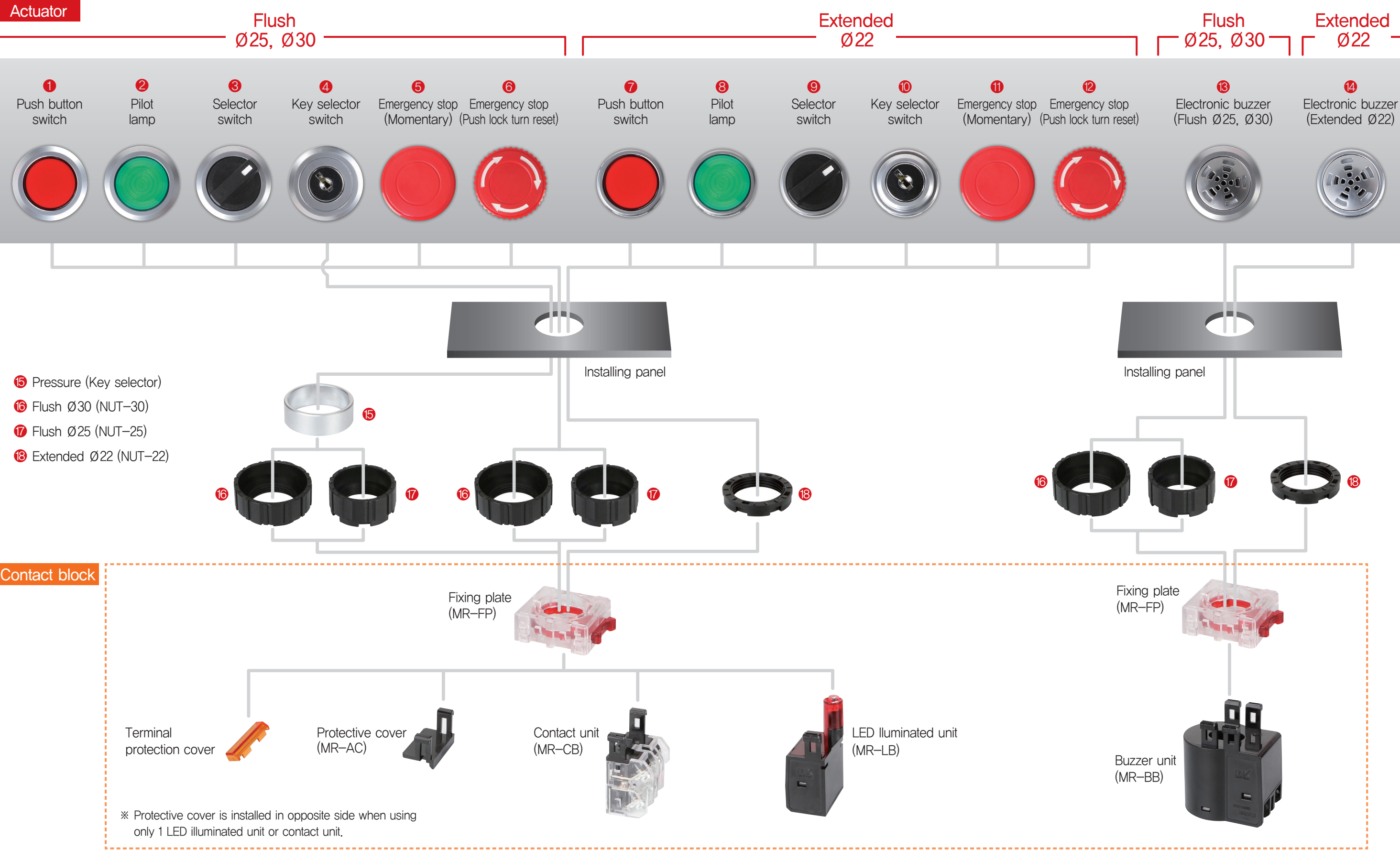
Ø22

Best Switch
MR series
Control switch

Products composition

Flush : Ø25, Ø30 / Extended : Ø22

MR series



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MR SERIES

Aluminum guard

Flush(Ø25,Ø30), Extended(Ø22)



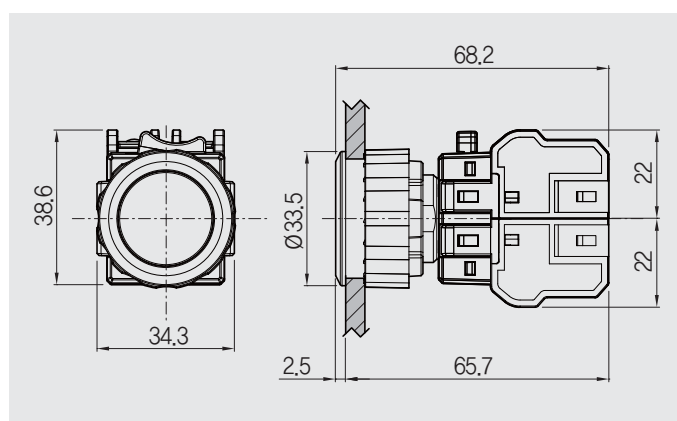
PUSH BUTTON SWITCH

Aluminum guard



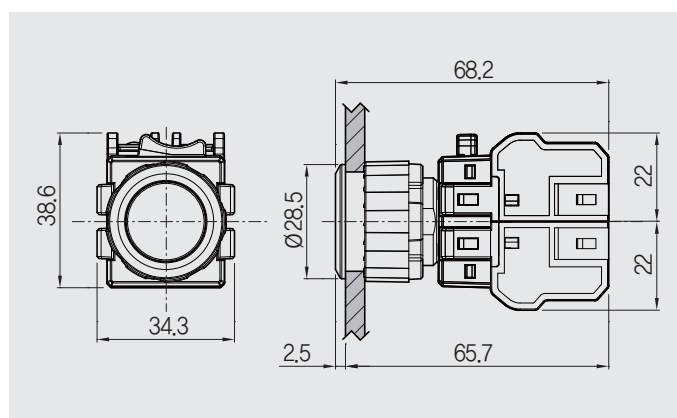
Model	Code	Description
MRF-	☐ ☐ ☐ ☐	Push button switch
Actuator	A	Flush (Installing hole: $\varnothing 30$)
	N	Flush (Installing hole: $\varnothing 25$)
	R	Extended (Installing hole: $\varnothing 22$)
Operation function	M	Momentary
	A	Alternate
Contact composition	1	1a1b
	2	2a2b
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRF-A Flush ($\varnothing 30$)



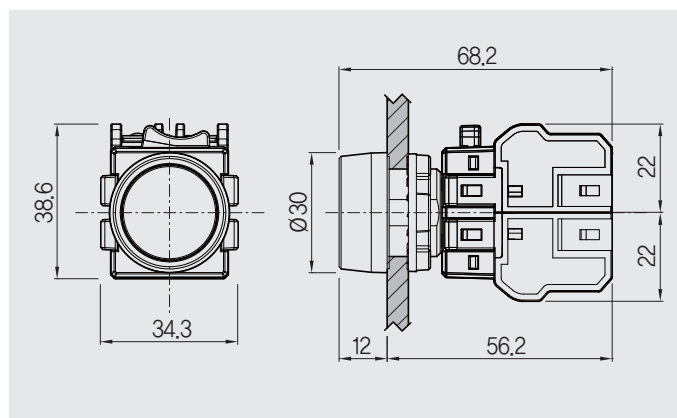
Unit : mm

MRF-N Flush ($\varnothing 25$)



Unit : mm

MRF-R Extended ($\varnothing 22$)



Unit : mm

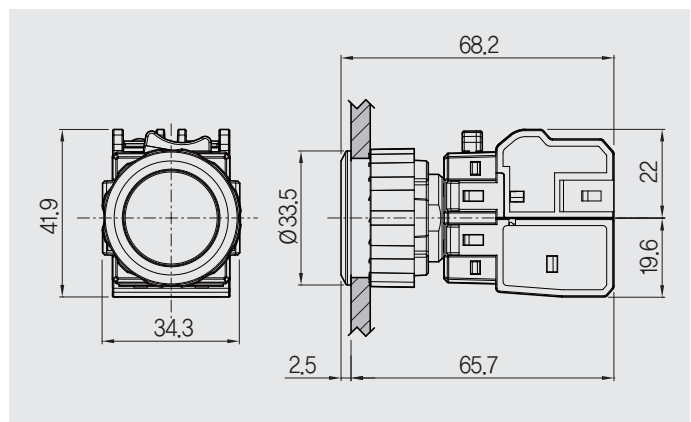
ILLUMINATED PUSH BUTTON SWITCH

Aluminum guard



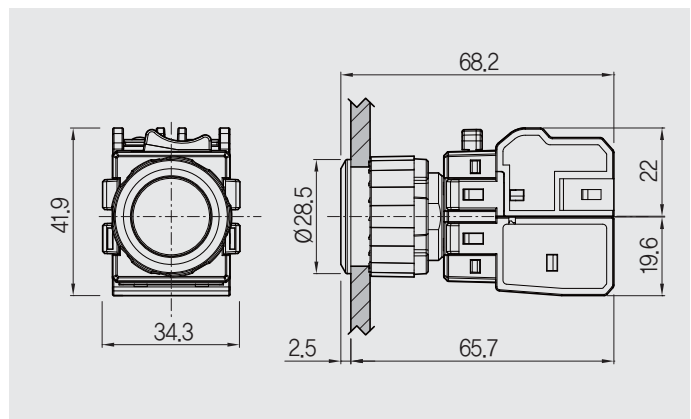
Model	Code	Description
MRX-	☐ ☐ ☐ ☐ ☐	Illuminated push button switch
Actuator	A	Flush (Installing hole: Ø30)
	N	Flush (Installing hole: Ø25)
	R	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	A	Alternate
Contact composition	1	1a1b
	2	2a2b
Rated input voltage	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRX-A Flush (Ø30)



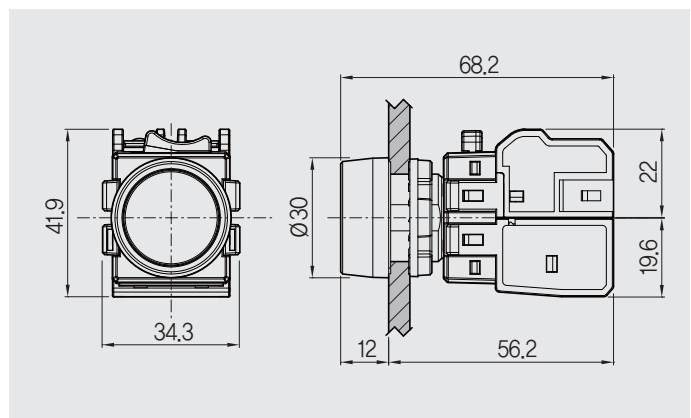
Unit : mm

MRX-N Flush (Ø25)



Unit : mm

MRX-R Extended (Ø22)



Unit : mm

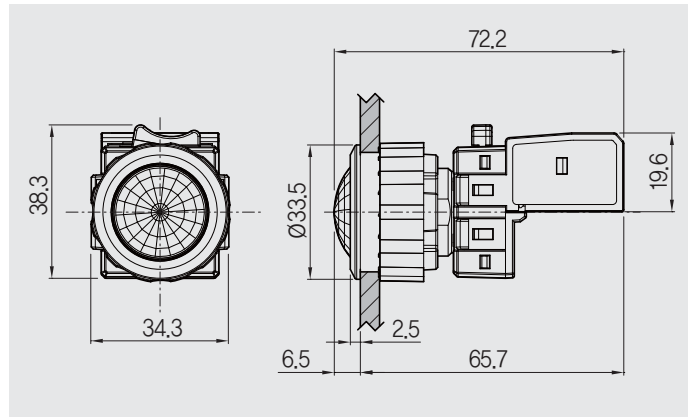
PILOT LAMP

Aluminum guard



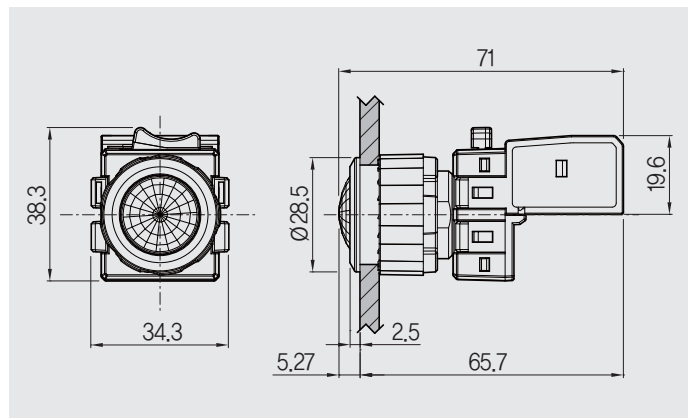
Model	Code	Description
MRP-	☐ ☐ ☐	Pilot lamp
Actuator	A	Flush (Installing hole: Ø30)
	N	Flush (Installing hole: Ø25)
	R	Extended (Installing hole: Ø22)
Rated input voltage	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRP-A Flush (Ø30)



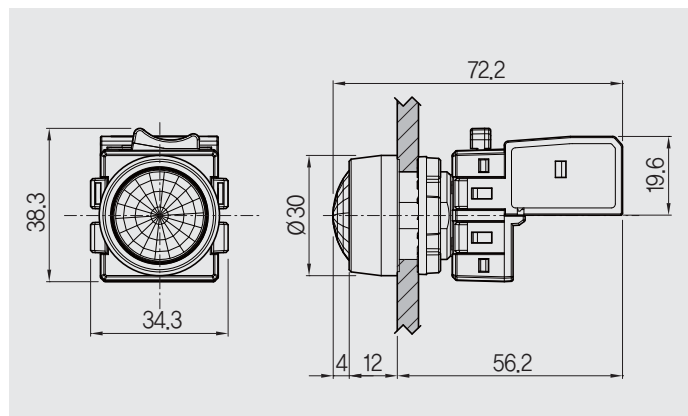
Unit : mm

MRP-N Flush (Ø25)



Unit : mm

MRP-R Extended (Ø22)



Unit : mm

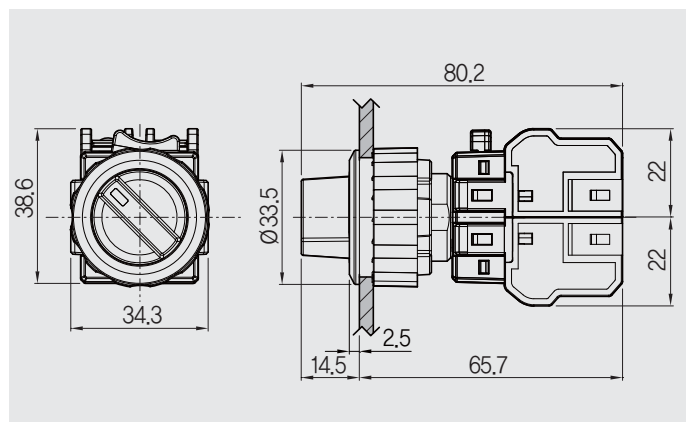
SELECTOR SWITCH

Aluminum guard



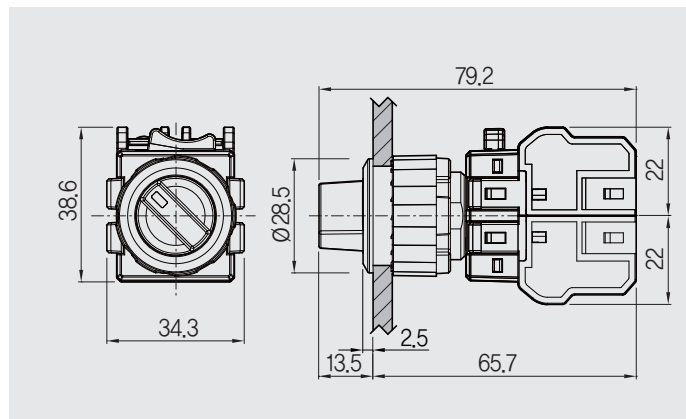
Model	Code	Description	
MRS—	☐ ☐ ☐	Selector switch	
Actuator	A	Flush (Installing hole: Ø30)	Aluminum guard
	N	Flush (Installing hole: Ø25)	
	R	Extended (Installing hole: Ø22)	
Operation function	2A	2 positions alternate operation	Refer to contact operation (3 positions : Only 2a2b contact available)
	2R	2 positions momentary operation	
	3A	3 positions alternate operation	
	3R	3 positions left and right side momentary operation	
Contact composition	1	1a1b	
	2	2a2b	
Actuator color (cap color)		Black (solid)	

MRS-A Flush (Ø30)



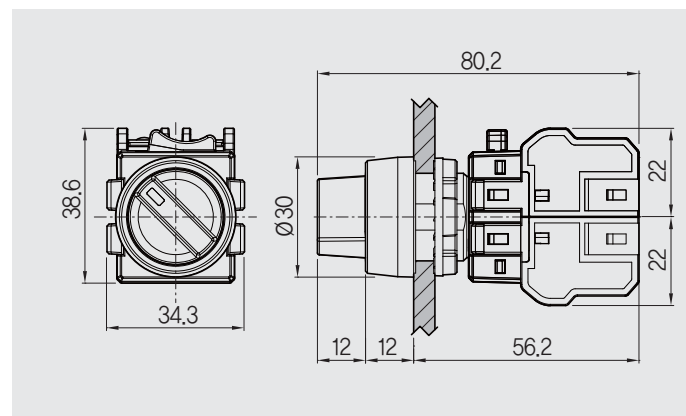
Unit : mm

MRS-N Flush (Ø25)



Unit : mm

MRS-R Extended (Ø22)



Unit : mm

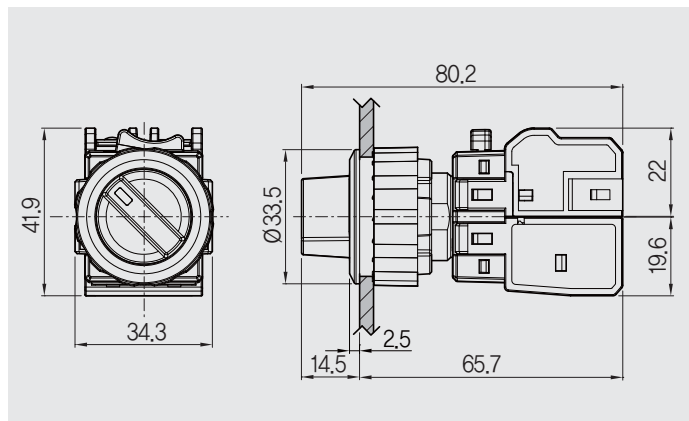
ILLUMINATED SELECTOR SWITCH

Aluminum guard



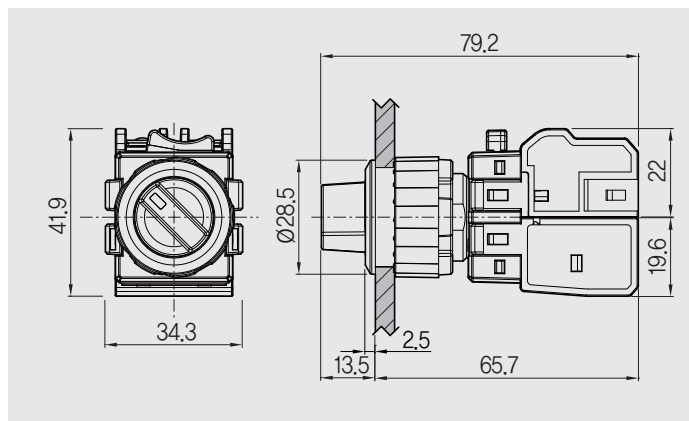
Model	Code	Description
MRT-	☐ ☐ ☐ ☐ ☐	Illuminated selector switch
Actuator	A	Flush (Installing hole: Ø30)
	N	Flush (Installing hole: Ø25)
	R	Extended (Installing hole: Ø22)
Operation function	2A	2 positions alternate operation
	2R	2 positions momentary operation 
	3A	3 positions alternate operation
	3R	3 positions left and right side momentary operation 
Contact composition	1	1a1b
	2	2a2b
Power supply voltage	A0	100-240 V AC
	A3	380 V AC
	D0	12-24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRT-A Flush (Ø30)



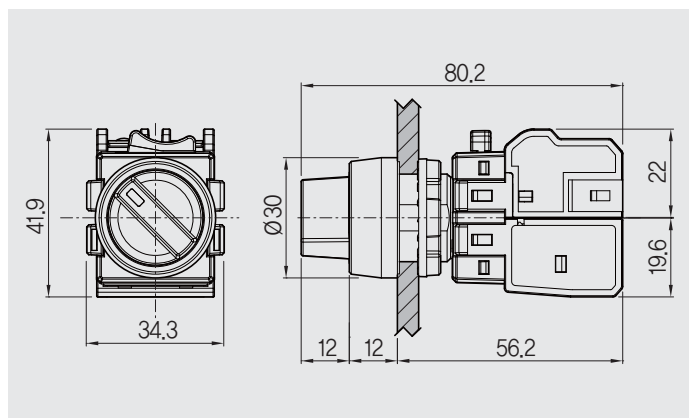
Unit : mm

MRT-N Flush (Ø25)



Unit : mm

MRT-R Extended (Ø22)



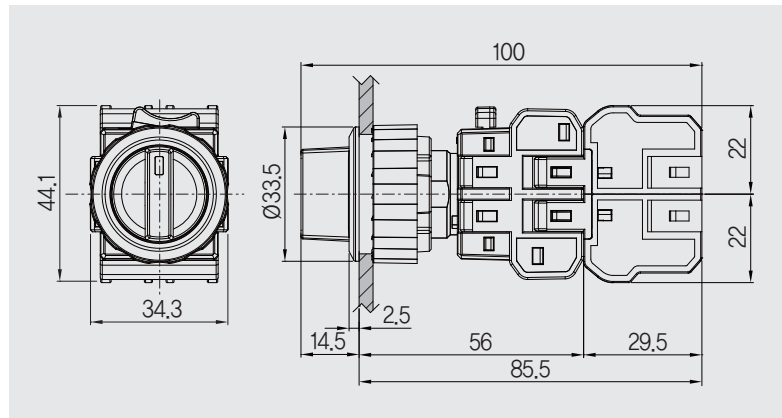
Unit : mm

ILLUMINATED SELECTOR SWITCH

Aluminum guard

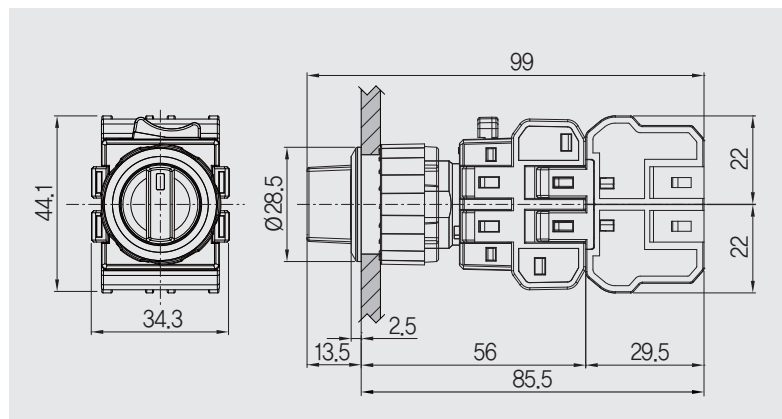


MRT-A3 Flush (Ø30)



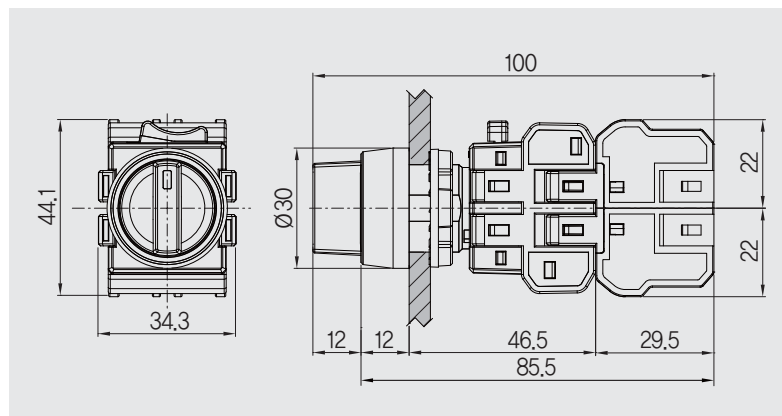
단위 : mm

MRT-N3 Flush (Ø25)



단위 : mm

MRT-R3 Extended (Ø22)



단위 : mm

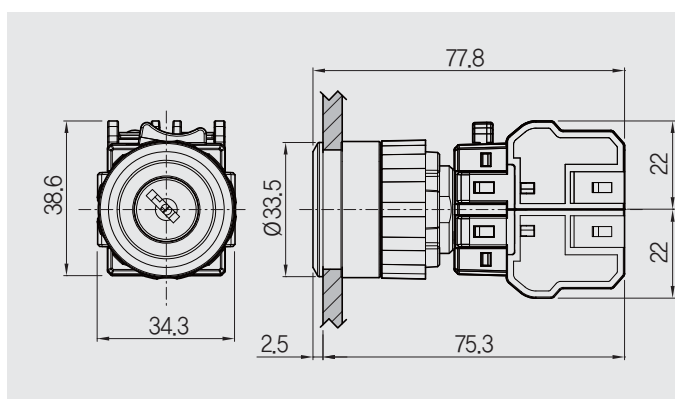
KEY SELECTOR SWITCH

Aluminum guard



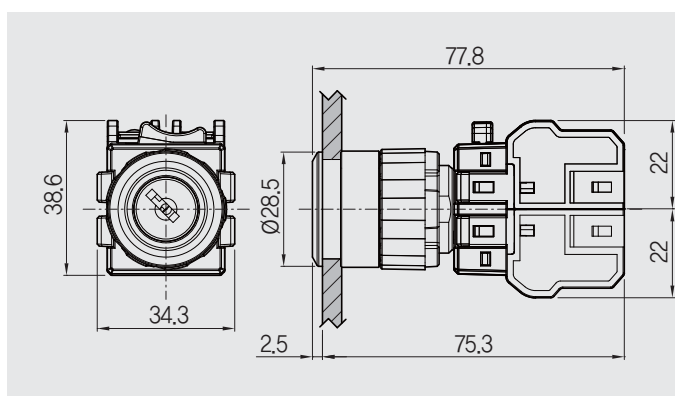
Model	Code			Description			
MRK—	☐	☐	☐	☐	Key selector switch		
Actuator	A				Flush (Installing hole:Ø30)		
	N				Flush (Installing hole:Ø25)		
	R				Extended (Installing hole:Ø22)		
Operation function	2A				2 positions alternate operation	—	Refer to contact operation (3 positions : Only 2a2b contact available)
	2R				2 positions momentary operation		
	3A				3 positions alternate operation	—	
	3R				3 positions left and right side momentary operation		
Contact composition	1	1a1b					
	2	2a2b					
Key removing position (Key selecting switch)	L	Left				In case of 2 positions, exclude the middle key removing position	
	R	Right					
	C	Middle					
	D	Left and right			 		
	E	Front			  		
Actuator color (cap color)		Aluminum (Plating a matt chrome)					

MRK-A Flush (Ø30)



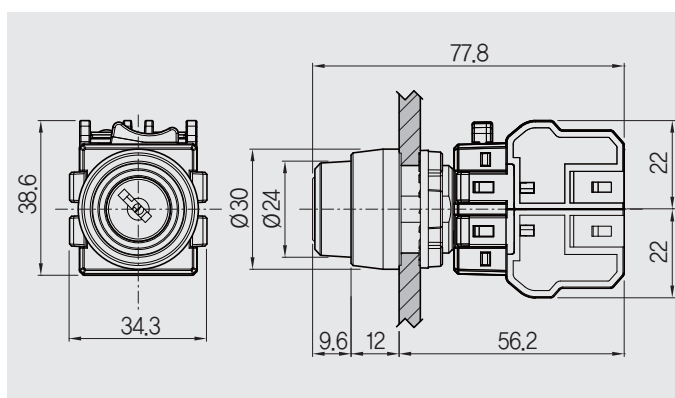
Unit : mm

MRK-N Flush (Ø25)



Unit : mm

MRK-R Extended (Ø22)



Unit : mm

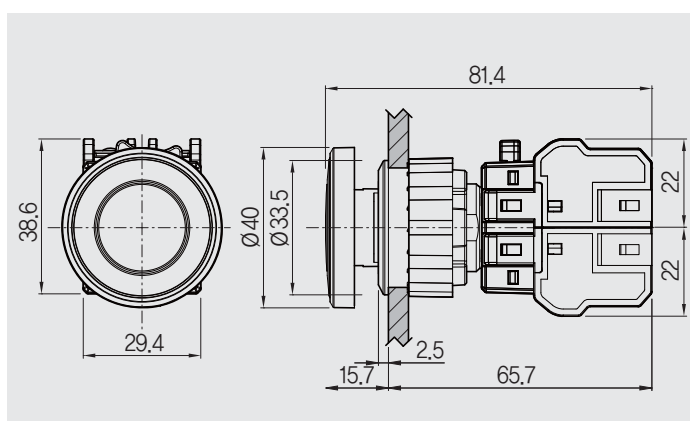
EMERGENCY STOP SWITCH

Aluminum guard



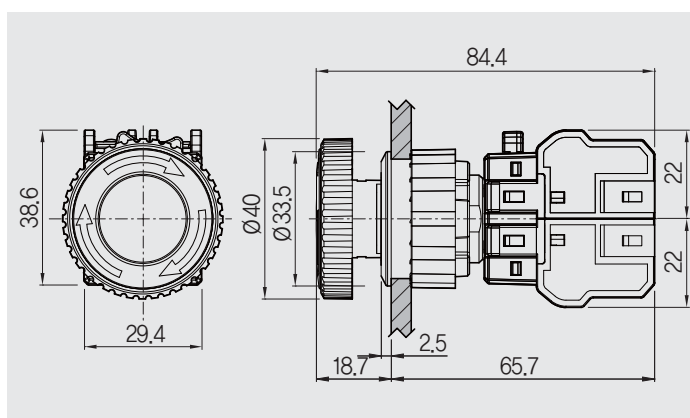
Model	Code	Description
MRE-	☐ ☐ ☐ ☐	Emergency stop switch
Actuator	A	Flush (Installing hole: Ø30)
	N	Flush (Installing hole: Ø25)
	R	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	R	Push lock turn reset
Contact composition	1	1a1b
	2	2a2b
Cap (LED color)	R	R(Red), G(Green) ※Push lock turn reset : only R(Red)

MRE-AM Flush (Ø30)



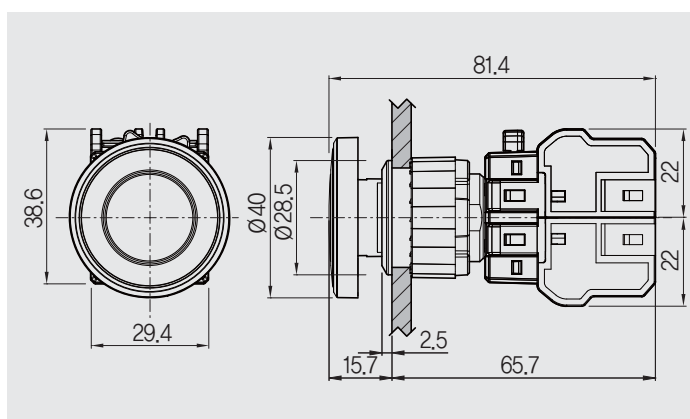
Unit : mm

MRE-AR Flush (Ø30)



Unit : mm

MRE-NM Flush (Ø25)



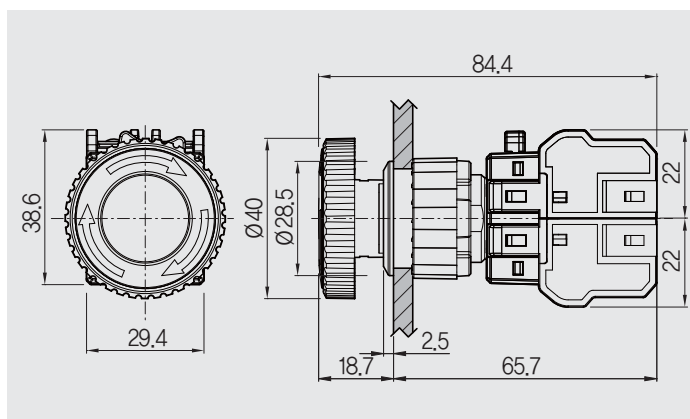
Unit : mm

EMERGENCY STOP SWITCH

Aluminum guard

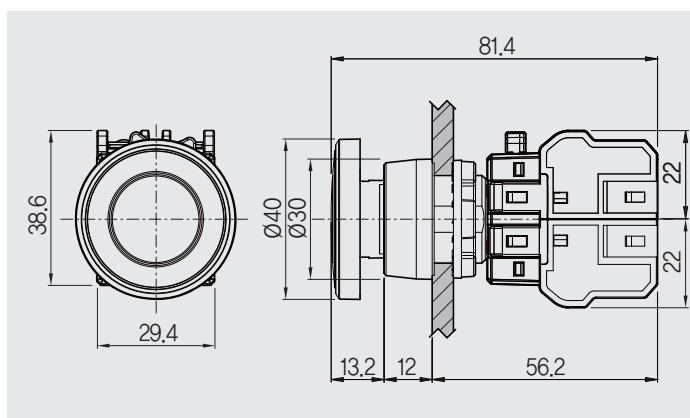


MRE-NR Flush (Ø25)



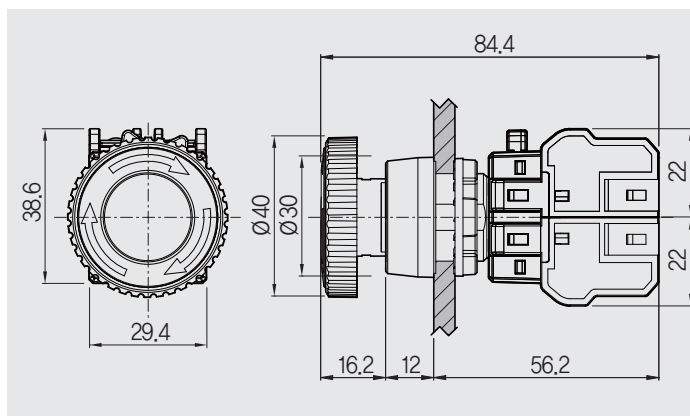
Unit : mm

MRE-RM Extended (Ø22)



Unit : mm

MRE-RR Extended (Ø22)



Unit : mm

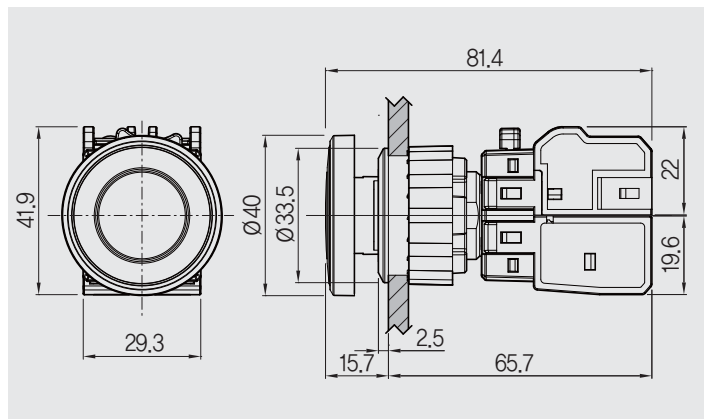
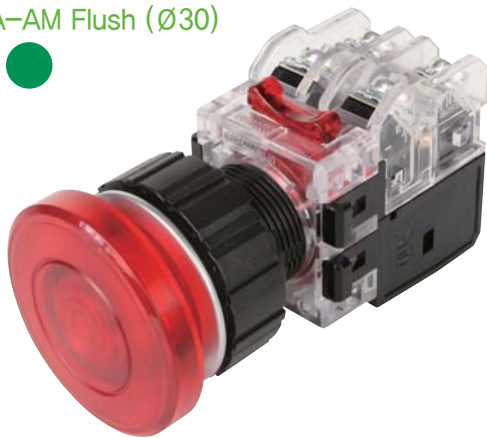
ILLUMINATED EMERGENCY STOP SWITCH

Aluminum guard



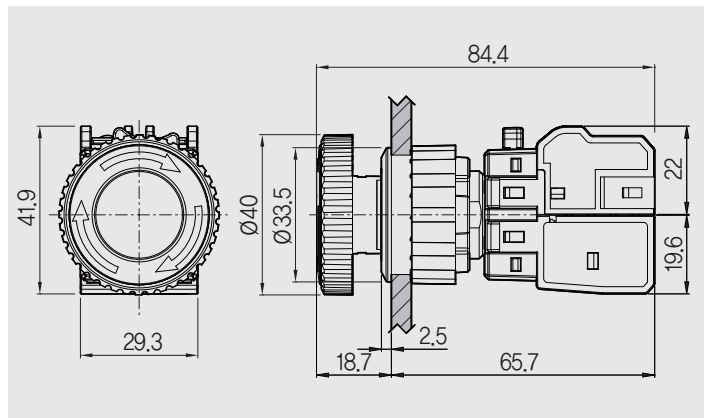
Model	Code	Description
MRA—	☐ ☐ ☐ ☐ ☐	Illuminated emergency stop switch
Actuator	A	Flush (Installing hole: Ø30)
	N	Flush (Installing hole: Ø25)
	R	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	R	Push lock turn reset
Contact composition	1	1a1b
	2	2a2b
Power supply voltage	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green) ※Push lock turn reset : only R(Red)

MRA-AM Flush (Ø30)



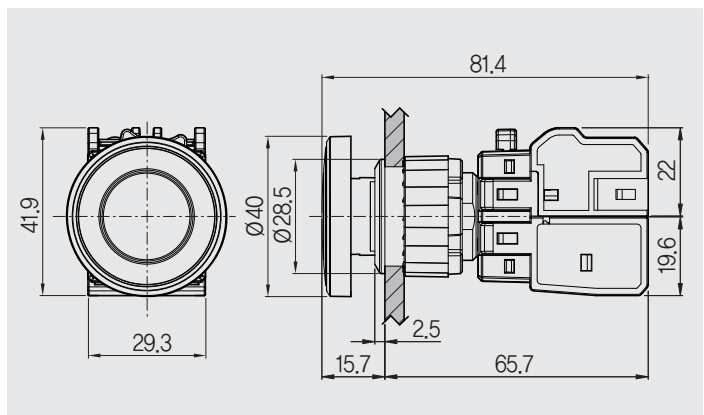
Unit : mm

MRA-AR Flush (Ø30)



Unit : mm

MRA-NM Flush (Ø25)



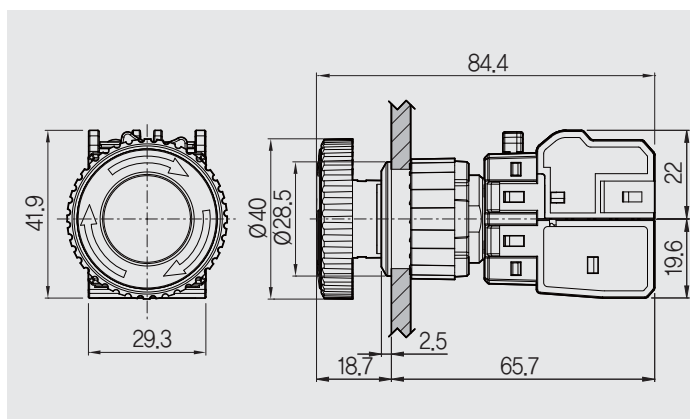
Unit : mm

ILLUMINATED EMERGENCY STOP SWITCH

Aluminum guard

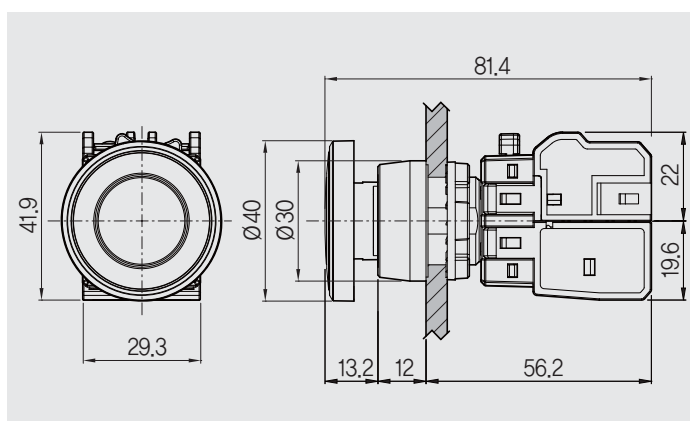


MRA-NR Flush (Ø25)



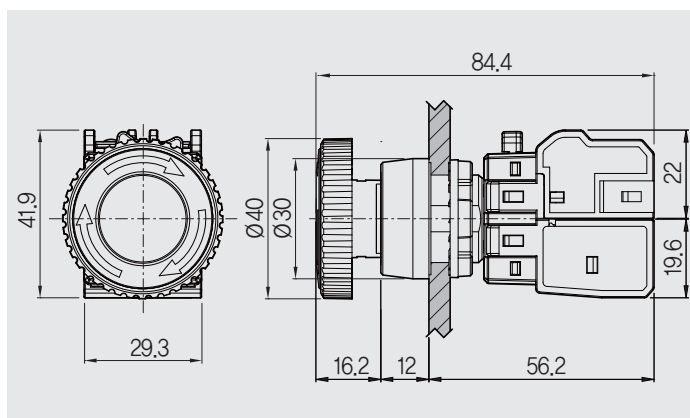
Unit : mm

MRA-RM Extended (Ø22)



Unit : mm

MRA-RR Extended (Ø22)



Unit : mm

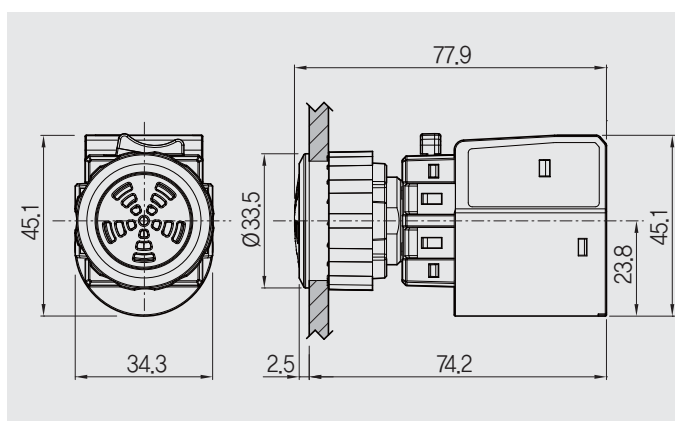
ELECTRONIC BUZZER

Aluminum guard



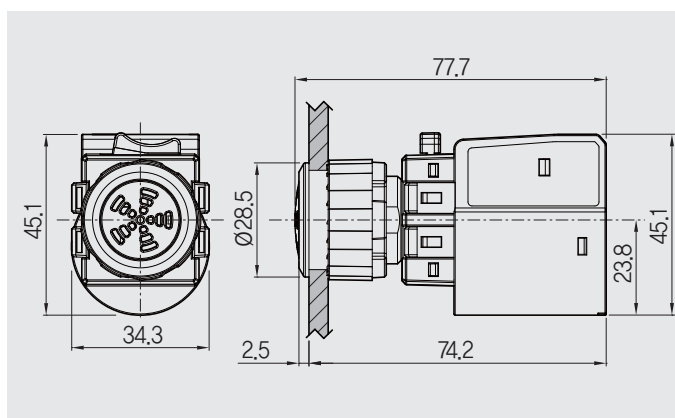
Model	Code	Description	
MRB-	☐ ☐	Electronic buzzer	
Actuator	A	Flush (Installing hole: Ø30)	Aluminum guard
	N	Flush (Installing hole: Ø25)	
	R	Extended (Installing hole: Ø22)	
Rated input voltage	A0	100 – 240 V AC	LED (Condenser voltage dropping type)
	D0	12 – 24 V DC/AC	LED (Resistance voltage dropping type)

MRB-A Flush (Ø30)



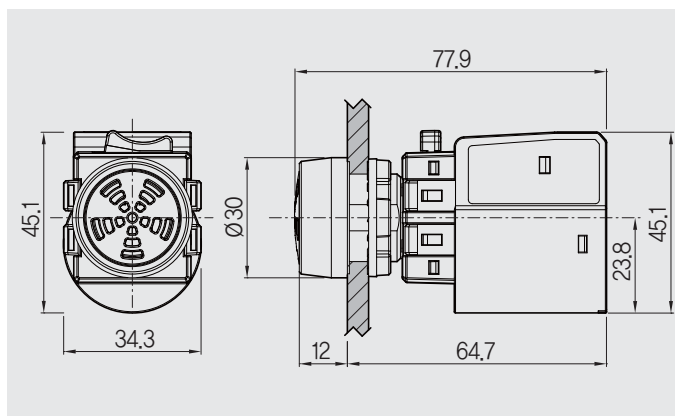
Unit : mm

MRB-N Flush (Ø25)



Unit : mm

MRB-R Extended (Ø22)



Unit : mm

MR SERIES

Plastic guard

Flush(Ø25), Extended(Ø22)



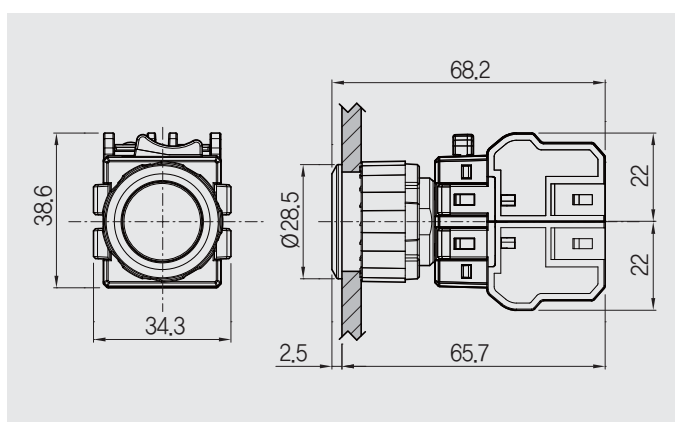
PUSH BUTTON SWITCH

Plastic guard



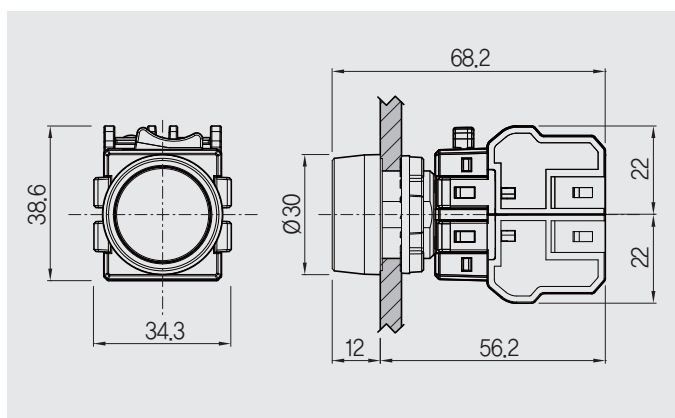
Model	Code	Description
MRF—	☐ ☐ ☐ ☐	Push button switch
Actuator	K	Flush (Installing hole: Ø25)
	T	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	A	Alternate
Contact composition	1	1a1b
	2	2a2b
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRF—K Flush (Ø25)



Unit : mm

MRF—T Extended (Ø22)



Unit : mm

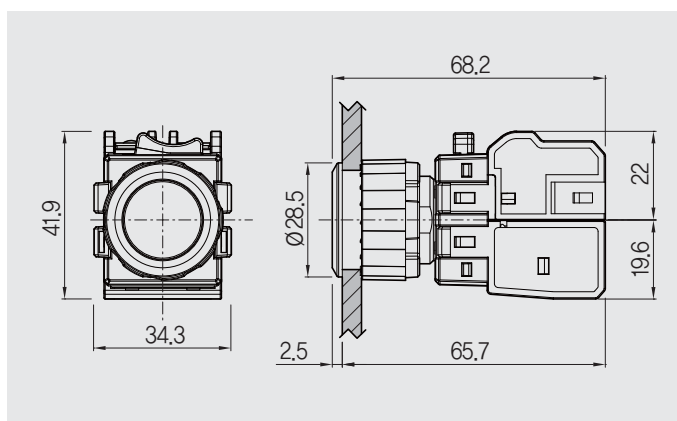
ILLUMINATED PUSH BUTTON SWITCH

Plastic guard



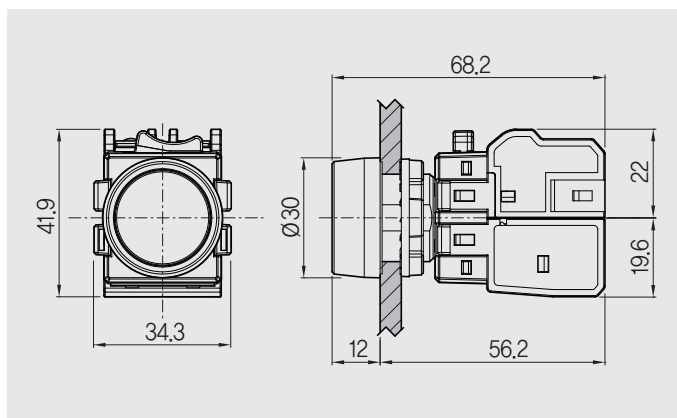
Model	Code	Description
MRX-	☐ ☐ ☐ ☐ ☐	Illuminated Push button switch
Actuator	K	Flush (Installing hole: Ø25)
	T	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	A	Alternate
Contact composition	1	1a1b
	2	2a2b
Rated input voltage	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRX-K Flush (Ø25)



Unit : mm

MRX-T Extended (Ø22)



Unit : mm

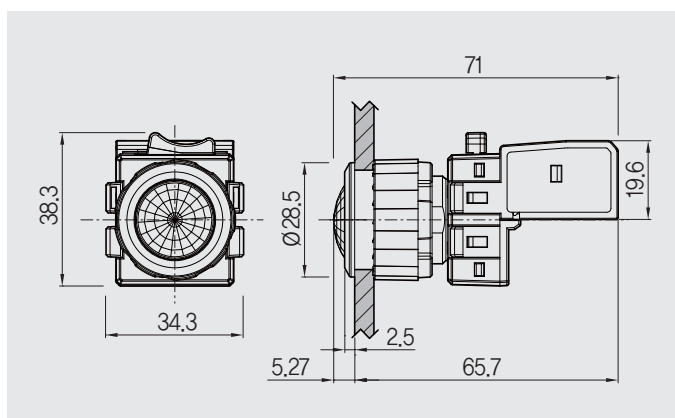
PILOT LAMP

Plastic guard



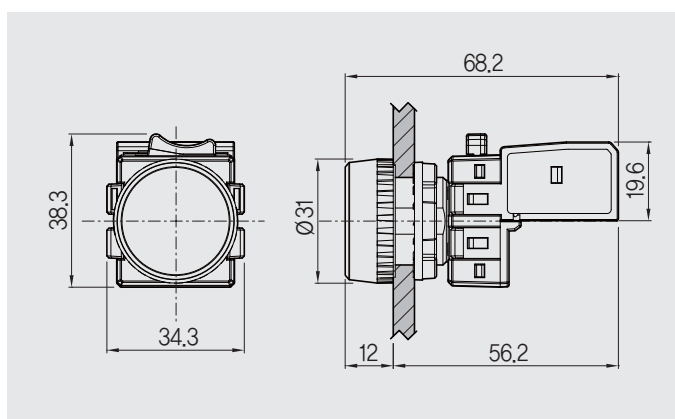
Model	Code	Description
MRP-	☐ ☐ ☐	Pilot lamp
Actuator	K	Flush (Installing hole: Ø25)
	T	Extended (Installing hole: Ø22)
Rated input voltage	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRP-K Flush (Ø25)



Unit : mm

MRP-T Extended (Ø22)



Unit : mm

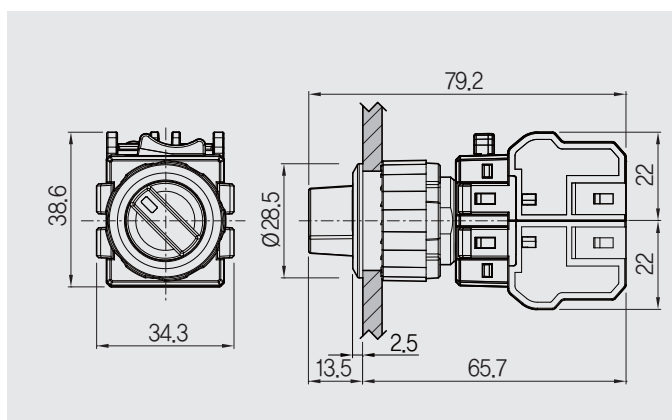
SELECTOR SWITCH

Plastic guard



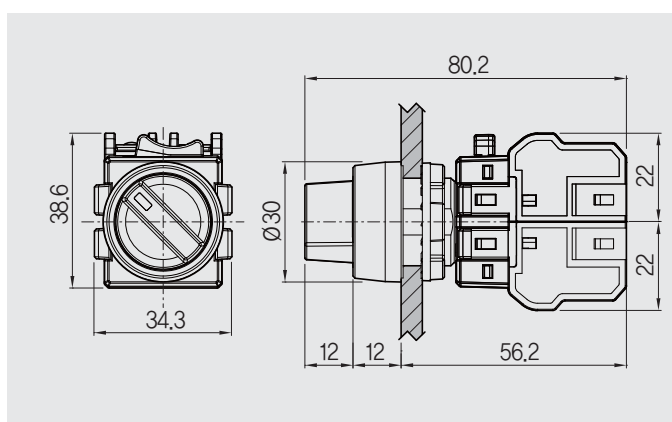
Model	Code	Description	
MRS—	☐ ☐ ☐	Selector switch	
Actuator	K	Flush (Installing hole: Ø25)	Plastic guard
	T	Extended (Installing hole: Ø22)	
Operation function	2A	2 positions alternate operation	Refer to contact operation (3 positions : Only 2a2b contact available)
	2R	2 positions momentary operation	
	3A	3 positions alternate operation	
	3R	3 positions left and right side momentary operation	
Contact composition	1	1a1b	
	2	2a2b	
Actuator color (cap color)		Black (solid)	

MRS-K Flush (Ø25)



Unit : mm

MRS-T Extended (Ø22)



Unit : mm

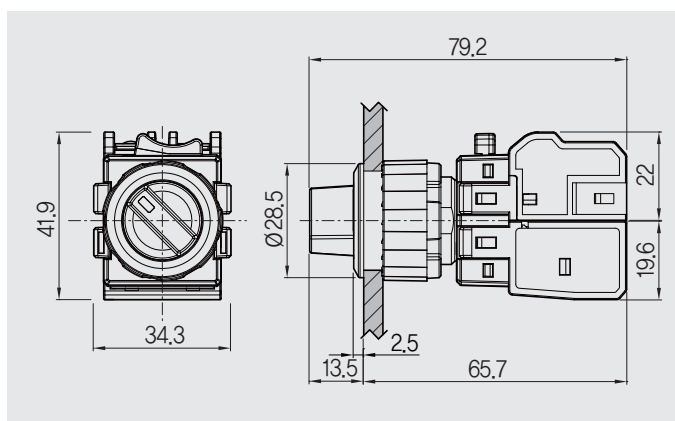
ILLUMINATED SELECTOR SWITCH

Plastic guard



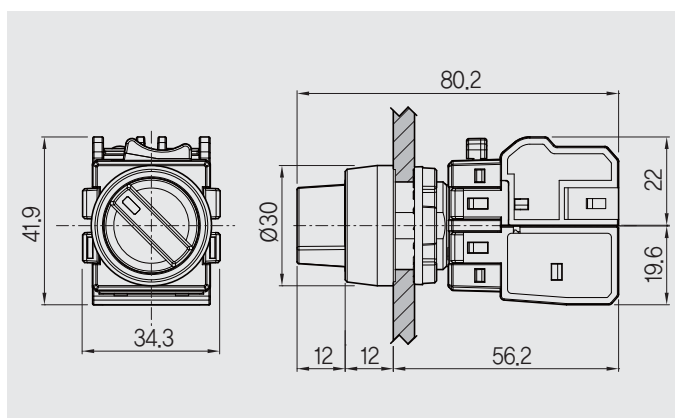
Model	Code	Description
MRT-	☐ ☐ ☐ ☐ ☐	Illuminated selector switch
Actuator	K	Flush (Installing hole: Ø25)
	T	Extended (Installing hole: Ø22)
Operation function	2A	2 positions alternate operation
	2R	2 positions momentary operation 
	3A	3 positions alternate operation
	3R	3 positions left and right side momentary operation 
Contact composition	1	1a1b
	2	2a2b
Power supply voltage	A0	100-240 V AC
	A3	380 V AC
	D0	12-24 V DC/AC
Cap (LED color)	R	R(Red), G(Green), Y(Yellow), A(Blue), W(White)

MRT-K Flush (Ø25)



Unit : mm

MRT-T Extended (Ø22)



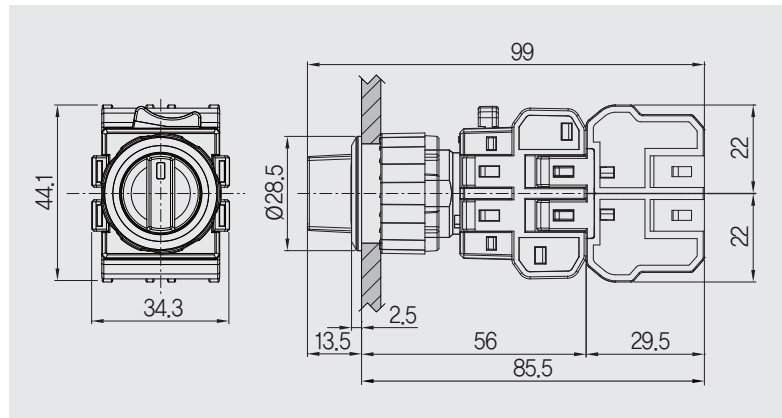
Unit : mm

ILLUMINATED SELECTOR SWITCH

Plastic guard

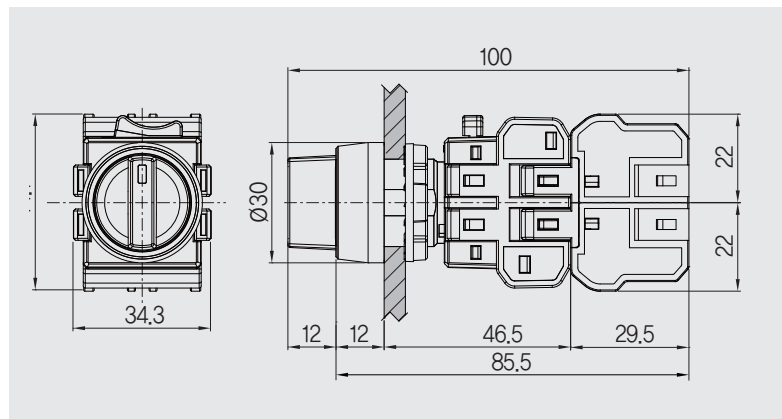


MRT-K3 Flush (Ø25)



단위 : mm

MRT-T3 Extended (Ø22)



단위 : mm



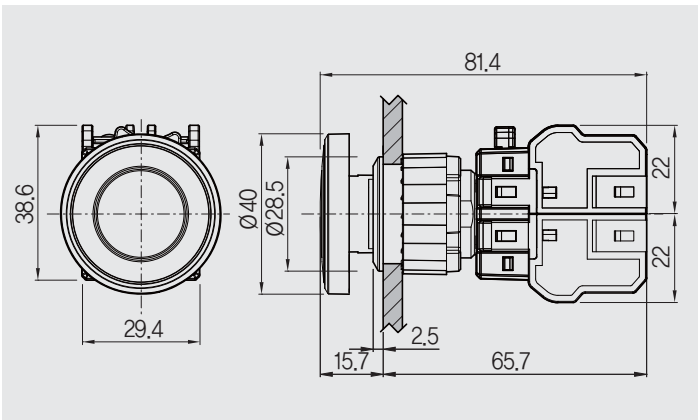
EMERGENCY STOP SWITCH

Plastic guard



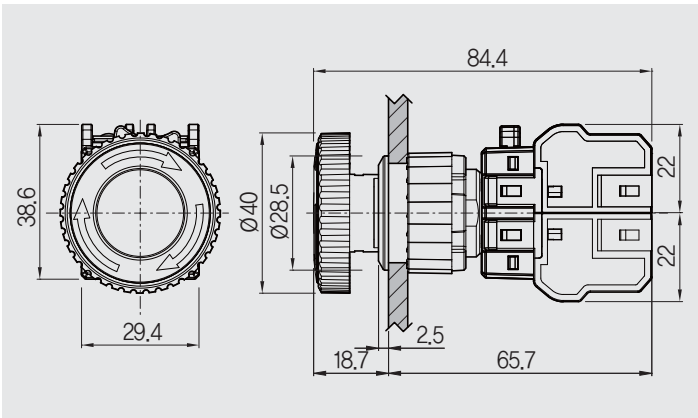
Model	Code			Description	
MRE-	☐	☐	☐	☐	Emergency stop switch
Actuator	K				Flush (Installing hole:Ø25)
	T				Extended (Installing hole:Ø22)
Operation function	M				Momentary
	R				Push lock turn reset
Contact composition	1				1a1b
	2				2a2b
Cap (LED color)		R	R(Red), G(Green)	※Push lock turn reset : only R(Red)	

MRE-KM Flush (Ø25)



Unit : mm

MRE-KR Flush (Ø25)



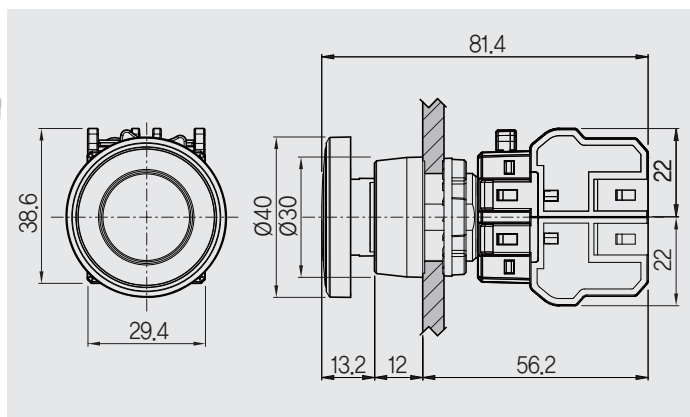
Unit : mm

EMERGENCY STOP SWITCH

Plastic guard

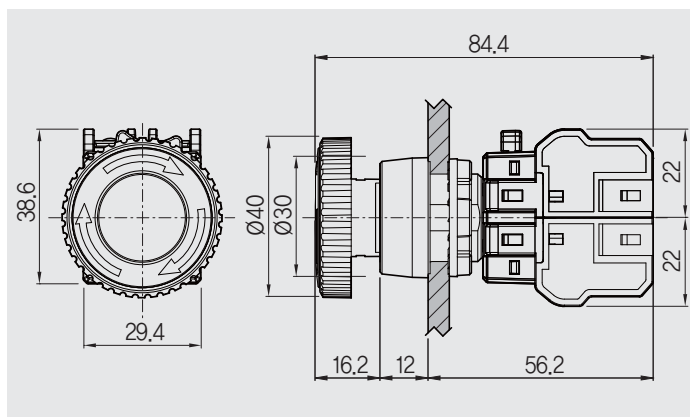


MRE-TM Extended (Ø22)



Unit : mm

MRE-TR Extended (Ø22)



Unit : mm

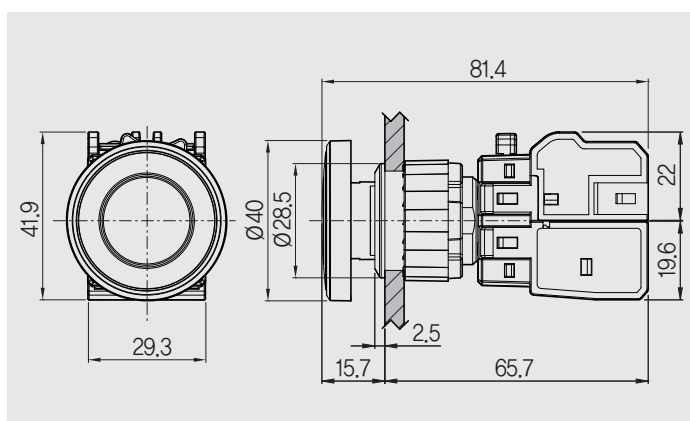
ILLUMINATED EMERGENCY STOP SWITCH

Plastic guard



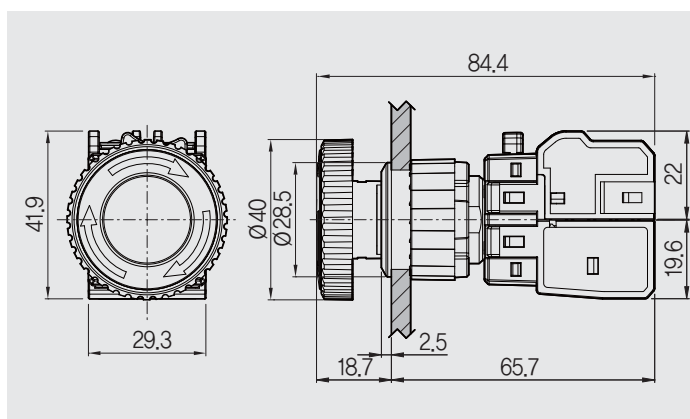
Model	Code	Description
MRA-	☐ ☐ ☐ ☐ ☐	Illuminated emergency stop switch
Actuator	K	Flush (Installing hole: Ø25)
	T	Extended (Installing hole: Ø22)
Operation function	M	Momentary
	R	Push lock turn reset
Contact composition	1	1a1b
	2	2a2b
전원전압	A0	100 – 240 V AC
	A3	380 V AC
	D0	12 – 24 V DC/AC
Cap (LED color)	R	R(Red), G(Green) ※Push lock turn reset : only R(Red)

MRA-KM Flush (Ø25)



Unit : mm

MRA-KR Flush (Ø25)



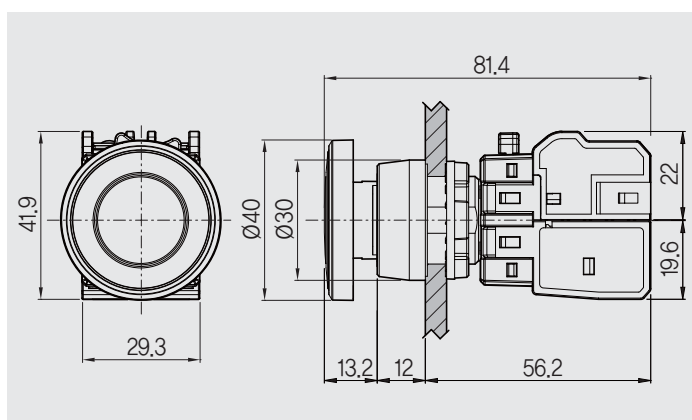
Unit : mm

ILLUMINATED EMERGENCY STOP SWITCH

Plastic guard

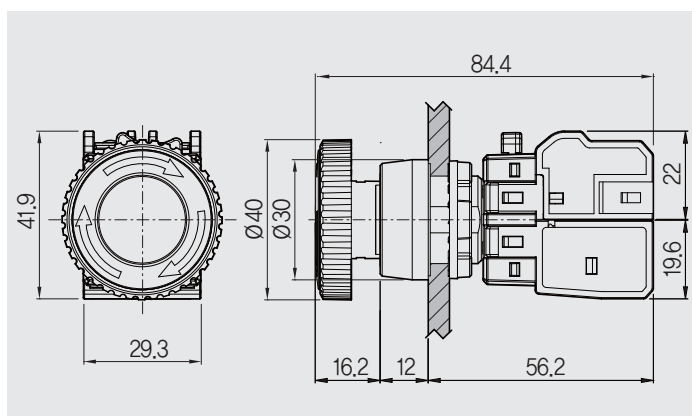


MRA-TM Extended (Ø22)



Unit : mm

MRA-TR Extended (Ø22)



Unit : mm



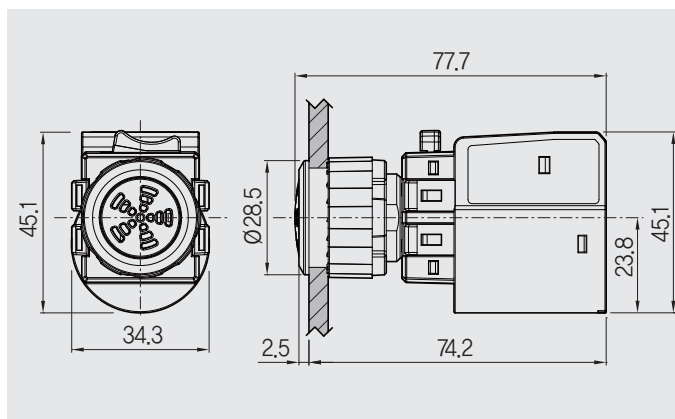
ELECTRONIC BUZZER

Plastic guard



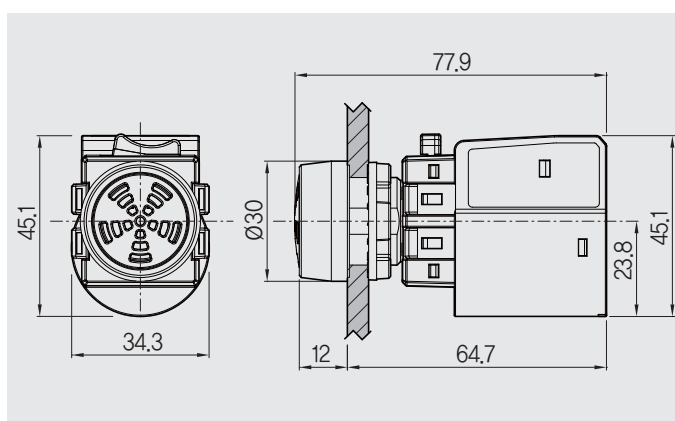
Model	Code	Description	
MRB—	☐ ☐	Electronic buzzer	
Actuator	K	Flush (Installing hole: Ø25)	Plastic guard
	T	Extended (Installing hole: Ø22)	
Rated input voltage	A0	100 – 240 V AC	LED (Condenser voltage dropping type)
	D0	12 – 24 V DC/AC	LED (Resistance voltage dropping type)

MRB-K Flush (Ø25)



Unit : mm

MRB-T Extended (Ø22)



Unit : mm

■ Suffix code

Model	Code	Description
MRF -	□	Push button switch
MRX -		Illuminated push button switch
MRP -		Pilot light
MRS -		Selector switch
MRT -		Illuminated selector switch
MRK -		Key selector switch
MRE -		Emergency stop switch
MRA -		Illuminated emergency stop switch
MRB -		Electronic buzzer
Actuator	A	Ø30 Flush
	N	Ø25 Flush
	R	Ø22 Extended
	K	Ø25 Flush
	T	Ø22 Extended

※ Please refer to the above suffix code and check out an operation function, contact composition, color actuator, rated input voltage, etc.

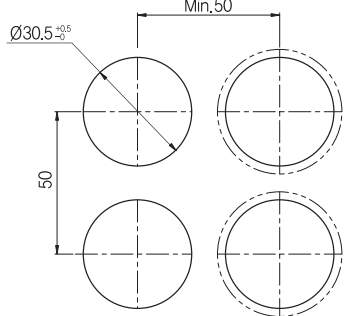
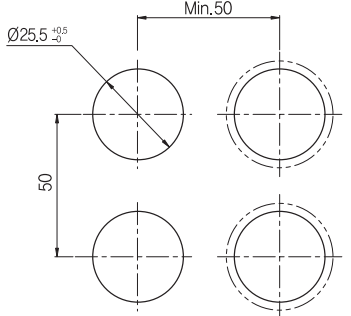
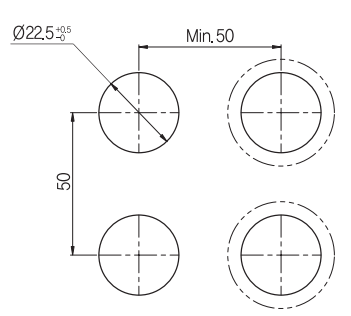
■ Specification

Contact composition		1a1b
Contact action		Snap-action
Installing panel thickness		7.0 mm (when excluded the additional accessories)
Material	Contact material	AgSnO2
	Contact body material	Polycarbonate (P.C)
Mechanical characteristic	Fixed torque	Installing nut : 1.96 N・m max, Installing nut : 0.78 N・m max
	Operating power	6.47 N (operation part + 1a1b contact)
	Operating distance	5 mm ±0.2
	Reflection time	max 3 ms
	Durability of actuator	Button: min 500 thousand times, Selector switch: min 200 thousand times
Electrical characteristic	Dielectric strength	2,000 V AC 1 min
	Contact resistance	max 50 MΩ (Initial setting)
	Insulation resistance	min 100 MΩ 500 V DC
	Rated current	6 A 250 V AC
	Min load current	5 mA 24 V DC, 10 mA 110 V DC
	Min load current	200 thousand times
Power supply voltage	Power supply voltage	100 – 240 V AC (ED condenser voltage dropping type)
		380 V AC (LED condenser voltage dropping type)
		12 – 24 V DC/AC (LED resistance voltage dropping type)
Buzzer volume		Approx. 90 dB
Environment condition	Ambient temperature	–20 ~ 55 °C
	Ambient temperature	35 ~ 85 % RH
	Storage temperature	–40 ~ 85 °C
	Shock resistance	300 ⅈ pulse cycle 11 ms
	Vibration resistance	100 ⅈ 10 – 55 Hz, amplitude 0.75 mm (within 1 ms)

■ Actuator panel installation sample

Aluminum guard			Plastic guard	
Flush (Ø30) MR□ - A	Flush (Ø25) MR□ - N	Extended (Ø22) MR□ - R	Flush (Ø25) MR□ - K	Extended (Ø22) MR□ - T
				

■ Panel cutout (Unit : mm)

Ø30 Flush	Ø25 Flush	Ø22 Extended
		

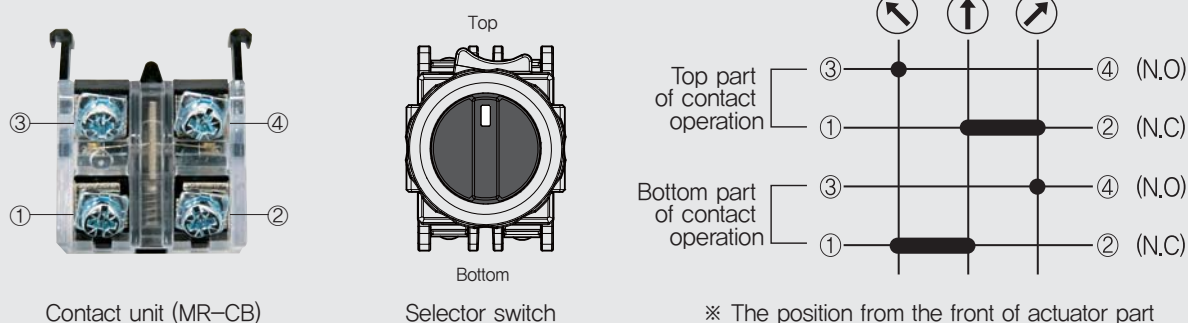
■ Contact part composition

Fixing plate (MR-FP)	Contact unit (MR-CB)	Illuminated LED unit
		

■ Selector / Key selector contact operation

In case of 3 positions selector, please refer to the contact operation diagram.

※ When installing to the contact unit



■ Accessories

Kinds	Appearance	Model	Reference
Contact unit		MR-CB	Hook fixing contact unit which is composed of 1a1b, is assembled to fixing plate.
		MR-CBC	When air-conditioning and refrigerating by slow-action contact (1a1b) and driving an industrial machine's motor, it can be used as START signal and STOP signal in relay's self-hold circuit.
Flush aluminum guard		MR-AGA	Aluminum guard A type panel cutout Ø30
		MR-AGN	Aluminum guard N type panel cutout Ø25
Extended aluminum guard		MR-AGR	Aluminum guard R type panel cutout Ø22
Fixing plate		MR-FP	Connect to actuator, contact unit and lamp unit.
3 positions of illuminated selector unit		MR-3SLA0□	100 – 240 V AC
		MR-3SLA3□	380 V AC
		MR-3SLD0□	12 – 24 V DC/AC
LED Illuminated unit		MR-LBA0□	100 – 240 V AC
		MR-LBA3□	380 V AC
		MR-LBD0□	12 – 24 V DC/AC
Protection cover		MR-AC	Protective cover is installed in opposite side when using only 1 LED illuminated unit or contact unit.

NEW PRODUCTS

Programmable temperature & humidity controller



TH510 / TD510

- High-Definition Screen (5.7" 640 x 480 TFT-LCD)
- Easy to configure due to use of touch panel
- Maximum 100 patterns (Maximum 2,000 segments)
- Digital input: Maximum 32 contacts, Digital output: Maximum 32 contacts
- Remote observation function by using Smartphone
- 3 languages are available (Korean, English, and Chinese)
- Digital recording function
- Communication function (RS422/485)

Graphic recorder



GR200

- Touch panel 5.7" 640 x 480 TFT-LCD
- Universal input (Thermocouple, RTD, VDC)
- 80M byte internal memory and support SD/SDHC memory card
- RS 485/422 communication (Modbus, PC-link)
- Remote monitoring by smart phone
- Size : 145(W) x 145(H) x 173.5(D)

Digital temperature controller



HX series

- Multi-input (Thermocouple 12 types, RTD 2 types, DC voltage 2 types)
- Heating control / Cooling control / Simultaneous heating - cooling control
- Multi-output (Relay, SSR, Current output)
- Set value (SV) selection by contact input (D.I)
- Retransmission output (4 - 20 mA)
- Fast sampling cycle 62.5 ms
- Installation depth 63 mm
- Heater break alarm
- Communication (RS485 / RS422)

Module type temperature controller



ML series

- 0.05sec sampling speed (4-channel)
- 4-channel relay / SSR / SCR output
- 8 event outputs
- Max 32units parallel connection available
- Connection and communication interface between the units by using the side connector.
- SV / minute rate of change adjustment
- Communication (RS232C, RS485)
- 76,800bps communication speed
- Installation by Din rail or screw

Thyristor power regulator

CE
(Excluded TPR-3)



TPR series

- Slim design
- Semi-permanent life expectancy
- Control mode selectable
- Movement by soft start

Solid state relay

CE
(Excluded HSR-2SL, 3SL)



HSR series

- High current load control
- Input / output high insulation
- Built-in CR snubber, zero cross
- Heat sink body type with better operability and safety

Power supply

CE



DPS series

- 35 mm DIN Rail Installation method
- Low output voltage fluctuation rate
- Low heating due to high efficiency
- DC OK Signal Relay Output Built-in
- Protection function against overcurrent, overvoltage, and overheating
- Various products from 15 W to 240 W
- Input voltage: 100 – 240 V Free Voltage or automatic selection of 110/220 V

Power supply

CE



TPS series

- Maximize the effect of protection against heat with using the Aluminum case. (30 W - 450 W)
- Output voltage adjustable volume built-in
- Free Voltage 100 - 240 V AC (15 W, 30 W, 50 W, 75 W, 450 W)
- Inrush Current Limit Circuit built-in
- Over current, Over voltage (except for 15 W), output short circuit, and overheating protection function

Bright and durable due to use of LED light

Control switch

MR series



※ Information in this catalog may change without prior notice for upgrade purpose.

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