

## PRODUCT SPECIFICATION

# 45 Series Ø22mm Metal Bezel Switches



## Technical Data

**Conventional free air thermal current I<sub>th</sub>**  
10 A, as per EN IEC 60947-5-1

**Switch rating**  
Switch rating AC with silver contact  
600 VAC, 1A, services category AC-15, as per EN IEC 60947-5-1

### Environmental conditions

**Switching system**  
Self cleaning, double-break rolling action silver contact with raked surface. The slow-make elements are constructed as per EN IEC 60947-5-1.

### Electrical characteristics

**Conventional free air thermal current I<sub>th</sub>**  
10 A, as per EN IEC 60947-5-1  
the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

**Switch rating**  
Switch rating AC (inductive) with silver contact  
service category AC-13, as per EN IEC 60947-5-1

Switch rating AC (inductive) with silver contact  
service category AC-14, as per EN IEC 60947-5-1

Switch rating (non-inductive) with silver contact

Switch rating DC with silver contact service  
category DC-13, as per EN IEC 60947-5-1

**Material**  
Silver contact

**Short-circuit protection**  
Series-connected blow-out fuse 10 A gL

**Overvoltage category**  
III, as per EN IEC 60947-5-1

**Degree of pollution**  
3, as per EN IEC 60947-1

### Contact Ratings (Contact Block)

Operating Voltage (AC/DC)		12V	24V	110V	230/240V
AC 50/60 Hz	Resistive Load	10A	10A	10A	6A
	Inductive Load	10A	10A	5A	3A
DC	Resistive Load	16A	8A	2.2A	1.1A
	Inductive Load	8A	4A	1.1A	0.6A
Contact Material		Silver			
Rated Insulation Voltage		600V			
Rated Thermal Current		10A			

• Minimum applicable load: 3V AC/DC, 5 mA  
(applicable range may vary with operating conditions and load types)



### Material

**Mushroom-head cap**  
Polyamide (PA)

**Actuator housing**  
Metal, self-extinguishing

**Switching element**  
Polyamide (PA), Polysulfon (PSU)

**Material of contact**  
Silver (Ag)

**Approvals**  
Approbations and Declaration of conformity  
CE                      CE

### Mechanical characteristics

**Terminals**  
Housing in different colors for NO and NC contacts  
Spring lift terminal helps easy wiring.

**Unlock torque**  
25 Ncm approx.







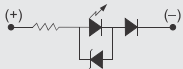
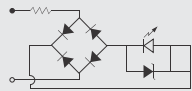



**Actuating travel**  
8.5 mm

**Rebound time**  
≤2 ms

## Specifications

Operating Temperature		-25 to +60°C (No freezing)
Storage Temperature		-40 to +80°C
Operating Humidity		45 to 85% RH (No condensation)
Contact Resistance		50 mΩ maximum (Initial value)
Insulation Resistance		100 MΩ minimum (500V DC megger)
Dielectric Strength		Between live and dead metal parts: 2,800V AC, 1 minute Between terminals: 2,800V 1 minute Indicators: 2,200 for 1 minute
Vibration Resistance	Push buttons, Indicators, Selector Switches and Key Selector Switches	Operating extremes: 5 to 55 Hz. amplitude 1 mm Damage limits: 30 Hz, amplitude 1.5 mm
	E-Stop Switches	Operating extremes: 10 to 550 Hz. amplitude 0.35 mm Acceleration: 50 m/s <sup>2</sup> (5G)
Shock Resistance	Push buttons, Indicators, Selector Switches and Key Selector Switches	Operating extremes: 100 m/s <sup>2</sup> (15G) Damage limits: 1000 m/s <sup>2</sup> (100G)
	E-Stop Switches	Operating extremes: 100 m/s <sup>2</sup> (15G) Damage limits: 1000 m/s <sup>2</sup> (100G)
Mechanical Durability (Minimum operations)	Push buttons and Illuminated push buttons	1,000,000
	Selector switch and Key selector switch	
	E-Stop Switches	
Electrical Durability (Minimum operations)	Push buttons, Selector switch and key selector switch	1,000,000
	E-Stop Switches	
Degree of Protection		Enclosed (IP20) Waterproof, dust-tight (IP65)

## LED lamp Ratings

Type	12V	24V	110V	230/240 V
Voltage Range	12V AC/DC ±10	24V AC/DC ±10%	110V AC/DC ±10%	230/240V AC/DC ±10%
Rated Voltage	12V AC/DC	24V AC/DC	110V AC/DC	230/240V AC/DC
Current Draw AC/DC	14 mA	10 mA	5.5 mA	2.7 mA
Colour	Red			
	Amber			
	Yellow			
	Green			
	Blue			
	White			
Life (reference value)	Approx. 100,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC.)			
Internal Circuit	 			<ul style="list-style-type: none"> <li> LED Chip</li> <li> Protection Diode</li> <li> Zener Diode</li> </ul>

## Model Number Structure - Pushbutton



45.110.11.02.00

Series
45 Series Metal Switches ø22mm

Operation Type		
110	Non-Illuminated Flush	Momentary
111	Non-Illuminated Extended	Momentary
112	Non-Illuminated Extended with full shroud	Momentary
113	Non-Illuminated Mushroom	Momentary
114	Illuminated Flush	Momentary
115	Illuminated Extended	Momentary
116	Illuminated Extended with Full Shroud	Momentary
117	Illuminated Mushroom	Momentary
118	Twin Head	Momentary
120	Non-Illuminated Flush	Maintained
121	Non-Illuminated Extended	Maintained
122	Non-Illuminated Extended with full shroud	Maintained
123	Non-Illuminated Mushroom	Maintained
124	Illuminated Flush	Maintained
125	Illuminated Extended	Maintained
126	Illuminated Extended with Full Shroud	Maintained
127	Illuminated Mushroom	Maintained

Voltage (Illuminated Types Only)	
12	12V AC/DC
24	24V AC/DC
11	110V AC/DC
23	230/240V AC/DC
00	Non-Illuminated

Colour	
02	Red
03	Amber
04	Yellow
05	Green
06	Blue
09	White
00	Black *

Contact	
00	No Contacts
10	1NO
01	1NC
11	1NO-1NC
20	2NO
02	2NC
22	2NO-2NC
30	3NO
03	3NC
40	4NO
04	4NC
12	1NO-2NC
21	2NO-1NC
13	1NO-3NC
31	3NO-1NC

Please contact your *WERNER* representative for more contact arrangement.

## Model Number Structure - Illuminated & Non-Illuminated Selector Switch



45.130.11.00.00

Series
45 Series Metal Switches ø22mm

Non-Illuminated Selector Switch Type		Position
130	Maintained	90° 2 Positions
131	Spring Return From Right	
132	Maintained	45° 3 Positions
133	Spring Return From Right	
134	Spring Return From Left	
135	Spring Return From 2 ways	

Illuminated Selector Switch Type		Position
136	Maintained	90° 2 Positions
137	Spring Return From Right	
138	Maintained	45° 3 Positions
139	Spring Return From Right	
140	Spring Return From Left	
141	Spring Return From 2 ways	

Voltage (Illuminated Types Only)	
12	12V AC/DC
24	24V AC/DC
11	110V AC/DC
23	230/240V AC/DC
00	Non-Illuminated

Colour	
00	Black
02	Red
03	Amber
04	Yellow
05	Green
06	Blue
09	White

Contact	
00	No Contacts
10	1NO
01	1NC
11	1NO-1NC
20	2NO
02	2NC
22	2NO-2NC
30	3NO
03	3NC
40	4NO
04	4NC
12	1NO-2NC
21	2NO-1NC
13	1NO-3NC
31	3NO-1NC

Please contact your *WERNER* representative for more contact arrangement.

Non-Illuminated Selector Switches are in black only.

# 45 Series Metal Switches

ø22mm WERNER

## Model Number Structure - Key Selector Switch



45.142.11.00

Series
45 Series Metal Switches ø22mm

Colour
00 Black

Key Selector Switch Type	Retained at	Pos.
142 Maintained	N.A	90° - 2 Pos.
143 Maintained	R	
144 Maintained	L	
145 Spring Return From Right	R & L	
146 Maintained	N.A	
147 Maintained	R	45° - 3 Pos.
148 Maintained	L	
149 Maintained	R & L	
150 Maintained	C	
151 Maintained	C & R	
152 Maintained	C & L	
153 Spring Return From Right	R	
154 Spring Return From Right	R & L	
155 Spring Return From Right	R & C	
156 Spring Return From Left	L	
157 Spring Return From Left	L & R	
158 Spring Return From Left	L & C	
159 Spring Return From 2 ways	R & L	

Contact
00 No Contacts
10 1NO
01 1NC
11 1NO-1NC
20 2NO
02 2NC
22 2NO-2NC
30 3NO
03 3NC
40 4NO
04 4NC
12 1NO-2NC
21 2NO-1NC
13 1NO-3NC
31 3NO-1NC

Please contact your *WERNER* representative for more contact arrangement.

## Model Number Structure - Illuminated & Non-Illuminated Emergency Stop Switch



45.186.10.02.24

Series
45 Series Metal Switches ø22mm

Emergency Stop Switch	Operation
186 Illuminated ø40 mm Mushroom	Pushlock Turn Reset
187 Non-Illuminated ø40 mm Mushroom	Pushlock Turn Reset
188 Illuminated ø40 mm Mushroom	Pushlock Turn Reset

Voltage	
12	12VAC/DC
24	24VAC/DC
11	110VAC/DC
23	230V AC

Colour	
02	Red

Contact	
00	No Contacts
10	1NO
01	1NC
11	1NO-1NC
20	2NO
02	2NC
22	2NO-2NC
30	3NO
03	3NC
40	4NO
04	4NC
12	1NO-2NC
21	2NO-1NC
13	1NO-3NC
31	3NO-1NC

Please contact your *WERNER* representative for more contact arrangement.



# 45 Series Metal Switches

ø22mm WERNER

## Non-illuminated Pushbutton Model Selection







Appearance	Pushbutton Type	Operation	Type	Contact	Model No.	Color
					Red 	
	Flush	Momentary	Non-illuminated	1NO	45.110.10.02	
				1NC	45.110.01.02	
				1NO-1NC	45.110.11.02	
				2NO	45.110.20.02	For more color options, refer to next page
				2NC	45.110.02.02	
		2NO-2NC	45.110.22.02			
		Maintained	Non-illuminated	1NO	45.120.10.02	
				1NC	45.120.01.02	
				1NO-1NC	45.120.11.02	
				2NO	45.120.20.02	
2NC	45.120.02.02					
2NO-2NC	45.120.22.02					
	Extended	Momentary	Non-illuminated	1NO	45.111.10.02	
				1NC	45.111.01.02	
				1NO-1NC	45.111.11.02	
				2NO	45.111.20.02	For more color options, refer to next page
				2NC	45.111.02.02	
		2NO-2NC	45.111.22.02			
		Maintained	Non-illuminated	1NO	45.121.10.02	
				1NC	45.121.01.02	
				1NO-1NC	45.121.11.02	
				2NO	45.121.20.02	
2NC	45.121.02.02					
2NO-2NC	45.121.22.02					
	Mushroom	Momentary	Non-illuminated	1NO	45.113.10.02	
				1NC	45.113.01.02	
				1NO-1NC	45.113.11.02	
				2NO	45.113.20.02	For more color options, refer to next page
				2NC	45.113.02.02	
		2NO-2NC	45.113.22.02			
		Maintained	Non-illuminated	1NO	45.123.10.02	
				1NC	45.123.01.02	
				1NO-1NC	45.123.11.02	
				2NO	45.123.20.02	
2NC	45.123.02.02					
2NO-2NC	45.123.22.02					
	Extended With Full Shroud	Momentary	Non-illuminated	1NO	45.112.10.02	
				1NC	45.112.01.02	
				1NO-1NC	45.112.11.02	
				2NO	45.112.20.02	For more color options, refer to next page
				2NC	45.112.02.02	
		2NO-2NC	45.112.22.02			
		Maintained	Non-illuminated	1NO	45.122.10.02	
				1NC	45.122.01.02	
				1NO-1NC	45.122.11.02	
				2NO	45.122.20.02	
2NC	45.122.02.02					
2NO-2NC	45.122.22.02					



# 45 Series Metal Switches

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## Non-illuminated Pushbutton Model Selection

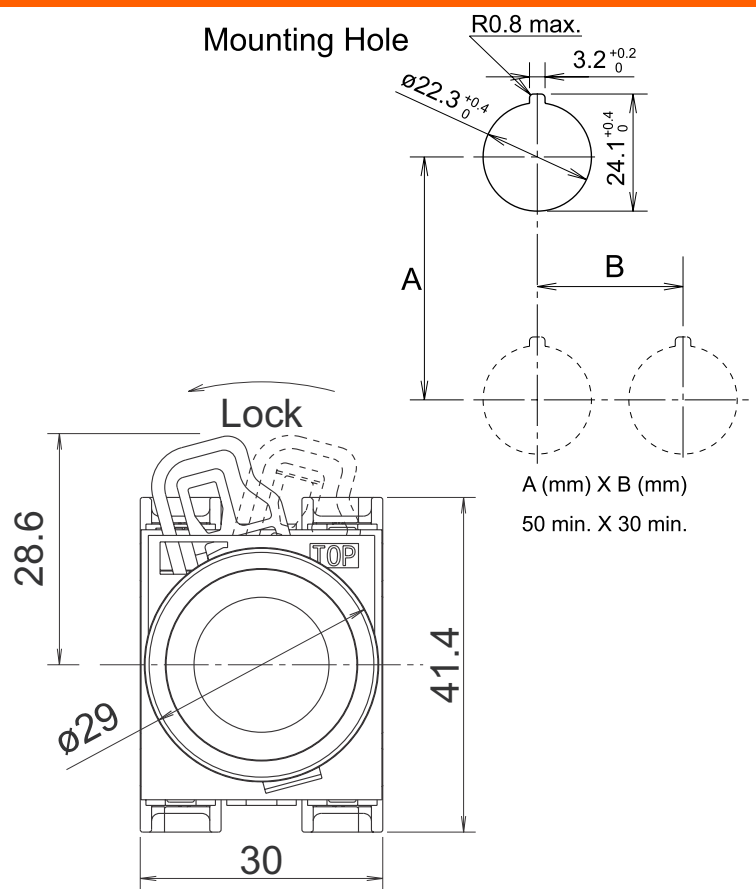
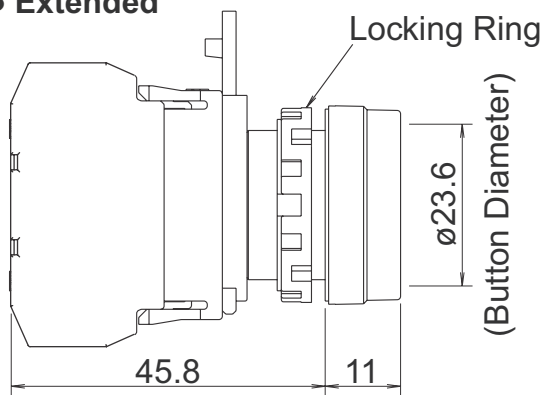
Model No.					
Amber 	Yellow 	Green 	Blue 	White 	Black 
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45.112.22.03	45.112.22.04	45.112.22.05	45.112.22.06	45.112.22.09	45.112.22.00
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Please contact your WERNER representative for more contact arrangement.

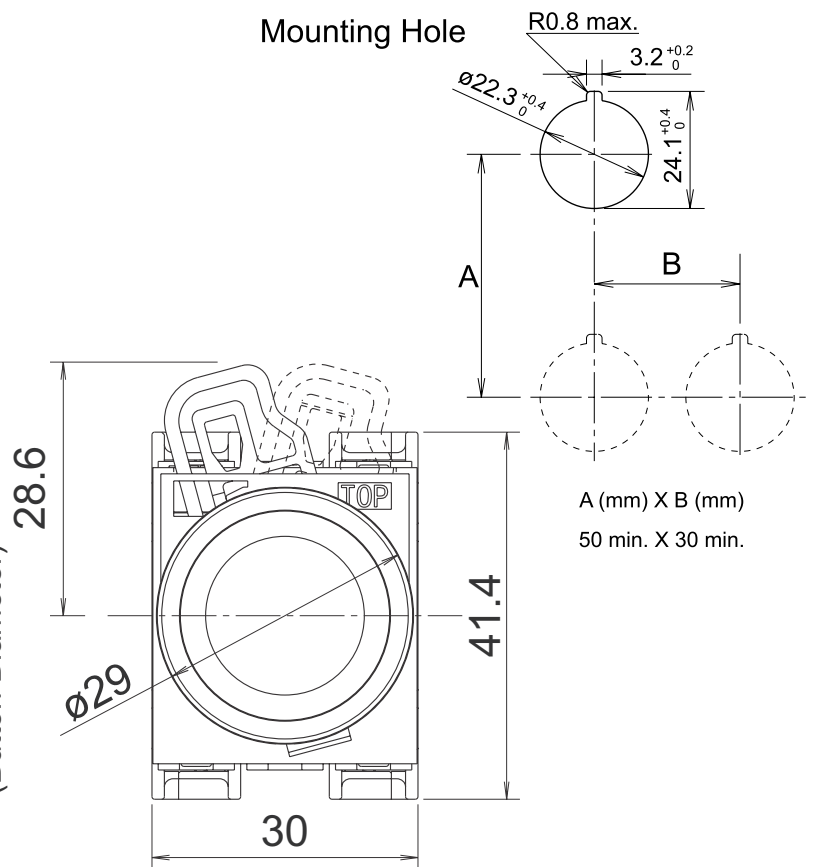
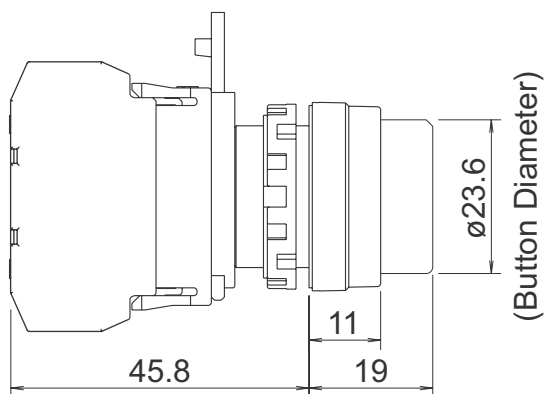
## Dimensions - Pushbuttons



• **Extended**



• **Extended with Full Shroud**

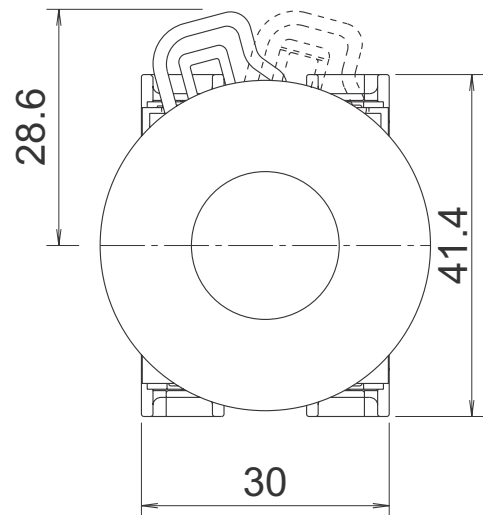
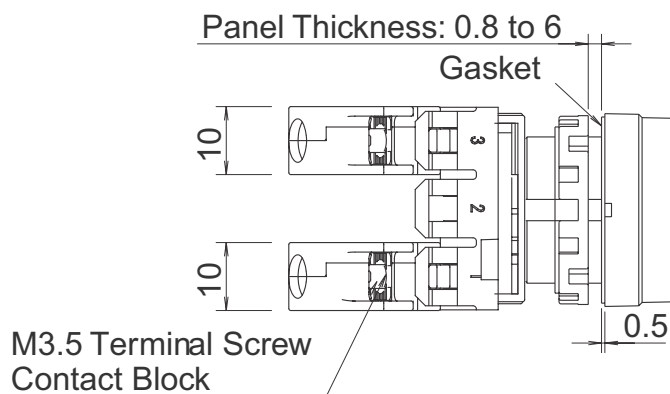
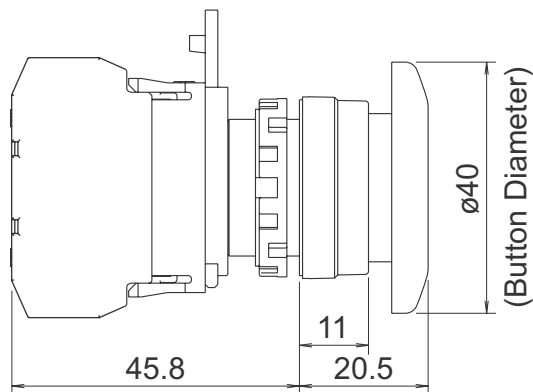


All dimensions in mm.

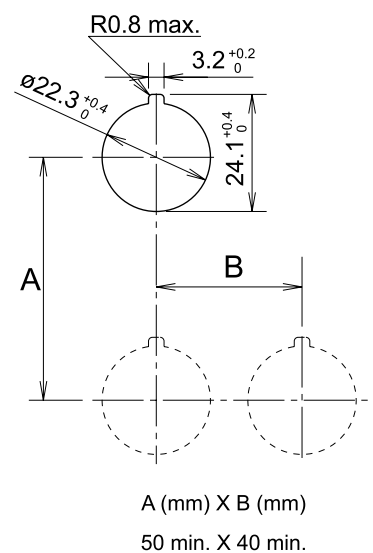
## Dimensions - Pushbuttons








### • Mushroom








### Mounting Hole






## Illuminated Flush Pushbutton - Model Selection

Appearance	Pushbutton Type	Operation	Voltage	Contact	Model No.	Color
					Red 	
	Flush	Momentary	12V AC/DC	1NO	45.114.10.02.12	
				1NC	45.114.01.02.12	
				1NO-1NC	45.114.11.02.12	
				2NO	45.114.20.02.12	
				2NC	45.114.02.02.12	
			24V AC/DC	2NO-2NC	45.114.22.02.12	
				1NO	45.114.10.02.24	
				1NC	45.114.01.02.24	
				1NO-1NC	45.114.11.02.24	
				2NO	45.114.20.02.24	For more color options, refer to next page
			110V AC/DC	2NC	45.114.02.02.24	
				2NO-2NC	45.114.22.02.24	
				1NO	45.114.10.02.11	
				1NC	45.114.01.02.11	
				1NO-1NC	45.114.11.02.11	
			2NO	45.114.20.02.11		
			2NC	45.114.02.02.11		
			230/240V AC/DC	2NO-2NC	45.114.22.02.11	
				1NO	45.114.10.02.23	
				1NC	45.114.01.02.23	
1NO-1NC	45.114.11.02.23					
2NO	45.114.20.02.23					
	Flush	Maintained	12V AC/DC	2NC	45.114.02.02.23	
				2NO-2NC	45.114.22.02.23	
				1NO	45.124.10.02.12	
				1NC	45.124.01.02.12	
				1NO-1NC	45.124.11.02.12	
			24V AC/DC	2NO	45.124.20.02.12	
				2NC	45.124.02.02.12	
				2NO-2NC	45.124.22.02.12	
				1NO	45.124.10.02.24	
				1NC	45.124.01.02.24	
			110V AC/DC	1NO-1NC	45.124.11.02.24	
				2NO	45.124.20.02.24	For more color options, refer to next page
				2NC	45.124.02.02.24	
				2NO-2NC	45.124.22.02.24	
				1NO	45.124.10.02.11	
			1NC	45.124.01.02.11		
			1NO-1NC	45.124.11.02.11		
			2NO	45.124.20.02.11		
			2NC	45.124.02.02.11		
			230/240V AC/DC	2NO-2NC	45.124.22.02.11	
1NO	45.124.10.02.23					
1NC	45.124.01.02.23					
1NO-1NC	45.124.23.02.23					
2NO	45.124.20.02.23					
	2NC	45.124.02.02.23				
	2NO-2NC	45.124.22.02.23				

## Illuminated Flush Pushbutton - Model Selection

Model No.				
Amber 	Yellow 	Green 	Blue 	White 
45.114.10.03.12	45.114.10.04.12	45.114.10.05.12	45.114.10.06.12	45.114.10.09.12
45.114.01.03.12	45.114.01.04.12	45.114.01.05.12	45.114.01.06.12	45.114.01.09.12
45.114.11.03.12	45.114.11.04.12	45.114.11.05.12	45.114.11.06.12	45.114.11.09.12
45.114.20.03.12	45.114.20.04.12	45.114.20.05.12	45.114.20.06.12	45.114.20.09.12
45.114.02.03.12	45.114.02.04.12	45.114.02.05.12	45.114.02.06.12	45.114.02.09.12
45.114.22.03.12	45.114.22.04.12	45.114.22.05.12	45.114.22.06.12	45.114.22.09.12
45.114.10.03.24	45.114.10.04.24	45.114.10.05.24	45.114.10.06.24	45.114.10.09.24
45.114.01.03.24	45.114.01.04.24	45.114.01.05.24	45.114.01.06.24	45.114.01.09.24
45.114.11.03.24	45.114.11.04.24	45.114.11.05.24	45.114.11.06.24	45.114.11.09.24
45.114.20.03.24	45.114.20.04.24	45.114.20.05.24	45.114.20.06.24	45.114.20.09.24
45.114.02.03.24	45.114.02.04.24	45.114.02.05.24	45.114.02.06.24	45.114.02.09.24
45.114.22.03.24	45.114.22.04.24	45.114.22.05.24	45.114.22.06.24	45.114.22.09.24
45.114.10.03.11	45.114.10.04.11	45.114.10.05.11	45.114.10.06.11	45.114.10.09.11
45.114.01.03.11	45.114.01.04.11	45.114.01.05.11	45.114.01.06.11	45.114.01.09.11
45.114.11.03.11	45.114.11.04.11	45.114.11.05.11	45.114.11.06.11	45.114.11.09.11
45.114.20.03.11	45.114.20.04.11	45.114.20.05.11	45.114.20.06.11	45.114.20.09.11
45.114.02.03.11	45.114.02.04.11	45.114.02.05.11	45.114.02.06.11	45.114.02.09.11
45.114.22.03.11	45.114.22.04.11	45.114.22.05.11	45.114.22.06.11	45.114.22.09.11
45.114.10.03.23	45.114.10.04.23	45.114.10.05.23	45.114.10.06.23	45.114.10.09.23
45.114.01.03.23	45.114.01.04.23	45.114.01.05.23	45.114.01.06.23	45.114.01.09.23
45.114.11.03.23	45.114.11.04.23	45.114.11.05.23	45.114.11.06.23	45.114.11.09.23
45.114.20.03.23	45.114.20.04.23	45.114.20.05.23	45.114.20.06.23	45.114.20.09.23
45.114.02.03.23	45.114.02.04.23	45.114.02.05.23	45.114.02.06.23	45.114.02.09.23
45.114.22.03.23	45.114.22.04.23	45.114.22.05.23	45.114.22.06.23	45.114.22.09.23
45.124.10.03.12	45.124.10.04.12	45.124.10.05.12	45.124.10.06.12	45.124.10.09.12
45.124.01.03.12	45.124.01.04.12	45.124.01.05.12	45.124.01.06.12	45.124.01.09.12
45.124.11.03.12	45.124.11.04.12	45.124.11.05.12	45.124.11.06.12	45.124.11.09.12
45.124.20.03.12	45.124.20.04.12	45.124.20.05.12	45.124.20.06.12	45.124.20.09.12
45.124.02.03.12	45.124.02.04.12	45.124.02.05.12	45.124.02.06.12	45.124.02.09.12
45.124.22.03.12	45.124.22.04.12	45.124.22.05.12	45.124.22.06.12	45.124.22.09.12
45.124.10.03.24	45.124.10.04.24	45.124.10.05.24	45.124.10.06.24	45.124.10.09.24
45.124.01.03.24	45.124.01.04.24	45.124.01.05.24	45.124.01.06.24	45.124.01.09.24
45.124.11.03.24	45.124.11.04.24	45.124.11.05.24	45.124.11.06.24	45.124.11.09.24
45.124.20.03.24	45.124.20.04.24	45.124.20.05.24	45.124.20.06.24	45.124.20.09.24
45.124.02.03.24	45.124.02.04.24	45.124.02.05.24	45.124.02.06.24	45.124.02.09.24
45.124.22.03.24	45.124.22.04.24	45.124.22.05.24	45.124.22.06.24	45.124.22.09.24
45.124.10.03.11	45.124.10.04.11	45.124.10.05.11	45.124.10.06.11	45.124.10.09.11
45.124.01.03.11	45.124.01.04.11	45.124.01.05.11	45.124.01.06.11	45.124.01.09.11
45.124.11.03.11	45.124.11.04.11	45.124.11.05.11	45.124.11.06.11	45.124.11.09.11
45.124.20.03.11	45.124.20.04.11	45.124.20.05.11	45.124.20.06.11	45.124.20.09.11
45.124.02.03.11	45.124.02.04.11	45.124.02.05.11	45.124.02.06.11	45.124.02.09.11
45.124.22.03.11	45.124.22.04.11	45.124.22.05.11	45.124.22.06.11	45.124.22.09.11
45.124.10.03.23	45.124.10.04.23	45.124.10.05.23	45.124.10.06.23	45.124.10.09.23
45.124.01.03.23	45.124.01.04.23	45.124.01.05.23	45.124.01.06.23	45.124.01.09.23
45.124.23.03.23	45.124.23.04.23	45.124.23.05.23	45.124.23.06.23	45.124.23.09.23
45.124.20.03.23	45.124.20.04.23	45.124.20.05.23	45.124.20.06.23	45.124.20.09.23
45.124.02.03.23	45.124.02.04.23	45.124.02.05.23	45.124.02.06.23	45.124.02.09.23
45.124.22.03.23	45.124.22.04.23	45.124.22.05.23	45.124.22.06.23	45.124.22.09.23

## Illuminated Extended Pushbutton - Model Selection






Appearance	Pushbutton Type	Operation	Voltage	Contact	Model No.	Color
					Red 	
	Extended	Momentary	12V AC/DC	1NO	45.115.10.02.12	
				1NC	45.115.01.02.12	
				1NO-1NC	45.115.11.02.12	
				2NO	45.115.20.02.12	
				2NC	45.115.02.02.12	
			2NO-2NC	45.115.22.02.12		
			24V AC/DC	1NO	45.115.10.02.24	
				1NC	45.115.01.02.24	
				1NO-1NC	45.115.11.02.24	
				2NO	45.115.20.02.24	For more color options, refer to next page
				2NC	45.115.02.02.24	
			2NO-2NC	45.115.22.02.24		
			110V AC/DC	1NO	45.115.10.02.11	
				1NC	45.115.01.02.11	
				1NO-1NC	45.115.11.02.11	
				2NO	45.115.20.02.11	
				2NC	45.115.02.02.11	
			2NO-2NC	45.115.22.02.11		
			230/240V AC/DC	1NO	45.115.10.02.23	
				1NC	45.115.01.02.23	
1NO-1NC	45.115.11.02.23					
2NO	45.115.20.02.23					
2NC	45.115.02.02.23					
2NO-2NC	45.115.22.02.23					
	Extended	Maintained	12V AC/DC	1NO	45.125.10.02.12	
				1NC	45.125.01.02.12	
				1NO-1NC	45.125.11.02.12	
				2NO	45.125.20.02.12	
				2NC	45.125.02.02.12	
			2NO-2NC	45.125.22.02.12		
			24V AC/DC	1NO	45.125.10.02.24	
				1NC	45.125.01.02.24	
				1NO-1NC	45.125.11.02.24	
				2NO	45.125.20.02.24	For more color options, refer to next page
				2NC	45.125.02.02.24	
			2NO-2NC	45.125.22.02.24		
			110V AC/DC	1NO	45.125.10.02.11	
				1NC	45.125.01.02.11	
				1NO-1NC	45.125.11.02.11	
				2NO	45.125.20.02.11	
				2NC	45.125.02.02.11	
			2NO-2NC	45.125.22.02.11		
			230/240V AC/DC	1NO	45.125.10.02.23	
				1NC	45.125.01.02.23	
1NO-1NC	45.125.11.02.23					
2NO	45.125.20.02.23					
2NC	45.125.02.02.23					
2NO-2NC	45.125.22.02.23					

LED Lamp type.

# 45 Series Metal Switches

ø22mm **WERNER**

## Illuminated Extended Pushbutton - Model Selection

Model No.				
Amber 	Yellow 	Green 	Blue 	White 
45.115.10.03.12	45.115.10.04.12	45.115.10.05.12	45.115.10.06.12	45.115.10.09.12
45.115.01.03.12	45.115.01.04.12	45.115.01.05.12	45.115.01.06.12	45.115.01.09.12
45.115.11.03.12	45.115.11.04.12	45.115.11.05.12	45.115.11.06.12	45.115.11.09.12
45.115.20.03.12	45.115.20.04.12	45.115.20.05.12	45.115.20.06.12	45.115.20.09.12
45.115.02.03.12	45.115.02.04.12	45.115.02.05.12	45.115.02.06.12	45.115.02.09.12
45.115.22.03.12	45.115.22.04.12	45.115.22.05.12	45.115.22.06.12	45.115.22.09.12
45.115.10.03.24	45.115.10.04.24	45.115.10.05.24	45.115.10.06.24	45.115.10.09.24
45.115.01.03.24	45.115.01.04.24	45.115.01.05.24	45.115.01.06.24	45.115.01.09.24
45.115.11.03.24	45.115.11.04.24	45.115.11.05.24	45.115.11.06.24	45.115.11.09.24
45.115.20.03.24	45.115.20.04.24	45.115.20.05.24	45.115.20.06.24	45.115.20.09.24
45.115.02.03.24	45.115.02.04.24	45.115.02.05.24	45.115.02.06.24	45.115.02.09.24
45.115.22.03.24	45.115.22.04.24	45.115.22.05.24	45.115.22.06.24	45.115.22.09.24
45.115.10.03.11	45.115.10.04.11	45.115.10.05.11	45.115.10.06.11	45.115.10.09.11
45.115.01.03.11	45.115.01.04.11	45.115.01.05.11	45.115.01.06.11	45.115.01.09.11
45.115.11.03.11	45.115.11.04.11	45.115.11.05.11	45.115.11.06.11	45.115.11.09.11
45.115.20.03.11	45.115.20.04.11	45.115.20.05.11	45.115.20.06.11	45.115.20.09.11
45.115.02.03.11	45.115.02.04.11	45.115.02.05.11	45.115.02.06.11	45.115.02.09.11
45.115.22.03.11	45.115.22.04.11	45.115.22.05.11	45.115.22.06.11	45.115.22.09.11
45.115.10.03.23	45.115.10.04.23	45.115.10.05.23	45.115.10.06.23	45.115.10.09.23
45.115.01.03.23	45.115.01.04.23	45.115.01.05.23	45.115.01.06.23	45.115.01.09.23
45.115.11.03.23	45.115.11.04.23	45.115.11.05.23	45.115.11.06.23	45.115.11.09.23
45.115.20.03.23	45.115.20.04.23	45.115.20.05.23	45.115.20.06.23	45.115.20.09.23
45.115.02.03.23	45.115.02.04.23	45.115.02.05.23	45.115.02.06.23	45.115.02.09.23
45.115.22.03.23	45.115.22.04.23	45.115.22.05.23	45.115.22.06.23	45.115.22.09.23
45.125.10.03.12	45.125.10.04.12	45.125.10.05.12	45.125.10.06.12	45.125.10.09.12
45.125.01.03.12	45.125.01.04.12	45.125.01.05.12	45.125.01.06.12	45.125.01.09.12
45.125.11.03.12	45.125.11.04.12	45.125.11.05.12	45.125.11.06.12	45.125.11.09.12
45.125.20.03.12	45.125.20.04.12	45.125.20.05.12	45.125.20.06.12	45.125.20.09.12
45.125.02.03.12	45.125.02.04.12	45.125.02.05.12	45.125.02.06.12	45.125.02.09.12
45.125.22.03.12	45.125.22.04.12	45.125.22.05.12	45.125.22.06.12	45.125.22.09.12
45.125.10.03.24	45.125.10.04.24	45.125.10.05.24	45.125.10.06.24	45.125.10.09.24
45.125.01.03.24	45.125.01.04.24	45.125.01.05.24	45.125.01.06.24	45.125.01.09.24
45.125.11.03.24	45.125.11.04.24	45.125.11.05.24	45.125.11.06.24	45.125.11.09.24
45.125.20.03.24	45.125.20.04.24	45.125.20.05.24	45.125.20.06.24	45.125.20.09.24
45.125.02.03.24	45.125.02.04.24	45.125.02.05.24	45.125.02.06.24	45.125.02.09.24
45.125.22.03.24	45.125.22.04.24	45.125.22.05.24	45.125.22.06.24	45.125.22.09.24
45.125.10.03.11	45.125.10.04.11	45.125.10.05.11	45.125.10.06.11	45.125.10.09.11
45.125.01.03.11	45.125.01.04.11	45.125.01.05.11	45.125.01.06.11	45.125.01.09.11
45.125.11.03.11	45.125.11.04.11	45.125.11.05.11	45.125.11.06.11	45.125.11.09.11
45.125.20.03.11	45.125.20.04.11	45.125.20.05.11	45.125.20.06.11	45.125.20.09.11
45.125.02.03.11	45.125.02.04.11	45.125.02.05.11	45.125.02.06.11	45.125.02.09.11
45.125.22.03.11	45.125.22.04.11	45.125.22.05.11	45.125.22.06.11	45.125.22.09.11
45.125.10.03.23	45.125.10.04.23	45.125.10.05.23	45.125.10.06.23	45.125.10.09.23
45.125.01.03.23	45.125.01.04.23	45.125.01.05.23	45.125.01.06.23	45.125.01.09.23
45.125.23.03.23	45.125.23.04.23	45.125.23.05.23	45.125.23.06.23	45.125.23.09.23
45.125.20.03.23	45.125.20.04.23	45.125.20.05.23	45.125.20.06.23	45.125.20.09.23
45.125.02.03.23	45.125.02.04.23	45.125.02.05.23	45.125.02.06.23	45.125.02.09.23
45.125.22.03.23	45.125.22.04.23	45.125.22.05.23	45.125.22.06.23	45.125.22.09.23






Please contact your WERNER representative for more contact arrangement.



# 45 Series Metal Switches

ø22mm WERNER

## Illuminated Extended Full Shroud Pushbutton - Model Selection






Appearance	Pushbutton Type	Operation	Voltage	Contact	Model No.	Color
					Red 	
	Extended With Full Shroud	Momentary	12V AC/DC	1NO	45.116.10.02.12	
				1NC	45.116.01.02.12	
				1NO-1NC	45.116.11.02.12	
				2NO	45.116.20.02.12	
				2NC	45.116.02.02.12	
			24V AC/DC	2NO-2NC	45.116.22.02.12	
				1NO	45.116.10.02.24	
				1NC	45.116.01.02.24	
				1NO-1NC	45.116.11.02.24	
				2NO	45.116.20.02.24	For more color options, refer to next page
			110V AC/DC	2NC	45.116.02.02.24	
				2NO-2NC	45.116.22.02.24	
				1NO	45.116.10.02.11	
				1NC	45.116.01.02.11	
				1NO-1NC	45.116.11.02.11	
			230/240V AC/DC	2NO	45.116.20.02.11	
				2NC	45.116.02.02.11	
				2NO-2NC	45.116.22.02.11	
				1NO	45.116.10.02.23	
				1NC	45.116.01.02.23	
	Extended With Full Shroud	Maintained	12V AC/DC	1NO	45.126.10.02.12	
				1NC	45.126.01.02.12	
				1NO-1NC	45.126.11.02.12	
				2NO	45.126.20.02.12	
				2NC	45.126.02.02.12	
			24V AC/DC	2NO-2NC	45.126.22.02.12	
				1NO	45.126.10.02.24	
				1NC	45.126.01.02.24	
				1NO-1NC	45.126.11.02.24	
				2NO	45.126.20.02.24	For more color options, refer to next page
			110V AC/DC	2NC	45.126.02.02.24	
				2NO-2NC	45.126.22.02.24	
				1NO	45.126.10.02.11	
				1NC	45.126.01.02.11	
				1NO-1NC	45.126.11.02.11	
			230/240V AC/DC	2NO	45.126.20.02.11	
				2NC	45.126.02.02.11	
				2NO-2NC	45.126.22.02.11	
				1NO	45.126.10.02.23	
				1NC	45.126.01.02.23	
	1NO-1NC	45.126.23.02.23				
	2NO	45.126.20.02.23				
	2NC	45.126.02.02.23				
	2NO-2NC	45.126.22.02.23				

LED Lamp type.

# 45 Series Metal Switches

ø22mm **WERNER**

## Illuminated Extended Full Shroud Pushbutton - Model Selection






Model No.				
Amber 	Yellow 	Green 	Blue 	White 
45.116.10.03.12	45.116.10.04.12	45.116.10.05.12	45.116.10.06.12	45.116.10.09.12
45.116.01.03.12	45.116.01.04.12	45.116.01.05.12	45.116.01.06.12	45.116.01.09.12
45.116.11.03.12	45.116.11.04.12	45.116.11.05.12	45.116.11.06.12	45.116.11.09.12
45.116.20.03.12	45.116.20.04.12	45.116.20.05.12	45.116.20.06.12	45.116.20.09.12
45.116.02.03.12	45.116.02.04.12	45.116.02.05.12	45.116.02.06.12	45.116.02.09.12
45.116.22.03.12	45.116.22.04.12	45.116.22.05.12	45.116.22.06.12	45.116.22.09.12
45.116.10.03.24	45.116.10.04.24	45.116.10.05.24	45.116.10.06.24	45.116.10.09.24
45.116.01.03.24	45.116.01.04.24	45.116.01.05.24	45.116.01.06.24	45.116.01.09.24
45.116.11.03.24	45.116.11.04.24	45.116.11.05.24	45.116.11.06.24	45.116.11.09.24
45.116.20.03.24	45.116.20.04.24	45.116.20.05.24	45.116.20.06.24	45.116.20.09.24
45.116.02.03.24	45.116.02.04.24	45.116.02.05.24	45.116.02.06.24	45.116.02.09.24
45.116.22.03.24	45.116.22.04.24	45.116.22.05.24	45.116.22.06.24	45.116.22.09.24
45.116.10.03.11	45.116.10.04.11	45.116.10.05.11	45.116.10.06.11	45.116.10.09.11
45.116.01.03.11	45.116.01.04.11	45.116.01.05.11	45.116.01.06.11	45.116.01.09.11
45.116.11.03.11	45.116.11.04.11	45.116.11.05.11	45.116.11.06.11	45.116.11.09.11
45.116.20.03.11	45.116.20.04.11	45.116.20.05.11	45.116.20.06.11	45.116.20.09.11
45.116.02.03.11	45.116.02.04.11	45.116.02.05.11	45.116.02.06.11	45.116.02.09.11
45.116.22.03.11	45.116.22.04.11	45.116.22.05.11	45.116.22.06.11	45.116.22.09.11
45.116.10.03.23	45.116.10.04.23	45.116.10.05.23	45.116.10.06.23	45.116.10.09.23
45.116.01.03.23	45.116.01.04.23	45.116.01.05.23	45.116.01.06.23	45.116.01.09.23
45.116.11.03.23	45.116.11.04.23	45.116.11.05.23	45.116.11.06.23	45.116.11.09.23
45.116.20.03.23	45.116.20.04.23	45.116.20.05.23	45.116.20.06.23	45.116.20.09.23
45.116.02.03.23	45.116.02.04.23	45.116.02.05.23	45.116.02.06.23	45.116.02.09.23
45.116.22.03.23	45.116.22.04.23	45.116.22.05.23	45.116.22.06.23	45.116.22.09.23
45.126.10.03.12	45.126.10.04.12	45.126.10.05.12	45.126.10.06.12	45.126.10.09.12
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45.126.20.03.24	45.126.20.04.24	45.126.20.05.24	45.126.20.06.24	45.126.20.09.24
45.126.02.03.24	45.126.02.04.24	45.126.02.05.24	45.126.02.06.24	45.126.02.09.24
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45.126.20.03.11	45.126.20.04.11	45.126.20.05.11	45.126.20.06.11	45.126.20.09.11
45.126.02.03.11	45.126.02.04.11	45.126.02.05.11	45.126.02.06.11	45.126.02.09.11
45.126.22.03.11	45.126.22.04.11	45.126.22.05.11	45.126.22.06.11	45.126.22.09.11
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45.126.01.03.23	45.126.01.04.23	45.126.01.05.23	45.126.01.06.23	45.126.01.09.23
45.126.23.03.23	45.126.23.04.23	45.126.23.05.23	45.126.23.06.23	45.126.23.09.23
45.126.20.03.23	45.126.20.04.23	45.126.20.05.23	45.126.20.06.23	45.126.20.09.23
45.126.02.03.23	45.126.02.04.23	45.126.02.05.23	45.126.02.06.23	45.126.02.09.23
45.126.22.03.23	45.126.22.04.23	45.126.22.05.23	45.126.22.06.23	45.126.22.09.23

Please contact your WERNER representative for more contact arrangement.

# 45 Series Metal Switches

ø22mm WERNER

## Illuminated Mushroom Pushbutton - Model Selection






Appearance	Pushbutton Type	Operation	Voltage	Contact	Model No.	Color
					Red 	
	Mushroom	Momentary	12V AC/DC	1NO	45.117.10.02.12	
				1NC	45.117.01.02.12	
				1NO-1NC	45.117.11.02.12	
				2NO	45.117.20.02.12	
				2NC	45.117.02.02.12	
				2NO-2NC	45.117.22.02.12	
			24V AC/DC	1NO	45.117.10.02.24	
				1NC	45.117.01.02.24	
				1NO-1NC	45.117.11.02.24	
				2NO	45.117.20.02.24	For more
				2NC	45.117.02.02.24	color options,
				2NO-2NC	45.117.22.02.24	refer to next
			110V AC/DC	1NO	45.117.10.02.11	
				1NC	45.117.01.02.11	
				1NO-1NC	45.117.11.02.11	
				2NO	45.117.20.02.11	
				2NC	45.117.02.02.11	
				2NO-2NC	45.117.22.02.11	
			230/240V AC/DC	1NO	45.117.10.02.23	
				1NC	45.117.01.02.23	
				1NO-1NC	45.117.11.02.23	
				2NO	45.117.20.02.23	
				2NC	45.117.02.02.23	
				2NO-2NC	45.117.22.02.23	
	Mushroom	Maintained	12V AC/DC	1NO	45.127.10.02.12	
				1NC	45.127.01.02.12	
				1NO-1NC	45.127.11.02.12	
				2NO	45.127.20.02.12	
				2NC	45.127.02.02.12	
				2NO-2NC	45.127.22.02.12	
			24V AC/DC	1NO	45.127.10.02.24	
				1NC	45.127.01.02.24	
				1NO-1NC	45.127.11.02.24	
				2NO	45.127.20.02.24	For more
				2NC	45.127.02.02.24	color options,
				2NO-2NC	45.127.22.02.24	refer to next
			110V AC/DC	1NO	45.127.10.02.11	
				1NC	45.127.01.02.11	
				1NO-1NC	45.127.11.02.11	
				2NO	45.127.20.02.11	
				2NC	45.127.02.02.11	
				2NO-2NC	45.127.22.02.11	
			230/240V AC/DC	1NO	45.127.10.02.23	
				1NC	45.127.01.02.23	
				1NO-1NC	45.127.11.02.23	
				2NO	45.127.20.02.23	
				2NC	45.127.02.02.23	
				2NO-2NC	45.127.22.02.23	

LED Lamp type.

# 45 Series Metal Switches

ø22mm **WERNER**

## Illuminated Mushroom Pushbutton - Model Selection

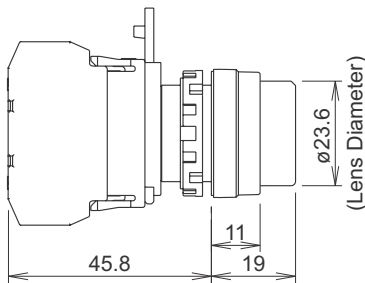
Model No.				
Amber 	Yellow 	Green 	Blue 	White 
45.117.10.03.12	45.117.10.04.12	45.117.10.05.12	45.117.10.06.12	45.117.10.09.12
45.117.01.03.12	45.117.01.04.12	45.117.01.05.12	45.117.01.06.12	45.117.01.09.12
45.117.11.03.12	45.117.11.04.12	45.117.11.05.12	45.117.11.06.12	45.117.11.09.12
45.117.20.03.12	45.117.20.04.12	45.117.20.05.12	45.117.20.06.12	45.117.20.09.12
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45.117.11.03.24	45.117.11.04.24	45.117.11.05.24	45.117.11.06.24	45.117.11.09.24
45.117.20.03.24	45.117.20.04.24	45.117.20.05.24	45.117.20.06.24	45.117.20.09.24
45.117.02.03.24	45.117.02.04.24	45.117.02.05.24	45.117.02.06.24	45.117.02.09.24
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45.117.10.03.11	45.117.10.04.11	45.117.10.05.11	45.117.10.06.11	45.117.10.09.11
45.117.01.03.11	45.117.01.04.11	45.117.01.05.11	45.117.01.06.11	45.117.01.09.11
45.117.11.03.11	45.117.11.04.11	45.117.11.05.11	45.117.11.06.11	45.117.11.09.11
45.117.20.03.11	45.117.20.04.11	45.117.20.05.11	45.117.20.06.11	45.117.20.09.11
45.117.02.03.11	45.117.02.04.11	45.117.02.05.11	45.117.02.06.11	45.117.02.09.11
45.117.22.03.11	45.117.22.04.11	45.117.22.05.11	45.117.22.06.11	45.117.22.09.11
45.117.10.03.23	45.117.10.04.23	45.117.10.05.23	45.117.10.06.23	45.117.10.09.23
45.117.01.03.23	45.117.01.04.23	45.117.01.05.23	45.117.01.06.23	45.117.01.09.23
45.117.11.03.23	45.117.11.04.23	45.117.11.05.23	45.117.11.06.23	45.117.11.09.23
45.117.20.03.23	45.117.20.04.23	45.117.20.05.23	45.117.20.06.23	45.117.20.09.23
45.117.02.03.23	45.117.02.04.23	45.117.02.05.23	45.117.02.06.23	45.117.02.09.23
45.117.22.03.23	45.117.22.04.23	45.117.22.05.23	45.117.22.06.23	45.117.22.09.23
45.127.10.03.12	45.127.10.04.12	45.127.10.05.12	45.127.10.06.12	45.127.10.09.12
45.127.01.03.12	45.127.01.04.12	45.127.01.05.12	45.127.01.06.12	45.127.01.09.12
45.127.11.03.12	45.127.11.04.12	45.127.11.05.12	45.127.11.06.12	45.127.11.09.12
45.127.20.03.12	45.127.20.04.12	45.127.20.05.12	45.127.20.06.12	45.127.20.09.12
45.127.02.03.12	45.127.02.04.12	45.127.02.05.12	45.127.02.06.12	45.127.02.09.12
45.127.22.03.12	45.127.22.04.12	45.127.22.05.12	45.127.22.06.12	45.127.22.09.12
45.127.10.03.24	45.127.10.04.24	45.127.10.05.24	45.127.10.06.24	45.127.10.09.24
45.127.01.03.24	45.127.01.04.24	45.127.01.05.24	45.127.01.06.24	45.127.01.09.24
45.127.11.03.24	45.127.11.04.24	45.127.11.05.24	45.127.11.06.24	45.127.11.09.24
45.127.20.03.24	45.127.20.04.24	45.127.20.05.24	45.127.20.06.24	45.127.20.09.24
45.127.02.03.24	45.127.02.04.24	45.127.02.05.24	45.127.02.06.24	45.127.02.09.24
45.127.22.03.24	45.127.22.04.24	45.127.22.05.24	45.127.22.06.24	45.127.22.09.24
45.127.10.03.11	45.127.10.04.11	45.127.10.05.11	45.127.10.06.11	45.127.10.09.11
45.127.01.03.11	45.127.01.04.11	45.127.01.05.11	45.127.01.06.11	45.127.01.09.11
45.127.11.03.11	45.127.11.04.11	45.127.11.05.11	45.127.11.06.11	45.127.11.09.11
45.127.20.03.11	45.127.20.04.11	45.127.20.05.11	45.127.20.06.11	45.127.20.09.11
45.127.02.03.11	45.127.02.04.11	45.127.02.05.11	45.127.02.06.11	45.127.02.09.11
45.127.22.03.11	45.127.22.04.11	45.127.22.05.11	45.127.22.06.11	45.127.22.09.11
45.127.10.03.23	45.127.10.04.23	45.127.10.05.23	45.127.10.06.23	45.127.10.09.23
45.127.01.03.23	45.127.01.04.23	45.127.01.05.23	45.127.01.06.23	45.127.01.09.23
45.127.23.03.23	45.127.23.04.23	45.127.23.05.23	45.127.23.06.23	45.127.23.09.23
45.127.20.03.23	45.127.20.04.23	45.127.20.05.23	45.127.20.06.23	45.127.20.09.23
45.127.02.03.23	45.127.02.04.23	45.127.02.05.23	45.127.02.06.23	45.127.02.09.23
45.127.22.03.23	45.127.22.04.23	45.127.22.05.23	45.127.22.06.23	45.127.22.09.23

Please contact your WERNER representative for more contact arrangement.

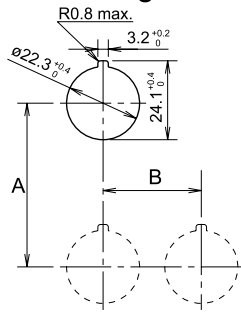
## Dimensions - Illuminated Pushbuttons



• Extended



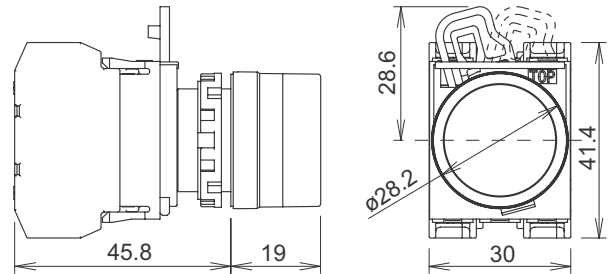
### Mounting Hole



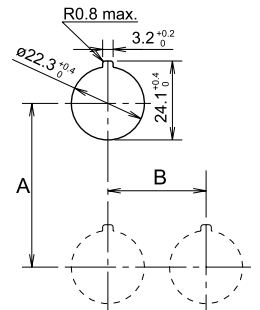
A (mm) X B (mm)  
50 min. X 30 min.



• Extended with Full Shroud



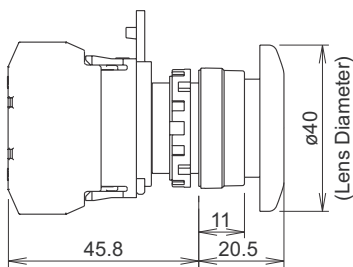
### Mounting Hole



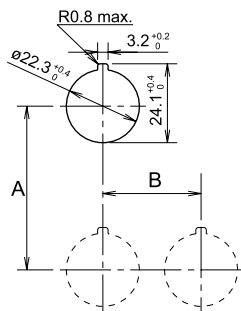
A (mm) X B (mm)  
50 min. X 30 min.



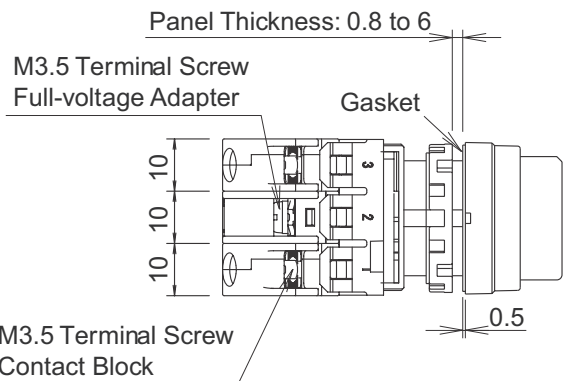
• Mushroom



### Mounting Hole











A (mm) X B (mm)  
50 min. X 40 min.



# 45 Series Metal Switches

ø22mm **WERNER**

## Non-Illuminated Selector Switch Model Selection








Appearance	Pushbutton Type	Position	Operation	Color	Figure	Contact	Model No.
	Non-Illuminated Selector Switch	90° 2 Positions	Maintained	Black		1NO	45.130.10.00
						1NC	45.130.01.00
						1NO-1NC	45.130.11.00
						2NO	45.130.20.00
						2NC	45.130.02.00
						2NO-2NC	45.130.22.00
						3NO	45.130.30.00
			Spring Return from Right to Left	Black		1NO	45.131.10.00
						1NC	45.131.01.00
						1NO-1NC	45.131.11.00
						2NO	45.131.20.00
						2NC	45.131.02.00
						2NO-2NC	45.131.22.00
						3NO	45.131.30.00
3NC	45.131.03.00						
	Non-Illuminated Selector Switch	45° 3 Positions	Maintained	Black		1NO	45.132.10.00
						1NC	45.132.01.00
						1NO-1NC	45.132.11.00
						2NO	45.132.20.00
						2NC	45.132.02.00
						2NO-2NC	45.132.22.00
						3NO	45.132.30.00
						3NC	45.132.03.00
			Spring Return from Right to Center	Black		1NO	45.133.10.00
						1NC	45.133.01.00
						1NO-1NC	45.133.11.00
						2NO	45.133.20.00
						2NC	45.133.02.00
						2NO-2NC	45.133.22.00
						3NO	45.133.30.00
						3NC	45.133.03.00
			Spring Return from Left to Center	Black		1NO	45.134.10.00
						1NC	45.134.01.00
						1NO-1NC	45.134.11.00
						2NO	45.134.20.00
						2NC	45.134.02.00
						2NO-2NC	45.134.22.00
						3NO	45.134.30.00
						3NC	45.134.03.00
			Spring Return Two Ways	Black		1NO	45.135.10.00
						1NC	45.135.01.00
						1NO-1NC	45.135.11.00
						2NO	45.135.20.00
2NC	45.135.02.00						
2NO-2NC	45.135.22.00						
3NO	45.135.30.00						
3NC	45.135.03.00						
4NO	45.135.40.00						
4NC	45.135.04.00						

Please contact your *WERNER* representative for more contact arrangement.

# 45 Series Metal Switches

ø22mm WERNER

## Illuminated Selector Switch Model Selection

Appearance	Type	Lamp	Positions	Voltage	Contact	Model No.	Color
						Red 	
	90° 2 Positions	LED	Maintained 	12V AC/DC	1NO	45.136.10.02.12	
					1NC	45.136.01.02.12	
					1NO-1NC	45.136.11.02.12	
					2NO	45.136.20.02.12	
					2NC	45.136.02.02.12	
				24V AC/DC	2NO-2NC	45.136.22.02.12	
					1NO	45.136.10.02.24	
					1NC	45.136.01.02.24	
					1NO-1NC	45.136.11.02.24	For more color options, refer to next page 
					2NO	45.136.20.02.24	
				2NC	45.136.02.02.24		
				2NO-2NC	45.136.22.02.24		
				110V AC/DC	1NO	45.136.10.02.11	
				1NC	45.136.01.02.11		
				1NO-1NC	45.136.11.02.11		
				2NO	45.136.20.02.11		
				2NC	45.136.02.02.11		
				2NO-2NC	45.136.22.02.11		
				230/240V AC/DC	1NO	45.136.10.02.23	
					1NC	45.136.01.02.23	
1NO-1NC	45.136.11.02.23						
2NO	45.136.20.02.23						
2NC	45.136.02.02.23						
2NO-2NC	45.136.22.02.23						
	90° 2 Positions	LED	Spring Return from Right 	12V AC/DC	1NO	45.137.10.02.12	
					1NC	45.137.01.02.12	
					1NO-1NC	45.137.11.02.12	
					2NO	45.137.20.02.12	
					2NC	45.137.02.02.12	
				24V AC/DC	2NO-2NC	45.137.22.02.12	
					1NO	45.137.10.02.24	
					1NC	45.137.01.02.24	
					1NO-1NC	45.137.11.02.24	For more color options, refer to next page 
					2NO	45.137.20.02.24	
				2NC	45.137.02.02.24		
				2NO-2NC	45.137.22.02.24		
				110V AC/DC	1NO	45.137.10.02.11	
				1NC	45.137.01.02.11		
				1NO-1NC	45.137.11.02.11		
				2NO	45.137.20.02.11		
				2NC	45.137.02.02.11		
				2NO-2NC	45.137.22.02.11		
				230/240V AC/DC	1NO	45.137.10.02.23	
					1NC	45.137.01.02.23	
1NO-1NC	45.137.11.02.23						
2NO	45.137.20.02.23						
2NC	45.137.02.02.23						
2NO-2NC	45.137.22.02.23						












# 45 Series Metal Switches

ø22mm WERNER






## Illuminated Selector Switch Model Selection

Appearance	Type	Lamp	Positions	Voltage	Contact	Model No.	Color
						Red 	
	45° 3 Positions	LED	Maintained 	12V AC/DC	1NO	45.138.10.02.12	
					1NC	45.138.01.02.12	
					1NO-1NC	45.138.11.02.12	
					2NO	45.138.20.02.12	
					2NC	45.138.02.02.12	
				2NO-2NC	45.138.22.02.12		
				24V AC/DC	1NO	45.138.10.02.24	
					1NC	45.138.01.02.24	
					1NO-1NC	45.138.11.02.24	
					2NO	45.138.20.02.24	For more
					2NC	45.138.02.02.24	color options,
				2NO-2NC	45.138.22.02.24	refer to next	
				110V AC/DC	1NO	45.138.10.02.11	
					1NC	45.138.01.02.11	
					1NO-1NC	45.138.11.02.11	
					2NO	45.138.20.02.11	
					2NC	45.138.02.02.11	
				2NO-2NC	45.138.22.02.11		
				230/240V AC/DC	1NO	45.138.10.02.23	
					1NC	45.138.01.02.23	
1NO-1NC	45.138.11.02.23						
2NO	45.138.20.02.23						
2NC	45.138.02.02.23						
2NO-2NC	45.138.22.02.23						
	45° 3 Positions	LED	Spring Return from Right 	12V AC/DC	1NO	45.139.10.02.12	
					1NC	45.139.01.02.12	
					1NO-1NC	45.139.11.02.12	
					2NO	45.139.20.02.12	
					2NC	45.139.02.02.12	
				2NO-2NC	45.139.22.02.12		
				24V AC/DC	1NO	45.139.10.02.24	
					1NC	45.139.01.02.24	
					1NO-1NC	45.139.11.02.24	
					2NO	45.139.20.02.24	For more
					2NC	45.139.02.02.24	color options,
				2NO-2NC	45.139.22.02.24	refer to next	
				110V AC/DC	1NO	45.139.10.02.11	
					1NC	45.139.01.02.11	
					1NO-1NC	45.139.11.02.11	
					2NO	45.139.20.02.11	
					2NC	45.139.02.02.11	
				2NO-2NC	45.139.22.02.11		
				230/240V AC/DC	1NO	45.139.10.02.23	
					1NC	45.139.01.02.23	
1NO-1NC	45.139.11.02.23						
2NO	45.139.20.02.23						
2NC	45.139.02.02.23						
2NO-2NC	45.139.22.02.23						

# 45 Series Metal Switches

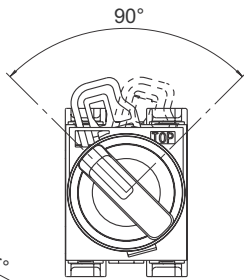
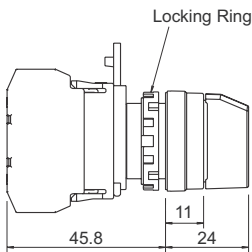
ø22mm **WERNER**

## Illuminated Selector Switch Model Selection

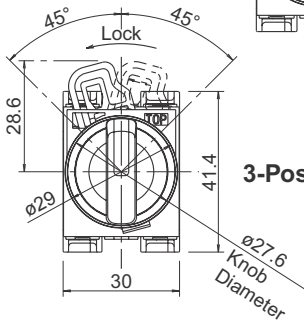
Model No.				
Amber 	Yellow 	Green 	Blue 	White 
45.138.10.03.12	45.138.10.04.12	45.138.10.05.12	45.138.10.06.12	45.138.10.09.12
45.138.01.03.12	45.138.01.04.12	45.138.01.05.12	45.138.01.06.12	45.138.01.09.12
45.138.11.03.12	45.138.11.04.12	45.138.11.05.12	45.138.11.06.12	45.138.11.09.12
45.138.20.03.12	45.138.20.04.12	45.138.20.05.12	45.138.20.06.12	45.138.20.09.12
45.138.02.03.12	45.138.02.04.12	45.138.02.05.12	45.138.02.06.12	45.138.02.09.12
45.138.22.03.12	45.138.22.04.12	45.138.22.05.12	45.138.22.06.12	45.138.22.09.12
45.138.10.03.24	45.138.10.04.24	45.138.10.05.24	45.138.10.06.24	45.138.10.09.24
45.138.01.03.24	45.138.01.04.24	45.138.01.05.24	45.138.01.06.24	45.138.01.09.24
45.138.11.03.24	45.138.11.04.24	45.138.11.05.24	45.138.11.06.24	45.138.11.09.24
45.138.20.03.24	45.138.20.04.24	45.138.20.05.24	45.138.20.06.24	45.138.20.09.24
45.138.02.03.24	45.138.02.04.24	45.138.02.05.24	45.138.02.06.24	45.138.02.09.24
45.138.22.03.24	45.138.22.04.24	45.138.22.05.24	45.138.22.06.24	45.138.22.09.24
45.138.10.03.11	45.138.10.04.11	45.138.10.05.11	45.138.10.06.11	45.138.10.09.11
45.138.01.03.11	45.138.01.04.11	45.138.01.05.11	45.138.01.06.11	45.138.01.09.11
45.138.11.03.11	45.138.11.04.11	45.138.11.05.11	45.138.11.06.11	45.138.11.09.11
45.138.20.03.11	45.138.20.04.11	45.138.20.05.11	45.138.20.06.11	45.138.20.09.11
45.138.02.03.11	45.138.02.04.11	45.138.02.05.11	45.138.02.06.11	45.138.02.09.11
45.138.22.03.11	45.138.22.04.11	45.138.22.05.11	45.138.22.06.11	45.138.22.09.11
45.138.10.03.23	45.138.10.04.23	45.138.10.05.23	45.138.10.06.23	45.138.10.09.23
45.138.01.03.23	45.138.01.04.23	45.138.01.05.23	45.138.01.06.23	45.138.01.09.23
45.138.11.03.23	45.138.11.04.23	45.138.11.05.23	45.138.11.06.23	45.138.11.09.23
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45.138.02.03.23	45.138.02.04.23	45.138.02.05.23	45.138.02.06.23	45.138.02.09.23
45.138.22.03.23	45.138.22.04.23	45.138.22.05.23	45.138.22.06.23	45.138.22.09.23
45.139.10.03.12	45.139.10.04.12	45.139.10.05.12	45.139.10.06.12	45.139.10.09.12
45.139.01.03.12	45.139.01.04.12	45.139.01.05.12	45.139.01.06.12	45.139.01.09.12
45.139.11.03.12	45.139.11.04.12	45.139.11.05.12	45.139.11.06.12	45.139.11.09.12
45.139.20.03.12	45.139.20.04.12	45.139.20.05.12	45.139.20.06.12	45.139.20.09.12
45.139.02.03.12	45.139.02.04.12	45.139.02.05.12	45.139.02.06.12	45.139.02.09.12
45.139.22.03.12	45.139.22.04.12	45.139.22.05.12	45.139.22.06.12	45.139.22.09.12
45.139.10.03.24	45.139.10.04.24	45.139.10.05.24	45.139.10.06.24	45.139.10.09.24
45.139.01.03.24	45.139.01.04.24	45.139.01.05.24	45.139.01.06.24	45.139.01.09.24
45.139.11.03.24	45.139.11.04.24	45.139.11.05.24	45.139.11.06.24	45.139.11.09.24
45.139.20.03.24	45.139.20.04.24	45.139.20.05.24	45.139.20.06.24	45.139.20.09.24
45.139.02.03.24	45.139.02.04.24	45.139.02.05.24	45.139.02.06.24	45.139.02.09.24
45.139.22.03.24	45.139.22.04.24	45.139.22.05.24	45.139.22.06.24	45.139.22.09.24
45.139.10.03.11	45.139.10.04.11	45.139.10.05.11	45.139.10.06.11	45.139.10.09.11
45.139.01.03.11	45.139.01.04.11	45.139.01.05.11	45.139.01.06.11	45.139.01.09.11
45.139.11.03.11	45.139.11.04.11	45.139.11.05.11	45.139.11.06.11	45.139.11.09.11
45.139.20.03.11	45.139.20.04.11	45.139.20.05.11	45.139.20.06.11	45.139.20.09.11
45.139.02.03.11	45.139.02.04.11	45.139.02.05.11	45.139.02.06.11	45.139.02.09.11
45.139.22.03.11	45.139.22.04.11	45.139.22.05.11	45.139.22.06.11	45.139.22.09.11
45.139.10.03.23	45.139.10.04.23	45.139.10.05.23	45.139.10.06.23	45.139.10.09.23
45.139.01.03.23	45.139.01.04.23	45.139.01.05.23	45.139.01.06.23	45.139.01.09.23
45.139.11.03.23	45.139.11.04.23	45.139.11.05.23	45.139.11.06.23	45.139.11.09.23
45.139.20.03.23	45.139.20.04.23	45.139.20.05.23	45.139.20.06.23	45.139.20.09.23
45.139.02.03.23	45.139.02.04.23	45.139.02.05.23	45.139.02.06.23	45.139.02.09.23
45.139.22.03.23	45.139.22.04.23	45.139.22.05.23	45.139.22.06.23	45.139.22.09.23

## Dimensions - Selector Switch

### • Non-Illuminated Selector Switch

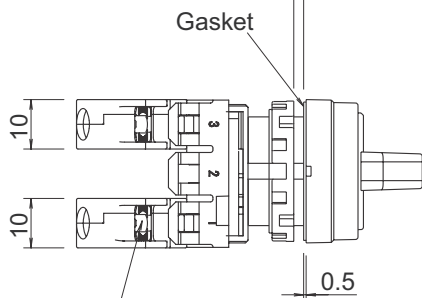


2-Position



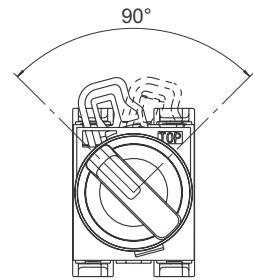
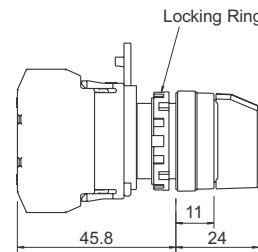
3-Position

Panel Thickness: 0.8 to 6

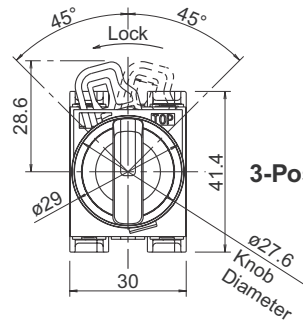


M3.5 Terminal Screw  
Contact Block

### • Illuminated Selector Switch

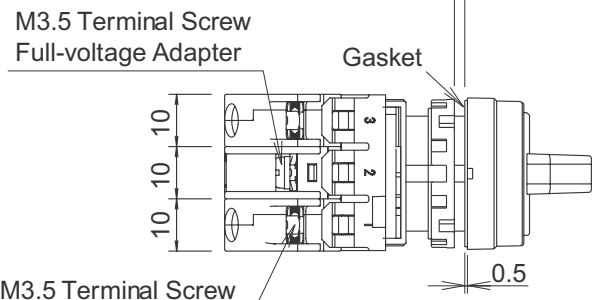


2-Position



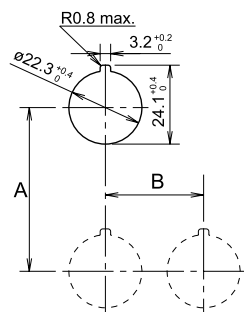
3-Position

Panel Thickness: 0.8 to 6



M3.5 Terminal Screw  
Full-voltage Adapter  
Contact Block

### Mounting Hole






















A (mm) X B (mm)  
50 min. X 30 min.

# 45 Series Metal Switches

ø22mm **WERNER**

## Key Selector Switch Model Selection

Appearance	Pushbutton Type	Position	Operation	Color	Retained at	Contact	Model No.		
	Key Selector Switch	90° 2 Positions	Maintained	Black		2NO	45.142.20.00		
						2NC	45.142.02.00		
						2NO-2NC	45.142.22.00		
						2NO	45.143.20.00		
						2NC	45.143.02.00		
						2NO-2NC	45.143.22.00		
			2NO	45.144.20.00					
			2NC	45.144.02.00					
			2NO-2NC	45.144.22.00					
		Spring Return from Right to Left	Black					2NO	45.145.20.00
								2NC	45.145.02.00
								2NO-2NC	45.145.22.00
	2NO							45.146.20.00	
	2NC							45.146.02.00	
	2NO-2NC							45.146.22.00	
	2NO	45.147.20.00							
	2NC	45.147.02.00							
	2NO-2NC	45.147.22.00							
	2NO	45.148.20.00							
	2NC	45.148.02.00							
	2NO-2NC	45.148.22.00							
	2NO	45.149.20.00							
	2NC	45.149.02.00							
	2NO-2NC	45.149.22.00							
	2NO	45.150.20.00							
	2NC	45.150.02.00							
	2NO-2NC	45.150.22.00							
	2NO	45.151.20.00							
	2NC	45.151.02.00							
	2NO-2NC	45.151.22.00							
	2NO	45.152.20.00							
	2NC	45.152.02.00							
	2NO-2NC	45.152.22.00							
Spring Return from Right to Center	Black					2NO	45.153.20.00		
						2NC	45.153.02.00		
						2NO-2NC	45.153.22.00		
							2NO	45.154.20.00	
							2NC	45.154.02.00	
							2NO-2NC	45.154.22.00	
	2NO	45.155.20.00							
	2NC	45.155.02.00							
	2NO-2NC	45.155.22.00							
Spring Return from Left to Center	Black					2NO	45.156.20.00		
						2NC	45.156.02.00		
						2NO-2NC	45.156.22.00		
							2NO	45.157.20.00	
							2NC	45.157.02.00	
							2NO-2NC	45.157.22.00	
	2NO	45.158.20.00							
	2NC	45.158.02.00							
	2NO-2NC	45.158.22.00							
Spring Return from two ways	Black					2NO	45.159.20.00		
						2NC	45.159.02.00		
						2NO-2NC	45.159.22.00		

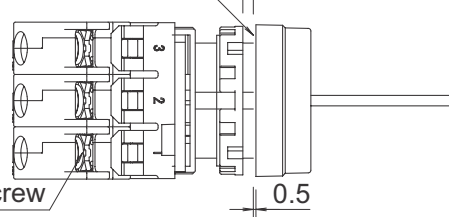
Each 45 Series Key Selector Switch is supplied with a spare key. Key is retained at ● positions and removable at ○ position. Please contact your WERNER representative for more contact arrangement.

## Dimensions - Key Selector Switch

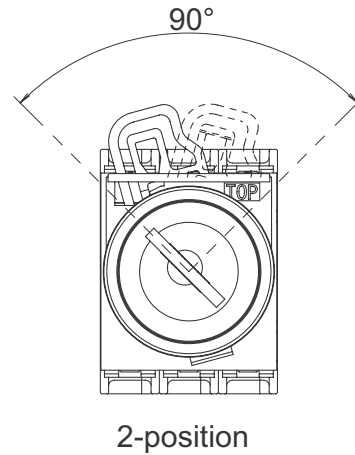
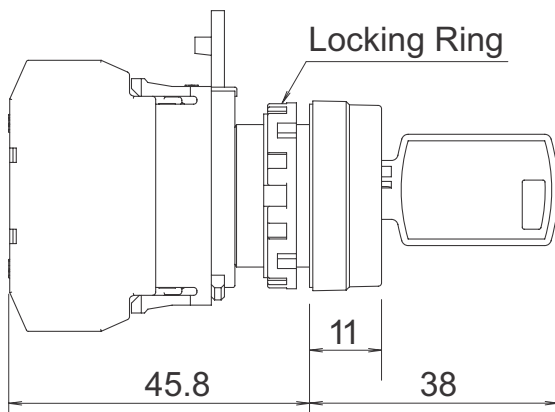


Panel Thickness 0.8 to 6

Gasket

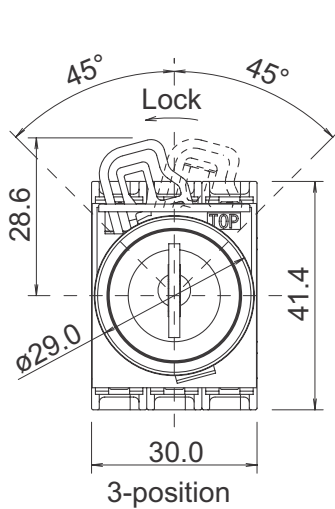


M3.5 Terminal Screw  
Contact Block

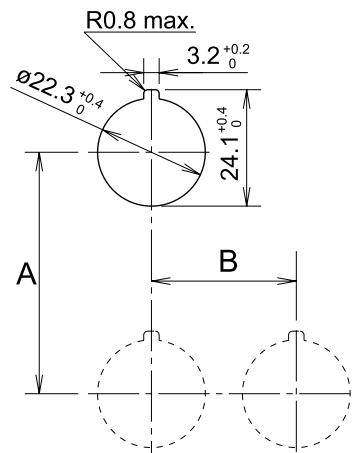


2-position

Mounting Hole





3-position



A (mm) X B (mm)

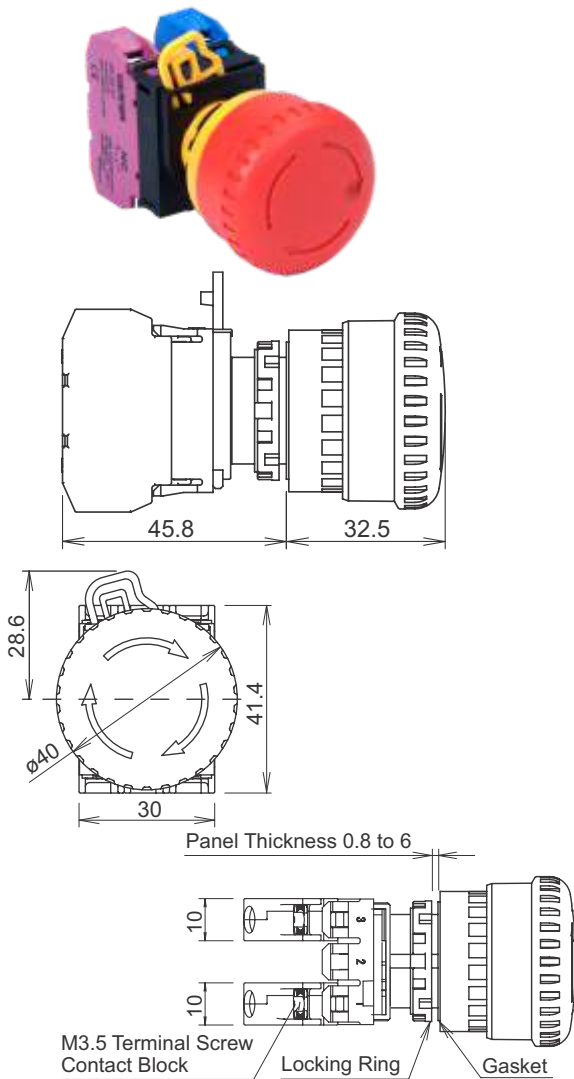
50 min. X 30 min.

## Emergency Stop Switches

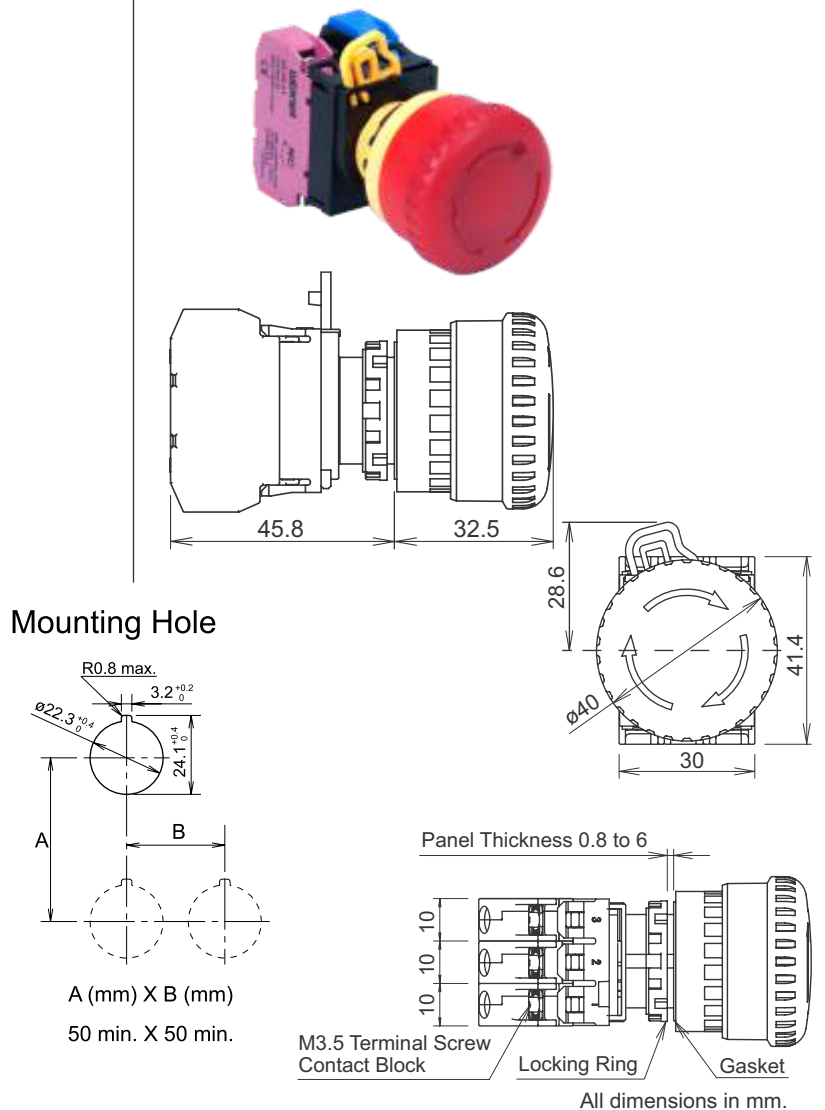
Appearance	Pushbutton Type	Operation	Color	Contact	Model No.
	ø40 mm Mushroom	Pushlock Turn Reset	Red Only	1NO	45.187.10.02
				1NC	45.187.01.02
				1NO-1NC	45.187.11.02
				2NO	45.187.20.02
				2NC	45.187.02.02
	ø40 mm Mushroom	Pushlock Turn Reset	Illuminated Red	1NO	45.186.10.02.24
				1NC	45.186.01.02.24
				1NO-1NC	45.186.11.02.24
				2NO	45.186.20.02.24
				2NC	45.186.02.02.24
				2NO-2NC	45.186.22.02.24

## Dimensions - Emergency Stop Switches

### • Non-Illuminated Emergency Stop Switch




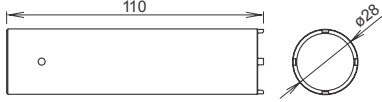

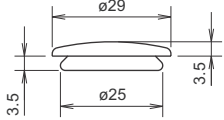

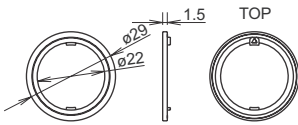

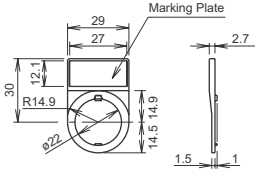

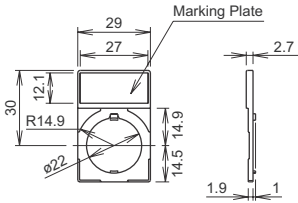

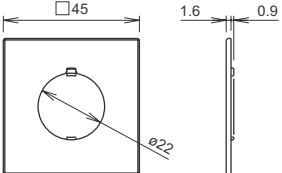

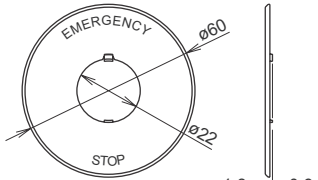

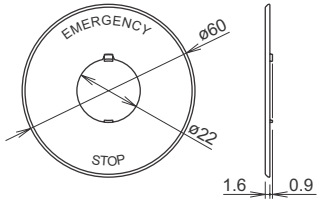
### • Illuminated Emergency Stop Switch



All dimensions in mm.

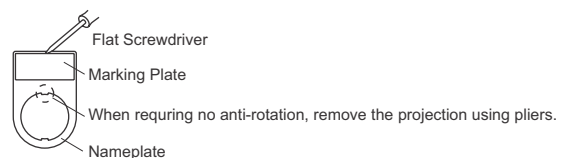
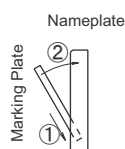


## Accessories

Appearance	Part No.	Description & Dimensions (mm)
	44.02.01	Metallic tool used to tighten the plastic locking ring when installing the 45 series control unit in a panel. 
	44.02.06	Used for plugging unused mounting holes in the panel. Color: Black 
	44.01.53	Prevents rotation of switches in panel. Mainly used with selector switches when no nameplate is used. With waterproof gasket (IP65). Made of plastic (black). 
	44.01.60	Round bottom, Plastic (black) 1.5 mm thick 
	44.01.61	Square bottom, Plastic (black) 1.5 mm thick 
	44.01.62	Square, Plastic (black) 1.5 mm thick 
	44.01.63	Round, Yellow Color Blank 
	44.01.64	Round, Yellow Color, With "EMERGENCY STOP" text. 


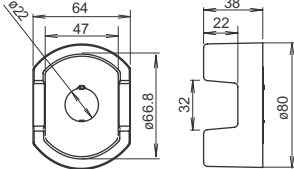

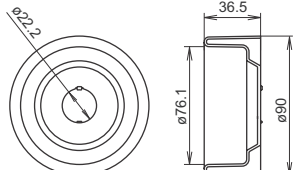


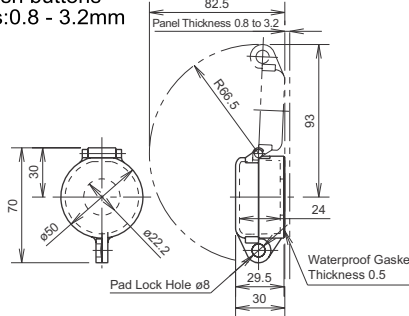

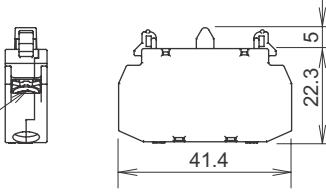


● Installing the marking plate on a nameplate

● To remove the marking plate, insert the flat screwdriver between the marking plate and nameplate.



Note: When using an nameplate, the mounting panel thickness is decreased by 1.5 mm.

## Accessories

Appearance	Part No.	Description & Dimensions (mm)
	44.02.07	Ellipse shape yellow color ø22mm 
	44.02.08	Round shape yellow color ø22mm 
	44.01.52	
	44.03.50	Illuminated plastic cover used to protect push buttons or selector switches(IP65), Panel thickness:0.8 - 3.2mm 
	45.05.10	
	45.05.01	
	NO - NC 45.05.11  2NO 45.05.20  2NC 45.05.02	
		Note: Double contact blocks cannot be used on emergency stop switches.

# 45 Series Metal Switches

ø22mm **WERNER**

## Accessories

Appearance	Voltage	Coil Type	Color	Model No.
	12 V	AC/DC	Red	45.06.02.12
			Amber	45.06.03.12
			Yellow	45.06.04.12
			Green	45.06.05.12
			Blue	45.06.06.12
			White	45.06.09.12
	24 V	AC/DC	Red	45.06.02.24
			Amber	45.06.03.24
			Yellow	45.06.04.24
			Green	45.06.05.24
			Blue	45.06.06.24
			White	45.06.09.24
	110 V	AC/DC	Red	45.06.02.11
			Amber	45.06.03.11
			Yellow	45.06.04.11
			Green	45.06.05.11
			Blue	45.06.06.11
			White	45.06.09.11
	230/240 V	AC/DC	Red	45.06.02.23
			Amber	45.06.03.23
			Yellow	45.06.04.23
			Green	45.06.05.23
			Blue	45.06.06.23
			White	45.06.09.23
	All Voltages	AC/DC	All Colors	45.06.00

## Safety Precaution

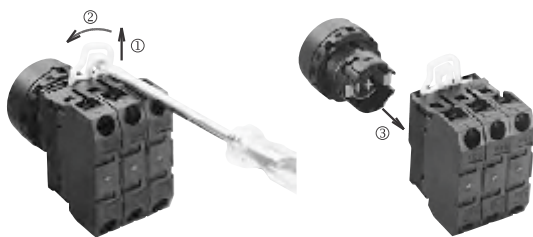
### General

- Failure to turn the power off may cause electrical shocks or fire hazard. Please turn off the power to the 45 series switches before starting installation, removal, wiring, maintenance, and inspection of the products
- Use the lamp holder tool when replacing lamps to avoid burning your hand.
- Failure to tighten the terminal screws may cause overheating or fire. In case of wiring, tighten the M3.5 terminal screws to a tightening torque of 1.0 to 1.3 N.m.

### Panel Mounting

- Remove the contact block from the operator (for pilot light, remove the transformer or full voltage unit from the pilot light). Remove the locking ring from the operator into the panel cut-out from the front, tighten the locking ring from the back, then install the contact block to the operator.

### Removing and Installing the Contact Block

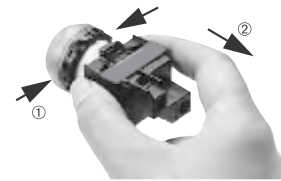


- ① Pull up the locking lever.
- ② Turn the lever to the left.
- ③ Pull out the contact block.

1. To remove the operator from the contact block, pull up the locking lever and turn it to the left. Then the operator can be pulled out.
2. To reinstall, place the TOP marking on the operator and the werner marking on the contact block mounting adapter in the same direction, and insert the operator into the contact block mounting adapter. Then turn the locking lever to right



### Removing the Full Voltage Unit



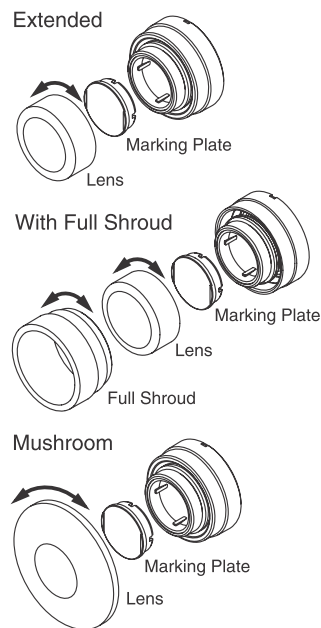
1. To remove the full voltage unit, squeeze the full voltage unit from both sides to disengage the latch as shown, and pull it out. Like the transformer unit, the full voltage unit can also be pulled out by inserting a flat screwdriver into the latch hole as shown.
2. To reinstall, place the TOP markings on the operator and the latch on the full voltage unit in the same direction, and insert the operator into the full voltage unit.

### Notes for Panel Mounting

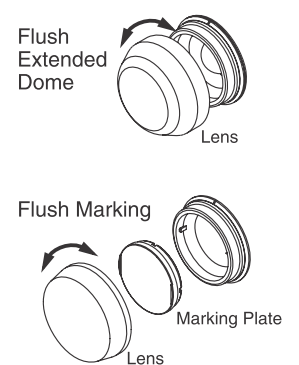
1. Use the optional locking ring wrench to mount the operator onto a panel. Tightening torque must not exceed 2.0 N · m. Do not use pliers. Excessive tightening will damage the locking ring.
2. For contact blocks and transformers housing LED and incandescent lamps, make sure not to press the lamps too hard, otherwise the lamp socket may be damaged.

### Insertion Order of Lens and Marking Plate

#### Illuminated Pushbutton



#### Pilot Light



### Removing and Installing the Transformer Unit

1. Insert a flat screwdriver (5 mm wide at maximum) into the latch hole on the transformer unit as shown in the photo below, and disengage the latch. Then pull out the operator.
2. To reinstall, place the TOP marking on the operator and the latch in the same direction, and push the operator into the transformer unit.



## Safety Precaution

### Replacement (LED and incandescent lamps)

Lamps can be replaced using the lamp holder tool from the front of the panel, or by removing the contact block from the operator unit.

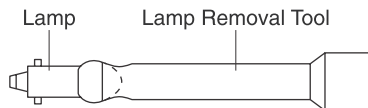
#### Removing the Lamp from the Front of the Panel



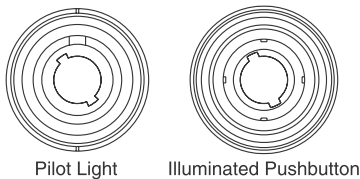
To remove, gently insert the lamp holder tool onto the lamp head. Then push slightly, and turn the lamp holder tool to the left.

#### Installing the Lamp from the Front of the Panel

1. To install, insert the lamp head into the lamp holder tool, and hold the lamp as shown in the figure below.



2. Place the pins on the lamp base to the grooves in the lamp socket. Insert the lamp and turn it to the right.



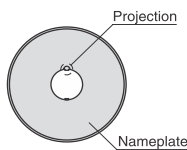
Pilot Light

Illuminated Pushbutton

Note: LED lamps in unibody type pilot lights cannot be replaced.

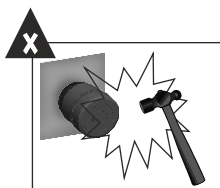
### Nameplate

When anti-rotation is not required, remove the projection from the nameplate using pliers.



### Handling

Do not expose the switch to excessive shock and vibration, otherwise the switch may be deformed or damaged, causing malfunction or operation failure.

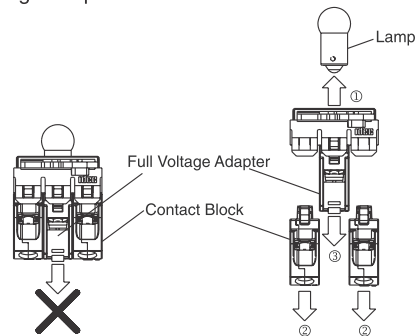


### Removing Contact Blocks and Full Voltage Adapter

Insert a flat screwdriver between the latch and contact block mounting adapter, and disengage the latch.



Make sure to remove the lamp and contact blocks before removing the full voltage adapter.

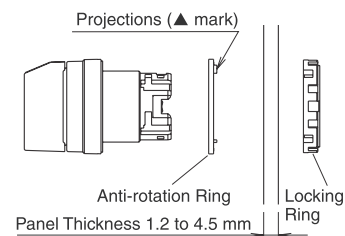


### Tightening Torque for Terminal Screws

Tighten terminal screws to a torque of 1.0 N·m.

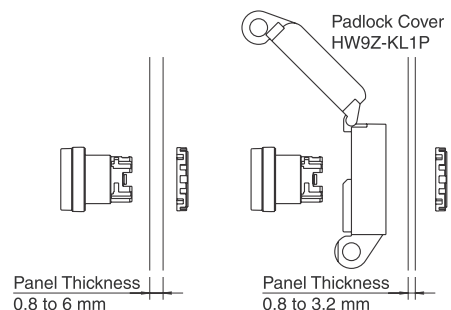
### Anti-rotation Ring and Mounting Panel

Turn the TOP marking on the operator and the ▲ mark on the anti-rotation ring to the recess on the mounting panel.



### Mounting Panel Thickness

The mounting panel must be 0.8 to 6.0 mm in thickness. When optional accessories are added, the applicable panel thickness changes as shown below.



### Contact Bounce

When pressing or turning the operator, the NC and NO contacts will bounce. When designing a control circuit, take the contact bounce time into consideration.

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