### ø22 Switches & Pilot Lights

# HW Series



Complete with finger-safe contact blocks. Ensure safety and save wiring time.



• DC-DC converter types are not approved by standards. • See website for details on approvals and standards.







HW1Z Illuminated Buzzer

HW Series Pilot Lights (short body)











## **HW Series Selection Guide**

Function	Pushbutton				
Category	Flush	Extended	ø29mm Mushroom	ø40mm Mushroom	ø60mm Mushroom
Galegoly	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary
Shape					6
Model	HW1B-M1 HW1B-A1	HW1B-M2 HW1B-A2	HW1B-M3 HW1B-A3	HW1B-M4 HW1B-A4	HW1B-M5
Page	B-187	B-187	B-187	B-187	B-187
Function			Pushbutton		
Category	Square Flush	Square Extended	Round Flush w/Square Bezel	Round Extended w/Square Bezel	ø29mm Mushroom w/Square Bezel
	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained
Shape					
Model	HW2B-M1 HW2B-A1	HW2B-M2 HW2B-A2	HW3B-M1 HW3B-A1	HW3B-M2 HW3B-A2	HW3B-M3 HW3B-A3
Page	B-188	B-188	B-189	B-189	B-189
Function		Pilot	Light		
Category	Flush (Marking)	Extended (Dome)	Square Flush (Marking)	Jumbo Dome	
Shape	1	6	P		
Model	HW1P-1	HW1P-2	HW2P-1	HW1P-5	
Page	B-190	B-190	B-190	B-190	
Function			Illuminated Pushbutton		
	Flush Extended Extended w/Full Shroud Square Flush Flush w/Square Bezel				
Category	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained

Category	Flush	Extended	Extended w/Full Shroud	Square Flush	Flush w/Square Bezel
Galegory	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained
Shape					
Model	HW1L-M1 HW1L-A1	HW1L-M2 HW1L-A2	HW1L-MF2 HW1L-AF2	HW2L-M1 HW2L-A1	HW3L-M1 HW3L-A1
Page	B-192	B-192	B-193	B-194	B-194

Function		Illuminated Pushbutton	
Category	Flush	Extended	Extended w/Full Shroud
Galegoly	Momentary/Maintained	Momentary/Maintained	Momentary/Maintained
Shape			
Model	HW1L-M3 HW1L-A3	HW3L-M3 HW3L-A3	HW1L-M4 HW1L-A4
Page	B-195	B-195	B-196

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APEM

Control Boxes Emergency Stop Switches Enabling Switches

Safety Products Explosion Proof

Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights

тw
YW

# **HW Series Selection Guide**

		Tunction
APEM Switches &		Category
Pilot Lights		
Control Boxes		
Emergency Stop Switches		Shape
Enabling Switches		
Safety Products		Model
Explosion Proof		Wodel
		Page
Terminal Blocks		Function
Relays & Sockets	-	Category
Circuit		
Protectors		
Power Supplies		Chana
LED Illumination		Shape
Controllers		
Operator Interfaces		Model
		Page
Sensors		-
AUTO-ID		Function
		Category
Flush Silhouette		Shape

Function	Dual Pushbutton			
FUNCTION	w/o Pil	ot Light	t Light w/ Pilot	
Category	Flush (top) Flush (bottom)	Flush (top) Extended (bottom)	Flush (top) Flush (bottom)	Flush (top) Flush (bottom)
	Momentary/Interlocking	Momentary/Interlocking	Momentary/Interlocking	Momentary/Interlocking
Shape				
Model	HW7D-B11 HW7D-B21	HW7D-B12 HW7D-B22	HW7D-L11 HW7D-L21	HW7D-L12 HW7D-L22
Page	B-199	B-199	B-200	B-200

Function		Selector Switch		Illuminate	d Selector	Pushbutton Selector
Category	Selector	Pin Tumbler Key	Disc Tumbler Key	Knob Operator	Lever Operator	Fusibulion Selector
Shape						
Model	HW1S	HW1K-□P	HW1K	HW1F	HW1F-□L	HW1R
Page	B-203	B-204	B-206	B-208	B-209	B-214

Function	Mono-Lever Switch		
Category	Standard	Interlocking	
Shape			
Model	HW1M	HW1M-L	
Page	B-215	B-215	

Pilot Lights

ø16

ø30 Miniature

TW
YW

# Ø22 HW Series Switches & Pilot Lights

### Complete with finger-safe contact blocks Ensure safety and save wiring time

- Finger-safe terminal blocks
- Self-cleaning rolling action contacts.
- Degree of protection: IP65 (except dual pushbutton: IP40)
- Dual pushbutton switches available with two pushbuttons and a pilot light integrated into one space-saving unit.
- A wide range of operating voltages for worldwide application.



#### Application for dual pushbuttons:

Ideal for use as power switches and start/stop switches (available with I/ON and O/OFF markings on the buttons and a pilot light in the center).

Interlock type prevents two pushbuttons from being pressed at the same time, providing the best solution for up/down switches.

#### **Specifications and Ratings**

#### **Contact Ratings**

Pushbuttons	Rated insulation voltage	600V
Illuminated Pushbuttons Dual Pushbuttons	Rated continuous current	10A
Selector Switches Illuminated Selector Switches Selector Pushbuttons	Contact ratings by utilization category IEC60947-5-1	AC-15 (A600) DC-13

#### **Contact Ratings by Utilization Category**

#### HW-U10 (NO contact), HW-U01 (NC contact)

Operating Voltag	е		24V	48V	50V	110V	220V	440V
	AC	AC-12 Control of resistive loads and solid state loads	10A	—	10A	10A	6A	2A
Operating	Operating 50/60 Hz	AC-15 Control of electromagnetic loads (> 72 VA)	10A	—	7A	5A	ЗA	1A
Current	DC	DC-12 Control of resistive loads and solid state loads	10A	5A	—	2.2A	1.1A	—
	DC	DC-13 Control of electromagnets	5A	2A	—	1.1A	0.6A	—

#### HW-U10R (EM contact/NO contact), HW-U01R (LB contact/NC contact)

Operating Voltag	е		24V	48V	50V	110V	220V	440V
	AC	AC-12 Control of resistive loads and solid state loads	5A	—	5A	5A	3A	1A
Operating	Operating 50/60 Hz	AC-15 Control of electromagnetic loads (> 72 VA)	5A	—	3.5A	2.5A	1.5A	0.5A
Current	DC	DC-12 Control of resistive loads and solid state loads	5A	2.5A	—	1.1A	0.55A	-
		DC-13 Control of electromagnets	2.5A	1A	—	0.55A	0.3A	—

• The operating current represents the classification by making and breaking currents (IEC 60947-5-1).

Contact materials: Silver contacts

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

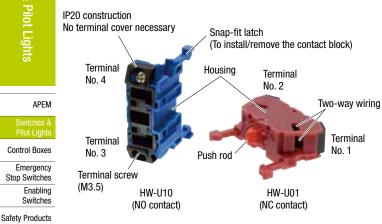


Flush Silhouette	
ø16	
ø22	
ø30	

Pilot Lights

### ø22 HW Series Switches & Pilot Lights

#### **HW-U Contact Block**



Part No.	HW-U10	HW-U01	HW-U10R	HW-U01R				
Contact		~~		~~				
Contact	1N0	1NC	EM (NO) (early make)	LB (NC) (late break)				
Contact No.	3-4	1-2	3-4	1-2				
Housing	Blue	Purple red	Blue	Purple red				
Push Rod	Green	Red	Black	White				
Weight	Approx. 11g							

• Up to 2 layers (4 blocks) can be attached.

· Gold contacts available (gold-plated silver)

#### **LED Specifications**

Terminal Blocks	Unit						LED	lamp
Relays & Sockets	UIIIL	Color	Color Rated Voltage		Operating Voltage		Lamp Base	Part No.
Circuit			6V AC/DC		6V AC/DC			LSTD-6*
Protectors			12V AC/DC		12V AC/DC			LSTD-1*
Power Supplies			24V AC/DC		24V AC/DC			LSTD-2*
	Illuminated pushbutton	R (red)	100/110V AC		100/110V AC		BA9S/13	
LED Illumination	Illuminated selector switch	G (green)	115/120V AC	50/60 Hz	115/120V AC (*1)	±10%		LSTD-6*
Controllers	Pilot light	Y (yellow) A (amber)	200/220V AC		200/220V AC			
Operator	Dual pushbutton	S (blue)	230/240V AC		230/240V AC (*1)			
Interfaces	(with pilot light)	PW (pure white)	380V AC	]	380V AC			
Sensors			400/440V AC	1	400/440V AC			
			480V AC	]	480V AC			
AUTO-ID			110V DC		90 to 140V DC			

• See B-182. for details on LED lamp ratings.

• For the LED lamp used in jumbo dome pilot lights, see B-182.

• Yellow (Y) cannot be used with dual pushbuttons. Flush Silhouette

• Color codes for units without LED lamps: ø16

R (red), G (green), A (amber), Y (yellow), S (blue)

When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of HW series cannot be guaranteed when a commercially available lamp is used.

#### **Power Unit Terminal**

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Miniature

Pilot Lights			Illuminated Unit	Pilot Light				
	Power Unit	Full voltage adapter	Transforme	ir	DC-DC converter	Full voltage adapter	Transformer	DC-DC converter
	Rated Voltage	6, 12, 24V AC/DC	100 to 240V AC	380V AC min.	110V DC	6, 12, 24V AC/DC	100 to 480V AC	110V DC
HW	Polarity	None	None	None	X1 (+) X2 (–)	None	None	X1 (+) X2 (–)
TW		X1						
YW		6 3	TANK NOT					
	Shape/Terminal	X2	X1 X2	l	X1 X2	x1 x1	T	X1 X2

Pilot Liq

Explosion Proof

# LED Lamp Ratings

STD (Except Jumbo Dome Phot Lights)												
Part No.			LSTD-6*		L	LSTD-1*						
Lamp Base		BA9S/13	BA9S/13									
Rated Voltag	ge	6V AC/DC			12V AC/DC		24V AC/DC	24V AC/DC				
Voltage Ran	ge	6V AC/DC	±10%		12V AC/DC ±10%		24V AC/DC ±10%	6				
	Color	R, A	G, PW	S	R, G, A, PW	S	R, G, A, PW	S	APEM			
Current Draw	DC	7mA	5.5mA	4.5mA	10mA	8mA	10mA	8mA	Switches &			
Diaw	AC	8mA	8mA	7mA	11mA	9mA	11mA	9mA	Pilot Lig			
Lamp Base	Color	Same as	ame as illumination color (PW: gray)									
Voltage Mar	king	Die stamp	Die stamped on the base									
Life (referen	ice value)		0,000 hours nance is reduced	to 50% the ini	tial intensity when use	d on complete DC a	at 25°C.)		Stop Sv Enablin Switche			
Internal Circuit		X 1 4		又 (g	Symbols	Example:	LSTD-2PW	2PW				
		X 2 4	X 2 Color						Explosi Termina Relays a			
Weight Approx. 2g					- Resistor				Circuit			

 $\bullet$  Specify a color code in place of \*. R (red), G (green), A (amber), S (blue), PW (pure white)

• Use a pure white (PW) LED for yellow (Y) illumination.

#### LSTDB (For Jumbo Dome Pilot Lights HW1P-5Q4 Only)

Part No.	LSTD	)B-2*							
Lamp Base	BA9S/13								
Voltage Range	24V AC/DC±10%	24V AC/DC±10%							
Current Draw	15mA								
Rated Voltage	24V AC/DC								
Life (reference value)	Approx. 20,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC at 25°C.)								
	R, A								
Internal Circuit		- H LED chip - H Rectifier diode - H Zener diode - □ - Resistor							
	G, S, PW	4							

• Specify a color code in place of \*. R (red), G (green), A (amber), S (blue), PW (pure white)

• Use a pure white (PW) LED for yellow (Y) illumination.

Power Supplies

LED Illumination

Flush Silhouette

ø16

ø30 Miniature Pilot Lights

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YW

Controllers Operator Interfaces Sensors AUTO-ID

## Ø22 HW Series Switches and Pilot Lights

#### **Specifications**

<b>20</b>	opeemeations						
& Pilot Liç	Operating Temperature	Non-illuminated: -25 to +60°C (no freezing) Illuminated: -25 to +50°C (no freezing) Jumbo dome pilot lights: -25 to +55°C (no freezing)					
ght	Operating Humidity	45 to 85% RH (no condensation)					
	Storage Temperature	-40 to +80°C (no freezing)					
	Contact Resistance	50 mΩ maximum (initial value)					
APEM	Insulation Resistance	100 MΩ minimum (500V DC megger)					
Switches & Pilot Lights	Dielectric Strength	Between live and dead metal parts: 2,500V AC, 1 minute (Full voltage and illuminated units: 2,000V AC, 1 minute) (*1)					
ntrol Boxes	Vibration Resistance	Damage limits: 30 Hz, amplitude 1.5 mm					
Emergency	VIDIATION RESISTANCE	Operating extremes: 5 to 55 Hz, amplitude 0.5 mm					
p Switches	Chask Desistance	Damage limits: 1,000m/s <sup>2</sup>					
Enabling Switches	Shock Resistance	Operating extremes: 100m/s <sup>2</sup>					
ty Products		Pushbutton, Illuminated pushbutton Momentary······5,000,000					
osion Proof		Maintained					
inal Blocks	Mechanical Life (minimum	Dual pushbutton       -500,000         Selector switch       -500,000         Key selector switch (Disc tumbler)       -500,000					
s & Sockets	operations)	Key selector switch (Pin tumbler)					
Circuit Protectors		Pushbutton selector switch					
		Mono-lever switches · · · · · · · · · · · · · · · 250,000					
er Supplies		Pushbutton, Illuminated pushbutton					
llumination		Momentary					
Controllers		Dual pushbutton•••••••••••••••••••••••••••••••••••					
Operator	Electrical Life (*5)	Selector switch					
Interfaces		Key selector switch (Disc tumbler)••••••500,000 (*3) Key selector switch (Pin tumbler)••••••100,000 (*3)					
Sensors		Illuminated selector switch					
AUTO-ID		Pushbutton selector · · · · · · · · · · · · 250,000 (*3) Mono-lever switches · · · · · · · · 250,000 (*4)					
		66g (HW1B-M122) 20g (HW1P-1Q4) 84g (HW1L-M122Q4)					
n Silhouette		66g (HW1S-2T22)					
	Weight (Apporox.)	94g (HW1K-2A22) 72g (HW1K-2JPC11)					
ø16		84g (HW1F-222Q4)					
ø22		71g (HW1R-2A22) 82g (HW1M-2222-22N9)					
ø30		72g (HW7D-B111111) 90g (HW7D-L111111Q4)					
Miniature							

\*1) Dielectric strength for dual pushbuttons are as follows:

Full voltage type: 1,000V AC, 1 minute (between live and dead metal parts) Transformer and DC-DC converter types: 2,000V AC, 1 minute (between live and dead metal parts)

\*2) Switching frequency 1,800 operations/h, duty ratio 40%

\*3) Switching frequency 1,200 operations/h, duty ratio 40%

\*4) Switching frequency 900 operations/h, duty ratio 40%

\*5) Load condition 220V AC, 3A (AC-15)

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Pilot Lights

#### **Ordering Information**

#### Standard models

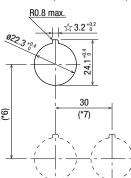
- · Specify Ordering No. when ordering.
- . Specify a button or lens color code in place of \*.
- · Pilot lights, illuminated pushbuttons, and illuminated selector switches have an LED lamp installed unless otherwise specified.
- Nameplates and accessories for mono-lever switch are ordered separately. See B-216 to B-218.
- · Color codes for units without LED lamps:
- R (red), G (green), A (amber), Y (yellow), S (blue)

When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of HW series cannot be guaranteed when a commercially available lamp is used.

#### **Mounting Hole Layout**

(Dimensions in mm)





- . The minimum mounting centers are applicable to switches with one layer of contact blocks (one to two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers in consideration of convenience for wiring.
- . When high temperature is expected, take necessary measures such as securing sufficient mounting centers or using a cooling fan.

#### Minimum Mounting Centers

winning contors		
Unit	A (*6)	B (*7)
ø40mm mushroom button	50	40
Pushbutton selector	50	50
Mono-lever switch	72	72
Pilot light	30	30
Jumbo dome pilot light	85	85
Dual pushbutton switch	55	30
Illuminated selector switch	50	50

. When using the safety lever lock, determine the vertical spacing (\*6) in consideration of convenience for installing and removing the safety lever lock. (Recommended vertical spacing: 100 mm) The minimum length of vertical spacing (\*6) is 45 mm when safety lever lock is not used.

 The 3.2 mm recess is for preventing rotation and is not necessary when the nameplate or anti-rotation ring is not used.

#### **Degree of Protection**

Unit	IEC 60529
All units except dual pushbutton switches	IP65 (*8)
Dual pushbutton switches	IP40 (*9)

\*8) When using a nameplate with the HW series, IP65 protection degree is achieved only when nameplates shown on B-216 are used. (IP40 when other ø22 namplates such as NWA are used)

\*9) IP65 protection degree when HW9Z-D7D button cover is used.

Contr Er Stop

Safety

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Termin

Relays &

Power LED IIIu С

Flush S



#### **Ordering Information** Pushbuttons (B-187 to B-189) When specifying gold-plated silver contact and contact configuration: HW1B-M1 11 R -MAU Optional contact MAU: Gold contact Contact configuration 10: 1N0 1NC 01: APEM 1N01NC 11: 20: 2N0 02: 2NC 22: 2N02NC Control Boxes 40: 4N0 04: 4NC Emergency Stop Switches 13: 1N03NC 3N01NC 31: Enabling Switches 30: 3N0 03: 3NC Safety Products 12: 1N02NC 2N01NC 21: Explosion Proof Pilot Lights (B-190) Terminal Blocks When specifying LED operating voltage: Relays & Sockets HW1P-1 <u>H2</u> R Without LED lamp Operating voltage QO: Circuit Q2: 6V AC/DC Protectors 12V AC/DC Q3: Power Supplies 04: 24V AC/DC H2: 100/110V AC LED Illumination H22: 115/120V AC M2: 200/220V AC Controllers 230/240V AC M42: Operator S2: 380V AC Interfaces T2: 400/440V AC T82: 480V AC Sensors D2: 110V DC AUTO-ID Note: Color codes for units without LED lamps: R (red), G (green), A (amber), Y (yellow), W (white), S (blue) When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of HW series cannot be guaranteed when a commercially available lamp is used. Flush Silhouette Illuminated Pushbuttons (B-192 to B-196) ø16 When specifying gold-plated silver contact, contact configuration, and LED operating voltage: HW1L-M1 <u>11 H2</u> R - <u>MAU</u> **Optional contact** MAU Gold contact ø30 Without LED lamp **Operating Voltage** 00: Q2: 6V AC/DC Miniature 12V AC/DC Q3: Q4: 24V AC/DC Pilot Lights H2: 100/110V AC H22: 115/120V AC M2: 200/220V AC M42: 230/240V AC 380V AC S2: 400/440V AC T2: T82: 480V AC ΤW 110V DC D2: YW Contact configuration 10: 1N0 01: 1NC 1N01NC 11: 20: 2N0 02: 2NC 22: 2N02NC 40: 4N0 04: 4NC 13: 1N03NC 31: 3N01NC 30: 3N0 03: 3NC 12: 1N02NC 21: 2N01NC

Note:

• Color codes for units without LED lamps: R (red), G (green), A (amber), Y (yellow), S (blue)

When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of HW series cannot be guaranteed when a commercially available lamp is used.

• Odd number of contact blocks, such as 1N0, 1NC, 3N0, 2N0-1NC, 1N0-2NC, and 3NC, is not available for transformer type or DC-DC converter type.



#### Ordering Information

Pilot Lights				-	-	: <b>light] (B-199)</b> d contact configuration:		
ght	HW7D-B <u>1</u>							
						<ul> <li>Optional contact</li> </ul>		: Gold-plated silver
						<ul> <li>Button legends</li> </ul>	Blani 1:	k: Without legend I/ON + 0/OFF
APEM Switches &						<sup>–</sup> Button color code	GR: WB:	Green (top) Red (bottom) White (top) Black (bottom)
Pilot Lights			L	 		<ul> <li>Contact arrangement co</li> </ul>	de 10:	1NO
Control Boxes Emergency						(bottom button)	01: 11: 20:	1NC 1N01NC 2N0
Stop Switches Enabling Switches						<ul> <li>Contact arrangement co</li> </ul>	02:	2NC 1NO
Safety Products						(top button)	01: 11:	1NC 1NO1NC
Explosion Proof							20: 02:	2NO 2NC
Terminal Blocks						<ul> <li>Button style</li> </ul>	1: 2:	Flush + Flush Flush + Extended
Relays & Sockets				 	 	<ul> <li>Operation</li> </ul>	1:	Momentary
Circuit Protectors							2:	Interlock
Power Supplies	Duel Duebhut	<b>.</b>	<b>C</b> :	 - 5	 	LU (D 000)		
LED Illumination	Dual Pushbut			-		ntact configuration, and	d I FD on	erating voltage.
Controllers	HW7D-L 1		•			naor oomgaraton, an	a 220 op	oraling volago.
Operator Interfaces						<ul> <li>Optional contact</li> </ul>	MAU	: Gold-plated silver
Sensors						- Button legends		k: Without legend I/ON + 0/OFF
AUTO-ID				L	 	<ul> <li>Button color code</li> </ul>	GR: WB:	Green (top), Red (bottom) White (top), Black (bottom)
					 	<ul> <li>Lamp color code</li> </ul>	G: PW:	Green Pure White
Flush Silhouette					 	<ul> <li>Operating voltage</li> </ul>	Q2:	6V AC/DC
ø16							Q3: Q4:	12V AC/DC 24V AC/DC
ø22								100/110V AC 115/120V AC
ø30							M2: M42	200/220V AC : 230/240V AC
Miniature							S2: T2:	380V AC 400/440V AC
Pilot Lights						<ul> <li>Contact arrangement co</li> </ul>	T82: de 10:	480V AC 1NO
НЖ						(bottom button)	01: 11: 20: 02:	1NC 1NO1NC 2NO 2NC
TW		L		 	 	- Contact arrangement co		1N0
YW						(top button)	01: 11: 20: 02:	1NC 1N01NC 2N0 2NC
				 		<ul> <li>Button style</li> </ul>	1: 2:	Flush + Flush Flush + Extended
				 		- Operation	1: 2:	Momentary Interlock

Note: Transformer type cannot have a contact arrangement of 3 contact blocks for the total of top and bottom.

ey Selector Switches (Pill Tullibler Key	, , , , , , , , , , , , , , , , , , ,		<u>2</u>				
hen specifying gold-plated silver contact, ke	y removal position, and key	number:	Lig				
НѠ1К- <u>2</u> J P A 01 - <u>501</u> - <u>МА</u> И			ot Lights				
	— Optional contact	MAU: Gold-plated silver					
	— Different key number	-501 - 515					
	—— Key removal position	2-position A: Removable in all positions B: Removable in the left only	APEM				
		C: Removable in the right only 3-position A: Removable in all positions	Switches & Pilot Lights				
		B: Removable in the left and center C: Removable in the right and center	Control Boxes				
		D: Removable in center only E: Removable in right and left	Emergency Stop Switches				
		G: Removable in left only H: Removable in right only	Enabling Switches				
	—— Cam code	Blank, J, or S	Safety Products				
	— Operator position code	2: 2-position, maintained 21: 2-position, spring return from right	Explosion Proof				
		3: 3-position, spring return from right 31: 3-position, spring return from right	Terminal Blocks				
		32: 3-position, spring return from left 33: 3-position, spring return two way	Relays & Sockets				
Note: • The key cannot be removed in a spring r	eturn position.	so. S position, oping rotan two nay	Circuit Protectors				
• The key number is engraved on the key		raved with a number)	Power Supplies				
			LED Illumination				
y Selector Switches (Disc Tumbler Ke en specifying gold-plated silver contact, ke		number	Controllers				
HW1K- <u>3 J A</u> 22 - <u>1H</u> - <u>MAU</u>	y removal position, and key	number.	Operator Interfaces				
	— Optional contact	MAU: Gold-plated silver	Sensors				
	— Different key number	-1H, -2H, -3H					
	—— Key removal position	(same as pin tumbler key shown above)	AUTO-ID				
	—— Cam code	(same as pin tumbler key shown above)					
	— Operator position code	(same as pin tumbler key shown above)					
Note:			Fluch Cilheuette				
The key cannot be removed in a spring r			Flush Silhouette				
• The key number is engraved on the key	cylinder. (default key is not eng	raved with a number)	ø16				
			ø22				
uminated Selector Switches (B-208 to	B-209)						
nen specifying gold-plated silver contact and			ø30				
HW1F- <u>2</u> <u>J</u> <u>L</u> 11 <u>H2</u> R - <u>MAU</u>			Miniature				
	— Optional contact	MAU: Gold-plated silver	Pilot Lights				
	—— Operating voltage	Q0:         Without LED lamp         M2:         200/220V AC           Q2:         6V AC/DC         M42:         230/240V AC           Q3:         12V AC/DC         S2:         380V AC					
		Q4:         24V AC/DC         T2:         400/440V AC           H2:         100/110V AC         T82:         480V AC	HW				
		H22: 115/120V AC	TW				
	—— Operator shape —— Cam code	Blank (Knob), L (Lever) Blank, J, or S	YW				
	Operator position code	2: 2-position, maintained					
	operator position code	2: 2-position, maintained 21: 2-position, spring return from right					

Color codes for units without LED lamps: R (red), G (green), A (amber), Y (yellow), S (blue) Note:

When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of HW series cannot be guaranteed when a commercially available lamp is used.

#### Selector Switches (B-203)

When specifying gold-plated silver contact

**Ordering Information** 

Key Selector Switches (Pin Tumbler Key) (B-204 to B-205)

HW1S- 2T11 - MAU

**Optional contact** 

MAU: Gold-plated silver

• See **B-203** for operator position.

bownload catalogs and CAD from http://asia.idec.com/downloads

#### ø22 HW Series Pushbuttons

#### Flush / Extended / Mushroom Pushbuttons

Pilot Lights	Pack						
ŧ.	Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)	
ght	Flush		1N0	HW1B-M110*			
0	HW1B-M1 HW1B-A1		1NC	HW1B-M101*			
	nwid-Al	Momentary	1NO-1NC	HW1B-M111*		Locking Ring	
APEM			2N0 2NC	HW1B-M120* HW1B-M102*	В	Safety Lever Lock	
Switches &			2NO-2NC	HW1B-M102*	G R		
Pilot Lights			1N0	HW1B-A110*	Ŷ		
Control Boxes			1NC	HW1B-A101*	S		
Emergency Stop Switches		Maintained	1NO-1NC	HW1B-A111*	W	49.4 (1 or 2 blocks) 69.4 (3 or 4 blocks) 29.4	
Enabling		Maintaineo	2N0	HW1B-A120*			
Switches			2NC	HW1B-A102*			
Safety Products			2NO-2NC 1NO	HW1B-A122* HW1B-M210*			
Explosion Proof	Extended HW1B-M2		1NC	HW1B-M201*			
Terminal Blocks	HW1B-A2		1NO-1NC	HW1B-M211*		Locking Ring	
		Momentary	2N0	HW1B-M220*		Safety Lever Lock	
Relays & Sockets			2NC	HW1B-M202*	B G		
Circuit Protectors			2N0-2NC	HW1B-M222*	R		
Power Supplies			1N0	HW1B-A210*	Y S		
			1NC	HW1B-A201*	Ŵ		
LED Illumination		Maintained	1NO-1NC 2NO	HW1B-A211* HW1B-A220*		49.4 (1 or 2 blocks) 13 69.4 (3 or 4 blocks) 19	
Controllers			2NC	HW1B-A202*			
Operator			2N0-2NC	HW1B-A222*			
Interfaces	ø29mm Mushroom HW1B-M3 HW1B-A3	Momentary	1N0	HW1B-M310*			
Sensors			1NC	HW1B-M301*			
AUTO-ID			1NO-1NC	HW1B-M311*	B G	Locking Ring Safety Lever Lock Panel Thickness 0.8 to 6	
			2N0	HW1B-M320*			
	121		2NC 2NO-2NC	HW1B-M302* HW1B-M322*			
Fluch Cilhouette		Maintained	1N0	HW1B-A310*	R Y		
Flush Silhouette			1NC	HW1B-A301*	S		
ø16			1NO-1NC	HW1B-A311*	W	49.4 (1 or 2 blocks) 13	
ø22			2N0	HW1B-A320*		69.4 (3 or 4 blocks) 23.2	
ø30			2NC	HW1B-A302*			
			2N0-2NC	HW1B-A322*			
Miniature	ø40mm Mushroom HW1B-M4		1N0 1NC	HW1B-M410* HW1B-M401*			
Pilot Lights	HW1B-A4		1NO-1NC	HW1B-M401*		Locking Bing	
		Momentary	2N0	HW1B-M420*		Safety Lever Lock	
			2NC	HW1B-M402*	B G		
	- Barris		2N0-2NC	HW1B-M422*	R		
HW			1N0	HW1B-A410*	Y S		
TW			1NC 1NO-1NC	HW1B-A401* HW1B-A411*	Ŵ	49.4 (1 or 2 blocks) 13	
YW		Maintained	2N0	HW1B-A411* HW1B-A420*		69.4 (3 or 4 blocks) 23.2	
	ø60mm Mushroom HW1B-M5		2NC	HW1B-A402*			
			2N0-2NC	HW1B-A422*			
			1N0	HW1B-M510*		Locking Ring Satety Lever Lock	
			1NC	HW1B-M501*			
		Momentary	1NO-1NC	HW1B-M511*	B G		
		womentaly	2N0	HW1B-M520*	R		
			2NC	HW1B-M502*		49.4 (1 or 2 blocks) 15	
			2N0-2NC	HW1B-M522*		69.4 (3 or 4 blocks) 30.1	

• Specify a color code in place of \* in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)

- Pushbuttons with 1 or 3 contact blocks have a dummy block.
- See B-184 for other contact configurations and gold-plated silver contacts.
- Pushbuttons: M3.5 Terminal screws integrated terminal cover

#### Square Flush / Square Flush Pushbuttons

Square Flush / S	Square Flush	Pushhutte	nns		ø22 HW Series Pushbuttons	Switches & Pilot Lights
oquare riusii /	oquare ridsir				Deskoes Aventikus	
01	Organitier	O and a st	Devit No.	O al a m O a d a	Package Quantity: 1	
Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)	- Ei
Square Flush		1N0	HW2B-M110*	-		hts
HW2B-M1 HW2B-A1		1NC	HW2B-M101*	-		
TIW2D-AT	Momentary	1N0-1NC	HW2B-M111*	-	Locking Ring Safety Lever Lock Panel Thickness 0.8 to 6	
		2N0	HW2B-M120*	В		APEM
		2NC	HW2B-M102*	G		
		2N0-2NC	HW2B-M122*	R		Switches & Pilot Lights
		1N0	HW2B-A110*	Y S W		Control Boxes
		1NC	HW2B-A101*			
	Maintained	1N0-1NC	HW2B-A111*		49.4 (1 or 2 blocks) 69.4 (3 or 4 blocks) 13	Emergency Stop Switches
		2N0	HW2B-A120*			Enabling
		2NC	HW2B-A102*			Switches
		2N0-2NC	HW2B-A122*			Safety Products
Square Extended		1N0	HW2B-M210*			
HW2B-M2		1NC	HW2B-M201*			Explosion Proof
HW2B-A2	Momentary	1N0-1NC	HW2B-M211*		Locking Ring Safety Lever Lock Panel Thickness 0.8 to 6	Terminal Blocks
	womentary	2N0	HW2B-M220*	В	Safety Lever Lock Panel Thickness 0.8 to 6	
		2NC	HW2B-M202*	G		Relays & Sockets
-		2N0-2NC	HW2B-M222*	R		Circuit Protectors
		1N0	HW2B-A210*	Y		
		1NC	HW2B-A201*	S   W		Power Supplies
	Maintained	1N0-1NC	HW2B-A211*	VV	49.4 (1 or 2 blocks) 13 69.4 (3 or 4 blocks) 19	LED Illumination
	wiaimameu	2N0	HW2B-A220*			[
		2NC	HW2B-A202*	]		Controllers
		2N0-2NC	HW2B-A222*	]		Operator Interfaces

• Specify a color code in place of \* in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)

Dummy block

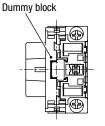
• Pushbuttons with 1 or 3 contact blocks have a dummy block.

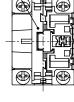
• See B-184 for other contact configurations and gold-plated silver contacts.

• Pushbuttons: M3.5 Terminal screws

#### **Bottom View**

• See B-227 for wiring. • Integrated terminal cover





1NO contact block

• For 1NC contact, the contact block will mount on the opposite side.

3 contact blocks



2/4 contact blocks

Flush Silhouette
ø16
ø30
Miniature
Pilot Lights

Sensors

AUTO-ID

HW	
TW	
YW	

## ø22 HW Series Pushbuttons

#### Round Flush / Round Extended /Mushroom with Square Bezel

Pilot Lights						Package Quantity: 1			
E	Shape	Operation	Contact	Part No.	Color Code	Dimensions (mm)			
Round Flush with Square Bezel			1N0	HW3B-M110*					
ŝ	HW3B-M1		1NC	HW3B-M101*					
	HW3B-A1	Momentary	1NO-1NC	HW3B-M111*	]	Locking Ring			
		womentary	2N0	HW3B-M120*	В	Safety Lever Lock Panel Thickness 0.8 to 6			
APEM			2NC	HW3B-M102*	G				
Switches & Pilot Lights			2N0-2NC	HW3B-M122*	R				
			1N0	HW3B-A110*	Y	╗╬╍──╠╾──╎──╎┼┇╫╴╽┼ ╵───╎╢((`-┼╌))) ╗ ╽			
Control Boxes			1NC	HW3B-A101*	S W				
Emergency Stop Switches		Maintained	1NO-1NC	HW3B-A111*		49.4 (1 or 2 blocks) 69.4 (3 or 4 blocks) 13			
Enabling		Wantanieu	2N0	HW3B-A120*					
Switches			2NC	HW3B-A102*					
Safety Products			2N0-2NC	HW3B-A122*					
	Round Extended		1N0	HW3B-M210*					
Explosion Proof	with Square Bezel		1NC	HW3B-M201*					
Terminal Blocks	HW3B-M2 HW3B-A2	Momentary Maintained	1NO-1NC	HW3B-M211*	B G R Y S W	Locking Ring			
Delaure & Ocializate			2N0	HW3B-M220*		Safety Lever Lock Panel Thickness 0.8 to 6			
Relays & Sockets			2NC	HW3B-M202*					
Circuit Protectors			2N0-2NC	HW3B-M222*					
			1N0	HW3B-A210*					
Power Supplies			1NC	HW3B-A201*					
LED Illumination			1N0-1NC	HW3B-A211*		49.4 (1 or 2 blocks) 13 69.4 (3 or 4 blocks) 19			
Controllers			2N0	HW3B-A220*		He -			
	_		2NC	HW3B-A202*					
Operator Interfaces			2N0-2NC	HW3B-A222*					
Sensors	ø29mm Mushroom		1N0	HW3B-M310*					
56115015	with Square Bezel HW3B-M3		1NC	HW3B-M301*					
AUTO-ID	HW3B-A3	Momentary	1NO-1NC	HW3B-M311*		Locking Ring			
			2N0	HW3B-M320*	В	Safety Lever Lock Panel Thickness 0.8 to 6			
			2NC	HW3B-M302*	G				
			2N0-2NC	HW3B-M322*	R				
Flush Silhouette			1N0	HW3B-A310*	Y S				
ø16			1NC	HW3B-A301*	Ŵ				
510		Maintained	1NO-1NC	HW3B-A311*		49.4 (1 or 2 blocks) 13 69.4 (3 or 4 blocks) 23.2			
ø22			2N0	HW3B-A320*					
ø30			2NC	HW3B-A302*					
			2N0-2NC	HW3B-A322*					
Miniature	• Chooify a color code in place of *		I) Q ( )						

Miniature • Specify a color code in place of \* in Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)

Dummy block

• Pushbuttons with 1 or 3 contact blocks have a dummy block.

• See **B-184** for other contact configurations and gold-plated silver contacts.

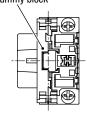
• Pushbuttons: M3.5 Terminal screws

## **Bottom View**

ΤW YW

Pilot Lights





1NO contact block

3 contact blocks

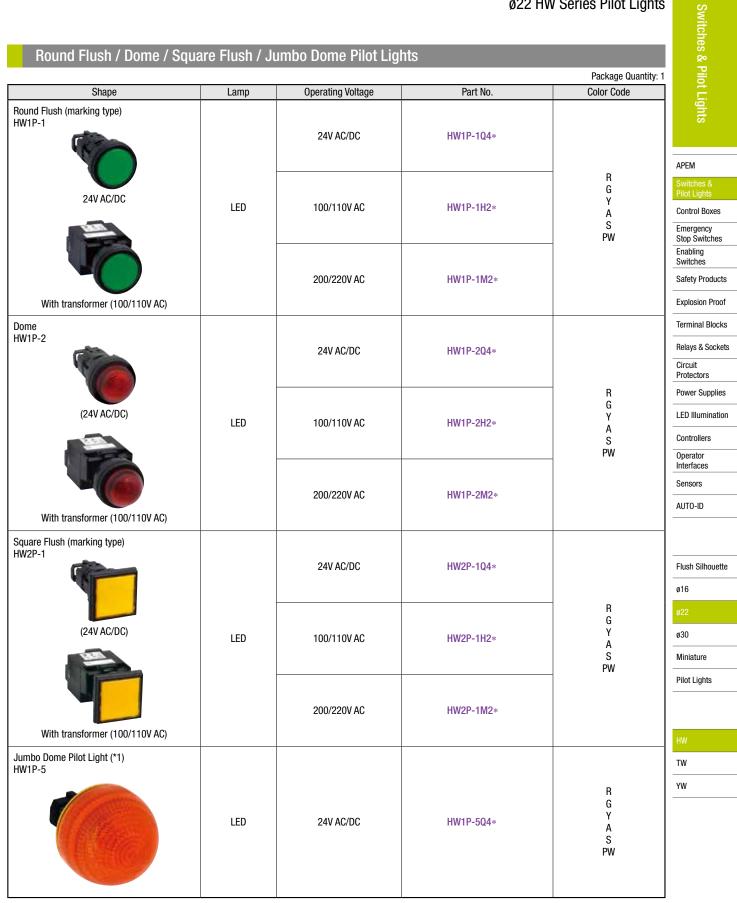


- See B-227 for wiring.
- Integrated terminal cover

Switches

2/4 contact blocks

#### Ø22 HW Series Pilot Lights



• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

• Pilot lights have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltages.

• See B-191 for bottom view.

• See **B-191** for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used. \*1) Jumbo dome pilot lights contain an exclusive LED. See B-182 and B-221.



Gasket

Locking Ring

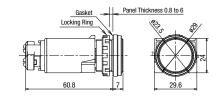
43.3

#### Pilot Lights

Round Flush Terminal screws: M3.5, integrated terminal cover

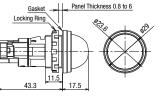
Panel Thickness 0.8 to 6

6, 12, 24V AC/DC, Without LED lamp 100/110V AC, 200/220V AC (240V AC maximum)



#### Extended Terminal screws: M3.5, integrated terminal cover

6, 12, 24V AC/DC, Without LED lamp



#### Square Flush Terminal screws: M3.5, integrated terminal cover

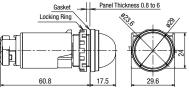
6, 12, 24V AC/DC, Without LED lamp

Gasket Locking Ring \_11 43.3

100/110V AC, 200/220V AC (240V AC maximum) Panel Thickness 0.8 to 6 124.

Jumbo Dome Pilot Light Terminal screws: M3.5, integrated terminal cover

100/110V AC, 200/220V AC (240V AC maximum)



Gasket

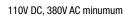
Locking Ring

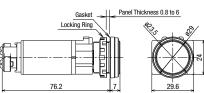
60.8

Panel Thickness 0.8 to 6

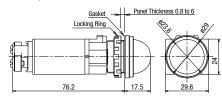
229.6

124

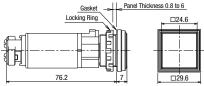




#### 110V DC, 380V AC minimum



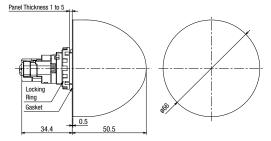
#### 110V DC, 380V AC minimum





ø16 ø30 Miniature Pilot Lights

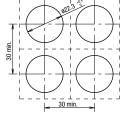
Flush Silhouette





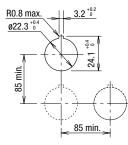
Panel Cut-Out **Mounting Centers** (Except jumbo dome)

Close mounting on 30 mm centers



When mounting 100/110V AC, 200/220V AC, 110V DC units on 30mm centers vertically and horizontally, keep the ambient temperature below 40°C.

**Mounting Centers** (Jumbo dome)

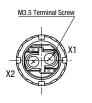


Determine the minimum mounting centers in consideration of convenience for wiring.

#### **Pilot Light Bottom View**

6, 12, 24V AC/DC Without LED lamp

#### 100/110V AC, 200/220V, 110V DC





 For DC-DC Converter types, terminal X1 is ⊕, X2 is⊖. See B-228 for wiring.

APEM

Control Boxes

Emergency Stop Switches Enabling

Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

LED Illumination

Controllers

Operator

Interfaces Sensors

AUTO-ID

Circuit

Protectors Power Supplies

			_	Contact			
Shape	Illumination	Operation	Rated Voltage	Configuration	Part No.	Color Code	2 Pilot Lights
Round Flush (Marking type)				1N0	HW1L-M110Q4*		st
W1L-M1				1NC	HW1L-M101Q4*		
IW1L-A1			0.41/ 0.0/00	1NO-1NC	HW1L-M111Q4*		
			24V AC/DC	2N0	HW1L-M120Q4*		APEM
				2NC	HW1L-M102Q4*	R	
				2N0-2NC	HW1L-M122Q4*	G	Switches Pilot Light
1		Momenter		1NO-1NC	HW1L-M111H2*	Ŷ	Control B
		Momentary	100/110V AC	2N0	HW1L-M120H2*	A	
			TUU/TTUV AC	2NC	HW1L-M102H2*	S	Emergen Stop Swit
				2N0-2NC	HW1L-M122H2*	PW	Enabling
				1NO-1NC	HW1L-M111M2*		Switches
(24V AC/DC)			200/220V AC	2N0	HW1L-M120M2*		Safety Pr
			200/220V AG	2NC	HW1L-M102M2*		
	LED			2N0-2NC	HW1L-M122M2*		Explosior
				1N0	HW1L-A110Q4*		Termsteret
				1NC	HW1L-A101Q4*		Terminal
			24V AC/DC	1NO-1NC	HW1L-A111Q4*		Relays &
			24V AU/DU	2N0	HW1L-A120Q4*		Circuit
				2NC	HW1L-A102Q4*	R	Protector
With transformer (100/110V AC)				2N0-2NC	HW1L-A122Q4*	G	Power S
		Maintained		1NO-1NC	HW1L-A111H2*	Y	
			100/110V AC 200/220V AC	2N0	HW1L-A120H2*	A	LED Illun
				2NC	HW1L-A102H2*	S	
				2N0-2NC	HW1L-A122H2*	PW	Controlle
				1NO-1NC	HW1L-A111M2*	_	Operator
()				2N0	HW1L-A120M2*		Interface
				2NC	HW1L-A102M2*		Sensors
				2N0-2NC	HW1L-A122M2*		AUTO-ID
ound Extended (Marking type)				1N0	HW1L-M210Q4*		AUTU-ID
W1L-M2				1NC	HW1L-M201Q4*		
W1L-A2			24V AC/DC	1N0-1NC	HW1L-M211Q4*		
			24V A0/D0	2N0	HW1L-M220Q4*		
_				2NC	HW1L-M202Q4*	R	Flush Sil
				2N0-2NC	HW1L-M222Q4*	G	ø16
		Momentary		1NO-1NC	HW1L-M211H2*	Y	טוש
		Momontary	100/110V AC	2N0	HW1L-M220H2*	A	ø22
				2NC	HW1L-M202H2*	S PW	-02
				2N0-2NC	HW1L-M222H2*	PW	ø30
				1NO-1NC	HW1L-M211M2*		Miniature
(24V AC/DC)			200/220V AC	2N0	HW1L-M220M2*		
				2NC	HW1L-M202M2*		Pilot Ligh
	LED			2N0-2NC	HW1L-M222M2*		
				1N0	HW1L-A210Q4*		
				1NC	HW1L-A201Q4*		
			24V AC/DC	1NO-1NC	HW1L-A211Q4*		нพ
				2N0	HW1L-A220Q4*		
				2NC	HW1L-A202Q4*	R	TW
				2N0-2NC	HW1L-A222Q4*	G	YW
		Maintained		1NO-1NC	HW1L-A211H2*	Y	1 11
		mantuniou	100/110V AC	2N0	HW1L-A220H2*	A	
				2NC	HW1L-A202H2*	S DW	
With transformer				2N0-2NC	HW1L-A222H2*	PW	
(100/110V AC)				1N0-1NC	HW1L-A211M2*		
			200/220VAC	2N0	HW1L-A220M2*		
			200/220VA0	2NC	HW1L-A202M2*		
	1		1	2N0-2NC	HW1L-A222M2*	٦ I	

• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

Round Flush / Round Extended (Marking Type)

• Illuminated pushbuttons have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• See B-184 for other contact configurations and gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-198 for bottom view.

LED

• See B-184 for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

## ø22 HW Series Illluminated Pushbuttons

APEM

Switches & Pilot Lights Control Boxes Emergency Stop Switches Enabling Switches Safety Products Explosion Proof Terminal Blocks Relays & Sockets Circuit Protectors Power Supplies LED Illumination Controllers Operator Interfaces Sensors AUTO-ID

LED Round	a extended v	with Full Shrou	d (Marking Ty	pe)			
	1		[ <u>-</u>	1		Package Quantity	
Shape	Illumination	Operation	Rated Voltage	Contact	Part No.	Color Code	
Round Extended with Full Shroud				1N0	HW1L-MF210Q4*	_	
(Marking type)				1NC	HW1L-MF201Q4*		
HW1L-MF2 HW1L-AF2			24V AC/DC	1NO-1NC	HW1L-MF211Q4*		
HWIL-AF2			241 10/00	2N0	HW1L-MF220Q4*		
				2NC	HW1L-MF202Q4*	— R	
				2NO-2NC	HW1L-MF222Q4*	G	
		Momentary		1NO-1NC	HW1L-MF211H2*	Ŷ	
		Momentaly	100/110V AC	2N0	HW1L-MF220H2*	A	
			100/110V AC	2NC	HW1L-MF202H2*	S PW	
				2N0-2NC	HW1L-MF222H2*	PVV	
		LED		1NO-1NC	HW1L-MF211M2*		
(24V AC/DC )			200/220V AC	2N0	HW1L-MF220M2*		
				2NC	HW1L-MF202M2*		
				2N0-2NC	HW1L-MF222M2*		
				1N0	HW1L-AF210Q4*		
			0.11/ 1.0/20	1NC	HW1L-AF201Q4*		
				1NO-1NC	HW1L-AF211Q4*		
			24V AC/DC	2N0	HW1L-AF220Q4*		
				2NC	HW1L-AF202Q4*		
				2N0-2NC	HW1L-AF222Q4*	— R G	
				1NO-1NC	HW1L-AF211H2*	U	
		Maintained		2N0	HW1L-AF220H2*	A	
			100/110V AC	2NC	HW1L-AF202H2*	S	
With transformer				2N0-2NC	HW1L-AF222H2*		
(100/110V AC)				1NO-1NC	HW1L-AF211M2*		
(,				2N0	HW1L-AF220M2*	-	
			200/220V AC	2NC	HW1L-AF202M2*		
				2N0-2NC	HW1L-AF222M2*	—	

• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

• Illuminated pushbuttons have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• See B-184 for other contact configurations and gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-198 for bottom view.

• See **B-184** for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used. Miniature

Pilot Lights

Flush Silhouette

ø16

ø30

τw
YW

#### ø22 HW Series Illluminated Pushbuttons

# Switches & Pilot

		0		<b>0</b>	D · · ·	Package Quantity: 1	<u> </u>
Shape	Illumination	Operation	Illumination	Contact	Part No.	Color Code	& Pilot Lights
Square Flush (Marking type)			-	1N0	HW2L-M110Q4*		, at
IW2L-M1			-	1NC	HW2L-M101Q4*	_	S
IW2L-A1			24V AC/DC	1NO-1NC	HW2L-M111Q4*		
				2N0	HW2L-M120Q4*		
			-	2NC	HW2L-M102Q4*	R	APEM
Branch of the				2N0-2NC	HW2L-M122Q4*	G	Switches &
		Momentary	-	1NO-1NC	HW2L-M111H2*	Y	Pilot Lights
		, i i i i i i i i i i i i i i i i i i i	100/110V AC	2N0	HW2L-M120H2*	A S	Control Boxes
				2NC	HW2L-M102H2*	PW	Emergency
				2N0-2NC	HW2L-M122H2*		Stop Switche
(24V AC/DC)			-	1N0-1NC	HW2L-M111M2*		Enabling
			200/220V AC	2N0	HW2L-M120M2*		Switches
(240 110/00)			-	2NC	HW2L-M102M2*		Safety Produ
	LED			2N0-2NC	HW2L-M122M2*		Explosion Pro
			-	1N0	HW2L-A110Q4*		
-				1NC	HW2L-A101Q4*		Terminal Blo
			24V AC/DC	1NO-1NC	HW2L-A111Q4*		Relays & Soc
				2N0	HW2L-A120Q4*		-
				2NC	HW2L-A102Q4*	R G	Circuit Protectors
				2NO-2NC	HW2L-A122Q4*	Y Y	
With transformer		Maintained	-	1N0-1NC	HW2L-A111H2*	Α	Power Suppl
			100/110V AC	2N0	HW2L-A120H2*	S PW	LED Illumina
				2NC 2N0-2NC	HW2L-A102H2*		
			200/220V AC	1NO-1NC	HW2L-A122H2*		Controllers
(100/110V AC)					HW2L-A111M2*		Operator
				2N0	HW2L-A120M2*		Interfaces
				2NC 2NO-2NC	HW2L-A102M2* HW2L-A122M2*		Sensors
				Í		<u> </u>	
Round Flush with Square Bezel			-	1N0 1NC	HW3L-M110Q4* HW3L-M101Q4*		AUTO-ID
Marking type) <del>I</del> W3L-M1				1NO-1NC			
IW3L-A1			24V AC/DC	2N0	HW3L-M111Q4* HW3L-M120Q4*		
			-	2NC			
			-	2NO-2NC	HW3L-M102Q4*	R G	Flush Silhou
A CONTRACTOR OF THE OWNER OWNER OF THE OWNER OWNE					HW3L-M122Q4* HW3L-M111H2*	- Ÿ	ø16
		Momentary		1NO-1NC 2N0		Α	ØIU
			100/110V AC	2NC	HW3L-M120H2* HW3L-M102H2*	S	ø22
				2NC-2NC	HW3L-M102H2*	PW	-02
				1NO-1NC			ø30
					HW3L-M111M2*		Miniature
			200/220V AC	2N0 2NC	HW3L-M120M2* HW3L-M102M2*		
(24V AC/DC)				2NC-2NC	HW3L-M122M2*		Pilot Lights
	LED			1N0	HW3L-M122M2*		
				1NC	HW3L-A101Q4*		
				1NO-1NC	HW3L-A111Q4*		
The second second			24V AC/DC	2N0	HW3L-A120Q4*		HW
				2NC	HW3L-A102Q4*		TW:
				2NC-2NC	HW3L-A122Q4*	R	TW
IN ATTEN				1NO-1NC	HW3L-A111H2*	G Y	YW
		Maintained		2N0	HW3L-A120H2*	YA	
			100/110V AC	2N0 2NC	HW3L-A120H2*	S	
						- PW	
With transformer				2NO-2NC	HW3L-A122H2*		
(100/110V AC)				1NO-1NC	HW3L-A111M2*		
			200/220V AC	2N0 2NC	HW3L-A120M2* HW3L-A102M2*		

Square Flush / Round Flush with Square Bezel (Marking Type)

• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

• Illuminated pushbuttons have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• See B-184 for other contact configurations and gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-198 for bottom view.

LED

• See B-184 for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

## ø22 HW Series Illluminated Pushbuttons

## Mushroom (ø29mm) / Mushroom (ø29mm) with Square Bezel (Marking Type)

s Qo	LED Mushr	oom (ø29mi	n) / Mushroon	n (ø29mm) wi	th Square B	ezel (Marking Type	e)	
ies & Pilot Lights		,,					Package Quantity	
E	Shape	Illumination	Operation	Illumination	Contact	Part No.	Color Code	
ght	ø29mm Mushroom				1N0	HW1L-M310Q4*		
S.	(Marking type)				1NC	HW1L-M301Q4*		
	HW1L-M3			24V AC/DC	1NO-1NC	HW1L-M311Q4*		
	HW1L-A3			24V A0/D0	2N0	HW1L-M320Q4*		
APEM					2NC	HW1L-M302Q4*	R	
Switches &					2N0-2NC	HW1L-M322Q4*	G	
Pilot Lights			Momentary		1NO-1NC	HW1L-M311H2*	Y	
Control Boxes			womentary	100/110V AC	2N0	HW1L-M320H2*	A	
Emergency				100/1101/10	2NC	HW1L-M302H2*	S PW	
Stop Switches					2N0-2NC	HW1L-M322H2*	F VV	
Enabling				_	1NO-1NC	HW1L-M311M2*		
Switches				200/220V AC	2N0	HW1L-M320M2*		
fety Products	(24V AC/DC)			200/2201110	2NC	HW1L-M302M2*		
		LED -			2N0-2NC	HW1L-M322M2*		
kplosion Proof					1N0	HW1L-A310Q4*		
rminal Blocks					1NC	HW1L-A301Q4*		
				24V AC/DC	1NO-1NC	HW1L-A311Q4*		
ays & Sockets	and the second se			24110/00	2N0	HW1L-A320Q4*		
Circuit					2NC	HW1L-A302Q4*	R	
Protectors					2N0-2NC	HW1L-A322Q4*	G	
ower Supplies			Maintained		1N0-1NC	HW1L-A311H2*	Y	
D. Wessels at las			mamamou	100/110V AC	2N0	HW1L-A320H2*	A S PW	
O Illumination					2NC	HW1L-A302H2*		
Controllers	With transformer				2N0-2NC	HW1L-A322H2*		
Operator	(100/110V AC)			_	1NO-1NC	HW1L-A311M2*		
Interfaces				200/220V AC	2N0	HW1L-A320M2*		
Sensors				200,2201110	2NC	HW1L-A302M2*		
					2N0-2NC	HW1L-A322M2*		
AUTO-ID	ø29mm Mushroom with Square				1N0	HW3L-M310Q4*		
	Bezel (Marking type)			1NC	HW3L-M301Q4*			
	HW3L-M3			24V AC/DC	1NO-1NC	HW3L-M311Q4*		
	HW3L-A3				2N0	HW3L-M320Q4*		
ish Silhouette					2NC	HW3L-M302Q4*	R	
					2N0-2NC	HW3L-M322Q4*	G	
ø16			Momentary		1NO-1NC	HW3L-M311H2*	Y	
ø22				100/110V AC	2N0	HW3L-M320H2*	A	
<u>ULL</u>					2NC	HW3L-M302H2*	S PW	
ø30					2NO-2NC	HW3L-M322H2*		
Miniatura					1N0-1NC	HW3L-M311M2*		
Miniature				200/220V AC	2N0	HW3L-M320M2*		
Pilot Lights	(24V AC/DC)				2NC	HW3L-M302M2*		
		LED –			2NO-2NC	HW3L-M322M2*		
					1N0	HW3L-A310Q4*		
					1NC	HW3L-A301Q4*		
HW				24V AC/DC	1NO-1NC	HW3L-A311Q4*		
	A CONTRACTOR				2N0	HW3L-A320Q4*		
TW					2NC	HW3L-A302Q4*	R	
1011					2N0-2NC	HW3L-A322Q4*	G	
YW			Maintained		1N0-1NC	HW3L-A311H2*	Y	
				100/110V AC	2N0	HW3L-A320H2*	A S	
					2NC	HW3L-A302H2*		
	With transformer				2N0-2NC	HW3L-A322H2*		
	(100/110V AC)				1NO-1NC	HW3L-A311M2*		
				200/220V AC	2N0	HW3L-A320M2*		
					2NC	HW3L-A302M2*		
	1				2N0-2NC	HW3L-A322M2*		

• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

• Illuminated pushbuttons have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• See B-184 for other contact configurations and gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-198 for bottom view.

- See **B-184** for how to specify units without LED lamps.
- When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

						Package Quantity: 1	iii
Shape	Illumination	Operation	Illumination	Contact	Part No.	Color Code	Pilot Lights
ø40mm Mushroom		·		1N0	HW1L-M410Q4*		gh:
(Marking type)		i		1NC	HW1L-M401Q4*	] [	S.
HW1L-M4		i	24V AC/DC	1NO-1NC	HW1L-M411Q4*	1	
HW1L-A4		i	24V AU/DU	2N0	HW1L-M420Q4*	1 I	
		i	-	2NC	HW1L-M402Q4*	] <sub>n</sub>	APEM
		i	[[	2N0-2NC	HW1L-M422Q4*	R G	Switches &
		Momontory	ļ	1NO-1NC	HW1L-M411H2*	] Ÿ	Pilot Lights
1000		Momentary	100/110V AC	2N0	HW1L-M420H2*	A	Control Boxes
		i		2NC	HW1L-M402H2*	S PW	Emergency
		í.	Г	2N0-2NC	HW1L-M422H2*		Stop Switches
		i	ļ	1NO-1NC	HW1L-M411M2*	7	Enabling Switches
		i	200/220V AC	2N0	HW1L-M420M2*	1 I	Safety Products
(24V AC/DC)		i	200/220V AC	2NC	HW1L-M402M2*	1	
, , , , , , , , , , , , , , , , , , ,	LED			2N0-2NC	HW1L-M422M2*	1	Explosion Proof
	LED		-	1N0	HW1L-A410Q4*		Terminal Blocks
		í.		1NC	HW1L-A401Q4*	]	
		i	24V AC/DC	1NO-1NC	HW1L-A411Q4*	1	Relays & Sockets
A REAL PROPERTY AND A REAL		i .	24V AC/DC	2N0	HW1L-A420Q4*	1	Circuit
		i	, l	2NC	HW1L-A402Q4*	] <sub>b</sub>	Protectors
		i	[[	2N0-2NC	HW1L-A422Q4*	R G	Power Supplies
		Maintained	ļ	1NO-1NC	HW1L-A411H2*	Ÿ	LED Illumination
		IVIAIIICU	100/110V AC	2N0	HW1L-A420H2*	A	
		i	100/110V AC	2NC	HW1L-A402H2*	S - PW	Controllers
		i	[[	2N0-2NC	HW1L-A422H2*		Operator
With transformer		i	ŢŢ	1NO-1NC	HW1L-A411M2*	]	Interfaces
(100/110V AC)		200/220V AC	2N0	HW1L-A420M2*	]	Sensors	
		i	200/2200 A0	2NC	HW1L-A402M2*	<b>1</b>	AUTO-ID
		1	Г	2N0-2NC	HW1L-A422M2*	<b>1</b>	

• Specify a color code in place of \* in Part No. R (red), G (green), Y (yellow), A (Amber), S (blue), PW (pure white)

Mushroom (ø40mm) (Marking Type)

• Illuminated pushbuttons have an LED lamp installed unless otherwise specified.

• See B-184 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• See B-184 for other contact configurations and gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-198 for bottom view.

LED

• See **B-184** for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

ø16	6		
ø3(	)		
Mir	niatur	e	
Pilo	ot Lig	hts	

Flush Silhouette

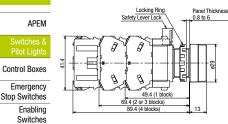
HW	
TW	
YW	

#### **Dimensions**

#### Illuminated Pushbuttons (Momentary / Maintained)

Round Flush Terminal screws: M3.5, integrated terminal cover

6, 12, 24V AC/DC, Without LED lamp 100/110V AC, 200/220V AC (240V maximum)



Panel Thi Safety Leve 0.8 to 6 ĝ Ø 79.5(2 blocks), 99.5 (4 blocks)

100/110V AC, 200/220V AC (240V maximum)

Locking Ring

Safety Lev

79.5 (2 blocks), 99.5 (4 blocks)

Safety I

ð

Terminal screws: M3.5, integrated terminal cover

100/110V AC, 200/220V AC (240V maximum)

ĝ

0.8 to 6

13

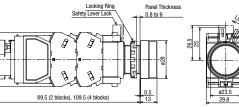
18.5

0.8 to 6

Safety Lever

110V DC, 380V AC minimum

110V DC, 380V AC minimum



Locking Bin

Safety L

89.5 (2 blocks), 109.5 (4 blocks)

ĝ

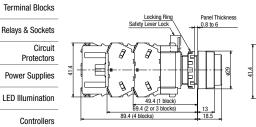
Panel Thickness 0.8 to 6

13

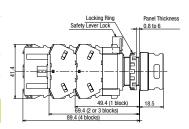
18.5

Round Extended Terminal screws: M3.5, integrated terminal cover

6, 12, 24V AC/DC, Without LED lamp

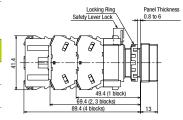


#### **Round Extended with Full Shroud** 6, 12, 24V AC/DC, Without LED lamp



Square Flush Terminal screws: M3.5, integrated terminal cover

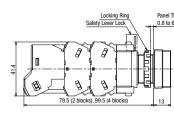
6, 12, 24V AC/DC, Without LED lamp



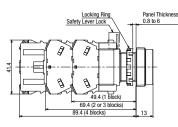
100/110V AC, 200/220V AC (240V maximum)

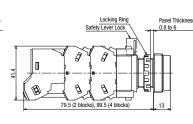
B

B



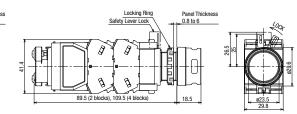
Flush with Square Bezel Terminal screws: M3.5, integrated terminal cover 6, 12, 24V AC/DC, Without LED lamp 100/110V AC, 200/220V AC (240V maximum)



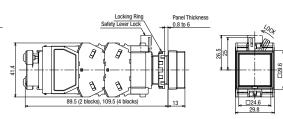


Panel Thickness 0.8 to 6 Locking Ri Lever Loc Safety L

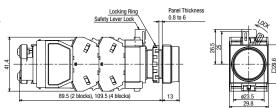
110V DC, 380V AC minimum



110V DC, 380V AC minimum



110V DC, 380V AC minimum



Safety Products

Explosion Proof

Protectors

Operator Interfaces

Sensors

AUTO-ID

Flush Silhouette

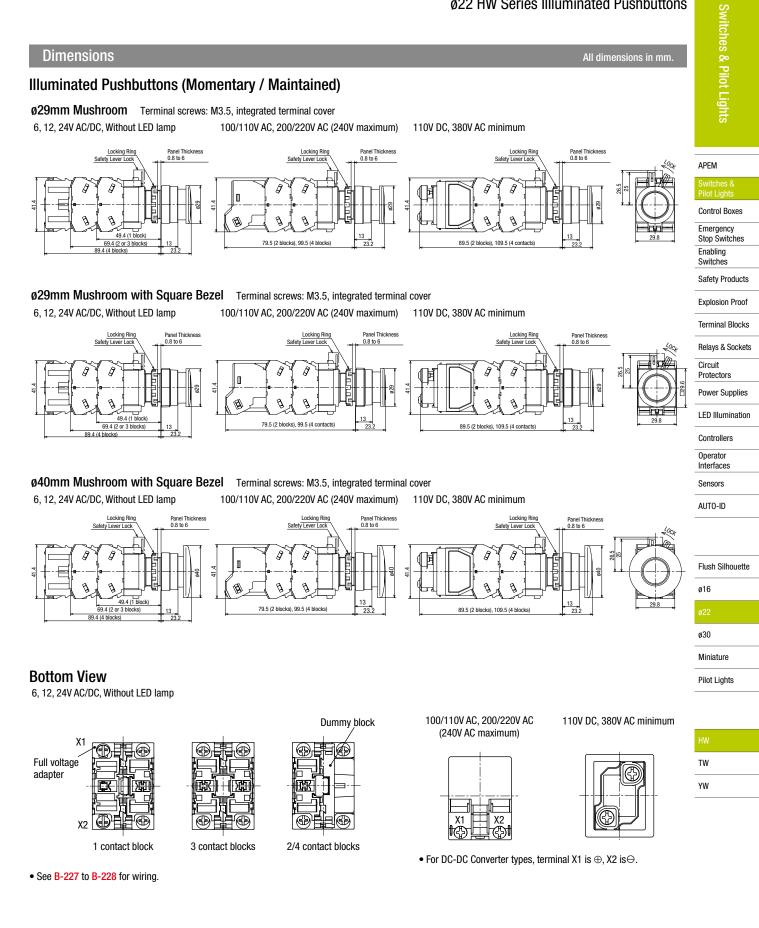
ø16

ø30 Miniature

ΤW

YW

Pilot Lights



#### ø22 HW Series Dual Pushbuttons

Shape

Dual Pushbuttons (without Pilot Light)

 Specify a button color code in place of 2 and legend code in place of 3 in the Part No.
 Package Quantity: 1

 HW7D
 HW7D

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces

ontrol Boxes					LOFF.	OFF	
Emergency op Switches						-	
Enabling	Operation	Button Style	Con	tact	Part No.	2 Button Color Code	3 Legend Code
Switches	operation	Dutton Otyle	Top Button	Bottom Button	Tartivo.		
ty Products			1N0	1NC	HW7D-B111001 2 3		
losion Proof		Flush (top)	1N0	1N0	HW7D-B111010 2 3		
		Flush (bottom)	1NO-1NC	1NO-1NC	HW7D-B111111 2 3		
ninal Blocks	Momentary		2N0	2NC	HW7D-B112002 2 3		
s & Sockets	Momentary		1N0	1NC	HW7D-B121001 2 3		
	_	Flush (top)	1N0	1N0	HW7D-B121010 2 3		
Circuit Protectors		Extended (bottom)	1N0-1NC	1NO-1NC	HW7D-B121111 2 3	GR: Green (top)	Blank: Without legend
			2N0		HW7D-B122002 2 3	Red (bottom)	
er Supplies			1N0	1NC	HW7D-B211001 2 3	WB: White (top)	1: I / ON (top) O / OFF (bottom)
Illumination		Flush (top)	1N0	1N0	HW7D-B211010 2 3	Black (bottom)	
Controllers		Flush (bottom)	1N0-1NC	1NO-1NC	HW7D-B211111 2 3		
			2N0		HW7D-B212002 2 3		
Operator Interfaces	Interlock (*1)		1N0	1NC	HW7D-B221001 2 3		
	Sensors	Flush (top)	1N0	1N0	HW7D-B221010 2 3		
36115015		Extended (bottom)	1NO-1NC	1NO-1NC	HW7D-B221111 2 3	1	
AUTO-ID			2N0	2NC	HW7D-B222002 2 3		

• For other contact arrangements, see Ordering Information on B-185 and Contact Arrangement Chart on B-202.

• Dual pushbuttons with 3 contact blocks have a dummy block.

• See B-202 for top and bottom button contact mounting positions.

<sup>\*1</sup>) Interlock: Momentary operation. When one of the buttons is pressed, the other button cannot be operated.

Do not operate top and bottom buttons at the same time. Operating the buttons at the same time may lead to malfunctions.

Flush Silhouelle
ø16
ø30
Miniature
Pilot Lights

TW YW

Package Quantity: 1

LED

#### **Dual Pushbuttons (with Pilot Light)**

Specify a LED color code in place of 1, button color code in place of 2, and legend code in place of 3 in the Part No.

	HW7D LED: LSTD-2* (24V	AC/DC)							t Lights				
Shape	de de												
									Switches & Pilot Lights				
					OFF	O			Control Boxes				
		1							Emergency Stop Switches				
Operation	Dutton Style	Illumination		ntact	Part No.	LED	Dutton Color Code		Enabling Switches				
Operation	Button Style	Illumination	Top Button	Bottom Button	Part NO.		2 Button Color Code	3 Legend Code	Safety Products				
		24V AC/DC	1N0	1NC	HW7D-L111001Q4 1 2 3				]				
	Flush (top) Flush (bottom)		1N0	1N0	HW7D-L111010Q4 1 2 3				Explosion Proo				
			1NO-1NC 1NO-1NC HW7D-L111111Q4 1 2 3			Terminal Block							
Momentary			2N0	2NC	HW7D-L112002Q4 1 2 3								
Womentary		24V AC/DC	1N0	1NC	HW7D-L121001Q4 1 2 3				Relays & Socke				
	Flush (top)		1N0	1N0	HW7D-L121010Q4 1 2 3	_	07 0 <i>(</i> )	5	Circuit Protectors				
	Extended (bottom)		1NO-1NC 1NO-1NC		HW7D-L121111Q4 1 2 3	R G	GR: Green (top) Red (bottom)	Blank: Without legend	Power Supplies				
			2N0	2NC	HW7D-L122002Q4 1 2 3	Ă		logona					
			1N0	1NC	HW7D-L211001Q4 1 2 3	S	WB: White (top)	1: I / ON (top)	LED Illuminatio				
Interlock (*1)	Flush (top) Flush (bottom)	24V AC/DC	C 1NO 1NO	1N0 1N0-1NC	HW7D-L211010Q4 1 2 3 HW7D-L211111Q4 1 2 3	PW	Black (bottom)	0 / OFF (bottom)	Controllers				
			1NO-1NC 2N0	2NC	HW7D-L2111104 1 2 3 HW7D-L212002Q4 1 2 3				Operator				
			1N0	1NC	HW7D-L212002Q4 1 2 3				Interfaces				
	Flush (top)		1N0	1N0	HW7D-L221010Q4 1 2 3				Sensors				
	Extended (bottom)	24V AC/DC	1NO-1NC	1NO-1NC	HW7D-L221111Q4 1 2 3				AUTO-ID				
			2N0	2NC	HW7D-L222002Q4 1 2 3								

• LED lamp code: G (green), PW (pure white)

• Only W (white) lens is available.

• See B-185 for other operating voltage such as 100/110V AC and 200/220V AC.

See B-202 for other contact configurations

• See **B-185** for gold-plated silver contacts.

• Illuminated pushbutttons of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-202 for top and bottom button contact mounting positions.

\*1) Interlock: Momentary operation. When one of the buttons is pressed, the other button cannot be operated.

Do not operate top and bottom buttons at the same time. Operating the buttons at the same time may lead to malfunctions.

Flush Silhouette

ø16

ø30

Miniature Pilot Lights

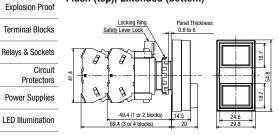


#### **Dual Pushbuttons**

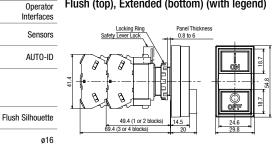
Without Pilot Light Terminal screws: M3.5, integrated terminal cover Flush (top), Flush (bottom)

LOCKING Ri Safety Lever Loc ģ 49.4 (1 or 2 blocks 24.6 29.8 69.4 (3 or 4 blo

Flush (top), Extended (bottom)



Flush (top), Extended (bottom) (with legend)



## **Bottom View**

Without Pilot Light Miniature

Pilot Lights

ø30

ΤW

YW

(D)

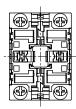
**Dummy Block** 

3 contact bocks

30

With Pilot Light 6, 12, 24V AC/DC

B



3 contact bocks

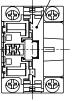
• See B-227 to B-228 for wiring.

働 FI D



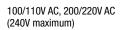
2/4 contact blocks

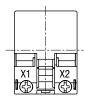
Dummy Block



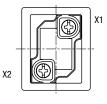
2/4 contact blocks

. Mounting position of the dummy block may change according to the contact configuration of the top and bottom buttons.



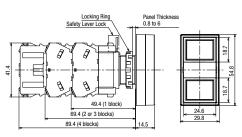


380V AC minimum

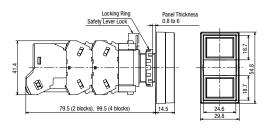


All dimensions in mm.

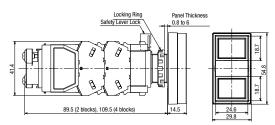
With Pilot Light Terminal screws: M3.5, integrated terminal cover Flush (top), Flush (bottom) (24V AC/DC)



#### Flush (top), Flush (bottom) (240V AC maximum)



#### Flush (top), Flush (bottom) (380V AC minimum)



For more information, visit http://asia.idec.com

Switches & Pilot Lights

APEM

Control Boxes Emergency Stop Switches

Enabling

Switches Safety Products

Controllers

## **Contact Arrangement Chart**

Contact			Contac	t Block	Top B	utton	Bottom Button	
Top Button	Bottom Button	Contact Code	Mounting Position	Contact	Normal	Push	Normal	Push
1N0	1N0	1010	1	NO		•		
	INO	1010	2	NO				•
1N0	1NC	1001	1	NO		•		
TNU	TNC	1001	2	NC				
	2NC		1	NO		•		
2N0		2002	2	NC			•	
			3	NO		•		
			4	NC				
			1	NO		•		
1NO-1NC	1NO-1NC	1111	2	NO				•
	TNU-TNU	1111	3	NC	•			
			4	NC				

• Transformer types cannot mount 3 contact blocks.

 $\bullet$  Contact blocks  $\odot$  and  $\circledast$  are actuated by the top button. Contact blocks  $\circledast$  and  $\circledast$  are actuated by the bottom button.

Contac	Contact Block		utton	Bottom	Button	← Button Position
Mounting Position	Contact	Normal	Push	Normal	Push	← Pushbutton Operation
1	NO		•			]
2	NO				•	
3	NC	•				
4	NC			•		]

**Contact Block Mounting Position** 



With Pilot Light (Full Voltage Type)



With Pilot Light (Transformer Type)

Part No. Example HW7D-B121111GR Contact Code **Switches & Pilot Lights** 

#### APEM

**Control Boxes** 

Emergency Stop Switches Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Flush Silhouette
ø16
ø22
ø30
Miniature
Pilot Lights

HW	
TW	
YW	

#### ø22 HW Series Selector Switches

#### Selector Switches (Knob Operator)

Package Quantity: 1

Knob Operator HW1S

Pilot Lig	
ghts	
APEM	
Switches & Pilot Lights	
Control Boxes	
Emergency Stop Switches	
Enabling Switches	
Safety Products	
Explosion Proof	
Terminal Blocks	2
Relays & Sockets	
Circuit Protectors	
Power Supplies	
LED Illumination	_
Controllers	
Operator Interfaces	
Sensors	
AUTO-ID	
Flush Silhouette	
ø16	4
ø22	
ø30	
Miniature	
Pilot Lights	
	1

Shape	HW1S											
	Contact	Contact	t Block	Operator Position				n	Maintained (90°)	Spring Return from Right (60°)	_	_
		Mounting Position	Contact	1	2							
	1N0	0	NO		•				HW1S-2T10	HW1S-21T10	/	/
90°	(10)	2	—		-	ımy E	Block		11010 2110	11010 21110		
2-position/	1NO-1NC	0	NO		•				HW1S-2T11	HW1S-21T11		
60° 2-position	(11)	2	NC	•								
	2N0	0	NO		•				HW1S-2T20	HW1S-21T20		
	(20)	2	NO		•							
		0	NO		•							
	2NO-2NC	2	NC	•					HW1S-2T22	HW1S-21T22		
	(22)	3	NO		•							
		4	NC	٠							/	/
	Contact	Contact	t Block	(	)pera	perator Position		n	Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-way
		Mounting Position	Contact	1	0	2			$\bigvee$	$\bigvee$		
	2N0	0	NO	•					HW1S-3T20	HW1S-31T20	HW1S-32T20	HW1S-33T20
	(20)	2	NO			٠			11013-3120	11013-31120	11013-32120	110/13-33120
	2NC	0	NC						HW1S-3T02	HW1S-31T02	HW1S-32T02	HW1S-33T02
	(02)	2	NC						11013-3102	11013-31102	11013-32102	110/13-33102
		0	NO	•						HW1S-31T22N1	HW1S-32T22N1	HW1S-33T22N1
	2N0-2NC	2	NO			•			HW1S-3T22N1			
	(22N1)	3	NC						11010 0122111	111110 31122111	11010 3212201	111110 00122111
45°		4	NC									
3-position		0	NO	•								
	4N0	2	NO			٠			HW1S-3T40	HW1S-31T40	HW1S-32T40	HW1S-33T40
	(40)	3	NO	•								
		4	NO			•						
		0	NC				1					
	4NC	2	NC				1		HW1S-3T04	HW1S-31T04	HW1S-32T04	HW1S-33T04
	(04)	3	NC									
		4	NC									
		0	NO	•								
	2NO-1NC (21N1)	2	NO			•			HW1S-3JT21N1	_	_	_
	(2111) ★☆	3	NC		•						_	
		4			Dum	nmv E	Block					

• Knob operator: white indicator on black body

• On the contact arrangement marked with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

- For models with  $\dot{\preccurlyeq}$ , contacts may overlap when the operator position is changed.

• Other contact arrangements are also available. See B-211 to B-213.

• Selector switches with one or three contact blocks contain a dummy block.

• See **B-186** for gold-plated silver contacts.

• Turn the operator to each position accurately.

#### **Contact Block Mounting Position**



τw

YW

#### Key Selector Switches (Pin Tumbler Key)

									Package Quantity: 1	Pilo	
	No. of		Contact	Block	Oper	ator Po	sition		Maintained	Pilot Lights	
Shape	No. of Positions	Contact	Mounting Position	Contact	1	2		Cam Code		yhts	
Pin Tumbler Key		1NC	0	NC	•				HW1K-2PA01		
HW1K		(01)	2	—	Dur	nmy B	lock	_	TIWTR-2FA01	APEM	
		1NO-1NC	1	NO		•			HW1K-2PA11	Switches &	
		(11)	2	NC	•				HWIK-2FAII	Pilot Lights	
		2NC	1	NC	•				HW1K-2PA02	Control Boxes	
		(02)	2	NC					TIWTR-2FA02		
			0	NO		•				Emergency Stop Switches	
		2NO-1NC	2	NO		•			HW1K-2PA21	Enabling	
	90°	(21)	3	NC	•				HWIK-2FA21	Switches	
	2-position		4	—	Dummy Block		lock			Safety Products	
			1	NC						Explosion Proof	
		3NC	2	NC	•				HW1K-2PA03		
-		(03)	3	NC	٠				HWTK-2PA03	Terminal Blocks	
			4	—	Dur	nmy B	lock			Relays & Sockets	
			0	NO		•					
		2N0-2NC	2	NC	٠			1	HW1K-2PA22	Circuit Protectors	
(NC contact only)		(22)	3	NO		•		1 —	TWIN-2PA22	Power Supplies	
			4	NC	•						

• Each selector key switch is supplied with two keys.

• 15 types of key numbers are available in addition to standard (500) key. See below for details.

• Spring-return type is also available. See below for details.

• Key retained position can be selected. See below for details.

#### **Ordering Information**

Example: HW1K - 2JPA01 - 501

Not specified: 500 (default key) 501-515: The key number is engraved on the key cylinder. Key removable/retained positions Cam code: Blank or J A: Removable/retained in all positions B: Removable in left theft only Operator position code: C: Removable in right only 2: 2-position, maintained

21: 2-position, spring return from right

Maintained (9	Maintained (90° 2-position)								
	2 1	Spring return from right $1 \rightarrow 2^2$							
Cam code: blank	Cam code: J	Cam code: blank							

• For more contact arrangement, see **B-211** to **B-213**.

• Key selector switches with one or three contact blocks contain a dummy block.

• See B-186 for gold-plated silver contacts.

• Turn the operator to each position accurately.

#### **Contact Block Mounting Position**



①②: Key removal position • Contract the second s

1

A (removable in

all positions)

A (removable in

all positions)

2

Note: The key cannot be removed in a spring return position.

Key Retained Position

B (removable in

left only)

Cam code: blank Key Retained Position

B (removable in

left only)

Cam code: J

2

0

ി

0

C (removable in

right only)

1

ΤW

YW

Operator Interfaces

Sensors AUTO-ID

Flush Silhouette

ø16

ø30

bownload catalogs and CAD from http://asia.idec.com/downloads

Controllers

Operator

Sensors

AUTO-ID

ø16

#### Key Selector Switches (Pin Tumbler Key)

<sup>2</sup> Pilot Lights		No. of	Conta	act Configuratio	n	Ope	rator Pos	ition	Cam	Package Qua Maintained	
Ints	Shape	Positions	Contact Code	Mounting Position	Contact	1	0	2	Code		
	Pin Tumbler Key		2NC	1	NC					HW1K-3PA02	
APEM	HW1K		(02)	2	NC					TIWTK-SFAU2	
Switches &				1	NO	•				HW1K-3PA22N1	
Pilot Lights			2N0-2NC	2	NO			•			
Control Boxes			(22N1)	3	NC						
Emergency				4	NC	-					
top Switches				1	NC						
Enabling			4NC	2	NC					HW1K-3PA04	
Switches		45°	(04)	3	NC						
ety Products		3-position		4	NC						
losion Proof				1	NO	•					
			2NO-1NC (21N1)	2	NO			•	J	HW1K-3JPA21N1	
ninal Blocks			★☆	3	NC		•		J	TIWTK-SJFA2 INT	
ys & Sockets				4	_	Du	ummy Blo	ck			
Circuit				1	NC			•			
Protectors			4NC	2	NC	•			s	HW1K-3SPA04	
wer Supplies	(NC contact only)		(04)	3	NC			•	) °	11W1K-33FAU4	
				4	NC	•					

• On the contact arrangement marked with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

• For models with  $rac{1}{\sim}$ , contacts may overlap when the operator is changed.

• For contact block mounting position, see the figure on the right. Interfaces

· Each key selector switch is supplied with two keys.

• 15 types of key numbers are available in addition to standard (500) key. See below for details.

- Spring-return type is also available. See below for details.
- . Key retained position can be selected. See table below details.

**Contact Block Mounting Position** 

J	rd	e	rii	۱g	In	t0	rm	a	i0	n		
-								~ ~			~	

ø30	
Miniature	
Pilot Lights	

Flush Silhouette

#### Example: HW1K -A04-501

Cam code: Blank, J, or S

Not specified: 500 (default key)

501-515: The key number is engraved on the key cylinder.

- Operator position code:
- 3: 3-position, maintained
- 31: 3-position, spring return from right
- 32: 3-position, spring return from left
- 33: 3-position, spring return two way
- ΤW YW

#### Maintained Spring Return (45° 3-position) (45° 3-position) Spring Return Spring Return Maintained Spring Return from Right from Left Two-way 2 2 2 Cam code: Cam code: blank blank, J, or S

• For more contact arrangement, see B-211 to B-213.

. Key selector switches with one or three contact blocks contain a dummy block.

- See B-186 for gold-plated silver contacts.
- Turn the operator to each position accurately.

Key removal/retained positions

- A: Removable in all positions
- B: Removable in left and center
- C: Removable in right and center
- D: Removable in center only
- E: Removable in right and left G: Removable in left only
- H: Removable in right only

Note: The key cannot be removed in a spring return position.

Key Retained Position (45° 3-position)												
A (removable in all positions)	B (removable in left and center)	C (removable in right and center)	D (removable in center only)									
			000									
E (removable in right and left only)	G (removable in left only)	H (removable in right only)										
	0 0											

①①②: Key removal position

OOO: Key retained position

Note: The key cannot be removed in a spring return position.

#### Key Selector Switches (Disc Tumbler Key)

								Package Quantity: 1	Pio
	Disc Tumbler K HW1K	ζey							Pilot Lights
No. of Positions		<b>b</b>							APEM
	(NC cont	tact only)							Switches & Pilot Lights
	Conta	act Configurat	ion	Operator	Position		Maintained (90°)	Spring Return from Right (60°)	Control Boxes
	Contact Code	Mounting Position	Contact	1	2	Cam Code	1 2		Emergency Stop Switches
	1N0	0	NO		•		HW1K-2A10	HW1K-21B10	Enabling Switches
	(10)	2	—	Dumm	y Block		IIWIR-2ATO	11W1R-21010	Safety Products
	1NC	0	NC	•			HW1K-2A01	HW1K-21B01	Explosion Proof
	(01)	2		Dumm	, I				
	1NO-1NC (11)	0	NO		•		HW1K-2A11	HW1K-21B11	Terminal Blocks
		2	NC	•					Relays & Sockets
	2N0 (20)	0	NO NO		•		HW1K-2A20	HW1K-21B20	Circuit Protectors
		2 1	NO	•	•				Power Supplies
	2NC (02)	 	NC	•		-	HW1K-2A02	HW1K-21B02	LED Illumination
90° 2-position/		0	NO	•	•				
60°	2NO-1NC	2	NO		•	-			Controllers
2-position	(21)	3	NC	•			HW1K-2A21	HW1K-21B21	Operator Interfaces
		4	_	Dumm	y Block	-			Sensors
		0	NC	•					
	3NC	2	NC	•			HW1K-2A03	HW1K-21B03	AUTO-ID
	(03)	3	NC	•			HWTK-2A05	HWIK-21003	
		4	—	Dumm	y Block				
		0	NO		•				Flush Silhouette
	2NO-2NC	2	NC	•			HW1K-2A22	HW1K-21B22	ø16
	(22)	3	NO		•	-			ø22
		4	NC	•					022

• Each key selector switch is supplied with two keys.

• 3 types of key numbers are available in addition to standard key.

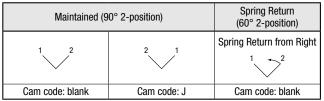
• Key retained position can be selected. See table below for key retained positions.

#### **Ordering Information**

Example: HW1K - 2JA01 - 1H

Not specified: 231 (default key) The key number is engraved on the key cylinder. 1H 2H

- 3H
- Cam code: Blank or J A: Removab
- Operator position code:
- 2: 2-position, maintained
- 21: 2-position, spring return from right



<sup>•</sup> For more contact arrangement, see B-211 to B-213.

Key selector switches with one or three contact blocks contain a dummy block.

Ney selector switches with one or unree contact blocks contain a dunimy bloc
 See P. 196 for gold plated either contacts

• See B-186 for gold-plated silver contacts.

• Turn the operator to each position accurately.

#### Key removal/retained positions A: Removable in all positions B: Removable in left only C: Removable in right only Key Retained Position A (removable in B (removable in C (removable in all positions) left only) right only) 1 2 1 Ø 0 0 Cam code: blank Key Removal Position A (removable in B (removable in C (removable in all positions) left only) right only) 1 0 A 1 Cam code: J

①②: Key removal position

Note: The key cannot be removed in a spring return position.

Contact Block Mounting Position

Miniature Pilot Lights

- HW
- YW

<sup>• @:</sup> Key retained position

#### ø22 HW Series Key Selector Switches

#### Key Selector Switches (Disc Tumbler Key)

호												Package Quantity: 1
lot Lights		Disc Tumbler HW1K	Key									
APEM	No. of Positions	(NC cor	ntact only)							P		
Switches & Pilot Lights		Contac	t Configurat	ion	Operator Position				Maintained	Spring Return	Spring Return	Spring Return
Control Boxes				1	Г	0511101	<u> </u>	Cam	0	from Right	from Left	Two-way
Emergency Stop Switches		Contact Code	Mounting Position	Contact	1	0	2	Code				
Enabling Switches		2N0	0	NO	•							
		(20)	2	NO	-		•	—	HW1K-3A20	HW1K-31B20	HW1K-32C20	HW1K-33D20
Safety Products		2NC	0	NC								
Explosion Proof		(02)	2	NC					HW1K-3A02	HW1K-31B02	HW1K-32C02	HW1K-33D02
Explosion Floor			0	NO	٠							
Terminal Blocks		2NO-2NC	2	NO			•		HW1K-3A22N1	HW1K-31B22N1	HW1K-32C22N1	HW1K-33D22N1
		(22N1)	3	NC								
Relays & Sockets			(4) (1)	NC NO	-							
Circuit		4NO	 	NO			•					
Protectors		(40)	3	NO	•		•	—	HW1K-3A40	HW1K-31B40	HW1K-32C40	HW1K-33D40
Power Supplies	45°	(40)	4	NO	-		•					
	3-position		0	NC								
LED Illumination		4NC	2	NC								
0		(04)	3	NC				_	HW1K-3A04	HW1K-31B04	HW1K-32C04	HW1K-33D04
Controllers			4	NC								
Operator		4NC	0	NC			•					
Interfaces		(04)	2	NC	•			S	HW1K-3SA04	_	_	
Sensors		★	3	NC	_		•	Ū				
			4	NC	•							
AUTO-ID		2N0-1NC	0	NO NO	•							
		(21N1)	2 3	NC		J	HW1K-3JA21N1	-	-	-		
		★☆	3 									
				l	Dun	inty D	UUN		I	1	l	

• On the contact arrangement marked with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact Flush Silhouette block. The rated insulation voltage and the rated thermal current remain unchanged.

Not specified: 231 (default key) The key number is engraved on the key cylinder.

• For models with \*, contacts may overlap when the operator is changed. Each key selector switch is supplied with two keys.

3 types of key numbers are available in addition to standard key.

• Key retained position can be selected. See table below for key retained positions.

#### **Contact Block Mounting Position**

Package Quantity: 1

#### **Ordering Information**

Example: HW1K - <u>3</u> <u>5</u> <u>4</u> 04 - <u>1</u> H



Pilot Lights

ø16

ø30 Miniature

> 2H 3H Cam code: Blank, J, or S

Operator position code:

1H

- 3: 3-position, maintained
- 31: 3-position, spring return from right 32: 3-position, spring return from left
- 33: 3-position, spring return two way

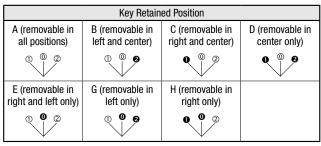
Maintained (45° 3-position)	Spring Return (45° 3-position)										
Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-way								
Cam code: blank, J, or S		Cam code: blank									

- For more contact arrangement, see B-211 to B-213.
- . Key selector switches with one or three contact blocks contain a dummy block.
- See B-186 for gold-plated silver contacts.
- Turn the operator to each position accurately.



- A: Removable in all positions
- B: Removable in left and center
- C: Removable in right and center D: Removable in center only
- E: Removable in right and left G: Removable in left only H: Removable in right only

Note: The key cannot be removed in a spring return position.



①①②: Key removal position

```
O O O: Key retained position
```

Note: The key cannot be removed in a spring return position.

LED

											Package Qu	lantity: 1	Pilot
lo. of Positions	Knob Oper HW1F	ator											& Pilot Lights
													APEM Switches &
	Conta	ct Configura	ation		)perato Positio		Operating	Maintained (90°)	Spring return from right (60°)			Color	Pilot Lights
	Contact Code	Mounting Position	Contact	1	2		Voltage		1 2	_	_	Code	Emergency Stop Switches
)		0	NO	$\vdash$		<b>—</b>	24V AC/DC	HW1F-211Q4*	HW1F-2111Q4*				Enabling
90°	1NO-1NC	2	NC	•	+				HW1F-2111H2*				Switches
2-position/	(11)	· · · ·	·	<u> </u>	L				HW1F-2111M2*				Safety Produc
60°		0	NO	<u> </u>			24V AC/DC	HW1F-220Q4*	HW1F-2120Q4*			- R G	Explosion Pro
2-position	2N0 (20)	2	NO					HW1F-220H2*	HW1F-2120H2*			Y	
	(20)		·				200/220V AC		HW1F-2120M2*			A	Terminal Bloc
ļ		0	NO				24V AC/DC	HW1F-222Q4*	HW1F-2122Q4*			S DW	Relays & Soci
	2N0-2NC	2	NC				100/110V AC	HW1F-222H2*	HW1F-2122H2*			PW	Circuit
	(22)	3	NO			$\Box$	200/220V AC	HW1F-222M2*	HW1F-2122M2*				Protectors
	<u> </u> '	4	NC										Power Suppl
	Contac	Contact Configuration		guration Operator Position		Operating	Maintained	Spring return from right	Spring return from left	Spring Return Two-way	Color	LED Illuminat	
	Contact Mounting Code Position		Contact	1	0	2	Voltage			2		Code	Controllers Operator
)		0	NO	•	-	<b>—</b>	24V AC/DC	HW1F-320Q4*	HW1F-3120Q4*	HW1F-3220Q4*	HW1F-3320Q4*		Interfaces
	2N0	2	NO	+	+	•			HW1F-3120H2*	HW1F-3220H2*	HW1F-3320H2*	1	Sensors
	(20)		<u> </u>	<u> </u>		<u> </u>			HW1F-3120M2*	HW1F-3220M2*	HW1F-3320M2*	1	
)	[]	0	NC	<b></b>		-	24V AC/DC	HW1F-302Q4*	HW1F-3102Q4*	HW1F-3202Q4*	HW1F-3302Q4*	1	AUTO-ID
	2NC	2	NC			_			HW1F-3102H2*	HW1F-3202H2*	HW1F-3302H2*	1	
	(02)	· · · · ·	·	I	L				HW1F-3102M2*	HW1F-3202M2*	HW1F-3302M2*	1	
45°		0	NO				24V AC/DC	HW1F-322N1Q4*	HW1F-3122N1Q4*	HW1F-3222N1Q4*	HW1F-3322N1Q4*	_	Flush Silhou
3-position	2N0-2NC		NO			•			HW1F-3122N1H2*	HW1F-3222N1H2*	HW1F-3322N1H2*	R G	FIUSH JIIIIOU
)	(22N1)	3	NC	<b> </b>			200/220V AC	HW1F-322N1M2*	HW1F-3122N1M2*	HW1F-3222N1M2*	HW1F-3322N1M2*	Y	ø16
	1'	4	NC				<u> </u>					Â	ø22
ļ		0	NO	•	<u> </u>		24V AC/DC	HW1F-340Q4*	HW1F-3140Q4*	HW1F-3240Q4*	HW1F-3340Q4*	S	022
	4N0	2	NO			•	100/110V AC	HW1F-340H2*	HW1F-3140H2*	HW1F-3240H2*	HW1F-3340H2*	PW	ø30
	(40)	3	NO	•					HW1F-3140M2*	HW1F-3240M2*	HW1F-3340M2*		Miniature
	1'	4	NO			•			· ·			1	Williatars
		0	NC	$\Box$			24V AC/DC	HW1F-304Q4*	HW1F-3104Q4*	HW1F-3204Q4*	HW1F-3304Q4*		Pilot Lights
	4NC	2	NC					HW1F-304H2*	HW1F-3104H2*	HW1F-3204H2*	HW1F-3304H2*		
	(04)	3	NC				200/220V AC	HW1F-304M2*	HW1F-3104M2*	HW1F-3204M2*	HW1F-3304M2*	1	
	/'	4	NC										
Snecify a r	color code j	n nlace of *	* in the Pr	art Nr	• R (	red),	G (green). Y (ve'	llow), A (amber), S (blu	PW (nure white)	·		·	HW
• See <b>B-186</b>	for other op	perating vol	oltage sucl	ch as 6	6V A0	C/DC	C and 12V AC/DC	2.					TW
A IIII III DI DI DE LA COLLA DE LA COLL		the construction	~ ~ ~ ~ ~ /n.	· · · · ·	lova.		· · · · · · · · · · · · · · · · · · ·	house a dumm	le le esta				
	l to <mark>B-213</mark> fc						th 2 or 4 contact	t blocks have a dumm	ny block.				YW

• See B-186 for gold-plated silver contacts.

• Turn the operator to each position accurately.

• See B-186 for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape.

Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

#### **Contact Block Mounting Position**

Full Voltage Adapter 3 1 1

Illuminated (full voltage)

Illuminated (transformer)

Download catalogs and CAD from http://asia.idec.com/downloads

LED

Selector Switches (Lever Operator)

Pilo												Package Qua	antity: 1
Pilot Lights	No. of Positions	Lever Ope HW1F□L	rator						P				
APEM													
Switches & Pilot Lights					0.7		~ "		Maintain ad (000)	Outine Datum (com			
Control Boxes		Contact	Contac	t Block		erato sitio		Operating	Maintained (90°)	Spring Return from Right (60°)			Color
Emergency Stop Switches Enabling		Code	Mounting Position	Contact	1	2		Voltage	1 2	1 2		_	Code
Switches			0	NO		•		24V AC/DC	HW1F-2L11Q4*	HW1F-21L11Q4*			
Safety Products	90°	1NO-1NC	2	NC	$\bullet$			100/110V AC	HW1F-2L11H2*	HW1F-21L11H2*			
	2-position/	(11)						200/220V AC	HW1F-2L11M2*	HW1F-21L11M2*			
Explosion Proof	60 <sup>°</sup>		0	NO				24V AC/DC	HW1F-2L20Q4*	HW1F-21L20Q4*			R G
Terminal Blocks	2-position	2N0 (20)	2	NO		•		100/110V AC	HW1F-2L20H2*	HW1F-21L20H2*			Ŷ
		(20)						200/220V AC	HW1F-2L20M2*	HW1F-21L20M2*			A
Relays & Sockets			0	NO		•		24V AC/DC	HW1F-2L22Q4*	HW1F-21L22Q4*	/		S PW
Circuit Protectors		2N0-2NC	2	NC	$\bullet$			100/110V AC	HW1F-2L22H2*	HW1F-21L22H2*			FW
		(22)	3	NO		•		200/220V AC	HW1F-2L22M2*	HW1F-21L22M2*			
Power Supplies			4	NC	$\bullet$								
		Contact		Operator Position									
LED Illumination		Contact	Con Blo					Operating	Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-way	Color
Controllers Operator		Contact Code	Blo Mounting	ick			n	Operating Voltage	Maintained				Color Code
Controllers Operator Interfaces			Blo Mounting Position	ock Contact	Po 1	sitio		Voltage		from Right $1 \rightarrow 2^{1}$	from Left		
Controllers Operator			Blo Mounting Position	Contact	Po	sitio	n 2	Voltage 24V AC/DC	1 0 2 HW1F-3L20Q4*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left	Two-way	
Controllers Operator Interfaces		Code	Blo Mounting Position	ock Contact	Po 1	sitio	n	Voltage 24V AC/DC 100/110V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 1 0 2 HW1F-32L20Q4* HW1F-32L20H2*	Two-way 1 1 1 1 1 2 HW1F-33L20Q4* HW1F-33L20H2*	
Controllers Operator Interfaces Sensors		Code 2NO	Blo Mounting Position ① ②	Contact NO NO	Po 1	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20M2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 1 0 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L20M2*	Two-way 1 1 1 1 2 HW1F-33L20Q4* HW1F-33L20H2* HW1F-33L20M2*	
Controllers Operator Interfaces Sensors		Code 2NO	Blo Mounting Position ① ② ①	Contact NO NO NC	Po 1	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20M2* HW1F-3L02Q4*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 1 0 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L20M2* HW1F-32L02Q4*	Two-way 1 1 1 1 2 HW1F-33L20Q4* HW1F-33L20H2* HW1F-33L20M2* HW1F-33L20M2*	
Controllers Operator Interfaces Sensors		Code 2NO (20)	Blo Mounting Position ① ②	Contact NO NO	Po 1	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20M2* HW1F-3L02Q4* HW1F-3L02H2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 1 0 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L20M2* HW1F-32L02Q4* HW1F-32L02Q4*	Two-way           1         0         2           HW1F-33L20Q4*         1         1           HW1F-33L20H2*         1         1           HW1F-33L20M2*         1         1           HW1F-33L20Q4*         1         1           HW1F-33L20M2*         1         1           HW1F-33L20Q4*         1         1	
Controllers Operator Interfaces Sensors	45°	Code 2NO (20) 2NC	Blo Mounting Position ① ② ① ②	Contact NO NO NC NC	Po	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20M2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02H2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way           1         0         2           HW1F-33L20Q4*         1         1           HW1F-33L20H2*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02H2*         1         1	
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette	45° 3-position	Code 2N0 (20) 2NC (02)	Blo Mounting Position ② ① ② ② ②	Contact NO NO NC NC NO	Po 1	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20H2* HW1F-3L02Q4* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L22N1Q4*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 10 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L02Q4* HW1F-32L02Q4* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2*	Two-way           1         0         2           HW1F-33L20Q4*         1         1           HW1F-33L20H2*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02H2*         1         1	Code
Controllers Operator Interfaces Sensors AUTO-ID		Code 2NO (20) 2NC (02) 2NO-2NC	Blo Mounting Position © 0 0 0 0	Contact NO NO NC NC NC NO NO	Po	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L22N1Q4* HW1F-3L22N1H2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 2 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 0 4 4 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20M2* HW1F-31L02Q4+ HW1F-31L02Q4+ HW1F-3	from Left 10 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L02Q4* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L22N1Q4* HW1F-32L22N1H2*	Two-way           1         0         2           HW1F-33L20Q4*         1         1           HW1F-33L20H2*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02M2*         1         1           HW1F-33L22N1Q4*         1         1           HW1F-33L22N1H2*         1         1	Code
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette		Code 2N0 (20) 2NC (02)	Blo Mounting Position © 0 0 0 0 0 0 0 0 3	Contact NO NO NC NC NO NO NO NC	Po	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L20H2* HW1F-3L02Q4* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L22N1Q4*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 10 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L02Q4* HW1F-32L02Q4* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L02H2*	Two-way           1         0         2           HW1F-33L20Q4*         1         1           HW1F-33L20H2*         1         1           HW1F-33L02Q4*         1         1           HW1F-33L02H2*         1         1	Code R G Y
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette ø16		Code 2NO (20) 2NC (02) 2NO-2NC	Blo Mounting Position ② ③ ③ ③ ③ ④	Contact NO NO NC NC NO NO NC NC		sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L02Q4* HW1F-3L02Q4* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02M2* HW1F-3L22N1Q4* HW1F-3L22N1H2* HW1F-3L22N1M2*	from Right 1 0 2 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20H2* HW1F-31L02Q4* HW1F-31L02H2* HW1F-31L02H2* HW1F-31L22N1Q4* HW1F-31L22N1H2* HW1F-31L22N1H2* HW1F-31L22N1H2*	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette Ø16 Ø22 Ø30		Code 2NO (20) 2NC (02) 2NO-2NC (22N1)	Blo Mounting Position © 0 0 0 0 0 0 0 0 3	Contact NO NO NC NC NO NO NO NC	Po	sitio	n 2	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	1         0         2           HW1F-3L20Q4*         1         1           HW1F-3L20H2*         1         1           HW1F-3L02Q4*         1         1           HW1F-3L02H2*         1         1           HW1F-3L02H2*         1         1           HW1F-3L22N1Q4*         1         1           HW1F-3L22N1Q4*         1         1           HW1F-3L22N1H2*         1         1           HW1F-3L22N1M2*         1         1           HW1F-3L22N1M2*         1         1           HW1F-3L40Q4*         1         1	from Right 1 0 2 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20H2* HW1F-31L02Q4* HW1F-31L02H2* HW1F-31L02M2* HW1F-31L02M2* HW1F-31L22N1H2* HW1F-31L22N1H2* HW1F-31L22N1M2* HW1F-31L20H4*	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette ø16		Code 2NO (20) 2NC (02) 2NO-2NC	Blo Mounting Position (2) (2) (2) (2) (2) (3) (4) (3) (4) (2) (3) (4) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	Contact NO NO NC NC NO NO NC NC NC NC		sitio	n 2 •	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 24V AC/DC 100/110V AC	1 0 2 HW1F-3L20Q4* HW1F-3L20H2* HW1F-3L02Q4* HW1F-3L02Q4* HW1F-3L02H2* HW1F-3L02H2* HW1F-3L02M2* HW1F-3L22N1Q4* HW1F-3L22N1H2* HW1F-3L22N1M2*	from Right 1 0 2 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20H2* HW1F-31L02Q4* HW1F-31L02H2* HW1F-31L02H2* HW1F-31L22N1Q4* HW1F-31L22N1H2* HW1F-31L22N1H2* HW1F-31L22N1H2*	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette Ø16 Ø22 Ø30		Code 2NO (20) 2NC (02) 2NO-2NC (22N1) 4NO	Blo Mounting Position ② ③ ③ ③ ④ ③	Contact NO NO NC NC NO NO NC NC NC NO NO NO		sitio	n 2 •	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	Implement         Implement           HW1F-3L20Q4*           HW1F-3L20H2*           HW1F-3L02Q4*           HW1F-3L02Q4*           HW1F-3L02H2*           HW1F-3L02M2*           HW1F-3L22N1Q4*           HW1F-3L22N1Q4*           HW1F-3L22N1Q4*           HW1F-3L22N1M2*           HW1F-3L40Q4*           HW1F-3L40Q4*           HW1F-3L40Q4*	from Right 1 0 2 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20H2* HW1F-31L02Q4* HW1F-31L02H2* HW1F-31L02M2* HW1F-31L22N1Q4* HW1F-31L22N1M2* HW1F-31L40Q4* HW1F-31L40Q4* HW1F-31L40Q4*	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette Ø16 Ø22 Ø30 Miniature		Code 2NO (20) 2NC (02) 2NO-2NC (22N1) 4NO	Blo Mounting Position (2) (2) (2) (2) (2) (3) (4) (2) (3) (3) (3)	Contact NO NO NC NC NO NO NC NO NO NO NO NO NO		sitio	n 2 • •	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 24V AC/DC 100/110V AC	Implement         Implement           HW1F-3L20Q4*           HW1F-3L20H2*           HW1F-3L02Q4*           HW1F-3L02Q4*           HW1F-3L02H2*           HW1F-3L02M2*           HW1F-3L22N1Q4*           HW1F-3L22N1Q4*           HW1F-3L22N1Q4*           HW1F-3L22N1M2*           HW1F-3L40Q4*           HW1F-3L40Q4*           HW1F-3L40Q4*	from Right 1 0 2 HW1F-31L20Q4* HW1F-31L20H2* HW1F-31L20H2* HW1F-31L02Q4* HW1F-31L02H2* HW1F-31L02M2* HW1F-31L22N1Q4* HW1F-31L22N1M2* HW1F-31L40Q4* HW1F-31L40Q4* HW1F-31L40Q4*	from Left 1 1 1 1 1 1 1 1 1 1 1 1 1	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette Ø16 Ø22 Ø30 Miniature		Code 2NO (20) 2NC (02) 2NO-2NC (22N1) 4NO	Blo Mounting Position (2) (2) (2) (2) (2) (3) (4) (3) (4) (3) (4) (3) (4) (5) (4) (5) (6) (4) (6) (6) (6) (6) (6) (6) (6) (7) (7) (7) (7) (7) (7) (7) (7) (7) (7	Contact NO NO NC NC NO NC NC NC NO NO NO NO NO NO		sitio	n 2 • •	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC	1         2           HW1F-3L2004*           HW1F-3L20H2*           HW1F-3L02Q4*           HW1F-3L02Q4*           HW1F-3L02H2*           HW1F-3L02H2*           HW1F-3L02H2*           HW1F-3L02H2*           HW1F-3L02H2*           HW1F-3L02H2*           HW1F-3L22N1Q4*           HW1F-3L22N1H2*           HW1F-3L22N1M2*           HW1F-3L40Q4*           HW1F-3L40Q4*           HW1F-3L40M2*	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 10 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L20M2* HW1F-32L02Q4* HW1F-32L02Q4* HW1F-32L02M2* HW1F-32L22N1Q4* HW1F-32L22N1M2* HW1F-32L40Q4* HW1F-32L40Q4* HW1F-32L40M2*	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S
Controllers Operator Interfaces Sensors AUTO-ID Flush Silhouette Ø16 Ø22 Ø30 Miniature		Code 2N0 (20) 2NC (02) 2N0-2NC (22N1) 4N0 (40)	Blo Mounting Position	Contact NO NO NC NC NO NO NO NO NO NO NO NO		sitio	n 2 • •	Voltage 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC 100/110V AC 200/220V AC 24V AC/DC	1         2           HW1F-3L2004*         1           HW1F-3L20H2*         1           HW1F-3L020H2*         1           HW1F-3L020H2*         1           HW1F-3L02H2*         1           HW1F-3L02H2*         1           HW1F-3L02H2*         1           HW1F-3L02H2*         1           HW1F-3L22N1Q4*         1           HW1F-3L22N1H2*         1           HW1F-3L22N1M2*         1           HW1F-3L40Q4*         1           HW1F-3L40Q4*         1           HW1F-3L40Q4*         1           HW1F-3L40Q4*         1           HW1F-3L40Q44*         1	from Right 1 1 1 1 1 1 1 1 1 1 1 1 1	from Left 10 2 HW1F-32L20Q4* HW1F-32L20H2* HW1F-32L02H2* HW1F-32L02Q4* HW1F-32L02Q4* HW1F-32L02H2* HW1F-32L02H2* HW1F-32L22N1H2* HW1F-32L22N1H2* HW1F-32L40Q4* HW1F-32L40H2* HW1F-32L40H2* HW1F-32L40H2*	Two-way 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Code R G Y A S

• Specify a color code in place of \* in the Part No. R (red), G (green), Y (yellow), A (amber), S (blue), PW (pure white)

• See B-186 for other operating voltage such as 6V AC/DC, 12V AC/DC, and 110V DC.

• Illuminated selector switches of 24V AC/DC or below with 2 or 4 contact blocks have a dummy block.

• See B-211 to B-213 for other contact arrangements.

• See B-186 for gold-plated silver contacts.

• Turn the operator to each position accurately.

• See B-186 for how to specify units without LED lamps.

• When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shape. Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

#### **Contact Block Mounting Position**

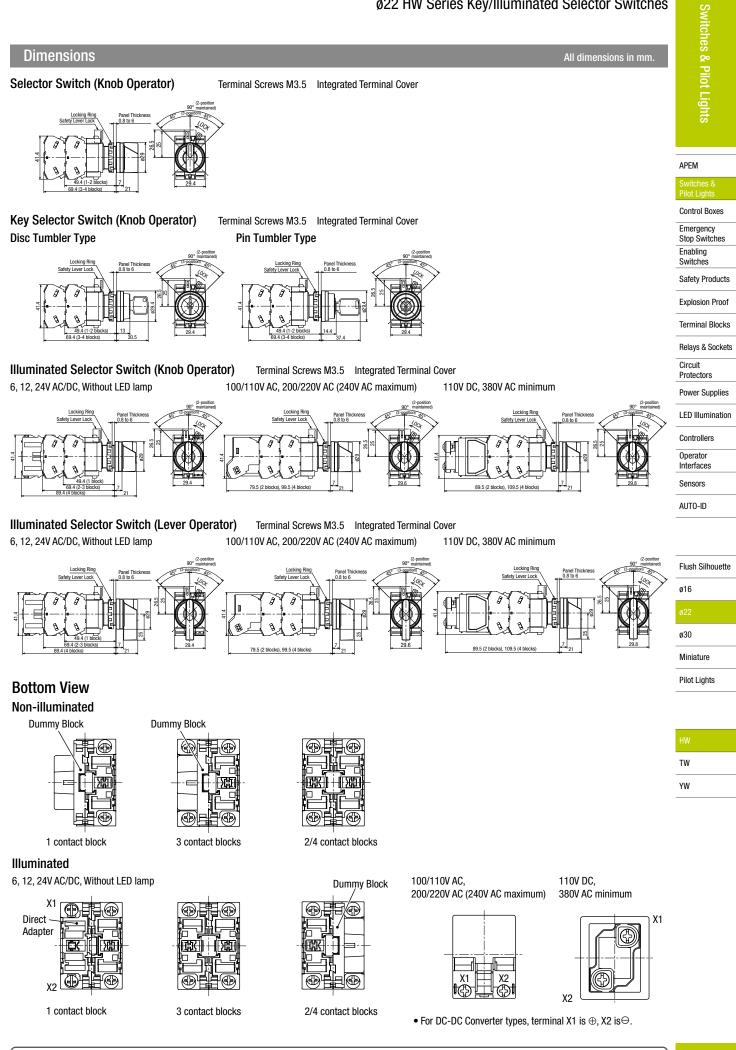


Illuminated (full voltage)

Illuminated (transformer)

τw

YW



bownload catalogs and CAD from http://asia.idec.com/downloads

#### Selector Switch Contact Arrangement

90° 2-position (Spring Return 60° 2-position) < Maintained/Spring Return from Right>

ilot	90 Z-position	(oping)	ioturn (						-		mg/n	-			
ilot Lights						Operation a			from Right						
ght					Mainta	inea	Spring	Return					Opera	ator Availability	
N.		Contact	Block		$\sim$			1	>				·		
	Contact			Knob/	14		Knob/ Kov Illuminated			Cam					
APEM	Code			Lever	Key	Illuminated	Lever Key mummated (			Code				Illumir	ated
Switches & Pilot Lights		Mounting	O and a st	Operator Position		itor on	Operator Position				Knob/ Lever	Pin Tumbler	Disc Tumbler	6, 12, 24V AC/DC	100,000//40
Control Boxes		Position	Contact			2 Ø			2 Ø					6, 12, 24V AG/DG	100, 200V AC
Emergency Stop Switches	1N0	1	NO												
Enabling	(10)	2		D	ummy	Block		ummy	Block	—	×	×	×	×	-
Switches	1NC	1	NC	•		DIOOR	•		DIOOR						
Safety Products	(01)	2	_	D	ummy	Block	D	ummy	Block	-	×	×	×	×	_
Evaluation Droof	1NO-1NC	1	NO			•			•		×	×	×	×	×
Explosion Proof	(11)	2	NC								^		^	^	^
Terminal Blocks	2N0	1	NO			•			•		×	×	×	×	×
	(20)	2	NO			•			•						
Relays & Sockets	2NC	1 2	NC NC	•			•				×	×	×	×	×
Circuit Protectors	(02)	1	NO			•			•						
	2N0-2NC	2	NC	•		•	•		•						
Power Supplies	(22)	3	NO			•			•	-	×	×	×	×	×
LED Illumination	( )	4	NC	•			•								
		1	NC	•			•								
Controllers	3NO-1NC	2	NO			۲			•		×	×	×	×	×
Operator	(31N1)	3	NO			•			•		~			~	~
Interfaces		4	NO			•			•						
Sensors		1	NO			•			•						
AUTO-ID	4N0	2	NO NO						•		×	×	×	×	×
AUTU-ID	(40)	3 ④	NO						•						
	1NO-1NC ★	1	EM												
	(7S)	2	LINI		_					—	×	×	×	×	×
	(	1	NC	•			•								
Flush Silhouette	3NC	2	NC	•			•								
ø16	(03)	3	NC	•			•			-	X	×	X	×	_
		4	_	D	ummy	Block	D	ummy	Block	1					
ø22		1	NO			•			•						
ø30	2NO-1NC	2	NC	•			•				×	×	×	×	_
Ø30	(21)	3	NO				Dummy Block			×					
Miniature		4	_		ummy	RIOCK		ummy	RIOCK						

Pilot Lights 90° 2-position Cam Reversed (Maintained)

ſ				Operator Operation a	nd Circuit Availability								
	Contact Code			Maint	Cam Code	Operator Availability							
V		Contact	Block	2									
v				Knob/Key/					Illumi	nated			
v –		Mounting Position		Operator Position			Knob/	Pin	Disc				
v			Contact	2	1		Lever	Tumbler	Tumbler	6, 12, 24V AC/DC	100, 200V AC		
		POSILION											
ſ	2NC	1	NC		•		×	×	×	×	×		
	(02)	(02) ②			•				~				
		1	NC		$\bullet$		×	×	×	×			
	3NC (03)	2	NC		•								
		3	NC		•	] 」							
		4	_	Dumm									

• On the contact arrangement marked with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

TW YW

#### 45° 3-position <Maintained>

	Con Blo	Operator Position			Circuit Availability					ilot Lights					
Contact Code	Manualian		1	0	2	Karah (			Cam	Keen hal	<b>D</b> .	Disc	Illumi	http://www.	
Code	Mounting Position	Contact			Ø	Knob/ Lever	Кеу	Illuminated	Code	Knob/ Lever	Pin Tumbler	Disc Tumbler	6, 12, 24V AC/DC	100, 200V AC	
1N0-1NC ★	1	NC				×	×	×		×	×	×	×	×	APEM
(11N1) <sup>☆</sup>	2	NO			•		~	~	J	^			~		APEINI
*	1	NC													Switches &
4NC	2	NC				×	×	×	S	×	×	×	×	×	Pilot Lights
(04)	3	NC			•	1 ^	~	^	3	^			~	^	Control Boxes
	4	NC													Emergency
2NO-1NC	1	NO													Stop Switches
	2	NO			•	×	×	×		×	×	×	×		Enabling
(21N1)	3	NC				1 ^	~	^	J	^	^	^	~	_	Switches
	4	—	Dur	nmy Bl	ock										Safety Products

#### 45° 3-position

#### <Maintained/Spring Return from Right/Spring Return from Left/Spring Return Two-way>

	Contact Block		Operator Position			Circuit Availability					Relays & Sockets				
Contact		Contact				Knob/		Illuminated	Cam Code	Knob/	Pin	Disc	Illumi	nated	Power Supplies
Code	Mounting			0	2										
	Position	oomaor			Ø	Lever		atou		Lever	Tumbler	Tumbler	6, 12, 24V AC/DC	100, 200V AC	LED Illuminati
1NO-1NC	1	NO	•			×	×	×		×	×	×	×	×	Controllers
(11)	2	NC					^	^	_	^	^	^	~	~	Operator Interfaces
1NO-1NC (11N1)	1	NC NO				×	×	×	—	×	×	×	×	×	Sensors
2N0	1	NO	•			×	×	×		×	×	x	×	×	AUTO-ID
(20)	2	NO NC		_	•										
2NC (02)	2	NC		_		×	×	×	—	×	×	×	×	×	
. ,	1	NO	•	1			×	×	_	×	×		×	×	
2NO-2NC	2	NO			•	×						×			Flush Silhoue
(22N1)	3 4	NC NC													
	(1)	NC		-		- ×	×	×		×	×	×	×		ø16
2NO-2NC	2	NO		_	•										ø22
(22N2)	3	NC												×	#20
	4	NO			•										ø30
	1	NO	•			×				×	×	×	×		Miniature
4N0	2	NO			•		×	×						×	Dilat Lishta
(40)	3 ④	NO NO	•		•										Pilot Lights
	(1)	NC													
4NC	2	NC								~			~		
(04)	3		×	×	-	×	×	×	×	×	нพ				
	4	NC				1									

• On the contact arrangement marked with ★ in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

 $\bullet$  For models with  $\precsim,$  contacts may overlap when the operator is changed.

YW

Terminal Blocks

#### Ø22 HW Series Selector Switch Contact Arrangement Chart

# Switches & Pilot Lights

Terminal Blocks

AUTO-ID

Flush Silhouette

Relays & Sock

#### **Operator Position** Maintained Contact Block Contact 2 3 Cam 1 4 Code Code ۲ ۲ Ø Mounting Contact Position Knob Operator 1 NO • Å 2 NC APEM 1NO-2NC x 3 NC • (12) 4 Dummy Block 1 LB Control Boxes 1NO-3NC 2 NC × Emergency (13N6) 3 NC . Stop Switches 4 NO • Enabling 1 NO Switches ★ . 2 NC 6 Safety Products 2NO-2NC × 3 NC • (22N3) Explosion Proof 4 NO

#### 30° 5-position

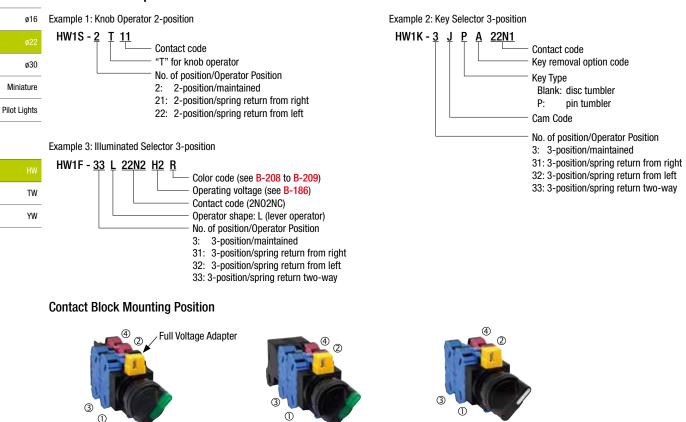
45° 4-position

Relays & Sockets										
					Op	Maintained				
Circuit Protectors	Contact	Contac	t Block	1	2	0	4	5	2 4	Cam
Power Supplies	Code			-	ے ا	3 ())	4 Ø	э Э	15	Code
LED Illumination		Mounting Position	Contact	Ø		Ŵ	Ø	۲	Knob Operator	
Controllers	*	1	NO	•						
Onereter	2N0-2NC 🏠	2	NC		•				~	
Interfaces	oporator	3	NC				•		×	-
Sensors		4	NO					•		
0013013										

• On the contact arrangement marked with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

• For models with  $rac{l}{\sim}$ , contacts may overlap when the operator is changed.

# Part No. Development



Illuminated Selector (Full Voltage)

Illuminated Selector (Transformer)



Non-illuminated Selector

# For more information, visit http://asia.idec.com

**Switches & Pilot Lights** 

#### **Pushbutton Selectors** Package Quantity: 1 $\bigcirc$ Contact Block **Ring Operator** Circuit Contact Button Shape Category Code Color Code Mounting Contact Normal Depressed Normal Depressed Part No. Position 1 NO • • 1NO-1NC HW1R HW1R-2A11\* (11)2 NC • APEM 1 NO • • 2N0 HW1R-2A20\* (20) 2 NO • А 1 NO • • Control Boxes 2 NC • 2NO-2NC Emergency HW1R-2A22\* (22) 3 NO • • Stop Switches (4) Enabling NC . Switches 1 NO • 2N0 HW1R-2D20\* Safety Products (20) 2 NO 1 NO Explosion Proof D 2 NO 2N0-2NC • HW1R-2D22N1\* Terminal Blocks (22N1) (3) NC В 4 NC Relays & Sockets . G \* 1 NO R Circuit Y S 2N0-2NC 2 NO Protectors • Е HW1R-2E22N1\* (22N1) 3 NC Power Supplies W 4 NC LED Illumination 1 NO • ★ ☆ 2NO-2NC 2 NO • Controllers F HW1R-2F22N1\* (22N1) 3 NC • Operator 4 • Interfaces NC 1 ★☆ NC . Sensors 2 2N0-2NC NO • • Ν HW1R-2N22N2\* AUTO-ID (22N2) 3 NC . 4 NO • • 1 NO • . 2NO-2NC 2 NO • • Т HW1R-2T22N1\* Blocked Flush Silhouette (22N1) 3 NC • 4 NC • ø16

• Specify a button color code in place of \* in the Part No. B (black), G (green), R (red), Y (yellow), S (blue), W (white)

• When operating the pushbutton selector, do not turn the operator ring or the lock lever while the button is depressed. Otherwise the pushbutton selector may be damaged.

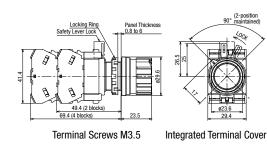
• On the contact arrangement marked page with 🖈 in the table above, the rated current (load switching current) is reduced to a half of the related current of the contact block. The rated insulation voltage and the rated thermal current remain unchanged.

• For models with  $\dot{m}$ , contacts may overlap when the operator is changed.

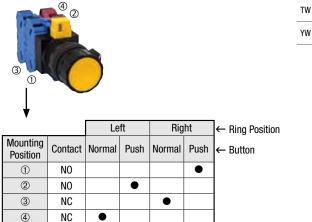
#### Dimensions

#### All dimensions in mm.





• See B-210 for the bottom view.



B-214

ø30

Miniature

Pilot Lights

Protectors Power Supplies

LED Illumination

Controllers Operator Interfaces Sensors AUTO-ID

80 80	Mono-Lever Switches								
Pilot Lights	Package Quantity:								
E I	Shape	Positions	Part No. (Ordering No.)						
ght	HW1M		HW1M-1010-20						
S.	Standard Lever		HW1M-2020-20						
		0 position	HW1M-0101-20						
		2-position	HW1M-0202-20						
APEM			HW1M-0101-40						
Switches &			HW1M-0202-40						
Pilot Lights		4 position	HW1M-1111-22N9						
Control Boxes		4-position	HW1M-2222-22N9						
Emergency	HW1M-L		HW1M-L1010-20						
Stop Switches	Interlocking Lever		HW1M-L2020-20						
Enabling Switches		0 position	HW1M-L0101-20						
Safety Products		2-position	HW1M-L0202-20						
			HW1M-L0101-40						
Explosion Proof			HW1M-L0202-40						
Terminal Blocks		4 position	HW1M-L1111-22N9						
	<b>↓</b> •	4-position	HW1M-L2222-22N9						
Relays & Sockets	• On all more lover switches, the rated current (load switchi	ing ourrant) is reduced to a half of the roted ourrant of t	es sontaat blaak						

• On all mono-lever switches, the rated current (load switching current) is reduced to a half of the rated current of the contact block. Circuit The rated insulation voltage and the rated thermal current remain unchanged.

# **Contact Arrangement Chart**

2-position (Right/Left)									
Contact	Cont Bloc		Lever Operator Position						
Code	Mounting Position	Contact	Left	Center	Right				
20	1	NO	•						
20	2	NO			•				
	1	NO	•						
40	2	NO			•				
	3	NO	•						
	(4)	NO			•				

#### 2-position (Up/Down)

Contact Code	Cont Blo		Lever Operator Position				
	Mounting Position	Contact	Left	Center	Right		
20	1	NO	•				
20	2	NO			•		
	1	NO	•				
40	2	NO			•		
40	3	NO	•				
	4	NO			•		

#### 4-position

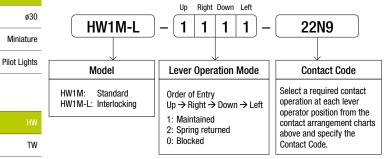
	Contact	Cont Blo	Lever Operator Position					
	Code	Mounting Position	Contact	Down	Left	Center	Up	Right
ſ		1	NC					٠
I	22N9	2	NC	•				
ľ	2219	3	NO		٠			
		4	NO				•	

Flush Silhouette

ø16

YW

#### Part No. Development



• The lever operator of the interlocking type HW1M-L is locked only in the center position. Pull on the interlocking lever before operating the lever up/down/right/left.

#### **Contact Block Mounting Position and** Lever Operation Position

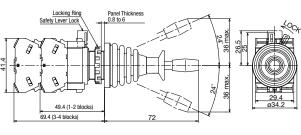


#### Dimensions Standard Lever

# Safe 49.4 (1-2 blocks 69.4 (3-4 blocks)

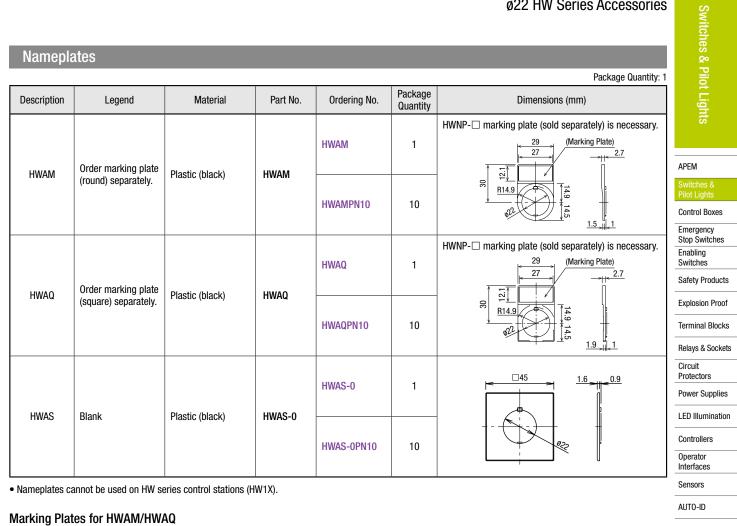
#### Interlocking Lever

All dimensions in mm.



**Terminal Screws M3.5** Integrated Terminal Cover See B-210 for the bottom view.

# For more information, visit http://asia.idec.com



Description	Material	Part No.	Ordering No.	Package Quantity	Dimensions (mm)	
	Aluminum (black)		HWNP-	1	White legend on black background. Engraving area: W25×H7	Flush Silhouette
HWNP	Thickness = 1.0mm	HWNP-□	HWNP-□PN10	10		ø22
<u> </u>					· · ·	ø30

 $\bullet$  Specify a legend code in place of  $\Box$  in the Ordering No.

#### Legends

Code	Legend
0	(blank)
1	ON
2	OFF
3	START
4	STOP
31	OFF-ON
35	HAND-AUTO
53	HAND-OFF-AUTO

• See B-226 for how to install nameplates/marking plates, and how to remove marking plates.

Miniature Pilot Lights

τw YW



## ø22 HW Series Accessories

nes & Pilot Lights	A	ccessories					All dimensions in mm.
ilot Li		Shape	Material	Part No.	Ordering No.	Package	When ordering, specify the Ordering No. Dimensions (mm)
ghts APEM Switches &		Locking Ring Wrench	Metal (brass) (weight: approx. 150g)	MW9Z-T1	MW9Z-T1	Quantity 1	Used to tighten the locking ring when installing the HW switch onto a panel.
Pilot Lights Control Boxes Emergency Stop Switches Enabling Switches Safety Products	Tool	Lamp Holder Tool	Nitrile rubber (black)	0R-55	0R-55	1	• Used to install and remove the LED lamps. See B-223 to B-224 for how to install. (A) : BA9S
Explosion Proof Terminal Blocks Relays & Sockets Circuit Protectors Power Supplies LED Illumination Controllers		Contact Block Removal Tool	Zinc-plated metal Nitril rubber	TW-KC1	TW-KC1	1	<ul> <li>59</li> <li>Used to remove the contact block and transformer, and also to install/remove the pilot light and illuminated pushbutton lens. See B-224.</li> </ul>
Operator Interfaces Sensors AUTO-ID	Anti-rotation Ring		Ring: polyamide Gasket: nitril rubber	HW9Z-RL	HW9Z-RLPN10	10	<ul> <li>Used to prevent the operator from turning. Generally used when using no nameplates on selector switches and pushbutton selectors.</li> </ul>
Flush Silhouette ø16 ø22 ø30 Miniature	Rub	ber Mounting Hole Plug	Nitril rubber (black)	0B-31	0B-31PN05	5	• Used to plug the unused ø22.2 mm mounting holes. Degree of protection: IP65 (round hole) IP40 (with anti-rotation function)
Pilot Lights HW TW YW	Rubber Mounting Hole Plug		Plug: chrome-plated zinc diecast Locking ring: polyamide Gasket: nitril rubber	LW9Z-BM	LW9Z-BM	1	Used to plug the unused ø22.2 mm mounting holes. Degree of protection: IP66 (round hole) IP40 (with anti-rotation function) Tightening torque: 1.2 N·m <u>@asket</u> <u>@ccking Ring</u> <u>M22 P:1</u> <u>Panel Thickness</u> <u>0.8 to 6</u>
	Metallic Mounting Hole Plug		Polyamide	LW9Z-BP1	LW9Z-BP1	1	• Used to plug the unused ø22.2 mm mounting holes. Degree of protection: IP65 Tightening torque: 2.0 N·m
	Barr	ier	Polyamide	HW-VU1	HW-VU1PN10	10	• Used to prevent contact between adjacent lead wires when units are mounted closely (see B-227 for details). Barriers should always be used in close mounting.

#### **Ø22 HW Series Accessories**



#### **Maintenance Parts**

When ordering, specify the Ordering No.

0	when ordering, specify the ordering No.								
lot Lights	Shape	Material	Part No.	Ordering No.	Package Quantity	Remarks			
5	Contact Block	NO contact	HW-U10	HW-U10	-	Housing color: blue/Push rod color: green			
	HW-U	NU CONTACT	HW-U10-MAU	HW-U10-MAU		MAU has gold contacts			
APEM		NO contract	HW-U01	HW-U01	-	Housing color: reddish purple/Push rod color: red			
		NC contact	HW-U01-MAU	HW-U01-MAU		MAU has gold contacts			
Switches & Pilot Lights		EM (early make)	HW-U10R	HW-U10R	-	Housing color: blue/Push rod color: black			
Control Boxes		contact	HW-U10R-MAU	HW-U10R-MAU		MAU has gold contacts			
Emergency		LB (late break)	HW-U01R	HW-U01R	- 1	Housing color: reddish purple/Push rod color: white			
Stop Switches	Weight: 11g (approx.)	contact	HW-U01R-MAU	HW-U01R-MAU		MAU has gold contacts			
Enabling Switches	Dummy Block					For HW-U contact blocks			
Safety Products		Polyamide	HW-DB	HW-DBPN10	10	<ul> <li>Used when the number of contact blocks and full voltage adapters is odd number.</li> </ul>			
Explosion Proof	Weight: 3.5g (approx.)								
Terminal Blocks	Full Voltage Adapter					Applicable model:			
Relays & Sockets	for Illuminated (*1)					Illuminated pushbuttons Illuminated selector switches			
Circuit Protectors		Polyamide	HW-GA1N	HW-GA1NPN02	2	• Applicable load (LED lamp)			
Power Supplies	Weight: 12g (approx.)					LSTD-6 (6V AC/DC)/LSTD-1 (12V AC/DC) LSTD-2 (24V AC/DC)			
LED Illumination	Transformer Unit (*1)	100/110V AC	HW-T16	HW-T16	1	Applicable model:			
Controllers			-			Illuminated pushbuttons Illuminated selector switches			
Operator	Weight: 12g (approx.)	200/220V AC	HW-T26	HW-T26	1	Applicable load (LED lamp)			
Interfaces						LSTD-6 (6V AC/DC)			

Sensors \*1) Maintenance parts are used for maintenance parts only. Do not use these parts for expansion or remodeling purpose.

AUTO-ID	.)			parto for orpan	son or remotioning put	p0001	When ordering, specify the Ordering No.
	Sh	ape	Material/Dimensions	Part No.	Ordering No.	Package Quantity	Color Code *
Flush Silhouette	Lens	①Round flush	Polyarylate ø23.5 H4.2	HW9Z-L11*-K	HW9Z-L11*-KPN05	5	
ø16		②Square flush	Polyarylate ø24.6 H4	HW9Z-L21*-K	HW9Z-L21*-KPN05	5	R (red), G (green), Y (yellow), A (amber), C (clear), S (blue) (*2)
ø22	3 <mark>9</mark> (4)	③Round extended	Polyarylate ø23.3 H10	HW9Z-L12*-K	HW9Z-L12*-KPN05	5	
ø30 Miniature	5	@ø29 mushroom	AS, marking type ø29 H12.7	ALW31LD-*-K	ALW31LD-*-KPN02	2	R (red), G (green),Y (yellow), A (amber), S (blue), C (clear) (*2)
Pilot Lights	6	©ø40 mushroom	AS, marking type ø40 H12.7	ALW41LD-*-K	ALW41LD-*-K	1	R (red), G (green), Y (yellow), A (amber), S (blue), C (clear) (*2)
HW TW		©Jumbo dome	Polycarbonate ø66 H50	HW1A-P5*	HW1A-P5*	1	R (red), G (green), Y (yellow), A (amber), W (white), S (blue)
YW		⑦Dome for pilot light	AS ø23.5 H15.1	HW1A-P2*-K	HW1A-P2*-KPN05	5	R (red), G (green), Y (yellow), A (amber), W (white), S (blue) (*3)
	Button ① ②	①Round flush with round or square bezel	Polyacetal ø23.6 H3	HW1A-B1*	HW1A-B1*PN05	5	
	•	②Round extended with round or square bezel	Polyacetal ø23.6 H9.2	HW1A-B2*	HW1A-B2*PN05	5	
	3	③Square flush	Polyacetal □24.8 H3	HW2A-B1*	HW2A-B1*PN05	5	Use ${\mathbb O}$ for pushbutton selectors.
	5	④Square extended	Polyacetal □24.5 H9.2	HW2A-B2*	HW2A-B2*PN05	5	B (black), G (green), R (red), Y (yellow), S (blue), W (white)
	6	©ø29 mushroom	Polyacetal ø29 H12.7(M18P1.0)	HW1A-B3*	HW1A-B3*PN02	2	
		©ø40 mushroom	Polyacetal ø40 H12.7(M18P1.0)	HW1A-B4*	HW1A-B4*PN02	2	

\*2) Use C (clear) lens for PW (pure white) illumination.

\*3) Use W (white) lens for PW (pure white) illumination.

## ø22 HW Series Maintenance Parts

All dimensions in mm.

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Stape         Materia/Utimenations         Part No.         Ordering No.         Personal Quantity         Permates           Round action         Actrylic action         Actrylic action         Actrylic action         HW82.P11         HW82.P11         HW82.P112         *White solution         *Specify a color code in place of *. R (red, G (green, Y (white)), includence, inclusion         *White solution         *Specify a color code in place of *. R (red, G (green, Y (white)), includence, inclusion         *White solution         *Specify a color code in place of *. R (red, G (green, Y (white)), includence, inclusion         *White solution         *Specify a color code in place of *. R (red, G (green, Y (white)), includence, inclusion         *White solution         *White solution         *Specify a color code in place of *. R (red, G (green, Y (white)), inclu		iannenance r			An almensions in mm. When ordering, specify the Ordering No.					
Number         PAUSE-P11         HWSZ-P11         HWSZ-P11PN05         5         - See 5/25 for dimensions and angraving area.         - See 5		Shape		Material/Dimensions	Part No.	Ordering No.			& Pilot Lights	
gg         gg         Activity         Activity         MW92-P12         HW92-P12         HW92-P12PN05         5           square         22.7         Tuckness = 1         HW92-P12         HW92-P12PN05         5         Fragmentation         Acrylic         Fragmentation         5         Fragmentation         Fragmentation         Acrylic         Fragmentation         5         Fragmentation					HW9Z-P11	HW9Z-P11PN05	5	• See B-225 for dimensions and	ts	
Image in the second i	g Plate				HW9Z-P12	HW9Z-P12PN05	5	engravnig area.	APEM Switches &	
e2:40 mm       Acrylic       ALW3B       ALW3BPN05       5       Standard key number         Operator Koob for Illuminated       AS reain       HW92-FDY+-K       HW92-FDY+-K       1       - Specify a color code in place of *. R reds, Green, Y gellow), A mather, W (white), Stoblewer for pure white illumination.       Same for the control of the	Markinç				HW9Z-P21	HW9Z-P21PN05	5		Pilot Lights Control Boxes	
Operator Kwob for Illuminated Selector Switch       As resin       HW9Z-FDVK       1       -Specify a coar code in place of -R Prof/s G greenes of -R Winkite, S (blue)       Specify a coar code in place of -R Prof/s G greenes of -R Winkite, S (blue)       Specify a coar code in place of -R Prof/s G greenes of -R Winkite, S (blue)       Specify a coar code in place of -R Winkite, S (b					ALW3B	ALW3BPN05	5		Emergency Stop Switches Enabling Switches	
Operator Lever for Illuminated Selector Switch       AS resin       HW92-FDL+-K       HW92-FDL+-K       1       HW92-FDL+-K       1         Spare Key (Disc Tumber Key)       Metal (nickel-plated brass)       Metal (nickel-plated brass)       HW92-SK-231       HW92-SK-231PN02       2       • Standard key number       See Soars Key (Pin Tumber Key)         Image: Spare Key (Pin Tumber Key)       Metal (nickel-plated brass)       Image: SK-500       LW92-SK-50PN02       2       • Standard key number       See See Soars Key (Pin Tumber Key)       See Soars Key (Pin Tumber Key)       Image: SK-500       LW92-SK-50PN02       2       • Standard key number       See See Soars Key (Pin Tumber Key)       See Soars Key (Pin Tumber Key)       Image: SK-500       LW92-SK-50PN02       2       • Standard key number       See See Soars Key (Pin Tumber Key)       See See Soars Key (Pin Tumber Key)       Image: SK-500       LW92-SK-50PN02       2       • Key number See See Soars Key (Pin Tumber Key)       Image: SK-500       LW92-SK-50PN02       2       • Key number See See Soars Key (Pin Tumber Key)       Fau See See Soars Key (Pin Tumber Key)       Image: SK-500       Image: SK-500       HW92-LS       HW92-LS       Fau See See Soars Key (Pin Tumber Key)       Image: SK-500       HW92-KEM       1       Image: SK-500       HW92-KEM       Fau See See Soars Key (Pin Tumber Key)       Image: SK-500       HW92-KEM       1       Image: SK-500			ated		HW9Z-FDY*-K	HW9Z-FDY*-K	1	R (red), G (green), Y (yellow), A (amber), W (white), S (blue) • Use W (white) knob/lever for pure white	Safety Products Explosion Proof Terminal Blocks	
Spare Key (Disc Tumber Key) (Disc Tumber Key)       Metal (mckel-plated brass)       HW9Z-SK-231       HW9Z-SK-231PN02       2       LU92       Lu92-SK-231PN02       2         Spare Key (Pin Tumber Key)       Metal (mckel-plated brass)       LW9Z-SK-00       LW9Z-SK-00PN02       2       •Standard key number       Aut         LW9Z-SK-       LW9Z-SK-       LW9Z-SK-       LW9Z-SK-       PN02       2       •Standard key number       Aut         Lockig Ring       Polyamide (black) o28.4 H5 M22P1       HW9Z-LN       HW9Z-LNPN05       5       •Key number       916         Cap for Mono-lever Switch       Standard       Nitryl rubber o10 L20       HW9Z-CPM       1       •Used for LED type jumbo dome pilot lights only. Do not use for incandescent lamp illumination.       10       •Lsed for LED type jumbo dome pilot lights only. Do not use for incandescent lamp illumination.       10       •Standard HW series switch/pilot light.			lated	AS resin	HW9Z-FDL*-K	HW9Z-FDL*-K	1	illumination.	Relays & Sockets Circuit Protectors	
Spare Key (Pn Tumber Key)       Metal (nickel-plated brass)       LW9Z-SK-500       LW9Z-SK-500PN02       * Standard key number       Aut         LW9Z-SK-       LW9Z-SK-       LW9Z-SK-       PN02       * Key number       Aut         Lockig Ring       Polyamide (black) ø28.4 H5 M22P1       HW9Z-IN       HW9Z-INPN05       5       * Key number       Fus         Cap for Mono-lever Switch       Polyamide (black) ø28.4 H5 M22P1       HW9Z-IN       HW9Z-INPN05       5       * Key number       90         Data of 10 L20       Polyamide (black) ø28.2 H5 M22P1       HW9Z-CPM       HW9Z-CPM       1       * Key number       90         Diffusing Lens       Standard       Nitryl rubber ø29.2 L34.4       HW9Z-BLM       HW9Z-PP5C       1       * Used for LED type jumbo dome pilot ights only. Do not use for incandescent gas at the standard HW series switch/pilot light.       YW         Safety Lever Lock       Polyacetal (yellow)       HW9Z-LS       HW9Z-LSPN10       10       * A safety lever lock is supplied with a standard HW series switch/pilot light.         Gasket       Nitryl rubber (black)       HW9Z-WM       HW9Z-WMPN10       10       Thickness = 0.5       Thickness = 0.5			B		HW9Z-SK-231	HW9Z-SK-231PN02	2		Power Supplies LED Illumination Controllers Operator	
Metal (nickel-plated brass)       LW92-SK-       LW92-SK-       PN02       2       • Key number : 501 to 503       AUT         Lockig Ring Cap for Mono-lever Switch       Polyamide (black) e28.4 H5 M22P1       HW92-LN       HW92-LNPN05       5       • Key number : 504 to 515       Flua e18         Cap for Mono-lever Switch       Standard       Nitryl rubber e10 L20       HW92-CPM       HW92-CPM       1       • Used for LED type jumbo dome pilot lights only. Do not use for incandescent amp illumination.       Min Pilot         Diffusing Lens       Polyacetal (yellow)       HW92-PFSC       HW92-PFSC       1       • Used for LED type jumbo dome pilot lights only. Do not use for incandescent lights only. Do not use for incandescent is andard HW series switch/pilot light.       YW         Safety Lever Lock       Polyacetal (yellow)       HW92-LS       HW92-LSPN10       10       • Lackers = 0.5 end for standard HW series switch/pilot light.         Gasket       Nitryl rubber (black)       HW92-WM       HW92-WMP110       10       • Thickness = 0.5 end for LED type lights only.					LW9Z-SK-500	LW9Z-SK-500PN02		Standard key number	Interfaces Sensors	
Lockig Ring       Polyamide (black) 028.4 H5 M22P1       HW9Z-SKPN02       • Key number : 504 to 515       Flus         Cap for Mono-lever Switch       Polyamide (black) 028.4 H5 M22P1       HW9Z-LN       HW9Z-LNPN05       5       S       Image: Solid to 515       1         Cap for Mono-lever Switch       Standard       Nitryl rubber 010 L20       HW9Z-CPM       HW9Z-CPM       1       Image: Solid to 515       HW9Z-CPM       1         Boot for Mono-lever Switch       Standard       Nitryl rubber 029.2 L34.4       HW9Z-BLM       HW9Z-BLM       1       Image: Solid to 12D	· ·				LW9Z-SK-	LW9Z-SK- PN02	2		AUTO-ID	
Lockig Ring       Polyamide (black)       #W9Z-LN       HW9Z-LNPN05       5       1       10         Cap for Mono-lever Switch       Standard       Nitryl rubber       #W9Z-CPM       HW9Z-CPM       1       1       10					LW9Z-SK-	LW9Z-SKPN02			Flush Silhouette	
Cap for Mono-lever Switch       Standard       Nitryl rubber 10 L20       HW9Z-CPM       HW9Z-CPM       1       Min         Boot for Mono-lever Switch       Standard       Nitryl rubber 29.2 L34.4       HW9Z-BLM       HW9Z-BLM       1       Used for LED type jumbo dome pilot lights only. Do not use for incandescent amp illumination.       HW9Z-PP5C       1       Used for LED type jumbo dome pilot lights only. Do not use for incandescent lamp illumination.       HW9Z-PP5C       1       Used for LED type jumbo dome pilot lights only. Do not use for incandescent lamp illumination.       HW9Z-PP5C       1       Used for LED type jumbo dome pilot lights only. Do not use for incandescent lamp illumination.       HW9Z-PP5C         Safety Lever Lock       Polyacetal (yellow)       HW9Z-LS       HW9Z-LSPN10       10       Thickness = 0.5 Mono-light       Thickness = 0.5 Mono-lever         Gasket       Nitryl rubber (black)       HW9Z-WMM       HW9Z-WMPN10       10       Thickness = 0.5 Mono-lever       Thickness = 0.5 Mono-lever	Lock	ig Ring			HW9Z-LN	HW9Z-LNPN05	5		ø16 ø22	
Mono-lever Switch       Standard       Nitryl rubber ø29.2 L34.4       HW9Z-BLM       HW9Z-BLM       1       Image: Constraint of the standard			Standard		HW9Z-CPM	HW9Z-CPM	1		Ø30 Miniature Pilot Lights	
Polycarbonate ø22.2 H21       HW9Z-PP5C       1       lights only. Do not use for incandescent lamp illumination.         Safety Lever Lock       Polyacetal (yellow)       HW9Z-LS       HW9Z-LSPN10       10       • A safety lever lock is supplied with a standard HW series switch/pilot light.         Gasket       Nitryl rubber (black)       HW9Z-WM       HW9Z-WMPN10       10       Thickness = 0.5 MOT Better	Mono	no-lever	Standard	Nitryl rubber ø29.2 L34.4	HW9Z-BLM	HW9Z-BLM	1		HW TW	
Polyacetal (yellow)     HW9Z-LS     HW9Z-LSPN10     10     standard HW series switch/pilot light.       Gasket     Nitryl rubber (black)     HW9Z-WM     HW9Z-WMPN10     10     Thickness = 0.5	Diffu	Ising Lens			HW9Z-PP5C	HW9Z-PP5C	1	lights only. Do not use for incandescent	YW	
Nitryl rubber (black) HW97-WM HW97-WMPN10 10 K	Safe	ty Lever Lock		Polyacetal (yellow)	HW9Z-LS	HW9Z-LSPN10	10			
	Gask	tet	>	Nitryl rubber (black)	HW9Z-WM	HW9Z-WMPN10	10	Thickness = 0.5		
Contact Block Plug     Polyamide     HW9Z-CBPL     HW9Z-CBPLPN10     10     • Used to plug the hole in the center of contact block.			2	Polyamide	HW9Z-CBPL	HW9Z-CBPLPN10	10	• Used to plug the hole in the center of		

Maintenance Parts

Maintenance Parts
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HW Series LED Lamps (except for HW Jumbo Dome Pilot Lights)

All dimensions in mm.

Package Quantity 1

#### When ordering, specify the Ordering No. Current Draw Operating Illumination Package Shape/Dimensions Part No. Ordering No. Base Voltage Color Code Quantity DC AC 7mA (R, A, W) LSTD-6\* 1 8mA (except S) LSTD-6\* 6V AC/DC 5.5mA (G, PW) 7mA (S) LSTD-6\*PN10 10 APEM 4.5mA (S) LSTD-1\* 1 10mA (except S) 11mA (except S) (20.8)12V AC/DC LSTD-1\* BA9S/13 R, G , A, W, S, PW Control Boxes 18.4 8mA (S) 9mA (S) LSTD-1\*PN10 10 Emergency Stop Switches Eyelet (X1) LSTD-2\* 1 10mA (except S) 11mA (except S) Base (X2) BA9S/13 Enabling 24V AC/DC LSTD-2\* Voltage Switches 8mA (S) 9mA (S) LSTD-2\*PN10 10 Safety Products

Explosion Proof

Flush Silhouette

ø16

Terminal Blocks

#### HW Series LED Lamps (used for HW Jumbo Dome Pilot Lights) Relays & Sockets

• Use a PW (pure white) LED lamp for Y (yellow) illumination.

• Specify a color code in place of \*. R (red), G (green), A (amber), W (white), S (blue), PW (pure white)

noiayo a ocontoto									
Circuit	Shape/Operating Voltage	Current Draw		Ordering No.	Illumination Color Code	Dimensions			
Protectors	Shape/Operating voltage	DC	AC			Dimensions			
Power Supplies	24V AC/DC					Light blue: <u>Base BA9S/13</u> LSTDB Illumination color			
LED Illumination		15mA	15mA	LSTDB-2*					
Controllers	C THE	TOTIA	TOINA	LOIDD-2*	R, G , A, W, S, PW				
Operator Interfaces						20.4			

• Specify a color code in place of \*. R (red), G (green), A (amber), W (white), S (blue), PW (pure white) Sensors

• Use a PW (pure white) LED lamp for Y (yellow) illumination. AUTO-ID

#### LED Lamps (LED Lamps for replacing incandescent lamps)

• Use the following replacement LED lamps to replace incandescent lamps.

· See HW series LED lamps shown above for ordering.

· LED lamps may have different brightness/color hue compared with incandescent lamps.

ø22	Incandescent Lamp						
ø30	Model (dimensions in mm)	Part No.	Rated Voltage	Lamp Ratings	Base		
Miniature	LS	LS-6	6V AC/DC	1W(6V)			
Pilot Lights		LS-8	12V AC/DC	1W(18V)	DA00/10		
	Co-	LS-2	AC/DC18V	1W(24V)	BA9S/13		
HW	Glass bulb: ø11 Length: 23	LS-3	24V AC/DC	1W(30V)			
YW	LSB (For Jumbo Dome Pilot Lights)	LSB-2	24V AC/DC	28V/0.17A	BA9S/13		
	Glass bulb: ø10 Length: 27						

Replacement LED Lamp					
Ordering No.	Illumination Color Code	Rated Voltage	Base		
LSTD-6*		6V AC/DC			
LSTD-1*		12V AC/DC	BA9S/13		
LSTD-2*	R, G , A, S, PW	24V AC/DC	DA90/13		
LSTD-2*		24V AC/DC			
LSTDB-2*	R, G , A, S, PW	24V AC/DC	BA9S/13		

• Specify a color code in place of \*. R (red), G (green), A (amber), S (blue), PW (pure white)

• Use a PW (pure white) LED lamp for Y (yellow) illumination.

#### Transformer

				Package Quantity: 1	
Shape	Operating Voltage	Operating Voltage Range	Ordering No.	Applicable Load	
6V	100/110V AC	100/110V AC ±10%	TWR516	LSTD-6* (6V AC/DC, LED lamp)	
	200/220V AC	200/220V AC ±10%	TWR526	Specify a color code in place of * in Part No.	
	400/440V AC	400/440V AC ±10%	TWR546	R (red), G (green), A (amber), S (blue), PW (pure white)	
24V	100/110V AC	100/110V AC ±10%	TWR512	LSTD-2* (24V AC/DC, LED lamp) or LSTDB-2* (24V AC/DC, LED lamp) Specify a color code in place of * in Part No.	
	200/220V AC	200/220V AC ±10%	TWR522		
	400/440V AC	400/440V AC ±10%	TWR542	R (red), G (green), A (amber), S (blue), PW (pure white)	

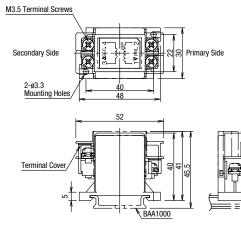
• Terminal cover (TWR-VL3) is installed on transformers as standard.

• Transformer is installed to one HW series unit.

#### **Specifications**

Part No.	TWR5□6	TWR5 2		
Operating Voltage	100/110V AC, 200/220V A 400/440V AC (50/60Hz)	AC		
Current Draw	2.4VA			
Rated Insulation Voltage	600V			
Insulation Resistance	100MΩ minimum (500V [	DC megger)		
Operating Temperature	-30 to +60°C (no freezing)			
Operating Humidity	35 to 85% RH (no condensation)			
Storage Temperature	-40 to +80°C (no freezing)			
Vibration Resistance	Damage limits: 30Hz, amplitude 1.5 mm Operating extremes: 5 to 55Hz, amplitude 0.5 mm			
Shock Resistance	Damage limits: 1,000 m/s <sup>2</sup> Operating extremes: 100 m/s <sup>2</sup>			
Dielectric Strength	2500V AC, 1 minute			
Terminal Screw	M3.5			
Applicable Wire	2mm <sup>2</sup> maximum, 2 wires maximum			
Weight (approx.)	87g			

#### **Dimensions**



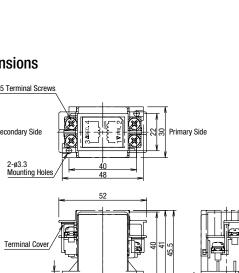
Flush Silhouette All dimensions in mm. ø16

#### **Accessories**

Accessories When ordering, specify the Ordering No.						ø30
Shape	Material	Part No.	Ordering No.	Package Quantity	Dimensions (mm)	Miniature
DIN 35 mm Rail Weight: 200g approx.	Aluminum Length: 1000 mm	BAA1000	BAA1000PN10	10		Pilot Lights
DIN 35 mm Rail Weight: 320g approx.	Steel Length: 1000 mm	BAP1000	BAP1000PN10	10		YW
End Clip Weight: 15g approx.	Metal (zinc-plated steel) Applicable rail: AA1000 BAP1000	BNL6	BNL6PN10	10		

bownload catalogs and CAD from http://asia.idec.com/downloads

• See H-071 for DIN rail products.



**Control Boxes** Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets Circuit Protectors

Power Supplies

LED Illumination

Controllers Operator Interfaces

Sensors AUTO-ID

#### **Safety Precautions**

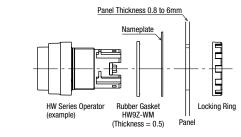
- Turn off the power to the HW series switches & pilot lights before starting installation, removal, wiring, maintenance, and starting installation, removing, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid a burn on your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Tighten the terminal screws to the recommended tightening torgue (see B-228). Failure to tighten terminal screws may cause overheat and fire.
- When using a commercially available lamp, choose a lamp with rated voltage 5 to 30V AC/DC and 1W maximum, and with the same base and shane

Make sure of correct operation before installation. The operation of illuminated pushbutton switches cannot be guaranteed when a commercially available lamp is used.

#### **Operating Instructions**

#### Panel Mounting

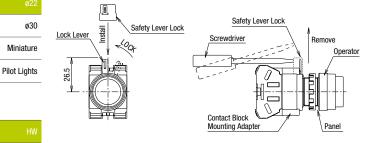
• Remove the contact block from the operator (for transformer type pilot lights, remove the transformer from the illumination unit). Remove the locking ring from the operator (for pilot lights, remove the locking ring from the illuminated unit). Insert the operator into the panel cut-out from the front. Tighten the locking ring from the back to install the contact block to the operator.



Mounting panel thickness is reduced by 1.5 mm when using a nameplate.

#### Flush Silhouette **Removing the Contact Block**

· Remove the safety lever lock (yellow) from the lock lever by inserting a flat screwdriver into the safety lever lock and push upwards.



 Remove the operator from the contact block by turning the locking lever in the direction of the arrow shown below. Then the operator can be pulled out.





- To reinstall, place the TOP marking on the operator and the lock lever in the same direction, and insert the operator into the contact block mounting adapter. Then turn the locking lever in the opposite direction.
- . Install the safety lever lock (yellow) on the lock lever. The safety lever lock cannot be installed when the lock lever is not upright.

#### Safety Lever Lock

IDEC strongly recommends using the safety lever lock (HW9Z-LS, vellow) to ensure that lock lever is locked, or to prevent maintenance personnel from unlocking contacts during wiring.



#### How to install

. Mount the HW series onto the panel, lock the lever, and push in the safety lever lock.

#### Spacing in Vertical Direction

 HW series can be installed with a minimum of 50 mm spacing in vertical direction (mono-lever switch: 70 mm minimum). Be sure to take the space required for installing/removing the safety lever lock into consideration. When the spacing is narrower than the recommended value, install the HW series units in the order of low to high. When removing, do so in the opposite direction.

#### Notes for Panel Mounting

Locking ring wrench recommended torque

Tighten the bezel to a tightening torque of 2.0 N·m.

#### Locking ring wrench

Locking ring wrench (MW9Z-T1) can be used to tighten the bezel. Do not use pliers. Excessive tightening will damage the locking ring.



Locking ring wrench (MW9Z-T1)

#### Panel Thickness

HW series can be mounted on a panel with thickness of 0.8 to 6.0 mm. Take the thickness of nameplate and/or switch guard into consideration.

#### Replacement of LED Lamps

LED lamps can be replaced by using the lamp holder tool (OR-55) from the front of the panel, or by removing the contact block from the operator unit. (See B-217 for lamp holder tool.)

#### How to Remove

To remove, slip the lamp holder tool onto the lamp head lightly. Then push slightly, and turn the lamp holder tool counterclockwise.



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Terminal Blocks

Relavs & Sockets

Power Supplies

LED Illumination Controllers

Circuit

Protectors

Operator

Interfaces

Sensors

AUTO-ID

ø16

ΤW

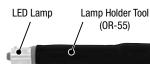
YW

Emergency Stop Switches

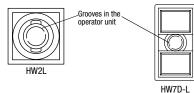
Enabling Switches Safety Products

#### How to Install

Insert the lamp head into the lamp holder tool.



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



Installing/Removing the Buttons and Lenses

<To install>

Pushbutton Button

Flush/Extended

Push in the button to install.



Insert a flat screwdriver between the button and the bezel to remove the button.



<To remove>

#### Mushroom/Jumbo Mushroom

Button has threads. Turn clockwise to install the button.

Turn the button remove. Note: Jumbo mushroom button





#### Illuminated Pushbutton Lens

 Flush/Extended Push in the lens holder into the operator unit.

Insert a flat screwdriver and the bezel to remove the lens holder.



Mushroom/Jumbo Mushroom

Lens has threads. Turn clockwise to install the lens.







• Round Flush/Square Flush

Latches



#### Insert a flat screwdriver between the lens and the bezel to remove.



Control Boxes

Emergency Stop Switches Enabling Switches

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- Terminal Blocks
- **Relavs & Sockets**

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Flush Silhouette

Insert the end of the contact block removal tool (TW-KC1) into the snap-fit latch of the transformer units or DC-DC converter and pull the tool forward.

**Removing the Contact Blocks/Full Voltage Adapters** 

contact block or full voltage adapter and lift to remove.

**Transformer Units and DC-DC Converters** 

Insert a flat screwdriver (4 to 6 mm) into the snap-fit latches of the

The contact block removable tool cannot be used to remove the HW-U contact blocks (HW-U), full voltage adapters (HW-GA1N), or dummy blocks (HW-DB).



# Transformer Units and DC-DC Converters for Pilot Li

Insert a flat screwdriver into the snap-fit latch on the contact lift to remove.



Mhen replacing parts (contact block, dummy block, full voltage adapter, transformer) for maintenance, make sure to install the parts to the original position. Otherwise proper operation cannot be guaranteed.

	ø16		
ghts			
t block and	ø30 Miniature		
	Pilot Lights		

HW
TW
YW

**Pilot Light Lens** Extended/Mushroom

Lens has threads. Turn clockwise to install the lens.







caused.

• Make sure to lift both latches.

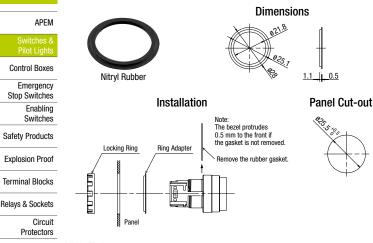
Contact blocks cannot be removed by lifting one latch only.

 Do not apply excessive force to the latches, otherwise damage maybe

#### Using a Ring Adapter

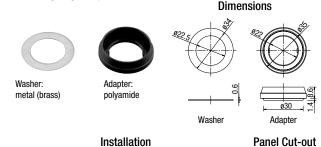
#### HW9Z-A25

Install the ring adapter between the HW series unit and panel. Make sure that the side with ridges face the panel.



#### Power Supplies HW9Z-A30

LED Illumination Controllers Controllers



Operator (example)

Washer Panel



ΤW

YW

ø16

Operator

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Flush Silhouette

# Replacement of Lens and Marking Plate

Adapter

#### Removing the Lens Unit

Locking Ring

Remove the lens unit (color lens, marking plate, and lens holder) by inserting a small flat screwdriver into the recess of the lens through the bezel. Knob on illuminated selector switches can be removed by tilting sideways. No tool is required.



#### **Removing the Lens**

Remove the lens by pushing the lens from the rear to disengage the latches between the lens and the lens holder, using a flat screwdriver as shown below. Marking plate can be removed after the lens is removed from the lens holder.



Note: The translucent filter in the lens holder cannot be removed because this filter is sealed to make the unit waterproof and oiltight.

Lens

Lens

Marking Plate

Marking Plate

Lens Holde

#### Installing

[For Round Lens]

#### Lens Marking Plate Lens Holder

- Place the marking plate on the lens holder with the anti-rotation projection engaged and press the lens onto the lens holder to engage the latches.
- 2. Place the marking plate in the correct orientation.

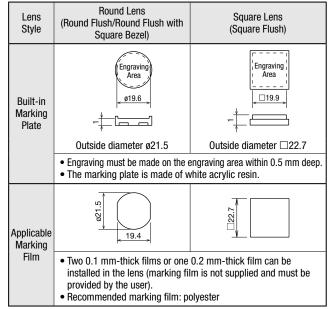
#### [For Square Lens]

#### Lens Marking Plate Lens Holder

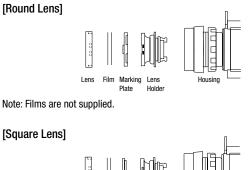
- 1. Place the marking plate on the lens holder and press the lens onto the lens holder to engage the latches.
- Place the marking plate in the correct orientation (note the directionality of marking plate).

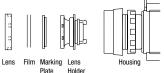
#### Marking

For HW series illuminated pushbuttons and pilot lights, legends and symbols can be engraved on the built-in marking plates, or printed film can be inserted under the lens for labeling purposes. Films are not supplied with illuminated pushbuttons, and may be provided by the user.



#### Insertion Order of Marking Plate and Film





Note: Films are not supplied. When inserting a film, make sure that the marking plate is installed with its uneven side facing the lens holder.

#### Nameplate

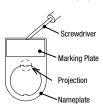
Mounting panel thickness is reduced by 1.5 mm when using a nameplate.

#### Installing a Marking Plate

Insert a marking plate tin the direction of the arrow (1), and press in as shown 2.

#### **Removing a Marking Plate**

Insert a flat screwdriver into the upper middle part of the marking plate and remove. When anti-rotation is not required, remove the projection from the nameplate using pliers.



Aarking Plate

Nameplate

0

#### **Replacing the Lens of Dual Pushbuttons** Removing

Remove the lens by inserting a small flat screwdriver into the recess of the lens through the bezel.



#### Installing

Install the lens in the recess between the buttons by pressing against the bezel.

#### Selector Switches

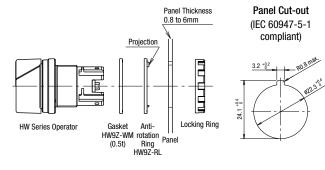
Turn the operator such as knob, lever, and key to each position accurately. Releasing halfway may cause the operator to return to the former position, or to get stuck between. On spring return two-way types, the center of operators may be misaligned slightly.

#### **Kev Selector Switches**

Insert the key completely before turning. Failure to do so may cause failures.

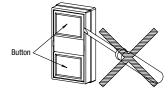
#### Anti-rotation Ring and Panel Cut-out

Align the TOP marking on the operator, TOP marking on the antirotation ring with the recess in the mounting panel.



#### **Dual Pushbutton Switches**

The pushbuttons cannot be removed or replaced. Do not attempt to remove using a flat screwdriver or pincers, otherwise the pushbuttons may be damaged.



#### Installing the Rubber Boot for Dual Pushbuttons

When using the HW7D pushbuttons in places where the pushbuttons are subject to water splash or an excessive amount of dust, make sure to use the HW9Z-D7D rubber boot (IP65) which is ordered separately. Recombs the rubber gasket pre-installed on the operator, and install the rubber boot from the front of buttons.

#### Notes for Installing the Rubber Boot

Remove the gasket from the operator, and install the rubber boot on the operator. Pull out the seals of the rubber boot and place them around the operator sleeve as shown. Make sure that the seals are not twisted or tucked inside and that the gasket does not remain. otherwise the normal waterproof and dustproof characteristics are not ensured.

① Remove the gasket



② Install the rubber boot on the pushbuttons Seals Rubber Boot HW9Z-D7D



Rubber Boot Installed



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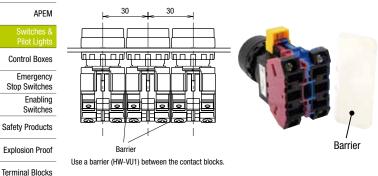
Flush Silhouette ø16 ø30 Miniature

Pilot Lights

HW	
TW	
YW	

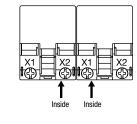
#### **Close Mounting**

When mounting the units closely in a horizontal row on 30 mm centers, use optional barriers to prevent interconnection between adjoining terminals, and to increase the creepage distance. The barriers can be attached simply by pressing them onto the sides of contact blocks.

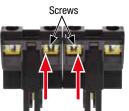


Note: Sufficient insulation distance cannot be obtained if barriers are not installed, or when other barriers such as HW-VG1 is used.

When using transformer type illuminated HW series of 240V AC maximum closely in a horizontal row on 30 mm centers, insert straight the solid wires or stranded wires into inside of the terminal screw on the transformer (see figure below) to prevent short circuit between adjoining terminals.



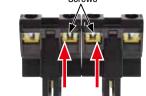
**Enlarged View of Terminal Part** 



ø16

ø30 Miniature Pilot Lights





When using transformer type pilot lights closely mounted in horizontal and vertical rows on 30 mm centers, keep the ambient temperature below 40°C.

### **Applicable Wiring**

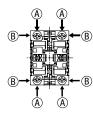
(1) Contact Block 0.3 to 3.5 mm<sup>2</sup> (solid wire Ø0.5 to 2.0 mm)

Pushbutton/illuminated pushbutton/dual pushbuttons (without pilot light), selector switch, illuminated selector switch, pushbutton selector, mono-lever switch

(A) and (B) show the wiring direction to the terminals.

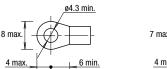
<Contact Block>

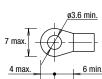
Terminal screws M3.5 (spring-up)



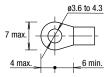
#### **Applicable Crimping Terminal**

Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks. Crimping terminal for (A)

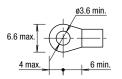




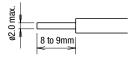
#### IP20 crimping terminal



#### Crimping terminal for (B) (IP20)



#### Solid wire



- . Strip the wire insulation 8 to 9 mm from the end.
- · Insert the wire until the insulation comes into contact with the terminal metal part.

#### (1)-1 IP20 Degree of Protection

The terminal of HW-U contact block has IP20 degree of protection. When IP20 is required for wiring, observe the followings. Make sure to insert the crimping terminal or wire to the terminal straight and fully.

When using a crimping terminal Use IP20 crimping terminals.

#### When using a solid wire

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully.

#### When using a stranded wire

Strip the wire insulation 8 to 9 mm from the end and insert the wire to the terminal fully. Make sure that the wires are not loosened.

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8 to 9mm

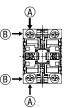
#### **Operating Instructions**

(2) Power Unit 0.3 to 2 mm<sup>2</sup> (solid wire Ø0.5 to 1.6 mm)

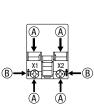
Illuminated pushbutton/illuminated selector switch (A) and (B) show the wiring direction to the terminals.

#### <Full Voltage Adapter>

Terminal screws M3.5 (spring-up)

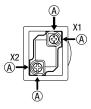


<Transformer Unit> 100/110V AC. 200/220V AC Terminal screws M3.5 (spring-up)



<DC-DC Convertor Unit/Transformer Unit>

110V DC, 380V AC minimum Terminal screws M3.5 (spring-up)



#### **Applicable Crimping Terminal**

Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

Crimping terminal for (A)

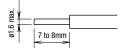
Crimping terminal for (B)



3.6 min.



#### Solid wire



 Strip the wire insulation 7 to 8 mm from the end.

6 min.

 Insert the wire until the insulation comes into contact with the terminal metal part.

Terminal cover is integrated in the full voltage adapter and transformer unit. Note that the connection terminal is not IP20.

(2) Pilot Light 0.3 to 2 mm<sup>2</sup> (solid wire Ø0.5 to 1.6 mm)

(Arrows show the wiring direction)

<Full Voltage Adapter> 6, 12, 24V AC/DC

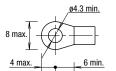
Terminal screws M3.5 (spring-up)



<Transformer, DC-DC Converter> 100/110V AC. 200/220V AC 110V DC, 380V AC minimum Terminal screws M3.5 (spring-up)

#### Applicable Crimping Terminal

Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.



#### Solid Wire

 Strip the wire insulation 8 to 9 mm from the end.

- Inset the wire until the insulation comes into contact with the terminal metal part.
- Terminal cover is integrated but not IP20.
- · When selecting mounting centers and crimping terminals, take sufficient insulation distance into consideration.

#### Cautions for Wiring

About DC-DC Converter Unit 1. Note the polarity for wiring when connecting to the DC-DC converter.

Terminal No. Polarity X1 Positive

- X2 Negative
- 2. Incandescent lamps cannot be used in DC-DC converter unit.
- 3. DC-DC converters are equipped with an electric circuit and noise may be heard inside the unit, which does not affect the performance of DC-DC converters.

#### **Recommended Tightening Torque** Number of Wires

Unit		Wire	Number of Wires	Recommended Tightening Torque	Terminal Screw	Flush Silhouette
	Orima	in a Terrational			SCIEW	ø16
	Crimp	ing Terminal	2	1.0 to 1.3		ø22
	Solid	ø0.5 to 1.6 mm (AWG14 to 22)	2	1.0 to 1.3		ø22 ø30
HW-U Contact	Wire	ø1.7 to 2.0 mm (AWG12)	1	1.2 to 1.3	M3.5	Ø30 
Block	Stranded	0.3 to 2.0 mm <sup>2</sup> (AWG14 to 22)	2	1.0 to 1.3		Pilot Lights
	Wire	2.1 to 3.5 mm <sup>2</sup> (AWG12)	1	1.2 to 1.3		
	Crimping Terminal					
Illuminated Unit	Solid Wire	ø0.5 to 1.6 mm (AWG14 to 22)	2	1.0 to 1.3	M3.5	HW TW
(*1)	Stranded Wire	0.3 to 2.0 mm <sup>2</sup> (AWG14 to 22)				YW
	Crimping Terminal					
Pilot Light	Solid Wire	ø0.5 to 1.6 mm (AWG14 to 22)	2	1.0 to 1.3 (M3.5)	M3.5	
	Stranded Wire	0.3 to 2.0 mm <sup>2</sup> (AWG14 to 22)				

\*1) Lamp terminal of illuminated pushbuttons, illuminated selector switches, dual pushbuttons with pilot lights

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