



## HW: The Best Engineered Switch in the World

### Key features include:

- Locking lever removable contact blocks
- Finger-safe IP20 contacts as standard, other terminal styles available
- Tamperproof construction
- All E-stops meet EN418 and are compliant with SEMI S2 standards
- Worldwide approvals
- Easy to assemble
- Available assembled or as sub-components
- Choice of black plastic or metallic front bezels
- Incandescent or LED illumination
- Transformer or full voltage
- Slow make double break self cleaning contacts

IDEC's HW switches are "The best engineered switch in the world" for a reason. Carrying the CE mark, UL, CSA, and TUV approvals, these switches are designed for use in almost any part of the world.

Complete with finger-safe contact blocks offering IP20 protection, these 7/8" (22mm) switches include illuminated and non-illuminated pushbuttons, pilot lights, selector switches, and emergency stop switches.

All switches also incorporate mechanically keyed safety locking levers, ensuring correct installation and maintaining safety in high-vibration applications.



File No. E68961



File No. LR92374



Registration No. R9551089 (E-stops)  
 Registration No. J9551458 (all other switches)  
 Registration No. J9650511 (Pilot Lights)

## Non-Illuminated Pushbuttons (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator + Button = Complete Part



### Part Numbers: Operators

Style		Plastic Bezel	Metal Bezel
Round Flush/Extended			
	Momentary	HW1B-M0	HW4B-M0
	Maintained	HW1B-A0	HW4B-A0
Ø 29mm Mushroom Ø 40mm Mushroom			
	Momentary	HW1B-M0L	HW4B-M0L
	Maintained	HW1B-A0L	HW4B-A0L
Ø 60mm Jumbo Mushroom			
	Momentary	HW1B-M5-①*	-
Square Flush Extended			
	Momentary	HW2B-M0	-
	Maintained	HW2B-A0	-



- In place of ①, specify the Button Color Code from table below.
- \*60mm mushroom operator includes non-removable button (available in red, black, green and yellow only).
- For nameplates and accessories, see page A-113.
- For dimensions, see page A-116.

#### ① Button Color Code

Color	Code	Color	Code
Black	B	White	W
Green	G	Yellow	Y
Red	R	Grey	N <sup>†</sup>
Blue	S		



- HW1B-M5 available only in black, red green and yellow.
- <sup>†</sup> Grey available for round flush only.

### Part Numbers: Contact Blocks

Style	1N0	1NC
Standard Fingersafe Contacts (IP20)	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
Spring-Up Terminal Contacts	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
Dummy Block	TW-DB	



- All assembled part numbers in catalog include standard (HW-F...) contacts.
- Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- Units with exposed screw terminals (HW-C...) must be ordered as sub-components.
- All contacts (including non-fingersafe versions) are UL, CSA, and IEC compliant and carry the CE mark.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



Use with notched panel cutout to prevent unit rotation.

### Part Numbers: Buttons

Style	Part Number
Round Flush	HW1A-B1-①
Round Extended	HW1A-B2-①
Ø 29mm Mushroom Cap	HW1A-B3-①
Ø 40mm Mushroom Cap	HW1A-B4-①
Square Flush	HW2A-B1-①
Square Extended	HW2A-B2-①

### Part Number: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CB2C



- Used to mount contact blocks to operator (first pair only).
- IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from inadvertently unlocking contacts.

## Emergency Stop Pushbuttons (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



### Part Numbers: Emergency Stop Operators

Style		Plastic	Metal
 Ø 29mm Head Pushlock Turn Reset		HW1B-V3R*	HW4B-V3R*
 Ø 40mm Head Pushlock Turn Reset	red	HW1B-V4R	HW4B-V4R
	yellow	HW1B-V4Y	HW4B-V4Y
 Ø 40mm Head EMO Pushlock Turn Reset		HW1B-V4R-EMO-2*	HW4B-V4R-EMO-2*
 Ø 40mm Head Push-Pull	red	HW1B-Y2R	HW4B-Y2R
	yellow	HW1B-Y2Y	HW4B-Y2Y
 Ø 40mm Head Pushlock Key Reset		HW1B-X4R*	HW4B-X4R*
 Ø 60mm Head Pushlock Turn Reset		HW1B-V5R	-

- 1. \*Available in red only.
- 2. All Emergency Stop Buttons are non-removable from the operator.

### Part Number: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CB2C

- 1. Used to mount contact blocks to operator (first pair only).
- 2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
 Standard Fingersafe (IP20)	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
 Spring-Up Terminal Contacts	HW-G10 HW-G10R (early make) HW-G10-MAU (gold contacts)	HW-G01 HW-G01R (late break) HW-G01-MAU (gold contacts)
 Exposed Screw Terminal Contacts	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
 Dummy Block	TW-DB	

- 1. All assembled part numbers in catalog include standard (HW-F..) contacts. (except unibody)
- 2. Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- 3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.
- 4. All contacts (including exposed screw) are UL, CSA, and IEC compliant and carry the CE mark.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

- Use with notched panel cutout to prevent unit rotation.

## Illuminated Pushbuttons (Sub-Assembled) con't



### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



Use with notched panel cutout to prevent unit rotation





### Part Numbers: Lamps

Type	Voltage	Part Number
LED 	6V AC/DC	LSTD-6②
	12V AC/DC	LSTD-1②
	24V AC/DC	LSTD-2②
	120V AC	LSTD-H2②
	240V AC	LSTD-M4②
Incandescent 	6.3V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24
	30V AC/DC	IS-30



- In place of ②, specify the LED Color Code from table on previous page.
- The LED contains a current-limiting resistor and reverse polarity protection diodes.





### Part Numbers: Lamp Circuit Components

Style	Description	Terminals	Part Number
	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
	For use with odd number of contacts.	Fingersafe	HW-DA1FB
		Exposed	HW-DA1B
		Spring Up	HW-GA1
	For use with even number of contacts.	Fingersafe	TW-DA1FB
		Exposed	TW-DA1B
	120VAC 240VAC 480VAC	Fingersafe	TW-F126B TW-F246B TW-F486B
	120V 240V 480V	Spring Up	HW-T126 HW-T246B HW-L486
	120V 240V 480V (6V secondary voltage)	Exposed	TW-T126B TW-T246B TW-T486B
DC-DC Converter	110VDC		HW-L16D



HW-GA1 "Dummy Block with full voltage adaptor" does not require the use of HW-LH3.

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20) 	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
Spring-Up Terminal Contacts 	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts 	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
Dummy Block 	TW-DB	



- All assembled part numbers in catalog include standard (HW-F...) contacts.
- Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CBL



- Used to mount contact blocks to operator (first pair only). Lamp holder is built-in.
- IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

## Selector Switches (Assembled)

### Part Numbers: 2-Position Selector Switches

Contact	Mounting	Operator Position		Maintained	Spring Return from Right
		L	R		
				<b>Part Number</b>	<b>Part Number</b>
1NO	1	0	X	HW <sup>Ⓢ</sup> S-2TF10	HW <sup>Ⓢ</sup> S-21TF10
1NO-1NC	1	0	X	HW <sup>Ⓢ</sup> S-2TF11	HW <sup>Ⓢ</sup> S-21TF11
	2	X	0		
2NO	1	0	X	HW <sup>Ⓢ</sup> S-2TF20	HW <sup>Ⓢ</sup> S-21TF20
	2	0	X		


**A**

Switches &amp; Pilot Devices

### Part Numbers: 3-Position Selector Switches

Contact	Mounting	Operator Position			Maintained	Spring Return from Right	Spring Return from Left	Spring Return Two-Way
		L	C	R				
					<b>Part Number</b>	<b>Part Number</b>	<b>Part Number</b>	<b>Part Number</b>
2NO	1	X	0	0	HW <sup>Ⓢ</sup> S-3TF20	HW <sup>Ⓢ</sup> S-31TF20	HW <sup>Ⓢ</sup> S-32TF20	HW <sup>Ⓢ</sup> S-33TF20
	2	0	0	X				
2NO-1NC	1	X	0	0	HW <sup>Ⓢ</sup> S-3JTF21N1	—	—	—
	2	0	0	X				
	3	0	X	0				
2NO-2NC	1	X	0	0	HW <sup>Ⓢ</sup> S-3TF22	HW <sup>Ⓢ</sup> S-31TF22	HW <sup>Ⓢ</sup> S-32TF22	HW <sup>Ⓢ</sup> S-33TF22
	2	0	0	X				
	3	0	X	X				
	4	X	X	0				

### Part Numbers: 4-Position Selector Switch

Contact	Mounting	Operator Position				Maintained Part Number
		1	2	3	4	
						<b>Part Number</b>
2NO-2NC	1	X	0	0	0	HW <sup>Ⓢ</sup> S-4TF22N3
	2	0	X	0	0	
	3	0	0	X	0	
	4	0	0	0	X	

### Part Numbers: 5-Position Selector Switch

Contact	Mounting	Operator Position					Maintained Part Number
		1	2	3	4	5	
							<b>Part Number</b>
2NO-2NC	1	X	0	0	0	0	HW <sup>Ⓢ</sup> S-5TF22N3
	2	0	X	0	0	0	
	3	0	0	0	X	0	
	4	0	0	0	0	X	



1. In place of <sup>Ⓢ</sup> enter 1 for plastic bezel or 4 for metal bezel.
2. Mounting refers to contact location on operator. See page A-105.
3. For nameplates, see page A-113.
4. Custom contact arrangements available. Contact IDEC for details.
5. Five position circuit cannot be made to make five independent contact closures.

## Selector Switches (Partial-Assemblies)

Contact Assembly + Operator = Complete Part



### Part Numbers: Operators

	No. of Positions	Description		Plastic Bezel	Metal Bezel
	2	Maintained	Standard Knob	HW1S-2T	HW4S-2T
			Lever Handle	HW1S-2L	HW4S-2L
		Spring Return from Right	Standard Knob	HW1S-21T	HW4S-21T
			Lever Handle	HW1S-21L	HW4S-21L
	3	Maintained (standard cam)	Standard Knob	HW1S-3T*	HW4S-3T*
			Lever Handle	HW1S-3L	HW4S-3L
		Maintained (S cam)	Standard Knob	HW1S-3ST*	HW4S-3ST*
		Maintained (J cam)	Standard Knob	HW1S-3JT*	HW4S-3JT*
		Spring Return from Right	Standard Knob	HW1S-31T	HW4S-31T
			Lever Handle	HW1S-31L	HW4S-31L
		Spring Return from Left	Standard Knob	HW1S-32T	HW4S-32T
			Lever Handle	HW1S-32L	HW4S-32L
	2-Way Spring Return	Standard Knob	HW1S-33T	HW4S-33T	
		Lever Handle	HW1S-33L	HW4S-33L	
4	Maintained	Standard Knob	HW1S-4T	HW4S-4T	
		Lever Handle	HW1S-4L	HW4S-4L	
5	Maintained	Standard Knob	HW1S-5T	HW4S-5T	
		Lever Handle	HW1S-5L	HW4S-5L	



1. Knob operator includes knob.
2. \* Three position operator is available with three different cams.
3. Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
4. For details of determining which cam to use, see page A-102.

### Part Numbers: Contact Assemblies

Style	Contacts	Part Number
Standard Fingersafe Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CBF10 HW-CBF01 HW-CBF11 HW-CBF20 HW-CBF02 HW-CBF22
Spring Up Terminal Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CB10 HW-CB01 HW-CB11 HW-CB20 HW-CB02 HW-CB22



## Selector Switches (Sub-Assembled)

Contact Blocks + Adaptor and Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



### Part Numbers: Operators

No. of Positions	Description		Plastic Bezel	Metal Bezel
2	Maintained	Standard Knob	HW1S-2T	HW4S-2T
		Lever Handle	HW1S-2	HW4S-2
	Spring Return from Right	Standard Knob	HW1S-21T	HW4S-21T
		Lever Handle	HW1S-21	HW4S-21
3	Maintained (standard cam)	Standard Knob	HW1S-3T*	HW4S-3T*
		Lever Handle	HW1S-3*	HW4S-3*
	Maintained (S cam)	Standard Knob	HW1S-3ST*	HW4S-3ST*
	Maintained (J cam)	Standard Knob	HW1S-3JT*	HW4S-3JT*
	Spring Return from Right	Standard Knob	HW1S-31T	HW4S-31T
		Lever Handle	HW1S-31	HW4S-31
	Spring Return from Left	Standard Knob	HW1S-32T	HW4S-32T
		Lever Handle	HW1S-32	HW4S-32
	2-Way Spring Return	Standard Knob	HW1S-33T	HW4S-33T
		Lever Handle	HW1S-33	HW4S-33
4	Maintained	Standard Knob	HW1S-4T	HW4S-4T
		Lever Handle	HW1S-4	HW4S-4
5	Maintained	Standard Knob	HW1S-5T	HW4S-5T
		Lever Handle	HW1S-5	HW4S-5



- Knob operator includes knob.
- Lever operators require lever and insert to be ordered separately.
- \* Three position operator is available with three different cams.
- Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
- For details of determining which cam to use, see page A-102.

### Part Numbers: Levers and Inserts

Style	Part Number
Lever	ASWHHL-①
Lever Color Insert	TW-HC1-①

#### ① Handle/Insert Color Code

Color	Code
Black*	B
Blue	S
Green	G
Red	R
Yellow	Y
White†	W

\* Lever color inserts not available in black.  
 † Knob and lever not available in white.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



- Use with notched panel cutout to prevent unit rotation.
- Not required when using HW series nameplates See page A-113.

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Appearance	Part Number
	HW-CB2C



- Used to mount contact blocks to operator (first pair only).
- IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20)	HW-F10	HW-F01
	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts	HW-G10	HW-G01
	HW-G10R (early make)	HW-G01R (late break)
Exposed Screw Terminal Contacts	HW-C10	HW-C01
	HW-C10R (early make)	HW-C01R (late break)
Dummy Block	TW-DB	



- All assembled part numbers in catalog include standard (HW-F...) contacts.
- Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

## Key Switches (Assembled)



Switches & Pilot Devices



### Part Numbers: 2-Position Key Switches

		Operator Position		Part Number	
				Maintained	Spring Return from Right
Contact	Mounting	L	R		
1NO	1	0	X	HW <sup>Ⓢ</sup> K-2AF10	HW <sup>Ⓢ</sup> K-21BF10
1NO-1NC	1	0	X	HW <sup>Ⓢ</sup> K-2AF11	HW <sup>Ⓢ</sup> K-21BF11
	2	X	0		
2NO	1	0	X	HW <sup>Ⓢ</sup> K-2AF20	HW <sup>Ⓢ</sup> K-21BF20
	2	0	X		

### Key Removable Option Codes

Code	Description
A	Key retained in NO position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
H	Key retained left and center (3 position only)



For more information on these options, contact your IDEC representative.

### Part Numbers: 3-Position Key Switches

		Operator Position			Part Number			
					Maintained	Spring Return from Right	Spring Return from Left	Spring Return from Left & Right
Contact	Mounting	L	C	R				
2NO	1	X	0	0	HW <sup>Ⓢ</sup> K-3AF20	HW <sup>Ⓢ</sup> K-31BF20	HW <sup>Ⓢ</sup> K-32CF20	HW <sup>Ⓢ</sup> K-33DF20
	2	0	0	X				
2NO-2NC	1	X	0	0	HW <sup>Ⓢ</sup> K-3AF22	HW <sup>Ⓢ</sup> K-31BF22	HW <sup>Ⓢ</sup> K-32CF22	HW <sup>Ⓢ</sup> K-33DF22
	2	0	0	X				
	3	0	X	X				
	4	X	X	0				



- In place of <sup>Ⓢ</sup> enter 1 for plastic bezel or 4 for metal bezel.
- Key is removable in all maintained positions. Other key removable options available.
- Two keys are supplied with all switches.
- All standard operators are keyed alike (contact IDEC for special keys).
- For nameplates, see page A-113.
- Custom contact arrangements available, contact IDEC for details.
- Mounting refers to contact location on operator. For more information, see page A-118.





## Key Switches (Partial-Assemblies)

**Contact Assembly + Operator = Complete Part**





### Part Numbers: Operators

	# of Positions	Description	Plastic Bezel	Metal Bezel
	2	Maintained	HW1K-2A	HW4K-2A
		Maintained, key remove left only	HW1K-2B	HW4K-2B
		Spring from Right	HW1K-21B	HW4K-21B
	3	Maintained, Standard Cam	HW1K-3A	HW4K-3A
		Maintained, Cam A	HW1K-3SA	HW4K-3SA
		Maintained, Cam S	HW1K-3JA	HW4K-3JA
		Spring Return from Right	HW1K-31B	HW4K-31B
		Spring Return from Left	HW1K-32C	HW4K-32C
		Two-Way Spring Return	HW1K-33D	HW4K-33D



- Operator includes two keys.
- All standard operators are keyed alike (contact IDEC for special keys).
- Other key removable options available. See "Other Key Removable Option Codes" on next page.

### Part Numbers: Contact Assemblies

Style	Contacts	Part Number
Standard Fingersafe Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CBF10 HW-CBF01 HW-CBF11 HW-CBF20 HW-CBF02 HW-CBF22
Spring Up Terminal Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CB10 HW-CB01 HW-CB11 HW-CB20 HW-CB02 HW-CB22

### Key Removable Option Codes

Code	Description
A	Key retained in NO position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
H	Key retained left and center (3 position only)



For more information on these options, contact your IDEC representative.

## Key Switches (Sub-Assembled)

Contact Blocks + Adaptor & Safety Lever Lock + Anti-Rotation Ring + Operator = Complete Part



Switches & Pilot Devices

### Part Numbers: Operators

# of Positions	Description	Plastic Bezel	Metal Bezel
2	Maintained	HW1K-2A	HW4K-2A
	Maintained, key remove left only	HW1K-2B	HW4K-2B
	Spring from Right	HW1K-21B	HW4K-21B
3	Maintained, Standard Cam	HW1K-3A	HW4K-3A
	Maintained, Cam S	HW1K-3SA	HW4K-3SA
	Maintained, Cam J	HW1K-3JA	HW4K-3JA
	Spring Return from Right	HW1K-31B	HW4K-31B
	Spring Return from Left	HW1K-32C	HW4K-32C
	Two-Way Spring Return	HW1K-33D	HW4K-33D

- 1. Operator includes two keys.
- 2. All standard operators are keyed alike (contact IDEC for special keys).
- 3. Other key removable options available. See table below.

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CB2C

- 1. Used to mount contact blocks to operator (first pair only).
- 2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Key Removable Option Codes

Code	Description
A	Key retained in NO position (removable in all positions)
B	Key retained in right position only
C	Key retained in left position only
D	Key retained in left and right (3 position only)
E	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
H	Key retained left and center (3 position only)

For more information on these options, contact your IDEC representative.

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20)		
	HW-F10	HW-F01
	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts		
	HW-G10	HW-G01
	HW-G10R (early make)	HW-G01R (late break)
Exposed Screw Terminal Contacts		
	HW-C10	HW-C01
	HW-C10R (early make)	HW-C01R (late break)
Dummy Block		
	TW-DB	

- 1. All assembled part numbers in catalog include standard (HW-F...) contacts.
- 2. Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- 3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

- 1. Use with notched panel cutout to prevent unit rotation (not included with assembled units).
- 2. Not required when using HW series nameplates See page A-113.

## Illuminated Selector Switches (Sub-Assembled)

Transformer \* + Contact Blocks + Lead Holder + Adaptor + Lamp + Anti-Rotation + Operator + Illuminated Knob = Complete Part



\* not applicable for full voltage units

### Part Numbers: Operators

Appearance	# of Positions	Description	Plastic Bezel	Metal Bezel
	2	Maintained	HW1F-2	HW4F-2
		Spring return from right	HW1F-21	HW4F-21
	3	Maintained	HW1F-3	HW4F-3
		Spring return from right	HW1F-31	HW4F-31
		Spring return from left	HW1F-32	HW4F-32
		Two-way spring return	HW1F-33	HW4F-33



Illuminated knobs must be ordered separately.

### Part Numbers: Illuminated Knob

Appearance	Description	Part Number
	Amber	HW9Z-FDY-A
	Green	HW9Z-FDY-G
	Red	HW9Z-FDY-R
	Blue	HW9Z-FDY-S
	White	HW9Z-FDY-W
	Yellow	HW9Z-FDY-Y

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
	HW-CBL



- Used to mount contact blocks to operator (first pair only). Lamp holder is built-in.
- IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Part Numbers: Contact Blocks



Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20) 	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
Spring-Up Terminal Contacts 	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts 	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
Dummy Block 	TW-DB	



- All assembled part numbers in catalog include standard (HW-F...) contacts.
- Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

## Illuminated Selector Switches (Sub- Assembled) con't




### Part Numbers: Lamps

Type	Voltage	Part Number
LED 	6V AC/DC	LSTD-6 <sup>②</sup>
	12V AC/DC	LSTD-1 <sup>②</sup>
	24V AC/DC	LSTD-2 <sup>②</sup>
	120V AC	LSTD-H2 <sup>②</sup>
	240V AC	LSTD-M4 <sup>②</sup>
Incandescent 	6.3V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24



1. In place of <sup>②</sup>, specify the LED Color Code from table at right.
2. The LED contains a current-limiting resistor and reverse polarity protection diodes.


### Part Numbers: Lamp Circuit Components

Style	Description	Terminals	Part Number
Lead Holder 	For use with HW-CBL on all illuminated pushbutton units. One required for each deck (pair) of contacts.		HW-LH3
Dummy Block with Full Voltage Adaptor 	For use with odd number of contacts.	Fingersafe	HW-DA1FB
		Exposed	HW-DA1B
		Spring Up	HW-GA1
Full Voltage Adaptor 	For use with even number of contacts.	Fingersafe	TW-DA1FB
		Exposed	TW-DA1B



- HW-GA1 "Dummy Block with full voltage adaptor" does not require the use of HW-LH3.

### Part Numbers: Transformer Unit

Style	Voltage	Part Number
Fingersafe	120V AC 240V AC 480V AC	TW-F126B TW-F246B TW-F486B
Spring Up	 120V AC 240V AC 480V AC	HW-T126 HW-T246 HW-L486
(6V secondary voltage)		
DC-DC Converter	110VDC	HW-L16D

### ② LED Color Code

Color	Code
Amber	A
Green	G
Red	R
Blue	S
White	W
Yellow	Y

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



1. Use with notched panel cutout to prevent unit rotation.
2. Not required when using HW series nameplates See page A-113.

## Custom Selector Switch Building Guide

To build a custom selector switch, follow these steps.

**Step 1: How many positions of the switch are needed?**

**A**

# of positions  
(2, 3, 4, 5)

**Step 2: How many contacts should there be?**

# of isolated contacts  
(maximum 6)

**Step 3: Fill in the Truth Table**

(X = closed, 0 = open)

		Knob Position				
		1	2	3	4	5
C o n t a c t s	1					
	2					
	3					
	4					
	5					
	6					

**Step 4: If building a 2, 4, or 5 position selector, skip this step.** (2, 4, 5 position selectors have only one cam)

**If building a 3 position selector, determine appropriate cam as follows:**

Look at Row 1 from above table and locate an identical row in the operator truth tables (See next page).

Repeat for all rows. Find one operator that contains all rows from above table.

Record the operator cam version.

Operator CAM Version  
(blank, S, J for 3 position)

**Step 5: Build by placing appropriate contact in appropriate mounting position for each desired row on operator cam truth table. "L" and "R" refer to mounting on left or right side of operator as viewed from the front of the panel.**

**Caution: Before putting any custom selector switch into use, it should be tested using an ohmmeter.**



For Operator Truth Tables, see next page.

## Operator Truth Tables

Use the following tables to build custom selector switches.

### 2 Position Selector Switches

HW1S-2T  
HW1K-2\*  
HW1F-2

Contact	Mounting Position	Operator Position	
		Left	Right
HW-F10 (NO)	L	0	X
	R	0	X
HW-F01 (NC)	L	X	0
	R	X	0
HW-F10R NO-(EM)	L	0	X
	R	0	X
HW-F01R NC-(LB)	L	X	0
	R	X	0



1. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).
2. \* for key removable code (see page A-96).

### 3 Position Selector Switches

HW1S-3T  
HW1K-3\*  
HW1F-3

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	X	X
	R	X	X	0
HW-F10R NO-(EM)	L	X	0	0
	R	0	0	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3T is identified by white plungers on the operator.
2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).
3. \* for key removable code (see page A-96).

HW1S-3ST  
HW1K-3S\*

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	0	X
	R	X	0	0
HW-F10R NO-(EM)	L	X	X	0
	R	0	X	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3ST is identified by red plungers on the operator.
2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).
3. \* for key removable code (see page A-96).

HW1S-3JT  
HW1K-3J\*

Contact	Mounting Position	Operator Position		
		Left	Center	Right
HW-F10 (NO)	L	X	0	0
	R	0	0	X
HW-F01 (NC)	L	0	X	0
	R	0	X	0
HW-F10R NO-(EM)	L	X	0	X
	R	X	0	X
HW-F01R NC-(LB)	L	0	X	X
	R	X	X	0



1. HW1S-3JT is identified by black plungers on the operator.
2. Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).
3. \* for key removable code (see page A-96).



**Operator Truth Tables con't**

## 4 Position Selector Switches

Contact	Mounting Position	Operator Position			
		1	2	3	4
HW-F10 (NO)	L	X	0	0	0
	R	0	0	0	X
HW-F01 (NC)	L	0	0	X	0
	R	0	X	0	0
HW-F10R NO-(EM)	L	X	X	0	X
	R	X	0	X	X
HW-F01R NC-(LB)	L	0	X	X	X
	R	X	X	X	0

HW1S-4T

## 5 Position Selector Switches

Contact	Mounting Position	Operator Position				
		1	2	3	4	5
HW-F10 (NO)	L	X	0	0	0	0
	R	0	0	0	0	X
HW-F01 (NC)	L	0	0	0	X	0
	R	0	X	0	0	0
HW-F10R NO-(EM)	L	X	X	X	0	X
	R	X	0	X	X	X
HW-F01R NC-(LB)	L	0	X	X	X	X
	R	X	X	X	X	0

HW1S-5T



Mounting position indicates which side of operator each contact should be mounted (as viewed from the front of the panel).



Switches & Pilot Devices

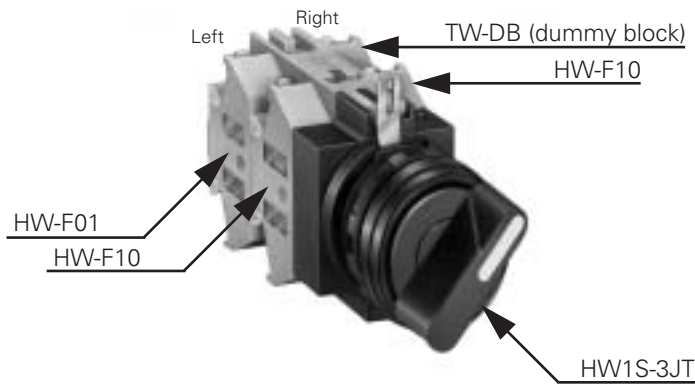
**Custom Selector Switch Building Examples**

### Example 1: 3 Position, Maintained Selector Switch with 3 Contacts

Determine which operator is capable of producing all the desired contact actions.

	Knob Position			Operator		
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT
<b>Contact 1</b>	0	0	X	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right
<b>Contact 2</b>	0	X	0	Not possible	Not possible	Possible with HW-F01 mounted on left or right
<b>Contact 3</b>	X	0	0	Possible with HW-F10 mounted on left	Possible with HW-F10 mounted on left	Possible with HW-F10 mounted on left

The only operator in this example that will produce all the desired contact actions is HW1S-3JT. Assemble as follows:

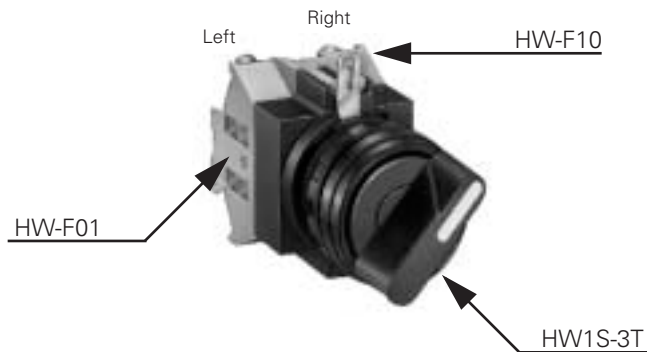


### Example 2: 3 Position, Maintained Selector Switch with 2 Contacts

Determine which operator is capable of producing all the desired contact actions.

	Knob Position			Operator		
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT
<b>Contact 1</b>	0	0	X	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right
<b>Contact 2</b>	0	X	X	Possible with HW-F01 mounted on left	Possible with HW-F10R mounted on right or HW-F01R mounted on left	Not possible

This arrangement is possible with either the HW1S-3T or HW1S-3ST operator. It is preferred to use the HW1S-3T as this requires only the standard contacts (HW-F10 and HW-F01 and not the early make (HW-F10R) or late break (HW-F01R) contacts). Assemble as follows:



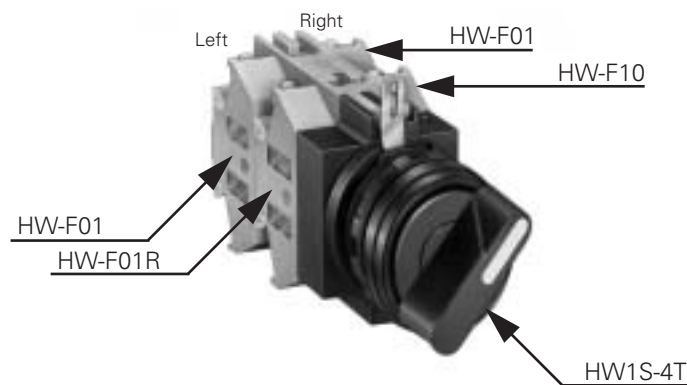
## Custom Selector Switch Building Examples con't

### Example 3: 4 Position Selector Switch with 4 Contacts

Determine where the contact will be mounted.

	Knob Position				Operator
	1	2	3	4	HW1S-4T
<b>Contact 1</b>	0	X	0	0	HW-F01 mounted on right
<b>Contact 2</b>	0	0	X	0	HW-F01 mounted on left
<b>Contact 3</b>	0	0	0	X	HW-F10 mounted on right
<b>Contact 4</b>	0	X	X	X	HW-F01R mounted on left

Assemble as follows:

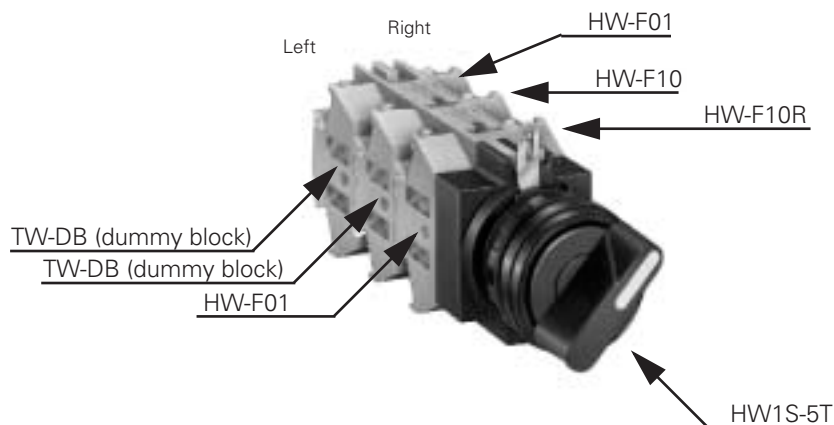


### Example 4: 5 Position Selector Switch with 4 Contacts

Determine where the contact will be mounted.

	Knob Position					Operator
	1	2	3	4	5	HW1S-5T
<b>Contact 1</b>	0	X	0	0	0	HW-F01 mounted on right
<b>Contact 2</b>	0	0	0	X	0	HW-F01 mounted on left
<b>Contact 3</b>	0	0	0	0	X	HW-F10 mounted on right
<b>Contact 4</b>	X	0	X	X	X	HW-F10R mounted on right

Assembled as follows:





## Mono Lever Switches (Sub-Assembled)

Contact Blocks + Mounting Adaptor + Anti-Rotation Ring + Operator = Complete Part



### Part Numbers: Operators

Appearance	# of Positions	Description	Part Number
	2	Maintained Up/Down	HW1M-1010
		Spring return Up/Down	HW1M-2020
		Maintained Left/Right	HW1M-0101
		Spring return Left/Right	HW1M-0202
	4	Maintained, 4 position	HW1M-1111
		Spring return, 4 position	HW1M-2222
	2	Maintained Up/Down	HW1M-L1010
		Spring return Up/Down	HW1M-L2020
		Maintained Left/Right	HW1M-L0101
		Spring return Left/Right	HW1M-L0202
	4	Maintained, 4 position	HW1M-L1111
		Spring return, 4 position	HW1M-L2222

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Appearance	Part Number
	HW-CB2C

- 1. Used to mount contact blocks to operator (first pair only).
- 2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL

- 1. Use with notched panel cutout to prevent unit rotation.
- 2. Not required when using HW series nameplates See page A-113.

### Part Numbers: Replacement Parts

Item	Part Number
Black Cap 	HW9Z-CPM
Boot 	HW9Z-BLM (fits standard type operator only)

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20) 	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
Spring-Up Terminal Contacts 	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts 	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
Dummy Block 	TW-DB	

- 1. All assembled part numbers in catalog include standard (HW-F...) contacts.
- 2. Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- 3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

## Pushbutton Selectors (Assembled)

### Part Numbers: 2-Position Pushbutton Selectors

Contacts	Mounting		Operator Position				Part Number
			Left		Right		
			Normal	Depressed	Normal	Depressed	
2NO	1	HW-F10	0	X	0	0	HW1R-2DF20-①
	2	HW-F10	0	0	0	X	
2NO-2NC	1	HW-F10	0	X	0	0	HW1R-2DF22N1-①
	2	HW-F10	0	0	0	X	
	3	HW-F01	X	0	X	X	
	4	HW-F01	X	X	X	0	
2NO-2NC	1	HW-F10	0	X	0	0	HW1R-2EF22N1-①
	2	HW-F10	0	0	0	X	
	3	HW-F01	0	0	X	X	
	4	HW-F01	X	X	0	0	
2NO-2NC	1	HW-F10	0	0	0	X	HW1R-2FF22N1-①
	2	HW-F10	0	X	0	0	
	3	HW-F01	0	0	X	0	
	4	HW-F01	X	0	0	0	



1. Available only with momentary pushbutton and maintained selector.
2. In place of ①, specify the button color code from table below
3. Other contact arrangements available. Contact IDEC for details.
4. All assembled parts use flush buttons.
5. **Normal** position refers to the button flush with the selector ring.
6. **Depressed** position refers to the button being pushed in.

#### ① Button Color Code

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y
Grey	N



**Pushbutton Selectors (Partial-Assemblies)**

**Contact Assembly + Operator/Button = Complete Part**



**Switches & Pilot Devices**

**Part Numbers: Operators**

Appearance	Description	Part Number
	Cam D	HW1R-2D-①
	Cam E	HW1R-2E-①
	Cam F	HW1R-2F-①



*In place of ① specify Button Color Code.*

**Part Numbers: Contact Assemblies**

Style	Contacts	Part Number
Standard Fingersafe Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CBF10 HW-CBF01 HW-CBF11 HW-CBF20 HW-CBF02 HW-CBF22
Spring Up Terminal Contacts 	1NO 1NC 1NO/1NC 2NO 2NC 2NO/2NC	HW-CB10 HW-CB01 HW-CB11 HW-CB20 HW-CB02 HW-CB22

**① Button Color Code**

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y
Grey	N

## Pushbutton Selectors (Sub-Assembled)

**A**  
 Switches & Pilot Devices


### Part Numbers: Operators

Appearance	Description	Part Number
	Cam D	HW1R-2D
	Cam E	HW1R-2E
	Cam F	HW1R-2F

### Part Numbers: Buttons

Description	Part Number
Round Flush 	HW1A-B1-①



In place of ① specify Button Color Code.

### Part Numbers: Anti-Rotation Ring

Appearance	Part Number
	HW9Z-RL



1. Use with notched panel cutout to prevent unit rotation.
2. Not required when using HW series nameplates See page A-113.

### Part Numbers: Contact Block Mounting Adaptor (safety lever lock included)

Appearance	Part Number
	HW-CB2C



1. Used to mount contact blocks to operator (first pair only).
2. IDEC strongly recommends using the safety lever lock (included) to prevent heavy vibration or maintenance personnel from unlocking contacts.

### Part Numbers: Contact Blocks

Description	Part Number	
	1NO	1NC
Standard Fingersafe (IP20) 	HW-F10 HW-F10R (early make)	HW-F01 HW-F01R (late break)
Spring-Up Terminal Contacts 	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts 	HW-C10 HW-C10R (early make)	HW-C01 HW-C01R (late break)
Dummy Block 	TW-DB	



1. All assembled part numbers in catalog include standard (HW-F...) contacts.
2. Assembled units with spring-up terminals (HW-G...) can be ordered by removing an "F" from the part number (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

### ① Button Color Code

Color	Code
Black	B
Green	G
Red	R
Blue	S
White	W
Yellow	Y
Grey	N