HW Series: 22mm

### **HW Series** — 22mm IEC Style Global Pushbuttons



# 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.









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 Anti-Rotation + Operator + Button = Complete Part

Lever Lock + Ring













Part	Numb	ers.	Operators

Part Numbers: Operators				
Style		Plastic Bezel	Metal Bezel	
Round Flush/Extended	Momentary	HW1B-M0	HW4B-MO	
6	Maintained	HW1B-A0	HW4B-A0	
Ø 29mm Mushroom Ø 40mm Mushroom	Momentary	HW1B-M0L	HW4B-M0L	
6	Maintained	HW1B-A0L	HW4B-AOL	
Ø 60mm Jumbo Mush- room	Momentary	HW1B-M5-①*	-	
Square Flush Extended	Momentary	HW2B-M0	-	
0	Maintained	HW2B-A0	-	



- 1. In place of ①, specify the Button Color Code from table below.
- 2. \*60mm mushroom operator includes non-removable button (available in red, black, green and yellow only).
- 3. For nameplates and accessories, see page A-113.
- 4. For dimensions, see page A-116.

#### **1) Button Color Code**

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



- 1. HW1B-M5 available only in black, red green and yellow.
- 2. †Grey available for round flush only.

#### **Part Numbers: Contact Blocks**

Style	1NO	1NC
Standard Fingersafe Contacts (IP20)		
400 - 4000	HW-F10	HW-F01
量週	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts		
	HW-G10 HW-G10R (early make)	HW-G01 HW-G01R (late break)
Exposed Screw Terminal Contacts		
1000	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.
- 4. 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
0	HW9Z-RL
Ilse with notched no	nal autout



Use with notched panel cutous 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
	Ø40mm Mushroom Cap	HW1A-B4-①
	Square Flush	HW2A-B1-①
?	Square Extended	HW2A-B2-①
	David Niversky over O	

#### Part Number: Contact Block Mounting Adaptor

(safety lever lock included)

Style	Part Number
<b>6</b> =	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 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			
<b>6</b>		HW1B-V3R*	HW4B-V3R*
Ø 40mm Head Pushlock Turn Reset	red	HW1B-V4R	HW4B-V4R
40	yellow	HW1B-V4Y	HW4B-V4Y
Ø 40mm Head EMO Pushlock Turn F	Reset		
ENO ENO		HW1B-V4R-EM0-2*	HW4B-V4R-EM0-2*
Ø 40mm Head Push-Pull	red	HW1B-Y2R	HW4B-Y2R
<b>40</b>	yellow	HW1B-Y2Y	HW4B-Y2Y
Ø 40mm Head Pushlock Key Reset			
10 0		HW1B-X4R*	HW4B-X4R*
Ø 60mm Head Pushlock Turn Reset			
1		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



 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)		
(E)4-(M)	HW-F10	HW-F01
<b>建</b>	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts	HW-G10	HW-G01
10 10	HW-G10R (early make)	HW-G01R (late break)
	HW-G10-MAU (gold con- tacts)	HW-G01-MAU (gold con- tacts)
Exposed Screw Terminal Contacts		
WALL TO A	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. (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
0	HW9Z-RL
AAA II aa wiidh madah ad manal and	



Use with notched panel cutout to prevent unit rotation.

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

#### **Part Numbers: Anti-Kotation King**

Appearance Part Number

HW9Z-RL



Switches & Pilot Devices

Use with notched panel cutout to prevent unit rotation

**Part Numbers: Lamps** 

Туре	Voltage	Part Number
LED	6V AC/DC	LSTD-6@
LLD	12V AC/DC	LSTD-1@
100	24V AC/DC	LSTD-2②
1	120V AC	LSTD-H2@
	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.
- 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-CBI illuminated pushbutto One required for each (pair) of contacts.	HW-LH3	
Dummy Block with Full Voltage Adaptor		Fingersafe	HW-DA1FB
1 Tellago / Laupto.	For use with odd number of contacts.	Exposed	HW-DA1B
興		Spring Up	HW-GA1
Full Voltage Adaptor	For use with even	Fingersafe	TW-DA1FB
	number of contacts.	Exposed	TW-DA1B
Transformer Unit	120VAC 240VAC 480VAC	Fingersafe	TW-F126B TW-F246B TW-F486B
133	120V 240V 480V	Spring Up	HW-T126 HW-T246B HW-L486
(6V secondary voltage)	120V 240V 480V	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)				
400	HW-F10	HWV-F01		
<b>季</b> 週	HW-F10R (early make)	HW-F01R (late break)		
Spring-Up Terminal Contacts	HW-G10	HW-G01		
11	HW-G10R (early make)	HW-G01R (late break)		
Exposed Screw Terminal Contacts				
THE THE	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: Contact Block Mounting Adaptor (safety lever lock included)

Style	Part Number
1	HW-CBL



- 1. 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

		Operator Position		Operator Position Maintained		Spring Return from Right
Contact	Mounting	L ×	R A	L\	LR	
ပိ	Ĕ			Part Number	Part Number	
1NO	1	0	Х	HW®S-2TF10	HW®S-21TF10	
1NO-	1	0	Х	HW®S-2TF11	HW®S-21TF11	
1NC	2	X	0	1100@3-21111	3-211111	
2NO	1	0	Х	HW®S-2TF20	HW®S-21TF20	
2.10	2	0	Х	1100 @ 5 211 20	11110 0 211120	



#### Part Numbers: 3-Position Selector Switches

rait Numbers. 3-rosition Selector Switches									
		Opera	ator Po	sition	Maintained Spring Retur from Right		Spring Return from Left	Spring Return Two-Way	
Contact	Mounting	L ×	c ↑	R #	C R	L C R	L C	$L \stackrel{C}{\longleftrightarrow}_R$	
ప	Ž				Part Number	Part Number	Part Number	Part Number	
2NO	1	Х	0	0	HW®S-3TF20	HW®S-31TF20	HW®S-32TF20	HW®S-33TF20	
2110	2	0	0	Х	1100 95 511 20	1100 9 311120	1100 9 321120	1100 90 331120	
2NO	1	Х	0	0					
2NO- 1NC	2	0	0	Х	HW®S-3JTF21N1	_	_	_	
	3	0	Χ	0					
	1	Х	0	0					
2NO-	2	0	0	Х	HW®S-3TF22	HW®S-31TF22	HW®S-32TF22	HW®S-33TF22	
2NC	3	0	Χ	X	1111 @ 3 311 22	1111000011122	1111 @ 0 021122	35 001122	
	4	Х	Χ	0					

#### Part Numbers: 4-Position Selector Switch

Operator Position						Maintained Part Number
Contact	Mounting	1	2	3	4	1 2 3 4
	1	Х	0	0	0	
2NO-	2 0 X 0 0 HW®S-4	HW®S-4TF22N3				
2NC	3	0	0	Х	0	1100@3-41122103
	4	0	0	0	Х	

#### Part Numbers: 5-Position Selector Switch

		Maintained Part Number					
Contact	Mounting	1	2	3	4	5	1 2 3 4 5
	1	Х	0	0	0	0	
2NO-	2	0	Х	0	0	0	HW®S-5TF22N3
2NC	3	0	0	0	Х	0	1100 93-311 22103
	4	0	0	0	0	Х	



- 1. In place of ⑤ 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



#### Selector Switches (Partial-Assemblies)

Contact Assembly + Operator = Complete Part



art Numbers: Operators					
	No. of Positions	Description		Plastic Bezel	Metal Bezel
		Maintained	Standard Knob	HW1S-2T	HW4S-2T
	2	Maintaineu	Lever Handle	HW1S-2L	HW4S-2L
	2	Spring Return	Standard Knob	HW1S-21T	HW4S-21T
		from Right	Lever Handle	HW1S-21L	HW4S-21L
		Maintained	Standard Knob	HW1S-3T*	HW4S-3T*
		(standard cam)	Lever Handle	HW1S-3L	HW4S-3L
		Maintained (S cam)	Standard Knob	HW1S-3ST*	HW4S-3ST*
	3	Maintained (J cam)	Standard Knob	HW1S-3JT*	HW4S-3JT*
		Spring Return from Right	Standard Knob	HW1S-31T	HW4S-31T
1007	3		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
	4	Maintained	Lever Handle	HW1S-4L	HW4S-4L
	F	Maintained	Standard Knob	HW1S-5T	HW4S-5T
	5	iviaiiitaiiieu	Lever Handle	HW1S-5L	HW4S-5L



- ${\it 1.\ Knob\ operator\ includes\ knob}.$
- $2.\ * \textit{Three position operator is available with three different cams}.$
- 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	1N0 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)**

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











#### Part Numbers: Operators

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



- 1. Knob operator includes knob.
- 2. Lever operators require lever and insert to be ordered separately.
- 3. \* Three position operator is available with three different cams.
- 4. Operator cams are color coded (white=standard cam, red=S cam, black =J cam).
- 5. 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	1	TW-HC1-①

#### ① Handle/Insert **Color Code**

Color	Code
Black*	В
Blue	S
Green	G
Red	R
Yellow	Υ
White <sup>†</sup>	W

<sup>\*</sup> Lever color inserts not available in black.

† Knob and lever not

#### 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 Numbe		
	1NO	1NC	
Standard Fingersafe (IP20)			
里道	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
  - (Ex. HW1B-M1F11-R becomes HW1B-M111-R).
- 3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

available in white.



#### **Key Switches (Assembled)**





Part Numbers: 2-Position Key Switches

Operator Position		Part Number			
		Operator	FUSILIUII	Maintained	Spring Return from Right
Contact	Mounting	L ×	R *	L\	L\R
1NO	1	0	Х	HW®K-2AF10	HW®K-21BF10
1NO- 1NC	1 2	0 X	X 0	HW®K-2AF11	HW®K-21BF11
2NO	1 2	0	X	HW®K-2AF20	HW®K-21BF20

**Key Removable Option Codes** 

Code	Description
Α	Key retained in NO position (removable in all positions)
В	Key retained in right position only
С	Key retained in left position only
D	Key retained in left and right (3 position only)
Е	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
Н	Key retained left and center (3 position only)



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

Part Numbers: 3-Position Key Switches

					Part Number					
			Operator Position		Operator Position		Maintained	Spring Return from Right	Spring Return from Left	Spring Return from Left & Right
Contact	Mounting	L ×	C †	R	C R	C R	C R	L C		
2NO	1 2	X 0	0	0 X	HW®K-3AF20	HW®K-31BF20	HW®K-32CF20	HW®K-33DF20		
	1	Х	0	0						
2NO-	2	0	0	Х	HW®K-3AF22	HW®K-31BF22	HW®K-32CF22	HW®K-33DF22		
2NC	3	0	Х	Х		TIVV®K-SALZZ	1100@K-31D122	1100 © K-3201 ZZ	1100 @ K-03D1 22	
	4	Х	Х	0						



- 1. In place of ⑤ enter 1 for plastic bezel or 4 for metal bezel.
- 2. Key is removable in all maintained positions. Other key removable options available.
- 3. Two keys are supplied with all switches.
- 4. All standard operators are keyed alike (contact IDEC for special keys).
- 5. For nameplates, see page A-113.
- $6.\ Custom\ contact\ arrangements\ available,\ contact\ IDEC\ for\ details.$
- 7. 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
		Maintained, Standard Cam  Maintained, Cam A  Maintained, Cam S  Spring Return from Right  Spring Return from Left		HW1K-3A	HW4K-3A
1 HI GO	Car.		Maintained, Cam A	HW1K-3SA	HW4K-3SA
146	100		Maintained, Cam S	HW1K-3JA	HW4K-3JA
				HW1K-31B	HW4K-31B
				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 "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 2NC 2NO/2NC	HW-CB10 HW-CB01 HW-CB11 HW-CB20 HW-CB02 HW-CB22

#### **Key Removable Option Codes**

Code	Description
Α	Key retained in NO position (removable in all positions)
В	Key retained in right position only
С	Key retained in left position only
D	Key retained in left and right (3 position only)
Е	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
Н	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
	Maintained	HW1K-2A	HW4K-2A
2	Maintained, key remove left only	HW1K-2B	HW4K-2B
	Spring from Right	HW1K-21B	HW4K-21B
	Maintained, Standard Cam	HW1K-3A	HW4K-3A
	Maintained, Cam S	HW1K-3SA	HW4K-3SA
3	Maintained, Cam J	HW1K-3JA	HW4K-3JA
3	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
Α	Key retained in NO position (removable in all positions)
В	Key retained in right position only
С	Key retained in left position only
D	Key retained in left and right (3 position only)
Е	Key retained in center only (3 position only)
G	Key retained right and center (3 position only)
Н	Key retained left and center (3 position only)



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

#### **Part Numbers: Contact Blocks**

Part N	lumber
1NO	1NC
HW-F10	HW-F01
HW-F10R (early make)	HW-F01R (late break)
LINA/ 010	LDA/ 001
HVV-G10	HW-G01
HW-G10R (early make)	HW-G01R (late break)
U\\/ C10	HW-C01
HW-C10R (early make)	HW-C01R (late break)
TW-DB	
	HW-F10 HW-F10R (early make)  HW-G10 HW-G10R (early make)  HW-C10 HW-C10R (early make)



- 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
0	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)**

Lamp

Transformer \* + Contact Blocks + Lead Holder +

Adaptor

+ Anti-Rotation +

Operator

Illuminated Knob

= Complete Part



Switches & Pilot Devices



















\* not applicable for full voltage units

#### **Part Numbers: Operators**

Appearance	# of Positions	Description	Plastic Bezel	Metal Bezel
		Maintained	HW1F-2	HW4F-2
	2	Spring return from right	HW1F-21	HW4F-21
		Maintained	HW1F-3	HW4F-3
_	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
Style	rait Nulliber
	HW-CBL



- 1. 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 N	umber
	1NO	1NC
Standard Fingersafe (IP20)		
499-160	HW-F10	HW-F01
道理	HW-F10R (early make)	HW-F01R (late break)
Spring-Up Terminal Contacts	LINA 040	LIVAY 004
- 60 TE	HW-G10	HW-G01
量量	HW-G10R (early make)	HW-G01R (late break)
Exposed Screw Terminal Contacts		
1000 1000	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.



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

#### **Part Numbers: Lamps**

Туре	Voltage	Part Number
	6V AC/DC	LSTD-6@
LED	12V AC/DC	LSTD-1@
	24V AC/DC	LSTD-22
	120V AC	LSTD-H2@
	240V AC	LSTD-M42
Incandescent	6.3V AC/DC	IS-6
	12V AC/DC	IS-12
	24V AC/DC	IS-24



- 1. In place of ②, 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		Fingersafe	HW-DA1FB
1	For use with odd number of contacts.	Exposed	HW-DA1B
興		Spring Up	HW-GA1
Full Voltage Adaptor	For use with even	Fingersafe	TW-DA1FB
, W	number of contacts.	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	А
Green	G
Red	R
Blue	S
White	W
Yellow	Υ

#### **Part Numbers: Anti-Rotation Ring**

Appearance	Part Number
0	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**

Oiltight Switches and Pilot Devices

To build a custom selector switch, follow these steps.

	St
A	

Switches & Pilot Devices

Step1:	How many	positions of the	switch are	needed?
ш.				

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

Step 2: How many contacts should there be?

	-	=
ŧ	of isolate	d contacts
	(maxin	num 6)



Step 3: Fill in the Truth Table

(X = closed, 0 = open)

			<b>Knob Position</b>					
		1	2	3	4	5		
	1							
	2							
	3							
	4							
	5							
_								

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**

Contact	Mounting Position		rator ition	
	FUSILIUII	Left	Right	
HW-F10 (NO)	L	0	Х	
1100-1 10 (100)	R	0	Х	
HW-F01 (NC)	L	Х	0	
1100-101 (100)	R	Х	0	
HW-F10R NO-(EM)	L	0 -	—X	
TIVV-I TOIL INO-(LIVI)	R	0	X	
HW-F01R NC-(LB)	L	X	0	
IIVV-I OIN NC-(LD)	R	X	0	



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

HW1S-2T

HW1K-2*		К	X	U
HW1F-2	HW-F10R NO-(EM)	L	0 -	X
	TIVV T TOTT TO (LIVI)	R	0	Х
	HW-F01R NC-(LB)	L	X	0
	TIVV TOTIL NO (ED)	R	X	0

#### **3 Position Selector Switches**

Contact	Mounting	Operator Position			
Contact	Position	Left	Center	Right	
HW-F10 (NO)	L	Χ	0	0	
1100-1 10 (100)	R	0	0	Х	
HW-F01 (NC)	L	0	X	X	
1100 101 (100)	R	X	X	0	
HW-F10R NO-(EM)	L	X	0	0	
TIVV T TOIT IVO (LIVI)	R	0	0 -	<del></del> X	
HW-F01R NC-(LB)	L	0	X	<u>—</u> Х	
TIVV TOTILING-(ED)	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
- 3. \* for key removable code (see page A-96).

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

0	Mounting	<b>Operator Position</b>			
Contact	Position	Left	Center	Right	
HW-F10 (NO)	L	Х	0	0	
1100-1 10 (100)	R	0	0	Χ	
HW-F01 (NC)	L	0	0	Χ	
HVV-FUT (INC)	R	Х	0	0	
HW-F10R NO-(EM)	L	X—	X	0	
TIVV-I TOTT INO-(LIVI)	R	0	X	X	
HW-F01R NC-(LB)	L	0	X	X	
HAN-LAID INC-(FD)	R	V	V	n	



- 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-3ST HW1K-3S\*

Contact	Mounting	Operator Position			
	Position	Left	Center	Right	
HW-F10 (NO)	L	Х	0	0	
1100 110 (100)	R	0	0	Χ	
HW-F01 (NC)	L	0	Х	0	
1100 101 (100)	R	0	Х	0	
HW-F10R NO-(EM)	L	Χ	0	Χ	
TIVV T TOTT INO-(LIVI)	R	X	0	X	

R



- 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
- 3. \* for key removable code (see page A-96).

HW1S-3JT HW1K-3J\*

HW-F01R NC-(LB)

0



#### **Operator Truth Tables con't**

### **4 Position Selector Switches**



Switches & Pilot Devices

HW1S-4T

Contact	Mounting	Operator Position					
Contact	Position	1	2	3	4		
HW-F10 (NO)	L	Х	0	0	0		
1100 1 10 (100)	R	0	0	0	Х		
HW-F01 (NC)	L	0	0	Х	0		
1100-101 (140)	R	0	Х	0	0		
HW-F10R NO-(EM)	L	X	X	0	Х		
TIVV-I TOTT NO-(EIVI)	R	Х	0	Х	X		
HW-F01R NC-(LB)	L	0	X-	X	X		
TIVV TOTIL NO-(LD)	R	X	X	X	0		

### **5 Position Selector Switches**

Contact	Mounting	Operator Position					
Contact	Position	1	2	3	4	5	
HW-F10 (NO)	L	Χ	0	0	0	0	
HVV-FIU (NU)	R	0	0	0	0	Х	
HW-F01 (NC)	L	0	0	0	Х	0	
	R	0	Х	0	0	0	
HW-F10R NO-(EM)	L	X	Х	X	0	Х	
HVV-FIUN NU-(EIVI)	R	Χ	0	X	X	X	
HW-F01R NC-(LB)	L	0	X	X	X	X	
TIVV-I OIN NO-(LD)	R	X	X	X	—X	0	



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

HW1S-5T

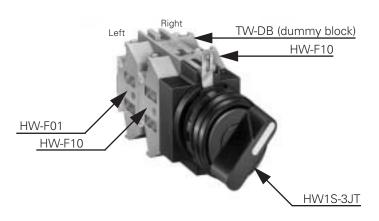
#### **Custom Selector Switch Building Examples**

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

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

	Kn	ob Posit	ion	Operator				
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT		
Contact 1	0	0	Х	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right		
Contact 2	0	Х	0	Not possible	Not possible	Possible with HW-F01 mounted on left or right		
Contact 3	Х	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:

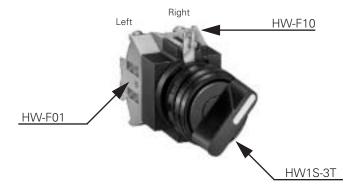


### **Example 2: 3 Position, Maintained Selector Switch with 2 Contacts**

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

	Knob Position		ion			
	Left	Center	Right	HW1S-3T	HW1S-3ST	HW1S-3JT
Contact 1	0	0	Х	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right	Possible with HW-F10 mounted on right
Contact 2	0	Х	Х	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:



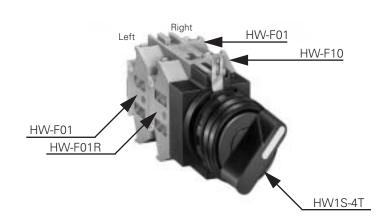


#### **Custom Selector Switch Building Examples con't**

#### **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	
Contact 1	0	Х	0	0	HW-F01 mounted on right	
Contact 2	0	0	Х	0	HW-F01 mounted on left	
Contact 3	0	0	0	Х	HW-F10 mounted on right	
Contact 4	0	Х—	X	X	HW-F01R mounted on left	
Assemble as follows:						

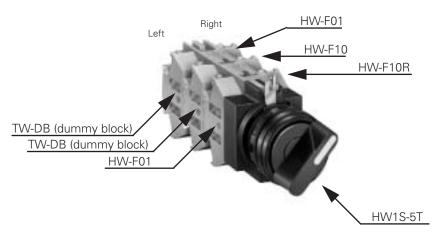


**Example 4: 5 Position Selector Switch with 4 Contacts** 

Determine where the contact will be mounted.

·		Kn	ob Posit	Operator		
	1	2	3	4	5	HW1S-5T
Contact 1	0	Х	0	0	0	HW-F01 mounted on right
Contact 2	0	0	0	Х	0	HW-F01 mounted on left
Contact 3	0	0	0	0	Х	HW-F10 mounted on right
Contact 4	Χ	0	X	X	X	HW-F10R mounted on right

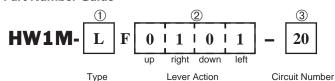
Assembled as follows:



#### **Mono Lever Switches (Assembled)**



#### **Part Number Guide**



ı yı	pc	LCVCI / (CliOI)	Oli Calt Marrison
Descript	tion	Code	Remarks
① Type	Standard	(blank)	Interlocking mecha- nism prevents inad-
туре	Interlocking	L	vertent activation
	Maintained	1	Fill in desired action for
2 Lever Action	Spring	2	each position: Up/Right/Down/Left
	Blocked	0	op/nigit/Down/Left
		20	0 0 1 1
③ Circuit Number		40	See Circuit Diagrams below
		22N9	

#### **Part Numbers: Mono Lever Switches**

Description	No. of Positions	Part Number
		HW1M-F1010-20
		HW1M-F2020-20
	2	HW1M-F0101-20
HW1M	2	HW1M-F0202-20
Standard Lever		HW1M-F0101-40
		HW1M-F0202-40
	4	HW1M-F1111-22N9
	4	HW1M-F2222-22N9
		HW1M-LF1010-20
		HW1M-LF2020-20
		HW1M-LF0101-20
HW1M-L	2	HW1M-LF0202-20
Interlocking Lever		HW1M-LF0101-40
		HW1M-LF0202-40
	4	HW1M-LF1111-22N9
	4	HW1M-LF2222-22N9

#### **Circuit Diagrams**

#### 2 Position Left/Right

Circuit Number	_	ontact ounting	Position		
IAMIIINGI	No.		Left	Center	Right
20	1	HW-F10	Х	0	0
20	2	HW-F10	0	0	Χ
	1	HW-F10	Х	0	0
40	2	HW-F10	0	0	Χ
<del>1</del> 0	3	HW-F10	Х	0	0
	4	HW-F10	0	0	Χ

#### 2 Position Up/Down

Circuit Number		Contact Iounting	Position		
Hullingi	No.		Down	Center	Up
20	1	HW-F10	Х	0	0
	2	HW-F10	0	0	Х
	1	HW-F10	Х	0	0
40	2	HW-F10	0	0	Χ
	3	HW-F10	Х	0	0
	4	HW-F10	0	0	Χ

### **4 Position**

71 0311011								
Circuit Number	Contact Mounting		Position					
Number	No.		Down	Left	Center	Up	Right	
22N9	1	HW-F01	0	0	0	0	Х	
	2	HW-F01	Х	0	0	0	0	
ZZINJ	3	HW-F10	0	Χ	0	0	0	
	4	HW-F10	0	0	0	Χ	0	



 $Other\ circuit\ arrangements\ available,\ contact\ IDEC\ for\ details.$ 



#### Mono Lever Switches (Sub- Assembled)

Contact Blocks



**Mounting Adaptor** 



+ Anti-Rotation Ring +



**Operator** 



**Complete Part** 

**Part Numbers: Operators** 

Appearance	# of Positions	Description	Part Number
Standard		Maintained Up/Down	HW1M-1010
	2	Spring return Up/Down	HW1M-2020
	2	Maintained Left/Right	HW1M-0101
ALL PARTY OF THE P		Spring return Left/Right	HW1M-0202
-	4	Maintained, 4 position	HW1M-1111
	4	Spring return, 4 position	HW1M-2222
Interlocking		Maintained Up/Down	HW1M-L1010
	2	Spring return Up/Down	HW1M-L2020
9600	2	Maintained Left/Right	HW1M-L0101
The same		Spring return Left/Right	HW1M-L0202
	4	Maintained, 4 position	HW1M-L1111
	4	Spring return, 4 position	HW1M-L2222

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

(safety lever lock included)	
Appearance	Part Number
	HW-CB2C



- 1. 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: 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**

rart Numbers: neplacement rarts		
ltem	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

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





- 1. Available only with momentary pushbutton and maintained selector.
- 2. In place of  $\, \odot \,$ , 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	В
Green	G
Red	R
Blue	S
White	W
Yellow	Υ
Grey	N



#### **Pushbutton Selectors (Partial-Assemblies)**





**Part Numbers: Operators** 

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



In place of  ${\tt @}$  specify Button Color Code.

#### **Part Numbers: Contact Assemblies**

art realibers. 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	В
Green	G
Red	R
Blue	S
White	W
Yellow	Υ
Grey	N

#### **Pushbutton Selectors (Sub-Assembled)**

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













**Part Numbers: Operators** 

Appearance	Description	Part Number
-	Cam D	HW1R-2D
9	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
0	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)

(safety lever lock included)	
Appearance	Part Number
	HW-CB2C



- 1. 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)			
488-460	HW-F10	HW-F01	
当遇	HW-F10R (early make)	HW-F01R (late break)	
Spring-Up Terminal Contacts			
	HW-G10	HW-G01	
量量	HW-G10R (early make)	HW-G01R (late break)	
Exposed Screw Terminal Contacts			
1988 1965	HW-C10	HW-C01	
	HW-C10R (early make)	HW-C01R (late break)	
Dummy Block		I.	
	TW-DB		



- 1. 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).
- 3. Units with exposed screw terminals (HW-C...) must be ordered as sub-components.

#### **1 Button Color Code**

Color	Code
Black	В
Green	G
Red	R
Blue	S
White	W
Yellow	Υ
Grey	N