

# W-Series

Sealed Rocker Switches

**PRODUCT WEBPAGE**

*request sample, configure part*



The W-Series features complete IP68 protection, even below the panel, where the critical connection is made from your wiring harness. When used in conjunction with the integrated connector, the totally submersible W-Series provides a seal for up to ten individual wires, assuring compatibility with even the most complex circuitry.

**1-2**  
Poles

**.4-10**  
Amps

**12-24**  
VDC

**IP68 Sealing**  
Above/Below-Panel

## Typical Applications

- Marine
- On/Off-Highway

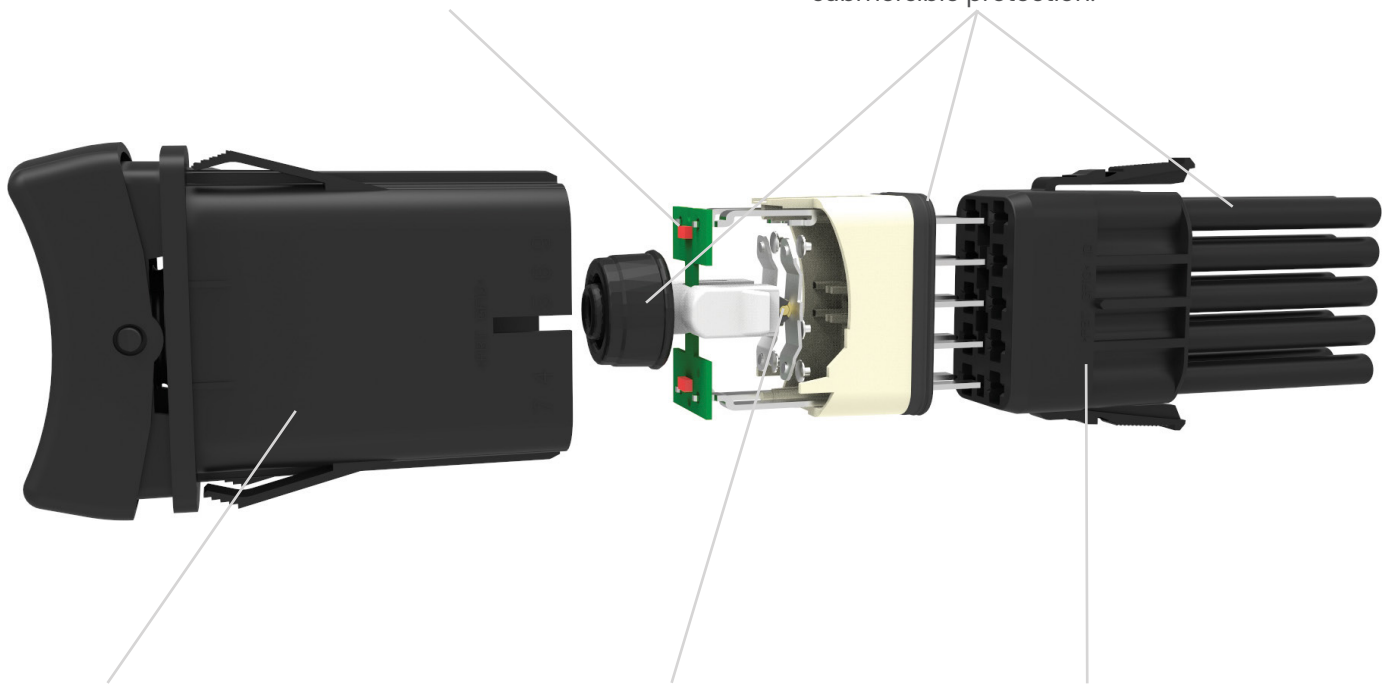
# Design Features

## ILLUMINATION

Choice of highly reliable SMT LED or incandescent lighting with 21 dependent or independent circuit options.

## TRI-SEAL DESIGN

Sealing at actuator, an insert molded neoprene base seal, along with wire lead seals, assures water tight, fully submersible protection.



## BODY

One piece polyester 94V0 seamless body acts as an umbrella to protect critical internal components.

## ROLLER PIN

Proven reliable mechanism is lubricant free and allows for 100k electrical and 250k mechanical cycles, and withstands extreme temperatures from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

## INTEGRATED CONNECTOR

Accommodates Tyco/Amp .110 junior power timer contacts with twin locking tabs to provide a safe, secure, sealed connection.

# Tech Specs

## Electrical

Contact Rating	.4VA @ 24VDC 10 amps, 3-24VDC
Dielectric Strength	1500 Volts RMS
Insulation Resistance	50 Megohms
Initial Contact Resistance	10 milliohms max. @ 4VDC
Life	Up to 100,000 cycles, circuit and load dependent
Contacts	Silver tin-oxide, 88/12
Terminals	Copper with silver or gold plating
Quick	Connect terminations.
Voltage	3-24 VDC
Overcurrent	15A for 50 cycles

## Physical

Lighted	LED - rated 100,000 hours 1/2 life (LED is internally ballasted for voltages to 24 VDC)
Seals	Neoprene
Base	Polyester blend rated to I25C with a UL flammability rating of 94V0.
Actuator	Basic actuator structure molded of thermoplastic polycarbonate with a hard Nylon 66 thermoplastic surface overlay.
Lens	Polycarbonate rated at 100°C
Function	2 & 3 Position Rocker Style
Operation	Maintained & Momentary
Base	PA 6/6 30GF (glass filled)
Actuator	PA 6/6 13GF
Bracket	PBT 10GF
Connector	PBT 10GF, polarized

## Actuator Travel (Angular Displacement)

24° full throw

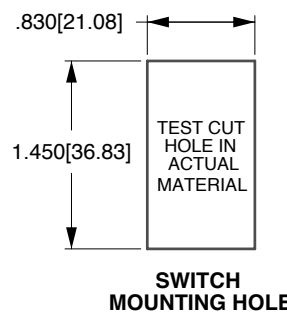
## Environmental

Sealing	IP68, for above and below-panel components of actual switch only
Corrosion/ Chemical Splash	Flowing Mixed Gas (FMG) Class III 3 year accelerated exposure per ASTM B-827, B-84
Operating Temperature	-40°C to +85°C, 22 cycles, 300 hours
Vibration 1	Per Mil-Std 202F, Method 204D Test Condition A 0.06 DA or 10G's 10-500 Hz.
Vibration 2	Resonance search 24-50 Hz 0.40 DA 50-2000 ±10 G's peak Results Horizontal Axis 3-5 G's max Random 24 Hz 0.06 PSD-Gsq/Hz 60 Hz 0.50 100 Hz 0.50 200 Hz 0.025 2000 Hz 0.025
Handling/Drop	One meter onto concrete floor
Salt Spray	Per Mil-Std 202F, Method 101D, Test Condition A, 48 Hrs.
Dust	IP6X
Thermal Shock	Per Mil-Std 202F, Method 107F, Test Condition A, -55°C to 85°C Test criteria - pre and post test contact resistance
Moisture Resistance/ Humidity	Per Mil-Std 202F, Method 106F, Test Criteria - pre and post test contact resistance

## Mounting Specifications

Panel Thickness Range .032 to .125

For optimum panel fit, the following panel thicknesses are suggested: .032, .062, .093, .125



# Ordering Scheme Rocker

Sample Part Number **W 11 D 2 B C 0 1 - A 7 Z 00 - 0 00**

Selection 1 2 3 4 5 6 7 8 9 10 11 12 13 14

## 1. SERIES

W

## 2. CIRCUIT

( ) - momentary For terminal arrangement, see dimensional specs

Position:	1	2	3
SP DP	2 & 3, 5 & 6	Connected Terminals	1 & 2, 4 & 5
11 21	(ON)	NONE	OFF
12 22	(ON)	NONE	OFF
13 23	(ON)	NONE	(OFF)
14 24	(ON)	NONE	(ON)
15 25	(ON)	NONE	(ON)
16 26	(ON)	OFF	(ON)
17 27	(ON)	OFF	(ON)
18 28	(ON)	OFF	(ON)
- 42	2 & 3, 5 & 6	NONE	1 & 8
- 43	2 & 3	2 & 3, 4 & 5	4 & 5
- 44	2 & 3, 5 & 6	2 & 3	OFF
- 45	(2 & 3), (5 & 6)	2 & 3	OFF
- 46	(2 & 3), (5 & 6)	2 & 3	2 & 1
- 47	2 & 3 & 4, 5 & 6	2 & 3, 4 & 5	2 & 1, 4 & 5
- 48	2 & 3, 5 & 6	2 & 3	2 & 1
- 49	2 & 3, 5 & 6	2 & 3, 4 & 5	2 & 1, 4 & 5
51 -	3 & 10	2 & 3	OFF
52 -	3 & 10	2 & 3	2 & 1
53 -	(3 & 10)	2 & 3	OFF
54 -	3 & 10	2 & 3	(OFF)
55 -	(3 & 10)	2 & 3	2 & 1
56 -	(3 & 10)	2 & 3	(OFF)
57 -	(3 & 10)	2 & 3	(2 & 1)
58 -	OFF	2 & 3	2 & 1
- 61	3 & 10, 6 & 9	2 & 3, 5 & 6	OFF, OFF
- 62	3 & 10, 6 & 9	2 & 3, 4 & 5	2 & 1, 5 & 4
- 63	(3 & 10, 6 & 9)	2 & 3, 4 & 5	OFF, OFF
- 64	3 & 10, 6 & 9	2 & 3, 4 & 5	(OFF, OFF)
- 65	(3 & 10, 6 & 9)	2 & 3, 4 & 5	2 & 1, 5 & 4
- 66	(3 & 10, 6 & 9)	2 & 3, 4 & 5	(OFF, OFF)
- 67	(3 & 10, 6 & 9)	2 & 3, 4 & 5	(2 & 1, 5 & 4)
- 68	OFF, OFF	2 & 3, 4 & 5	2 & 1, 5 & 4

## 3. RATING 3

B 10A 24V D 10A 12V G 10A 6V H 10A 3V

## 4. TERMINATION / BASE STYLE

2 .110 TAB (QC)

## 5. ILLUMINATION

Lamp #1: above terminals 1&4 end of switch; Lamp #2 above terminals 3&6 end of switch. Positive (+) and negative (-) symbols apply to LED lamps only

Lamps	Actuator Lens Position Illumination Type	Lamp Wired to Terminals
O	NONE	
A	# 1 Independent	8+ 7-
B	# 1 Down	3+ 7-
C	# 2 Up	3+ 7-
D	# 1 Down	3+ 7-
E	# 1 Up	1+ 7-
F	# 1 Independent	8+ 7-
G	# 1 Up	3+ 6-
H	# 2 Independent	8+ 7-
Selections for Single Pole Switches Only:		
J	# 1 Down	3+ 8-
K	# 1 Independent	6+ 7-
L	# 2 Independent	6+ 7-
Selections for Double Pole Switches Only:		
M	# 1 Down	3+ 6-
N	# 2 Up	3+ 6-
O	# 1 Down	3+ 6-
P	# 2 Down	1+ 4-
Q	# 1 Up	1+ 4-
R	# 2 Up	3+ 6-
S	# 1 Down	3+ 7-
T	# 2 Up	6+ 7-
U	# 1 Down	6+ 7-
V	# 2 Independent	8+ 7-
W	# 1 Independent	8+ 7-
X	# 2 Independent	10+ 9-
Y	# 1 Independent	10+ 9-
Z	# 2 Independent	8+ 7-

## 6,7. LAMP (SAME CODING FOR BOTH SELECTIONS)

Selection 6: above terminals 1 & 4; Selection 7: above terminals 3 & 6

No lamp	Amber	Green	White
LED* Red	A	L	F
2VDC	A	L	F
6VDC	B	M	G
12VDC	C	N	H
24VDC	D	P	J

\* Consult factory for "daylight bright", blue/green and white LED options. Typical current draw for LED is 20ma.

## 8. BRACKET COLOR 1

1 Black

## 9. ACTUATOR 1

3 Black with Laser Etched A Black

## 10. LENS COLOR / STYLE - ABOVE LAMP #1 TERMINALS 1 & 4 11. LENS COLOR / STYLE - ABOVE LAMP #2 TERMINALS 3 & 6

Z - No Lens

Clear	White	Amber	Green	Red	Blue	
1	-	B	G	M	T	Large Transparent
-	7	C	H	N	U	Large Translucent
3	-	D	J	P	V	Bar Transparent
-	9	E	K	R	W	Bar Translucent
5	A	-	-	-	-	Laser-Etched

Lens color for LEDs must be clear, white, or match color of LED.

## 12. ACTUATOR LENS OR BODY LEGENDS 2

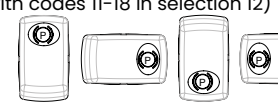
00 - No Legend this location/No actuator

11 ON	12 OFF	13 I	14 O
OFF	ON	O	I
15 O O	16 O O	17 O I	18 I O
F N	N F		
F	F		
21 OFF	22 ON	23 O	24 I
O	O	O	I
F	N		
F			

For additional legend options & codes, visit us at carlingtech.com

## 13. LEGENDS ORIENTATION

0	No legend (used with codes 11-18 in selection 12)
1	Orientation 1
2	Orientation 2
3	Orientation 3
4	Orientation 4



## 14. ACTUATOR LENS LEGENDS 2

00 No legend (used with codes 11-18 in selection 12) Selection 14 required when switch requires two legends. If the two legends consist of one lens & one body legend, lens legend must be specified in selection 12; body legend specified in selection 14. For standard legends, see "Standard Legend Codes" page. For additional legends, please consult factory

- Notes:
- 1 Custom colors are available. Consult factory.
  - 2 White imprinting is standard on black actuators; Black imprinting is standard on white, red & gray actuators; Custom colors are available, consult factory.
  - 3 .4VA @ 24VDC rating is available, consult factory for circuit compatibility.

[Configure Complete Part Number >](#) [Browse Standard Parts >](#)

# Ordering Scheme Locking Rocker

Sample Part Number

**W 11 D 2 0 W 0 J - P 7 B 00 - 0**

Selection 1 2 3 4 5 6 7 8 9 10 11 12 13

## 1. SERIES

**W**

## 2. CIRCUIT

( ) - momentary  
For terminal arrangement, see dimensional specifications

Position:	1	2	3
SP DP	2 & 3, 5 & 6	Connected Terminals	1 & 2, 4 & 5
<b>11</b>	<b>21</b> ON	NONE	OFF
<b>14</b>	<b>24</b> ON	NONE	ON

## 3. RATING

**B** 10A 24V  
**D** 10A 12V  
**G** 10A 6V  
**H** 10A 3V

## 4. TERMINATION / BASE STYLE

**2** .110 TAB (QC)

## 5. ILLUMINATION

Lamp #1: above terminals 1&4 end of switch.; Lamp #2 above terminals 3&6 end of switch. Positive (+) and negative (-) symbols apply to LED lamps only

Lamps	Actuator Lens Position Illumination Type	Lamp Wired to Terminals
<b>O</b> NONE		
<b>C</b> # 2	Up	3+ 7-
<b>H</b> # 2	Independent	8+ 7-

## 6. LOCK

**W** Lock Option

## 7. LAMP #2

No lamp LED*	0	Red	Amber	Green	White
2VDC	<b>A</b>	<b>L</b>	<b>F</b>	<b>4</b>	
6VDC	<b>B</b>	<b>M</b>	<b>G</b>	<b>5</b>	
12VDC	<b>C</b>	<b>N</b>	<b>H</b>	<b>6</b>	
24VDC	<b>D</b>	<b>P</b>	<b>J</b>	<b>8</b>	

\* Consult factory for "daylight bright", blue/green and white LED options. Typical current draw for LED is 20ma.

## 8. BRACKET COLOR <sup>1</sup>

**J** Black

## 9. ACTUATOR <sup>1</sup>

**P** Black  
**R** Red

## 10. LENS

Z - No Lens	Clear	White	Amber	Green	Red	Blue	
<b>1</b>	-	<b>B</b>	<b>G</b>	<b>M</b>	<b>T</b>		Large Transparent
-	<b>7</b>	<b>C</b>	<b>H</b>	<b>N</b>	<b>U</b>		Large Translucent
<b>3</b>	-	<b>D</b>	<b>J</b>	<b>P</b>	<b>V</b>		Bar Transparent
-	<b>9</b>	<b>E</b>	<b>K</b>	<b>R</b>	<b>W</b>		Bar Translucent

Lens color for LEDs must be clear, white, or match color of LED.

## 11. LOCK FUNCTION

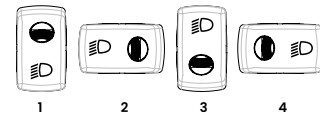
Up	Down	Lock Color
<b>B</b>	<b>J</b>	Black
<b>C</b>	<b>K</b>	White
<b>D</b>	<b>L</b>	Red
<b>E</b>	<b>M</b>	Safety Orange

## 12. LASER ETCHED, LENS OR BODY LEGEND <sup>1</sup>

**00** No legend  
For standard legends, see "Standard Legend Codes" page.  
For additional legends, please consult factory

## 13. LEGENDS ORIENTATION

- 0** No legend
- 1** Orientation 1
- 2** Orientation 2
- 3** Orientation 3
- 4** Orientation 4



Notes:

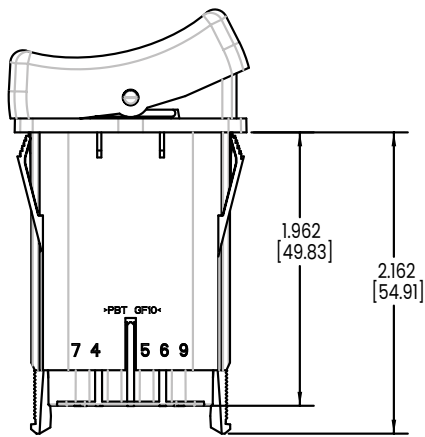
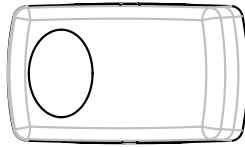
<sup>1</sup> White imprinting is standard on black actuators; Black imprinting is standard on white, red & gray actuators; Custom colors are available, consult factory.

[Configure Complete Part Number >](#)

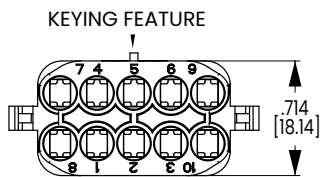
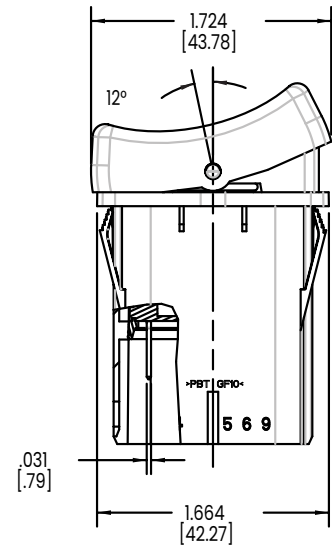
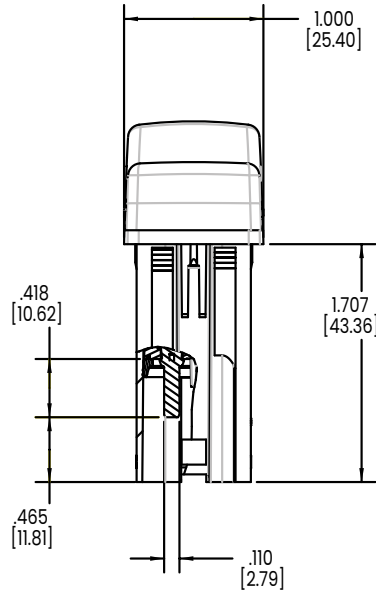
[Browse Standard Parts >](#)

# Dimensional Specs

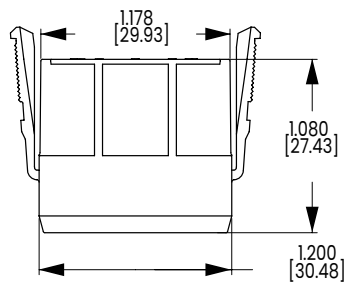
inches [millimeters]



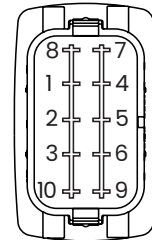
SWITCH SHOWN WITH CONNECTOR INSTALLED



WCH CONNECTOR  
(190-31214-001)



TERMINAL ARRANGEMENT



Notes:  
WCH connector is intended for use with Tyco/Amp .110 Junior Power Timer, female contacts, and wire seals.  
For 14-16 awg wire, specify Tyco/Amp P/N 927766-3  
For 16-20 awg wire, specify Tyco/Amp P/N 927770-3  
Tyco/Amp cable seal P/N 828904-1 (20-18 awg wire) or P/N 828905-1 (16-14 awg wire) is required for each individual wire lead, and Tyco/Amp cable plug, P/N 828922-1, is required to seal each unused connector opening.  
Consult Tyco/Amp for the cable seal recommended for your specific wire gauge and thickness.

# Circuit Diagrams

CIRCUIT CODE	CIRCUIT DIAGRAM	CIRCUIT CODE	CIRCUIT DIAGRAM	CIRCUIT CODE	CIRCUIT DIAGRAM	CIRCUIT CODE	CIRCUIT DIAGRAM
11		23		46		57	
12		24		47		58	
13		25		48		61	
14		26		49		62	
15		27		51		63	
16		28		52		64	
17		42		53		65	
18		43		54		66	
21		44		55		67	
22		45		56		68	

# Lamp Circuit Diagrams

LAMP CIRCUIT CODE	CIRCUIT DIAGRAM
A	
B	
C	
D	
E	
F	
G	
H	

LAMP CIRCUIT CODE	CIRCUIT DIAGRAM
J	
K	
L	
M	
N	
P	
R	
S	

LAMP CIRCUIT CODE	CIRCUIT DIAGRAM
U	
V	
W	
Y	
Z	

# Standard Legend Codes

YK	UA	UB	US	UV	UW	UX	UY	MP	MR	PX	MS	MT
VU	MW	NZ	NX	NY	YM	VW	PS	PW	PZ	WG	WM	RN
RP	YG	TX	VD	VE	VF	VG	SH	SM	SN	SP	SR	SY
DIM	BRIGHT	UH	UJ	PD	PE	PF	VC	VJ	UF	UG	MU	TN
WY	WZ	WIPER	VZ	YE	NN	RW	PU	WA	YN	UE	NM	RJ
NS	PB	SE	VR	SL	VA	UC	VN	PK	VY	UZ	RH	NU
NR	YD	TL	VR	SL	VA	UC	VN	PK	VY	UZ	RH	NU
NV	RB	RC	RK	RL	MZ	RG	UP	DOWN	UD	UR	WD	TY
PA	UK	WR	UU	UT	YR	PM	VV	WB	TB	TC	TD	TE
MY	PV	TA	TZ	WC	PT	PN	PH	RA	TU	TT	YL	SK
VS	UL	UM	WK	TS	VT	WL	VP	YJ	PJ	RY	UP	NW
NP	RE	RF	PP	PR	TV	PC	YT	YU	PL	WJ	MV	RR
TK	RT	SEAT	VX	WF	WH	PG	SJ	YA	YB	RM	TM	RD
RS	UN	TP	TR	NT	MX	YC	TW	TJ	YF	TH	TF	TG
YS	YH	AUX	ON OFF	OFF ON	I O	O I	OFF ON	ON OFF	ON OFF	I O	O I	II
RAISE	LOWER	HIGH	LOW	FWD	REV	DEPTH	TRIM TAB	ACC	NAV ANCH	WIND LASS UP/DN	LIVE WELL	REAR
ST	SU	WU	WV	SV	SW	VB	VH	VK	VL	VM	WE	SF
PARK	AUTO	RU	RV	RX								
SG	SS											

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