Owner's Manual

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DANGER Δ

DANGER is used in this manual to warn of high voltages capable of causing shock, burns, or death.

WARNING Â

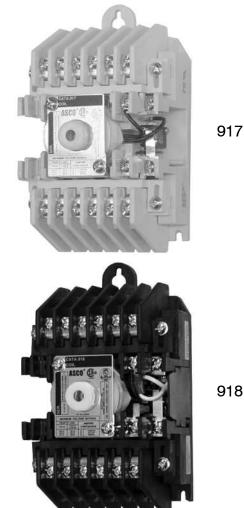
WARNING is used in this manual to warn of possible personal injury.

A CAUTION

CAUTION is used in this manual to warn of possible equipment damage.

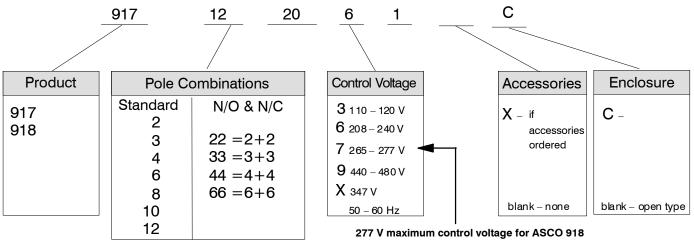
ASCO 917 Remote Control (RC) Switches are rated 20 amperes non-HID lighting loads and 30 amperes general purpose. ASCO 918 RC Switches are preferred for HID (high intensity discharge) loads such as sodium vapor, mercury vapor, and metal halide lighting (control voltage is limited to 277 V). ASCO 918 RC Switches are rated 30 amperes for standard ballast loads.

ASCO[®] 917 & 918 **Remote Control Switches**



Catalog Number Identification with Elements Explained

Typical ASCO 917 catalog no. for 12 pole 208 volt 60 Hz control in an enclosure:



ASCO Power 50 Hanover Road, Florham Park, New Jersey 0732-1331 Co.A. For sales or service call 1 800 800-2726 (ASCO) www.ascopower.com

ASCO POWER TECHNOLOGIES CANADA PO Box 1238, 17 Airport Road, Brantford, Ontario, Canada N3T 5T3 telephone 519 758-8450, fax 519 758-0876, for service call 1 888 234-2726 (ASCO) www.asco.ca



These RC Switches are UL-508 listed and are available in 2 to 12 pole single throw double break and 2 to 6 pole normally open and normally closed configurations. Control voltages are from 120 to 480 V ac. See tables A, B, and C for contact ratings.

Do not exceed these values. Exceeding the rating can cause personal injury or serious equipment damage.

Table A – Maximum AC Voltage and Current Ratings for ASCO 917 & 918 Main Contacts (open or closed)

Load	Amperes		Poles	to Load
-	Continuous		1 for	2 for 1 phase
Туре	917	918	1 phase	3 for 3 phase
General	30	30	347 V ac	600 V ac
Standard Ballast*	20	30	347 V ac	600 V ac
Tungsten	20	20	250 V ac	250 V ac

* ASCO 918 is preferred for HID and metal halide loads

Table B – Maximum DC Voltage and Current Ratings for ASCO 917 & 918 Main Contacts (open or closed)

Load Type	Amperes	Poles to	o Load
Load Type	Continuous	2 in Series	3 in Series
General	20	125 V dc	250 V dc

Table C – Withstand Current Ratingsfor ASCO 917 & 918 Remote Control Switches

Available Symmetrical Amperes RMS			
	When Used with Molded–Case Circuit Breakers		
At AC Service Voltage	Withstand Current Rating	Maximum Breaker Size	
	(amperes)	(amperes)	
250 V	22,000	30	
480 V	14,000	30	
600 V	10,000	30	

Drawing Index

Drawing Description	Standard RC Switch	N/O & N/C RC Switch	Page
RC Switch Outline & Mounting	361069	383826	6
Outline & Mounting with Accessories	363164	383897	7 & 8
Wiring Diagram	361068	383825	9
Wiring Diagram with Accessories	363165	383880	10 & 11
Enclosure Outline & Mounting	363104	363104	12

Installation

ASCO 917 & 918 Remote Control (RC) Switches are pre-tested and ready to use. Installation requires mounting and connection of service cables and control circuit wires. An experienced licensed electrician should install the RC Switch.

Each RC Switch has a ratings / identification label defining load types and maximum voltage ratings. Use the switch only within the limits shown on this label.

Do not exceed the values on the rating label. Exceeding the rating can cause personal injury or serious equipment damage.

To prevent malfunction or shortened life, protect the switch from construction grit and metal chips.

Mounting: Five *Outline and Mounting Diagrams* are furnished. Select the appropriate diagram and mount the RC Switch. All mounting details and instructions are shown on the diagrams.

The RC switch can be mounted in any position but is usually mounted vertically. Mounting holes in open-type RC Switches accept #10 screws (3/8-inch minimum length). Enclosure mounting holes accept 1/4-inch diameter screws.

Line and Load Connections

🔺 WARNING

Deenergize the branch circuit to be connected to the RC Switch and the control line too.

Four *Wiring Diagrams* are furnished. Line and load terminals are reversible. The RC switch is UL listed for use with 60 or 75 degrees C cable. All power wires should enter enclosure adjacent to the RC switch terminals. Combination knockouts are provided on NEMA Type 1 enclosures. Line and load connections are supplied with clamp-type terminals. These terminals accept the wire sizes #18–10 AWG Cu. Insert appropriate line and load wires and tighten clamp screws to 18 inch-pounds.

Control Line Connections

Control circuit connections designated L, O, C on the right side are supplied with clamp-type terminals. These terminals accept wire sizes #18–10 AWG Cu. Insert appropriate control wires and tighten terminal clamp screws to 18 inch-pounds. See the *Wiring Diagrams*.

Tighten all electrical connections to 18 inch-pounds.

Install overcurrent protective devices for the control circuit in accordance with applicable electrical codes.

Table D lists the maximum distances and minimum wire sizes that can be run between a control station and one ASCO 917 or 918 Remote Control Switch.

Table D – Line Run

Wire Size	Maximum Distance (feet) at ac control voltage				
(AWG)	120 V	240 V	277 V	347 V	480 V
14	700	2,000	2,600	3,400	5,500
12	1,050	3,100	4,100	5,600	8,800
10	1,670	5,000	6,600	9,000	14,000

Do not exceed these distances for proper switch operation.

Line run can be extended by use of Control Modules.

Table E lists the ASCO 917 & 918 coil inrush current and minimum control circuit fuse sizes.

Table E – Inrush Current / Minimum Fuse

	Inrush Current / Fuse Size (amps RMS)				
Amps	at ac control voltage				
	120 V	240 V	277 V	347 V	480 V
Inrush	5.0	2.5	2.2	1.8	1.3
Fuse	2.0	1.0	1.0	0.75	0.5

Auxiliary Contacts – Optional Accessories 14H, 14HA

These auxiliary contacts, if furnished, are installed on the left side of the RC switch. The auxiliary contacts operate along with the main contact to provide remote indication of RC switch position (closed or open).

Each auxiliary contact provides a form C, spdt (single pole double throw) contact rated 10 amps at 277 V ac.

Accessory 14H is one auxiliary contact, and Accessory 14HA is two auxiliary contacts. A connector with leads is provided for each auxiliary contact. See *Wiring Diagram* 363165 (page 10) or 383880 (page 11) for contact configuration, additional ratings, and wiring.

Control Modules – Optional Accessories 47, 48, 49

These control modules, if furnished, are connected and mounted on the bottom or right side of the RC switch depending on the number of RC switch poles or n/o and n/c contact configuration. A control module can be field installed by ordering the appropriate module kit. Contact ASCO. Refer to Wiring Diagram 363165 (page 10) or 383880 (page 11).

Operation

Accessory 47 control modules are for two-wire control of the RC switch only. The module must be energized to close the RC switch, and de-energized to open the RC switch. Therefore, use a single-pole, maintained-type control station to operate the module.

Accessory 48 control modules are for three–wire control of the RC switch. One terminal must be energized to close the RC switch; another terminal must be energized to open the RC switch. If neither or both terminals are energized, no output will occur. Therefore, use a single–pole, double– throw, momentary–type control station to operate the module.

Accessory 49 control modules are for Form 3 (start-stop) control of the RC switch. The modules must be energized to close the RC switch, and de-energized to open the RC switch. Therefore, use one normally-closed and one normally-open separate control stations to operate the module.

There are four different control modules for each Accessory 47, 48, and 49. Each module is suitable only for the control voltage marked on it. Refer to Table F. Ratings for the control modules are listed in Table H.

Module	2–Wire Control	3-Wire Control	Form 3 Control
Control	Accessory	Accessory	Accessory
Voltage	47 Modules	48 Modules	49 Modules
120 V	429447-001	429448-001	429449-001
ac			
24 V	429447-002	429448-002	429449-002
ac & dc			
240/277	429447-003	429448-003	429449-003
V ac			
12 V	429447-004	429448-004	429449-004
ac & dc			

Table F - Accessory 47, 48, 49 module numbers

Table G - Connections to Control Modules

Module Terminal	Connect To
1	not used
2	control station for Acc. 48, 49
3	control station for Acc. 47, 48, 49
4	module control voltage*
5	RC switch control voltage
0	pre-connected to O on RC switch
С	pre-connected to O on RC switch

* For dc control modules connect terminal 4 to negative (-).

Connections

Connections to the Accessory 47, 48, and 49 control modules are shown in Table G. Also refer to the labels in Figure 1 and to Wiring Diagram 363165 or 383880. Barrier screw type terminals accept #22–12 AWG Cu control wiring. Tighten terminals to 12 inch–pounds.

The control modules have two colored leads pre-connected to the **O** and **C** terminal bus on the RC switch. A yellow wire runs between the **O** terminals; and orange/ black wire runs between the **C** terminals.

Connect your control wiring for the module to terminals **2**, **3**, and **4** on the modules. Terminal **2** is not used on Accessory 47 and terminal **1** is never used.

For dc modules be sure to connect terminal 4 to negative (–).			

Connect your control wiring for the RC switch (coil voltage) to terminal **5** on the control module and terminal L on the RC switch. If the line voltage (service) is the same as the coil voltage, the control voltage can come directly from the poles of the RC switch.

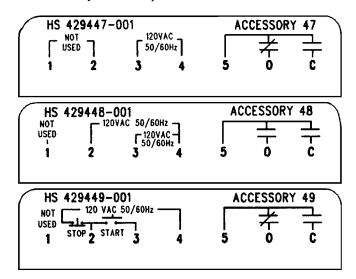


Figure 1. Typical labels on control modules.

Control Module	Acc. 47		Acc	. 48	Acc	. 49
Control Module	AC	DC	AC	DC	AC	DC
120 V ac	1.90		1.60		3.70	
24 V ac & dc	0.85	0.36	0.34	0.38	0.70	0.72
240 / 277 V ac	4.00		2.50		6.00	
12 V ac & dc	0.60	0.32	0.34	0.36	0.68	0.70

Table H - Rating for Control Modules

Trouble-Shooting

A WARNING

The RC switch is energized. Proceed with care!

Problem	Check Control Voltage	Check Control Station, Wiring, Supply
RC switch does not close when control station is closed.	Measure control voltage between RC switch terminals L and C.	If no voltage is present, check control station contacts, control wiring, supply fuses, and optional accessories.
RC switch does not close when control station is opened.	Measure control voltage between RC switch terminals L and O.	If no voltage is present, check control station contacts, control wiring, supply fuses, and optional accessories.
RC switch tries to open or close, but cannot.	Measure at least 90% control voltage (nameplate coil voltage) between RC switch terminals L and C, or L and O.	If voltage is low, check control wire size and line run distance; see Table D on page 5. If a transformer is used in the control line, make sure it can handle the VA burden required; see Table E on page 5.
RC switch closes and opens repeatedly.		Check control station for overlapping contacts, and correct. Control station cannot call on RC switch to close and open at the same time.
RC switch closes or opens very quickly with excessive noise.	Measure no more than 110% control voltage (nameplate coil voltage) between RC switch terminals L and C, or L and O.	If voltage is high, change control supply or change RC switch.

Manual Operation

A #8–32 screw 1 1/2 inches long can be used to manually operate the RC switch. One is supplied in all replacement parts kits that require manual operation. The screw should be used for maintenance purposes only. Remove the screw after maintence.

A WARNING

Do not manually operate the RC switch until all power and control circuits are disconnected.

Open circuit breakers, then use a voltmeter to verify no voltage is present at the RC switch at both control and line terminal screws.

Insert the operating screw into the center of the coil and carefully turn it clockwise until the threads engage the cam/core.

Pull the screw outward to open the RC switch contacts; push it in to close the contacts. Observe the buttons in the contact block (buttons out means contacts open).

Replacement Parts

The main contact blocks and the operator coil are available in kit form. When ordering parts, provide the Serial No. and Catalog No. from the RC switch nameplate. Contact your local ASCO Authorized Representative, Sales Office, or ASI.

Included in each kit are instructions that explain how to replace the parts. These instructions are also available separately:

Service Bulletin 381339-021

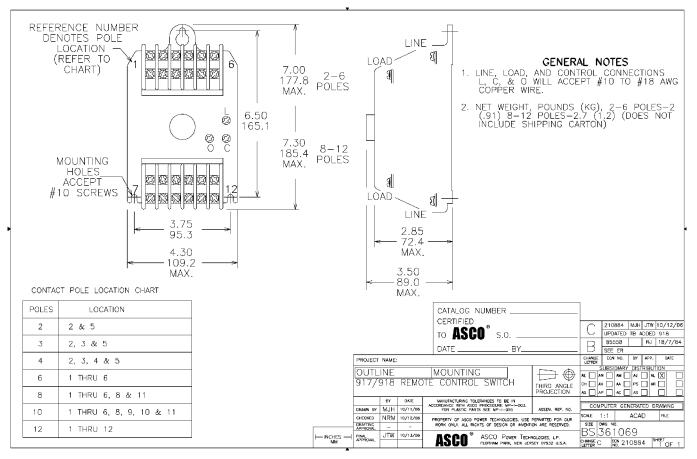
Note: ASCO 918 RC Switches are provided with a coil circuit specifically designed for HID lighting applications. Do not disconnect or remove this circuit component.

Conversion Kits

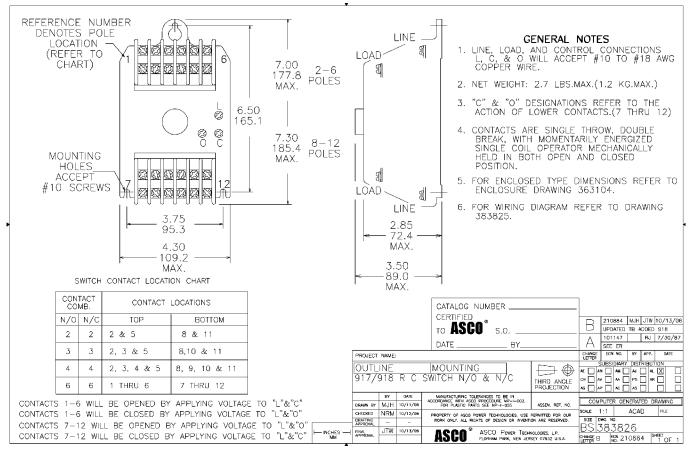
Conversion kits are available for field or distributor modification of ASCO 917 and 918 Remote Control Switches to allow changes in pole configuration, control voltage, control modules, and auxiliary contacts.

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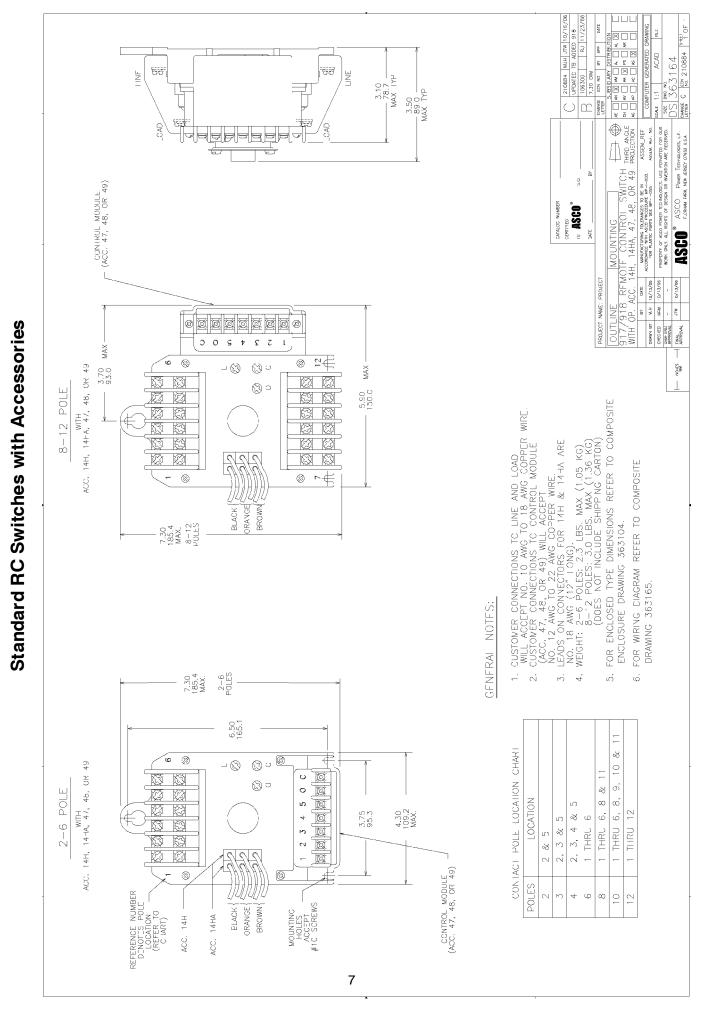
Standard RC Switches



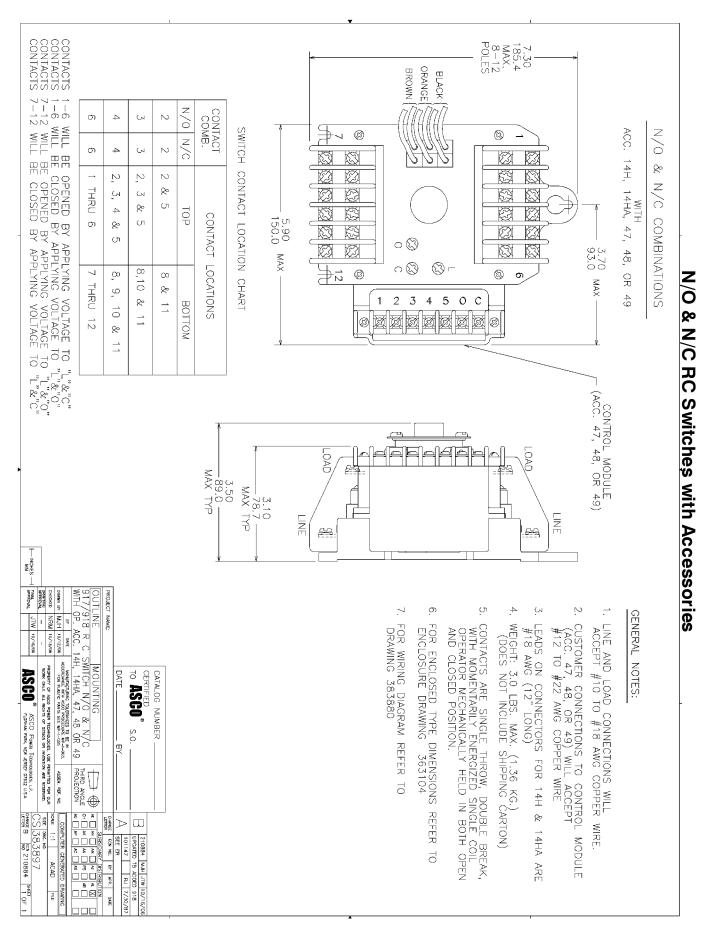
N/O & N/C RC Switches



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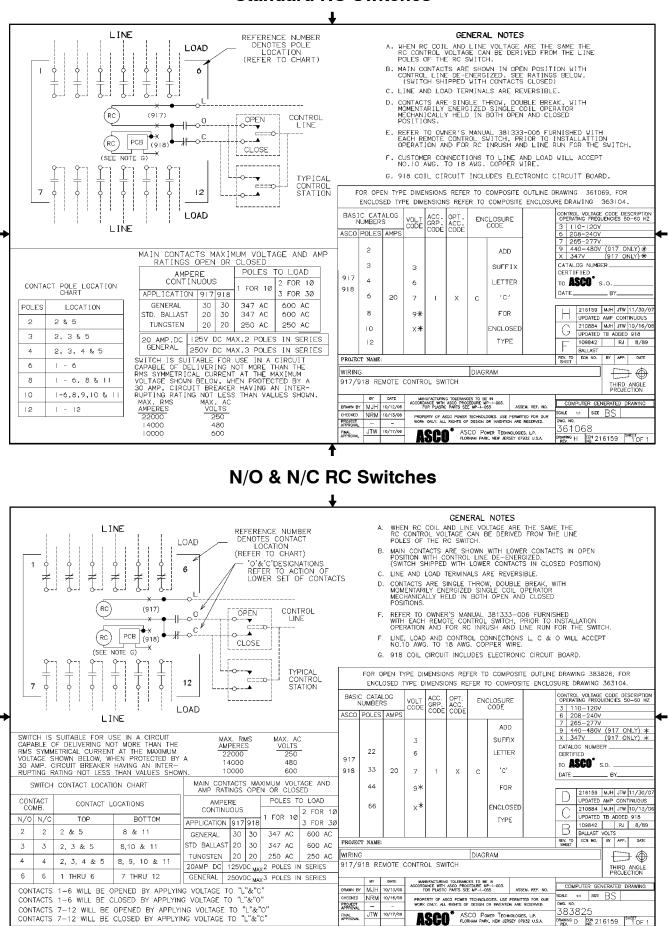


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Standard RC Switches



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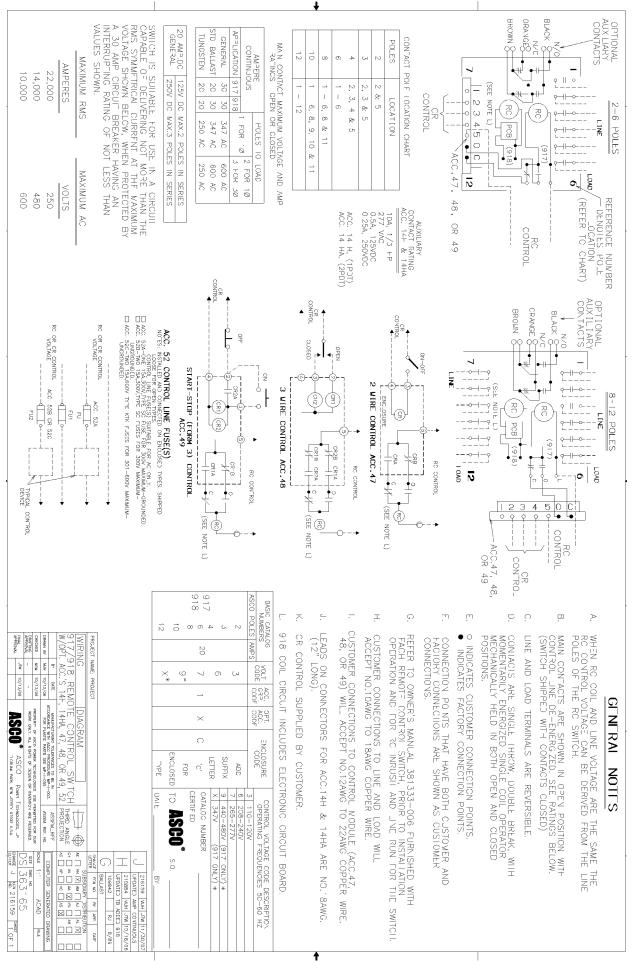
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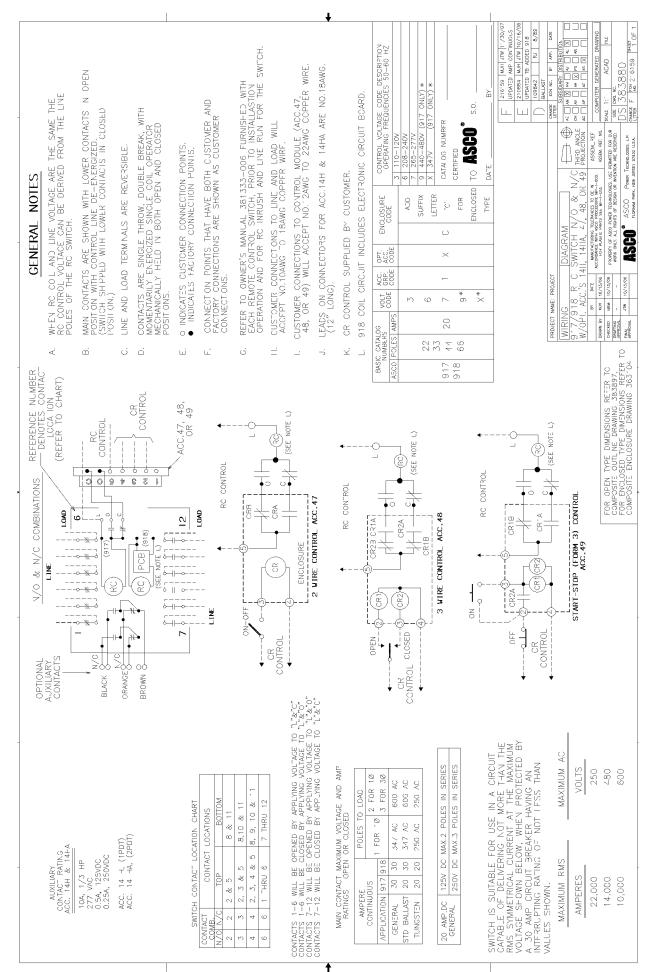


Standard RC Switches with Accessories

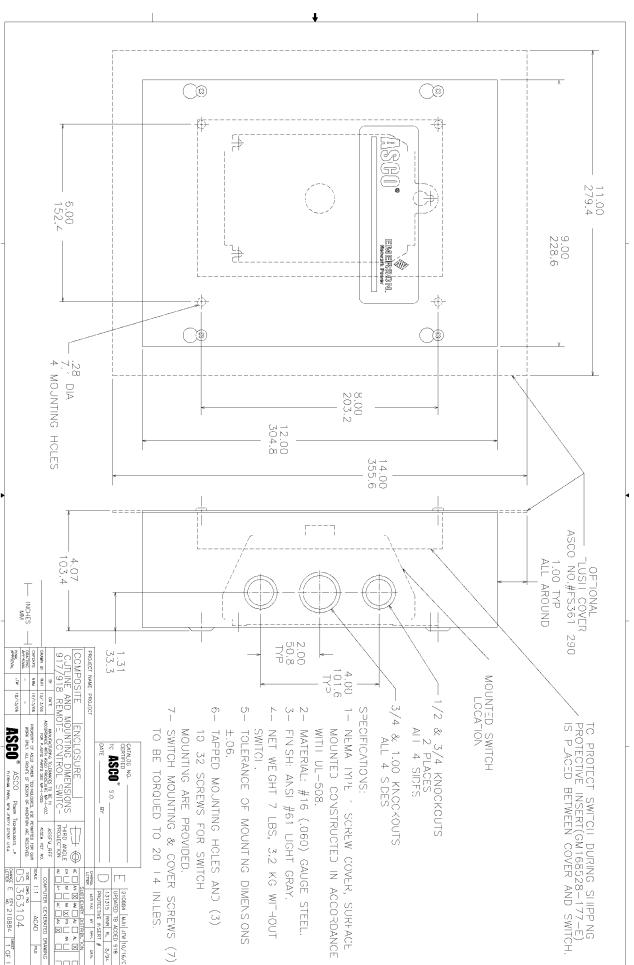
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N/O & N/C RC Switches with Accessories



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Enclosure Outline & Mounting

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