



# 12V DC Wire Standard

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## Disclaimer


















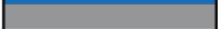














More now than ever, many recreational vehicle owners are opting for the "Do-it-Yourself" (DIY) method of repairs. The DIY method allows an owner to use skills he or she has previously acquired to save time and money. If you're one of these owners and you want to work on your RVs 12 Volt electrical system, we think Keystone's towable industry exclusive color-coded 12 Volt Wire Standard will point you in the right direction. Keystone's 12 Volt Wire Standard contains easy-to-trace circuits that will simplify your ability to troubleshoot the electrical and entertainment systems. You can locate and trace the exact wire you need, taking the guess work out of the equation. While Keystone understands why you'd want to use the DIY method on your personal RV, USE CAUTION AND GOOD COMMON SENSE. ALWAYS DISCONNECT the 120V POWER CORD, and TURN OFF GENERATOR (if applicable). Your comfort and your safety working with the 12 Volt Wiring Standard are very important to us. So, if at any time you're uncomfortable or realize you don't have the necessary experience to independently work with the 12 Volt Wiring System, please stop what you're doing immediately! Either seek the advice of someone familiar with RV 12 volt electrical systems AND Keystone's 12 Volt Wire Standard, or contact your authorized Keystone dealership or Keystone directly. It is important to note, the information outlined and discussed in the 12 Volt wiring standard is in no way related, nor does it apply to the 120 Volt system of your recreational vehicle. If you are unsure of the difference between 12 Volt and 120 Volt wiring and 120 Volt appliances and/or receptacles, do not attempt any DIY methods, contact your authorized Keystone dealership.











## Dedicated Numbered Circuit Groups







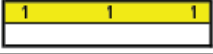
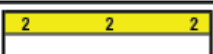
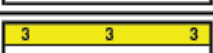


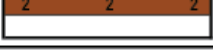







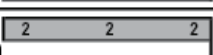








Numbered and Colored wires are specific to the Application. The Positive Conductor (Colored Conductor) will indicate the circuit number for the group. Numbers are repeated down the entire length of the wire.

## Numbered Circuit Groups

Colored Groupings are numbered per circuit. The Positive Conductor (Colored Conductor) will indicate the circuit number for the group. Numbers are repeated down the entire length of the wire. The numbers correspond to the items on that circuit.

Item	Color	Wire Ga. & Label	Application	
(+) 12 VDC Positive Conductor	 RED	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	Positive Battery Mains	
(-) 12 VDC Negative Conductor Return	 BLACK	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	Negative Battery Mains	
(+) 12 VDC Electric Slide-Out Power	 PURPLE	10 ga.	Electric Slide-Out Feed	
(+) 12 VDC Power Awning	 Yellow	10 ga.	Electric Awning Feed	
(+) 12 VDC Awning Light	 Orange	14 ga.	Awning Light Feed	
(-) 12 VDC Negative Conductor Return	 White	10 ga, 14 ga	Negative	
Marker, Tail, & License Lights	 7-Way RV Trailer Connector	 GREEN	16 ga	7-Way RV Connector
Left Stop & Turn		 RED	16 ga	7-Way RV Connector
Right Stop & Turn		 BROWN	16 ga	7-Way RV Connector
Electric Brake		 BLUE	Varies (Use Existing)	7-Way RV Connector
Common Ground		 WHITE	10 ga	7-Way RV Connector
Battery Charge		 BLACK	10 ga	7-Way RV Connector
Center Auxiliary		 YELLOW	16 ga	7-Way RV Connector
Gray Tank #2 Fresh Tank Gray Tank #1 Tank Level Ground Black Tank #1	 BONDED RIBBON	 RED	18 ga	Gray Tank #2 Sensor Signal
		 BLUE	18 ga	Fresh Tank Sensor Signal
		 GRAY	18 ga	Gray Tank #1 Sensor Signal
		 WHITE	18 ga	Tank Level GND Return Path
		 BROWN	18 ga	Black Tank #1 Sensor Signal
Gray Tank #3	 1 1 1	LT BLUE 1	18 ga	Gray Tank #3 Sensor Signal
Black Tank #2	 2 2 2	LT Blue 2	18 ga	Black Tank #2 Sensor Signal
Water Heater GND Water Heater Gas Signal Water Heater Electric Signal Water Heater Fault Signal	 BONDED RIBBON	 WHITE	18 ga	Water Heater
		 BROWN	18 ga	
		 ORANGE	18 ga	
		 PINK	18 ga	
Generator Start Generator Prime/Stop Generator Service Generator Hours Generator GND	 ONAN HARNESS	 RED	OEM Harness Come in various Lengths.	Generator Start Signal
		 GREEN		Generator Prime/Stop Signal
		 BLUE		Generator Status Lamp Signal
		 ORANGE		Generator Hours Signal
		BROWN		Generator Control GND




Interior Lighting Circuits	(+)  (-) 	GREEN/WHITE w/#	10 ga - 1 14 ga - 1, 2, 3, 4, 5, 6, 7, 8	12 VDC Interior Lights
12 VDC Accessory Circuits	(+)  (-) 	PINK/WHITE w/#	10 ga - 1 14 ga - 1, 2, 3	12 VDC Accessory Feed: Power Vent Fans / Furnace / Refrigerator TV Booster / USB Charging Stations / Range Fan Radio Power / CO Alarm / TV Power Lifts / etc.
Holding Tank Heaters	(+)  (-) 	TAN/WHITE w/#	10 ga - 1, 2, 3, 4	12 VDC Holding Tank Heaters
Bed Lift Circuits	(+)  (-) 	DK GREEN/WHITE w/#	10 ga - 1, 2	12 VDC Bed Lift/Tilt/Fold Systems/Happy Jacks
12 V Relay Signal	(+)  (-) 	PINK/BLACK w/# (TBD)	18 ga - none using at this time	12 VDC Relay Trigger Signal

Electric Slide-Out 1	(+)  (-) 	PURPLE 1/WHITE	10 ga	First Electric Slide-Out (Order: Front ODS to Rear ODS, Rear DS to Front DS)
Electric Slide-Out 2	(+)  (-) 	PURPLE 2/WHITE	10 ga	Second Electric Slide-Out (Order: Front ODS to Rear ODS, Rear DS to Front DS)
Electric Slide-Out 3	(+)  (-) 	PURPLE 3/WHITE	10 ga	Third Electric Slide-Out (Order: Front ODS to Rear ODS, Rear DS to Front DS)
Electric Slide-Out 4	(+)  (-) 	PURPLE 4/WHITE	10 ga	Fourth Electric Slide-Out (Order: Front ODS to Rear ODS, Rear DS to Front DS)
Electric Slide-Out 5	(+)  (-) 	PURPLE 5/WHITE	10 ga	Fifth Electric Slide-Out (Order: Front ODS to Rear ODS, Rear DS to Front DS)
Electric Awning 1	(+)  (-) 	YELLOW 1/WHITE	12 ga	First Electric Awning (Order Front to Back, Rear)
Electric Awning 2	(+)  (-) 	YELLOW 2/WHITE	12 ga	Second Electric Awning (Order Front to Back, Rear)
Electric Awning 3	(+)  (-) 	YELLOW 3/WHITE	12 ga	Third Electric Awning (Order Front to Back, Rear)
Electric Front Jack(s)	(+)  (-) 	BROWN 1/WHITE	10 ga	Front Electric Jack(s)
Electric Rear Jack(s)	(+)  (-) 	BROWN 2/WHITE	10 ga	Rear Electric Jack(s)
Awning Light 1	(+)  (-) 	ORANGE 1/WHITE	14 ga	Switch To Awning Light Circuit 1
Awning Light 2	(+)  (-) 	ORANGE 2/WHITE	16 ga	Switch To Awning Light Circuit 2
Awning Light 3	(+)  (-) 	ORANGE 3/WHITE	16 ga	Switch To Awning Light Circuit 3
Exterior Lights	(+)  (-) 	ORANGE 4/WHITE	14 ga	Porch Light/ Entrance Light/ Step Light/ Power Channel
Security/Scare Light	(+)  (-)	ORANGE 5/WHITE	14 ga	Scare Light(s), Cap & Cargo Light(s)
Hydraulic Valve (Landing Gear)	(+)  (-)	GRAY 1/WHITE	16 ga	Hydraulic Solenoid- Front Landing Jacks
Hydraulic Pump (FWD/REV)	REV(+)  FWD (+)	GRAY 2/WHITE	16 ga	Hydraulic Pump Contactor
Hydraulic Valve (Slide Out)	(+)  (-)	GRAY 3/WHITE	16 ga	Hydraulic Solenoid-Slide-Out(s)
Generator Fuel Tank Level	GND  Signal	RED 1/BLACK	14 ga	Generator Fuel Tank Sending Unit
Fuel Station Tank Level	GND  Signal	RED 2/BLACK	14 ga	Fuel Station Tank Sending Unit
Water Pump	(+)  (-)	BLUE/WHITE	14 ga	Water Pump Power






## Following is a breakdown of sections of the 12V wiring standard.

This will help you understand how our units are manufactured and provide you with the information you need to use the standard.

- 1 POWER FEEDS & 7-WAY TRAILER CONNECTION**
- » The power feeds do not contain numbers. These are used to provide a single source of power to a junction or switch panel.
  - » Any battery connections (-) or **chassis** ground will be **BLACK**, in some cases a white wire will also be a chassis ground (an inverter, for example) but will never be a direct connection to the battery.
  - » 7-Way Trailer Connection matches with the industry standard

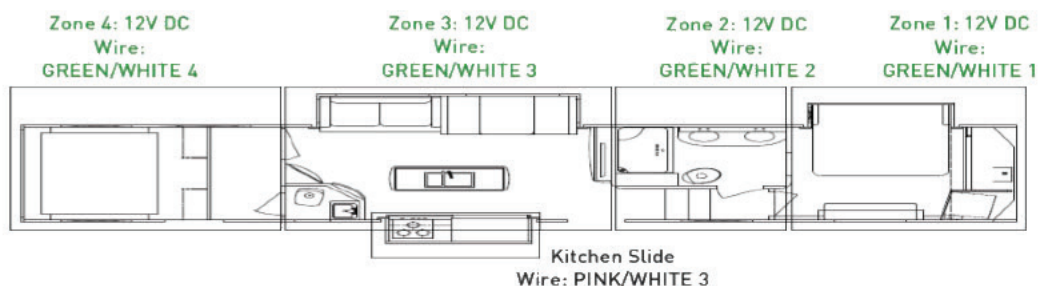
(+) 12 VDC Positive Conductor		RED	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	Positive Battery Mains/Single Conductor
(-) 12 VDC Negative Conductor Return		BLACK	2 ga, 4 ga, 6 ga, 8 ga, 10 ga	Negative Battery Mains/Single Conductor
(+) 12 VDC Electric Slide-Out Power		PURPLE	10 ga.	Electric Slide Out Feed/Single Conductor
(+) 12 VDC Power Awning		YELLOW	10 ga.	Electric Awning Feed/Single Conductor
(+) 12 VDC Awning Light		ORANGE	14 ga.	Awning Light Feed/Single Conductor
(-) 12 VDC Negative Conductor Return		WHITE	10 ga, 14 ga	Negative/Single Conductor
Marker, Tail, & License Lights		GREEN	16 ga	7-Way RV Connector Green/White Ripcord
Left Stop & Turn		RED	16 ga	
Right Stop & Turn		BROWN	16 ga	
Electric Brake		BLUE	Varies	
Common Ground		WHITE	10 ga	
Battery Charge		BLACK	10 ga	
Center Auxiliary		YELLOW	16 ga	

- 2 TANKS, WATER HEATER, & GENERATOR**
- » Tank - 5-Wire Ribbon; a 2nd Black Tank or 3rd Gray Tank use single-conductor **LIGHT BLUE** numbered wires.
  - » Water Heater - 4-Wire Ribbon
  - » Generator - 5-Wire Harness (OEM supplied)

Gray Tank #2 Fresh Tank Gray Tank #1 Tank Level Ground Black Tank #1	BONDED RIBBON		RED BLUE GRAY WHITE BROWN	18 ga 18 ga 18 ga 18 ga 18 ga	Gray Tank #2 Sensor Signal Fresh Tank Sensor Signal Gray Tank #1 Sensor Signal Tanks Level GND Return Path Black Tank #1 Sensor Signal
Gray Tank #3			LT BLUE 1	18 ga	Gray Tank #3 Sensor Signal/Single Conductor
Black Tank #2			LT Blue 2	18 ga	Black Tank #2 Sensor Signal/Single Conductor
Water Heater GND Water Heater Gas Signal Water Heater Electric Signal Water Heater Fault Signal	BONDED RIBBON		WHITE BROWN ORANGE PINK	18 ga 18 ga 18 ga 18 ga	Water Heater
Generator Start Generator Prime/Stop Generator Service Generator Hours Generator GND	ONAN HARNES		RED GREEN BLUE ORANGE BROWN	OEM Harness	Generator Start Signal Generator Prime/Stop Signal Generator Status Lamp Signal Generator Hours Signal Generator Control GND

- 3 12 VDC TRAILER "ZONE" ORGANIZATION** (See 3a and 3b)
- » Interior Lights are organized in a minimum of two and maximum of four Dedicated Zones numbered #1-#4 for 12 VDC power.

(3a)



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## 12 VDC TRAILER "ZONE" ORGANIZATION (CONTINUED)

(3b)

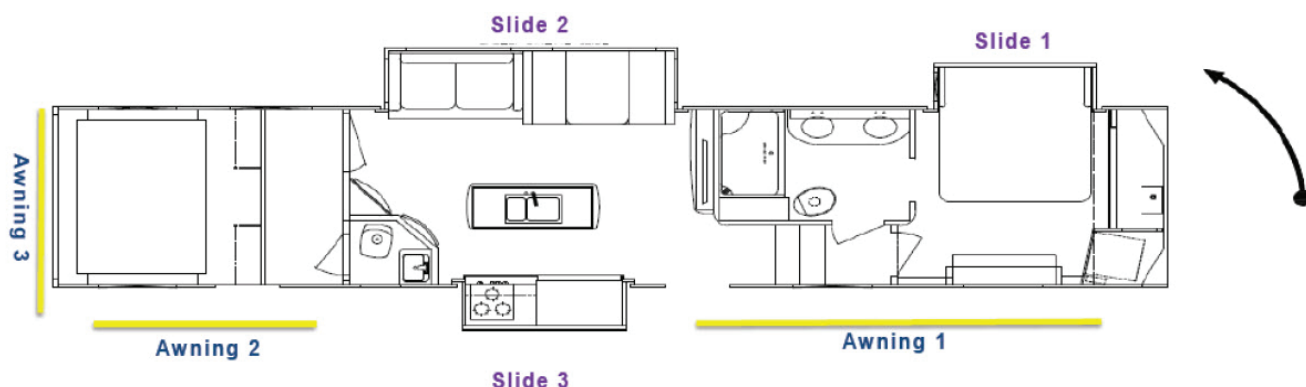
Note: PINK/WHITE 3 is ALWAYS used for the kitchen slide.

Interior 12 VDC Zone Circuits	(+) <span style="background-color: #90EE90;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> GREEN/WHITE w/#	10 ga - 1 14 ga - 1, 2, 3, 4, 5, 6, 7, 8	12 VDC Interior Lights
12 VDC Accessory Circuits	(+) <span style="background-color: #FFB6C1;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> PINK/WHITE w/# Pink #2 = Furnace/Pink #3 = Kitchen Slide	10 ga - 1 14 ga - 1, 2, 3	12 VDC Accessory Feed: Power Vent/Fans/Furnace/Refrigerator/TV Booster/USB Charging Station/Range Fan/Radio Power/CO Alarm/RV Power Lifts/ETC..
Holding Tank Heaters	(+) <span style="background-color: #FFDAB9;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> TAN/WHITE w/# Tan #1 = Power Feed to Switch/Tan #2 = Fresh Tank/Tan #3 Gray Tank(s)/Tan #4 Black Tank(s)	10 ga - 1, 2, 3, 4	12 VDC Holding Tank Heaters
Bed Lift Circuits	(+) <span style="background-color: #228B22;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> DK GREEN/WHITE w/#	10 ga - 1, 2	12 VFC Bed Lift/Tilt/Fold Systems/Happy Jacks

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## ELECTRIC SLIDES AND POWER AWNINGS

- » Electric slides are numbered #1-#5 starting at the hitch and going counter-clockwise around the trailer with ODS Front #1.
- » Hydraulic slides are not counted.
- » Power awnings are numbered #1-#3 from front to back.



Electric Slide	(+) <span style="background-color: #800080;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> PURPLE/WHITE w/#	10 ga - #1 First Slide, #2 Second Slide, #3 Third Slide, #4 Fourth Slide, #5 Fifth Slide
Electric Awning	(+) <span style="background-color: #FFD700;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> YELLOW/WHITE w/#	12 ga - #1 First Awning, #2 Second Awning, #3 Third Awning

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## ELECTRIC JACKS/EXTERIOR LIGHTS/HYDRAULIC PUMP &amp; SOLENOID VALVES/ FUEL SENDING UNITS/ WATER PUMP/AWNING

- » Awning lights are numbered #1-#3 from front to back. #1 - 1s 14 ga as it may be used to supply (2) Awning lights on remote systems, #2 & #3 are 16 ga.
- » Hydraulic pump - note the GRAY wire is REV & the WHITE wire is FWD. The Trombetta is labeled REV & FWD.
- » Fuel sending units - both fuel tank sending unit suppliers use RED or PINK for signal and BLACK for GND.

Electric Stabilizer Jacks	(+) <span style="background-color: #8B4513;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> BROWN/WHITE w/#	10 ga - #1 Front Jacks, #2 Rear Jacks
Exterior Light Circuits	(+) <span style="background-color: #FF8C00;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> ORANGE/WHITE w/#	#1 Awning Light (1) - 14ga, #2 Awning Light (2) - 16ga, #3 Awning Light (3) - 16ga, #4 Exterior Lights - 14ga, #5 Security/Scare Light - 14ga
Hydraulic 12VDC Control Circuits	(+) <span style="background-color: #A9A9A9;"># # #</span> (-) <span style="background-color: #FFFFFF;"># # #</span> GRAY/WHITE w/#	16 ga - #1 Hydraulic Valve (Landing Gear), #2 Hydraulic Pump, #3 Hydraulic Pump (SlideOut)
Fuel Tank Level (Sending Units)	GND Signal <span style="background-color: #FF0000;">2 2 2</span> RED/BLACK w/#	14 ga - #1 Generator Fuel Sending Unit, #2 Fuel Station Sending Unit
Water Pump	(+) <span style="background-color: #0000FF;">1 1 1</span> (-) <span style="background-color: #FFFFFF;"># # #</span> BLUE 1/WHITE	14 ga - #1 Water Pump



Any electrical fault can be isolated to a circuit in a matter of minutes by using this 12V wire standard, a VOM meter (multi-meter) and starting at the source:

- Every 12V DC circuit is color-coded and numbered (if applicable) for easy identification
- All Distribution Center (DC) panel labeling (wiring) has been standardized
- 12V power sources have been standardized

With few exceptions, there are two possible 12V power sources:

#### **(1) 12V DC Panel**

Typically lower and more stable amperage draw components (interior lights, appliances, fans, etc.).

Wiring sequence of color-coded and numbered wire:

- a. DC panel → Switch → Component
- b. DC panel → In-Command Body Control Module (control board) → Switch → Component

#### **(2) 12V Battery**

Typically higher and more variable amperage draw components (slide motors, leveling jacks, etc.).

Wiring Sequence of color coded and numbered wires:

- a. Battery → Auto Resettable Circuit Breaker → Switch → Component
- b. Battery → In-Command Body Control Module (control board) → Switch-Component

#### **Important Notes:**

- » Auto resettable breakers are typically located within 18" of the battery
- » Some components may not be on a switch
- » Some vendor installed components contain a fuse (radios, awnings, electric jacks, safety alarms)