

## 2N1 Inrush Switch

IP 69K / 2x10A CHAN

### Features

- ▶ Electrical Rating 2 x 10A/Channel, 20A max. rating.
- ▶ Double pushbuttons for controlling two outputs or Up and Down control.
- ▶ Inrush Protection, our switch hold 120Amp Inrush for 120us before fault mode trips !
- ▶ Stainless Steel SS316 Body and IP69K Waterproof Rating.
- ▶ Protection from Salt Spray (Fog) Test (EN ISO 9227-17).
- ▶ 20g Bump Shock Test Approved.
- ▶ Switch meet Flammability Rating UL 94 V2 and All material will be non-flammable or will be 105°C spec.

### Specification

|                                  |                                                                                         |
|----------------------------------|-----------------------------------------------------------------------------------------|
| Illuminated                      | Blue,Green,Red,Yellow, Purple , White LED                                               |
| Voltage Rating                   | 9VDC ~ 24 VDC                                                                           |
| Current Rating                   | 20A 12VDC, 80A Surge (200 ms)                                                           |
| Reverse Polarity Protection      | 24 VDC                                                                                  |
| Initial Contact Resistance       | ≤ 10 mΩ                                                                                 |
| Overload Protection              | ≥120A, Flashing white LED<br>Outputs do not function<br>Switch is reset by press button |
| Mechanical Life                  | 50,000 Cycles                                                                           |
| Electrical Life Contact          | 10,000 Cycles                                                                           |
| Resistance Insulation            | 50 MΩ Maximum                                                                           |
| Resistance                       | 1000 MΩ Mimumum                                                                         |
| Dielectric Strength              | 2,000 VAC                                                                               |
| Operate Storage Temp             | -20°C ~ +55°C                                                                           |
| Travel                           | 1.50mm                                                                                  |
| Moisture Protection              | IP69K                                                                                   |
| Contact Material                 | Silver Alloy                                                                            |
| Actuation Force                  | 4 N                                                                                     |
| Panel Thickness                  | 1-6mm                                                                                   |
| Mounting Nut Torque              | 5-14Nm                                                                                  |
| <b>Construction Material</b>     |                                                                                         |
| Body Material                    | Stainless Steel SS316                                                                   |
| Lens Material                    | PC material rated to 105°C                                                              |
| Switch Plug & Dongle             | Nylon 6 rated to 105°C                                                                  |
| <b>Deutsch Recommended Part#</b> |                                                                                         |
| Large socket                     | 0462-203-12141                                                                          |
| Small socket                     | 0462-209-16141                                                                          |
| Dummy Plug                       | 14017-ZZ                                                                                |

### Part No.

| N/O : Normally Open<br>N/C : Normally Close<br>2 Outputs Function                                  | Power On                                                             | Press & Hold | Press   | Press & Hold 2 buttons |
|----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------|---------|------------------------|
| 9059-7002<br>1. N/O (ON)<br>2. N/O (ON)                                                            |                                                                      |              |         |                        |
| 9059-7004<br>1. N/C (OFF)<br>2. N/C (OFF)                                                          |                                                                      |              |         |                        |
| 9059-7006<br>1. N/C (ON)<br>2. N/O (OFF)                                                           |                                                                      |              |         |                        |
| 9059-7009<br>1. N/O - On/Off<br>2. N/O - On/Off                                                    |                                                                      |              |         |                        |
| 9059-7012<br>1. N/O - On/Off<br>2. N/C (OFF)                                                       |                                                                      |              |         |                        |
| 9059-7013<br>1. N/O - On/Off<br>2. N/C (OFF)                                                       |                                                                      |              |         |                        |
| 9059-7014<br>1. N/O - On/Off<br>2. N/O - On/Off<br>NAV/ANC                                         |                                                                      |              |         |                        |
| 9059-7015<br>1. N/C - Dim Up<br>50% --> 100%<br>2. N/C - Dim Dn<br>50% --> 5%<br><br>DIMMER<br>PWM | Restart power : light intensity level to the level of power off!<br> | Dim up<br>   | Off<br> | Activate<br>or Top<br> |
| 9053-3914<br>BW DT<br>Connector                                                                    | 5 pins Deutsch Connector<br>                                         |              |         |                        |
| 9451-0800<br>Laser Actuators                                                                       | Double-painted actuators in Black for Laser etching<br>              |              |         |                        |
| 9451-1801<br>Translucent Actuators                                                                 | Full translucent actuators<br>                                       |              |         |                        |
| 114017-ZZ<br>Dummy Plug                                                                            | for DT Connector<br>                                                 |              |         |                        |

## 2N1 Inrush Switch

IP 69K / 2x10A CHAN

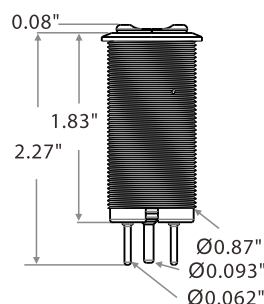
### Recommended Wiring

Orange (Power +) Red (Load 1 +)  
Blue (Blue LED +) Red/Black (Load 2 +)  
Black (Ground -)

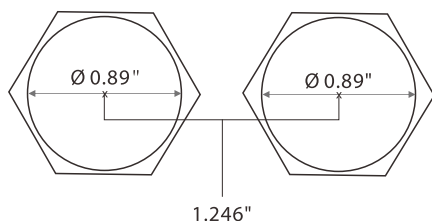
|           |       |                 |
|-----------|-------|-----------------|
| Black     | 16awg | Ground -        |
| Blue      | 16awg | Blue LED +12Vdc |
| Red       | 14awg | Load1 +12Vdc    |
| Orange    | 14awg | Power +12Vdc    |
| Red/Black | 14awg | Load2 +12Vdc    |



### Size Diagram



### Mounting Hole



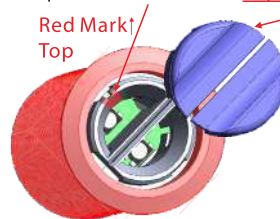
Recommended Minimum Center Spacing to allow for point-to-point mounting nut with center removal tool clearance

### WARNING

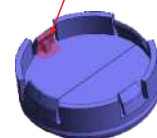
- ▶ Dummy plugs required in Bluewater DT connectors for all non-wired (empty) pin locations.
- ▶ Failure to include dummy plug in non-wired (empty) pin locations in Bluewater DT Connector voids water tight rating and warranty.
- ▶ See part number for dummy plugs on page one.
- ▶ Wire sizes must meet minimum OD requirements listed on page one. Failure to meet the OD requirements voids water-tight rating and warranty
- ▶ Only use Bluewater DT connector, other connector will cause damage & void warranty.

### Installing Actuator

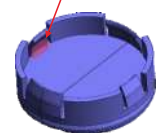
A recessed slot from the top view of the switch (Top actuator)



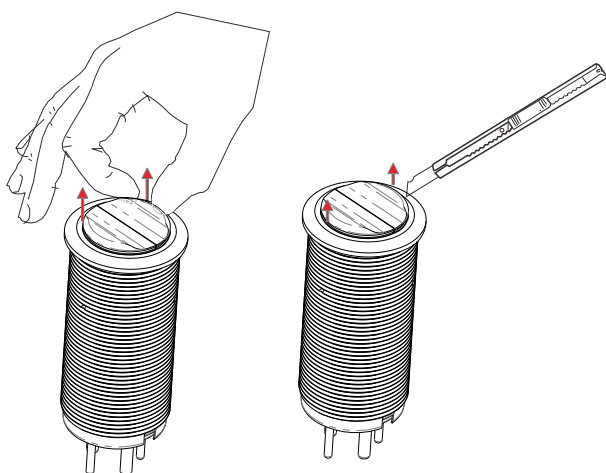
A raised ridge from the rear of the top actuator



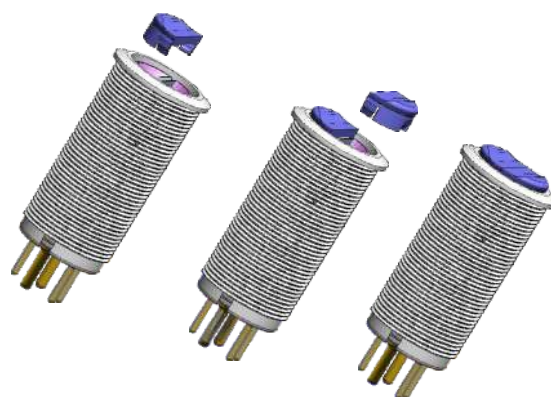
Flat surface from the rear of the bottom actuator



### Replacing Actuator



Remove the actuator:  
lift up the actuator by finger or fine tool toward the edge of the actuator.



## 9059-7002 Double Momentary ON

1. N/O (ON) 2. N/O (ON)

### Operation

- ▶ Press and hold the Top button to turns on the output 2 (LED lights Green) .
- ▶ Press and hold the Bottom button to turns on the output 1 (LED lights Red)



- ▶ **Laser Etched Actuator in Daytime Mode** LED light is off.
- ▶ **Laser Etched Actuator in Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Both outputs OFF, Both LEDs OFF.



- ▶ **Press and Hold Top Button** turn on output 2, Top LED lights Green.
- ▶ **Release Top Button** turn off output 2, Top LED lights OFF.



- ▶ **Press and Hold Bottom Button** turn on output 1, Bottom LED lights Red.
- ▶ **Release Bottom Button** turn off output 1, Bottom LED lights OFF.

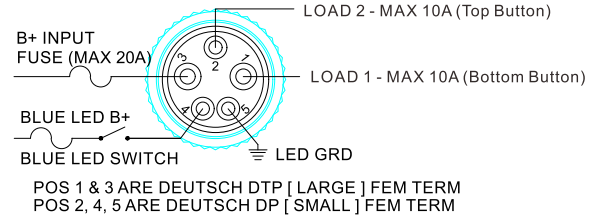


- ▶ **Press and Hold Both Buttons** turn on output 1 and output 2, Top LED lights Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** turn off output 1 and output 2, Both LEDs OFF.

### REAR PLUG VIEW

BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button press and hold - Top LED lights Green (Load 2 ON)  
BOTTOM Button press and hold - Bottom LED lights Red (Load 1 ON)



## 9059-7004 Double Momentary OFF

1. N/C (OFF) 2. N/C (OFF)

### Operation

- ▶ Press and hold the Top button to turns off the output 2 (LED lights Green) .
- ▶ Press and hold the Bottom button to turns off the output 1 (LED lights Red)



- ▶ **Laser Etched Actuator in Daytime Mode** LED light is off.
- ▶ **Laser Etched Actuator in Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Both outputs ON, Both LEDs OFF.



- ▶ **Press and Hold Top Button** turn off output 2, Top LED lights Green.
- ▶ **Release Top Button** turn on output 2, Top LED lights OFF.



- ▶ **Press and Hold Bottom Button** turn off output 1, Bottom LED lights Red.
- ▶ **Release Bottom Button** turn on output 1, Bottom LED lights OFF.

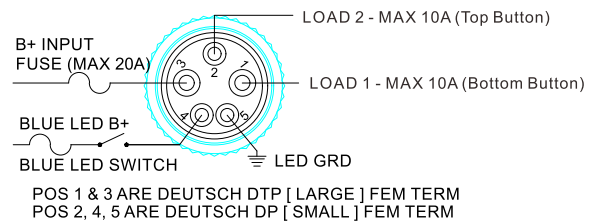


- ▶ **Press and Hold Both Buttons** turn off output 1 and output 2, Top LED lights Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** turn on output 1 and output 2, Both LEDs OFF.

### REAR PLUG VIEW

BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button press and hold - Top LED lights Green (Load 2 OFF)  
BOTTOM Button press and hold - Bottom LED lights Red (Load 1 OFF)



## 9059-7006 Double Momentary ON/OFF

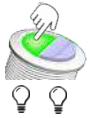
1. N/C (ON) 2. N/O (OFF)

### Operation

- ▶ Press and hold the Top button to turns off the output 2 (LED lights Green) .
- ▶ Press and hold the Bottom button to turns on the output 1 (LED lights Red)



- ▶ **Laser Etched Actuator in Daytime Mode** LED light is off.
- ▶ **Laser Etched Actuator in Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Output 2 ON, Output 1 OFF, Both LEDs OFF.



- ▶ **Press and hold the Top Button** turn off output 2, Top LED lights Green.
- ▶ **Release Top Button** output 2 ON, Top LED OFF.



- ▶ **Press and hold the Bottom Button** turn on output 1, Bottom LED lights Red.
- ▶ **Release Bottom Button** output 1 OFF, Bottom LED OFF.

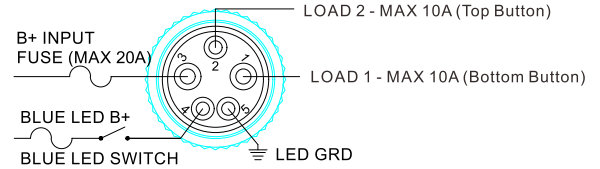


- ▶ **Press and hold Both Buttons** Output 2 turns off and Output 1 turns on, Top LED turns Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** output 2 ON, output 1 OFF, Both LEDs OFF.

### REAR PLUG VIEW

BLUE BACKLIT - APPLY B+ TO TERM 4.

TOP Button press and hold - Top LED lights Green (Load 2 OFF)  
BOTTOM Button press and hold - Bottom LED lights Red (Load 1 ON)



POS 1 & 3 ARE DEUTSCH DTP [ LARGE ] FEM TERM  
POS 2, 4, 5 ARE DEUTSCH DP [ SMALL ] FEM TERM

## 9059-7009 Double Latch ON

1. N/O : On-Off 2. N/O : On-Off

### Operation

- ▶ Press the Top button to turns on the output 2 (LED lightns Green) .
- ▶ Press the Bottom button to turns on the output 1 (LED lights Red)



- ▶ **Laser Etched Actuator in Daytime Mode** LED light is off.
- ▶ **Laser Etched Actuator in Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Both outputs OFF, Both LEDs OFF.



- ▶ **Press the Top Button** turn on output 2, Top LED lights Green.
- ▶ **Release Top Button** output 2 keeps on, Top LED keeps Green.



- ▶ **Press the Bottom Button** turn on output 1, Bottom LED lights Red.
- ▶ **Release Bottom Button** output 1 keeps on, Bottom LED keeps Red.

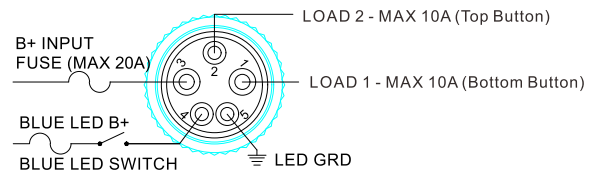


- ▶ **Both Buttons latch ON** Both outputs ON, Top LED keeps Green and Bottom LED keeps Red.

### REAR PLUG VIEW

BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button Press - Top LED lights Green (Load 2 ON)  
BOTTOM Button Press - Bottom LED lights Red (Load 1 ON)



POS 1 & 3 ARE DEUTSCH DTP [ LARGE ] FEM TERM  
POS 2, 4, 5 ARE DEUTSCH DP [ SMALL ] FEM TERM



## 9059-7012 Latch On Momentary Off

1. N/O: On-Off 2. N/C (OFF)

### Operation

- ▶ Press the Top button to turns on the output 2 (LED lights Green) .
- ▶ Press and hold the Bottom button to turns off the output 1 (LED lights Red)



- ▶ Laser Etched Actuator in **Daytime Mode** LED light is off.
- ▶ Laser Etched Actuator in **Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Output 2 OFF, Output 1 ON, Both LEDs OFF.



- ▶ **Press the Top Button** turn on output 2, Top LED lights Green.
- ▶ **Release Top Button** output 2 keeps ON, Top LED keeps Green.



- ▶ **Press and hold the Bottom Button** turn off output 1, Bottom LED lights Red.
- ▶ **Release Bottom Button** output 1 ON, Bottom LED OFF.



- ▶ **Press the Top Button again** turn off output 2, Top LED OFF.
- ▶ **Release Top Button** output 2 keeps OFF, Top LED OFF.



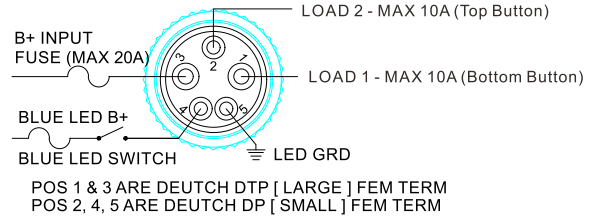
- ▶ **Press and hold Both Buttons** Output 2 turns off, Bottom LED lights Red.
- ▶ **Release Bottom Button** output 2 ON, Bottom LED OFF.

### REAR PLUG VIEW

BLUE BACKLIT - APPLY B+ TO TERM 4.

TOP Button press - Top LED lights Green (Load 2 ON)

BOTTOM Button press and hold - Bottom LED lights Red (Load 1 OFF)



## 9059-7013 Latch ON/Interrupt OFF

1. N/O: On-Off 2. N/C (OFF) Interrupt

### Operation

- ▶ Press the Top button to turns on the output 2 (Both LEDs lights Green) .
- ▶ Press and hold the Bottom button to turns off both outputs (Top LED OFF, Bottom LED turns Red)



- ▶ Laser Etched Actuator in **Daytime Mode** LED light is off.
- ▶ Laser Etched Actuator in **Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the switch's status.
- ▶ **Power ON:** Output 2 ON, Both LEDs OFF.



- ▶ **Press the Top Button** turn on output 2, Both LEDs light Green.
- ▶ **Release Top Button** output 2 & 1 keep on, Both LEDs keep Green.



- ▶ **Press the Top Button again** turn off output 2, Both LEDs OFF.
- ▶ **Release Top Button** output 2 keeps off, Both LEDs OFF.



- ▶ **Press the Top Button again** turn on output 2, Both LEDs light Green.
- ▶ **Release Top Button** output 2 & 1 keep on, Both LEDs keep Green.



- ▶ **Press and hold the Bottom Button** turn off output 1 and output 2, Bottom LED lights Red. Top LED OFF.
- ▶ **Release Bottom Button** output 1 ON, output 2 OFF, Both LEDs OFF.

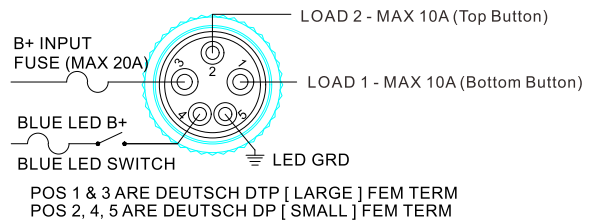


### REAR PLUG VIEW

BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button Press - Both LEDs lights Green (Both Loads ON)

BOTTOM Button press and hold - Bottom LED lights Red (Load 1 OFF)



## 9059-7014 Latch On-Off Nav/Anc

1.N/O: On-Off 2.N/O: On-Off

### Operation

- ▶ Press the Top button to turns on both output 2 (Top LED lights Green, Bottom LED lights Red) .
- ▶ Press the Bottom button to turns off output2 and turn on output1 (Top LED OFF, Bottom LED lights Red)



- ▶ **Laser Etched Actuator in Daytime Mode** LED light is off.
- ▶ **Laser Etched Actuator in Nighttime Mode** The Blue LED provides great visibility of the function switches and lets you know that the swithes are in off position .
- ▶ **Power ON:** Both outputs OFF, Both LEDs OFF.



- ▶ **Press the Top Button** turn on both output s, Top LED lights Green, Bottom LED lights Red.
- ▶ **Release Top Button** Both outputs keep ON, Top LED kees Green, Bottom LED keeps Red.



- ▶ **Press the Top Button again** turn off both outputs, Bottom LEDs OFF.
- ▶ **Release Top Button** both outputs keep OFF , Both LEDs keep OFF.



- ▶ **Press the Bottom Button** Output 2 turns off, Output 1 turns on, Bottom LED lightns Red.
- ▶ **Release Bottom Button** output 1 keeps ON, Bottom LED keeps Red.

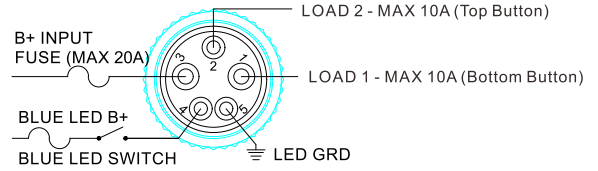


- ▶ **Press the Bottom Button again** turn off both outputs, Bottom LEDs OFF.
- ▶ **Release Bottom Button** both outputs keep OFF , Both LEDs keep OFF.

### REAR PLUG VIEW

BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button Press - Turn ON both outputs, Top LED Green, Bottom LED Red  
BOTTOM Button Press - Turn OFF output 2, Turn ON output 1.  
Bottom LED lights Red, Top LED OFF.



POS 1 & 3 ARE DEUTSCH DTP [ LARGE ] FEM TERM  
POS 2, 4, 5 ARE DEUTSCH DP [ SMALL ] FEM TERM

## 9059-7015 Dimmer (PWM)

Top button: Dim up, Bottom button: Dim Dn

### Operation

- ▶ Press and hold the Top button to Dim Up the light level from 5% to 100%
- ▶ Press and hold the Bottom button to Dim Down the light level from 100% to 5%
- ▶ Restart Power: Light intensity level to the level of power off.



- ▶ **Power ON:** Both LEDs light Red, output light level to the 50%



- ▶ **Press and hold the Top Button** Dim up the output light level, bottom LED lights Off
- ▶ **Release Top Button** To the light level (70%)while releasing the button. Top LED lights Red  
50% -->70%(100%)



- ▶ **Press both Buttons** Turn off the output, Both LEDs Off.



- ▶ **Activate: Press Bottom or Top Button to Activate the Dimmer Light**  
Will go to the light intensity level to the level of power off. 70%



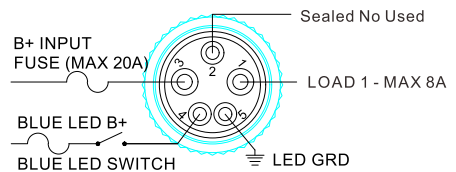
- ▶ **Press and hold the Bottom Button** Dim down the output light level, Top LED lights Off
- ▶ **Release Bottom Button** To the light level (30%)while releasing the button. Bottom LED lights Red  
70% -->30%(5%)



### REAR PLUG VIEW

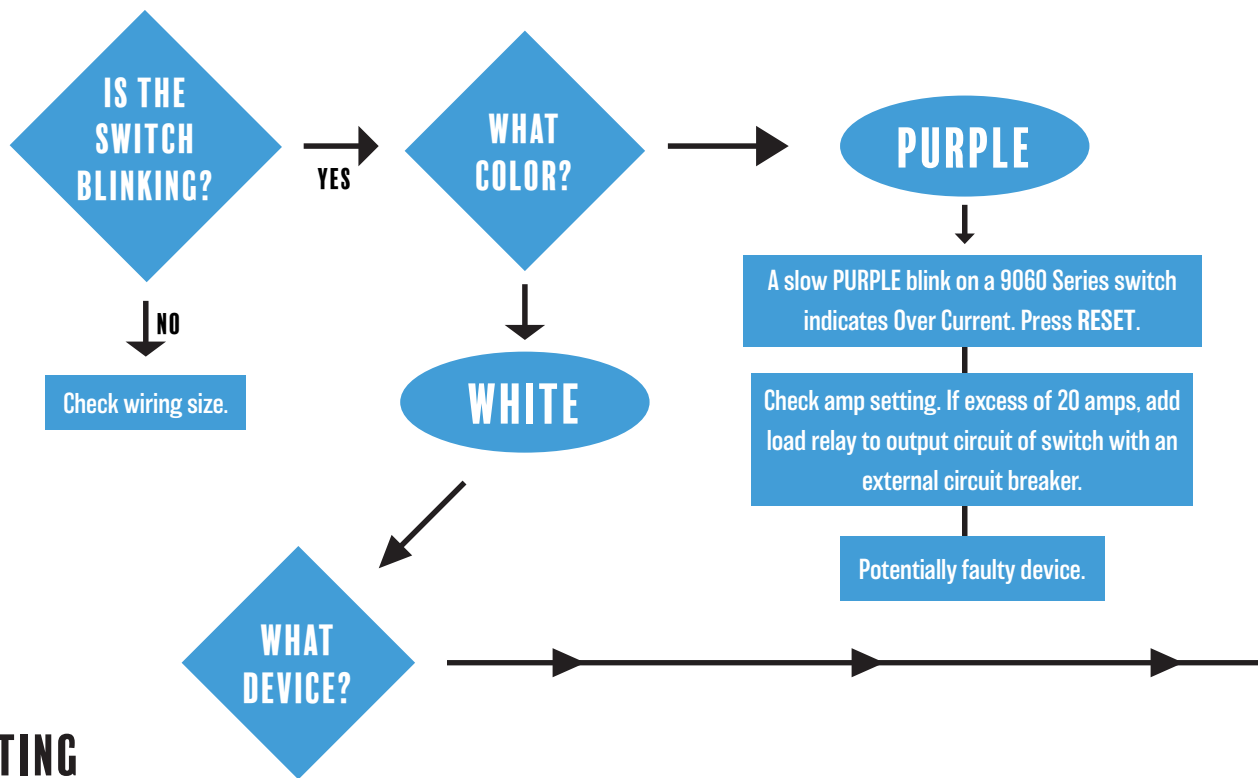
BLUE BACK LIGHT - APPLY B+ TO TERM 4.

TOP Button Press and hold: Dim UP - 5% to 100%  
BOTTOM Button press and hold - Dim Down - 100% to 5%



POS 1 & 3 ARE DEUTSCH DTP [ LARGE ] FEM TERM  
POS 2, 4, 5 ARE DEUTSCH DP [ SMALL ] FEM TERM

## SMART SWITCH FLOW CHART



## TROUBLESHOOTING PARTS

Capacitor

1406-000-001



Choke

1400-000-001



Diode

1405-300-001



FIGURE 1

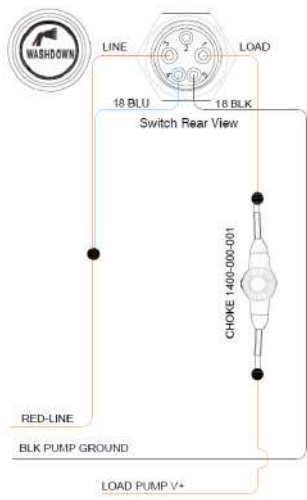


FIGURE 2

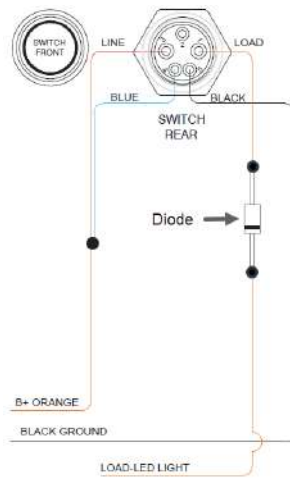
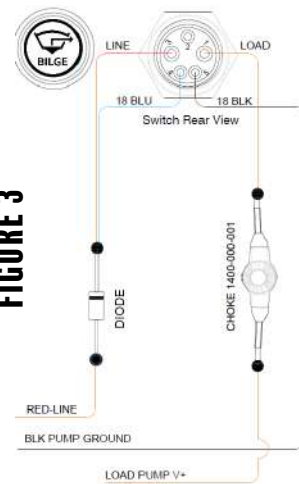


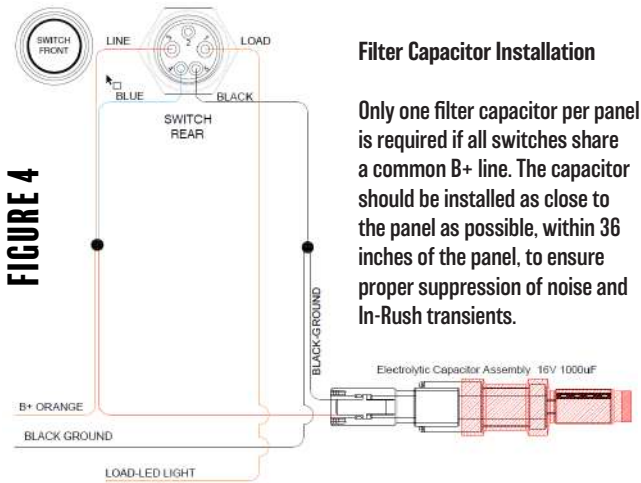
FIGURE 3



### Bilge Pump Switch Installation

A diode is required on every bilge pump switch to prevent back-feeding and ensure proper operation. A choke is not typically necessary; however, if a choke is required, it should be installed as close to the pump as possible, above the waterline, to effectively suppress noise.

FIGURE 4



### Filter Capacitor Installation

Only one filter capacitor per panel is required if all switches share a common B+ line. The capacitor should be installed as close to the panel as possible, within 36 inches of the panel, to ensure proper suppression of noise and In-Rush transients.

CARMIN/  
MFDS

Install a diode (Part ID: 1405-300-100) between the switch output and the device, with the cathode (grey part) facing the device.  
See Figure 2.

LED  
LIGHTS

Install a diode (Part ID: 1405-300-100) between the switch output and the device, with the cathode (grey part) facing the device.  
See Figure 2.

RELAY/ RELAY  
STYLE  
BATTERY SWITCH

Install a diode (Part ID: 1405-300-100) between the switch output and the device, with the cathode (grey part) facing the device.  
See Figure 2.

EVACUATION  
BLOWER/FAN

Install a diode (Part ID: 1405-300-100) between the switch output and the device, with the cathode (grey part) facing the device.  
See Figure 2.

STILL  
BLINKING

Install a 16V 1000uF electrolytic capacitor (Part ID: 1406-000-001) across Line B+ and Ground near the LED switch. This stabilizes voltage and prevents In-Rush or Over Current faults. Note that faults may not appear until after extended operation, when voltage drops or temperature rises.  
See Figure 4.

STILL  
BLINKING

Install a 16V 1000uF electrolytic capacitor (Part ID: 1406-000-001) across Line B+ and Ground near the switch. This stabilizes voltage and corrects the issue creating the fault.  
See Figure 4.

STILL  
BLINKING

Install a 16V 1000uF electrolytic capacitor (Part ID: 1406-000-001) across Line B+ and Ground near the switch. This stabilizes voltage and corrects the issue creating the fault.  
See Figure 4.