

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 Outputs do not function 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
Construction Material	
Body Material	Stainless Steel SS316
Lens Material	PC material rated to 105°C
Switch Plug & Dongle	Nylon 6 rated to 105°C
Deutsch Recommended Part#	
Large socket	0462-203-12141
Small socket	0462-209-16141
Dummy Plug	14017-ZZ

Part No.

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

2N1 Inrush Switch

IP 69K / 2x10A CHAN

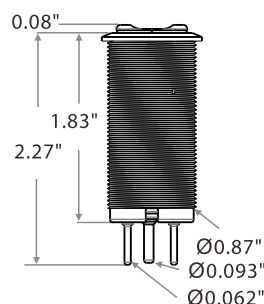
Recommended Wiring

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

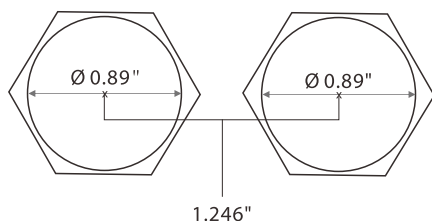
Black	16awg	Ground -
Blue	16awg	Blue LED +12Vdc
Red	14awg	Load1 +12Vdc
Orange	14awg	Power +12Vdc
Red/Black	14awg	Load2 +12Vdc



Size Diagram



Mounting Hole



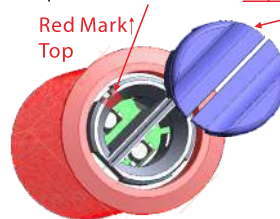
Recommended Minimum Center Spacing to allow for point-to-point mounting nut with center removal tool clearance

WARNING

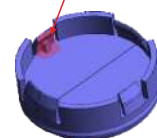
- ▶ Dummy plugs required in Bluewater DT connectors for all non-wired (empty) pin locations.
- ▶ Failure to include dummy plug in non-wired (empty) pin locations in Bluewater DT Connector voids water tight rating and warranty.
- ▶ See part number for dummy plugs on page one.
- ▶ Wire sizes must meet 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

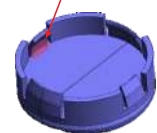
A recessed slot from the top view of the switch (Top actuator)



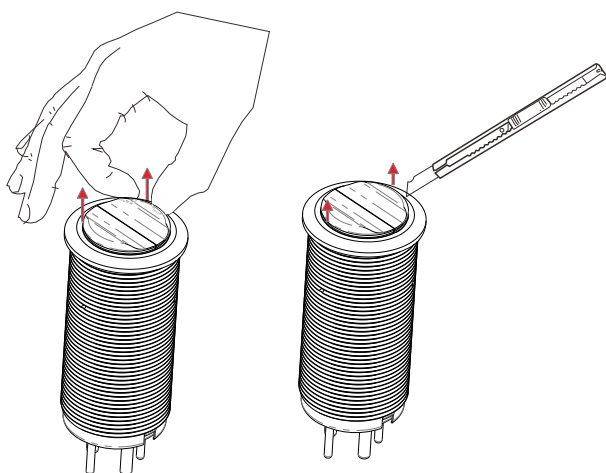
A raised ridge from the rear of the top actuator



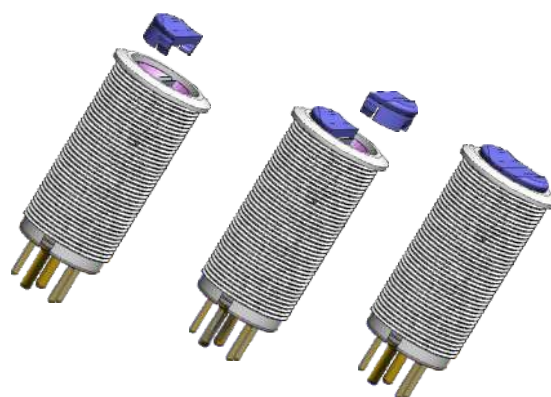
Flat surface from the rear of the bottom actuator



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.

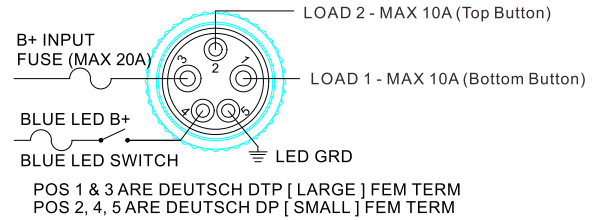


- ▶ **Press and Hold Both Buttons** turn on output 1 and output 2, Top LED lights Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** turn off output 1 and output 2, Both LEDs OFF.

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.

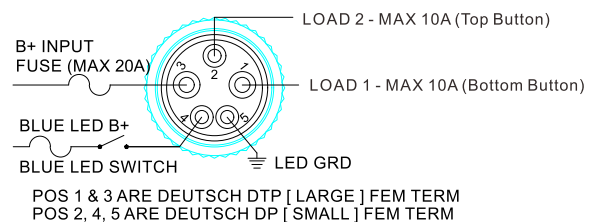


- ▶ **Press and Hold Both Buttons** turn off output 1 and output 2, Top LED lights Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** turn on output 1 and output 2, Both LEDs OFF.

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

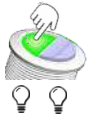
1. N/C (ON) 2. N/O (OFF)

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.

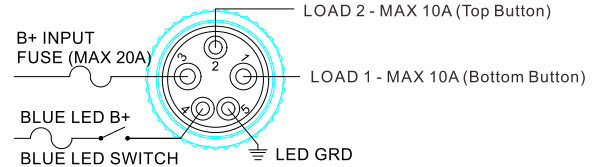


- ▶ **Press and hold Both Buttons** Output 2 turns off and Output 1 turns on, Top LED turns Green and Bottom LED lights Red.
- ▶ **Release Both Buttons** output 2 ON, output 1 OFF, Both LEDs OFF.

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.

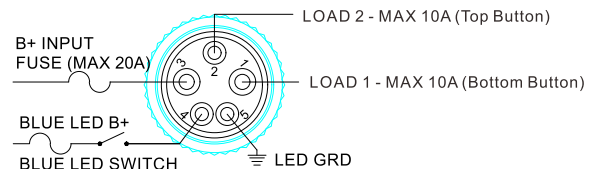


- ▶ **Both Buttons latch ON** Both outputs ON, Top LED keeps Green and Bottom LED keeps Red.

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.



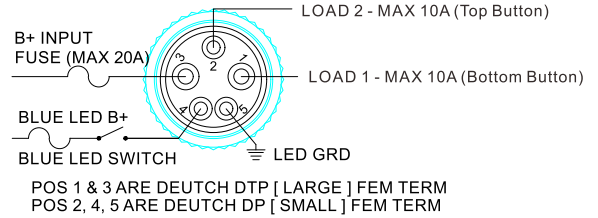
- ▶ **Press and hold Both Buttons** Output 2 turns off, Bottom LED lights Red.
- ▶ **Release Bottom Button** output 2 ON, Bottom LED OFF.

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.

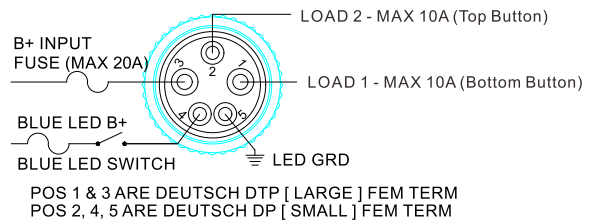


REAR PLUG VIEW

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.

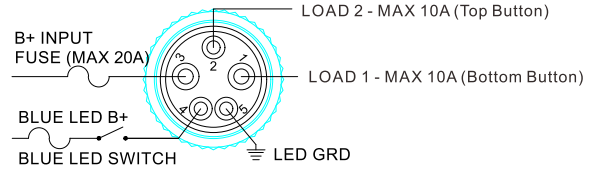


- ▶ **Press the Bottom Button again** turn off both outputs, Bottom LEDs OFF.
- ▶ **Release Bottom Button** both outputs keep OFF , Both LEDs keep OFF.

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%)



- ▶ **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%)



- ▶ **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%)



- ▶ **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%)

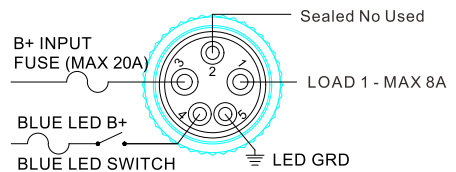


- ▶ **Press and hold the Bottom Button** Dim down the output light level, Top LED lights Off
- ▶ **Release Bottom Button** To the light level (30%)while releasing the button. Bottom LED lights Red
70% --> 30%(5%)

REAR PLUG VIEW

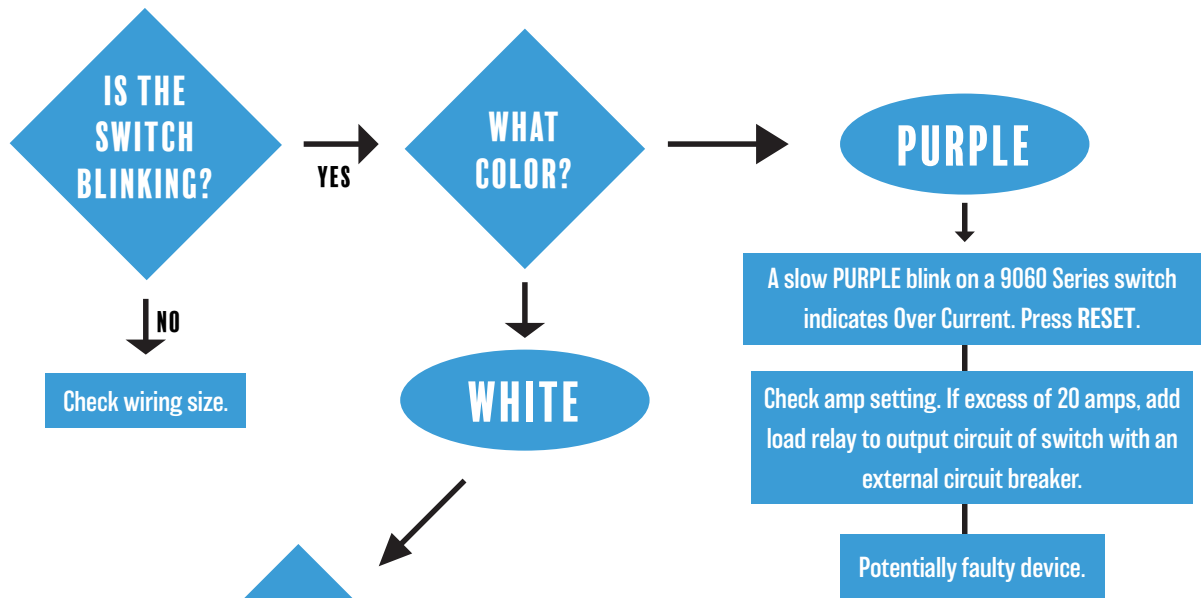
BLUE BACK LIGHT - APPLY B+ TO TERM 4.

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

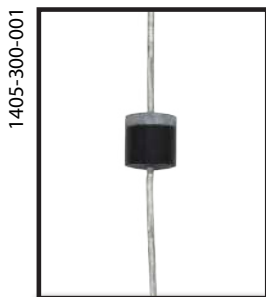
Capacitor



Choke



Diode



Install an in-line choke (Part ID: 1400-000-001) in the wire between the switch output and the pump, as close to the pump as possible (above the waterline). This will suppress electrical noise and typically correct any pump or motor that repeatedly triggers an Over Current fault. [See Figure 1.](#)

Install an in-line choke (Part ID: 1400-000-001) in the wire between the switch output and the pump, as close to the pump as possible (above the waterline). This will suppress electrical noise and typically correct any pump or motor that repeatedly triggers an Over Current fault. [See Figure 1.](#)

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 3.](#)

Install a diode (Part ID: 1405-300-100) with the cathode facing the switch to prevent back-feeding from the 24-hour auto bilge circuit. [See Figure 2.](#)

FIGURE 1

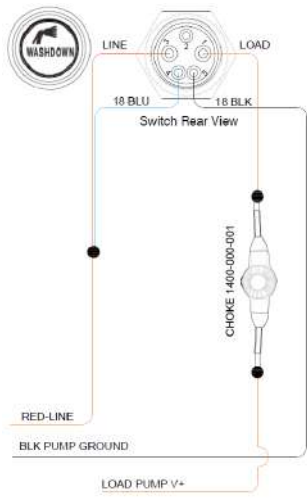


FIGURE 2

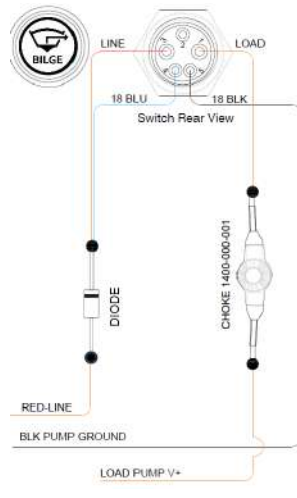
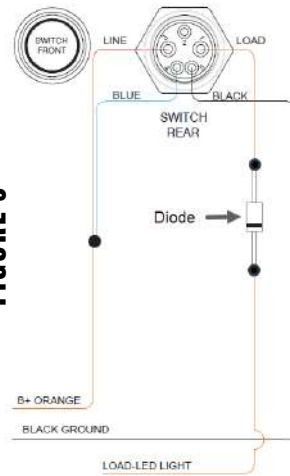


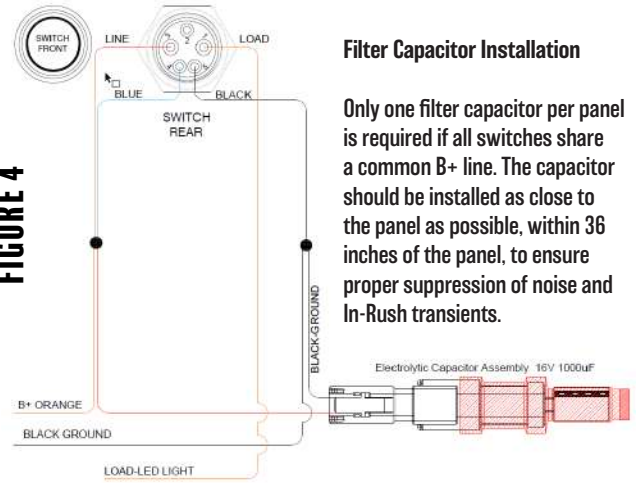
FIGURE 3



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.

GARMIN/
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 3](#).

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 3](#).

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](#).

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 3](#).

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](#).

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 3](#).

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](#).