

WIG-WAG RELAY SWITCH

WIG-WAG relay switch for UL aircraft landing lights



Product description:

WIG-WAG RELAY SWITCH is a product intended for regular alternating switching of left and right reflector lighting. This function is used during the landing maneuver of the aircraft. The time interval for alternating lighting of one side is approximately 720 msec, i.e. the repetition period is 1.4 s. The product has two electrical circuits. The first circuit (thinner wires used) powers the control logic of the power element and the second, with thicker wires, serves to connect the lights. The second circuit contains 3 wires. One common (+) and two output wires L and R (switched output WIG-WAG). The maximum permissible current through the common conductor (COM) for the product's long life is 1 A (power max. 15W). If it is necessary to turn on continuous lighting, it is necessary to add a function switch to the circuit. With this switch, we turn off the WIG-WAG function and apply voltage directly to the reflectors. This ensures that both reflectors are lit. The common COM wire is protected inside the product by a reversible fuse.

During installation, proceed according to the wiring diagram (see Fig. 1 or 2) and properly test the installation. The product is intended for aircraft with 12 V electrical installations. This type of product is not intended for certified aircraft. If the reversible fuse is equipped, the device must be switched off and wait for it to cool down. After that, the device can be turned on again in full functionality.

Electrical characteristic:

<i>Parameter</i>	<i>Min</i>	<i>Typ.</i>	<i>Max</i>	<i>Unit</i>	<i>note</i>
Supply voltage	9	12	15	VDC	
Power consumption	100	200	500	mW	
Switching voltage	9	12	15	VDC	
Switching current	0,1	-	1	A	
Peak current			3	A	Max. 8 msec
Switching power	0,9	-	15	W	
Mechanical life relay		10 ⁷		-	No load
Electrical life relay		10 ⁵		-	
Recommended fuse protection of low-power electronic		0,5		A	
Recommended fuse protection of high-power electronic		8		A	Slow fuse
Switching output fuse protection		YES			Automatic conduction renewal. When equipped the inside fuse, the device must be turned off for the cooling of the protective element, and then it can be turned on.
Reverse polarity protection		YES			
Output WIG-WAG timing	620	720	820	msec	
Blocking diode at output L and R		*YES			Outputs L and R are individually blocked against reverse current by a diode.
Note	*In devices manufactured from 12/19/2023. Older versions were without blocking diodes.				

Mechanical dimension:

<i>Parameter</i>	<i>value</i>	<i>unit</i>	<i>note</i>
Width	41,0	mm	*See Fig. 3, 4 and 6 – Box dimension
Depth	44,5	mm	
High	27,5	mm	
Mounting holes	M3	mm	
Weight	50	g	
Cable size	0,34 a 0,5	mm ²	22AWG a 20AWG
Cable length	50	cm	

Wire name legend:

Signal	Recommended connector	Wire color
Control electronic supply (22AWG / 0,35mm²)		
GND	male	BLUE
+12V	male	RED
Relay input/output (20AWG / 0,5mm²)		
COM (+12V)	male	Black
OUT L*	female	YELLOW
OUT R	female	WHITE

* If the control electronics of the unit is not powered, the COM wire is connected to the output OUT L

Wiring diagram:

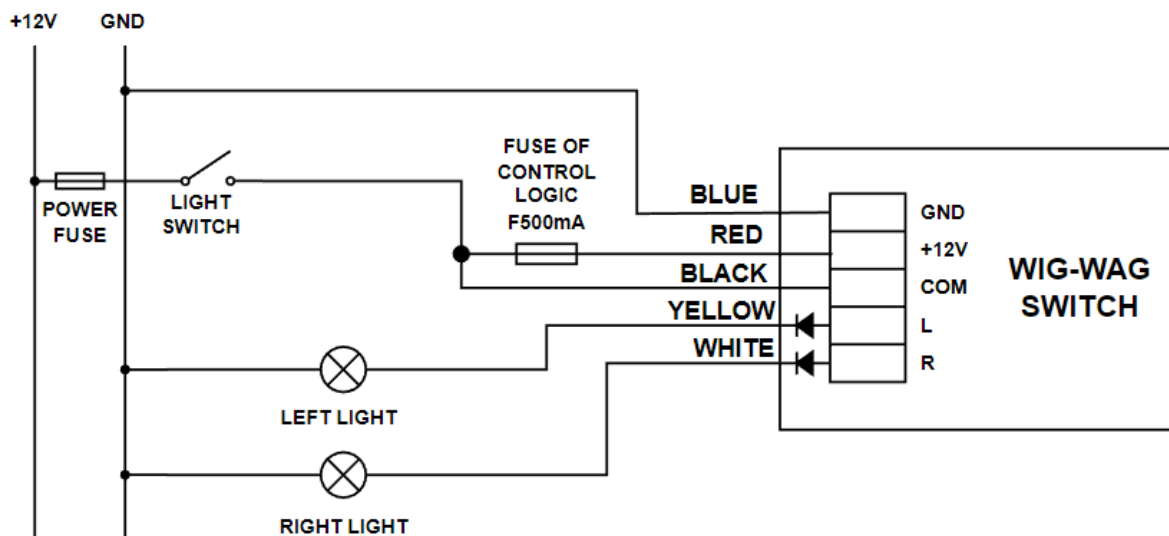


Fig. 1 Basic WIG-WAG Relay Switch

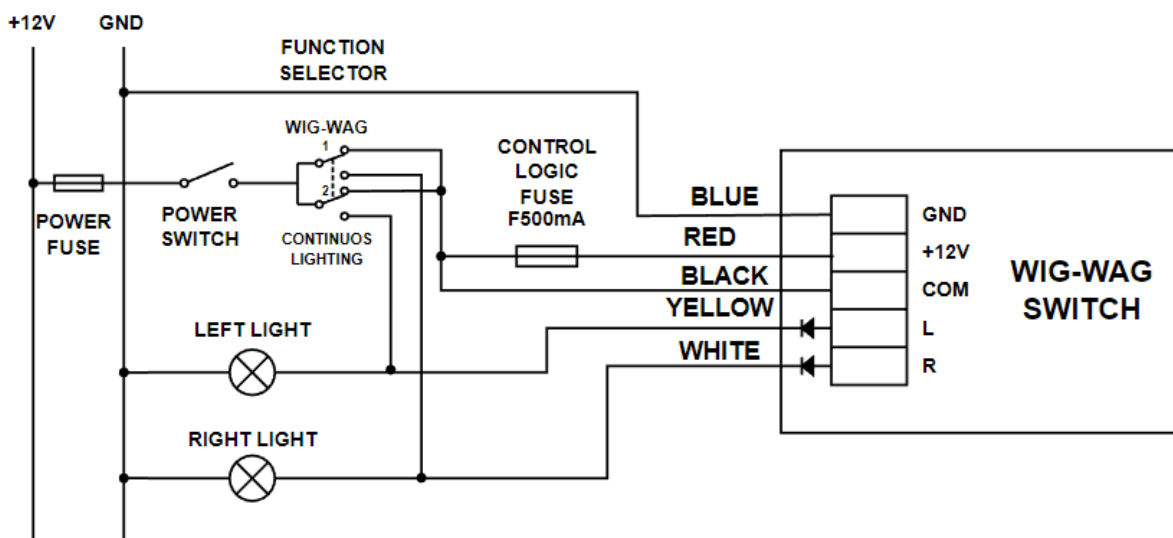


Fig. 2 Extended schema WIG-WAG Relay Switch with switch continuous light/wig-wag

Product dimension:

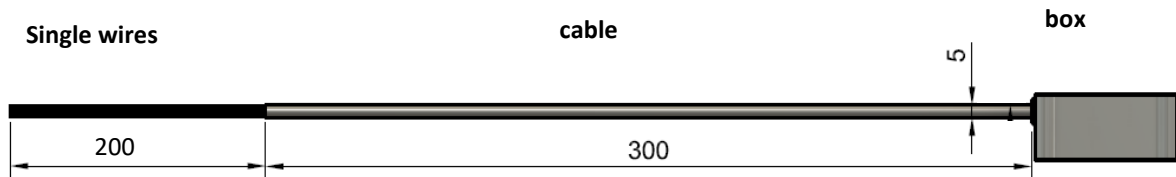


Fig. 3 Cable length output (mm)

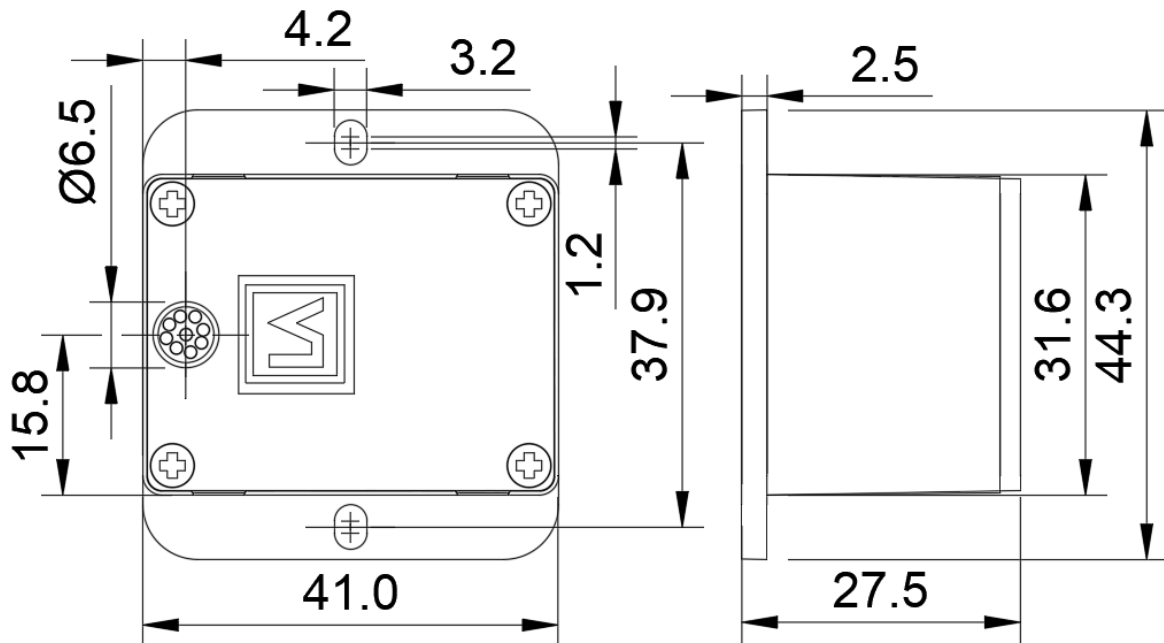


Fig. 4 Box dimension (mm)

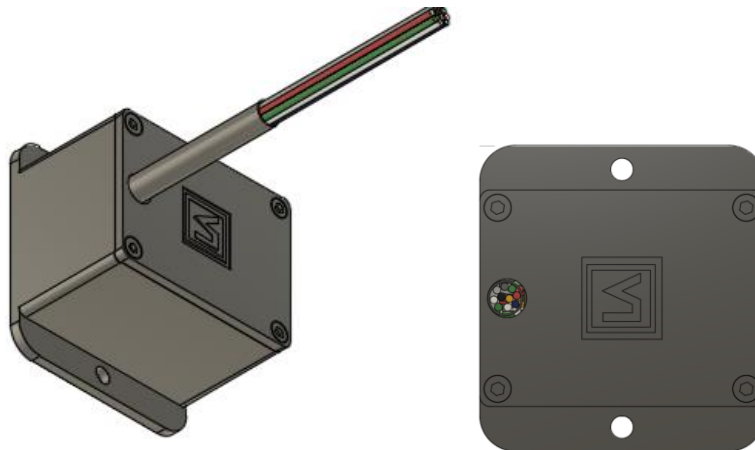


Fig. 5 View of product

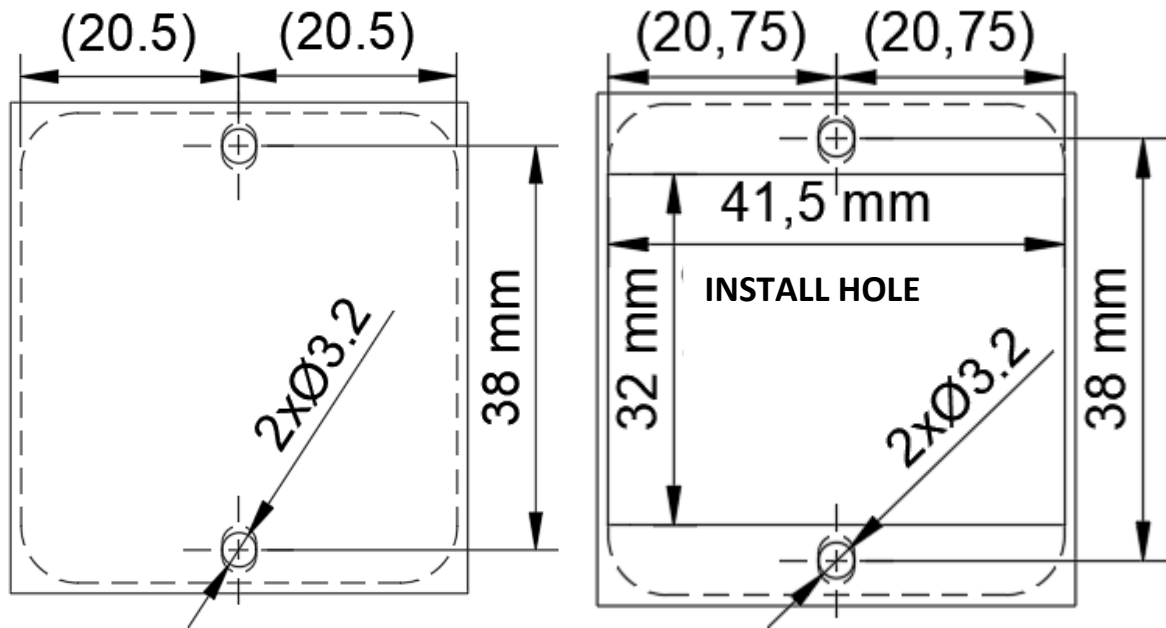


Fig. 6 Installation holes a) on the surface b) recessed into the hole

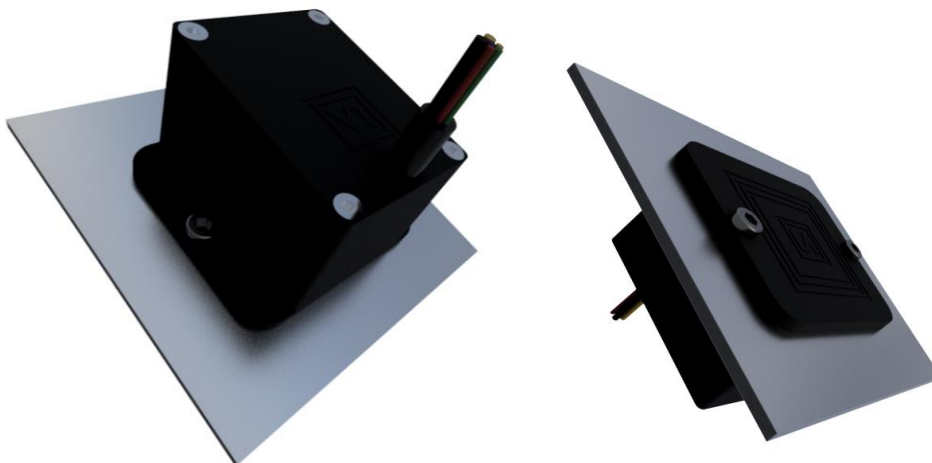


Fig. 7 Installation representation a) on the surface b) recessed into the hole

Operating conditions:

Parameter	Value	Unit	Note
Operating temperature	-30 ÷ 55	°C	
Humidity	20 ÷ 80 %	RH	
Atmospheric pressure	900 ÷ 1100	hPa	
IP	IP20	-	
Mounting type	To surface/hole	-	Screw M3
Operating position	any	-	

Important notes and warnings

Thank you for purchasing **WIG-WAG RELAY SWITCH**. For a comfortable and safe use of this product, please pay attention to THE ENTIRE MANUAL, especially the notes and warnings below.

- Although the **WIG-WAG RELAY SWITCH** unit has been thoroughly tested to ensure maximum safety in all conceivable situations, THE RIGHT FUNCTIONALITY DEPENDS ON THE RIGHT INSTALLATION AND SETTINGS.
- Therefore, it is **NECESSARY to READ CAREFULLY and UNDERSTAND THIS MANUAL COMPLETELY**.
- Keep this manual printed in an airplane for cases of emergency or change of ownership.
- **THIS PRODUCT IS NOT APPROVED FOR INSTALLATION IN CERTIFIED AIRPLANES.**
- The pilot **MUST UNDERSTAND** the control of this product before the first flight. **DO NOT** use the product unless you are sure how it works!
- Do not allow unauthorized persons to handle the installed product.
- After installing the product, before the first flight, turn on ALL possible sources of electromagnetic interference on board the aircraft and ensure that the instrument is functioning properly.
- Use of the device in conflict with this manual, with bad wiring, outside the allowed operating conditions, etc., may cause the device to malfunction or damage and endanger flight safety.
- If the product repeatedly indicates an error, do not use it and turn off the power!
- AVOID contact with liquids and chemicals
- Before installation, check the mechanical integrity of the device and its accessories
- **DO NOT** disassemble the device!
- After installation, carefully check the functionality of the device and its installation
- The responsibility for the installation is entire with the installer.
- Responsibility for performing control actions based on information indicated by the product is full of the operator (pilot). The operator must be able to evaluate an incorrect indication even if the product does not indicate an error.
- Ensure regular maintenance of the aircraft's main battery
- If you do not agree to the notes and warnings above, do not use this product.

Company LAMBERT AERODEVICES s.r.o reserves the right to change or improve the product or manual without prior or subsequent notice.

Document history:

<i>Date</i>	<i>rev</i>	<i>Change description</i>	<i>author</i>
18.08.2022	0	First release of the document	NEPOR
2.12.2022	1	Update box dimension	NEPOR
13.12.2022	2	Update wiring diagram	NEPOR
19.12.2023	3	Modification of parameters and wiring diagrams	NEPOR



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