TABLO

Double LED signaling unit with user-adjustable signaling color

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Description:

TABLO unit is a double segment colored light signaling unit. It is useful for show warnings, errors and other states of units in the aircraft. Thanks to the colored illuminated text, the pilot has a quick overview of the situation and can react quickly to a given stimulus. The user can choose from standard (WARNING – CAUTION, STALL WARNING – MFD ALARM, CANOPY – PITOT HEAT, …) or custom-made transparent front labels. The control and color settings of the upper and lower segments are independent of each other. Segments are activated by grounding the respective control terminal pins. The unit has one more input, the dimmable input, which is common to both channels. For channel dimming, it is possible to use the DOUBLEDIMMER product from our range.

The installation is carried out in the instrument panel in the cockpit. It is necessary to make a square hole in the panel, pass the cables through it and connect them to the back terminals of the TABLO unit. Next, the entire product is inserted into the hole. The spring-loaded locking element is installed at the end. Place the spring contact on the cables and place it on the body of the product. Snap it into the slots in the body of the product. Pay attention to the legal orientation of the spring.

The TABLO product is intended for UNCERTIFIED aircraft with a 12 V or 24 V (nominal) electrical system. **PRODUCT NOT APPROVED FOR INSTALLATION IN CERTIFIED AIRCRAFT! The product does not have TSO certification!**

Electrical parameters:

Parameters	*Min*	*Type*	*Max*	*Unit*	*Note*
Supply voltage	9	12	30	V	
Idle current consumption		4		mA	R_{SET}=∞; DIM=0; LED_CTRL not connected
Max current consumption			150	mA	
LED RED consumption			50	mA	2 channels, max brightness
LED ORANGE consumption			50	mA	2 channels, max brightness
LED GREEN consumption			40	mA	2 channels, max brightness
DIM input voltage	2		30	V	
Output current on LED_xxx_CTRL			2	mA	
Output current on LED_xxx_SET			0,5	mA	
PWM lost protection		YES			After 2 sec it goes to maximum brightness (for VCC and GND level)
Recommended FUSE protection		500		mA	
Polarity reversal protection		YES			It is necessary to have fuse protection
Voltage input resistance		30		V	Against the permanently connected voltage
Backlight technology		LED			RGB
PWM frequency	40		150	Hz	
PWM Duty Cycle	0,8		100	%	

Mechanical dimension table:

Parameters	*Value*	*Unit*	*Note*
Width	23,9	mm	
Deep	59,0	mm	
High	23,9	mm	
Weight	25	g	
Size of light segment	7,5 x 17	mm	
Installing hole	22,5 x 22,5	mm	A square hole in the panel

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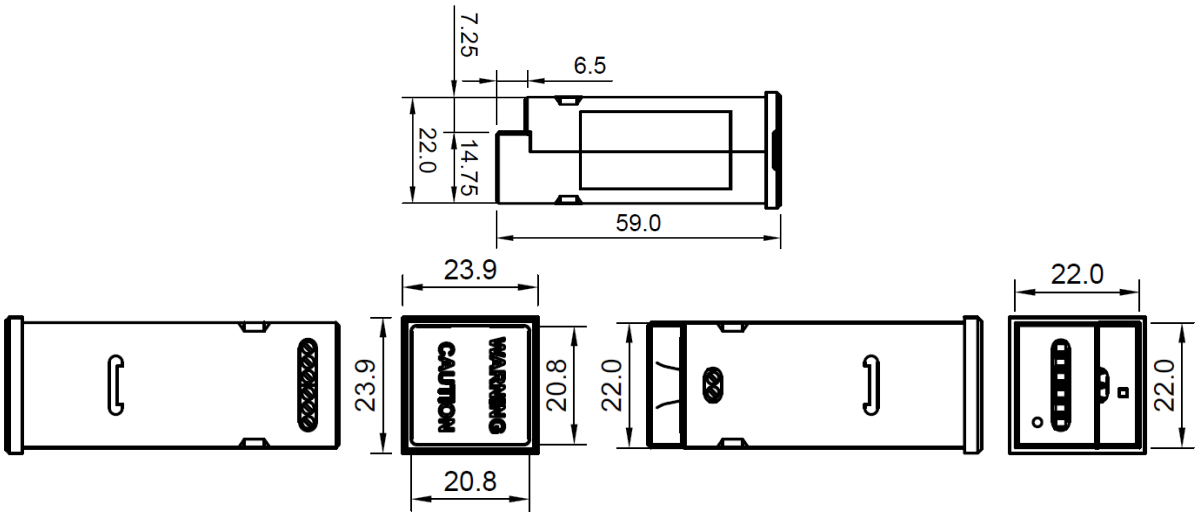
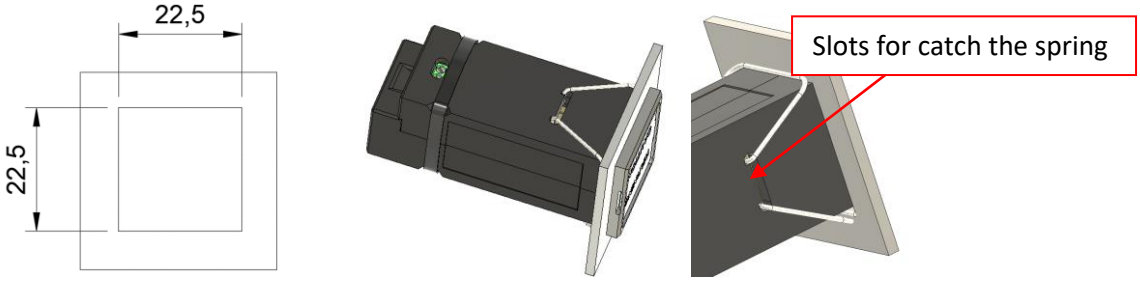
Mechanical dimension – drawing:



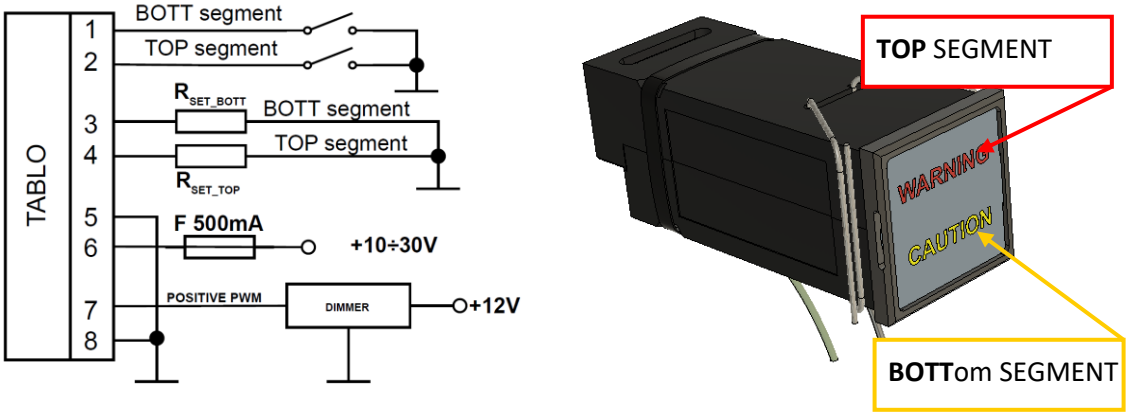
Pict. 1: mechanical dimension

Installation hole – drawing:



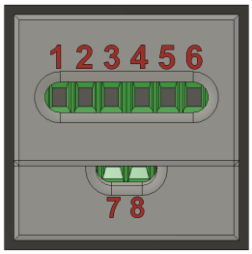
Pict. 2: Square hole for TABLO in the panel and spring lock

Electrical diagram of connection:



Pict. 3: *Electrical diagram and segment orientation*

Output terminal block:



Pict. 4: Output terminal numbering – TABLO back view

Table of output terminal signals:

Terminal	*Signal*	*Description*	*Parameters*
1	**LED_BOTT_CTRL**	Control input – bottom segment	Connect to GND to activate
2	**LED_TOP_CTRL**	Control input – top segment	Connect to GND to activate
3	**LED_BOTT_SET**	Setting input – bottom segment	0 ÷ ∞ Ω (see color setting table)
4	**LED_TOP_SET**	Setting input – top segment	0 ÷ ∞ Ω (see color setting table)
5	**GND**	Negative power supply	0 V
6	**V+**	Positive power supply	10 ÷ 30 V
7	**DIM**	Dimming input	positive PWM, common GND
8	**GND**	Negative power supply	0 V

Segment color setting table:

Color	*Resistor R_{SET_XXX} value*
Red	1k8
Orange	6k8
Green	22k
Off	Unconnected
Resistor tol. 5% or better, THT type 0204 or 0207 (for example Yageo CFR-12 or CFR-25)	

Operating conditions:

Parameter	*Value*	*Unit*	*Note*
Working temperature	-30...+55	°C	
Humidity	20...80	%	
Atmospheric pressure	900...1120	hPa	
IP	IP20	-	
Type installation	To panel	-	Terminal wire size 0,14 ÷ 0,5mm^2
Working position	any	-	Not specific

Product view:

Pict. 5: Product view

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Important notes and warnings

Thank you for purchasing TABLO. For a comfortable and safe use of this product, please pay attention to THE ENTIRE MANUAL, especially the notes and warnings below.

- Although the TABLO 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.

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Date	*# rev.*	*Description*	*Author*
18.08.2022	0	Creation of the document	NEPOR
10.10.2022	1	Changing the size of the installation hole	NEPOR
17.02.2023	2	Top and Bott segment – product orientation	NEPOR

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