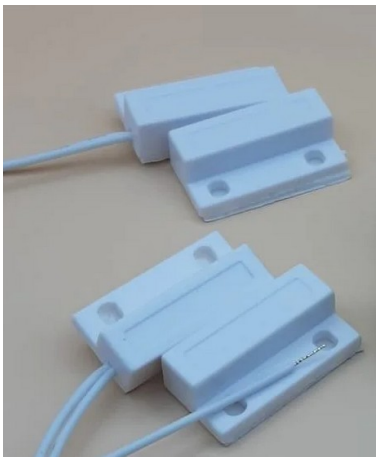
GearWarn Installation and User Manual



Manual edition 1.01

info@xcvario.com

Table of Content

1. Description

The XCWarn gear warning is a plug an play gear warning extension for the XCVario series that feature an S2 interface (all above XCVario 2020). It can be configured if no Flap Sensor is equipped. The flap sensor pin is hardwired, a second variant is in preparation to use the S2 RS232 RX pin instead of the Flap sensor pin. Contact us if you need this variant.

The system is not expensive, comes readily built up and tested.

Please also check the XCVario handbook for details regarding warn screen, setup and the acknowlege of an active alarm (via the Rotary button).

2. Setup

The XCVario Setup is easy, enable "S2 Flap positive" under "Hardware Setup" -> "Gear Warn".

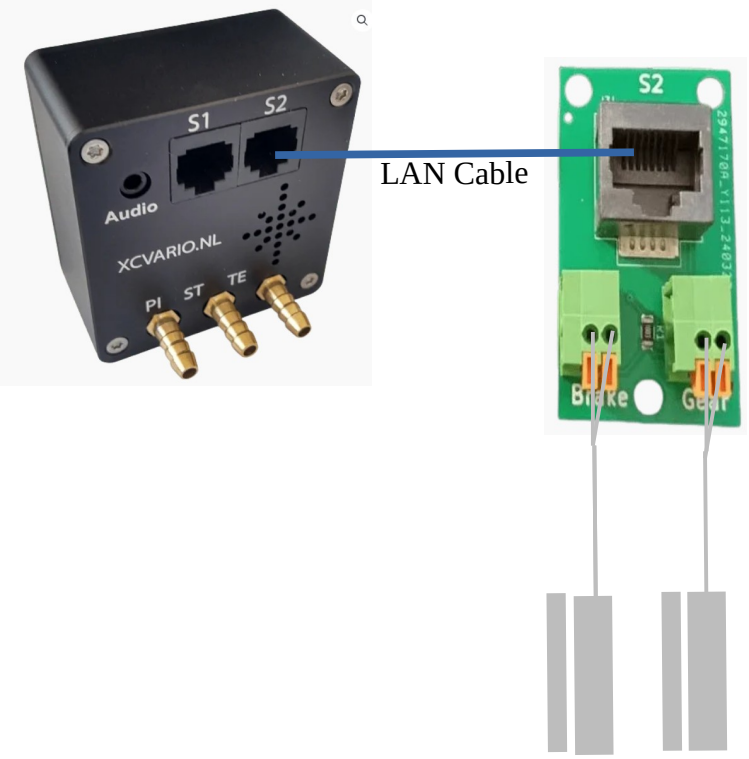
3. Features

- Small, lightweight and plug an play without soldering
- Reliable and contactless reed contact's
- Low power consumption

4. Connection Overview

The following overview shows the gear warn system connections:

- Connect the reed contact to the wire terminal on the main PCB, the polarity does not matter.
- Connect the RJ45 connector either to S2 directly or to the "WK-Sensor" port of the S2 Splitter in case you have one equipped.



5. Installation of Contacts

The main PCB of the gear warning can be either installed under the seat close to the place where the contacts for air-brake and gear lever are getting installed.

The reed contacts are to be installed in that way shown below. The magnets (the smaller parts without wire) can be attached by 5 minutes epoxy glue to the rods for gear and air-brakes.

Ensure for a lateral **space** gap of **minimum 3 mm**. The is **maximum lateral distance is 10 mm** between the magnet and the contact in order to function, same for a displacement at the long side between contact and magnet. After mounting check carefully this distance so that the contact or magnet does not touch or rub each other in any position of breaks and gear to ensure that the rod won't block to move into fully closed position in any situation.

Air-Breaks: Closed position

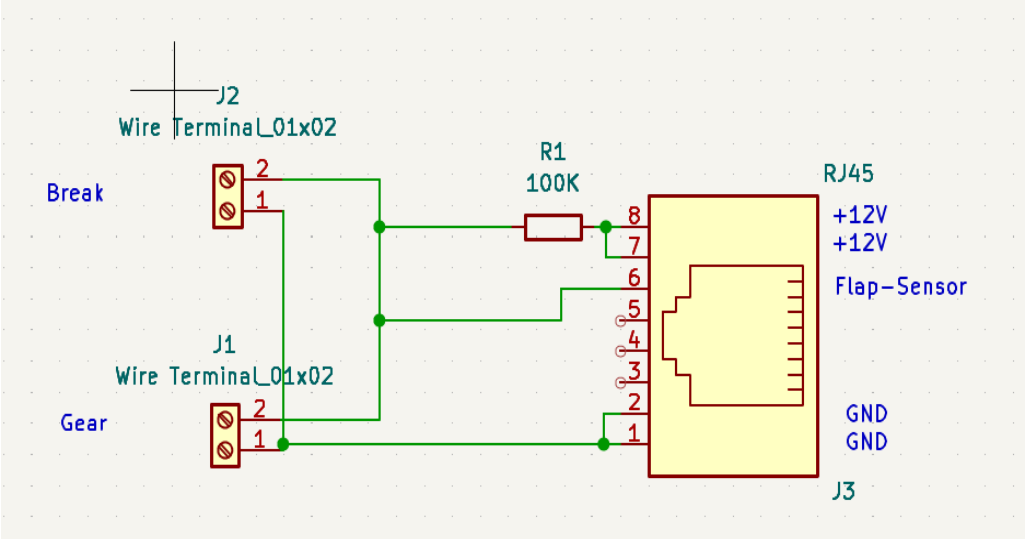
Gear: Gear down and locked

6. Technical specifications

Usage	Connect to XCVario
LAN Interfaces	1xRJ45
USB Interface	1x USB 2.0 male plug
Power consumption	<1 mA
Dimensions	1 x PCB 44 x 26 x 18 mm 2 x contacts 27.5 x 14 x 8,5 mm
Weight	75g

7. PCB Schematic

The connector can be attached directly to S2.



8. Maintenance

The device does not require any maintenance. Storage shall not be done in a humid environment. Ensure that relative humidity will not exceed 100% in order to avoid condensation.

9. Warranty Policy

For the gear warn, the manufacturer provides a guarantee of two years from the date of purchase with regard to the effort and material costs of the repair. Within this period, components that fail under normal operating conditions will be repaired or replaced free of charge, provided the device was sent to the manufacturer free of charge.

The warranty does not cover damage resulting from misuse, abuse, accidents, unauthorized modifications or repairs, proven incorrect or faulty wiring, over-voltage or fire.

According to the German Civil Code, the return can be made within 14 days of the date of purchase. In this case, the device and its accessories must be returned by the buyer to the address from which it was delivered. The buyer bears the costs for this.

10. Permit

For each instrument, if the equipment is part of the minimum equipment list or requires approval, it may only be installed if the supplier or manufacturer provides a document on the proper check for compliance with the respective specification of the individual piece of equipment, area of EASA this is usually the EASA Form One.

For all other equipment, as well as for standard parts, a corresponding examination and documentation of the same is not required (e.g. device, final approach computer, flight data recording devices, navigation computer, additional antennas, batteries, cameras, additional pressure probes, mosquito cleaning systems, etc.). This is regulated in detail by EASA in AMC 21.A.303(c) 2, with the following wording:

AMC 21.A.303(c) Standard Parts

1. In this context a part is considered as a **‘standard part’** where it is designated as such by the design approval holder responsible for the product, part or appliance, in which the part is intended to be used. In order to be considered a ‘standard part’, all design, manufacturing, inspection data and marking requirements necessary to demonstrate conformity of that part should be in the public domain and published or established as part of officially recognized Standards, or
2. For sailplanes and powered sailplanes, where it is a **non-required instrument** and/or equipment certified under the provision of CS 22.1301(b), if that instrument or equipment, when installed, functioning, functioning improperly or not functioning at all, does not in itself, or by its effect upon the sailplane and its operation, constitute a safety hazard.

‘Required’ in the term ‘non-required’ as used above means required by the applicable certification specifications (CS 22.1303, 22.1305 and 22.1307) or required by the relevant operating regulations and the applicable Rules of the Air or as required by Air Traffic Management (e.g. a transponder in certain controlled airspace).

Examples of equipment which can be considered as standard parts are, variometers, bank/slip indicators ball type, total energy probes, final glide calculators, navigation computers, data logger / barograph / turnpoint camera, bug-wipers and anti-collision systems. Equipment which must be approved in accordance to the certification specifications shall comply with the applicable ETSO or equivalent and is not considered a standard part (e.g. oxygen equipment). The gear warning is considered as a part of the variometer and therefore runs as non required equipment. The aircraft can be operated even without a functioning gear warning, standard landing check requires to ensure gear down and lock.

This means that no EASA Form One is required for the gear warning.

Note:
After installation, the equipment list of the aircraft should be adjusted. A relevant change in center of gravity due to the additional mass of 0.075 kg is not to be expected. In doubt a weighing must be carried out and the change has to be approved.

11. Limitation of Liability

With the purchase of the device, the customer agrees that no liability for any direct or indirect damage, claims for damages or consequential damages of any kind and on any legal basis arising from the use of the device.

This device is a purely extension for comfort, it is not part of the required equipment for gliders, and in case of a defect, controlling navigating the aircraft is still possible mechanically. The device therefore does not require any FAA or EASA approval.

12. CE Declaration of Conformity

DECLARATION OF CONFORMITY

XCVario, owner Dipl. Ing (FH) Eckhard Völlm, Panoramastr. 86/1, D-71665 Vaihingen/Enz, explains that in the normal configuration the device hardware meets the requirements of the CE.