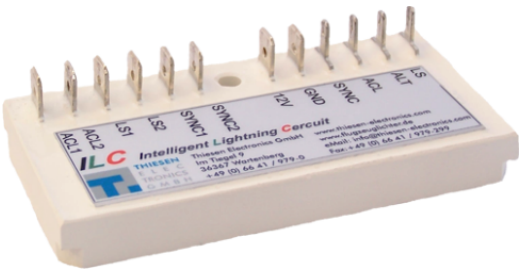
ILC
*Intelligent Lightning Circuit*




# Mounting Instruction ILC (Intelligent Lightning Circuit)

Control module espacially for two landing lights with intelligent synchronisation

**Dear customer,**
the electronic intelligent Lightning Circuit is a highly innovative product which contributes to saver airspace.

The new technology Intelligent Synchronisation, developed by Thiesen, allows to schedule the current pulse in a way that the single current pulses do not overlap, what means that the generator and the battery aren't overcharged. Due to the staggered synchronisation of the power input of the anti collision lights, overcharge is excluded at ACL-Mode, even if two landing lights are in use (see figure 1). Suitable landing lights are ELL50, ELL60 and ELL80is, which can all be controlled directly by the ILC.

The ILC sticks out by following **control possibillities**:
1. Control of two landing lights at ACL-Mode with staggered ACL-Flashes (switch S1).
2. Control of two landing lights at Alternate-Mode every second (switch S2).
3. Control of two ladning lights as continuous light (switch S3).

**Input / Output**:

| | | |
|---|---|---|
| LS | = | Gate input to turn the landing light to continuous light (0,3mm²) |
| ALT | = | Gate input to turn the landing light to Alternate-Mode (0,3mm²) |
| ACL | = | Gate input to turn the landing light to ACL-Mode (triple flash) (0,3mm²) |
| SYNC | = | Synchronisation input to synchronize the landing lights with EPTA/EPL2 (0,3mm²) |
| GND | = | Negative pole of the battery (1,5mm²) |
| 12V | = | Positive pole of the battery (after fuse and switch) (1,5mm²) |
| SYNC2 | = | Synchronisation output to landing light 2 (yellow cable) (0,3mm²) |
| SYNC1 | = | Synchronisation output to landing light 1 (yellow cable) (0,3mm²) |
| LS2 | = | Gate output to landing light 2 (continuous light, blue cable) (1,5mm²) |
| LS1 | = | Gate output to landing light 1 (continuous light, blue cable) (1,5mm²) |
| ACL2 | = | Gate output to landing light 2 (ACL-Mode, red cable) (1,5mm²) |
| ACL1 | = | Gate output to landing light 1 (ACL-Mode, red cable) (1,5mm²) |

(Values in brackets are the minimum wire cross section in mm²)

**The set includes 1 ILC as well as the required connectors.**

**Required material, respectively utilities for mounting:**
- Connector (enclosed)
- nylon screw M4 enclosed
- soldering iron
- tin solder
- clear silicone

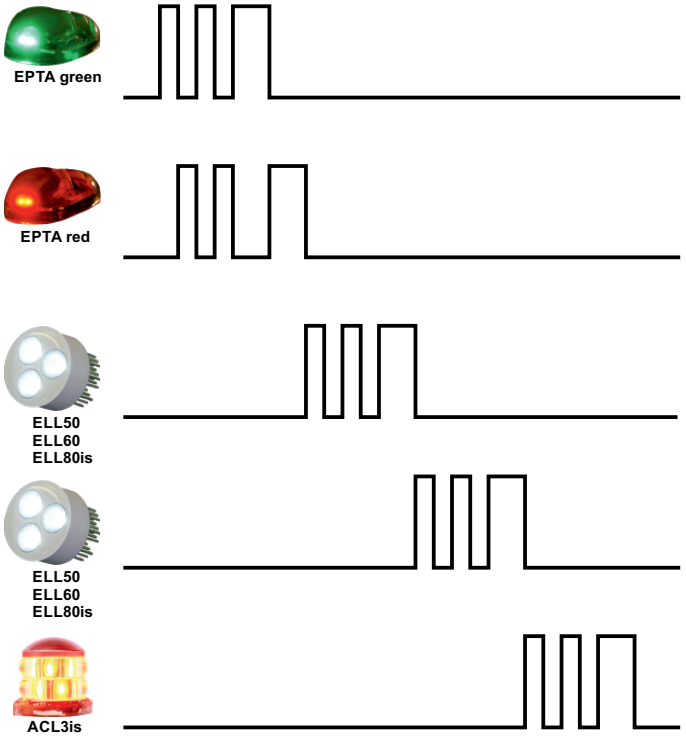
## Recommendation:

***Cable***
Depending on wing-span of your aircraft, we recommend a double core, flexible and twisted cable with a cross section of at least 1.5 mm² for power supply (red / black) and one cable with minimum 0,3 mm² for synchronisation cable. In case of doubt, you can order the suitable cable from Thiesen Hardware- und Software-Design GmbH.

***Fitting***
One nylon screw M4 is enclosed. If you want to use a other kind of screw, please keep in mind the distance to contacts to prevent of short circuit! Two drops of silicon will work as anti-twist protection.

Please look out for a careful mounting, also inside the plane. The twiste cable must be fixed to the wing to avoid scrubbing. Luster terminals are not suitable to connect cables. There is a good selection of suitable crimp connections in various shops.

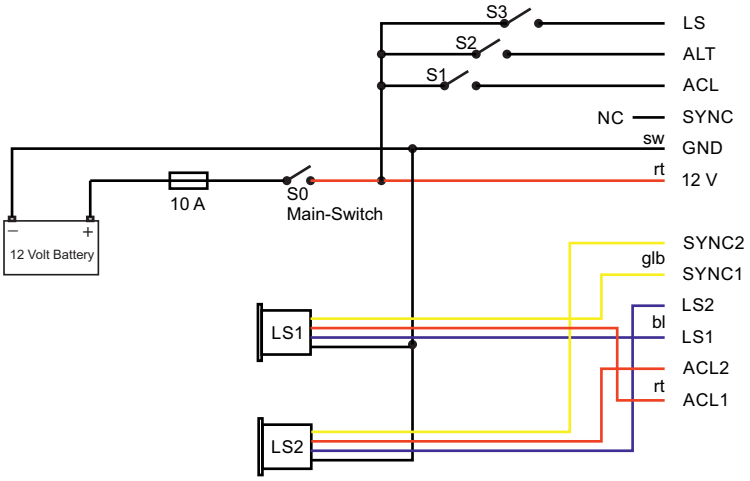
## Intelligent Synchronisation = intelligent Powermanagement

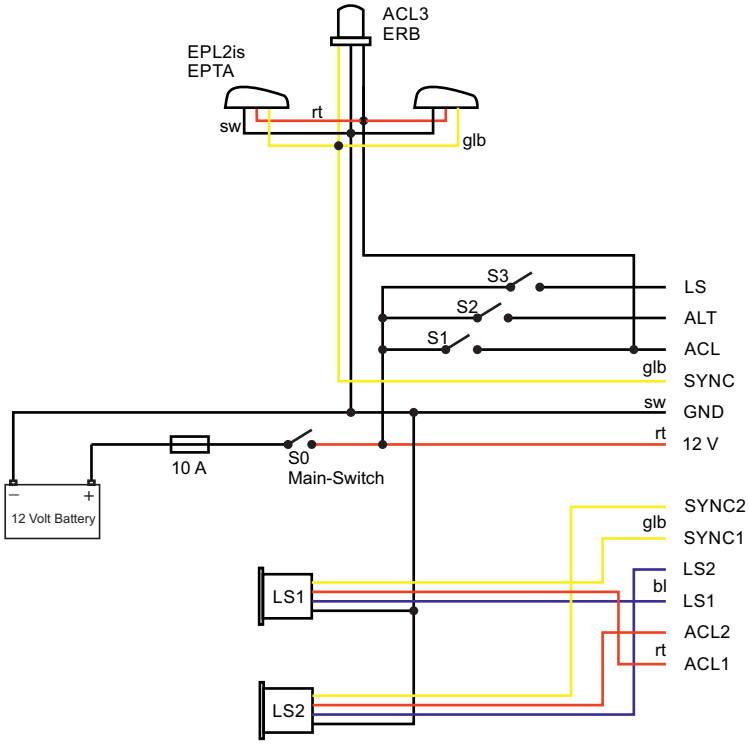


**To illustrate the potential modes of operation, here some examples as proposal:**

## Schematic 1:

Basic function for two landing lights without external synchronisation.
S0 is main switch, S1 synchronises both landing light in ACL-Mode to operate the ACL-Flash one after another.
S2 switches both landing lights to Alternate-Mode, that means that the landing lights turn on/off in turn.
S3 switches both landing lights to continuous light.
Please use a fuse of 5 Ampere with 2 x ELL50 and one with 10 Ampere for ELL60 and ELL80is.
Switch S3 overrides landing light functions of the switches S1 + S2.
Switch S2 overrides landing light functions of the switch S1.



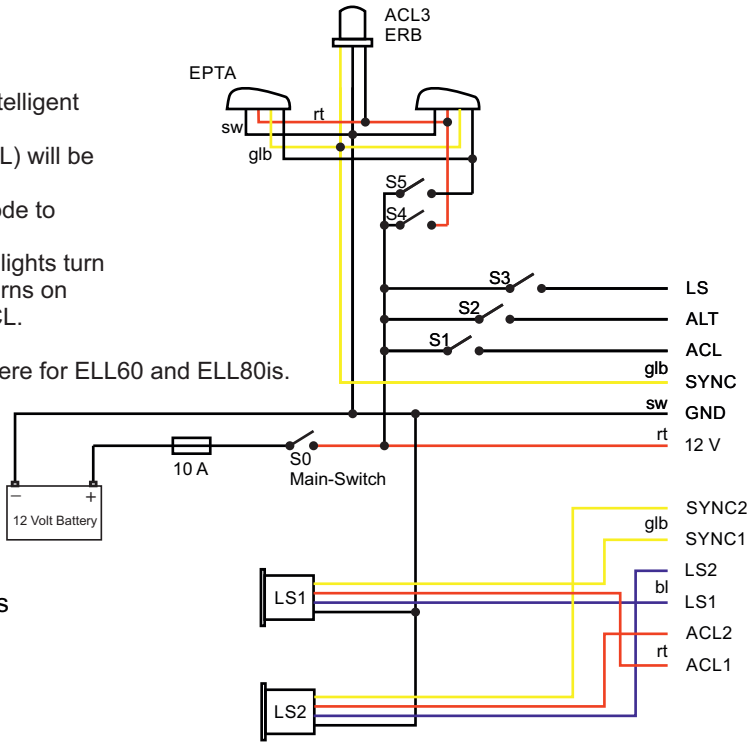




## Schematic 2:

Complete Layout with EPTA(LSA)/EPL2is and ACL3is/ERBis with intelligent synchronisation and two landing lights.
S0 is main switch, S1 switches EPTA(LSA)/EPL2is and ACL3is/ERBis as well as the two landing lights to ACL-Mode and synchronizes the ACL-Flash automatically to flash one after another. S2 switches the two landing lights to Alternate-Mode, so the landing light turn on/off in turn.
S3 switches both landing lights to continous light.
Please use a fuse of 5 Ampere with 2 x ELL50 and one with 10 Ampere for ELL60 and ELL80is.
Switch S3 overrides landing light functions of the switches S1 + S2.
Switch S2 overrides landing light functions of the switch S1.

## Schematic 3:

Complete Layout with EPTA(LSA)/EPL2is and ACL3is/ERBis with intelligent synchronisation and two landing lights.
In this example, the position lights and the ACL (Wingtip and Tail-ACL) will be switched separate.
S0 is main switch, S1 synchronizes the two landing lights at ACL-Mode to automatically flash one after another.
S2 switches the two landing lights to Alternate-Mode, so the landing lights turn on/of in turn. S3 switches both landing lights to continous light. S4 turns on Wingtip and Tail-ACL, the landing lights synchronize with Wingtip ACL.
S5 turns on the position lights red/green/white.
Please use a fuse of 5 Ampere with 2 x ELL50 and one with 10 Ampere for ELL60 and ELL80is.
Switch S3 overrides landing light functions of the switches S1 + S2.
Switch S2 overrides landing light functions of the switch S1.




## Technical data

| | |
|---|---|
| Operating voltage | : 10-17 volts (DC), typically 12.8 - 13.4 volts |
| Input | : engine idle approx. 0.1 watts |
| Dimensions | : 84 x 42 x 10 mms (+10 mms pin) |
| Drill hole | : 4 mms |
| Weight | : approx. 65 grams |
| Warranty | : 3 years |

**3 years warranty**
**Made in Germany**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