



Solutions for a safe conversion to LED direction indicators

OUR MAIN TARGET:

To provide a seamless conversion from tungsten filament indicator lamps to LED indicator lamps on a wide variety of vehicles, such as coaches, trucks & trailers with 12V or 24V systems and to achieve this without using illegal load resistors.

LEGAL PRESCRIPTION:

Regulation ECE R48 requires that direction indicators on all vehicles should be monitored and in the case of failure, the failure be made known to the driver either visibly or by the use of an audible signal.

LED lamps are subject to **ISO standard (ISO 13207-1)** that standardises the failure pulse from LED indicator lamp.

BASIC AND PRELIMINARY NOTION:

How does a conventional indicator flasher work?

A conventional Flasher checks constantly the power draw by the whole direction indicator circuit and detects a failure when the power drops below a defined threshold.

The low power draw generated by the new LED indicator lamps may create irregular flashing frequency and/or false failure signals.

Should you wish to convert your old indicator lamps to LED indicator lamps, the main question is:

CAN YOU REPLACE THE FLASHER UNIT FITTED TO THE VEHICLE?

CAN YOU REPLACE THE FLASHER UNIT FITTED IN THE VEHICLE?

YES

Do you know exactly the power consumption (W) of your new LED indicators?

YES



TAILOR MADE SOLUTION:
We can develop a specific LED Flasher

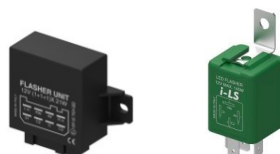


*Customers Ref.:
Lotus, Tesla, Tazzari Cars, Faresin, Dotto
Trains, BMW Motor, Melex.*

NO



ILS SOLUTIONS:
You can use our ILS LED Flashers
(also for Hybrid circuit)



1° WAY



ILS unit with easy connectors



*Customers Ref.:
Caterpillar*

2° WAY



ILS unit with flying wires



*Ref:
All After Market Customers*

3° WAY



PCB ILS unit embedded directly into LED lamps



All LED Lamps Manufacturers



**All Kinds
of LED
Lamps,
even
without
failure
pulse**

**From
1W to
9W**



What is the I-LS Solution?

i-LS is a patented electronic device, complete with on-board microprocessor, capable of connecting to **any LED indicator from 1w to 9w.**

The unit sends a coded signal to AUTOELETTRIC's proprietary **LED Flasher for i-LS or any other LED Flasher unit that conforms to Regulation ISO 13207-1:2012**, precisely monitoring the status of the connected LED indicator.

How is the I-LS Solution made?

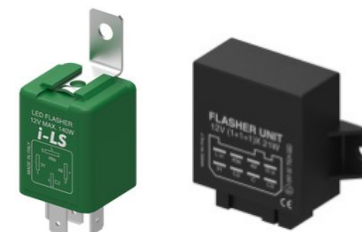
i-LS Unit

A single booster connected to each single LED indicator.



i-LS Flashers

Or any other flashers conform to ISO 13207



Notes:

- Patented inside the member states of EU, European Patent n. 2 540 570.
- EMC Homologation according to ECE E24 10R-030926
- Tested for compliance with the Standard ISO "13207-1:2012- Road Vehicles – LED lamp characteristics for bulb compatible failure detection".
- Made in Italy.

CAN YOU REPLACE THE FLASHER UNIT INSTALLED IN THE VEHICLE?

NO

Does the
flasher relay
built in the
vehicle meet
Regulation
ISO 13207-
1:2012?

YES



You can keep it in the circuit.

Example of ILS Compatible Flashers are:
HELLA Nr. 4DN 009 492-101
HELLA Nr. 4DM 009 492-001
HELLA Nr. 4DW 009 492-011
HELLA Nr. 4DW 009 492-111

1° WAY



ILS unit with
easy
connectors



*Customers Ref.:
Caterpillar*

2° WAY



ILS unit with
free wires



*Ref:
All After Market
Customers*

3° WAY



PCB ILS unit
embedded
directly into
LED lamps



*All LED Lamps
Manufacturers*



All Kinds
of LED
Lamp,
also
without
failure
pulse

From
1W to
9W



NO



**Cod. LLL.01 LED LIGHT LINK – Diagnostic
Indicator Circuit Device for Trailers.**

Example of some popular products in the market:
HELLA 5DS 009 552 – 011 .
BRITAX E07-00-12V (12V) | E07-00-24V (24V)
JOKON LK100

What is the LED Light Link?

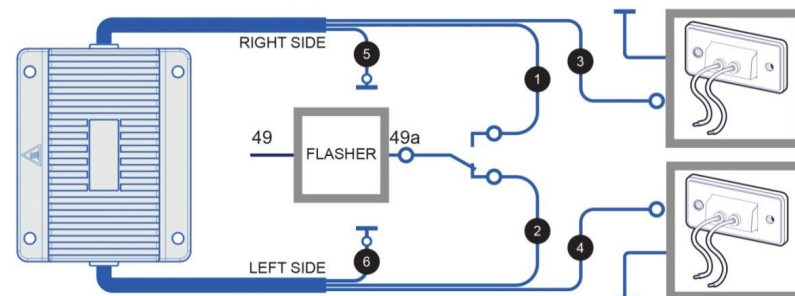
LED Light Link device allows all trailers to be coupled to any vehicle regardless of the type of flasher unit fitted.

The unit simulates 21W incandescent bulbs using resistors. In the case of an LED lamp failure the 21W resistors are automatically switched off thus enabling failure detection.

***LED Light Link** is designed mainly for the trailers market or generally for anyone who can't (or doesn't want to) change the existing flasher in the vehicle or tractor when replacing traditional bulbs indicator lamps with LED.*

How is the LED Light Link made?

LED Light Link device is a dual channel LED control unit for the LEFT and RIGHT side **LED** indicator lamps by set.



Advantages / Disadvantages / Requirements for all options

ADVANTAGES / DISADVANTAGES / REQUIREMENTS FOR TRACTOR WITH/WITHOUT TRAILER

<p>Can you replace the flasher unit installed in the vehicle?</p>	<p>YES</p>	<p>Solution:</p> <p>Replace the existing Flasher unit with Autoelettric Flasher Units</p> <p><i>*If existing built in flasher meet regulation ISO 13207-1, i-LS solution works properly and you can keep it. For example Flashers like:</i></p> <p>Pn: 4DN 009 492-101 Pn: 4DM 009 492-001 Pn:4DW 009 492-011 Pn:4DW 009 492-111</p>	<p>Option 1: Tailor made/ Custom Flasher Unit.</p> <p>Requirements:</p> <ul style="list-style-type: none"> -LED indicators Samples / Knowing exact power consumption of each LED indicators in the circuit. -Direction indicator circuit. <p>Advantages:</p> <ul style="list-style-type: none"> -Price, labour costs. <p>Disadvantages:</p> <ul style="list-style-type: none"> -Direction indicator circuit cannot be altered. -LED indicators cannot be altered.
			<p>Option 2: i-LS Solution</p> <p>Requirements:</p> <p>Nothing. It works with every LED indicator that has a power consumption between 1W to 9W. Install a single ILS unit in each LED lamp and use a ILS compatible LED Flasher. This solution works also in hybrid circuit (bulbs+ LED clusters).</p> <p>Advantages:</p> <ul style="list-style-type: none"> -Works with new (LED) and old (bulbs) trailers. -Free to purchase the LED indicator that fits your needs (price, appearance, features). -Low power consumption compared with traditional load resistor. -The i-LS unit can be embedded inside the LED indicator or be purchased as a plug-in device. Easy fit.

ADVANTAGES / DISADVANTAGES / REQUIREMENTS FOR TRACTOR WITH/WITHOUT TRAILER

Can you replace the flasher unit installed in the vehicle?	NO	<p>Solution:</p> <p>The failure detection is made by the vehicle's CPU or by the flasher. Contact the CPU and the flasher manufacturer and verify if these devices meet failure detection according to the standard ISO 13207-1.</p> <p><i>*If it does not meet this regulation but it meets different failure pulse, we can adjust our ILS units to required failure pulse.</i></p>	<p>Existing device <u>meets</u> the standard ISO 13207-1:</p> <p>Option: i-LS Solution</p> <p>i-LS units send the failure pulse according to the standard ISO 13207-1 "Road vehicles — LED lamp characteristics for bulb compatible failure detection. LED lamps used as direction indicators".</p> <p>Requirements: Install a single ILS unit in each LED lamp.</p>
			<p>Existing device <u>doesn't meet</u> the standard ISO 13207-1:</p> <p>Option: LED LIGHT LINK Use LED LIGHT LINK – Diagnostic Indicator Circuit Device for Trailers.</p> <p>Requirements: Nothing. It works with every LED lamp that has a power consumption between 1W to 9W. It works connected to a pair of LED indicator lamps (Right & Left).</p>

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