

# GTB

GROUPE DE TRAVAIL "BRUXELLES 1952"  
WORKING PARTY "BRUSSELS 1952"

Informal document No. GRE-56-30  
(56<sup>th</sup> GRE, 4-7 April 2006  
agenda items 4.4. and 7.)

*Transmitted by the expert from GTB*

## **Proposals by GTB and OICA on Regulations Nos. 6 and 48**

**Activation of a telltale, in the event of  
malfunction of direction indicators equipped  
with multiple light sources**

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Advantages of LED – direction indicators:

- improvement of visibility
- lifetime as vehicle (filament lamps are wear parts)
- reduce of wattage (fuel economy)

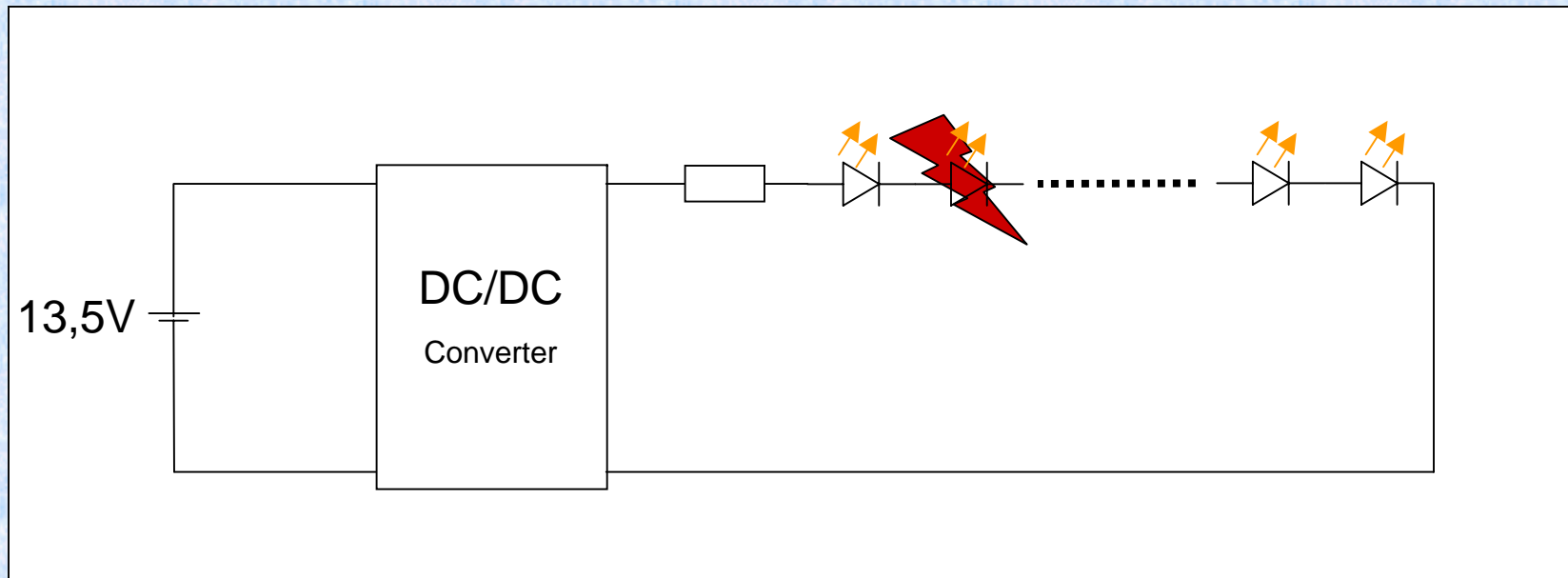
Failure indication:

- not possible with detection of current variation because resistance varies in respect to temperature
- depends on wiring
- is contradictory to high reliability of the system

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Series Connection



Each failure can be detected and indicated.

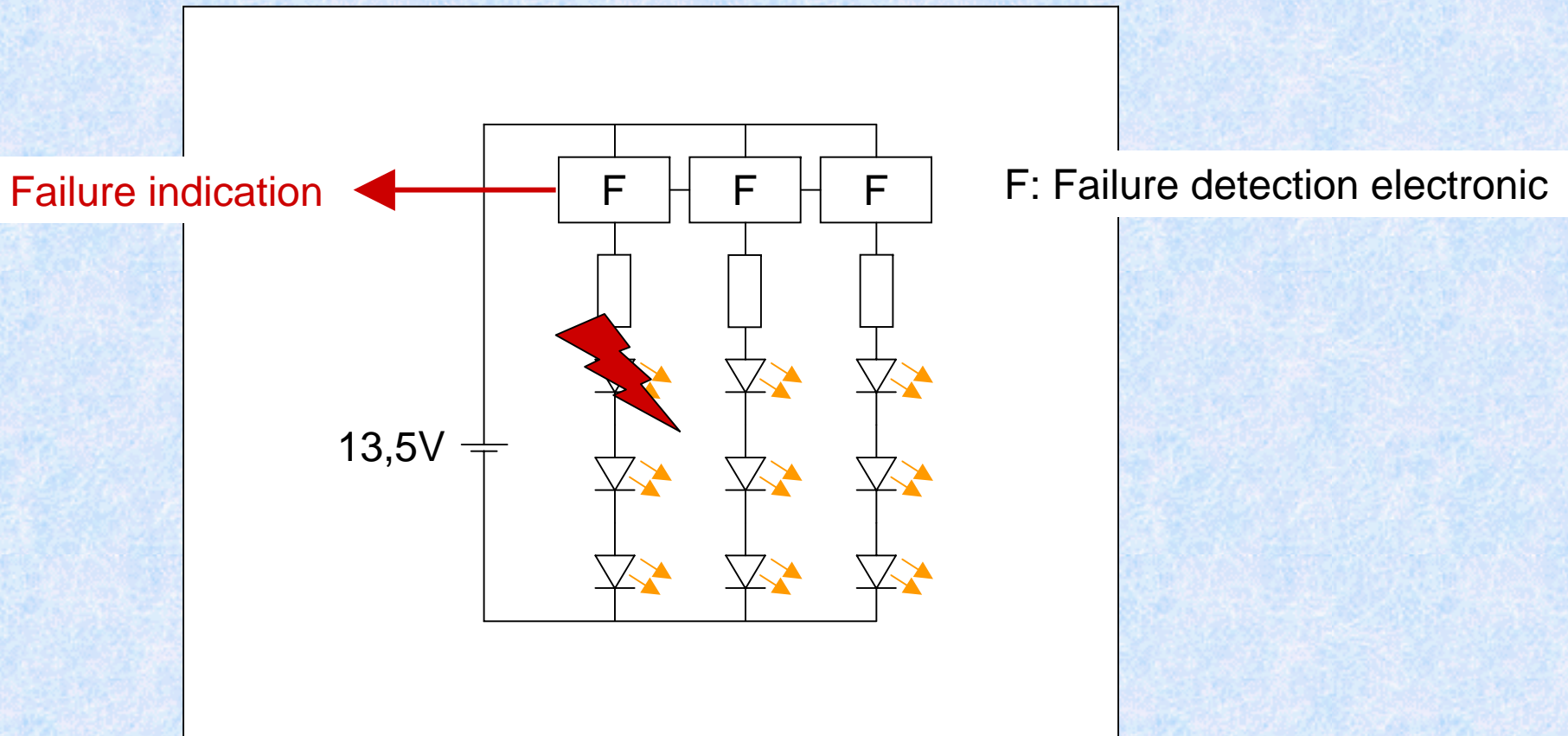
Each failure of LED or electronic leads to a total breakdown of the system.

Reliability of the DI-function is on a level with a one-filament-lamp-system.

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Parallel Connection in Groups

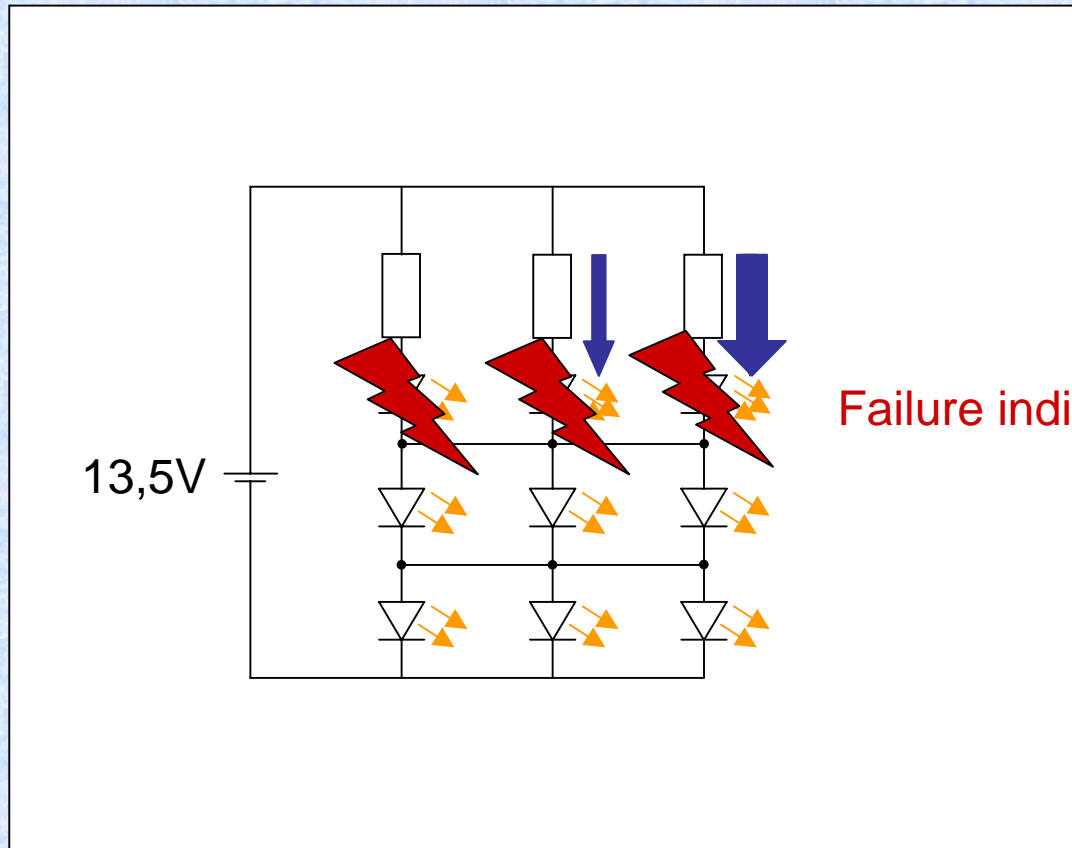


Each failure can be detected and indicated, the whole series of LED fails after a failure of one LED. Problems: The lamp must comply when one light source has failed. Electronics for failure detection and wiring doubles price of LEDs for DI.

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Matrix Connection



When a second LED in a row fails it leads to an immediate break down of the third LED. This failure can be detected and indicated by the same means as used for a one filament lamp system.

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ECE-R 6 Photometric

ECE-R 6 photometric was created for a single filament lamp and one reflector system.

GTB/OICA proposal ECE-TRANS-WP29-GRE-2006-26 to amend ECE-R 6 is based on this existing light distribution.

This means that in 10° horizontal 35 % of light intensity is required. For failure indication the proposal requires 50% light intensity of HV as minimum.