



Cracow, Poland / 1-3 June 2017

EUROPEAN UNION  
OF ELECTRICAL  
WHOLESALEERS

**Tomaž  
Berginc**

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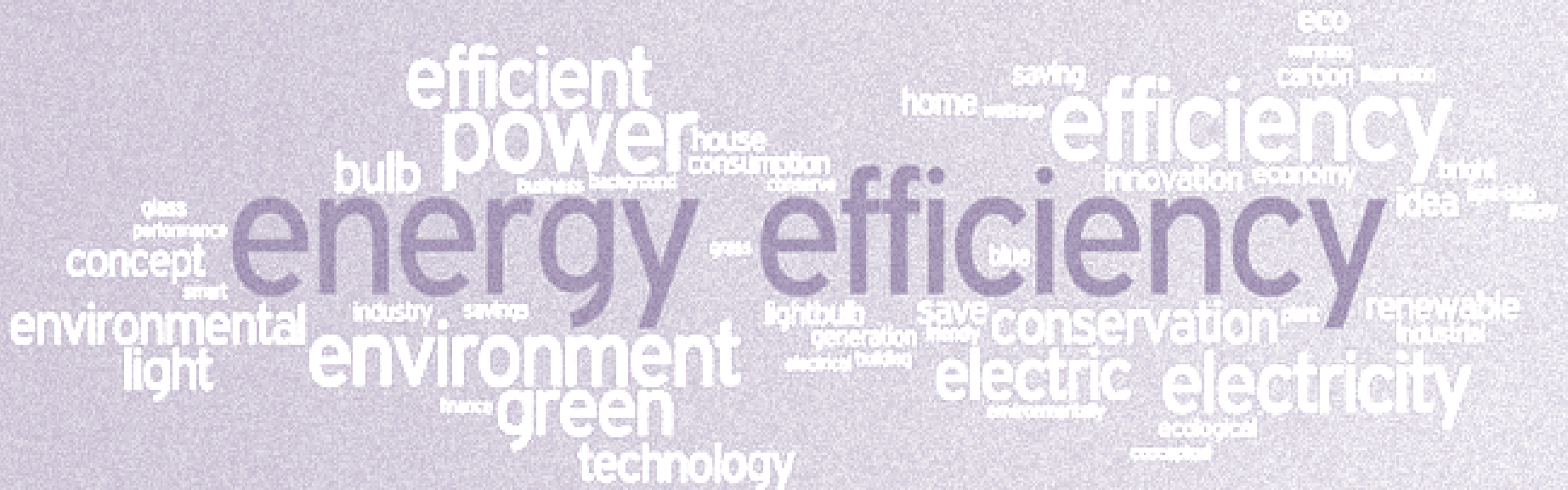
ETI





**Power needs control**

# Energy Efficiency and ETI protection devices



Mag. Tomaž Berginc

# Energy Policy for Europe

Energy Efficiency Directive 2012/27/EU,  
by European Council in March 2007



**20**

Reduce greenhouse gas emissions by 20%

**20**

Increase the share of renewable energy to 20%

**20**

Improve energy efficiency by 20%

and use The national Energy Efficiency Action Plans (NEEAPs) for this purpose

# Increase the share of renewable energy to 20%



PV systems require increased protection (life and fire hazard)

We support the directive in the form of complete protection for PV systems:

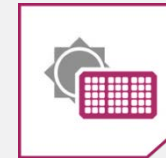
- DC circuits
- circuits inside DC/AC inverters
- AC circuits



# Increase the share of renewable energy to 20%



Protection of battery storage systems and other applications



Currently a new standard (IEC 60269-7, gBat) is being prepared by IEC TC32B committee, which will confirm these fuses as the sole appropriate protection for storage systems.

# Increase the share of renewable energy to 20%

## Why use ETI Battery fuse?

- 30% higher DC voltage in comparison with all producers
- Very fast time-current characteristic
- Ceramic body resistant against thermal shocks
- High resistance to current cyclic loading
- Highly insensitive to ageing processes
- Increased protection against corrosions (silver plated contact)
- Comprehensive technical support
- RoHS
- Made in EU
- Recognized as development supplier in the segment of e - mobility
- Customized solutions





# Increase the share of renewable energy to 20%

## ETI “BATTERY FUSES” for automotive sector



Development partner to majority of European automotive groups

**The future belongs to e – mobility**



# Improve energy efficiency by 20%

Reduce loss

Low power dissipation of our fuse-links enables a significant decrease in space and energy consumption

New generation of gG fuses



gPV fuses



BATTERY fuses



# Improve energy efficiency by 20%

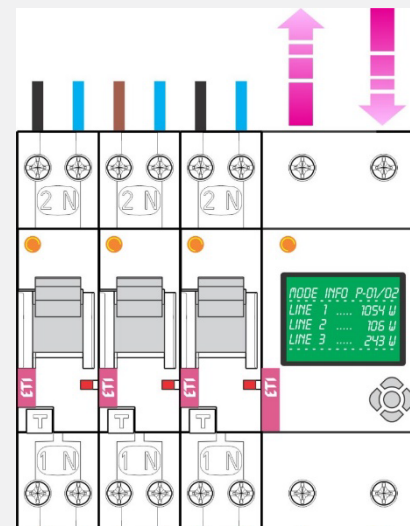
Control as the basis for efficiency

## Protection devices with measuring function

Metering fuses



RCBO with energy consumption metering



# Improve energy efficiency by 20%

## RCBO with energy consumption metering

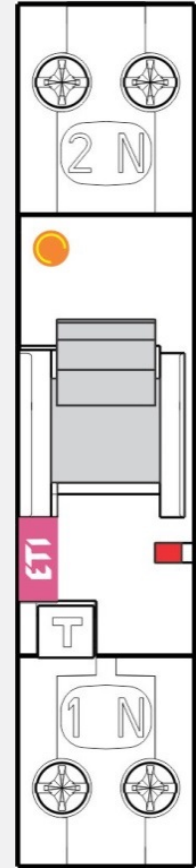
RCBO offers:

- protection in case of overload,
- protection in case of short-circuit,
- residual current protection.

Smart functionalities:

- Two-way communication (IR, RF) with processing module.
- Steady information about current, power, energy consumption.
- Information about the reason for tripping.
- Possibility for disconnection (tripping) of RCBO.

All functions integrated in one device in 1 module (18 mm).



# Improve energy efficiency by 20%

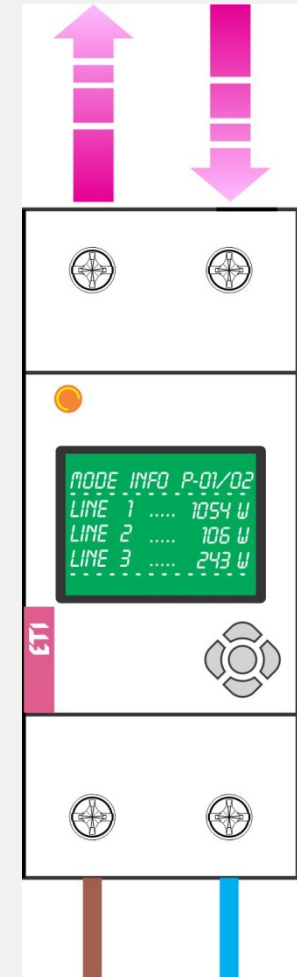
## Processing module

### Smart functionalities:

- Two-way wireless communication (IR, RF) with KZS's (up to 20 KZS-1M EM):
- receiving,
- storage and
- processing of informations for each KZS.
- Plug & play inicialization of KZS-1M EM in distribution box.
- Communication in standard protocols, like IP, modbus, KNX.
- Receiving and processing of informations / commands from user.

### Additional functionalities:

- Possibility to set conditions for automatic trippning.
- Sending of alarms in case of anomalies.



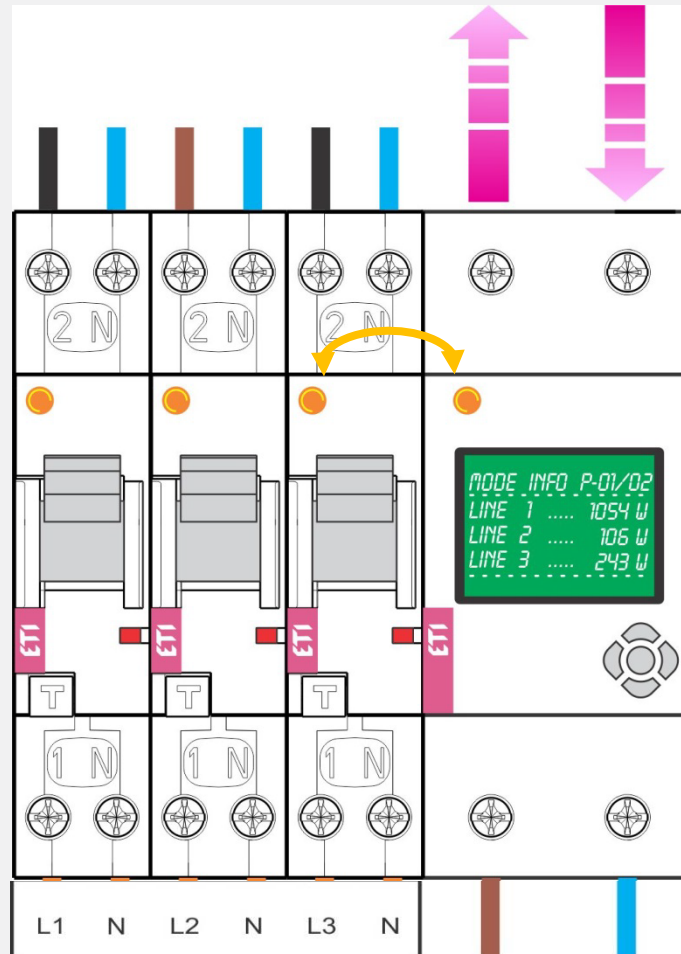
# Improve energy efficiency by 20%

RCBO with energy consumption metering KZS 1M EM

OUTPUT

KZS-1M EM

INPUT



*Receiving and transmitting of informations with user*

**Wireless (IR) communication**

PROCESSING MODULE

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**We are doing our part – what about you?**

On behalf of ETI,

we thank you for your attention and we are looking forward to your questions.

ETI d.d.

Izlake, April 2017





# 62<sup>nd</sup> EUEW GENERAL CONVENTION

Cracow, Poland / 1-3 June 2017

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SPONSORS

