engineering empowerment

enginko®

EGK-LW22PLG

LoRaWAN® Energy Meter plug with On/Off

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Instantaneous reading of active, reactive and apparent power, voltage and current

±0.2 %

Embedded antenna

Relay switch 230Vac - 16Amp Load

230Vac – 16A

Class C LoRaWAN® 1.0.2 , EU868

Bluetooth LE 5.0 interface for configuration, data reading and FW upgrade

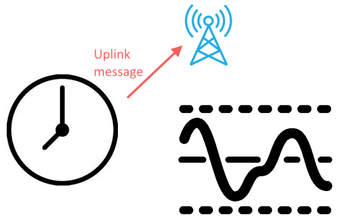
BLE 5.0

Configurable default power-on status

ON

OFF

Time interval based or thresholds based uplink



Pushbutton for forcing transmission or Re-Join, ON/OFF output (lockable),

Overload protection

OVERLOAD PROTECTION

Weekly schedule for time-Based ON/OFF*

*Coming soon

Bicolor led (green, blue), for output and LoRaWAN status

Remote configuration

Rechargeable battery for powerline outage detection

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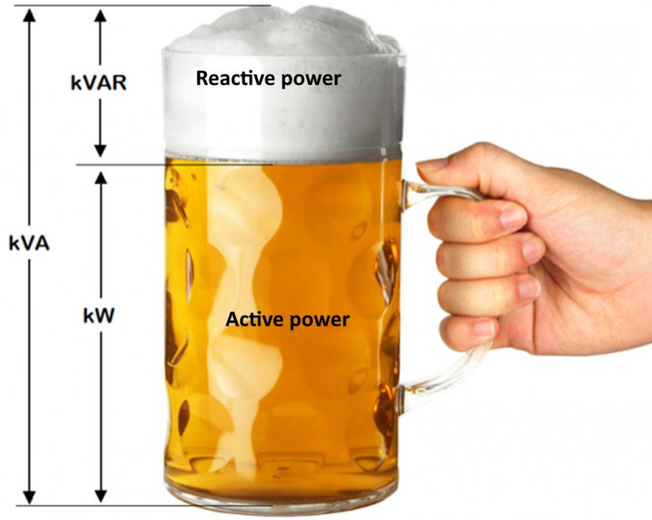
Up to 10 different data for each message:

- Active energy (Wh)
- Reactive energy (VARh)
- Apparent energy (VAh)
- Active power (W)
- Reactive power (VAR)
- Apparent power (VA)
- Voltage (V/10 RMS)
- Current (mA RMS)
- Period (us)
- Seconds of running (s)



$$\text{Cos } \varphi = \frac{\textbf{Active Power (W) P}}{\textbf{Apparent Power (VA) A}}$$

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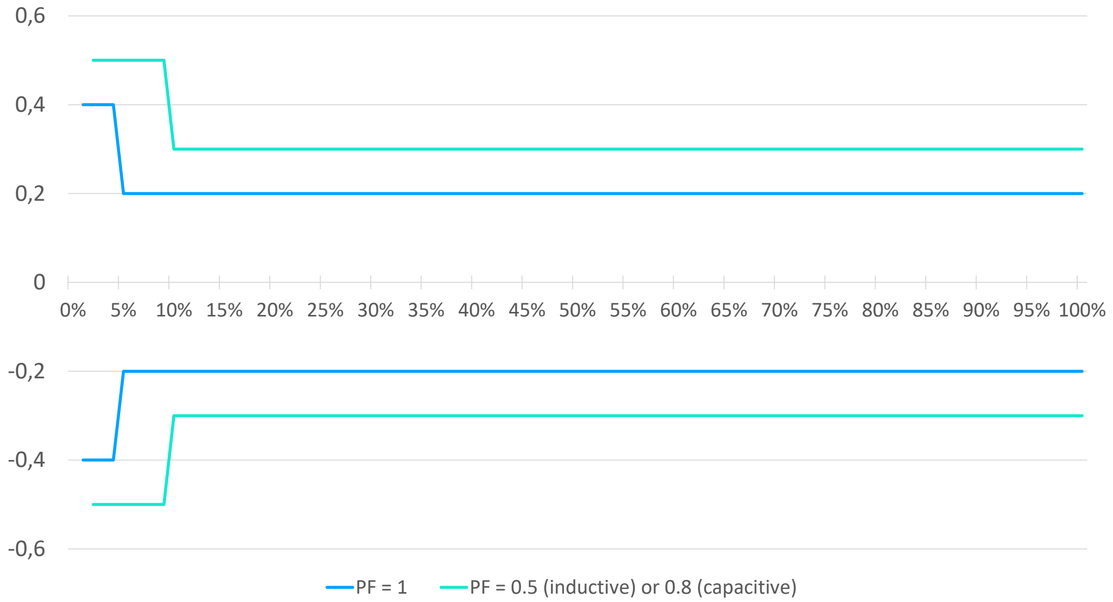
+/- 0.2% error from 5% to 100% of the nominal load

Class 0.2S accuracy for IEC 62053-22

Value of current	Power factor	Percentage error limits for meters of class 0,2 S
$0{,}01\ I_n \le I < 0{,}05\ I_n$	1	±0,4
$0{,}05\ I_n \le I \le I_{max}$	1	±0,2
$0{,}02\ I_n \le I < 0{,}1\ I_n$	0,5 inductive 0,8 capacitive	±0,5 ±0,5
$0{,}1\ I_n \le I \le I_{max}$	0,5 inductive 0,8 capacitive	±0,3 ±0,3



Annual Average Consumption (per household)	EGK-LW22PLG error (+/- 0.2%)	Other portable socket (+/- 3% error as example)
3600KWh	±7,2KWh	±108KWh
2052€ (0.57€/KWh)	±4,10€	±61,56€

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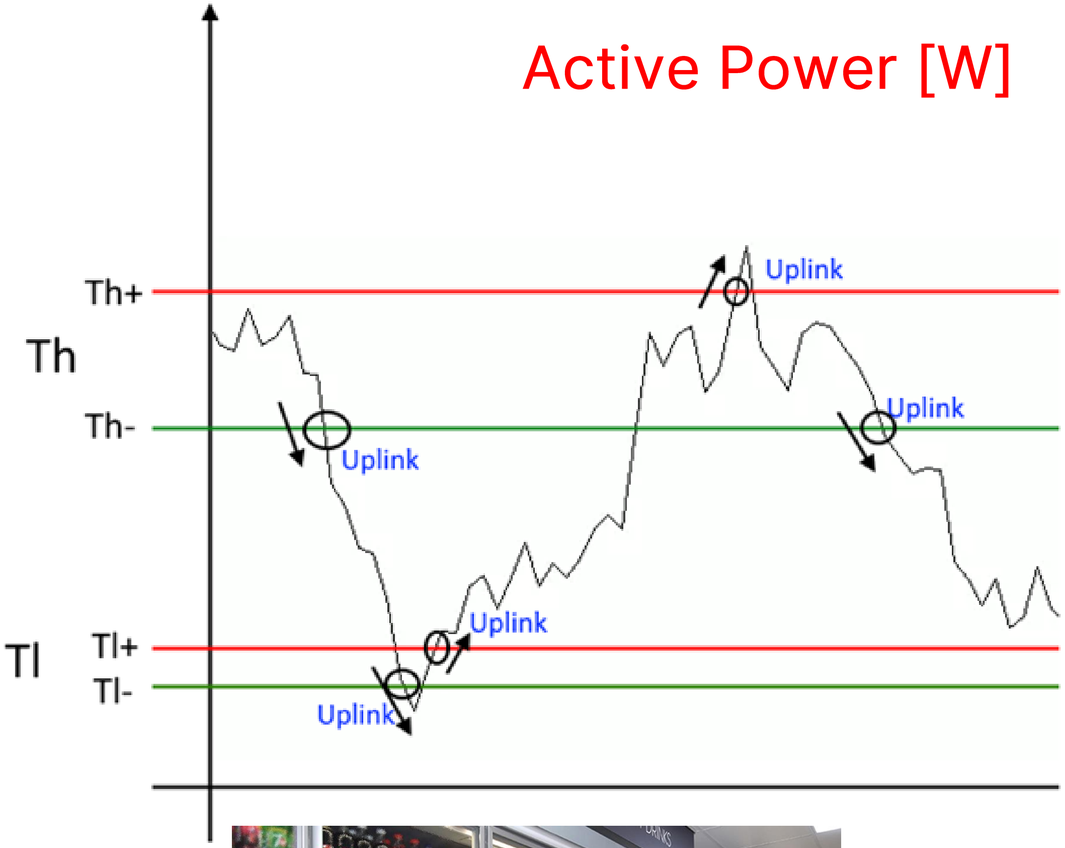
Thresholds

Is possible to set 4 thresholds for the active power:

- Th+ = Threshold High Rising
- Th- = Threshold High Falling
- Tl+ = Threshold Low Rising
- Tl- = Threshold Low Falling



When target values are rising and exceed the positive thresholds, the device sends an uplink with the latest measure.

When values are falling below the negative thresholds, the device sends a new uplink with the latest measure.

Thresholds can be enabled, disabled and changed via LoRaTool or with downlinks.

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Pulsed outputs

The output has pulse capability (minimum pulse duration is 100ms, maximum around 100 minutes), so, instead to send two different commands (one to turn on and one to turn off the output), is possible to send a duration command.

Useful to drive time-driven devices (motors, valves, pumps, feeders) or to build a software fail safe output in case of missing LoRaWAN connectivity.

Downlink generator

Set outputs

Default Output ON Output OFF

1	2	3	4	5	6	7	8
Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless	Duration 0 = Endless
100							
10 Seconds	- - - Seconds	- - - Seconds	- - - Seconds	- - - Seconds	- - - Seconds	- - - Seconds	- - - Seconds

040001000000000000006400

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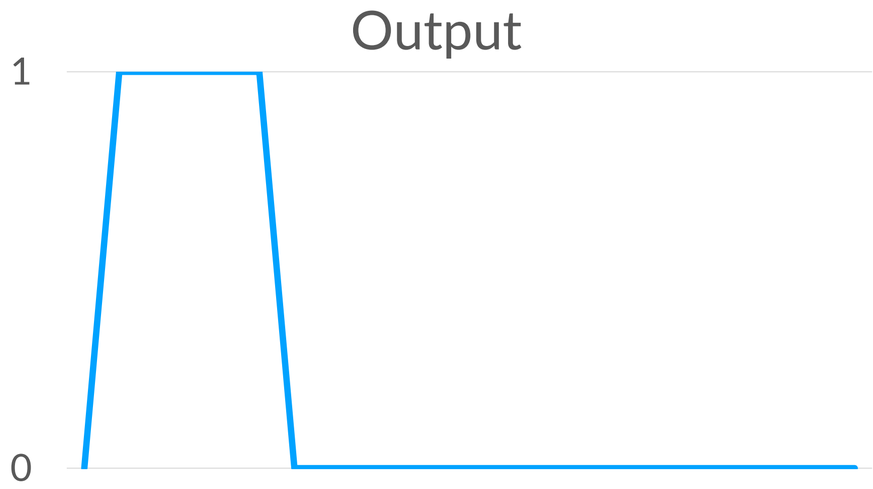

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