

# Intelligent ripple control receiver

## LCR 444

The LCR444 is a high-quality and modular ripple control receiver. It can be used in standard ripple control applications as well as in modern systems with „Distributed Intelligence“ as a remotely programmable tariff switching unit.

The operation of the internal clock during a power failure can be secured for a few days from a built in supercap (option). A further option is an optical interface, through which the receiver can be parameterised and read out similar to an electronic meter.

### Features

- ◆ Digital filtering of the ripple control signal through the micro controller
- ◆ Processing of all conventional ripple control protocols and its specific pulse patterns
- ◆ Processing of a second protocol with secured data transmission according to DIN 43861-301 (VERSACOM)
- ◆ Remote parameterisation of switching times and weekday assignment of the work schedules (using the VERSACOM-protocol)
- ◆ Enable / disable of work schedules
- ◆ Switch-on status (a/b) determinable for each relay
- ◆ Cyclic switching function
- ◆ Switching delay for switch-on operations (1 s - 24 h)
- ◆ Wiping timer function (1 s - 24 h.)
- ◆ Ripple control signal absence detection (e.g. for enabling a work schedule)
- ◆ Memorized schedule function

### Internal clock features

- ◆ Internal clock (remotely synchronizable) for autonomous operating of work schedules (weekday based)
- ◆ Real time clock with supercap (option), voltage interruptions can be bridged at min. 48 h
- ◆ Up to 32 work schedules programmable per receiver
- ◆ Up to 14 switching times programmable per work schedule
- ◆ Free assignment of work schedules to the relays
- ◆ Changes of switching times from the central station using the VERSACOM protocol, or locally via the programming interface



### Supervision features

- ◆ Storage of pulse pattern and signal level of the last received telegram
- ◆ Signal absence sensing, detection of transmitter failures
- ◆ Counter for number of switching actions per relay

### Programming and test equipment

The programming is performed as standard via the RS 232 serial interface (also possible when receiver is without own power supply). An optical interface according to IEC 62056-21 can be integrated (Option). The programming could be also done with an external plugable EEPROM (LCR450)

### Output relays

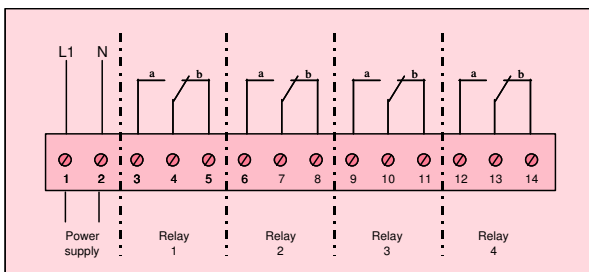
The receiver can be delivered either with soldered or plugged relays. It can be equipped with up to 4 relays.

# Technical Data

Modifications or deviations are reserved

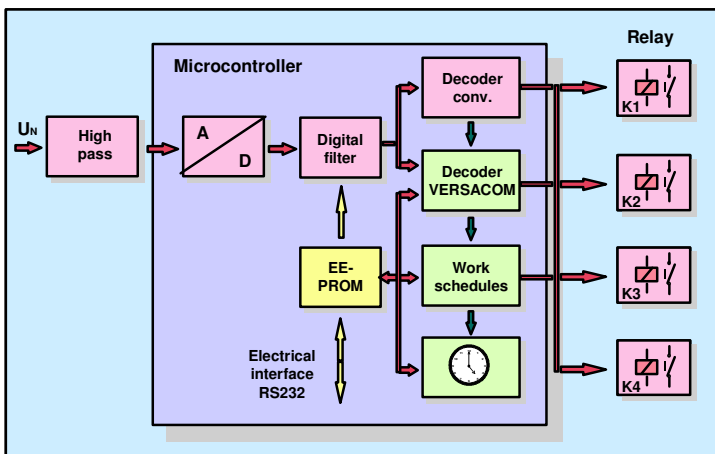
<b>Power supply:</b>	Mains voltage	230V + 11%...-22%
	Mains frequency	50Hz +1%...-2%
	Power consumption	< 1W / 10VA kap.
	Surge voltage resistance	8kV 1,2/50 according to DIN EN 61 037
<b>Filter data:</b>	Operational frequency	158Hz - 350Hz 350Hz - 1350Hz
	Selection of operational frequency	Per parameter, free selectable
	Min. operational voltage	$U_f > 0.5\% U_n$
	Non-operational voltage	$U_{nf} < 0.3\% U_n$ or according to agreement
	Maximum operational voltage	8-15 times $U_f$ (dependent of frequency)
<b>Output data:</b>	Number of relays	1 to 4 (bistable)
	Nominal switching voltage $U_c$	250V, 50Hz or 60Hz
	Nominal switching current $I_c$	16A, $\cos \phi = 1$ (soldered) 10A, $\cos \phi = 1$ (plugged) 8 A $\cos \phi = 0,4$ ind
	Relay type (status a/b programmable) Terminal size	Potential free contact  2 x 2,5 mm <sup>2</sup> or 1 x 4 mm <sup>2</sup> wire
<b>Internal clock (Option):</b>	Back up	> 48 h
	Accuracy	5 +/- 23 ppm
<b>Climatic conditions:</b>	Operating temperature	-20...+60 °C
	Storage temperature	-30...+60 °C
	Type of protection	IP 51
<b>Dimensions:</b>	Meter terminal lid mounting	H=175mm, W=104mm, D=60mm
	Meter board mounting	H=210mm, W=104mm, D=60mm

## Connection diagram



## Housing

The Ripple control receiver housing is designed according to DIN 43861 part 2 (mounting on meter board or terminal lid).



Block diagram LCR 444

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