

# Kit Sets + Modules

Prices see [shop.griederbauteile.ch](http://shop.griederbauteile.ch)

<b>ACOUSTICAL EFFECTS</b>	<b>Page 2</b>
<b>AUTOMOTIVE ELECTRONICS</b>	<b>Page 3</b>
<b>RECEIVER/TRANSMITTER</b>	<b>Page 3</b>
<b>POWER CONTROLS</b>	<b>Page 6</b>
<b>LIGHTING EFFECTS</b>	<b>Page 10</b>
<b>TESTING AND MEASURING</b>	<b>Page 16</b>
<b>MIXING CONSOLE UNITS</b>	<b>Page 19</b>
<b>PSU POWER SUPPLY UNITS</b>	<b>Page 20</b>
<b>SWITCH AND REGULATE</b>	<b>Page 24</b>
<b>GAMES AND ENTERTAINMENT</b>	<b>Page 28</b>
<b>KEEPING ANIMALS AT BAY</b>	<b>Page 30</b>
<b>SURVEILLANCE, ALARM AND SECURITY</b>	<b>Page 36</b>
<b>PRE- AND POWER AMPLIFIER</b>	<b>Page 41</b>
<b>MISCELLANEOUS</b>	<b>Page 44</b>
<b>KIT SETS AND MODULES</b> in alphabetical order	

**BKM.M141 Melody Generator 5 Watt (Module)**

After pressing the key, this melody generator plays one of 6 different melodies in succession. Application: break signal, doorbell, alarm signal, etc.

Operating voltage: 9 – 18 V/DC  
 Output power: max. 5 Watt  
 Playing time: approx. 10 – 15 seconds each time  
 Loudspeaker connection: 4 – 8 Ohm  
 Dimensions: approx. 60 x 45 x 20mm  
 Make: Kemo (EAN 4024028031415)



**BKM.B015 Fog Horn 5 Watt**

...generates a deep, noisy sound similar to the fog-horns of ships.

Kit set: to solder yourself  
 Operating voltage: 4.5 - 12 V/DC  
 Tone frequency: adjustable  
 Power: max. 5 Watt depending on voltage  
 Loudspeaker connection: 8 Ohm (not included)  
 Board dimensions: approx. 25 x 27 mm  
 Make: Kemo (EAN 44024028010151)  
 Suitable case: BKM.G027N – Plastic case black 72 x 50 x 35mm



**LC.110 Parabolic Microphone** **While stock lasts**

You will be able to receive noises and words over large distances with this highly sensitive microphone amplifier. Ideal for observing animals, for detectives etc.

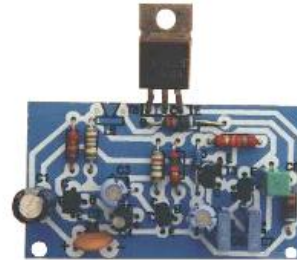
Operating voltage: 6VDC - 9VDC  
 Current draw: < 10mA  
 Dimensions: 63mm x 54mm



## BKM.B052 Destroyer Siren

Warship siren "Clear decks for action". In rapid intervals sounds a shortly swelling tone

Kit set: to solder yourself  
 Operating voltage: 6 - 12 V/DC  
 Output power: approx. 3 – 15 Watt  
 Loudspeaker: 8 Ohm (not included)  
 Board dimensions: approx. 55 x 31 mm  
 Make: Kemo (EAN 4024028010526)  
 Suitable case: BKM.G027N – Plastic case black 72 x 50 x 35mm



## AUTOMOTIVE ELECTRONICS



### LC.23 LED Voltmeter (Suitable for Monitoring of 12 Volt Car Batteries) (Kit Set)

**While stock lasts**

12V Car battery monitoring with LED display. You can easily check your battery charge condition.

Kit set: to solder yourself  
 Display range: 10.5VDC - 15VDC  
 Dimensions: 75 x 46mm

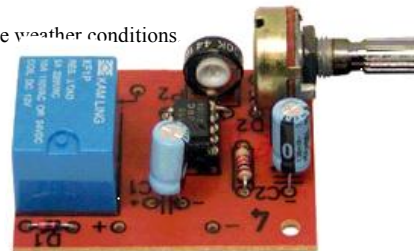


### LC.7 Interval Switch for Car Wiper (Kit Set) **While stock lasts**

Interval Switch for Car Wiper (Kit Set)

Interval switch for infinitely adjustable pause time. Adjust the interval times to the weather conditions.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current draw: 120mA  
 Interval time: 1 second to 100 seconds  
 Contact rating: 5A (relay)  
 Dimensions: 50mm x 40mm



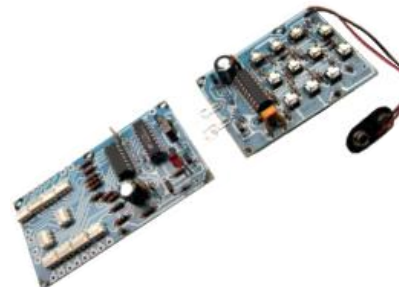
## RECEIVER/TRANSMITTER



### BKM.B241 10-Channel Infrared Remote Control (Kit)

For switching 10 different applications by relay On or Off. 1 of the 10 different relays can be switched on or off each time. Transmitter: 3 V battery, receiver: 12 V/DC. Range: approx. 5m (with convergent lens approx. 10m, not included in delivery). Max. rupturing capacity of the installed relay: 25 V/DC/AC, 0,25A. If this capacity is not sufficient, stronger relays may be topped. 8 SMD diodes have to be soldered onto the board.

Kit set: to solder yourself  
 Channels: 10, each with own relay output  
 Rupturing capacity: 0.25A direct or alternating voltage per relay approx 5m when superposing a convergent lens at the receiver approx 10m (not part of the delivery)  
 Operating voltage transmitter: 3VDC  
 Current consumption transmitter: < 20mA in transmitting mode  
 Operating voltage receiver: 12VDC  
 Current consumption: < 20mA  
 Size of board receiver: approx 55 x 75mm  
 Size of board transmitter: approx 105 x 55mm  
 Make: Kemo (EAN 4024028012414)



### BKM.B014 27 MHz Transmitter 6 Watt (Kit)

Please ensure to use this device by the law of your country (legal regulations of telecommunication) In Germany the possession of this device is only allowed to persons holding a permission or to dealers. **Attention: Only radio amateurs who have a valid license are allowed to possess this kit (CCT-Law within the EEC)!**

Kit set: to solder yourself  
 Transmitting frequency: approx 25 – 30 MHz (adjustable)  
 Operating voltage: approx 9 – 24VDC  
 Output power: max 6 Watt  
 Modulation method: AM + FM (narrow)  
 Board dimensions: approx 50 x 50mm  
 Make: Kemo (EAN 4024028010144)  
 Suitable case: BKM.G01B Plastic case small for a 9V block battery



### BKM.B156N FM Receiver (Kit)

Kit for FM radio. The integrated audio amplifiers can drive an 8 ohm loudspeaker > 1 W. Pre-assembled SMD IC's and pre-printed coils simplify assembly. The kit can be powered by a 9 V battery.

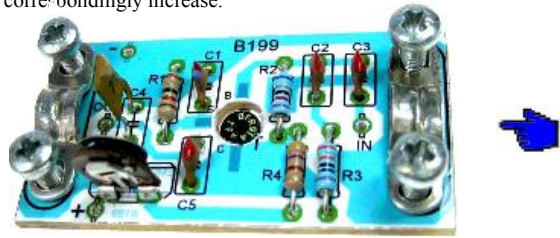
Kit set: to solder yourself  
 Frequency range: FM approx 87 – 108MHz  
 Operating voltage: 9V (battery) (not included)  
 Current consumption: approx 10mA (depending on volume)  
 Output: max 0.7W music power  
 Loudspeaker connection: 8 ohm (speaker not included)  
 Board dimensions: 57 x 57mm  
 Make: Kemo (EAN 4024028011561)



## BKM.B199 Antenna Amplifier 50 - 1000 MHz (Kit)

Single-stage antenna amplifier, with continuously adjustable amplification up to max. 15 dB. For any television range from channel 2 up to channel 65, also suitable for VHF radio and cable television. There are prepared clamps for coaxial cable on the board. As required it is possible to connect two antenna amplifiers one after another. The total amplification will correspondingly increase.

Kit set: to solder yourself  
 Operating voltage: 6 – 18VDC  
 In- and Output impedance: 50 – 75 ohm  
 Amplification: 0 – 15dB, adjustable  
 Frequency range: approx 50 – 1000MHz (incl. TV-channel 2 – 65)  
 Board dimensions: approx 26 x50mm  
 Make: Kemo (EAN 4024028011998)



## BKM.B119 Converter 100 - 200 MHz

The converter has to be placed within the antenna lead! With this converter it is possible to receive frequencies between around 100 – 200MHz with an ordinary FM radio (98 – 104MHz) (e.g. television sound, taxi radio, police radio, marine radio, amateur radio).

**Attention: Only radio amateurs who have a valid license are allowed to possess and use this kit (CCT-Law within the EEC)!**

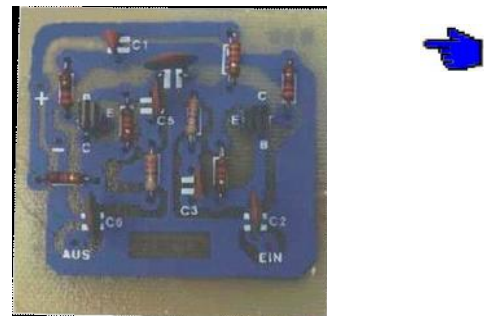
Kit set: to solder yourself  
 Operating voltage: 9 – 12VDC  
 Sensitivity: up to 0.8µV at 10dB S/N  
 Board dimensions: approx 85 x 95mm  
 Make: Kemo (EAN 4024028011196)



## BKM.B099 Special Antenna Amplifier 30 - 850 MHz (Kit)

Wideband antenna amplifier, especially suitable for amplification of weak television signals within VHF and UHF range as well as for amateurs receivers.

Kit set: to solder yourself  
 Operating voltage: 9 – 12VDC  
 Input and output impedance: 50 – 75 ohm  
 Frequency range: approx 30 – 850MHz  
 Amplification: max 20dB  
 Board dimensions: approx 55 x 55mm  
 Make: Kemo (EAN 4024028010991)



## LC.50.1 1-Channel Infrared Receiver (Kit) **While stock lasts**

Coded infrared system, which means that there are no external influences like sun light or other remote controls which could interfere with switching operations.

The receiver can be use as a switch or a momentary switch. The relay can be used as a NO or NC

This receiver can be used with the 6-channel infrared hand held transmitter

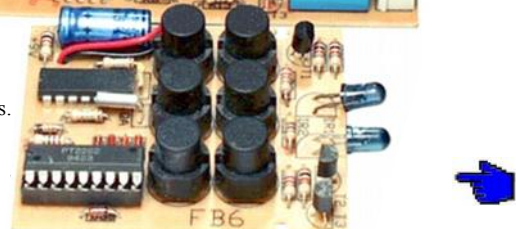
Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current consumption: 60mA  
 Range: 8m  
 Contact rating: 230VAC / 5A (relay)



## LC.49.1 6-Channel Infrared Handheld Transmitter (Kit) **While stock lasts**

Coded infrared system, which means that there are no external influences like sun light or other remote controls which could interfere with switching operations. You can switch 6 IR-receivers with this hand held transmitter.

Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Current consumption: 20mA  
 Range: 8m  
 Contact rating: 230VAC / 5A (relay)



## LC.60.1 Infrared Audio Transmission 40m Transmitter and Receiver (Kit) While stock lasts

Infrared Audio Transmission 40m Transmitter and Receiver (Kit)

Wireless transmission of audio signals over a range of up to 40m. The transmitter comes complete with lens and microphone. The receiver has an amplified loudspeaker output.

Kit set: to solder yourself

Operating voltage receiver: 9VDC – 12VDC

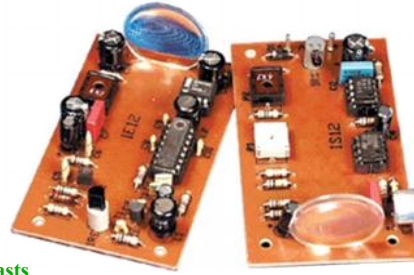
Operating voltage transmitter: 12VDC

Current consumption receiver: 25mA - 100mA

Current consumption transmitter: < 200mA

Range with lens: up to 40m

Dimensions: 82 x 48mm (receiver and transmitter each)



## LC.74 Infrared Remote Control Transmitter/Receiver (Kit) While stock lasts

Coded infrared system, which means that there are no external influences like sun light or other remote controls which could interfere with switching operations.

The receiver can be used as a switch or a momentary switch. The relay can be used as a NO or NC.

Receiver (Kit)

Operating voltage: 12VDC

Current: 12mA (not used), 60mA (load)

Rating: 230VAC / 5A (relay)

Dimensions: 42 x 74mm



## LC.74.2 Additional Single Infrared Handheld Transmitter While stock lasts

Coded infrared system, which means that there are no external influences like sun light or other remote controls which could interfere with switching operations.

## LC.8A Antenna Amplifier (Kit) While stock lasts

Antenna Amplifier (Kit)

Kit set: to solder yourself

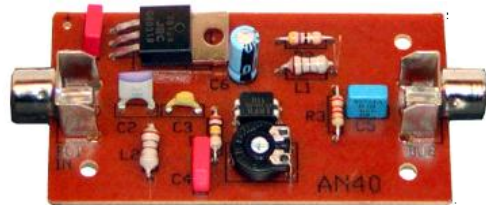
Operating voltage: 15 - 18VDC

Current consumption: 100mA

Amplification: < 10dB

Frequency range: 4MHz - 30MHz

Dimensions: 38 x 72mm



## LC.108 FM-Mini-Receiver (Kit) While stock lasts

FM-Mini-Receiver (Kit)

This simple one chip (TDA7000) will allow you to build a powerful FM receiver.

Operating voltage: 7 - 18VDC

Current consumption: 8mA / 9VDC

Sensitivity: 7µV

Output voltage: 75mV

Output impedance: 22kΩ

Frequency range: 87 - 104MHz

Dimensions: 50 x 55mm



## BKM.M128 HF Detector (Mini Spy Finder)

This detector gives you protection from eavesdropping. It allows you to search for active concealed bugs.

The HF detector has a LED which flashes faster the closer you get to the bug transmitter.

Display: 1 x LED for the turn-on control, 1 LED for indication of receipt from one transmitter

the closer you get to the transmitter, the faster this LED flashes). A 9 V/DC block battery is necessary for operation.

Operating voltage: 9VDC block battery (not included)

Current consumption: < 10mA

Frequency range: approx 0.1MHz – 2.4GHz

Display: LED

Dimensions: approx 102 x 61 x 26mm (without antenna)

Make: Kemo (EAN 4024028031286)



## BKM.M091N Phase Coupler for Power Line Products (Module)

Phase Coupler for Power Line Products (Module)

Connects capacitively all 3 in-house mains phases with each other so that transfer rates of up to 650 Mbit via the mains supply can be reached for the internet and computer networking (depending on the nature of the mains supply). If the signal is fed into 1 phase only, the phase coupler connects all 3 phases with each other so that these become permeable to the power line signal and the internet or computer signal will also be available at all other sockets of the in-house network. Also suitable for wireless intercoms! A considerable increase of the range and transmission quality may be achieved!

Installation only by an authorized qualified electrician

For electric circuits: 110 – 440VDC For power line products: 10 – 650Mbit

Dimensions: approx 72 x 50 x 28mm (without fastening straps)

Make: Kemo (EAN 4024028030951)



## POWER CONTROLS

### **BTK Phase Fired Controller 10W to 120W**

Especially suitable for small loads. By emitting the RC element the loads can be lowered to 2W .

Operating voltage: max. 250VAC  
 Rated current: max. 0.6A  
 Nominal load: min. 10W, max. 120W  
 Dimensions: 40 x 40 x 15mm



### **BTS Phase Fired Controller 25W to 1320W**

Phase Fired Controller 25W to 1320W

This phase fired controller is used as brightness control for incandescent bulbs, speed control of electric drills and similar. The circuitry has interference suppression.

Operating voltage: max. 250VAC  
 Rated current: max. 6A  
 Nominal load: min. 25W, max. 1320W (R-load)  
 Nominal load: min. 25W, max. 880W (L-load)  
 Dimensions: 110 x 50 x 35mm



### **BTD.10 Phase Fired Controller 60W to 1320W Controlled Automatically**

Zero-Crossing triggered and interference suppressed, controlled automatically from dark to light or reverse, arbitrary time constant. Another function are two buttons. Button T2 switches the light to bright and then darkens slowly. And button T1 turns off the light.

Operating voltage: max. 250VAC  
 Rated current: max. 6A  
 Peak current: max. 10A (20ms)  
 Rated load capacity: min. 60W, max. 1320W  
 Time constant basic: < 1.5 minutes  
 Time constant max range: 4 seconds - 1.5 hours  
 Dimensions: 90 x 120 x 30mm

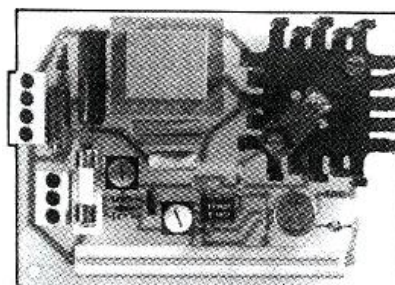


### **BTE Phase Fired Controller with Possible Multi-Version**

This triac based controller can be used as well as a dimmer control for lighting or as an engine speed control for drills or can be interconnected with 2 to max 10 triac based controllers. That way theater lighting, cinema lighting and lighting in dancing halls can be individually operated. Each triac based controller has its own potentiometer. There is an additional master potentiometer with this multi-version. This potentiometer allows to control all lights at the same time, this equals a lighting mixer console. The wiring for the multi version stays the same but the capacitor C5 (our order no COF.100.100n) with a value of 100nF is changed to 1µF (our order no COF.63.1u0).

Rated voltage: max. 250VAC  
 Rated current: max. 6A  
 Peak current: max 10A (20ms)  
 Rated load capacity: min. 60W, max. 1320W  
 Dimensions: 90 x 120 x 30mm

Please order the number of required capacitors COF.63.1u0 separately



## BKM.M106 Step Motor Interface 4 Pin (Module)

...for controlling a 4-lane bipolar stepper motor 3 - 17 V, max. 2 A. A double power pack (split power supply) is required for the current supply. For connection to a standard AT-PC from type '486 on. The motor may either be controlled by hand with the computer keyboard or via a program with an automatic program flow which has been written before. By means of an interface switch (BKM.M108) it is possible to operate up to 4 step motors at the same time via individual step motor interfaces respectively. Diskette 3,5" is enclosed.

Operating voltage: 4 – 18V split power supply. Double DC voltage, dependent on the connected motor (always 1V more than the motor requires).

Motor connection: 1 bipolar stepper motor 4 connections 3 – 17V, max. 2A

Connector: 25 poles for connection to the PC printer port LPT1

Dimensions: approx 120 x 50 x 24mm

Make: Kemo

EAN 4024028031064



Available accessories:

BKM.M108 4 fold interface switch

BKM.P5108 Stepper motor Berger RDM57

BKM.P5110 Mini stepper motor RDM37

BKM.P5111-15 Stepper motor AEG S026/48-4 Pin

BKM.P5113 Stepper motor SIEMENS 1 BC 2720-68N

BKM.P5341 Micro Stepper motor

BKM.P5342 Micro Stepper motor

## BKM.M108 4-Fold Interface Switch (Module)

This interface switch allows the use of 2, 3 or 4 interface modules with one motor each to be connected to a computer for simultaneous use. This way it is possible to operate up to 4 motors at the same time and to programme complex montions, e.g. For robots, machines, model railways etc.

Dimensions: approx 72 x 50 x 22mm

Make: Kemo (EAN 4024028031088)

This interface switch is suitable for our motor interface modules:

BKM.M106 – Step motor interface 4 pin

BKM.M107 – DC motor interface



## BKM.M013N Twilight Switch 240VAC (Module)

This electronic twilight switch switches devices automatically on by nightfall and off by dawn light through an installed relay. It can switch e.g. Energy saving lamps or other devices on for the night and off at daybreak. The module can be installed in the reversed way of turning devices off for the night and on at daybreak (e.g. Advertising displays, fountains etc.). It can switch potential-free loads up to 3A.

Operating voltage: 210 – 240VAC

Current consumption: < 40mA

Switching contact (floating): 1x switchover max load 3A (resistive load)

Turn-on brightness: approx 10 Lux ±50%

Turn-off brightness: approx 60 Lux ±50%

Delay in reaction: approx 30 seconds ±50%

Temperature range: approx -15°C to +40°C

Dimensions: approx 70 x 60 x 23mm (without fastening straps)

Make: Kemo

EAN 4024028030135



## BKM.M110 Stepper Motor Driver 6 Pin (Module)

A stepper motor with 6 connections can be operated at this module. It is possible to change the direction of rotation of the motor. The number of revolutions of the motor can also be adjusted from ca. 2 - 1000 Hz (impulse sequence). For motors from 5 - 12 Volt, max. 2 A. The operating voltage of the module depends on the operating voltage of the motor (5 - 12 Volt). Furthermore a potentiometer 1M linear and a switch 2 x change over are necessary for operation. These parts are not included. The module works without computer and can only control the direction of rotation and the number of revolutions of the motor. A controlled program flow is not possible!

Operating voltage: 5 – 12V

Switching current: max. 2A

Impulse frequency: approx 2 – 1000Hz

Dimensions: approx 120 x 50 x 24mm

Make: Kemo

EAN 4024028031101



### BKM.M195 PWM Power Control 9VDC - 28VDC, max. 20A (Module)

Power controller for controlling DC loads (DC motors, light bulbs, heaters, LEDs with current limiting resistors, etc.) The use of PWM (pulse width) control works well even with electric motors running at low RPM. Switching frequency: approx. 400 Hz (for motors, a humming noise may be heard). The control is via the supplied potentiometer or optional with an external control voltage 0 to 5 V/DC.

Operating voltage: 9 – 28VDC  
 Max current carrying: 20A (if the module is screwed on a cooling plate)  
 Control range: approx < 0% to > 100%  
 Control mode: PWM Pulse width modulation with a frequency between 300 – 600Hz  
 Potentiometer: 4.7k-ohm linear (enclosed)  
 Dimensions: approx 87 x 60 x 33mm (with mounting plate)  
 Permissible loads: direct current motors, incandescent lamps, heating, LEDs with protective resistors. Current consumption up to max 20A in each case  
 Make: Kemo (EAN 4024028031958)



### BKM.M063N Dimmer 12VAC - 48VAC, max. 10A (Module)

Controls continuously 12 V/AC motors (also direct current motors with added rectifier), incandescent lamps, heating, etc. Only to be operated at a 12 V/AC transformer (50 - 60 Hz), not suitable for DC voltage (battery). It is also possible to control voltages such as 24 V/AC or 48 V/AC by exchanging the potentiometer.

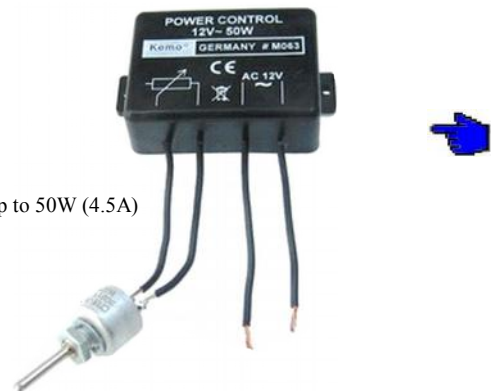
Operating voltage: 12VAC 50-60Hz (for normal iron-core transformers only, not for electronic transformers).  
 If the enclosed potentiometer is exchanged for a potentiometer 100k linear, it is also possible to control 24VAC or a potentiometer 220k linear is required for 48VAC (please order separately).  
 Mode of operation: phase control  
 Control range: approx 0 – 90%  
 Loading capacity: for ohmic or inductive loads up to max 10A (with cooling) or max 4A without additional cooling, e.g. AC motors, incandescent lamps, heating, transformers.  
 Dimensions: approx 87 x 60 x 33mm (with mounting plate)  
 Make: Kemo  
 EAN 4024028030661



### BKM.M063 Dimmer 12VAC, 50W (or 24 – 48VAC) (Module)

For halogen lamps and motors  
 Controls continuously 12 VAC incandescent lamps (e.g. halogen lamps), 12 VAC heating, motors (also direct current motors with added rectifier), etc.. Only to be operated at a 12 VAC transformer (50 - 60 Hz), not suitable for DC voltage (accumulator)! It is also possible to control 24 VAC (potentiometer 2.2 k linear) or 48 V/AC (potentiometer 4.7 k linear) by exchanging the potentiometer.

Operating voltage: 12VAC (10 – 14VAC) alternating voltage 50 – 60Hz  
 (for normal iron core transformers only, not for electronic halogen transformers)  
 Working mode: phase control  
 Loading capacity: for ohmic or inductive loads such as lamps, motors, electromagnets up to 50W (4.5A)  
 Dimensions: approx 59 x 44 x 20mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028030630



### BKM.M012 Power Control 110 - 240VAC, 1200VA (Module)

Regulates ohmic or inductive loads like heaters, hand drills, etc. with a potentiometer. When superposing BKM.M150 DC and pulse converter it's also possible to control this power control module (BKM.M012) with control voltages (1 - 5 V/DC or 3 - 12 V/DC or 6 - 24 V/DC) or with TTL pulses (optionally in each case).

Operating voltage: 110 – 240VAC 50-60Hz  
 Operating temperature range: approx -30°C to +60°C  
 Max admissible current: 6A (constant duty 3A), this equivalent to 230VAC max 1200/600VA or at 100VAC max 600/300VA  
 Duty cycle: 100% at 3A or 20% (max 3 minutes) at 6A  
 Control: with a firmly connected rotary potentiometer  
 Loads: for ohmic or inductive loads  
 Dimensions: approx 70 x 36 x 23mm  
 Make: Kemo  
 EAN 4024028030128





### BKM.M028 Power Control 110 - 240VAC, 2600 VA (Module)

Control of resistive + inductive loads (e.g. motors, heating, incandescent lamps, etc., if they are phase controllable). It is not possible to control: e.g. fluorescent lamps, motors with starting capacitor. When superposing the module BKM.M150 DC and pulse converter, it is also possible to control this power control (BKM.M028) with control voltages (1 - 5 V/DC or 3 - 12 V/DC or 6 - 24 V/DC) or with TTL pulses (optionally in each case). For your interest there was an article "Dosierte Leistung" in the German magazine "Electronic Actuell Magazin" no 4/1999 about this product.

Operating voltage: 110 – 240VAC

Current: max 12A. At 110VAC this corresponds to max 1320VA and to max 2880VA at 240VAC

Load: max 2600VA

Required: potentiometer 470k-ohm linear (please order separately).

Dimensions: approx 60 x 56 x 20mm (without fastening straps)

Make: Kemo (EAN 4024028030289)



### BKM.M028N Power Control 110 - 240VAC, 4000VA (Module)

Power Control 110 – 240VAC 4000VA (Module)

Control of resistive + inductive loads (e.g. motors, heating etc., if they are phase-controllable). When superposing the BKM.M150 DC + pulse converter module, it is also possible to control (BKM.M028N) with control voltages (1 - 5 V/DC or 3 - 12 V/DC or 6 - 24 V/DC) or with TTL pulses (optionally in each case).

#### Important installation instructions!

Depending on the load the module heats up. The heat is dissipated from the aluminum plate at the bottom of the module. Under certain circumstances it must be mounted on a cooling surface according to installation instructions. It is important that the module is fixed with 4 M3 screws (or 2.9mm metal screws) on the cooling surface. This may be the back wall of a metal casing. The aluminum plate on the bottom of the module must not bend, do not use larger screws and do not drill larger holes. The screw heads must rest on the plate of the module, rather than on the plastic edge of the module! During assembly, the module should not be curled up (if the ground is not flat). The reason: on the inside of the aluminum base of the module the thin insulating layer are directly soldered on the electronic SMD components. When the aluminum floor of the module curls up, the joints and the module start loosen and the module is defective. Please ensure that the maximum specified temperature (as specified in the module's description) is not exceeded. Otherwise apply a larger cooling plate.

Operating voltage: 110 – 240VAC

Loading capacity: 110VAC this corresponds to max 2000VA and to max 4000VA at 230VAC

Max load: 18A when mounting on a heat sink

Max load without heat sink: max 6A (peak max 25A for 10 seconds)

Regulation: phase control

Connectable loads: ohmic and inductive loads (see circuit description)

Dimensions: 87 x 60 x 33mm (with mounting bottom)

Make: Kemo

EAN 4024028032924



### BKM.M156 Sensor Power Control 230VAC 1 kW (Module)

Power control for resistive loads and motors to be operated by push button or sensor contact. When pressing the key button, the power raises and decreases again automatically and keeps this setting if the key button is detached. If the key button is touched shortly in the desired setting, the power control switches off and upon touching it once again in the last setting it switches on again. It also can be used as a light sweller / pulsator module in the clock frequency of 5 - 9 seconds per rise and decline.

Operating voltage: 220 – 240VAC 50-60Hz

Loading capacity: max 6A

Loads to be connected: resistive loads, electric motors and other inductive loads which may

be regulated through phase control with a nominal voltage of 220 – 240VAC

Operation: by push button or a sensor contact using the finger (not enclosed)

Threshold frequency: approx 5 – 9 seconds for adjusting 1x upward and downward again

Dimensions: approx 80 x 56 x 23mm (without fastening straps)

Make: Kemo

EAN 4024028031569



### BKM.M160 Power Control for Electric Transformers (Module)

Phase section regulator 110 - 240 V/AC, short circuit-proof

Output regulator for normal halogen transformers and resistive loads (e.g. heating elements). This output regulator has a soft start (increases the lifetime of lamps) and is short circuit-proof.

Operating voltage: 110 – 240VAC 50-60Hz

Current: max approx 1.3A

Power rating: approx 1.3A (that are about 300W at 230VAC and about 140W at 110VAC)

Connectable loads: halogen transformers, electronic or standard transformer 50 – 60Hz, incandescent lamps 110 – 240VAC (same voltage as the operating voltage of the dimmer) and other resistive loads such as heating, simple unregulated soldering irons. The module is not suitable for motors and other consumers with built-in regulating electronics.

Control range: approx 0 – 95%

Powering up: soft start (this increases the lifetime of incandescent lamps considerably)

Short circuit protection: the device switches off in case of a short circuit or a too high

load and has to be switched on again (turn off the operating voltage and switch it on again)

Dimensions: approx 60 x 45 x 20mm (without fastening straps)

Make: Kemo

EAN 4024028031606



## BKM.FG002N Power Control 230VAC

The output of ohmic or inductive loads 230 V/AC, which are controllable by phase control is infinitely variable with it. The regulator has a CE approval up to a load of 400 W. It may also control loads up to 800 W, but then an additional interference filter has to be connected in series. It is also possible to control temporarily (max. 3 seconds) loads up to 1600 W (e.g. in case of high starting currents for electric motors, only with additional interference filter connected in series).

Ohmic loads are e.g. electric heating, soldering irons, etc.. Inductive loads are e.g. motors with carbon brushes (e.g. kitchen machines), electromagnets, vibrating tables, etc.. It is not possible to connect devices, which already have built-in control electronics! Only for indoor use!

Operating voltage: 180 – 240VAC  
 Load: max 400W  
 Load with additional interference filter: max 800W  
 Short load capacity: (max 3 seconds) 1600W  
 Dimensions: approx 112 x 67 x 63mm (without connector)  
 Make: Kemo (EAN 4024028020020)



## LIGHTING EFFECTS



### BKM.B204 Flashing LED 230VAC

Flash circuit with one red LED (light emitting diode) Ø 5mm which can be operated with 230VAC.  
 Uses: Control-lamp for devices and alarm systems, start control for machines

Kit set: to solder yourself  
 Operating voltage: 220 - 240VAC  
 Flash frequency: approx. 2 Hz  
 Board dimensions: approx. 25 x 23mm  
 Make: Kemo (EAN 4024028012407)



Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm

### BKM.B003 Flasher / Alternating Flasher for 2 Small Light Bulbs

The light bulbs connected to this flasher will flash at an adjustable flashing speed.  
 Can be used as a flasher (max. 300mA) or as an alternating flasher (2 x max. 300mA).

Kit set: to solder yourself  
 Operating voltage: 6 – 16VDC  
 Power rating max.: 0.3A per output (2 outputs available)  
 For small light bulbs: 6 – 16VDC  
 Flashing speed: adjustable, approx. 1 – 3 times per second  
 Board dimensions: approx. 45 x 22mm  
 Make: Kemo  
 EAN 4024028010038  
 Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm



### BKM.B185 Flasher 6 - 12VDC, max. 100mA

Electronic flasher for filament bulbs. Also usable as alternating flasher.  
 Flashing frequency: approx. 1 – 3 times per second. Ideal for construction of models. It is possible to expand this flasher for loads up to 3A with the additional kit set BKM.B197 Relay card 12VDC (order separately)

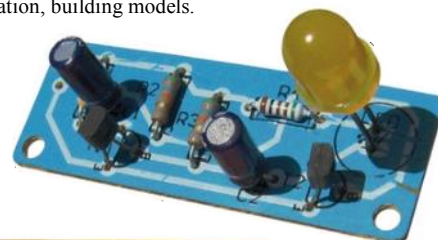
Kit set: to solder yourself  
 Operating voltage: 6 – 12VDC  
 Switching current: max. 100mA  
 Flashing frequency: approx. 1 – 3 times per second  
 For small filament bulbs: 6 – 12VDC  
 Board dimensions: approx. 45 x 26mm  
 Make: Kemo  
 EAN 4024028011851  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.B186 Jumbo LED Flasher

Jumbo LED Flasher  
 Electronic flasher unit with a large Ø 8mm light emitting diode. Application: decoration, building models.

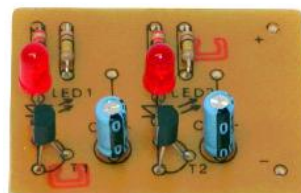
Kit set: to solder yourself  
 Operating voltage: 6 – 12VDC  
 Flashing frequency: approx. 60 – 120 times per minute  
 Board dimensions: approx. 20 x 55mm  
 Make: Kemo  
 EAN 4024028030876  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### LC.117 LED-Alternating Flasher with 2 LEDs (Kit) **While stock lasts**

Two LEDs are flashing alternately.

Operating voltage: 6 - 12VDC  
 Current consumption: 25mA  
 Dimensions: 48 x 40mm



### BKM.B092 LED Alternating Flasher

Two different coloured light emitting diodes are flashing alternately. The flashing time is adjustable. This flasher can be powered with a 9 volt block battery.  
Applications: flashing adornments, name-plates, for miniature model construction

Kit set: to solder yourself  
Operating voltage: 6 – 12VDC (e.g. 9V block battery)  
Current draw: approx. 20mA  
Flashing frequency: adjustable  
Board dimensions: approx. 24 x 26mm  
Make: Kemo  
EAN 4024028010922  
Suitable case: BKM.G01B Plastic case small for a 9V block battery



### BKM.M079 Flasher or Alternating Flasher for 1 to up to 10 LEDs (Module)

Flasher or Alternating Flasher (Module)  
Suitable as flasher or alternating flasher for light emitting diodes. Protection against change of polarity, short-circuit-safe, built-in current limitation for LED's. Connecting possibilities for 1 - 10 LED's. Ideal for use in model construction, for adornment picture or caps with built-in LED's, warning flashers, etc.

Operating voltage: 6 – 12VDC  
Output: 2 (alternating flasher)  
Flashing sequence: approx. 2 – 3Hz (approx. 120 – 180 flashing pulses per minute)  
Flashing to non-flashing: approx. 50 / 50%  
Dimensions: approx. 18 x 16 x 4mm  
Make: Kemo  
EAN 4024028030791



### BKM.M080 Flasher/Alternating Flasher for Small Light Bulbs 6 - 12VDC

Flasher/Alternating Flasher for Small Light Bulbs 6-12VDC  
It is possible to connect light bulbs up to 300mA current draw.

Operating voltage: 6 – 12VDC  
Current draw: 2 x max. 300mA (per output)  
Outputs: 2  
Operating mode: flasher or alternating flasher  
Flashing frequency: approx. 2 – 3 Hz (approx. 120 – 180 times per minute)  
Flashing/non-flashing ratio: approx. 50% : 50%  
Dimensions: approx. 18 x 15 x 12mm (without fastening straps)  
Make: Kemo  
EAN 4024028030807



### BKM.FG008N Mains Socket with In-Built Flasher 230VAC, max. 300W **Only for Indoor Use!**

Flasher with adjustable flashing time: approx. 0,6 - 9 seconds turn-on time  
For light bulbs 25 - 300W, 230VAC  
Only for indoor use!

Operating voltage: 230VAC  
Flashing time: adjustable, approx. 0.6 – 9 seconds turn-on time  
Turn-off time: approx. 50% of turn-on time  
Inbuilt fuse: T 1.6A  
Dimensions: approx. 112 x 67 x 63mm (measured without plug)  
Make: Kemo  
EAN 4024028020082



### BKM.B128 3-Channel Running Light 6 – 24VDC for Small Filament Bulbs

This running light works at 6 – 24VDC. Each channel can be fitted with filaments bulbs of the same voltage (max. 3A).

Kit set: to solder yourself  
 Operating voltage: 6 – 24VDC  
 Channels: 3  
 Power rating: 3A each channel  
 Speed of operation: adjustable approx. 1 – 10 Hz  
 Board dimensions: ca. 65 x 45mm  
 Make: Kemo  
 EAN 4024028011288  
 Suitable case: BKM.G010 Shell case 95 x 135 x 45mm



### BKM.B097 4-Channel Running Light 230VAC + 12VDC

This digital 4-channel running light has controls for 4 different lamp outputs. One lamp after another lights up in regular intervals. With 230 VAC light bulbs, use max. 100 Watt per output. The speed for the lighting up time is adjustable. The device works with full-wave control.

Kit set: to solder yourself  
 Operating voltage: 230VAC + 12VDC  
 Power rating per channel: max. 100W per light bulb  
 Speed: adjustable  
 Board dimensions: approx. 58 x 44mm  
 Make: Kemo  
 EAN 4024028010977  
 Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm



### BKM.FG010 3-Channel Running Light 230VAC

This running light has 3 sockets where incandescent lamps, lamp groups or light chains of 230 V/AC may be connected. Only incandescent lamps may be connected, no fluorescent lamps, quartz lamps, power saving lamps nor halogen bulbs with a superposed transformer! You may only connect lamps up to a maximum of 300 W total power to each socket.

Operating voltage: 230VAC  
 Channels: 3  
 Load: max. 300W per channel  
 Running speed: adjustable  
 Dimensions: approx. 105 x 78 x 67mm (measured without connector)  
 Make: Kemo  
 EAN 4024028020105



### BKM.M011N 4-Channel Running Light (Module)

This running light controls the lighting for 4 lamps or 4 lamp groups. It switches the lights on and off one after another in regular intervals. The speed for the lighting up time is adjustable: approx. 20 – 200 cycles per minute. Kemo  
For luminous advertising in shop windows, for exhibition stands, in disco, for party rooms or light warning devices in danger zones.

Operating voltage: 230VAC  
Channels: 4  
Load per channel: min. 25W, max. 300W (max 300W per light bulb and channel)  
Max total load: 1200W  
Speed: adjustable, approx. 20 – 200 cycles per minute  
Dimensions: approx. 120 x 70 x 50mm  
Make: Kemo  
EAN 4024028030111



### BKM.M065 Halogen Light Organ for 12VAC Lamps (Module)

Halogen light organ for 12VAC lamps or halogen lamps up to max. 50W. When connected the lights will be flickering with the musical rhythm. To adjust sensitivity to the music a potentiometer 1k-Ohm linear has to be installed. The potentiometer is not included and has to be ordered separately. The module is working with a 12VAC power transformer(alternating voltage). It is not suitable for direct voltage (accumulator).

Operating voltage: 12VAC (power transformer)  
Power rating: max. 50W (lamp)  
Adjusting: potentiometer 1 k-Ohm linear (please order separately)  
Connection: at the loudspeaker output of an amplifier or radio  
Dimensions: approx. 53 x 57 x 28mm  
Make: Kemo  
EAN 4024028030654



### BKM.B062 Infrared Light Barrier > 18m

This light barrier uses the IC U2531B and works with invisible infrared light beams. The transmitter and receiver are included! The coverage range is over 18m and can be extended to up to 30m if two convex lenses are installed.  
Ideal for alarm systems, automatic animal picturing, remote control for garage doors, etc. With incorporated infrared filter for day operation!  
Applications: installed between posts as door bell, counter of people entering or installed on windows as alarm device.

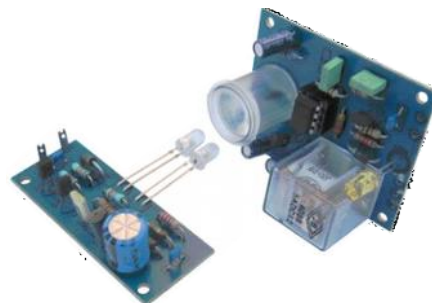
Kit set: to solder yourself  
Operating voltage transmitter 9VDC  
Operating voltage receiver: 12VDC  
Transmitting power: adjustable  
Relay: 1x on, max 3A  
Board dimensions transmitter: approx. 23 x 45mm  
Board dimensions receiver: approx. 55 x 44mm  
Make: Kemo  
EAN 4024028031200  
Suitable cases: BKM.G026 case black 72 x 50 x 28mm and BKM.G027N case black 72 x 50 x 35mm



### BKM.B213 Infrared Light Barrier 50m (Kit)

The enclosed optics and highly sensitive photo detector allows this light barrier to be used for a range of up to 5m. The infrared light is invisible to the human eye.  
When the IR light between the transmitter and receiver is interrupted (a person walks through it) the relay in the receiver switches.  
A detailed construction manual "Eingeschränkt" appeared in the German magazine "Electronic Aktuell Magazin" Nr.4/99.

Kit set: to solder yourself  
Operating voltage transmitter: 9VDC  
Current draw transmitter: approx. 100mA  
Operating voltage receiver: 12VDC  
Current draw receiver: max. approx. 50mA  
Operating range: max. approx. 50m  
Relay rating receiver: 1 x switch-over max. 25V, 3A  
Board size transmitter: approx. 58 x 23mm  
Board size receiver: approx. 57 x 45mm  
Make: Kemo  
EAN 4024028012131  
Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm



### BKM.B045 Light Barrier 12VDC (Alarm Bell) (Kit)

This light barrier switches a relay on or off if there is light or if there is darkness (e.g. Shadow of someone passing the light ray).  
Application: If the light ray of a lamp between doors or windows is interrupted (someone is passing through) the relay is switching on an alarm.  
Works in twilight as well.

Kit set: to solder yourself  
Operating voltage: 12VDC  
Current draw: < 100mA  
Rating relay: 1x on, max. 3A, max. 25V  
Sensitivity: adjustable  
Designed for visible light  
Board dimensions: approx. 56 x 27mm  
Make: Kemo (EAN 4024028010458)  
Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm



### BKM.B045 Light Barrier 12VDC (Alarm Bell) (Kit)

This light barrier switches a relay on or off if there is light or if there is darkness (e.g. Shadow of someone passing the light ray).

Application: If the light ray of a lamp between doors or windows is interrupted (someone is passing through) the relay is switching on an alarm.

Works in twilight as well.

Kit set: to solder yourself

Operating voltage: 12VDC

Current draw: < 100mA

Rating relay: 1x on, max. 3A, max. 25V

Sensitivity: adjustable

Designed for visible light

Board dimensions: approx. 56 x 27mm

Make: Kemo (EAN 4024028010458)

Suitable case: BKM.G027N Plastic case black 72 x 50 x 35mm



### BKM.B223 Infrared Spotlight (Kit)

This IR night vision spotlight allows the CCD camera to produce images in levels of light approaching total darkness.

The Infrared light is completely invisible to the human eye.

Ideal for inconspicuous surveillance of entrances, facades and other areas.

Kit set: to solder yourself

Operating voltage: 12 – 14VDC

current draw: approx. 300mA

Wavelength: approx. 870 – 950nm

Operating range: approx. 5m

Board dimensions: ca. 74 x 56mm

Make: Kemo

EAN 4024028012230

Suitable case: BKM.G089 Transparent case for wall mounting 120 x 70 x 30mm



### BKM.M120 Infrared Spotlight for CCD Cameras 12 - 15VDC < 300mA (Module)

This IR night vision spotlight allows the CCD camera to produce images in levels of light approaching total darkness.

The Infrared light is completely invisible to the human eye.

Ideal for inconspicuous surveillance of entrances, facades and other areas.

Operating voltage: 12 – 15VDC

Current draw: < 300mA

Operating range: approx. 5m

Wavelength: approx. 875nm

Dimensions: approx. 72 x 50 x 18mm (with LED's)

Make: Kemo

EAN 4024028031200



### LC.170 LED-Arrow with Running Light Effect (Kit) While stock lasts

Application: direction sign, wall decoration, window display

Operating voltage: 9 volt (block) battery

Suitable box size approx. 141 x 56 x 21mm

Make: LC-Electronic

Type: L170



### BKM.M136 LED-Signal Lamp Red 12VDC (Module)

The signal lamp is equipped with 39 very bright red LED's. These LED's are moulded and the lamp is constructed for rugged use. Surface mounted with 2 screws.

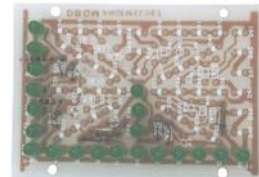
Operating voltage: 12VDC (24VDC when using the enclosed resistor)  
 Current draw: < 150mA  
 Fastening: surface mounted with 2 screws  
 Dimensions: approx. Ø 51mm x 51mm long (with fastening straps)  
 Make: Kemo  
 EAN 4024028031361



### BKM.B200 Luminous Letters (Kit)

With this kit it is possible to mount any capital letter of the alphabet or any digit from 0 - 9. The concrete description of each letter and of each digit is been enclosed. The kit includes especially bright LED's. The printed wiring board could be equipped also with LED's of any other colour. With each kit it is feasible to mount any digit and putting several kits together, you are capable to build luminous nameplates, signboards, house numbers etc. Fitting letter control see BKM.B206.

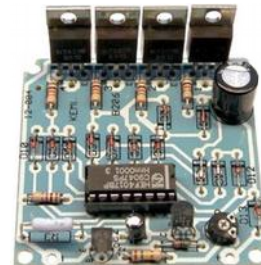
Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current draw: approx. 100 – 300mA, depending on which letter  
 Digit dimensions: ca. 90 x 65mm  
 Board dimensions: ca. 92 x 67mm  
 Make: Kemo  
 EAN 4024028012001  
 Suitable control: BKM.B206 Luminous letter control



### BKM.B206 Luminous Letter Control (Kit)

...switches luminous letters or lamp groups slowly on one after another, keeps all letters switched on for a while and then switches them off at the same time. Then, the process re-starts again. There are 4 outputs. Each can connect 1 letter or one letter group. The control is suitable to be used with our BKM.B200 – Luminous Letter Kit Set

Kit set: to solder yourself  
 Operating voltage: 12 – 15VDC  
 Outputs: 4  
 Rating: max. 5A per output  
 Clock frequency: approx. 0.5 – 1Hz, adjustable  
 Cycle sequence: after the 4. cycle all outputs are left on for another 6 cycles.  
 Board dimensions: approx. 55 x 55mm  
 Make: Kemo  
 EAN 4024028012063  
 Suitable case: BKM.G010 Shell case 95 x 135 x 45mm



### LC.85.1 Luminous Letter Control (Kit) **While stock lasts**

...switches luminous letters or lamp groups slowly on one after another, keeps all letters switched on for a while and then switches them off at the same time. Then, the process re-starts again. There are 4 outputs. Each can connect 1 letter or one letter group.

Luminous Letter Control (Kit)  
 Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Max: 5A  
 Dimensions: 55 x 55mm



### BKM.M124 Swelling Light 12VDC, max 24W (Module)

This swelling light regulates the brightness of incandescent lamps as well as halogen lamps. The automatic control starts with dark and slowly changes to bright and slowly back again and restarting again. Similar to a flasher but instead of flashing the light changes the Brightness. There was an article "Light & Lock" in the German magazine "Electronic Aktuell Magazin" Nr.8/2001 about this product.

Operating voltage: 8 – 15VDC  
 Rating: max. 2A  
 Swelling sequence: approx. every 5 – 8 seconds  
 Dimensions: approx.. 60 x 45 x 20mm  
 Make: Kemo  
 EAN 4024028033006

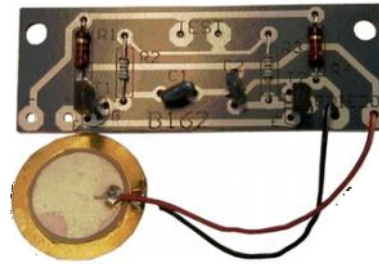


## TESTING AND MEASURING

### BKM.B162 Continuity Tester with Piezo Buzzer (Kit)

For testing highly resistive and low impedance connections. An extremely low holding-wire current flows ( $< 10\mu\text{A}$ ). If the connection is conductive, the piezo buzzer hums. Also usable as rain indicator when the test probes contact water!

Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Acoustical electrical transducer: piezo  
 Measuring current:  $< 10\mu\text{A}$   
 Board dimensions: approx 19 x 55mm  
 Make: Kemo  
 EAN 4024028011622  
 Suitable case: BKM.G01B Plastic case small for a 9V block battery



### EMK.FG06 Function Generator (DIY Kit)

Generating continuous waveforms of sine, square, triangle.

Kit set: to solder yourself  
 Operating voltage: 230VAC  
 Output: 1Veff (adjustable), 12V (square)  
 Frequency range: 1Hz  $< 600\text{kHz}$   
 Klirr factor: 0.5%  
 Dimensions: 130 x 80mm



### BKM.B195 Infrared Detector 9VDC (Kit)

With the aid of this circuitry it is possible to carry out functional tests of infrared remote controls used in TV-sets and video devices, etc. Whenever there is radiation of infrared beams on the Special-Sensor, the LED will light up and indicate that the infrared remote control is operating. As accessories is available our kit "B197 | Relay card 12 V/DC". This could be connected with the Infrared Detector and it is then possible to switch through the relay contact loads up to 3 A.

Kit set: to solder yourself  
 Operating voltage: 9VDC (8 – 12VDC)  
 Current consumption without signal:  $< 200\mu\text{A}$   
 Current consumption with a signal of an IR remote control: approx 2 – 15mA  
 Range between remote control and infrared detector: approx 2 – 10cm, depending on the remote control  
 Function display: LED  
 Board dimensions: approx 17 x 58mm  
 Make: Kemo (EAN 4024028011950)  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.M085 Infrared Detector 9VDC (Module)

With the aid of this "Infrared Detector" it is made possible to carry out functional tests with infrared remote control units, infrared transmitters in light barriers, etc. This module consists of an infrared receiver which indicates through switching on a light emitting diode, if the remote control on test emits infrared radiation. Suitable for most of the remote controls and transmitters. Indispensable test equipment for radio and TV workshops and also for hobbyists.

Operating voltage: 9VDC  
 Current consumption:  $< 8\text{mA}$   
 Sensitivity: the whole light spectrum from visible light to infrared  
 Display: LED  
 Dimensions: approx 30 x 59 x 20mm (without fastening straps, with light tube)  
 Make: Kemo  
 EAN 4024028030852



### BKM.K100 Small Compass

Small compass for school, leisure and hobby. Also spare part for BKM.B172 The little electro-technician .

Dimensions: 35 x 10mm  
 Make: Kemo  
 EAN 4024028011707



### LC.37 3½-Digit LCD-Thermometer While stock lasts

Operating voltage: 9VDC (Battery)  
 Current consumption: 1.5mA  
 Measuring range:  $-50^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$   
 Resolution:  $0.1^{\circ}\text{C}$   
 Inaccuracy:  $\pm 0.5\%$  ( $\pm 1$  Digit)  
 Dimensions: 145 x 30 x 80mm



### LC.39 3½-Digit LCD-Thermometer in Matching Case While stock lasts

Same thermometer as above in matching case

**No picture available**





### BKM.M087N LED-Tester (Module)

With the aid of this test module it is possible to carry out tests of wired light emitting diodes in order to check function, brightness, colour and polarity. In order to facilitate selection of LED's of equal brightness, there have been placed two test sockets with the same currents (5mA/10mA) side by side. Operating with battery 9 V (alkali).

Operating voltage: 9V battery (alkali)

LED connection: socket strip

LED testing currents: optional approx 0.5, 1, 2.5, 5, 10, 20, 35, 50mA

Dimensions: approx 60 x 82 x 24mm

Make: Kemo (EAN 4024028030876)



### BKM.M101A Magnet Field Generator (Module)

Magnetic field generator for sanitary conduits against lime build-up

Produces magnetic alternating fields, which charge the trace elements such as lime, metal oxides, etc. contained in water positively molecular. So it can be prevented that these cannot dock to molecules that are also charged positively (e.g. pipes). Thus the deposit of lime, minerals, etc. in pipes, valves, etc. is made difficult or prevented, respectively. **For indoor use only.** Required plug power supply: 6 - 15V/DC with jack plug 3.5mm, < 130mA (not enclosed).

Operating voltage: 6 - 15VDC

Current consumption: approx < 130mA

Operating frequency: < 2000Hz

For water pipes made of copper, plastic, steel: Ø 8 - 80mm

Capacity: max approx 5000l/h

The coil on the water pipe must be wound in opposite directions!

Dimensions: approx 72 x 50 x 28mm (without fastening straps)

Make: Kemo (EAN 4024028031118)



### BKM.M101 Magnet Field Generator (Plug-In)

This module operates environment-friendly without chemicals on a physical-inductive base. Very easy assembly, no intervention into pipes necessary. If possible, the device should be mounted directly behind the water meter according to the drawing. Please observe that both coils must be wound around the water pipe in opposite directions. Intended use: Assembly at water pipes in order to ionize the crystals contained in the water.

Operating voltage: approx 230VAC (firmly connected plug power supply)

Current consumption: < 2,5W

Operating frequency: < 2000Hz

For water pipes made of copper, plastic, steel, approx. Ø 8..80mm

Capacity: max. approx. 5 m<sup>3</sup> / h

The coil on the water pipe must be wound in opposite directions!!

Dimensions: approx. 72 x 50 x 28mm (without mounting straps)

Make: Kemo (EAN 4024028031019)



### BKM.M058N Mikrowave Leakage Tester (Module)

The microwave leakage tester indicates leakage radiation at microwave ovens, which flows out through faulty door hinges, rubber seals or screens. Microwaves are a form of high energy which penetrates plastic, ceramics and also live tissue. An indispensable device for your health and environmental preservation!

Operating voltage: 9VDC

Display: LED

Dimensions: approx 101 x 60 x 26mm

Make: Kemo (EAN 4024028030586)



### BKM.B187 Signal Injector (Test Signal Generator) (Kit)

Universal square-wave sound generator with approx. 1000 Hz basic frequency and a great number of harmonic waves which lead up to VHF-range. The signal can be listened through a highly ohmic earphone or could be amplified for loudspeakers through an amplifier. Ideal as repair equipment for radios and amplifiers, in order to feed a sound signal at various stages of the defect object.

Kit set: to solder yourself

Operating voltage: 6 - 12VDC

Frequency: approx 1000Hz

Board dimensions: approx 25 x 24mm

Make: Kemo (EAN 4024028011875)

Suitable case: BKM.G01B Plastic case small for a 9V block battery



### BKM.B214 Ultrasonic Proximity Sensor (Kit)

A LED lights up if a body approaches the ultrasonic sensors at a distance of 10 - 80 cm (depending on the size of the body). Use: parking-in assistance for cars in garages, alarm signal for persons or animals staying in a certain area. Operating voltage: 9 - 12 V/DC. The device works according to the same principle as the ultrasonic echo ranging of bats! This kit may be extended to relay operation with our relay board "B197" (not enclosed). For your interest there was an article "Peilen wie die Fledermaus" in the German magazine "Electronic Aktuell Magazin" Nr.7/99

Kit set: to solder yourself

Operating voltage: 9 - 12VDC

Operating frequency: approx 40kHz

Range: approx 10 - 80cm, depending on the size of the object (approx 0.01 - 0.5m<sup>2</sup>)

Display: LED

Current consumption: < 10mA

Board dimensions: approx 55 x 45mm

Make: Kemo (EAN 4024028012148)

Suitable case: BKM.G023 Case with fastening straps



## BKM.M048N Ultrasonic Generator (Animal Repellent) (Module)

It is possible to scare away animals and insects: e.g. rats, mice, martens, wild rabbits, mosquitoes with this ultrasonic sound device. If mounted on the car, deer will be scared away (decreased danger of accidents). For connection of a piezo-treble loudspeaker. The module is an ideal aid to scare away destructive animals out of your pantry, kitchen, storehouses, garden, etc. Also to be used as dog whistle. There are some birds species which will be scared away out of your fruit trees.

Operating voltage: 12 – 15VDC

Current consumption: < 50mA

Loudspeaker output: only for up to 5 piezo loudspeakers!

Audio frequency: adjustable approx 8 – 40kHz ( $\pm 20\%$ )

Dimensions: approx 60 x 45 x 29mm (without fastening straps)

Make: Kemo (EAN 4024028030487)

Recommended piezo-tweeter:

BKM.L001 Piezo-spherical dome tweeter with flare

BKM.L002 Ultrasonic wall loudspeaker

BKM.L003 Piezo- tweeter approx 8 ohm 50mm

BKM.P5123 Mini piezoelectric tweeter



## LC.3.1 Watt Meter for Speakers (Kit) **While stock lasts**

Watt meter for Loudspeakers (Kit)

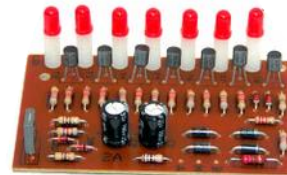
The loudspeaker output is displayed with 7 LEDs. This watt meter is connected parallel to the loudspeaker. There is no power supply necessary.

Kit set: to solder yourself

Input A: 0.3W - 35W

Input B: 4.0W - 200W

Dimensions: 50 x 82mm

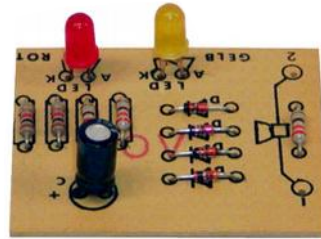


**MIXING CONSOLE UNITS**



**LC.115 Speaker Overload Protection (Kit)** **While stock lasts**  
Loudspeaker Overload Protection (Kit)

Kit set: to solder yourself  
Power: 10 - 80W  
Impedance: 4 - 16 Ohm  
Display: 2 LED  
Dimensions: 48 x 40mm



**LC.73 Stereo Speaker Guard (Kit)** **While stock lasts**  
Stereo Loudspeaker Guard (Kit)  
Can be easily installed between amplifier and loudspeaker.

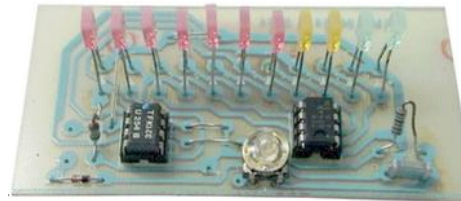
Kit set: to solder yourself  
Operating voltage: 12 - 15VDC  
Current consumption: 80mA  
Power-up delay: 2 seconds  
Dimensions: 80 x 50mm



**BKM.B111 LED VU-Meter with 11 LED's**

Almost inertialess measuring device with 11-LED-indication. Ideal as volume indicator for amplifiers and cabinets or as volt- or ampere meter for mains supplies, etc.

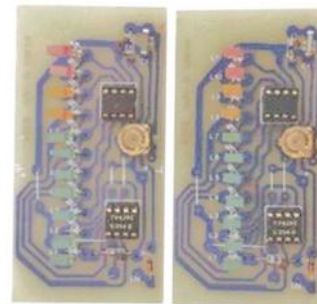
Kit set: to solder yourself  
Operating voltage: 12VDC  
Display: 11 LED's (light band)  
Sensitivity: adjustable  
Board dimensions: approx 92 x 46mm  
Make: Kemo  
EAN 4024028012117  
Suitable case: BKM.G010 Shell case 95 x 135 x 45mm



**BKM.B124 Stereo LED-Volume Indicator**

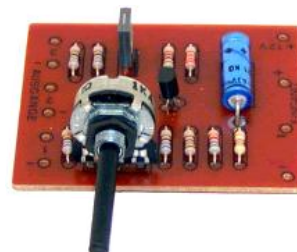
Almost inertialess volume indicator for amplifier units from 2 - 100 W. Indication through 22 LEDs (2 x 11 LEDs). Operating voltage: 12 V/DC. Easy connection with the loudspeakers.

Kit set: to solder yourself  
Operating voltage: 12VDC  
Sensitivity: adjustable  
Display: 2x 11 LEDs  
Display type: light band  
Board dimensions: approx 92 x 46mm  
Make: Kemo  
EAN 4024028011240



**LC.98 Video Transfer Amplifier (Kit)** **While stock lasts**

Kit set: to solder yourself  
Operating voltage: 12VDC  
Current consumption: 40mA  
Input and output impedance: 60 - 75 Ohm  
Number of outputs: 3  
Dimensions: 50 x 60mm



## PSU POWER SUPPLY UNITS

### BKM.M083 Battery Charging Regulator 12VDC (Module)

This module supervises the charging state of a 12 V car battery and starts charging automatically, whenever there is a drop of voltage. When the battery is charged the module will switch off and supervise the battery. Suitable for batteries placed in alarm systems, weekend-houses, caravans etc. in order to keep batteries constantly charged without the risk of overcharging. Also suitable as charging regulator for solar panels. Short circuit and reverse current proof.

Automatic charging interruption with battery voltage of approx. 13.8 - 14.2 V/DC.

Input voltage: 16 – 20VDC (solar panel or power supply)  
 Output: regulated for charging a 12V battery to max 13.8 – 14.2VDC  
 Output current: 0 – 1.5A, depending on the charging state of the battery  
 Dimensions: approx 60 x 45 x 20mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028030838



### BKM.M057 Automatic Accumulator Charging Module

Constant current charger for accumulators 1.2 - 18VDC. Reversible charging currents (depending on the accumulator): 0.01 - 1A. The charging current adjusts automatically. A transformer is required, which has approx 10 V more voltage than the accumulator. For all accumulators which may be charged with constant current: e.g. NiCd, NiMH, lead or gel accumulators.

**Not suitable for lithium ion accumulators!**

Accumulators capable of being charged: 1.2 – 18VDC NiCd, NiMH, lead and gel accumulators,  
 Charging current: constant charging current adjustable in steps  
 Required transformer AC: always 10V higher than the voltage of the accumulator to be charged, max 28V. The maximum output current of the transformer should be higher than the desired charging current of the accumulator.  
 Dimensions: approx 53 x 45 x 21mm  
 Make: Kemo (EAN 4024028030579)



### LC.25 Battery Charger for Nickel-Cadmium-Accumulators **While stock lasts**

Battery Charger for NiCd-Accus

Up to 12 NiCd accumulators can be charged with this charger. The charging time takes about 10h at 0.1CA.

Operating voltage: 12VDC - 18VDC  
 Charging current: 15mA – 450mA  
 Charge time: 10h at 0.1CA  
 Dimensions: 40 x 45mm



### LC.07M Racing-Pack Charger (7.2V and 1700mA) (Module) **While stock lasts**

Fast charge possible in just 4 hours with automatic turn-off when charged.

Operating voltage: 12VDC  
 Current (loading): 500mA  
 Current consumption: 1A  
 Dimensions: 98 x 88 x 34mm



### BKM.M174 Solar Charging Regulator Dual 16A (Module)

To be connected between a solar panel 12VDC and 1 or 2 batteries in order to avoid an overload of the batteries. If 2 batteries are connected, they are charged separately from each other. The battery with lowest charging voltage always receives more charging current. With LED displays and high charging capacity: max. 2 x 8A or 1 x 16A.

Input voltage: solar panels 15 – 30VDC open circuit voltage, 12VDC rated voltage  
 Max charging current: total 16A (2 batteries of max 8A each or 1 battery connected in parallel at both outputs up to 16A)  
 Connections: 1 or 2 batteries 12V. If only one battery is connected then both outputs (1 + 2) in parallel (simultaneously) applied to the battery  
 Displays: one display per battery "battery is charging" and one display "all batteries charged"  
 Cooling: In case of currents > 4A the module has to be screwed with the metal bottom on a heat sink with a surface of > 300cm<sup>2</sup>  
 Fuse: A pre-fuse F16A is necessary (not included)  
 Switch-on voltage: battery approx < 12.9VDC (± 5%)  
 Switch-off voltage: "battery charged" approx 14.2VDC (± 5%)  
 Own current consumption (is taken from the battery): < 2mA  
 Reverse current-proof (no additional diode required)  
 Dimensions: approx 87 x 60 x 33mm (with mounting bottom)  
 Make: Kemo  
 EAN 4024028031743



### BKM.M043 Solar Discharge Protection (Module)

...prevents reverse current (discharge) between solar elements and accu, whenever the solar elements do not create much current because of inferior light conditions. Voltage loss merely approx. 0.35V at 300mA! Max. 1.5A.

Connection: cable connection  
 Max current load: 1.5A  
 Dimensions: approx 25 x 22 x 17mm  
 Make: Kemo  
 EAN 4024028030432



### BKM.M149 Solar Charging Controller 12VDC, 6A / 10A (Module)

This solar charging controller is connected between a solar cell 12VDC (open circuit voltage 14 - 30VDC) and a battery 12VDC to prevent an overcharge of the battery. LED displays for "battery full" (approx. 14.4VDC) and "charging".

Input voltage solar cell panels: 14 – 30VDC open circuit voltage  
 Nominal voltage: 12VDC  
 Max input current: 6A, short-time not more than 5 minutes 10A  
 Inrush voltage: battery voltage < approx 13,4VDC  
 Interrupting voltage: battery voltage > approx 14.4VDC  
 Displays: 1 LED for "charging" and 1 LED for "accu full"  
 Own power consumption: < 2.5mA (LED switched on)  
 Dimensions: approx 72 x 50 x 42mm (without fixing straps)  
 Make: Kemo (EAN 4024028031491)



### BKM.M102N Second Battery Charger 6 – 24VDC (Module)

For lead batteries 6 to 24 V. With this battery separating filter 2 batteries are charged separately at one source of charging current (vehicle generator, solar systems, windmills, chargers etc). For charging currents up to 10 A at maximum (with cooling 20 A). The charging current distributes in such a manner that an empty battery will be charged more than a battery that is almost charged. It is perfect for motor caravans if one battery operates the television, radio etc. and the second battery must remain charged in order to start the motor. Or for weekend cottages if one battery used for the alarm system must not be emptied.

Operating voltage: 6 – 24VDC  
 Batteries to be connected: 2 each of the same voltage 6 – 24VDC  
 Max charging current: 10A (with cooling max 20A) total current  
 Dimensions: approx 87 x 60 x 33 (with mounting plate)  
 Make: Kemo  
 EAN 4024028031026



### BKM.M172 Bicycle Charge Controller USB (Mini B) (Module)

Allows the operation of navigators, PDAs, MP3 players, etc. if these have a current supply jack „Mini USB B“ with generally usual wiring. The current for the operation and/or for charging the battery is then taken from the bicycle dynamo.

#### Supported devices

The Bicycle charge controller supplies Power according to USB specifications on the outer pins of the USB-plug. Most devices with Mini-USB-B Port are compatible. Some manufacturer however require additional signals on the data pins before going into charge mode. That serves economic interests: no power supplies of other manufacturers are allowed. Those signals can be very different. For that reason we can not promise that all devices on the market are compatible with our M172 Bicycle charge controller. Because there are thousands of devices, we can not test them all. Please do not ask us if any specific device works with M172. As mentioned before, most of the time it works. (you can read about it on many internet forums.)

Input voltage: 6VAC commercial bicycle dynamo (also wheel hub dynamos) alternating voltage

Output voltage: 5.2VDC stabilized (approx 5.1 – 5.3VDC)  
 Output current: max 300mA (is fully sufficient for most of the devices that are supplied with USB jack)  
 LED display: the installed LED lights up when the switch is set to "USB operation" and the bicycle is moving  
 Switch: installed change-over switch in order to switch to "USB operation" or "Bicycle lighting on".  
 The bicycle dynamo cannot charge USB and operate the lights at the same time  
 Connections 1 USB cable approx 60cm long, 1 cable "earth" to the bicycle chassis, 1 cable to the dynamo, 1 cable to the bicycle lighting  
 Dimensions: approx 40 x 40 x 12mm (without switch and fastening straps)  
 Make: Kemo (EAN 4024028031729)



### BKM.M155 Discharger for 7.2VDC Racing Packs (Module)

Discharges partially charged 7.2 V/DC Racing Packs to prevent a memory effect and thus to increase the accumulator's life. The accumulator is discharged to ca. 5.4 V/DC (display through control LED) through a special protective circuit.

Connection voltage: 7.2VDC (6 NiCd or NiMH cells)  
 Discharge current: max 0.45A (± 20%)  
 Final discharge voltage: approx 5.4VDC (0.9VDC per cell)  
 Indicator: by LED  
 Socket type: TAM socket type "A"  
 Dimensions: approx 60 x 45 x 24mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028031552



### BKM.M168 Overvoltage Protection 12VDC (Module)

Voltage spike suppressor for motor vehicles — suppresses constantly all voltage spikes in the supply system of motor vehicles! Prevents damage to the sensitive supply system electronics through voltage spikes in the supply system.

Field of application: 12VDC (supply system of motor vehicles)  
 Max energy rating: i max 8/20µs 2000A  
 Dimensions: approx 30 x 25 x 15mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028031682



## BKM.M148A Battery Guard 12VDC (Module)

This battery saver protects your car battery from total discharge by switching off consumers such as ice boxes, heaters, radios + television sets, etc. in time. It switches on again automatically after return of the normal voltage. The interrupting voltage is adjustable: approx. 10.4V - 13.3V.

Operating voltage: 12V battery  
 Max switching capacity: 20A (10A without cooling, 20A with additional cooling)  
 Interrupting voltage: adjustable approx 10.4 – 13.3V  
 Resetting voltage: approx 0.8V ( $\pm$  0.3V) higher than the adjusted interrupting voltage  
 Cutoff element: power MOS transistor in the negative line  
 Own current: < 0.7mA in OFF condition, < 1.6mA in ON condition (LED lights)  
 Dimensions: approx 87 x 60 x 33mm (with mounting plate)  
 Make: Kemo  
 EAN 4024028031484



## BKM.M150 DC + Pulse Converter (Module)

By connecting this module in series, it is possible to control our power control modules (230 V/AC or 110 V/AC) BKM.M012, BKM.M028 and BKM.M028N (from microcomputers or PCs) with a DC voltage or a pulse width modulation. This module is connected at the spot of the potentiometer. Galvanic separation of the control circuit via optocouplers. Control may be done optionally (at 230 V/AC) 1 - 5 V/DC, 3 - 12 V/DC, 6 - 24 V/DC. Or TTL rectangular pulses 5 V/DC, 1 - 10 kHz pulse width 10 - 90 % PWM (Puls width modulation). Regulation is done by changing the pulse width.

Operating voltage: 110VAC or 230VAC (is led to the dimmer module via the connections)  
 Output: The module delivers a control voltage for the potentiometer input of the dimmer modules BKM.M012, BKM.M028 and BKM.M028N  
 Input: The module BKM.M150 may either be controlled with control DC voltages of 1 – 5VDC or 3 -12VDC or 6 – 24VDC. Or with TTL pulses with a pulse width modulation  
 Frequency: between 1 – 10Hz  
 Impulse voltage: approx 5VDC, pulse width 10 – 90% PWM. The power is adjusted with the pulse width 10 – 90%  
 Input: resistances: control input 1 – 5VDC > 1.4k, control input 3 – 12VDC > 4.1k, control input 6 – 24VDC > 9.1k  
 TTL pulse input: > 1,1k  
 Galvanic separation: via an optocoupler between the control inputs and the signal output towards the power control module  
 Dimensions: approx 70 x 60 x 23mm (without fastening straps)  
 Make: Kemo (EAN 4024028031507)



The DC and pulse converter module M150 is an ideal controlling module for:

BKM.M012 Power control 110 – 240VAC, 1200VA  
 BKM.M028 Power control 110 – 240VAC, 2600VA  
 BKM.M028N Power control 110 – 240VAC, 4000VA

## LC.46.24 Power Supply $V_{in}=22VAC-24VAC$ $V_{out}=24VDC$ (Kit) **While stock lasts**

Same as above but for 18 volt output.

Kit set: to solder yourself  
 $V_{in}$ : 22VAC - 24VAC  
 $V_{out}$ : 24VDC  
 Dimensions: 80 x 50mm



## BKM.B102 IC Power Supply Approx 1.2 – 30VDC max 2A (Kit)

Stabilized, electronically controllable power supply with power-IC. Also necessarily are a transformer 24VDC, 2A and a heat sink as a cooling element with min. dimensions: 10 x 10 x 5cm.

Kit set: to solder yourself  
 Output voltage: approx 1.2 – 30VDC adjustable  
 Max output current: approx 2A  
 Board dimensions: approx 55 x 55mm  
 Make: Kemo  
 EAN 4024028011028



### BKM.M039 Power Supply 1.2 – 30VDC, max 2A (Module)

Steplessly adjustable, stabilized power supply with integrated rectifying + filtering. Adjustable in 2 stages: stage 1 : ca. 1,2 - 12 V/DC, stage 2 : ca. 12 - 30 V/DC.

Required for operation are:

- 1 potentiometer 10k-Ohm linear
- 1 transformer 2 x 12VAC, 2A,
- 1 switch 1 x change over 2A,
- 1 heat sink as cooling element approx. 10 x 8 x 5cm or larger.

Operating voltage: approx 2 x 12VAC, 2A  
 Output voltage: approx 1.2 – 30VDC adjustable  
 Max output load: 2A  
 Dimensions: approx 82 x 73 x 33mm  
 Make: Kemo (EAN 4024028030395)



### BKM.M029 DC-DC Converter 12VDC to 24VDC, max 2A (Module)

DC/DC converter input: 6 - 14VDC, output: 11 - 26VDC

This electronically controllable DC voltage converter transforms a low input voltage into a nearly twice as high output voltage. Output voltage decreases whenever there is a higher load. With the help of an additional potentiometer of 4.7k linear output voltage can be limited towards higher rates at input voltages of over 10 V.

Input voltage: 6 – 14VDC  
 Output voltage: 11 – 26VDC direct current (depending on load)  
 Output current: max 2A  
 Dimensions: approx 70 x 60 x 23mm (without fastening straps)  
 Make: Kemo (EAN 4024028030296)



### BKM.M038 DC-DC Converter 24VDC to 12VDC, max 3A (Module)

...for operation of 12 V/DC devices at a 24 V/DC lorry or boat battery. Short circuit-proof, shock-proof module.

This power-potential transformer module has to be mounted on a heat sink or the like if the maximum power shall be drawn as continuously. The module is short circuit-proof and has a built-in thermal circuit breaker which disconnects in case of overheating. Application: to operate larger car radios, CB radio equipment etc. at a 24 V lorry or bus battery.

Input voltage: 24 – 26VDC  
 Output voltage: 12VDC  
 Max current: 3A (> 10 min, max 2A) with input voltage 24VDC  
 Dimensions: approx 137 x 62 x 25mm  
 Make: Kemo (EAN 4024028030388)



### BKM.M038N DC-DC Converter 24VDC to 12VDC, max 3A (Module)

Converts from 24VDC to 12VDC (13.8VDC), max. 3A. For operation of 12VDC devices at a 24VDC lorry or boat battery. Short circuit-proof, shock-proof module.

Input voltage: 24 – 26VDC  
 Output voltage: approx 13.8VDC (equivalent to a full loaded 12VDC battery)  
 Maximum current: 3A  
 Dimensions: approx 87 x 60 x 33mm (with mounting plate)  
 Make: Kemo (EAN 4024028030388)



### BKM.M020 DC-DC Converter 24VDC to 12VDC (13.8VDC), max 1.1A (Module)

With this module you can operate 12VDC devices at 24VDC truck or marine engine batteries. Several modules can be connected in parallel if more power is required, e.g. 2 modules do 2,2 A.

Input voltage: approx 24 – 30VDC  
 Output voltage: approx 13.8VDC (for 12VDC devices)  
 Loading capacity: cont. 0.5A, max 1.1A (3 min 5% duty cycle)  
 Dimensions: approx 60 x 45 x 20mm (without fixing straps)  
 Several modules may be connected to increase the power  
 Make: Kemo (EAN 4024028030203)



### BKM.M015N Potential Transformer Adjustable Max. 1.5A, Input: 6 - 28VDC, Output: 3 - 15VDC

The input voltage must be at least 3 V higher than the adjusted output voltage. The adjusted output voltage is stabilized or short circuit-proof. For operation of appliances with lower voltages at a 12 V or 24 V car battery or power supply.

Input voltage: 6 – 28VDC  
 Output voltage adjustable: 3 – 15VDC (electronically stabilized)  
 Note: The input voltage must be at least 3V higher than the adjusted output voltage  
 Max output current: 1.5A  
 Max dissipation: approx 3W without heat sink, approx 10W with heat sink (please order separately)  
 Dimensions: approx 60 x 45 x 20mm (without fastening straps)  
 Make: Kemo (EAN 4024028030159)



### BKM.TR01 Trafomer for Converters

This transformer is especially suitable for a push-pull DC-voltage converter of 12VDC up to 230VAC. The maximal output power of this transformer is about 40/50W.

Max Output power: approx 40/50W  
 Dimensions: approx 76 x 69 x 59mm (without fixing straps)  
 Make: Kemo (EAN 4024028040707)



Subject to alterations and errors. Pictures are a guide only.

## BKM.M050 Transformer Control

With this transformer voltage control module it is possible to regulate mains transformer 230VAC (max. 400W) at the input side (primary) in the power between approx. 5 - 95 %. Required potentiometer: 500 k linear (not included). Usage: Construction of adjustable high-power mains controls, a.c. voltage mains supplies, control of transformers for low-voltage halogen lamps, control of high-voltage transformers etc.

**Not suitable with electrical transformers!**

Operating voltage: 230VAC

Max. power: 400W

Required potentiometer: 500k-Ohm linear

Dimensions: approx 71 x 49 x 26mm

Marke: Kemo (EAN 4024028030500)



## BKM.M142 LED Constant Current 4 – 30VDC (Module)

This LED with soldered constant current electronics can be connected to any voltage between 4 - 30 V/DC. The LED always shines with almost constant brightness and has a current consumption of approx 15mA. An additional protective resistor is not required. The supplied LED can be exchanged for any other LED. It is also possible to connect several LED's in series.

Operating voltage: 4 – 30VDC

Current consumption: approx 15mA

Dimensions of the board: approx 10 x 13mm

Make: Kemo

EAN 4024028031422



## SWITCH AND REGULATE

### BKM.B133 Precision Timer (Kit)

Adjustable time switch for switching operations from approx. 1 sec. to 40 minutes. The device switches on after pressing the key and switches off again when the adjusted time has expired. The lapse of time may be interrupted any time with the reset key. Switching power: max. 25V 3A.

Kit set: to solder yourself

Adjustable time: approx 1 second to 10 minutes or approx 3 seconds to 40 minutes

Adjustment of time: with an adjustable regulator

Operating voltage: 12VDC

Current consumption: < 50mA

Switching power: max 25V, 3A

Switching contact: 1x ON

Board dimensions: approx 54 x 44mm

Make: Kemo (EAN 4024028031330)

Suitable case: BKM.G024 Case with fastening straps



### LC.81 Precision Timer **While stock lasts**

Operating voltage: 12VDC

Current consumption: 80mA

Adjustable time range: 0.1 seconds - 120 seconds

Contact rating: 220VAC / 5A (real)

Dimensions: 40 x 40mm



### LC.14M Precision Timer (Module) **While stock lasts**

Timer module for different applications, e.g. photo timer, timer for model railway, short time switch for other uses.

Operating voltage: 12VDC

Current consumption: 40mA

Adjustable time range: 0.1 seconds - 120 seconds

Contact rating: 230VAC / 5A

Dimensions: 68 x 57 x 23mm





## BKM.B042 Time Switch (Short Term) 2 Seconds to 5 Minutes (Kit)

Time Switch (Short Term) 2 Seconds to 5 Minutes (Kit)

After pushing the button the installed relay switches on for approx. 2 seconds up to approx. 5 minutes (adjustable) and then switches off again.

Kit set: to solder yourself

Operating voltage: approx 12VDC

Current consumption: approx 40mA

Switching times: between approx 2 seconds to 5 minutes, adjustable

Relay rating: max 3A, max 25V

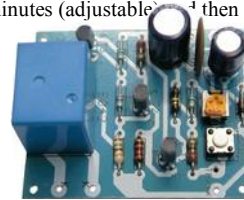
Relay contact: 1x ON

Board dimensions: approx 54 x 44mm

Make: Kemo

EAN 4024028010427

Suitable case: BKM.G024 Case with fastening straps



## BKM.M113A Time Switch 12 – 15VDC (Module)

Time switch approx. 2 sec. up to 23 min. (± 30%)

The relay (1x ON max 3A) switches other devices on after pushing the button and switches them off again automatically after the adjusted time has expired. The lapse of time may be interrupted any time by pushing the second push button.

Two push-buttons are required for operation (they have to be ordered separately).

Operating voltage: 12 – 15VDC

Current consumption: approx 20mA/80mA (relay off/on)

Adjustable time: approx 2 seconds to 23 minutes (± 39%)

Connection: with flat-pin plug at the module

Displays: 2 LEDs (1x LED operating voltage, 1x LED relay ON)

Relay: 1x ON, max 3A, max 25V (The installed relay may also switch up to 230VAC, but in this case the safety regulations of VDE like protection against accidental contact, etc. have to be considered)

Dimensions: approx 87 x 60 x 33mm (without mounting plate)

Make: Kemo (EAN 4024028031309)



## BKM.M122 Twilight Switch 12VDC (Module)

The twilight switch switches on e.g. lamps at nightfall and off again at daybreak. (for weekend cottages, sailing yachts, caravans etc.)

Distribution output: relay 1 x change over, max. 3 ampere. The sensitivity of the luminous intensity may be changed by partially covering the sensor mechanically.

Operating voltage: 12VDC (11 – 14VDC)

Power consumption: approx 2mA or 35mA (Relay off or on)

Relay contact: 1x switch-over, loading capacity max 25V/3A

Operating temperature range: approx – 15°C to + 50°C

Luminous intensity switching on: approx 25 lux ±20%

Luminous intensity switching off: approx 45 lux ±20%

Switching delay: approx 3 – 4 seconds

Dimensions: approx 72 x 50 x 32mm (without fastening straps)

Make: Kemo (EAN 4024028031224)



## BKM.M119 Master Slave 6 – 30VDC (Module)

"Current conduction switch", connects or disconnects automatically another device when starting a direct-current device. For example, the radio is disconnected automatically when switching on the CB-radio equipment in the car. Or the amplifier of the radio equipment is connected automatically when the CB-radio transmits. Or the outdoor illumination of a motor caravan is disconnected automatically when switching on the indoor lighting. May also be used for controlling whether lamps at a vehicle light (control of current conduction).

The module simply has to be connected in series with the power lead of the device (6 - 30 V/DC) and connects and disconnects other devices via a potential-free contact (1 x change over, max. 3 A). The module reacts on currents between ca. 1 - 5 A.

Switching voltage: 6 – 30VDC

Switching contact: 1x change-over, max 3A (potential-free)

Switching current: approx 1 – 5A

Internal resistance: approx 0.12 ohm (currents – 1 A) or 0.05 ohm (current 3 – 5A)

Dimensions: approx 60 x 45 x 20mm (without fixing straps)

Make: Kemo

EAN 4024028031194



## BKM.M103N Master/Slave Switch 230VAC (400VAC) (Module)

Automatically switches another load on when a machine, lamp etc., is turned on. It can monitor 1-phase or 3-phase machines (where a single phase is sampled). On the output side, 1-phase devices (e.g. vacuum cleaner) are switched on automatically (or three-phase loads with an auxiliary relay, not included). Maximum of 15A each. Total output: 3600W.

Operating voltage: 230VAC

Max currents: 15A for the master, 15A for the slave, but the total current must not exceed 16A!

Example: if the master port needs 10A, only one slave load of max 6A can be connected

Tripping power: for the master to turn on the slave 6 – 3450 watts

Operating temperature range: -15°C to +70°C

Switching function: relay 1x ON max 16A

Own power module: < 0.5W

Dimensions: 67 x 65 x 37mm (without mounting brackets)

Connection: connection cable (single core)

Make: Kemo

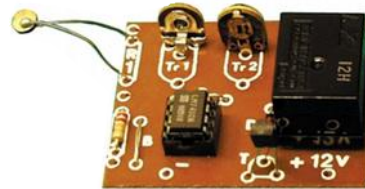
EAN 4024028031033



## LC.9 Temperature Switch 7VDC – 15VDC (Thermo Switch/Thermostat) (Kit) **While stock lasts**

A NTC thermistor activates this thermostat and switches devices at a chosen temperature on or off.

Operating voltage: 7VDC - 15VDC  
 Current consumption: 40mA  
 Temperature range: 0°C to +90°C  
 Rating: 250VAC / 5A (relay)  
 Relay: On / On  
 Dimensions: 50 x 40mm



## BKM.M169 Temperature Switch Thermostat 12VDC (Module)

Adjustable electronic temperature switch. With a cable of up to 1m length can the sensor (Ø 5 mm) be connected with the control electronics.

Operating voltage: 12 – 15VDC, stabilised (max 0.1A)  
 Temperature range: approx 0 – 100°C  
 Switching output: relay contact 1 x switch-over, max 5A 25V  
 Dimensions: approx 60 x 45 x 25mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028031699



## BKM.B011 Sensor Touch Switch (Kit)

It is possible to switch devices on and off through a soft touch of the sensor with fingers or the nose. With the first touch a relay with switch devices on and with a second touch will switch them off. In the off-stage the relay uses only < 0.1µA current consumption. With this low consumption the sensor can be kept on at all the time. This sensor switch can be used as a secret switch if installed at a hidden place.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Relay: 1x change over, max 3A  
 Board dimensions: approx 55 x 44mm  
 Make: Kemo  
 EAN 4024028010113  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



## BKM.M104 4 Channel Computer Switch (Module)

...for switching up to 4 different appliances, lamps or motors by a computer program. Electrical consumers with operating voltages of 6...24V, max. 2A direct current can be controlled. By means of the enclosed software it is possible to switch on and off appliances at certain times, specific switching sequences (also for several days) can be programmed, running light effects etc. The module is connected to the printer port of a standard PC.

Diskette 3,5" is enclosed!

Operating voltage: 6 – 24VDC  
 Loading capacity/ch: max 2A total current connected simultaneously  
 Dimensions: approx 73 x 56 x 30mm  
 Make: Kemo  
 EAN 4024028031040



### BKM.M068 Electronic Card Switch (Module)

Whenever the corresponding card has been inserted into the card slot, the card switch will switch on. The card will be read optically by 4 infrared read-heads and will solely react on the correct card. 3 cards are enclosed, coding can be changed. Usage: switching of devices, machines, alarm systems, door opener, etc. which should be feasible only for a special circle of persons. The lock has an installed relay which switches loads up to 1A, 48V.

Operating voltage: 9VDC  
 Output: relay contact 1x ON, max 1A, 48V  
 Operating mode: optical with 4 infrared-reflex reading heads  
 Card dimensions: approx 85 x 54mm (3 cards are enclosed)  
 Module dimensions: approx 80 x 35 x 70mm  
 Make: Kemo  
 EAN 4024028030685  
 Available accessories:  
 BKM.M068-5 Replacement cards for BKM.M068 (5 pieces)



### BKM.M144 Impulse Switch Lock Control for Locks, Doors (Module)

A small magnet has to be fixed at the locking mechanism or door. If the magnet approaches the sensing device (reed contact) of the transmitter, a relay picks up for a short time (pulse duration ca. 0.5 – 1.5 sec.). The relay can switch e.g. a horn, flasher lamps or similar. There was an article "Light & Lock" in the German magazine "Electronic Aktuell Magazin" no 8/2001 about this product.

Operating voltage: 12VDC (11 – 15VDC)  
 Current consumption: < 9mA  
 Relay: 1x ON, max 25V 3A  
 Dimensions: approx 71 x 45 x 22mm (without fixing straps)  
 Make: Kemo  
 EAN 4024028031446



### BKM.B231 Electronic Key Switch (Kit)

When holding the enclosed key pendant in front of the sensor (distance 5 - 15mm), a relay switches on. Application: non-contact door opener to switch appliances etc. You may hide the sensor behind a nameplate or a door glass panel. In this case only "insiders" know, at which point you have to hold the key pendant in order to open the door. The key pendant does not require any battery! Replacement keys are available under order no. BKM.M131N.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current consumption: approx 0.1A  
 Board dimensions: approx 55 x 46mm  
 Make: Kemo  
 EAN 4024028012315  
 Suitable case: BKM.G024 Case with fastening straps



### BKM.B210 8 Channel Relay Board (Kit)

For switching different appliances, lamps or motors by a computer program. The relay points can be loaded up to 3A each at maximum. By means of the enclosed software it is possible to switch on and off up to 8 different appliances at different times. It is also possible to program certain switching sequences (also for several days) or attractive effect lighting for stages and discotheques! The module has to be connected at the printer port of a standard PC. Software-CD is enclosed!

For your interest there was an article "Kanalnetz" in the German magazine "Electronic Aktuell Magazin" Nr.5/2002 about this product.

Kit set: to solder yourself  
 Operating voltage: 12VDC max 0.8A  
 Channels: 8  
 Relay contact: 1x ON max 3A, max 25V each (if higher voltages have to be switched, please follow the instructions in the enclosed printed matter no M1003)  
 Indication: each channel by 1 LED  
 Delivered software: DOS + WIN95 – XP  
 Board dimensions: approx 108 x 71mm  
 Make: Kemo (EAN 4024028012100)  
 Suitable case: BKM.G010 Shell case 95 x 135 x 45mm



### BKM.M162 USB Relay Card (Module)

Switching module with 8 relays for controlling devices by the USB port of a computer. The 8 relays are available, each with a contact normal on, load capacity of max. 25V, 3A. With the software up to eight individual devices can be controlled independently from each other: On/Off switching is by date, hour, minute, seconds or even milliseconds. It is also possible to repeat the selected shift sequence in a continuous loop operation. Software for Win XP, Win Vista, Win 7, 32 bit + 64 bit. Source code is available. Connecting cable with USB-A connector. Each switching channel has an indicator LED. Operation requires a regulated power supply with an output of 7.5VDC at 600mA min. and a 3.5mm jack. The positive pole must be at the tip of the 3.5mm plug. The power supply is not included.

Operating voltage: 7.5VDC (regulated)  
 Recommended power supply: min 600mA  
 Current consumption: 0 – 520mA (65mA per relay)  
 Relay contacts: 8  
 Load capacity per relay: max 25V, 3A  
 Cable connection: USB Type A  
 Housing dimensions: 120 x 75 x 35mm (without mounting brackets)  
 Make: Kemo (EAN 4024028031620)



## BKM.M171 PWM Power Control 9 – 28VDC, max 10A (Module)

Power control to control direct current loads (motors, lamps, heating, LEDs with protective resistors, etc.). Electric motors start well also at low revolution speeds because of the employed PWM (pulse width) modulation. Modules from serial no. 06022DI (available > 11/2011) can also be connected to a control voltage of 0 - 5VDC.

Operating voltage: 9 – 28VDC  
 Max current: 5A or 10A (if the module is screwed on to a cooling plate)  
 Control range: approx < 5% to > 95%  
 Control mode: PWM pulse width modulation with a frequency between 10 – 20kHz  
 Potentiometer: 4.7k-ohm linear (enclosed)  
 Permissible loads: direct current motors, incandescent lamps, heating, LEDs with protective resistors. Current consumption up to max 10A in each case.  
 Dimensions: approx 87 x 60 x 33mm (with mounting board)  
 Make: Kemo  
 EAN 4024028031712



## BKM.FG016 Exhaust Air Control

If an exhaust hood is switched on with the window closed and a hearth is in use (oven, fireplace), it sucks toxic carbon monoxide gases from the fireplace into the room this can be potentially dangerous. This exhaust control ensures that the exhaust hood (or other exhaust ventilators) may only be switched on if the window is in tilt position. The Fireplace Directive (M-FevVO§4) prohibits the operation of a fireplace and simultaneous suction of air, unless there is a sufficient fresh air supply (e.g. window in tilt position). The magnetic sensor of the exhaust control is fitted at the window. The exhaust hood can only be switched on if this transmits the signal "window open" via the approx. 5 m long cable. A back suction of dangerous flue gases into the living spaces is that way prevented. The exhaust control is an adapter plug, which is simply put between the socket and the plug of the exhaust hood.

Switching capacity: (max suitable for connection) 230VAC 1600W  
 Fuse in the device: 8 – 10A, 5x20mm  
 Magnetic switch white dimensions: approx 54 x 11 x 10mm (is fixed at the window frame)  
 Magnet case white dimensions: approx 54 x 11 x 10mm (is fixed at the casement)  
 Cable length between the magnetic switch + adapter plug for the exhaust hood: approx 5m white  
 Adapter plug: white (safety mains plug with safety socket)  
 Dimensions: approx 110 x 68 x 65mm (measured without safety plug)  
 Make: Kemo  
 EAN 4024028020167



## GAMES AND ENTERTAINMENT

### BKM.B189 Anti Flea Generator for the Cat and Dog Basket (Kit)

This generator produces ultrasonic sounds, which are adjustable within the range of approx. 8 - 35kHz. It is said, that crawling and jumping parasites are banished through the ultrasonic sound. The tone frequency can be adjusted so that the domestic animal will not be disturbed. As loudspeaker is required either a small treble loudspeaker 8 Ohm (no piezo!) or a dynamic 8 Ohm earphone. (Not enclosed in the kit).

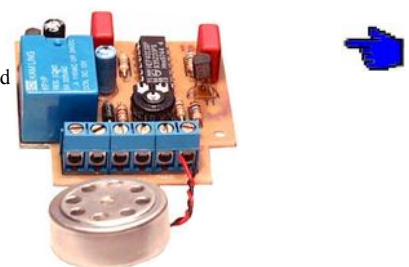
Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Tone frequency: 8 – 35kHz, adjustable  
 Loudspeaker connection: 8 Ohm (not included)  
 Board dimensions: approx. 25 x 24mm  
 Make: Kemo  
 EAN 4024028011899  
 Suitable case: BKM.G01B Plastic case small for a 9V block battery



### LC.19.1 Clapper Switch (Kit) While stock lasts

Sound Activated Electrical Switch  
 This sound activated electrical switch has adjustable sensitivity that can be adjusted for soft or loud

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current draw: 100mA  
 Switching power: 230VAC / 5A (relay)  
 Dimensions: 70mm x 45mm



### BKM.B093 Electronic Dice (Kit)

After pressing a key this digital die indicates depending on chance a number between 1 - 6. Indication takes place by LED display.

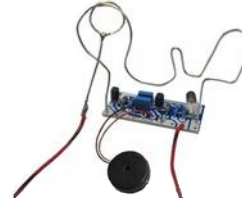
Kit set: to solder yourself  
 Operating voltage: 9 – 15VDC with battery or stabilised power supply  
 Current draw: < 20mA  
 Display: number of die cast (1 – 6) by LED display  
 Clock frequency: approx. 30Hz  
 Dimensions of the board: approx. 60 x 60mm  
 Make: Kemo  
 EAN 4024028010939  
 Suitable case: BKM.G100 – Display case with transparent lid



### BKM.B081 Deftness Game (Kit)

The matter is to pass a small wire loop through a thread wire with a lot of bends and obstacles. The person who touches the thread wire with the wire loop, will release an acoustic and optic signal. An interesting game for parties and for never-ending evenings.

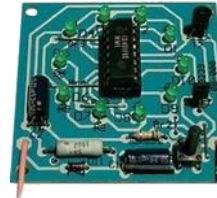
Kit set: to solder yourself  
 Operating voltage: 9 – 12VDC  
 Error indication: optical and acoustical  
 Board dimensions: approx. 45 x 20mm  
 Make: Kemo  
 EAN 4024028010816  
 Suitable case: BKM.G027 – Plastic case black 72 x 50 x 35mm



### BKM.B239 Electronic Wheel of Fortune (Kit)

After releasing the push-button, the light signal rotates quickly at the 10 LED's, slows down and then stops at random at one of the LED's. During operation all LED's shine except that LED that just receives the signal. That's why the luminous board looks very decorative.

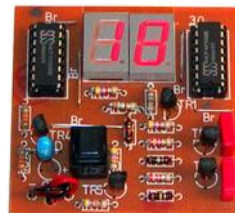
Kit set: to solder yourself  
 Operating voltage: 9 – 12VDC  
 Number of LED's: 10  
 Board dimensions: approx. 56 x 56mm  
 Make: Kemo  
 EAN 4024028012391  
 Suitable case: BKM.G100 – Display case with transparent lid



### LC.14 Lotto Number Generator 1 to 49 (Kit) **While stock lasts**

The automatic on-/off-switch displays the selected numbers for 4 seconds.

Kit set: to solder yourself  
 Operating voltage: 6VDC - 12VDC  
 Current draw: 40mA  
 LED display: 13mm, red  
 Dimensions: 80mm x 50mm



### LC.112 Skin Resistance Lie Detector (Kit) **While stock lasts**

The Lie Detector circuit works based on the fact that a person's skin resistance changes when they sweat (sweating because they are lying).

Kit set: to solder yourself  
 Operating voltage: 4.5VDC  
 Current draw: < 60mA  
 Dimensions: 48mm x 40mm



### LC.66 Secondary Telephone Bell (Kit) **While stock lasts**

For dual tone telephones. The sound is picked up with a piezo disc which is attached to the phone.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current draw: 50mA  
 Contact rating: 230VAC / 5A (relay)  
 Dimensions: 85mm x 40mm



### LC.87.1 Two-Way Intercom (Kit) **While stock lasts**

The kit set consists of a two-way intercom system which is connected with each other. For the connection you need (max. 50m) installation wire.

Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Current draw: < 50mA  
 Power rating: 0.8W  
 Cable length: max. 50m  
 Dimensions: 64mm x 43mm



## KEEPING ANIMALS AT BAY

### BKM.B189 Anti Flea Generator for the Cat and Dog Basket (Kit)

This generator produces ultrasonic sounds, which are adjustable within the range of approx. 8 - 35kHz. It is said, that crawling and jumping parasites are banished through the ultrasonic sound. The tone frequency can be adjusted so that the domestic animal will not be disturbed. As loudspeaker is required either a small treble loudspeaker 8 Ohm (no piezo!) or a dynamic 8 Ohm earphone. (Not enclosed in the kit).

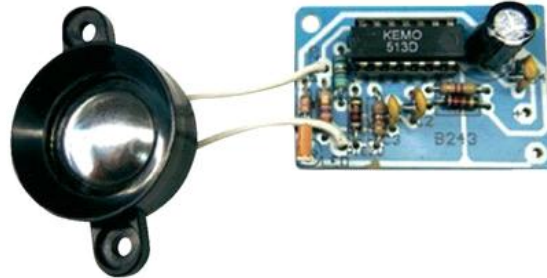
Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Tone frequency: 8 – 35kHz, adjustable  
 Loudspeaker connection: 8 Ohm (not included)  
 Board dimensions: approx. 25 x 24mm  
 Make: Kemo (EAN 4024028011899)  
 Suitable case: BKM.G01B Plastic case small for a 9V block battery



### BKM.B243 Marten and Vermin Repellent 12VDC (Kit)

This device produces a high ultrasonic sound (approx. 23kHz). Martens, mice, etc. find this sound extremely annoying and these animals will leave that place (most likely). Ideal for installation into cars (as protection against martens), in houses against mice, etc. There was an article "Mückenfrei" in the German magazine "Electronic Aktuell Magazin" Nr.2/2003 about this product.

Kit set: to solder yourself  
 Operating voltage: 12 – 16VDC  
 Current consumption: < 0.05A  
 Frequency: 23kHz  
 Loudspeaker: spherical piezoelectric loudspeaker Ø approx 30mm, 13mm  
 Board dimensions: approx 45 x 29mm  
 Make: Kemo  
 EAN 4024028012438  
 Suitable case: BKM.G020 Case for signals approx. 72 x 50 x 28mm  
 Suitable accessories: BKM.L001 Piezo spherical dome tweeter with flare  
 BKM.P5123 Mini piezo electric tweeter



### BKM.FG015F Fox Repellent

To drive away wild animals such as martens, rodents (e.g. out of carports, lofts, camper vans), wild boars, deer, etc. (from gardens, farmland, etc.). The device produces an enormously loud, pulsating and aggressive ultrasonic sound of about 21kHz which is not audible to most people, but represents a considerable annoyance for wild animals which, therefore, try to avoid it. In some cases (not always!) it is also possible to drive away dogs and cats that are used to human community. The device is operated with 4 batteries R14 (UM2) which last up to 8 months depending on the quality.

Acoustic coverage: > 200m (656 feet). In unobstructed space up to 600 square meter (6458.35 ft²)  
 Temperature range: -15°C to +60°C  
 Acoustic range: > 200m  
 Operating voltage: 6V (4x batteries UM2)  
 Dimensions: approx L=190mm B=70mm T=33mm  
 (dimensions without fastening straps)  
 Make: Kemo  
 EAN 402402802015



### LC.01M Ultrasonic Marten Defense System for Motor Vehicles (Module)

Produces aggressive ultrasonic sounds in intervals. This sound is not audible to men.

operating voltage: 12VDC  
 Current consumption: < 50mA  
 Frequency: 10kHz - 40kHz  
 Dimensions: 68 x 57 x 23mm



### BKM.M069N Underground Mole and Vole Repellent (Module)

This waterproof module emits in rapid intervals aggressive seismic oscillations, which are underground widely radiated and are mostly avoided by root voles, moles and similar rodents. The module has to be dug in near the animal tunnels and is operated through a cable with operating voltage of 9VDC. One module will cover approx. 1.000m² of garden.

Operating voltage: 9VDC  
 Current consumption: max 100mA  
 Cover area: up to 1000m²  
 Dimensions: approx 72 x 50 x 35mm  
 Make: Kemo  
 EAN 4024028030692



### BKM.B243 Marten and Vermin Repellent 12VDC (Kit)

This device produces a high ultrasonic sound (approx. 23kHz). Martens, mice, etc. find this sound extremely annoying and these animals will leave that place (most likely). Ideal for installation into cars (as protection against martens), in houses against mice, etc. There was an article "Mückenfrei" in the German magazine "Electronic Aktuell Magazin" Nr.2/2003 about this product.

Kit set: to solder yourself

Operating voltage: 12 – 16VDC

Current consumption: < 0.05A

Frequency: 23kHz

Loudspeaker: spherical piezoelectric loudspeaker Ø approx 30mm, 13mm

Board dimensions: approx 45 x 29mm

Make: Kemo (EAN 4024028012438)

Suitable case: BKM.G020 Case for signals approx. 72 x 50 x 28mm

Suitable accessories: BKM.L001 Piezo spherical dome tweeter with flare

BKM.P5123 Mini piezo electric tweeter



### BKM.M186 Marten Defence for Motor Vehicles 12VDC (Module)

Chases away martens by means of small high-voltage plates charged electrically to approx. 200 - 300VDC through electric shock in the engine compartment of the vehicle (only weak current pulses that chase the marten away, but do not kill it) and through strong, aggressively pulsating ultrasonic sounds. Extremely low power consumption (< 0.005A), switches the battery voltage of < 11.5V automatically off (does not discharge the battery completely if vehicles are being parked for quite some time).

Make: Kemo

EAN 4024028031866



### BKM.M176 Marten Defence for Motor Vehicles 12VDC – Splash-Proof with IP65

Chases away the marten through high-voltage plates (movable) charged electrically to approx. 200 - 300VDC through electric shock in the motor compartment of the vehicle (only weak current pulses that merely chase the marten away but do not kill it) and through strong, aggressively pulsating ultrasonic sounds. Extremely low current consumption (< 0.005A), switches off automatically at a battery voltage of < 11.5VDC (does not discharge the battery if vehicles are being parked for quite some time). The basic device with the ultrasound radiation is splash-proof according to IP 65\* and may be mounted directly at the vestibule opening of the marten in the car. Built-in brightly blinking LED.

\*IP 65 = No penetration of dust at a low pressure of 20mbar in the case, protected against hose-water from every direction against the case (corresponds to 12.5 ltr./minute e.g. garden hose, test period: approx. 5 minutes, information without engagement).

Make: Kemo

EAN 4024028031767

Available accessories: BKM.M020 DC/DC converter and BKM.Z115 ground-mat for electroshock devices



### BKM.M100N Ultrasonic Anti Marten Device for Motor Vehicles (Module)

Produces aggressive ultrasonic sounds not audible to men which martens find extremely annoying and so try to avoid them, if possible. To be mounted in the engine compartment of motor vehicles. Ultrasonic marten repellent for use in cars, houses and lofts. Produces enormously loud and pulsating ultrasonic sounds with a special dome speaker.

Available accessory: BKM.M020 DC/DC Converter.

Operating voltage: 11 - 15VDC (car battery)  
 Switch-on function: soft start so that the vehicle computer will not be disturbed.  
 Sound: loud pulsating  
 Average power consumption: < 2mA  
 Ultrasonic frequency: approx. 23kHz  
 Dimensions: approx. 72 x 50 x 28mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028031002



### BKM.M094N Marten Repellent (Module)

Produces intensively pulsating ultrasonic sounds which martens and similar rodents find unbearable. They will move to a more acceptable place. This „Marten repellent“ includes 4 small ultrasonic loudspeakers to achieve a profitable radiation of the ultrasonic sound. Usage: This module is able to scare away martens from the engine compartment of cars and lorries, place where the animals use to gnaw the cables and other plastic parts! Or to be used in pantries, in the cellar or attic!  
 There was an article “Marderscheuche” in the German magazine "Electronic Aktuell Magazin" no. 2/1999 about this product.

Operating voltage: 12 - 15VDC  
 Current consumption: at 12VDC < 0.05A  
 Indication of operation: through light emitting diode  
 Loudspeaker output: only for piezo loudspeakers!  
 Audio frequency: adjustable approx. 8 - 40 kHz (± 20%)  
 Volume: 120db (± 20%) with 1 speaker  
 Dimensions piezo loudspeaker: approx. Ø 30mm x 13mm  
 Dimensions module approx. 60 x 45 x 25mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028030944  
 Available accessories:  
 BKM.L001 Piezo-spherical dome tweeter with flare  
 BKM.L002 Ultrasonic wall loudspeaker  
 BKM.P5123 Mini-piezoelectric tweeter



### BKM.M157 Marten Defence (Module)

...chases away martens from cars, garages, etc. with sharp, high tone bursts (approx 12kHz). Automatic activation in parked cars.

Operating voltage: 11 - 15VDC  
 Operation display: LED on the upper side of the device  
 Current consumption average 1.2mA (± 20%)  
 Frequency: approx 12kHz (± 10%)  
 Acoustic pressure: max 85dB (± 25%)  
 Pulse frequency: approx 10 seconds on, then an interval of 10 seconds (± 20%)  
 Fuse in the fuse holder: F 0.5A  
 Operating temperature range: -25°C to +70°C  
 Type approval by the Federal Motor Transport Authority e1\*72/245\*2006/28\*3884\*03  
 Dimensions: approx L=91mm W=50mm H=28mm (with mounting straps)  
 Make: Kemo  
 EAN 4024028031576



### BKM.FG022 Marten Repellent Mobile

This mobile marten repellent operates with latest high-frequency technology (ultrasound) and without assembly work. This marten repellent may be set up where ever martens are present (e.g. in cars, carports, garages and houses), ideal as protection for cars that are parked for a long time. The optimum maintenance-free time of performance of 12 months can only be reached with high-quality alkaline manganese batteries (2 x 1.5V Mignon AA, not enclosed). The device has to be mounted in such a way that no water or dirt can penetrate into the case. May also be used against mice and other rodents.

Range of action: > 55m²  
 Frequency: approx 24kHz (± 15%) Acoustic pressure: approx 100dB (± 20%) (Ultrasonic devices should have a sound pressure level exceeding 100dB (C) to avoid habituation (ADAC test results). (Source de.wikipedia.org/wiki/Marderabwehr)  
 Operating voltage: 3VDC  
 Acoustic range: > 6m  
 Make: Kemo  
 EAN 4024028020228





## BKM.M180 Anti Marten Device Splash Proof IP 65\*

To repel martens from cars, houses, etc. Produces aggressive ultrasonic sounds inaudible to humans, which martens find very annoying and will avoid. Because the device is water and dirt resistant this device can be mounted where the martens enter the cars.

\*IP 65: No penetration of dust at a low pressure of 20mbar in the case, protected against hose-water from every direction against the case (corresponds to 12.5 ltr./minute e.g. garden hose, test period: approx. 5 minutes, information without engagement).

Features: splash-proof, 2-fold effectiveness ultrasound + pulsating light

Operating voltage: 11 - 15VDC (car battery)

Sealing: splash-proof case, according to IP 65\* (can be mounted at the entrance holes of the motor vehicle)

Switch-on function: soft start so that the vehicle computer will not be disturbed

Average power consumption: < 2mA

Ultrasonic frequency: approx 23kHz ± 15%

Angle of radiating ultrasound: approx. 160°

Acoustic pressure: approx 105dB (± 20%) (Ultrasonic devices should have a sound pressure level exceeding 100dB (C) to avoid habituation (ADAC test results). (Source de.wikipedia.org/wiki/Marderabwehr)

Sound: Sine, aggressively pulsating

Loudspeaker: impact sound generator, which makes the upper side oscillate (splash-proof)

Optical deterrent: pulsating LED (serves as functional display at the same time)

Temperature range: approx. -25°C to +80°C

Voltage peaks: secured against voltage peaks in the vehicle power supply up to 40V (< 20ms)

Fuse in the fuse holder: F500mA

Dimensions: approx 58 x 38 x 31mm (without fastening straps)

Make: Kemo

EAN 4024028031804

Suitable accessory: BKM.M020 DC/DC converter



## BKM.FG014 Marten Repellent Tester

Testing instrument to detect existing ultrasonic sounds (15 - 29 kHz) and high voltage (150 - 700VDC) at the contact plates. This tester allows you to test ultrasonic marten devices. **Only for indoor use!**

Operating voltage: 9V battery

Current consumption operation: 10 - 15mA

Battery check: automatically, if the instrument is switched on

Frequency range: reacts to ultrasonic sounds in the range of 15 - 29kHz

Sensitivity: at 23kHz approx 40dB

Series resistor high voltage-tracer pin: 36M-Ohm

Dimensions: approx 100 x 60 x 25mm

Make: Kemo

EAN 4024028020143



## BKM.Z100 Marten Repellent Spray

Highly effective (heat-resistant!) concentrate in a pump bottle (no pressurised spray cans). This agent has been proven effective thousands of times over! The natural active ingredient geraniol spray almost always drives away the marten from the engine compartment of your car, from the attic, etc.

**Tip:** Before the first application remove existing marten scent with our BKM.Z101 Scent Marks Remover or a thorough engine wash.

Use the spray safely. Before use always read label and product information.

Keep the spray locked up and out of the reach of children.

Avoid contact with eyes and skin.

Active ingredient 1.5g / l geraniol.

May cause allergic reactions.

BAuA No. 47927

Content: 500 ml concentrate corresponds to approximately 1.3 liters of non-concentrated liquid.

Make: Kemo

EAN 4024028040684



## BKM.Z101 Scent Marks Remover Spray

FOR THE RELIABLE REMOVAL OF MARTEN SCENT MARKS IN THE ENGINE COMPARTMENT APPLY BEFORE THE USE OF MARTEN REPELLENT PRODUCTS WITHOUT THE INITIAL REMOVAL OF SCENT MARKS, THE MARTEN FEELS PROVOKED AND DEFENDS HIS TERRITORY. NOT AN ENGINE CLEANER. ESPECIALLY FOR SCENT MARKS.

Application: Apply only when engine / engine compartment is cool!

- Spray the Scent Marks Remover inside the engine compartment including the hood and fenders.

- Wait approx. 2-3 minutes, and then rinse with water. Do not rinse with high pressure washer.

- Please be especially careful around sensitive electronic parts!

Scent marks remover alone does not protect against marten damage. For protection against marten damage please use a marten repellent device or our BKM.Z100 Marten Repellent Spray



Safety Precautions: R10 Flammable. Keep container tightly closed. Keep away from sources of ignition - no smoking! Avoid contact with skin.

In case of contact with eyes, rinse immediately and thoroughly with water and consult a physician. If swallowed, seek medical advice immediately and show container or label. Use only in well ventilated areas. Contains (R)-(+)-limonene. May cause allergic reactions.

Disposal Instructions: Completely emptied packaging may be recycled.

Ingredients: <5% anionic surfactants, Fragrances, (R)-(+)-limonene, citral, benzoisothiazolinones, Methylisothiazolinone, dyes

Contents: 500ml

Make: Kemo

EAN 4024028040691

### BKM.B181N Paralyser 15.000 Volt (Kit)

Produces high-voltage sparks of more than 15.000 volt (the sparks can go through clothes). The sparks are produced by a 9V battery. Ideal as self-defence weapon against wild animals etc. or may be used for physical laboratory experiments. In several countries (e.g. in the EU) the possession as a weapon is prohibited. A deterrent effect is already achieved through the flashing and crackling of the sparks!

Kit set: to solder yourself  
 Operating voltage: 9VDC alkaline block battery  
 Current consumption: 100 – 200mA with every keystroke  
 Output voltage: > 15'000V  
 Frequency of sparks: 1 spark per keystroke (possible approx every 2 seconds)  
 Dimensions of the board: approx. 64 x 68mm  
 Make: Kemo (EAN 4024028011813)



### BKM.M175 Animal Repellent Ultrasonic High Performance (Module)

This ultrasonic generator produces very loud and aggressive ultrasonic sounds pulsating like a siren, which many animals perceive as extremely unpleasant and, therefore, try to avoid them (not always). The generator can be used to keep away rodents, insects, crawling parasites, game and birds. If a larger area needs to be protected from animals there is the possibility to connect up to two more loudspeakers BKM.L020 (please order separately). The audio frequency may be adjusted between ultrasound (inaudible to humans) and loud + high sounds that are audible to humans.

Operating voltage: 12 - 14VDC (stabilised power supply or 12V battery > 12Ah)  
 Current consumption: max 150mA  
 Adjustable frequency range: approx 7kHz - 38kHz. Pulsating like a siren  
 LED displays: one LED each for "Power On" and "Sound Emission"  
 Connections: for up to 2 additional loudspeakers BKM.L020 (not enclosed)  
 Acoustic range: max 100m, may be extended with additional loudspeakers BKM.L020 (not enclosed)  
 Acoustic pressure: max. 135dB ± 30% (Ultrasonic devices should have a sound pressure level exceeding 100dB (C) to avoid habituation (ADAC test results). (Source de.wikipedia.org/wiki/Marderabwehr)  
 Loudspeakers: High-power ultrasonic loudspeakers with plastic membrane  
 Dimensions: approx. 140 x 65 x 37mm  
 Make: Kemo (EAN 4024028031750)  
 Suitable accessory: BKM.L020 Ultrasonic loudspeaker



### BKM.M161 Ultrasonic Power Cannon (Module)

High-Power Ultrasonic Pulse Generator with Loudspeaker  
 ...to chase away wild animals such as martens, wild boars, deers etc from gardens, farmlands etc. The loudspeaker emits pulsating ultrasonic sounds. The acoustic range can be extended up to 300m with a tube placed over the module (tube is not included).

Operating voltage: 12 – 14.4VDC  
 Power consumption: max. 150mA  
 Frequency: approx 22kHz (inaudible to humans)  
 Frequency curve: sine  
 Pulse width: approx 0.5 seconds  
 Pulse sequence: approx 5 seconds  
 Indication: flashing LED when loudspeaker is connected  
 Suitable loudspeakers: piezo loudspeakers  
 There is one loudspeaker BKM.L010 included with this module and there could be one more attached (please order separately)  
 Dimensions: approx 60 x 46 x 20mm (without fixing straps)  
 Make: Kemo (EAN 4024028031613)  
 Suitable accessories: BKM.L010 Piezo loudspeaker



### BKM.FG017 Ultrasonic Animal Trainer and Repellent

Battery-powered hand-held unit with adjustable audio frequency and a very loud ultrasonic sound to train dogs. For joggers, sportsmen, etc.: Many wild animals (e.g. foxes, aggressive dogs) can be chased away (not always) through the unusual high sound. The sound is very loud (max. 105dB ± 20%) and is continuously adjustable from ultrasound (approx. 27kHz) up to an audible high sound of approx. 3kHz. Elderly dogs and other animals (e.g. horses) may then also be trained with it. The device is also well suitable as signal with children and hikers and also for deterrence if the device was adjusted to an intensive, very high and audible sound. An efficient 9V battery (block, alkaline or the like) is required for operation.

Operating voltage: 9VDC block battery  
 Current consumption: approx 50mA  
 Frequency: adjustable approx 3 – 27kHz  
 Acoustic pressure: depending on the frequency max approx 105dB (± 20%)  
 Acoustic system: pressure chamber  
 Colour: the colour of the case can vary  
 Make: Kemo (EAN 4024028020174)  
 Subject to alterations and errors. Pictures are a guide only.



## BKM.M071N Ultrasonic Vermin Repellent (Module)

This ultrasonic generator produces pulsating and aggressive ultrasonic sounds like a siren which many animals perceive as extremely unpleasant and, therefore, try to avoid it. The generator should be used to keep away rodents, insects, crawling parasites, game and birds, etc. The frequency of the generator is adjustable between approx. 8 - 40kHz. A special loudspeaker with vaulted aluminium dome membrane has been built in to achieve a better sound distribution. A stabilised power supply 12VDC (< 60mA) is necessary for setting into operation. Up to 4 additional loudspeakers BKM.L001 (built-in loudspeaker) or BKM.L002 (on-wall loudspeaker) can be connected, if larger rooms (> 30m<sup>2</sup>) have to be exposed to ultrasonic waves.

Operating voltage: 12VDC (10-13.8VDC)

Current consumption: approx < 60mA

Adjustable frequency: approx 8 - 40kHz (± 15%)

Frequency deviation, ca. 2 x per second: 2-3kHz (automatic change of frequency, siren-like)

Sound pressure: max 100dB (± 15%) (Ultrasonic devices should have a sound pressure level exceeding 100dB (C) to avoid habituation (ADAC test results). (Source de.wikipedia.org/wiki/Marderabwehr)

Range: > 40m with free field of vision

Loudspeaker's beam angle: max 140°

Connection of additional piezoelectric loudspeakers: max 4 additional loudspeakers may be connected

Functional display: flashing LED, BR> Connection: by attached cable

Dimensions: approx 72 x 50 x 33mm (without fastening straps, with potentiometer)

Make: Kemo

EAN 4024028030715

Available accessories:

BKM.L001 Piezo spherical dome tweeter with flare

BKM.L002 Ultrasonic wall loudspeaker

BKM.P5123 Mini piezoelectric tweeter



## LC.62M Mini Electric Fence Generator for High-Voltage (Module) While stock lasts

High voltage generator with pulsating output voltage. This module can be used as electric fence for small animals or as thief-deterrent.

Operating voltage: 12VDC

Current consumption: 300mA

Output voltage: 2000V (pulsating)

Dimensions: 71 x 50 x 41mm



## BKM.B152 Build Your Own Electronic Fence Appliance (Kit)

...produces a pulsating high-voltage of > 3000 Volt out of 6VDC. For small animal-electric fences, as protection against burglars (set the door handles under voltage etc.). Furthermore a standard power transformer 230VAC auf 12VDC, 1A is necessary.. Important! This small fence appliance is only suitable for little animals, not for big animals like bulls or horses!

There was an article "Elektronischer Zaun" in the German magazine "Electronic Aktuell Magazin" no.1/1999 about this product.

Kit set: to solder yourself

Operating voltage: 6VDC

Average power: approx. 100 mA, on average, up to 1.5A in

Consumption: pulse spikes Board dimensions: approx. 45 x 21mm

Make: Kemo

EAN 4024028011523

Suitable case: BKM.G024 Case with fastening straps



## BKM.M062 Mini Fence High-Voltage Generator (Module)

Mini Fence High-Voltage Generator Module

This generator produces a pulsating, weak high-tension of approx. 1000 Volt from a operating voltage of 9 - 12VDC (battery). For electrically operated fences for small animals, as thief-protection etc. The animal (burglar) must touch the two high voltage wires at the same time to induce an electric shock.

Operating voltage: 9 - 12VDC

Power consumption: approx. 40mA

Output voltage: pulsating max 1000V/0.5 joule

Pulse frequency: approx 1Hz (1 pulse per second)

High-voltage display: LED

High-voltage cable length: max 100m (use paired wiring, wires not included)

Dimensions: approx 72 x 50 x 42mm (without fastening straps)

Make: Kemo

EAN 4024028030623



## SURVEILLANCE, ALARM AND SECURITY

### LC.34.1 Listen-Aider Sound Amplifier (Stethoscope) **While stock lasts**

You are able to listen through thin walls, doors, windows, etc. Highly sensitive preamplifier with electret microphone capsule ready to be plugged in with a headphone.

Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Power consumption: 10mA  
 Dimensions: 63mm x 54mm



### BKM.B198 Alarm Display (Kit)

This alarm display has been fitted with 2 different coloured light emitting diodes, which are flash alternately in short sequences. For use in cars, weekend-houses, etc. in order to simulate an armed alarm set.

Kit set: to solder yourself  
 Operating voltage: 9 – 12VDC  
 Board dimensions: approx 22 x 27mm  
 Make: Kemo (EAN 4024028011981)



### BKM.M061 Alarm Monitor (Module)

Small alarm monitor with 2 coloured LED's which are fast and alternately flashing.

Usage: For mounting in cars, window-sills etc. as visible deterrent against thieves. The monitor could be mounted without or in combination with an alarm system.

Operating voltage: 9 – 12VDC direct-current voltage  
 Current consumption: approx 28 – 40mA  
 Flashing period: approx 3 – 6x per second  
 Dimensions: approx 30 x 25 x 15mm  
 Make: Kemo (EAN 4024028030616)



### BKM.B101 Universal Alarm System 12VDC (Kit)

Professional alarm unit for 12VDC. Connecting features: max. 20 rest contacts. Contact control and alarm indication with LED's. Adjustable rise-delay time and alarm duration: approx. 2 - 15 seconds and 8 - 30 seconds, in accordance with the police law.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Rise-delay: adjustable  
 Alarm delay: adjustable  
 Alarm duration: approx 8 – 30 seconds  
 Relay contact: 1x change over, 5A  
 Board dimensions: approx 58 x 45mm  
 Make: Kemo (EAN 4024028011011)  
 Suitable case: BKM.G028 Case black ca 72 x 50 x 42mm  
 Suitable case: BKM.G028N Case black ca 72 x 50 x 42mm  
 Other accessory: BKM.A003 Alarm contact for embedding



### BKM.FG011 Alarm Flasher 230VAC

When this unit is plugged into a socket, the integrated light-emitting diode starts to flash. Burglars, who can see the flashing unit through the window, may suspect an active alarm system. **Only for indoor use!**

Operating voltage: 230VAC  
 Dimensions: approx 104 x 87 x 47mm  
 Make: Kemo (EAN 4024028020112)



### BKM.A003 Alarm Contact for Embedding

The contact is closed (NC) when the magnet is connected. The alarm contact is potted humidity-proof. This alarm contact is embedded into the door folding or window rabbet.

Colour: brown  
 Dimensions: approx Ø 9.2 x 22mm  
 Make: Kemo (EAN 4024028070834)  
 The Alarm contacts are for the use with our kits and modules:  
 BKM.B101 Universal alarm system 12VDC



### LC.64 Acoustical Warning Device for Refrigerators (Kit) **While stock lasts**

This device will start a loud sound if the cooling temperature is warming up.

Operating temperature: 9 - 15VDC  
 Current consumption: 10mA  
 Working temperature range: -10°C to +10°C  
 Dimensions: 50 x 40mm



## BKM.M148A Battery Guard 12VDC (Module)

This battery saver protects your car battery from total discharge by switching off consumers such as ice boxes, heaters, radios + television sets, etc. in time. It switches on again automatically after return of the normal voltage. The interrupting voltage is adjustable: approx. 10.4 - 13.3V.

Operating voltage: 12V battery  
 Max switching capacity: 20A (10A without cooling, 20A with additional cooling)  
 Interrupting voltage: adjustable approx 10.4 – 13.3V  
 Resetting voltage: approx 0.8V ( $\pm$  0.3V) higher than the adjusted interrupting voltage  
 Cutoff element: power MOS transistor in the negative line  
 Own current: < 0.7mA in OFF condition, < 1.6mA in ON condition (LED lights)  
 Dimensions: approx 87 x 60 x 33mm (with mounting plate)  
 Make: Kemo (EAN 4024028031484)



## GSB.IG12V Motion/Movement Sensor 12VAC/DC (50/60Hz) White Infra Garde 12V

Operating voltage: 12 Volt (50/60Hz)  
 Input: 12V DC or AC  
 Switching power: max 5A for 12 - 230VAC  
 Switching power: max 5A for 12 - 30VDC  
 Operating range: approx 10m frontal  
 Detection range: 120°  
 Time adjustment: approx 6 seconds to 12 minutes  
 Protection: IP 44  
 Twilight: approx 5 - 1000 Lux  
 Colour: white



### Function:

The sensor reacts to heat emission of moving objects. When a person approaches the detection range a light turns automatically on. Does the person leave the range the light switches off after an adjustable time (6 seconds to 12 minutes).

### Positioning:

The mounting height should be around 2.5m (max 3m). Don't mount the sensor around a heat source or a reflecting surface. The lens can be partly covered to prevent faulty circuits caused by moving trees etc.

### Mains connection:

The connection has to be 12V AC or DC (50 – 60Hz). The cable entry point is from the back or from the bottom.

## BKM.M173 Soil Humidity Sensor 12VDC (Module)

This sensor switches your garden irrigation pump or the magnetic valve on when the soil is dry and switches off when there is enough humidity in the soil. The measuring head has to be buried into the ground at the depth where it has to measure and has to be connected with the basic device by cable. Approx. 2m of cable are included, the sensor cable may, however, be prolonged up to 20m with normal 2-pole cable. The device is operated by means of a commercial plug power supply (12VDC stabilized, > 130mA, jack plug 3.5mm). If the garden should be irrigated at certain times of the day or weekdays only, then please put a commercial timer before the plug power supply and program it accordingly. The soil humidity sensor starts to operate when it receives current from the power supply.

### Operation sequence:

The soil humidity is measured after switching on the operating voltage. The connected pump is switched on for 18...30 minutes if the soil is too dry. If the soil is humid enough the device switches to „Pause“ for about 18 - 30 minutes and takes a new measurement after that. This continues as infinite loop until the operating voltage is switched off.

The basic device has to be mounted in a dry place.

Operating voltage: 12VDC stabilized > 130mA, 3.5mm jack  
 Display: 3 LEDs: On ... Off ... Pause  
 Switching contact: potential-free relay contact 1x On max 3A (up to 25V or 230VAC, see description)  
 Connectors: screw terminals  
 Time delays: approx 18 – 30 minutes between  
 Switching threshold: continuously, adjustable  
 Dimensions soil humidity sensor: approx 30 x 64mm plus 2 galvanized meta pins approx 4 x 40mm  
 Dimensions basic device: approx 72 x 50 x 28mm (without fastening straps)  
 Make: Kemo (EAN 4024028031736)



## BKM.M121 Fake CCD Camera (Module)

Fake CCD-camera with lens system and 3 infrared spotlight LEDs. A red flashing LED fakes a working camera. 2 AA (UM3) batteries are necessary for the operation of the flashing LED. This module should fake a real camera to prevent shoplifting and burglaries.

Operating indicator: red LED  
 Operating voltage: 3VDC (2x AA batteries/UM3 cells)  
 Dimensions: approx. 90 x 50 x 33mm (without fixing straps)  
 Make: Kemo (EAN 4024028031217)



## LC.10 Twilight Switch 7 – 15VDC (Kit) **While stock lasts**

This twilight switch automatically switches devices on or off at nightfall or daybreak.

Kit set: to solder yourself  
 Operating voltage: 7 - 15VDC  
 Current consumption: 40mA  
 Rating: 250VAC / 5A (relay)  
 Relay: On / On  
 Dimensions: 50 x 40mm



### BKM.B051N Gas Sensor, Alcohol and Spirits Tester (Kit)

This instrument indicates gases such as alcohol, acetone, benzole, propane, carbon monoxide (contained in the smoke of fire). Perfect as alarm for gases and fire.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current consumption: approx 180mA  
 Indication: LED and relay (1x ON, 3A)  
 Make: Kemo (EAN 4024028010519)



### BKM.M128 HF Detector (Mini Spy Finder) (Module)

This detector gives you protection from eavesdropping. It allows you to search for active concealed bugs. The HF detector has a LED which flashes faster the closer you get to the bug transmitter.

Display: 1 x LED for the turn-on control, 1 LED for indication of receipt from one transmitter (the closer you get to the transmitter, the faster this LED flashes). A 9 V/DC block battery is necessary for operation.

Operating voltage: 9VDC block battery (not included)  
 Current consumption: < 10mA  
 Frequency range: approx 0.1MHz – 2.4GHz  
 Display: LED  
 Dimensions: approx 102 x 61 x 26mm (without antenna)  
 Make: Kemo (EAN 4024028031286)



### LC.116M Infrared Light Barrier max 30m (Module) **While stock lasts**

The infrared light is invisible to the human eye. The max distance between transmitter and receiver is approx 30m. When the IR light between the transmitter and receiver is interrupted (a person walks through it) the relay (SPDT 1A) in the receiver switches.

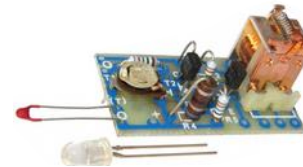
Operating voltage transmitter: 12VDC (approx 10mA)  
 Operating voltage receiver: 12VDC (approx 10...50mA)  
 Switching power relay: SPDT, max 1 Ampere / 24 Volt  
 Operating range: max 30 meter  
 Dimension transmitter: approx 73 x 50 x 27mm  
 Dimensions receiver: approx 73 x 50 x 27mm



### BKM.B123 Combination Construction Kit Set 12VDC Light Barrier - Heat Switch - Twilight Switch (Kit)

With this "combination construction set" you can build a light barrier, a heat switch (-40°C to +100°C), an ice alarm or a twilight switch.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current consumption: max approx 120mA  
 Relay: 1x ON, max 6A  
 Switching threshold: adjustable  
 Board dimensions: approx 45 x 22mm  
 Make: Kemo  
 EAN 4024028011233  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.B045 Light Barrier 12VDC (Alarm Bell) (Kit)

This light barrier switches a relay on or off if there is light or if there is darkness (e.g. Shadow of someone passing the light ray).

Application: If the light ray of a lamp between doors or windows is interrupted (someone is passing through) the relay is switching on an alarm. Works in twilight as well.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Current draw: < 100mA  
 Rating relay: 1x on, max. 3A, max. 25V  
 Sensitivity: adjustable  
 Designed for visible light  
 Board dimensions: approx. 56 x 27mm  
 Make: Kemo  
 EAN 4024028010458  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.M073N Motorbike Alarm (Module)

Switches automatically a horn or a siren on, if the motorbike is moved from a parking position to any other position. This is a waterproof and shake proof sealed module. Can be also used to protect any other objects, which are not to be moved.

Switching tilt angle: approx 12° to 20° in all directions  
 Switching capacity: max 25VDC max 1A  
 Dimensions: approx 30 x 25 x 15mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028030739



### BKM.B085 Parabolic Microphone (Kit)

This highly sensitive microphone needs to be fitted with a parabolic reflector (eg. half-ball-shaped reflector a divided play ball) and is able to receive noises and words from more than some hundred meters away. Ideal for observing animals, for detectives etc.

Kit set: to solder yourself  
 Acoustic sensor: high-sensitive FET capacitor microphone  
 Sensitivity: adjustable  
 Headphone connection: 8 – 32 ohm  
 Operating voltage: 9VDC  
 Power consumption: max approx 230mA  
 Board dimensions: approx 56 x 56mm  
 Make: Kemo (EAN 4024028010854)  
 Suitable case: BKM.G085 Case standard for wall mounting 120 x 70 x 35mm



### BKM.B217 Smoke Alarm 12VDC (Kit) **While stock lasts**

This smoke alarm switches a relay if thick smoke gets between the installed infrared light barrier it will activate sirens, alarm lamps or other devices.

Kit set: to solder yourself  
 Operating voltage: 12VDC  
 Power consumption: max 150mA  
 Operating system: optical smoke detector  
 Indication: LED  
 Relay contact: 1x ON, 12V  
 Board dimensions: approx 59 x 45mm  
 Make: Kemo (EAN 4024028012179)  
 Suitable case: BKM.G024 Case with fastening straps



### BKM.B048 Temperature Switch 12VDC (Kit)

Switches according to a preset temperature a relay on or off. Ideal as thermostat, ice alarm, fire detector, etc.  
 The IC is either TL061 or TL081.

Kit set: to solder yourself  
 Operating voltage: 12 – 14VDC  
 Current consumption: approx 100mA at maximum  
 Temperature switching range: approx -30°C to +150°C  
 Relay contact: 1x ON, max 25V, 3A  
 Board dimensions: approx 56 x 27mm  
 Make: Kemo  
 EAN 4024028010489  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



## BKM.M152 Rain Sensor 12VDC (Module)

If the sensor plate gets into contact with rain or slushy snow / hail, it switches on a relay. Sun blinds may be retracted with that, skylights may be closed or a simple rain alarm can be given. The automatically heated surface of the sensor prevents any freezing or wetting of the sensor surface. 2 installed LEDs indicate the function. Waterproof-encapsulated electronics.

Note: The electronics of the rain sensor react to the electrical conductivity of the water. We have now ascertained that there are areas where rainwater falls, which is absolutely clean (distilled water). The sensor does not react to this. The water must be at least slightly contaminated (fractions of dust, smoke, etc.) so that the water is electrically conducting and triggers the sensor. In Germany the rainwater is conductive in 99% of the areas. If the sensor does not trigger in your case, you should install it in such a manner that the rainwater runs at first over a small porch roof or the like before the water touches the sensor. If the water falls directly from the cloud on the sensor in its purest form and does not trigger it, it will be sufficient if it runs over a small board or from a porch roof on the sensor. Then the water will have absorbed enough impurification that it will be electrically conducting and triggers the sensor. Of course, the sensor has to be built it slantwise so that the water runs down again.

Operating voltage: 12VDC  
 Current consumption without heating: approx 8mA  
 Current consumption with heating: approx 160mA  
 Relay contact: 1x ON, maximum load 25V, 2A  
 Sensor heating: automatically in case of contact with rain  
 LED diode 1: indication that the rain sensor is working  
 LED diode 2: indication that rain is reported and the relay has switched on  
 Duty cycle of the relay: as long as the sensor is wet  
 Active sensor surface, gold-plated: approx 29 x 30mm  
 Dimensions: approx 65 x 45 x 36mm  
 Make: Kemo  
 EAN 4024028031521



## LC.06M Universal Siren (Module) While stock lasts

Siren with loud interval sound of swelling tone.

Operating voltage: 12VDC  
 Current consumption: 250mA  
 Dimensions: 68 x 57 x 23mm



## BKM.B192 Water Level Sensor 9VDC (Kit)

Whenever two bare wires have contact with water, the light emitting diode will light up. The device is suitable to release alarm in case of overflowing rain barrels and gutters. Operating voltage: 9VDC.

Kit set: to solder yourself  
 Operating voltage: 9VDC  
 Power consumption: rest (without water contact) < 10µA or LED lights up approx 15mA  
 Indication of water: LED  
 Board dimensions: approx 45 x 16mm  
 Make: Kemo  
 EAN 4024028011929  
 Suitable case: BKM.G025 Plastic case black approx 72 x 50 x 21mm



## BKM.M167N Level Indicator for Water Tanks (Module)

Remote sensing up to 100 m

Battery-powered liquid level indicator for measuring the level of water in tanks such as rain water, sewage chambers or slurry tanks from a distance of up to 100 m. After touching the button, 10 LEDs display the level of the liquid in steps of 10% each LED (indication 10 - 100%). The device (approx. 131 x 78 x 36 mm) is assembled at the wall of the tank and requires 2 batteries „AA“. Connection is made via terminals inside the device. A normal signal cable (telephone cable, control wire or the like) with at least 11 cores is necessary to connect your water tank with the level indicator (cable is not included). A cable with less cores could be used, but then it will not be possible to use all indication steps (e.g. with 8 cores only 7 LED indication steps may be used, which is, however, often sufficient).

Extension in case of bigger measurements

This module is normally to be used for measuring water levels in rain containers, water containers, etc. Our clients have asked us if the module can be used to measure bigger containers like for example a dwell, where the separation of the measurement electrodes is of approx. 5 m. Due to the big separation between the higher and the lower electrode in this kind of measurements (approx. 40 m), the intensity of the measurement display (LED's) can become weak. In order to avoid this, we recommend installing the electrodes with a parallel long tube for all of the electrodes (see info as pdf file).

Operating voltage: 3V (2x AA batteries, not included)  
 Display: max 10 LEDs and 1 LED for the battery control  
 Measuring points in the water tank: 1 – 10, switchable  
 Current consumption during the measurement (button is pushed): max 120mA if all LEDs light up  
 Max cable length between the level indicator and water tank: 100m  
 Required cable to the water tank: telephone cable or similar cable with at least 11 cores  
 Measuring current at the water tank probe: approx 50µA per channel  
 Dimensions: approx 131 x 78 x 36mm  
 Make: Kemo  
 EAN 4024028031675





## BKM.M158 Water Switch 9 – 12VDC (Module)

If the 2 sensor connections of the module come into contact with water, the built-in relay switches on. Sirens, other cutoff relays, etc. may be triggered with that.

Operating voltage: 9VDC are ideal (max 12VDC) please do only use a stabilised power supply  
Current consumption: "Ready" < 10mA. In case of contact with water when the relay picks up < 90mA each with 9VDC

LED display: 1 LED for the indication of readiness "POWER", 1 LED for the indication "ON", if the relay switches on

Connections: free cables

Approved cable length towards the water sensors: max 5m with normal cable, max 100m with shielded cable, if the shielding braid is connected with the negative pole of the distribution voltage

Dimensions: sealing case approx 60 x 45 x 20mm (without fastening straps)

Make: Kemo (EAN 4024028031583)



## BKM.B214 Ultrasonic Proximity Sensor (Kit)

A LED lights up if a body approaches the ultrasonic sensors at a distance of 10 - 80cm (depending on the size of the body). Use: parking-in assistance for cars in garages, alarm signal for persons or animals staying in a certain area. Operating voltage: 9 - 12VDC. The device works according to the same principle as the ultrasonic echo ranging of bats!

This kit may be extended to relay operation with our relay board "B197" (not enclosed).

For your interest there was an article "Peilen wie die Fledermaus" in the German magazine "Electronic Aktuell Magazin" Nr.7/99

Kit set: to solder yourself

Operating voltage: 9 – 12VDC

Operating frequency: approx 40kHz

Range: approx 10 – 80cm, depending on the size of the object (approx 0.01 – 0.5m<sup>2</sup>)

Display: LED

Current consumption: < 10mA

Board dimensions: approx 55 x 45mm

Make: Kemo (EAN 4024028012148) Suitable case: BKM.G023 Case with fastening straps



## PRE- AND POWER AMPLIFIER



### EMK.PA10 4.5W-7.5W Hi-Fi Power Amplifier Module Monacor IPA-10

Mono version with different output power. A 12V DC voltage (max. 18V DC current ) is required for operation.

RMS output power: 4.5Wrms/4Ω

Music output power: 7.5W/4Ω

THD: 0.15%/4.5W

Output impedance: 4Ω

Frequency range: 40Hz - 20kHz

Input impedance: 150kΩ

Input voltage: 50mV

S/N ratio: > 70dB

Standby current: 50mA

Operating voltage: 8VDC - 18VDC

Current consumption (max): 0.55A

Dimensions: B=59mm H=41mm T=37mm

Make: Monacor

Type: IPA-10 IPA10



### EMK.PA20 20W Hi-Fi Power Amplifier Module Monacor IPA-20

Same version as above but with 20 Watt.

RMS output power: 1x 15Wrms/4Ω, 1x 12Wrms/8Ω

Music output power: 1x 20W/4Ω, 1x 16W/8Ω

THD: 0.1%/12W

Output impedance: 4Ω - 8Ω

Frequency range: 20Hz - 20kHz

Input impedance: 70kΩ

Input voltage: 80mV

S/N ratio: > 70dB

Standby current: 100mA

Power supply: 8V – 18V (1.7A)

Current consumption (max): 1.7A

Dimensions: B=64mm H=42mm T=57mm

Make: Monacor (Type: IPA-20 IPA20)



## BKM.B134 Mono Sound Controller (Kit)

This mono sound controller must be superposed to the mono final amplifier. Trebles, basses and volume are adjustable separately.

Kit set: to solder yourself

Operating voltage: 9 – 18VDC

Current load: approx 3mA

Controlling: approx ± 15dB

Board dimensions: approx 63 x 30mm

Make: Kemo

EAN 4024028011349

Suitable case: BKM.G010 Shell case 95 x 135 x 45mm



### BKM.B110 Stereo Sound Controller (Kit)

Separate treble-, and volume-control. This stereo-tone-control may be connected in front of the output-amplifier. Treble, bass, and volume are separately adjustable.

Kit set: to solder yourself  
 Operating voltage: 9 – 18VDC  
 High frequency and bass: adjustable independently  
 Board dimensions: approx 115 x 38mm  
 Make: Kemo  
 EAN 4024028011103



### FGA-40 Ground Insulator (Isolator) Carpower by Monacor FGA-40

Stereo line transformer, for preventing signal interference and hum loops which may occur, e.g. when connecting the car radio to an amplifier.

- Galvanically isolated inputs and outputs
- RCA plugs and RCA jacks

Input/output impedance: 15k $\Omega$   
 Frequency range: 20-30,000Hz  
 Transmission ratio: 1:1  
 THD (Total Harmonic Distortion): < 0,001%  
 Operating temperature: 0°C bis 40°C  
 Dimensions:  $\varnothing$  35mm x 65mm  
 Weight: 65g  
 Make: Carpower by Monacor (Type: FGA-40 FGA40)



### BKM.M055 Stereo Amplifier 3W (Module)

Universal stereo amplifier with a wattage of max. 2 x 1.5W.

Output power: max 3W musical power (2 x 1.5W)  
 Operating voltage: 3 – 10VDC  
 Loudspeaker socket: 8 – 32 ohms  
 Input sensitivity: < 100mV  
 Frequency response: approx 20 – 20'000Hz  
 Dimensions: approx 60 x 45 x 20mm (without fastening straps)  
 Make: Kemo  
 EAN 4024028030555  
 Available accessory: BKM.M040 Universal Preampifier (for Stereo use you need two of them)



### EVV.4FG Ready-to-Use Audio Stereo Pre-Amplifier Profitec TC-400

Stereo phono pre-amplifier for turntables with magneto-dynamic pickup systems. Also suitable for direct connection of turntable and sound card of your PC. Conforms with RIAA guide lines.

Included in delivery: AC-DC adapter 230VAC / 12VDC and RCA connecting cable.

Power supply: 12VDC  
 Input impedance: 100k $\Omega$ , 5mV  
 Output impedance: 100k $\Omega$ , 250mV  
 Frequency range: 18Hz - 22kHz  
 S/N Ratio: > 50dB  
 Dimensions: 120 x 60 x 20mm  
 Weight: 560g  
 Make: Profitec  
 EAN 4016641135854  
 Type: TC-400 TC400



### BKM.M032N Universal Amplifier 12W (Module)

Robust amplifier module for universal use. The module is cast humidity-proof and shake-proof. The casting compound and the module case consist of a special, highly heat-conductive plastic. So no additional heat sinks are needed. The module is protected electronically against overheating and overload.

Operating voltage: 8 – 16VDC  
 Current consumption: max. 800mA  
 Input sensitivity: < 80mV  
 Loudspeaker connection: 4 – 16 ohm  
 Music power: max 12W with 16V at a 4-ohm loudspeaker  
 Frequency response: approx 40 – 20000Hz  
 Dimensions: approx 70 x 36 x 23mm (without fixing straps)  
 Make: Kemo (EAN 4024028030326)  
 Available accessory: BKM.M040 Universal Preamplifier



### BKM.M032S Universal Amplifier 12W “Plug-In and Play” (Module)

Amplifying module with jacks used for the signal input and for the power supply. Inserted loudspeaker regulator and loudspeaker connection are over the cables.

Operating voltage: 6 – 16VDC  
 Current consumption: max 800mA  
 Input sensitivity: < 80mV  
 Loudspeaker connection: 4 – 16 ohm  
 Music power: max 12W with 16VDC at a 4-ohm loudspeaker  
 Frequency response: approx 40 – 20000Hz  
 Power supply jack: for mains plug 2.5mm  
 Dimensions: approx 72 x 50 x 42mm (without fastening straps)  
 Make: Kemo (EAN 4024028030302)  
 Available accessory: BKM.M040 Universal Preamplifier



### BKM.M040N Universal Preamplifier (Module)

For microphones and different other uses. This mini module is simply connected between a power amplifier (e.g. BKM.M032N Amplifier 12 W, universal) and a weak signal source (e.g. microphones).

Operating voltage: approx 9 – 24VDC  
 Frequency range: approx 20 – 20'000Hz ±3dB  
 Input voltage: approx 2 – 50mV  
 Output voltage approx 0.2 – 5V  
 Input impedance: approx 50k-ohm  
 Output impedance: approx < 1k-ohm  
 Amplification: approx 40dB (100 x) ± 10%  
 Distortion: < 0.02%  
 Current consumption: < 2mA  
 Dimensions: approx 30 x 25 x 15mm (without fastening straps)  
 Make: Kemo (EAN 4024028030401)  
 Available accessories:  
 BKM.M032N Amplifier 12W universal  
 BKM.M032S Universal Amplifier 12W Plug & Play  
 BKM.M033N Amplifier 18W universal  
 BKM.M034 Power Amplifier 40W universal  
 BKM.M055 Stereo Amplifier 3W



### BKM.B073 Pre-Amplifier Universal Super Wide Band (Kit)

Super wide band 2-step preamplifier for high-power amplifier, headphones-amplifier, etc.

Kit set: to solder yourself  
 Operating voltage: 12 – 30VDC  
 Super wide band: approx 10Hz – 150kHz  
 Input sensitivity: approx 2 – 20mV  
 Output: approx 200mV – 2V  
 Structure: 2-stage  
 Board dimensions: approx 54 x 29mm  
 Info as pdf file  
 Make: Kemo (EAN 4024028010731)  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.B182 Amplifier 1 Watt (Kit)

Small universal amplifier with a peak sound capacity of 2 W. A modern, low cost amplifier for many purposes. It works with an 8-pin DIP IC, the design is very small, so that this amplifier can be integrated into many devices.

Kit set: to solder yourself  
 Power: max 2W music power  
 Operating voltage: 6 – 9VDC  
 Current consumption: max 380mA  
 Loudspeaker connection: 8-ohm  
 Frequency range: approx 20 – 20'000Hz  
 Sensitivity: approx 80mV  
 Board dimensions: approx 41 x 24mm  
 Make: Kemo (EAN 4024028011820)  
 Suitable case: BKM.G027 Plastic case black 72 x 50 x 35mm



### BKM.M031N Amplifier 3.5 Watt Universal (Module)

Robust amplifier module for universal use. The module is cast humidity-proof and shake-proof. The casting compound and the module case consist of a special, highly heat-conductive plastic. So no additional heat sinks are needed. The module is protected electronically against overheating and overload.

Operating voltage: 4.5 – 12VDC  
 Output: max 3.5W music power  
 Loudspeaker connection: 4 – 16-ohm  
 Input sensitivity: < 80mV  
 Frequency response: approx 40 – 20'000Hz  
 Dimensions: approx 40 x 40 x 12mm (without fastening straps)  
 Make: Kemo (EAN 4024028030319)  
 Additional module: BKM.M040N Universal preamplifier



### BKM.M033N Amplifier 18 Watt Universal (Module)

Robust amplifier module for universal use. The module is cast humidity-proof and shake-proof. The casting compound and the module case consist of a special, highly heat-conductive plastic. So no additional heat sinks are needed. The module is protected electronically against overheating and overload.

Operating voltage: 8 – 20VDC  
 Current consumption: max 800mA  
 Input sensitivity: < 80mV  
 Loudspeaker connection: 4 – 16-ohm  
 Music power: max 18W with 20V at a 4-ohm loudspeaker  
 Frequency response: approx 40 – 20'000Hz  
 Dimensions: approx 70 x 36 x 23mm  
 Make: Kemo (EAN 4024028030333)



### BKM.M034 Power Amplifier 40 Watt Universal (Module)

Loudspeaker output transformer amplifier for general use: e.g. increase of output of small radio, CD-player, tape recorder, microphone amplifiers etc.

Operating voltage: 6 – 16VDC  
 Musical power: max 40W at 4 ohm loudspeaker load in case of an operating voltage of 16VDC  
 Connectable loudspeakers: 4 – 8-ohm  
 Sensitivity: < 500mV  
 Frequency range: approx 20 – 25'000Hz  
 Dimensions: approx 70 x 45 x 29mm  
 Make: Kemo (EAN 4024028030340)  
 Additional module: BKM.M040N Universal preamplifier



## MISCELLANEOUS



### BKM.B172 The Little Electro-Technician (Kit)

Easy instructional construction set for beginners from 8 years on. The cables are not soldered, solely screwed or twisted. The tests are described through figures and helpful descriptions. As current supply is been used a 4.5VDC flat battery (not included).

Among others there are to be made following tests:

1. Ordinary circuit with small lamp
2. Electromagnetism
3. Current proof through compass needle
4. Radio transmitter system Marconi
5. Generator
6. Selfmade battery etc.
7. Test of conductivity of water
8. LED test I
9. LED test II

Make: Kemo (EAN 4024028011721)



### BKM.FG019 Thirst Reminder for Elderly

Reminds elderly people to drink at adjustable times. Elderly people often no longer have a feeling of thirst and forget to drink regularly. The body then „dehydrates“ as the medics say, it runs dry.

This “Thirst Reminder” rings a bell at adjustable times followed by the sound of pouring water and a pre-recorded message. The message can be spoken by a family member (e.g. Nephew, daughter). The message is more likely to be followed if it is spoken by a familiar voice, who his addressing the person by their first name.

Operating voltage: A plug power supply with an input voltage of 230VAC, output 12 or 15VDC > 150mA is enclosed  
 Time switch: 24 hours clock. Mechanical time switch with sliding riders, which is very simple to operate. A message may be adjusted every 15 minutes

Recording text: texts up to 5 seconds may be recorded: e.g. “Dear grandma Anna, you must dring something now!” Repetition: every 50 – 60 seconds within 15 minutes unless the “STOP” button is pressed.

Rendering: First a bell rings followed by the noise of pouring water into a glass and the recorded message.

Volume: adjustable

Displays: 2 illuminated displays: “READY” (ON) and “REMINDER ANNOUNCEMENT RUNS NOW” (ALARM)

Registered product: with IFA (Informationsstelle für Arzneispezialitäten)

Dimensions: approx 120 x 100 x 82mm

Make: Kemo

EAN 4024028030050

