

# BIOLOGA - NA 16-1P Standard CUT-OFF SWITCH



## USER MANUAL & INSTALLATION GUIDE

### **CAUTION!**

**L1 (Terminal 3) output L1 (Terminal 1)**

**These terminals may NOT be bridged or reversed. This can cause destruction of the device. The warranty is voided by doing so.**

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### **BIOLOGA - NA 16-1P Standard**

#### **CUT-OFF SWITCH**

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## 2) TECHNICAL DATA

Length x width x height:	90 x 17 (1st) x 60 mm
Height on DIN rail:	55 mm
Color / weight:	light grey / approx. 70 g
Energy consumption:	< 1.6 Watts
Mech. Lifetime (relays):	approx. 100,000 operations
Electr. Lifetime (relays):	approximately 100,000 switching cycles (at max. resistive load - 16A)
Operating voltage:	230 VAC
Load: Nominal power:	16 A load (3680VA resistive load max.)
Test voltage:	200 VDC (unregulated)
Residual ripple:	approx. 0, 1V RMS.
Sensitivity:	approx. 1.5 Watts (6mA)
Switch-off delay:	approx. 5 sec.
Switch-on delay:	approx. 0.1 sec.
Indicator lights (LED):	RGB LED (red, green)
Warranty:	2 years
Conformity to EMC Directive: 73/23/EEC low voltage Directive 89/336/EEC EMC Directive	EN 60730 EN 50081 EN 50082 (IEC/1000-6-1)
Testing for: (surge resistant to IEC-1000-4-4 [burst]) IEC 1000-4-5 [surge]	DIN EN 61000-4-2/A1 DIN EN 61000-4-3-6 DIN EN 61000-4-11 <del>Reg. Nr.</del> DAR TTI P-G115/97-10
Assembly: carrying rail/rail	According to DIN 55022 in the electric distributor

### Suitable for the following devices

Led bulbs (from 1.5 Watt)

Compact fluorescent lamps (backseat)

Switchable dimmer, refrigerators with bi-metal switch, water and hospital beds with digital control and its own power supply (E.g., battery)

Traditional resistive consumers, bulbs (mains voltage halogen G9, light bulbs etc.)

### Scope of delivery

Switching device (1pc) [installation in the distribution]

Base load element (GLW-plus) [devices < 1,5 Watt]

Indicator KO-L-NA (1pc) [socket]

Installation instructions / schematics

### Special accessories

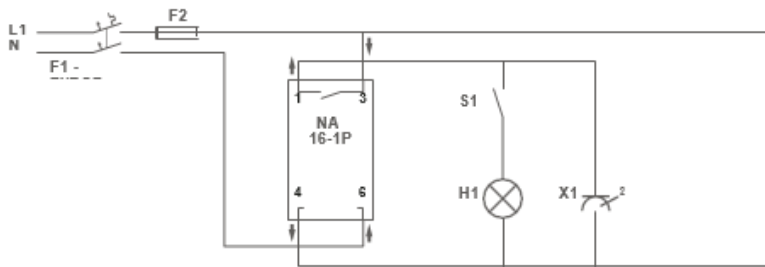
Surface-mounted housing acts

Base load elements (Blue + Blue-plus)

### 3) WIRING DIAGRAMS

#### 01 – Wiring Diagram

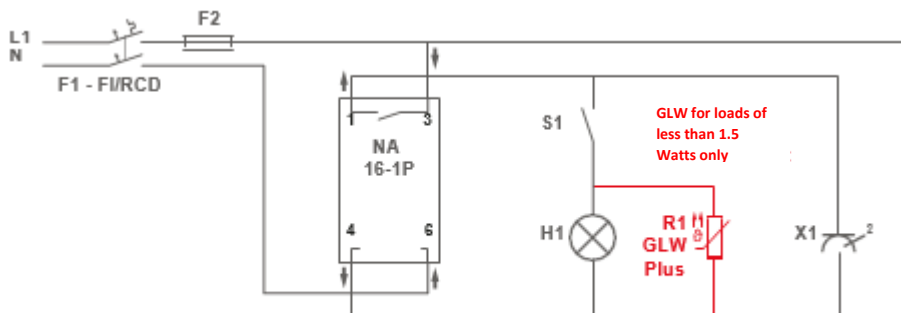
All disconnectable consumers using greater than 1.5 Watt (except for timed devices) - Please note the connection of the neutral conductor. The neutral conductor in the room supply must be connected to the mains coupler.



#### 02 - Wiring diagram

All disconnectable consumers using less than 1.5 Watt (except time consumer) - Please note the connection of the neutral conductor. The neutral conductor in the room supply must be connected to the mains coupler.

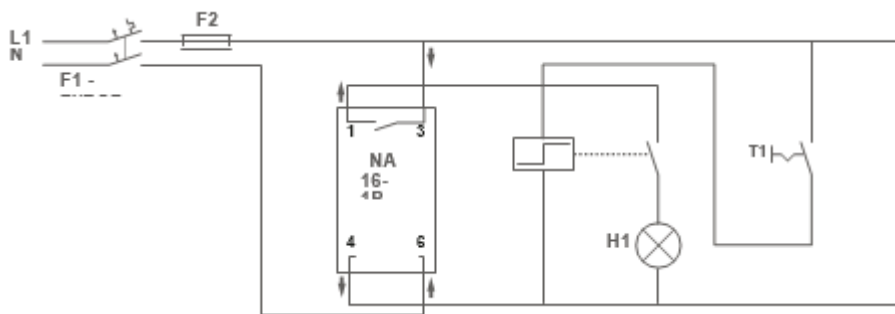
The base-load item GLW-plus is connected parallel to the consumers or between switch and consumer.



We cannot be held responsible for improper use and handling. For questions and possible problems, please call our service telephone +49 7433 955 7172.

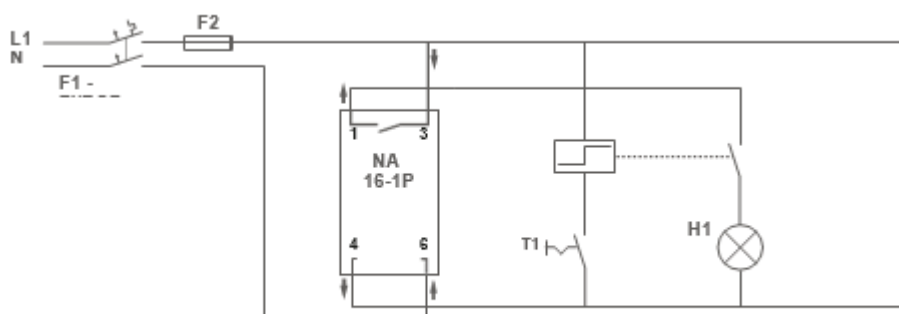
## 01 - Schematic - power surge circuit

### Switch over L1 (phase)



## 02 - Schematic - power surge circuit

### Button n (neutral conductor)



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## 5) INSTALLATION

Installation in a secondary consumer unit:

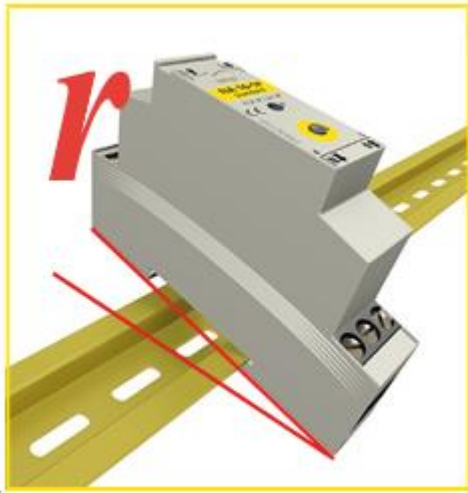


Fig 1: Mains decoupler from below at an angle of approx. 15 ° bump against the spring. Then hang up

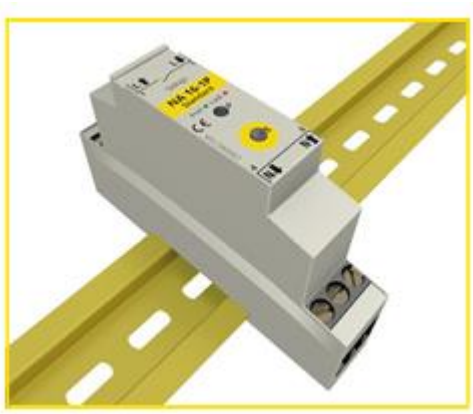


Fig. 2: network coupler engaged. The NA is now fixed

### How to connect the device:

Phase (L1)  
Room supply

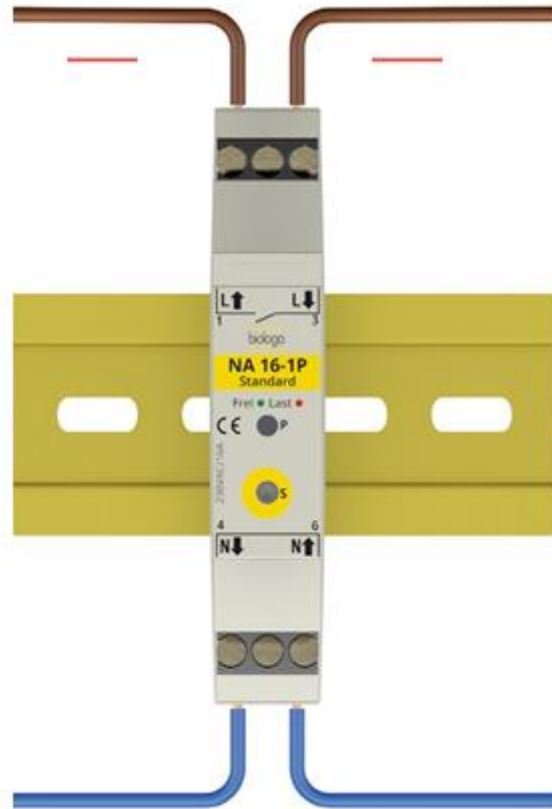
Switched

(Output)

Phase (L1)  
Power supply

Power drain coupler

(Input)



Neutral conductor (N) room supply line

Danger:

Not from

Busbar!

(Output)

Neutral conductor (N)

Power supply

Demand switches

(Input)

Fig. 3: connect the power supply of the power drain coupler and the room supply.

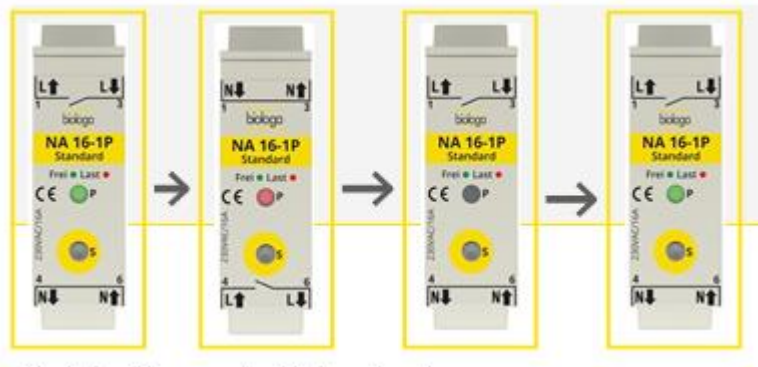
## ATTENTION

**The neutral of the room supply must be connected to the right hand terminal of the Coupler.**

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## 6) OPERATIONAL MANUAL

The below pictures show the stages of initialisation:



### Initialisation and self-learn programming:

Switch all loads on the circuit off

The LED labelled 'P' flashes on the device as follows:

Green => Red => Self Learns => Green

(Note the switching sequence of the initialisation in the 4 diagrams above)

Function:

To perform a manual reset, press the button "S" for longer than 2 seconds until the "P" LED goes out. Then let go and the switch re-initialises itself. This process takes approximately 10 seconds.

### After the installation and then switching on:

After the installation and the learning phase is completed the network Coupler is off for approx. 5 seconds in the mode of "Load" 230VAC. The LED lights up red. All devices are switched off and devices disconnected from the mains, the power drain coupler mode will "unlock". When the LED is "green" the user circuits are at 200VDC (DC). If not devices are still switched on or continuous devices are present on the circuit.



## Using the KOLNA lamp to test the NA

For the UK market, the encapsulating plug (shown below) is supplied with the NA.



Insert the KOLNA light to test whether the NA is working properly.

1 - When the NA is in 'Load' mode (LED (P) = Red) the KOLNA lights up

2 - When the NA is in 'Free' mode (LED (P) = Green) the KOLNA is unlit

Up to 3 KOLNA indicator lights can be used per circuit

### **ATTENTION**

The network decoupler has a switch-off delay of approximately 5 seconds. This means that for short repeated on and off switching no decoupling takes place.

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## 7) FUNCTIONAL MODES

### Free mode (loads off)



LED (P) =>Green

After learning phase or during operation of the NA is in Free in mode.

There are 200 VDC (DC voltage) to the user circuit.

Function:

All consumers must be switched off, permanent devices disconnected.

The device is in the continuous operation mode can be reached "free" by briefly pressing of the button "S" on the fly.

The switch is then again in the automatic mode 200VDC.

### Load - continuous operation (230VAC):



NA-EL-ITECH-V2.0.0-2N-200VDC-

LED flashes green <-> red

Function:

This mode is reached by briefly pressing the "S" button during operation.

The switch is then in

230VAC continuous operation.

Another press of the button

"S" puts the switch back in the 200VDC automatic mode. Delay approx. 5 sec.

## 8) INDICATOR LIGHT

Mounting control lamp KO-L-NA:



LED (P) => Green  
Free-> 200VDC

Function:  
KO-L-NA no indicator light



LED (P) =>Red load -> 230VAC

Function:  
The warning light KO-L-NA lights up

## 9) FAQ / TROUBLESHOOTING

### Power off coupler does not switch off / LED Red:

- 1) **Red LED always on – Always in load mode** – usually something still switched on e.g. standby mode check all is switched off or unplugged.
- 2) **The NA is continually in manual mode** – LED flashed red and green – Press S button briefly to exit manual mode – in older switches this may have been caused by a power cut, in newer switches, revert to automatic mode after power cut.
- 3) **The connections of the neutral conductor (blue) are swapped** - Re-test the connections of the neutral Terminal 4 + 6. If the cable connections are reversed the cut-off switch remains in loaded mode and the power remains on.
- 4) **It is possible there is a fault in the electrical circuit** – Electricians please check the circuit. Please also take into account un-interruptible power supplies and ensure these are disconnected.

### Lamp does not turn / is only dimly lit / flashing:

- 1) **The load bulb has a lower power consumption than 1.5 Watts** – You will need to connect the base load element as per circuit diagram 02. A base load element (GLW-Plus) is supplied with each switch. If multiple base-load items should be required, they can be reordered.
- 2) **An LED bulb flashes infrequently when turned on** – This is caused by a mismatched lamp ballast. A simple exchange of the light bulb can often solve the problem.

### Chargers and other low power consumption units using less than 1.5 Watts:

- 1) Sometimes when left plugged in but not connected to the device chargers of Smartphones, tablets or even notebooks, may use less than 1.5 Watts. It is advisable to turn the chargers off.
- 2) As an alternative to a GLW is to plug in a small lamp at the same time as using a low powered device such as a kitchen radio to ensure cut-off switch doesn't go into free mode.

### Short circuit bridging may cause the cut-off switch to fail

- 1) If the power connections 1 and 3 are bridged the unit will fail. If the electronic diagnosis function of the device shows this has happened the Warranty will be void.
- 2) To avoid overload do not connect devices with uncontrolled start up currents. The start up switch has been tested with 1.5kw machines with a controlled start up current.