

Operating Instructions

LIGHTwatcher

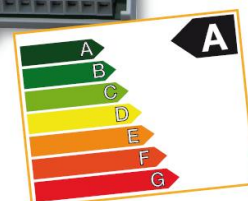


Upgrading Energy Efficiency...

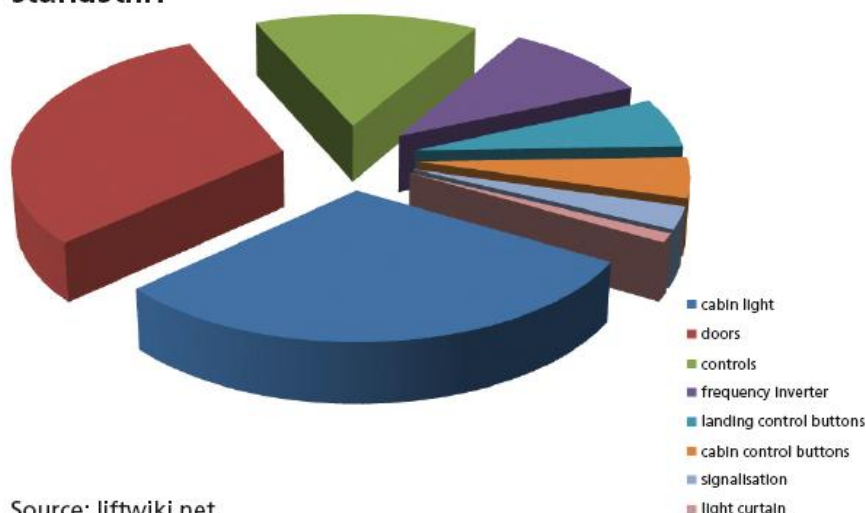
Using LIGHTwatcher saves energy costs and even benefits the environment, fully in the sense of VDI 4707 (directive from VDI, The Association Of German Engineers).

Especially existing lifts have scarcely been in the focus of energy efficiency ambitions.

So their cabin illumination is on throughout, wasting more than 40% of the overall power consumption of lifts.



What shares in the energy consumption of a lift at a standstill?

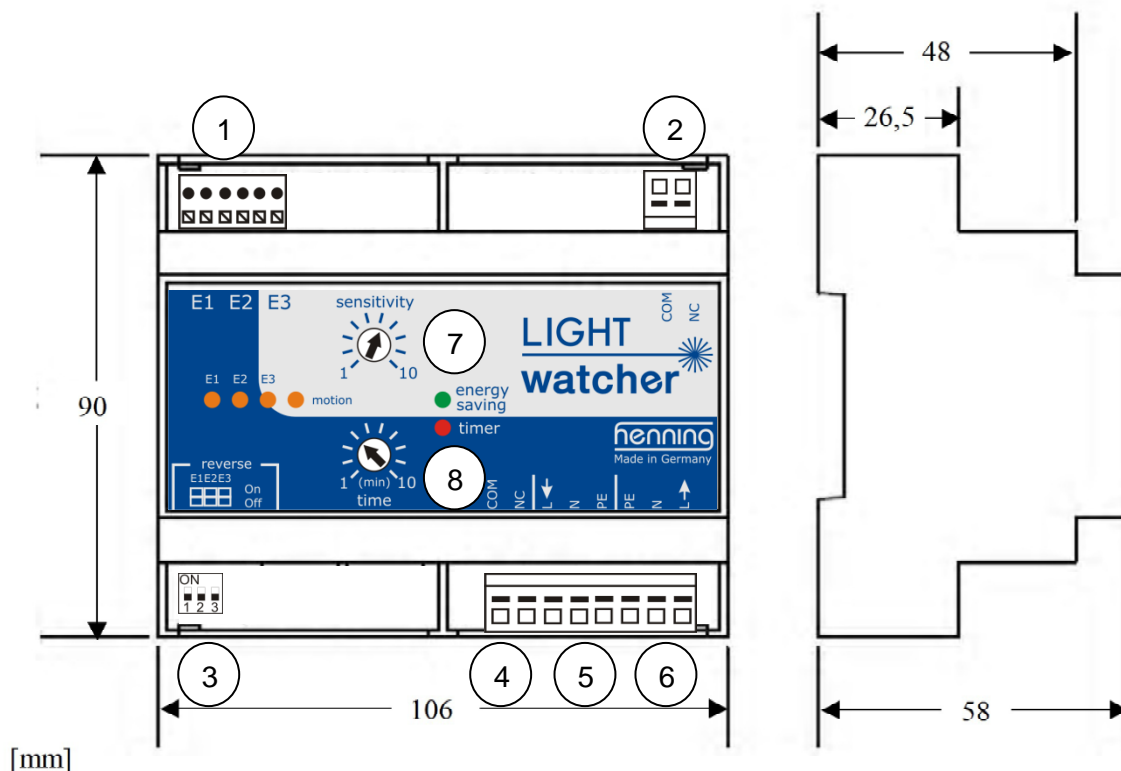


Source: liftwiki.net

Sample calculation

Power consumption per year (cabin light being on throughout)	required (travel consumption)		wasted (standstill consumption)	
	Power (kWh)	Cost	Power (kWh)	Cost
fluorecent lamps (typical: 78 W)	31	7,44 €	647	155,28 €
halogen lamps (typical: 150 W)	60	14,40 €	1245	298,80 €
LEDs (typical: 9 W)	4	0,96 €	75	18,00 €
(Energy price assumption: 0,24 €/kWh)				

1. Dimensions



- ① Supplementary control inputs
- ② Relay output for connectible switch-on consumers such as for example emergency light
- ③ DIP-switch for reversing the control inputs
- ④ Relay output for connectible switch-off consumers such as for example ventilation fan
- ⑤ Switched supply voltage of cabin light
- ⑥ Supply voltage of LIGHTwatcher and cabin light
- ⑦ Sensitivity dial
- ⑧ Switching delay dial



2. Connecting And Operating Elements

LightWatcher is equipped with the the following LEDs:

● energy saving	on	Power saving mode active
	off	Power saving mode non-active
● timer	on	Timer blocked
	off	Timer lapsed
	flashing	Timer in operation
● motion	on	movement sensed
	off	no movement sensed
● E1	on	Input E1 active
	off	Input E1 non-active
● E2	on	Input E2 active
	off	Input E2 non-active
● E3	on	Input E3 active
	off	Input E3 non-active

8 How To Adjust The Switching Delay

The delay for switching the power saving mode on can be adjusted. That is the time to elapse after the movement last sensed resp. the control signal last received. It can be steplessly set by the rotary dial to intervals between 1 min and 10 min and will start elapsing again after the next movement sensed or control signal received.

7 How To Adjust The Switching Threshold

By this rotary dial you can set the switching threshold of the internal movement/acceleration sensors. Door movements are typically included in the sensitivity. For this purpose, after installing the gadget on the car roof, make the doors move and simultaneously set the dial to a switching threshold that ensures safe sensing of door movements, but skips ambient vibrations such as for example adjacent lifts in the well. Surpassing the set threshold will be signalled by the LED *motion*.

6 Supply Voltage LIGHTwatcher and Cabin Light

To these terminals, apply the supply voltage for LIGHTwatcher and the cabin light to be switched.

5 Switched Supply Voltage Cabin Light

Supply voltage of the LIGHTwatcher is connected through to these terminals, in order to have the cabin light switched. Connect the cabin light to these terminals.

Power saving mode active: no voltage at L-contact

Power saving mode non-active: supply voltage to be connected through

4 Relay Output For Connectible Switch-Off Consumers (additional function)

This potential-free relay output can be used to switch off an additional consumer in the energy-saving mode. This contact can be used for example for low-voltage cabin lights, fans and so on.

Power saving mode active:: relay-contact open

3 DIP-Switch For Reversing The Control Inputs (additional function)

As soon as voltage is applied to one of the control inputs, LIGHTwatcher will deactivate the power saving functions. Provided that one or more of the control inputs shall be connected reversely, i.e. deactivation of the power saving functions in case there is no voltage applied, the according DIP-switch (reverse E1 through E3) is to be set to "ON".

2 Relay Output For Connectible Switch-On Consumers (additional function)

This potential-free relay output is switched on as soon as LIGHTwatcher activates the power saving mode.

This is useful for special applications. Think of a lift that has landing doors with windows: passengers can not see that the car is there and will not enter it, if it is not illuminated. To avoid such a situation, the emergency light can be connected to this relay output in order to have the cabin illuminated a little and, at the same time, save energy, as the main light is off.

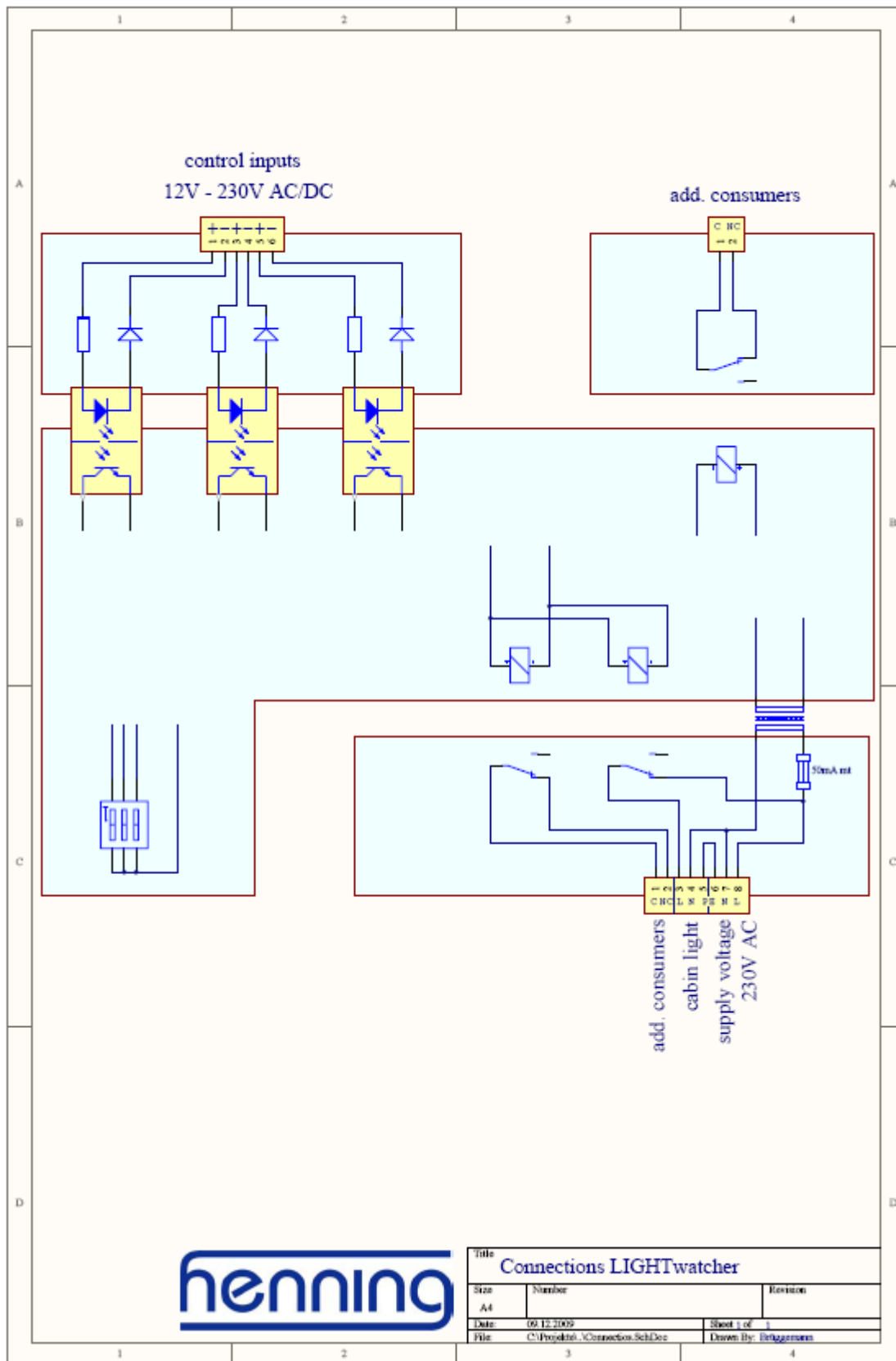
Power saving mode active: relay-contact closed

1 Supplementary Control Inputs (additional function)

There are three potential-free inputs E1 through E3, that can be reversed as well. They are intended for special applications, where not only the internal movement-sensors but also other sensors or functions (such as for example pressing the alarm button) shall switch the cabin light on. These inputs can be wired with direct or alternating current signals between 12 V and 230 V. As regards reversing of the inputs, refer to 3.

After connecting LIGHTwatcher to the supply voltage, it will take approx. 30 sec for the movement-sensor to be ready for operation. During that time, the cabin light will be left on.

3. Wiring Diagram





4. Technical Specification


Supply voltage	230 V AC
Power received	2 VA
Relay outputs	3
switching voltage max.	250V AC
starting current max.	15A
constant current max.	10A
switching current (resistive load) max.	2500VA
switching current (ind. load) max.	500VA
switching load min.	0.3W
Supplementary control inputs	3
Control voltage	12 V – 230 V AC/DC
Dimensions	106 x 90 x 48 mm
Delay adjustable between	1 min and 10 min
Degree of protection	IP 20


5. Functions


LIGHTwatcher is to be mounted directly onto the car roof, in order to realise movements in/of the car by its sensors, that are sensitive enough to even detect movements of the car door.

As soon as a movement in the car is perceived, the cabin light is switched on. The switching threshold for sensing movements can be set directly on the LIGHTwatcher-gadget. 



Provided that no further car or door movements are sensed, a certain time will elapse before the cabin light is switched off again. This delay can be preset as well. 

To install LIGHTwatcher, the lighting branch-circuit is simply cut and LIGHTwatcher placed in 5. Supplied with power by the lighting branch-circuit, LIGHTwatcher does not require any further wiring. 

LIGHTwatcher can, apart from the cabin light, switch off an additional consumer.  Moreover, for the power-saving mode a third contact has been provided that can

switch on a consumer  , so as to activate the emergency light for example for the time the main cabin light is off.

For special applications that require the cabin light to be activated not only by the movement-sensors but also by other sensors or functions, three potential-free

inputs  have been provided, that can be used reversely  as well.