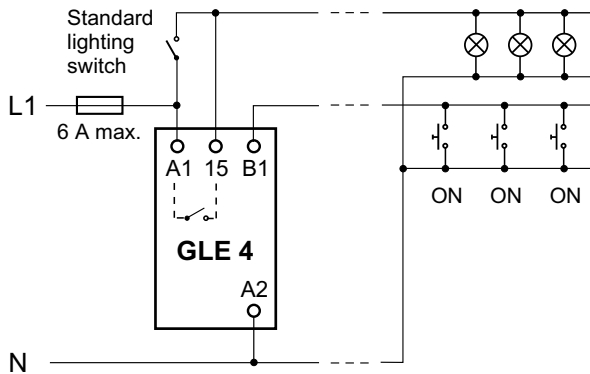


# Automatic staircase lighting switch GLE 4

The GLE 4 device is destined supply voltage to the lighting circuits on pushing the "ON" buttons mounted at each floor and to turn the lighting off automatically following the adjusted delay time.

Powering the lighting circuit causes a built-in relay to be activated without the "ON" button having to be pushed. This relay drops out elapsing of the T time adjusted on a scale. The whole cycle is repeated whenever the "ON" button is pushed.

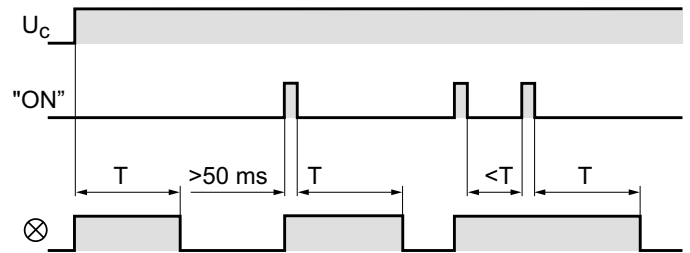


Pushing in the button while the "T" time is running causes the preset time delay and restarted. Getting the "ON" button stuck in the pushed position causes no harm whatsoever to the device for reasons of the relay being just permanently energized.

One automatic staircase lighting switch is capable of activating altogether 10 pushbuttons with glow tubes and/or any number of pushbuttons without them.

Permanent staircase lighting can be obtained by closing a switch connected across the terminals A1-15.

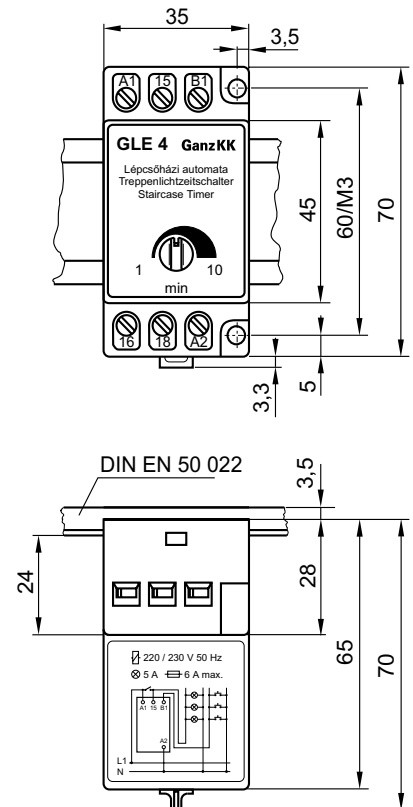
Using consumers with a rating in excess of that specified for the relay requires an auxiliary switch to be interconnected.



## Technical data

Rated control circuit voltage ( $U_C$ )	230 V +10 %, -15 %, 50 Hz
Power consumption	5 VA max.
Range of delay time	1 ... 10 min $\pm 20$ %
Repetition accuracy at rated voltage	$\pm 1$ %
Ambient temperature range	-5 ... +40 °C
Rated insulation voltage	250 V 50 Hz
Test voltage	1,5 kV 50 Hz
Degree of protection	IP 20
Mounting position	any
<b>Built-in relay</b>	
-type	1 make
-rated operational voltage	230 V 50 Hz
-rated thermal current	6 A
-switching power (with 40 or 60 W bulbs)	1200 W
-rated operating current (230 V, AC-15)	2 A
-electric endurance	100 000 c
Dimensions	35×70×70 mm
Mounting	M3 bolts (2 pcs) or on a 35 mm mounting rail
Type of electric connection	wire-clamping element
Cross-section of connectable wires	0,75 ... 1,5 mm <sup>2</sup>
Mass	approx. 0,3 kg
Relevant standard	IEC 669

## Dimensions



# IK type installation contactors

## Application

IK type contactors - installation contactors - are suitable for switching single-phase or three-phase loads (e.g. heat storage ovens, lamps, heat pumps, air-conditioning equipment, ventilators, electrical motors, etc.). Their control is available by push buttons, timers, programmig switches, by signal of a voice frequency control-system, or any suitable impulse.

The characteristic feature of **IK** installation contactors is the silent operation, because the technical solution of the IK 21 contactor is that the contact system and the magnetic

system are moving parallel with mounting surface, and IK 40 and IK 63 have a built-in rectifier in case to use for DC operation.

In this way they are particularly suitable for automatical control of electric devices in the fields of installations at dwellings, office-buildings, shops, hospitals, etc.

Recommended for use in energy-supplying systems, especially at two-tariff system and for switching of staircase lighting as executive device.

## Features

- IK contactors can be snapped on a rail by EN 50022, or they can be fixed by 2 pcs M4 screws,
- design is favourable for mounters (easy connection, big terminals),
- they are lead-sealable in opened or in enclosed variant,
- degree of protection IP 20,
- they can be mounted into the 45 mm wide cut out of distribution boxes used in electric installation of buildings,
- LED indicates position of the contacts (in case of IK 40 and IK 63).

## Technical data

Types	IK 21	IK 40	IK 63
<b>General data</b>			
Relevant standards	EN 60947-4-1; EN 61095		
Mounting vertical surface $\pm 30^\circ$	TS 35 rail, 2 pcs M4	TS 35 rail	
Ambient temperature [ $^\circ\text{C}$ ]	operating	- 5...+ 55	- 5...+ 40
	storage	- 30...+ 80	
Climatic conditions	by standard IEC 68		
Mechanical durability [c]	3×10 <sup>6</sup>		
Degree of protection	IP 20		
Width [mm]	35	53,5	
Masse [kg]	0,17 / 0,23*	0,40 / 0,48*	
Cross section of connecting wires [mm <sup>2</sup> ] solid / stranded	1 ... 4 / 2,5	1 ... 25 / 16	
Terminal screw	M 3,5	M 5	
Tightening torque [Nm]	1,2	2	
<b>Control system</b>			
Rated ins. voltage U <sub>i</sub> [V]	415	500	
Rated control circuit voltage (0,8...1,1) U <sub>c</sub>	24, 110, 230 V AC	24, 110, 220, 230, 240 V AC, DC	
Power consumption of coil [VA/W]	inrush	37 / 32	50 / 30
	hold	5,5 / 1,5	15 / 5
Switching times [ms]	on	7 ... 20	15 ... 20
	off	10 ... 20	35 ... 45
Switching frequency max. [c/h]	360	120	
<b>Auxiliary contact system (4th contact path)</b>			
Rated ins. voltage U <sub>i</sub> [V]	415	500	
Rated operational current I <sub>e</sub> [A] AC-15	230 V	6	
	400 V	4	

\* in enclosure

Types	IK 21	IK 40	IK 63		
<b>Main contact system</b>					
Rated ins. voltage U <sub>i</sub> [V]	415	500			
Rated impulse withstand [kV]	4				
Rated thermal current I <sub>th</sub> [A]	20	40	63		
Rated operational current I <sub>e</sub> [A] Series connection of 4th contact is not recommended	AC-1, AC-7a	20	40	63	
		AC-3	5	20	30
	DC-1 1 pole	24 V	20	40	63
		110 V	2	4	4
		220 V	0,5	0,8	0,8
	2 poles connected in series	24 V	20	40	63
		110 V	4	10	10
		220 V	1,5	6	6
	3 poles connected in series	24 V	20	40	63
		110 V	6	30	35
		220 V	2,5	20	30
	Rated switchable power [kW]	AC-7a	230 V	7,5	16
400 V			13	26	40
	AC-3; AC-7b	230 V	1,1	5,5	8,5
		400 V	2,2	11	15
Electrical endurance at 400 V AC [10 <sup>5</sup> c]	AC-1	2	1	1	
	AC-3	3	1,5	1,5	
	AC-5a	1 / 36 F	1 / 220 F	1 / 300 F	
	AC-5b	0,5 / 1,5 kW	1 / 4 kW	1 / 6 kW	
	AC-7a	2	1	1	
	AC-7b	3	1,5	1,5	
Stray power/current path [W]	2	4	8		
Back-up fuse gL max. rating	25 A	63 A	80 A		

AC-5a Switching of electric discharge lamp control

AC-5b Switching of incandescent lamps

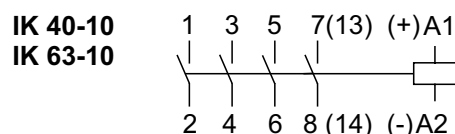
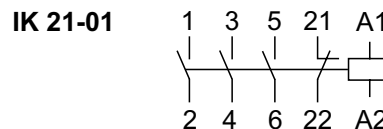
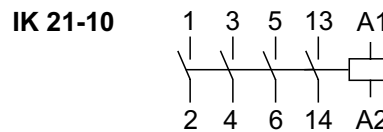
AC-7a Slightly inductive loads in household appliances and similar applications

AC-7b Motor-loads for household applications

## Maximum number of lamps per phase

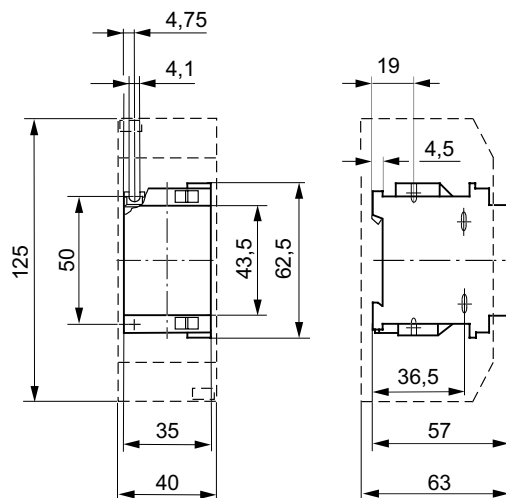
Types		IK 21	IK 40	IK 63
Fluorescent lamps (uncompensated)	18 W	24	90	140
	36 W	20	65	95
	58 W	13	40	60
Fluorescent lamps (compensated)	18 W	8	45	70
	36 W	8	45	70
	58 W	5	25	43
Fluorescent lamps (dual fitted)	18 W	2 x 48	2 x 100	2 x 150
	36 W	2 x 24	2 x 65	2 x 95
	58 W	2 x 15	2 x 40	2 x 60
Low pressure sodium-vapour lamps (compensated)	35 W	1	10	16
	55 W	1	10	16
	90 W	1	8	12
	135 W	-	4	7
	180 W	-	4	7
High pressure sodium-vapour lamps (compensated)	50 W	3	22	33
	70 W	3	18	27
	110 W	2	18	27
	150 W	1	10	16
	250 W	1	6	9
	400 W	-	4	7
	1000 W	-	2	3
Fluorescent lamps with electronic starting device AC-operation	1 x 18 W	30	60	80
	1 x 36 W	16	30	42
	1 x 58 W	12	22	30
	2 x 18 W	32	40	48
	2 x 36 W	16	20	26
2 x 58 W	10	10	18	
Incandescent lamps	60 W	25	65	85
	100 W	15	40	50
	200 W	7	20	25
	500 W	3	8	10
	1000 W	1	4	5
Energy saving lamps	7 W	15	100	150
	11 W	15	100	150
	15 W	15	100	150
	20 W	10	70	70
Halogen lamps	200 W	5	15	20
	300 W	3	10	13
	500 W	2	6	8
	1000 W	1	3	4
Low pressure sodium-vapour lamps (uncompensated)	35 W	6	13	20
	55 W	6	13	20
	90 W	4	9	14
	135 W	3	6	9
	180 W	3	6	9
High pressure sodium-vapour lamps (uncompensated)	50 W	12	24	38
	70 W	10	20	30
	110 W	7	16	25
	150 W	5	10	16
	250 W	3	6	10
	400 W	2	4	6
	1000 W	-	2	3

## Contact-versions:

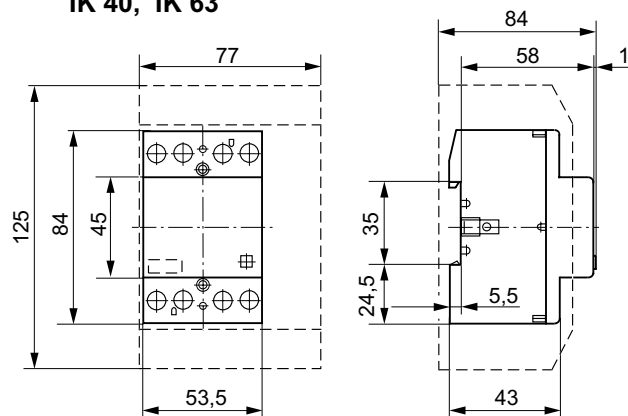


## Dimensions

### IK 21



### IK 40, IK 63



--- = enclosure IP 20

# Residual current circuit breakers GFI

GANZ Kapcsoló- és Készülékgyártó Ltd. distributes the GFI residual current breakers in the framework of a co-operation with a reputable Western-European company.

Residual current circuit breakers (RCCB):

- make protective earthing less expensive as earth resistance, related to a given touch voltage, can be much higher;
- are most effective to in prevent accidents of electric shock since the current, flowing through the person accidentally touching the phase line, is disconnected in short time;
- play an important role in preventing fires resulting from deteriorated insulation as the earth-shortened equipment is disconnected at the value of residual current.

The two- and four-pole RSSBs operate on electromagnetic principle, they have not any electronic system.

The "AC" type RCCBs sense the alternating residual current only, the type-sign shows AC letters. The "A" type RCCBs sense the alternating and the pulsating direct residual current too (the type-sign does not contain any marking) and their functioning is not disturbed by controlling devices containing semiconductors.

Neither the two-, nor the four-pole design contains built-in short-circuit and overload protection, so these protective devices have to be fitted additionally.

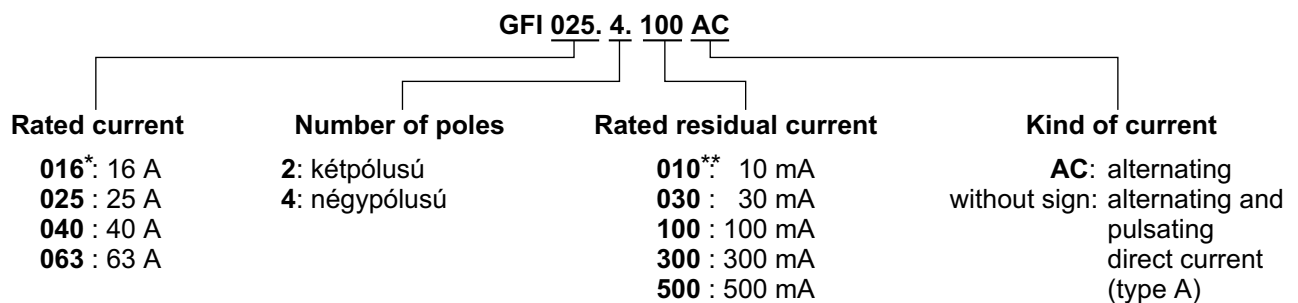
The short-circuit and overload-protective devices that are to be fitted on line with the residual current circuit breaker in case of different rated currents and presumed value of short circuit currents are:

- 63 A: gL80
- 40 A: gL63
- 25 A: gL63
- 16 A: gL63

The allowed earth resistance maximums for the different rated residual current release in case of 25 V and 50 V touch voltage are:

$I_n$ [mA]	$R_m$ [ ] at 25 V	$R_m$ [ ] at 50 V
10	2500	5000
30	835	1670
100	250	500
300	83	167
500	50	100

## Ordering information



\* At double-pole executions only

\*\* At double-pole  $I_e=16$  A and 25 A executions only

To choose the appropriate residual current circuit breaker, it must be considered that for the effective shock-protection the device having the higher sensitivity is the better, but the application is restricted by the fact that the capacitive and leakage currents in larger networks can exceed the residual (fault)-current release limit and this could lead to an unnecessary release.

To solve the problems:

- The fitting of a RCCB with sensitivity 300 mA or 500 mA at the feeding point of a larger network,
- The fitting of a RCCB with sensitivity 30 mA of the important premises (e.g. flats, bathrooms, kitchens, etc.) from point of view of electric shock.

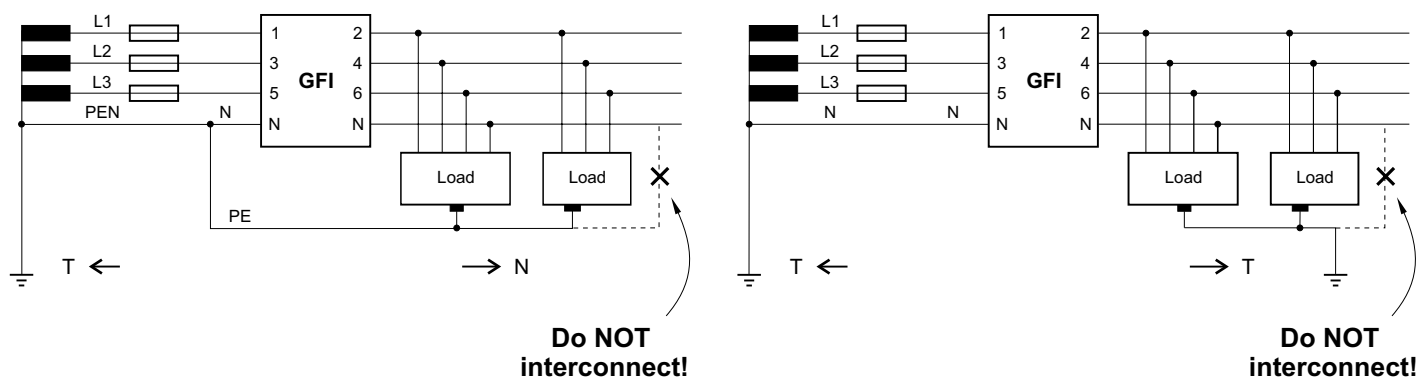
The installation of the RCCBs should be done by an expert only.

When installing, specific attention must be paid, because the following connection should be made:

- in and out neutral conductors (N) with each other, or,
- on the load side, the earth wire and the neutral conductor with each other.

The devices do not need maintenance, only the functioning must be checked once a month by pushing the TEST button.

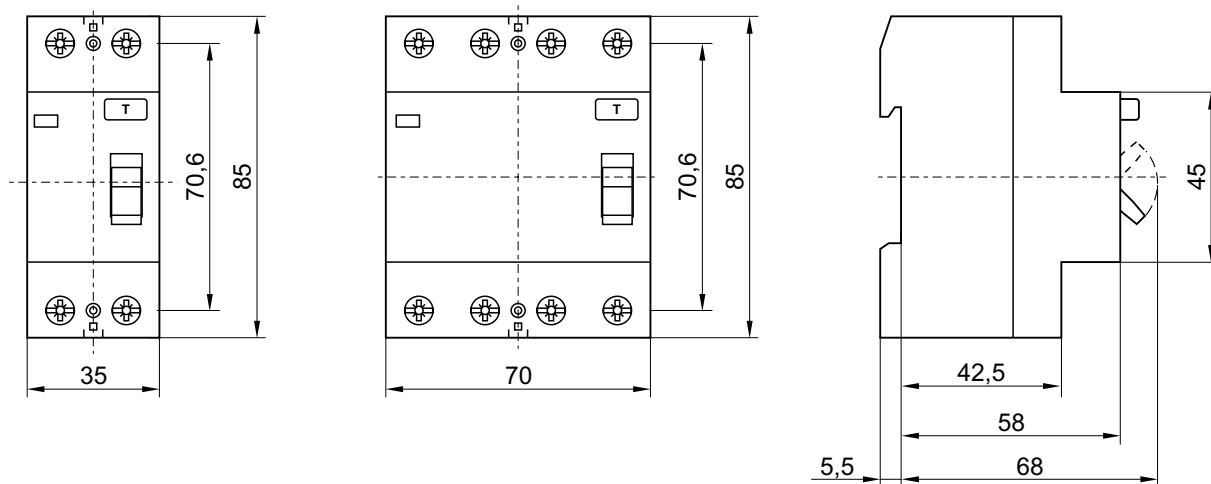
## Wiring diagram



## Technical data

Number of poles			2				4		
Rated current	$I_n$	A	16	25	40	63	25	40	63
Rated residual operating (fault) current	$I_n$	A	0,01	0,01					
			0,03	0,03	0,03	0,03	0,03	0,03	0,03
			0,1	0,1	0,1	0,1	0,1	0,1	0,1
			0,3	0,3	0,3	0,3	0,3	0,3	0,3
			0,5	0,5	0,5	0,5	0,5	0,5	0,5
Rated voltage	$U_n$	V	230				230/400		
Rated frequency		Hz	50/60						
Rated short-circuit capacity $I_m$	$I_m=I_m$	A	500				630		
Rated residual capacity $I_m$			500				630		
Allowed value of fuse	$I_n$	gL (A)	63	63	63	80	63	63	80
Rated conditional short-circuit current	$I_{cn}$		10 000 A						
Degree of protection			IP 20, after building in enclosure IP 40						
Mounting position			any						
Ambient temperature			-25°C ... +40°C						
Mass			230 g				390 g		
Wiring capacity			1... 25 mm <sup>2</sup>						
Release time			at 1× $I_n$ : <0,2 s; at 5× $I_n$ : <0,04 s						
Electrical endurance			>10 000 c						

## Dimensions



# Dimming switch GFK 2

Dimming switches type GFK 2 are designed to automatically turn on the various lights in the evening and turn them off at sunrise.

In daylight, the relay inside the device is deenergized. As soon as the light intensity falls to below the preset value, it is energized and a circuit is made. The cycle taking place when the light intensity increases is reversed. The circuit is made with a certain delay in order to prevent any unnecessary disconnections due to short-term increases in the light intensity (such as f. in. caused by lightning.)

The device comes preset to the desired activating threshold (to be specified when ordering), which is somewhere between 5 and 40 lux. Unless otherwise ordered, it leaves the factory preset to between 10 and 25 lux, a widely accepted rule-of-thumb value.

When installing, should be mounted to a vertical surface, with the covering upwards, using 2 pcs. M5 screws.

When mounting, it should be made sure that enough light falls onto the device, and that other light sources possibly disturb with the night-time operation are avoided.

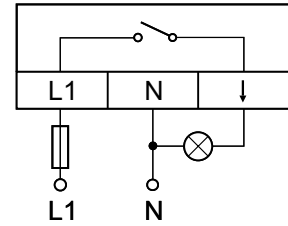
When connecting it should be removed the covering and connected the three-wire cable to the terminal block by reason of wiring diagram given on the nameplate. Recommended wire: A05VV-F3×1 mm<sup>2</sup>, blue, brown, black.

It is a good practice to clean the covering of the dimming switch at regular intervals in function of the climatic conditions in order to prevent reduced transparency.

## Technical data

Rated insulation voltage	250 V
Rated control circuit voltage	230 V 50 Hz +10 %, -15 %
Power consumption	5 VA max.
Activating threshold	10 ... 25 lx
Deactivating threshold	1.3 ... 1.8 times the actual actuating threshold
Operate delay on abrupt changes in light intensity	2 s min.
Switching frequency	120 c/h max.
Degree of protection	IP 54
Shock protection method	by double insulation
Operating temperature range	-20 ... +50 °C
Wiring capacity	0,5 ... 1,5 mm <sup>2</sup>
Operating position	with the covering pointing upwards
Mass	0,4 kg
Contact	1 make (closed in darkness)
Rated operational voltage	230 V, 50 Hz
Rated thermal current	8 A
Allowable loading current and electric endurance	1,6 A and 10 <sup>5</sup> cycles 900 W and 2×10 <sup>4</sup> cycles
Recommended fuse	6 A (slow-blow)
Relevant standard	IEC 669

## Wiring diagram



## Dimensions

