

Applications 2009



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The power in relays and timers since 1954

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Control of lighting system with manual or automatic switch-off.

Examples of applications:

- garage lighting
- lighting of corridor

Description:

Staircase timer K1 controls light fittings E1 and E2. K1 will normally be manually activated by pressing illuminated push-button S1 or S2.

With K1 set to the IT function mode, the lights can be allowed to turn off automatically after the K1 set time has expired (0.5...20 min). Or, they can be manually switched off by a second press of one of the push-buttons S1 or S2.

Relay K3 allows the lights to be switched on by an external command, which is electrically isolated from the push-buttons circuit. However, externally terminating the lighting time period is prohibited by the normally closed contact of K2, which inhibits the activation of K3 while the lights are on.

List of components:



K1 = staircase timer (set to IT function)
type 14.01.8.230.0000



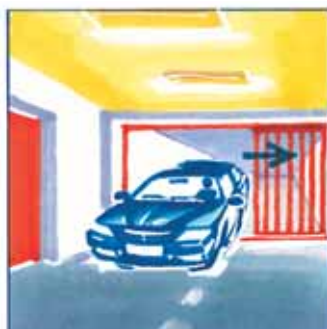
K2 = modular monostable relay
type 22.23.8.230.4000



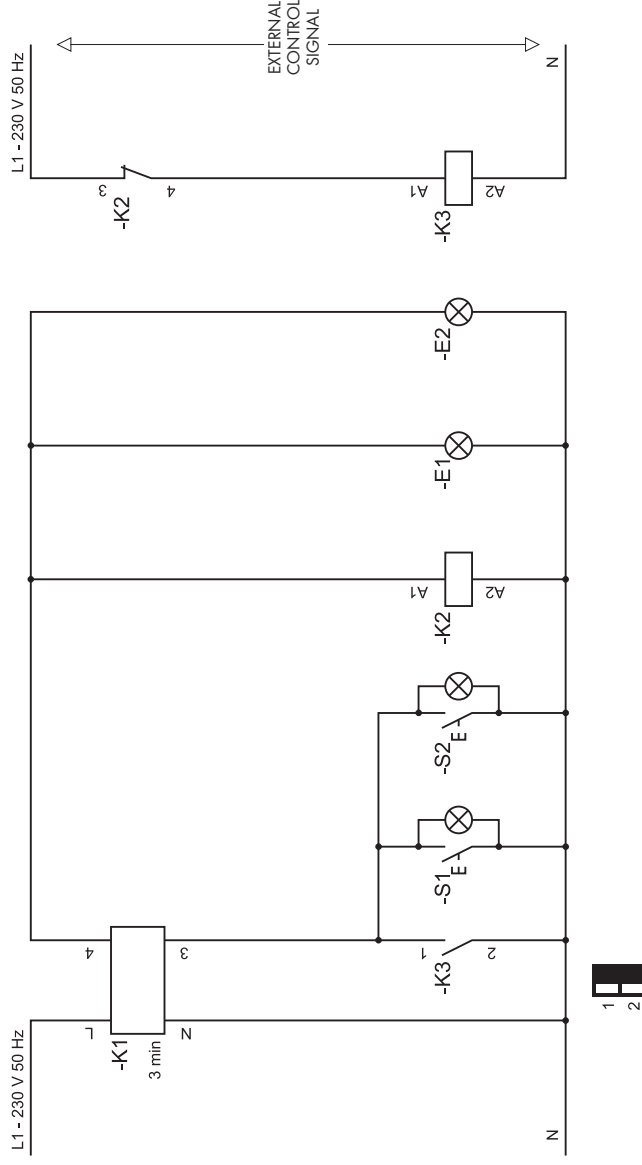
K3 = modular monostable relay
type 22.21.8.230.4000

E1-E2 = light fittings

S1-S2 = illuminated push-buttons, normally open



WIRING SCHEMATIC



LEGEND

- K1 = 14.01.8.230.0000
- K2 = 22.23.8.230.4000
- K3 = 22.21.8.230.4000

Drawing: E10
 Project: Control of lighting system with manual or automatic switch-off

Control of lighting system with automatic switch-off.

Examples of applications:

- staircase lighting
- lighting of areas of common usage/public buildings

Description:

Lights E1.1...2 and E2.1...2 are controlled by two separate circuits via the contacts of miniature power relays K2 and K3.

By pressing illuminated push-buttons S1 or S2, the output contact of staircase timer (K1) closes for the chosen time (0.5...20 min). This in turn activates K2 and K3 - provided S3 and S4 are in the automatic position.

It is possible to extend the time that the lights are on, by pressing one of the push buttons again before the expiry of the K1 set time.

Whenever there is the need to permanently activate one or more lighting circuits, it is possible to select the manual position for S3 and S4.

At dusk the light dependent relay K4 activates relay K5 which in turn will activate the lighting system – subject to there being an external control signal present. Relay K5 provides electric isolation between the push-button circuit and the low voltage external control signal. This option usefully provides for the possibility, at night, to automatically control the lighting in response to the operation of electric garage doors or to the trigger from a PIR detector.

List of components:



K1 = staircase timer (set to BE function)
type 14.01.8.230.0000



K2-K3 = miniature power relay
type 62.32.8.230.0040 +
socket type 92.03 +
LED module/varistor
type 99.02.0.230.98



K4 = modular light dependent relay
type 11.01.8.230.0000

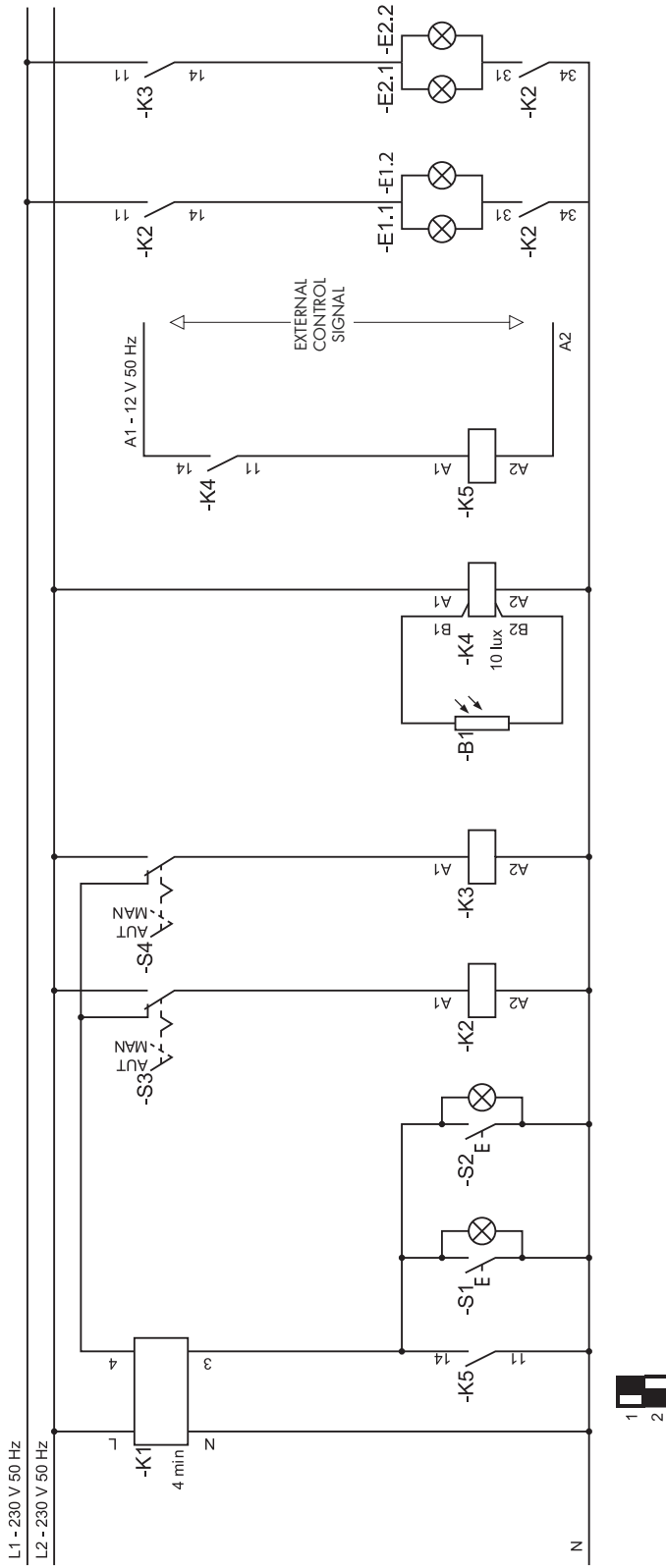


K5 = modular interface with relay
type 48.31.8.012.0060

E1.1-E1.2-E1.3-E2.1-E2.2-E2.3 = light fittings
S1-S2 = illuminated push-buttons - normally open
S3-S4 = position selector switches



WIRING SCHEMATIC



LEGEND

- K1 = 14.01.8.230.0000
- K2 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K3 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K4 = 11.01.8.230.0000
- K5 = 48.31.8.012.0060

Drawing: E11
Project: Control of lighting system with automatic switch-off

Control of lighting system with automatic switch-on and switch-off.

Examples of applications:

- lighting of outside areas
- small public lighting system

Description:

At dusk the light dependent relay K1 automatically activates power relays K2, K3 and K4, provided that selector switches S1, S2 and S3 are in the automatic position. The miniature power relays supply three different lighting groups (E1.1...3.2); these groups being equally distributed over the three supply phases. At dawn, relay K1 switches off the lighting system. Whenever there is the need to permanently activate one or more lighting circuits, it is possible to select the manual position for S1...S3.

List of components:



K1 = modular light dependent relay
type 11.01.8.230.0000



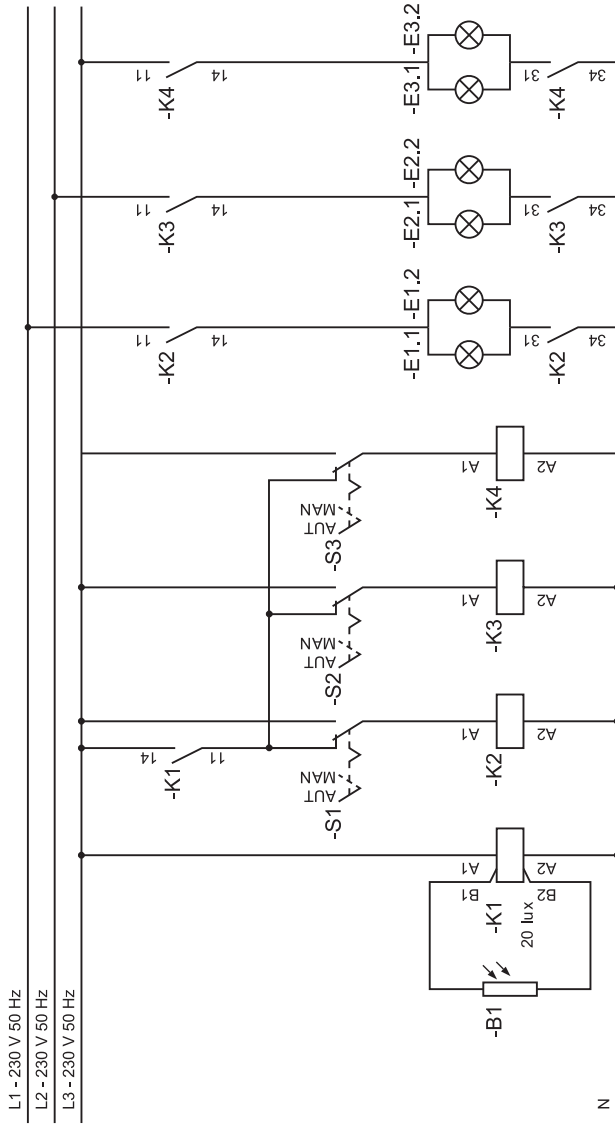
K2-K3-K4 = miniature power
type 62.32.8.230.0040 +
socket 92.03 +
LED module/varistor
type 99.02.0.230.98

E1.1-E1.2-E2.1-E2.2-E3.1-E3.2 = light fittings

S1-S2-S3 = 2 position selector switches



WIRING SCHEMATIC



LEGEND

- K1 = 11.01.8.230.0000
- K2 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K3 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K4 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98

Drawing: E12
Project: Control of lighting system with automatic switch-on and switch-off

Control of lighting system with centralized switch-off.

Examples of applications:

- lighting in stores
- lighting in private houses

Description:

Light fittings E1, E2, E3 and E4 are supplied through the contacts of step relays K2, K3, K4 and K5. By pressing buttons S2, S3, S4 and S5 it is possible to control switch-on and switch-off of the four lighting circuits in an independent way.

Push-button S1 activates relay K1; which in turn will energise the coil of all step relays which are currently active. This therefore achieves a centralized and simultaneous switch-off of all light fittings that were on.

List of components:



K1 = timed interface relay
type 58.34.8.230.0060



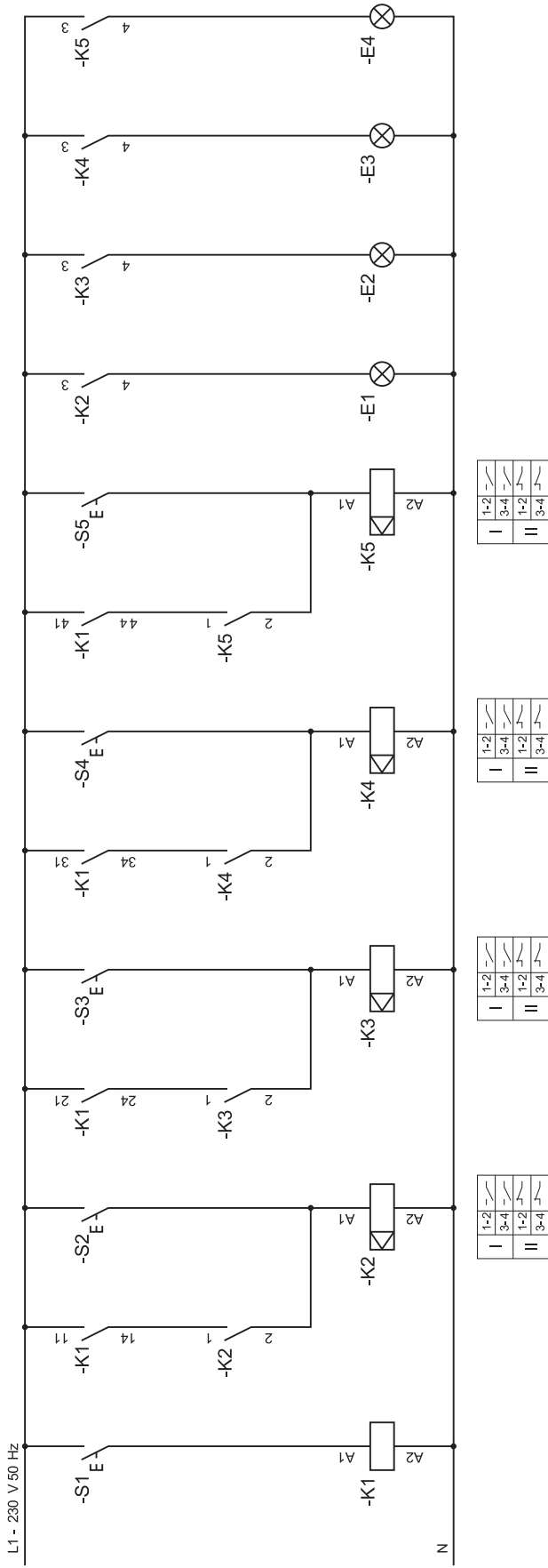
K2-K3-K4-K5 = step relay
type 20.22.8.230.4000

E1-E2-E3-E4 = light fittings

S1-S2-S3-S4-S5 = push-buttons, normally open



WIRING SCHEMATIC



LEGEND

- K1 = 58.34.8.230.0060
- K2 = 20.22.8.230.4000
- K3 = 20.22.8.230.4000
- K4 = 20.22.8.230.4000
- K5 = 20.22.8.230.4000

Drawing: E13
 Project: Control of lighting system with centralized switch-off

Control of lights with automatic switch-on and switch-off.

Examples of applications:

- control of advertising signs
- control of illuminated road signs

Description:

Light dependent relay K1 switches on light fitting E1 at dusk and switches it off at dawn. To avoid oscillations and malfunctioning when the photoelectric sensor of K1 is being illuminated from an artificial source, such as car headlamps, the switch-off of the relay is delayed for a few seconds. The simplicity of the wiring is worth considering.

List of components:

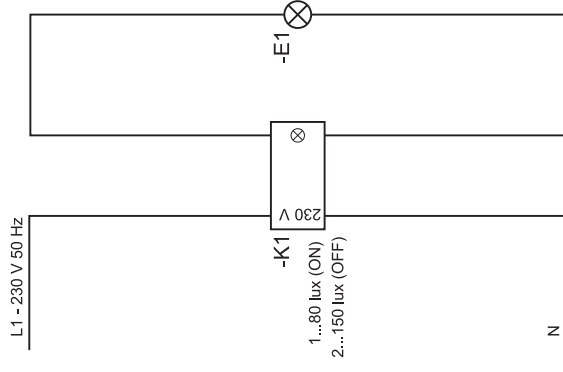


K1 = light dependent relay
type 10.41.8.230.0000

E1 = light fitting



WIRING SCHEMATIC



LEGEND

Drawing: E14
Project: Control of lights with automatic switch-on and switch-off

K1 = 10.41.8.230.0000

Control of lighting system using a low voltage (SELV) push-button.

Examples of applications:

- control for lighting system in humid or wet areas
- control for lighting system in locations with large areas of accessible metal

Description:

By pressing button S1 it is possible to switch-on and switch-off the light fitting E1 through the electronic step relay K1.

Unlike electromechanical step relays, if the supply voltage is lost then the contact of relay K1 opens. With the supply restored, a further press of the S1 push-button is required to re-operate the light.

This step relay is provided with a separated extra low voltage (SELV) control circuit that is electrically isolated from the supply circuit and from the power contact (Ui 4000 V). This is thanks to a high security transformer inside the relay, built in accordance with norm EN 61558. This feature makes this product useful for the installation of control push-buttons in areas or rooms exposed to a high risk of electrical shock - in accordance with limitations of norm EN 60364 (CEI 64-8).

List of components:



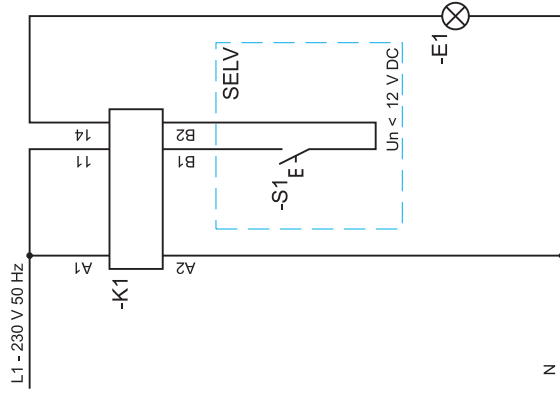
K1 = electronic step relay
type 13.01.8.230.0000

E1 = light fitting

S1 = push-button, normally open



WIRING SCHEMATIC



LEGEND

Drawing: E15
 Project: Control of lighting system using a low voltage (SELV) push-button

K1 = 13.01.8.230.0000

Sequential control of lighting circuits.

Examples of applications:

- lighting systems in private houses
- lighting systems in commercial buildings

Description:

Step relay K1 is controlled by push-button S1 or S2. With each successive press of S1 (or S2) the two output contacts of K1 change state such that the Lighting follows the sequence:

- E1 on
- E1 & E2 on
- E1 & E2 off

The switching sequence will repeat cyclically with further presses of the push-buttons.

List of components:



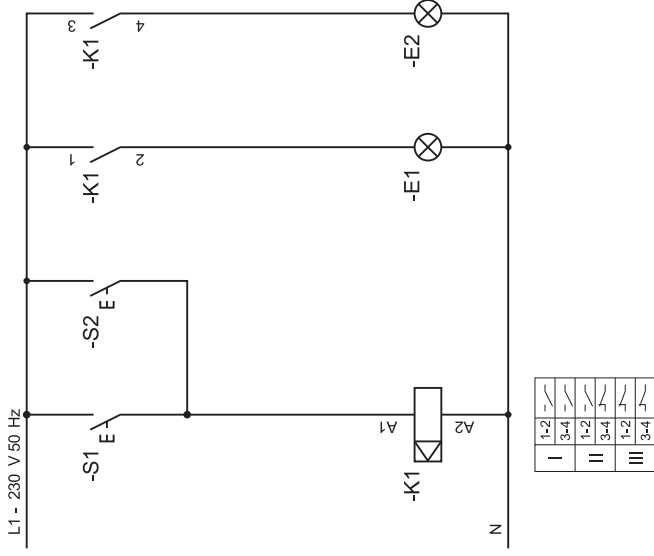
K1 = modular step relay
type 20.26.8.230.4000

E1-E2 = light fitting

S1-S2 = push-buttons, normally open



WIRING SCHEMATIC



LEGEND

Drawing: E16
 Project: Sequential control of lighting circuits

K1 = 20.26.8.230.4000

Control of motorized roller shutter by double function push-buttons.

Examples of applications:

- private homes
- shops

Description:

With a short press of push-button S1, auxiliary relay K1 energises which in turn energises power relay K3. K3 self maintains its energisation and supplies power to motor M1 allowing the roller shutter to completely close.

Similarly, a short press of push-button S2, will result in the roller shutter opening completely (through relays K2 and K4).

If either push-button is pressed for a time longer than that selected on timer K5, the movement of the roller shutter will stop at the instant that the push-button is released.

While the roller shutter is working it is possible to change the working direction of motor M1 by pressing the button of the opposite direction.

List of components:



K1-K2 = timed interface relay
type 48.52.8.230.0060



K3-K4 = miniature power relay
type 56.34.8.230.0000 +
socket 96.04 +
LED module/varistor
type 99.02.0.230.98



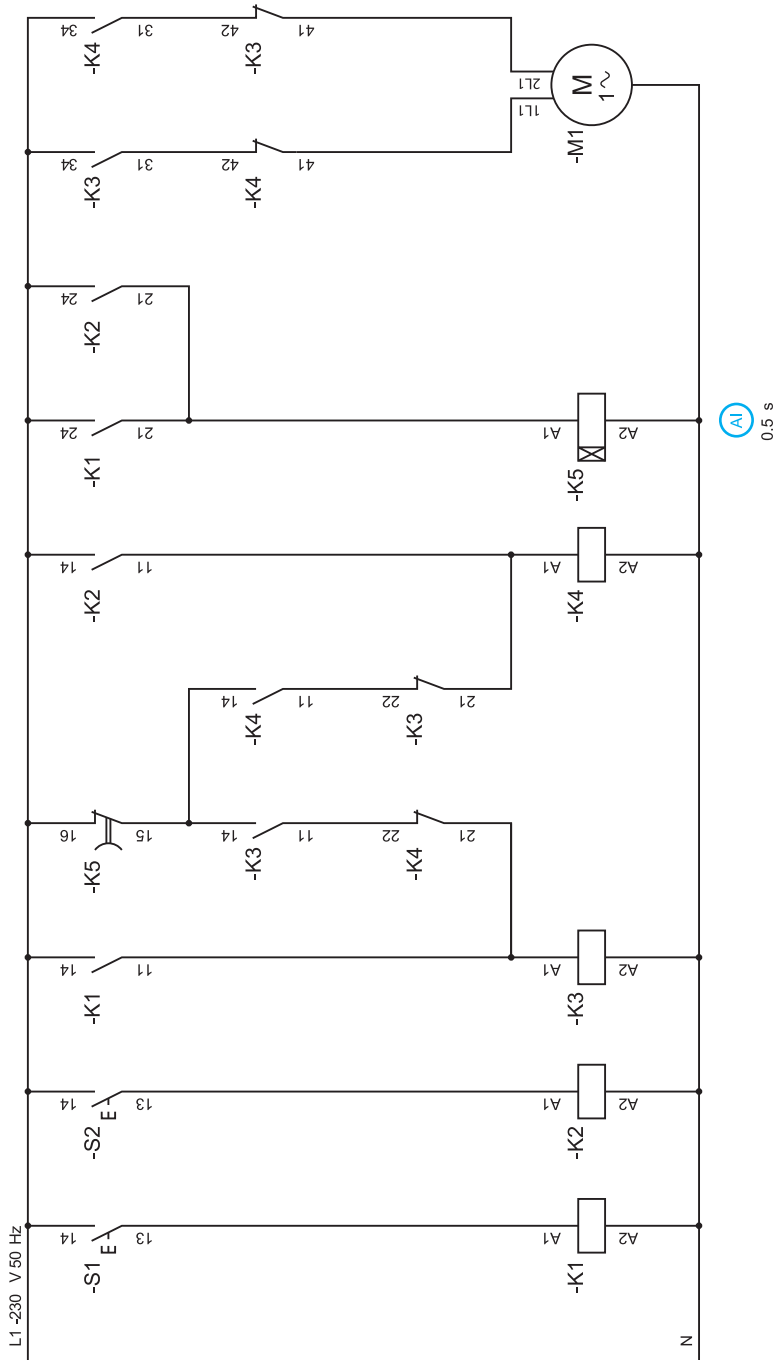
K5 = timer
type 80.01.0.240.0000

M1 = single phase motor for roller shutter
with integral limit switches

S1-S2 = push-buttons, normally open



WIRING SCHEMATIC



LEGEND

- K1** = 48.52.8.230.0060
- K2** = 48.52.8.230.0060
- K3** = 56.34.8.230.0000 + 96.04 + 99.02.0.230.98
- K4** = 56.34.8.230.0000 + 96.04 + 99.02.0.230.98
- K5** = 80.01.0.240.0000

Drawing: E17
Project: Control of motorized roller shutter by double-function push-buttons

Control of signal lamp - timed and blinking.

Examples of applications:

- call on the entrance phone for deaf persons
- call for door opener in quiet areas
(libraries, doctor's offices, radio and television studios)

Description:

Momentarily pressing button S1 will activate timer K1 in the "On Pulse" mode (DI). A normally open contact of K1 supplies timer K3 set on blinking function (SW). The normally open contact of K3 powers the signal lamp E1 which will continue to blink for the time selected for K1. Pressing button S2 at any time will interrupt the signal lamp.

List of components:



K1-K3 = Plug-in timer
type 85.02.8.240.0000

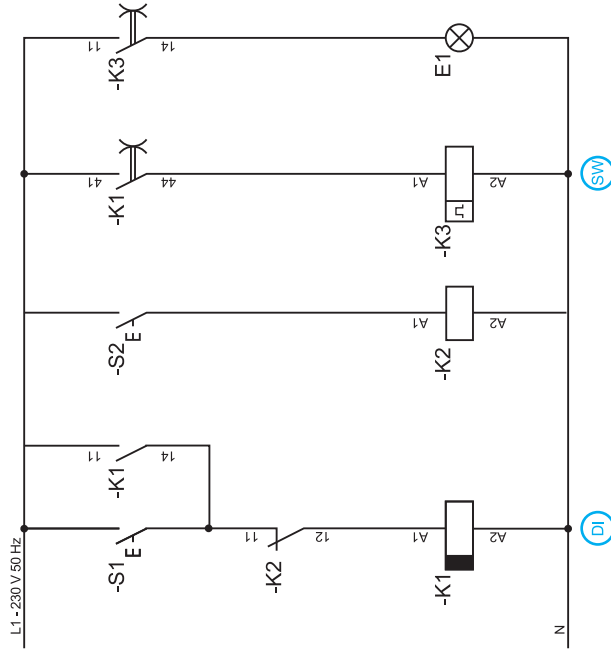
K2 = timed interface relay
type 48.31.8.230.000.0060

E1 = signal lamp

S1-S2 = push-button, normally open



WIRING SCHEMATIC



LEGEND

- K1 = 85.02.8.240.0000
- K2 = 48.31.8.230.0060
- K3 = 85.02.8.240.0000

Drawing: E18
 Project: Control of signal lamp - timed and blinking

Alternating the duty of two 3-phase motors.

Examples of applications:

- pump installations
- air compressors

Description:

As soon as the 24v control circuit powers up, timer K1 (set for DI function) energises and in turn applies a short pulse to the coil of step relay K2 (equal to the time setting for K1). This changes the state of step relay K2 contacts, so that the motor now ready for duty is the one that was previously off duty.

Timer K5 is set for "On Delay" (AI) and inhibits either motor being started during a short time period following powering up the control circuit (K5 time must be set slightly greater than K1).

After the expiry of K5 set time, the motors are turned on and off by miniature power relays K3 and K4, which are under the On/Off control of S1, with the duty being determined by the state of the contacts of K2. Every time S1 opens, the supply to K3 and K4 is cut and the supply to the motor on duty is removed. At the same time, power is re-applied to timer K1 which repeats the timing cycle that pulses the step relay K2, which in turn changes the motor duty ready for the next closure of S1.

List of components:



K1-K5 = relay type 40.31.8.024.0000 +
socket type 95.03 +
timer module
type 86.30.0.024.0000



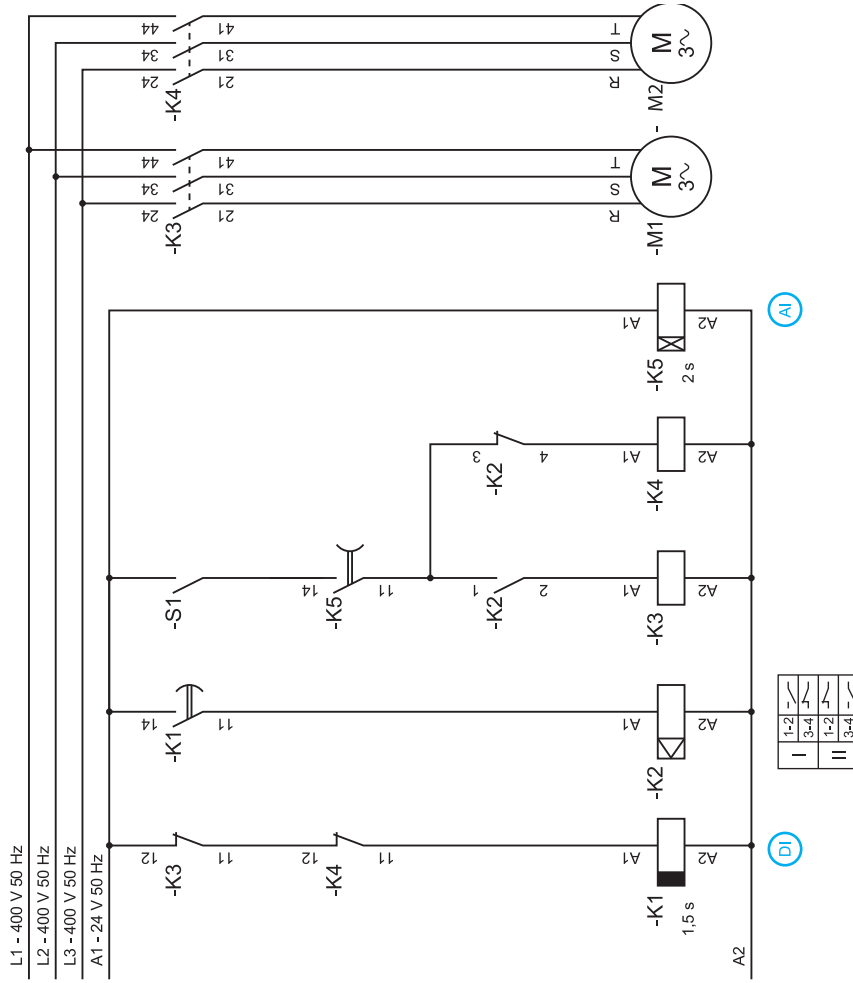
K2 = step relay
type 20.23.8.024.4000



K3-K4 = miniature power relay
type 56.34.8.024.0000 +
socket type 96.04 +
LED module/varistor
type 99.02.0.024.98

M1-M2 = three-phase motors



WIRING SCHEMATIC

LEGEND

- K1 = 40.31.8.024.0000 + 95.03 + 86.30.0.024.0000
- K2 = 20.23.8.024.4000
- K3 = 56.34.8.024.0000 + 94.04 + 99.02.0.024.98
- K4 = 56.34.8.024.0000 + 94.04 + 99.02.0.024.98
- K5 = 40.31.8.024.0000 + 95.03 + 86.30.0.024.0000

Drawing: E19
Project: Alternating the duty of two 3-phase motors

Sequential control A-B-C with one single push-button.

Examples of applications:

- lighting systems
- control of a three-phase motor

Description:

Every time when pushing button S1 relay K1 is activated. The first time S1 is pressed the contact K1, which is normally open, supplies the coil of the step relay K2 and operates the closing of both contacts of this relay. The contacts of K2 activate simultaneously relays K3 and K4, which switch-on light E1. The second time S1 is pressed the first contact of K2 opens and de-activates relay K4 and this switches-off light E1 and switches-on light E2.

The third time S1 is pressed the status of the contacts K1 changes, light E2 switches-off and light E3 switches-on. The fourth time S1 is pressed all lights are switched-off. Note: the lights switch-on at the instant push-button S1 is released.

List of components:



K1-K3-K4 = timed interface relay
type 58.34.8.230.0060



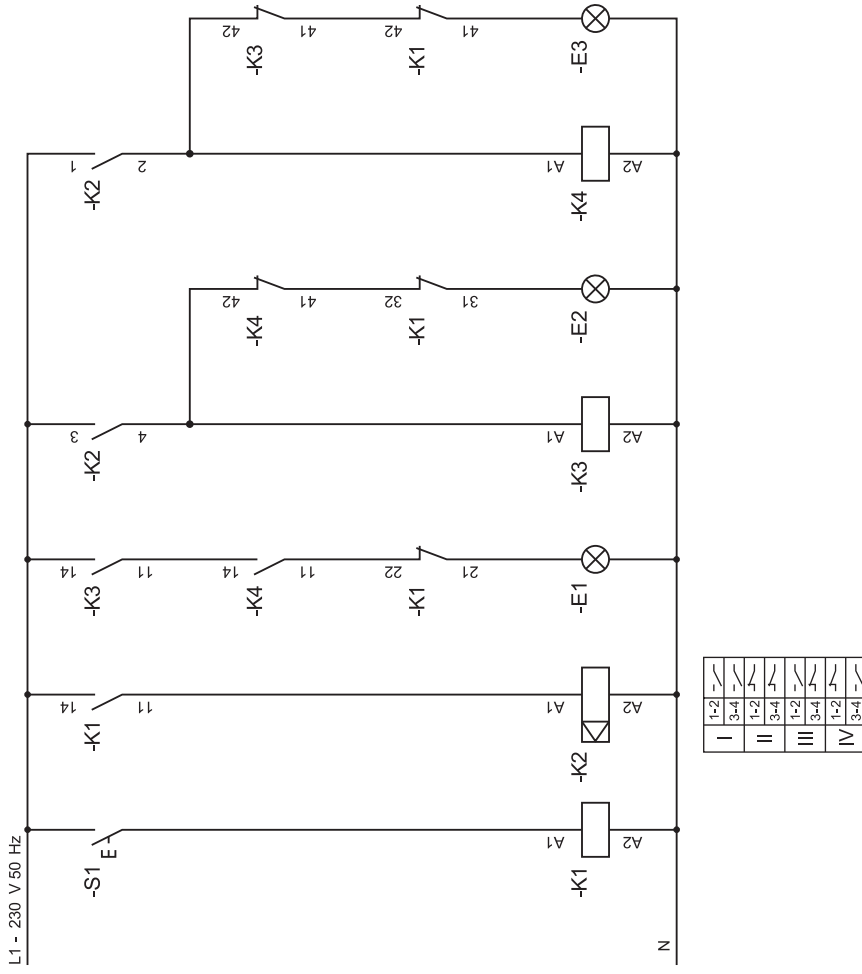
K2 = step relay
type 20.24.8.230.4000

E1-E2-E3 = light fittings

S1 = push-button, normally open



WIRING SCHEMATIC



LEGEND

- K1 = 58.34.8.230.0060
- K2 = 20.24.8.230.4000
- K3 = 58.32.8.230.0060
- K4 = 58.32.8.230.0060

Drawing: E20
 Project: Sequential control A-B-C with one single push-button

Regulation to maintain steady lighting level.

Examples of applications:

- energy saving lighting systems

Description:

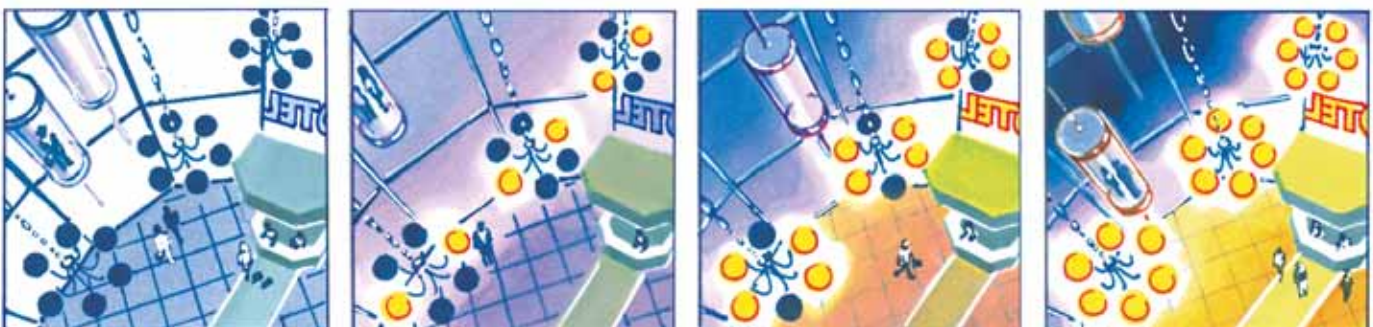
This circuit aims to maintain a steady light level in a room that receives a varying level of natural daylight. Due to the different lux settings of light dependent relays K1, K2 and K3, the artificial lighting E1, E2 and E3 is introduced progressively, as the natural light decreases. Note: the light sensitive photocells B1, B2 and B3 must be located such that they register the natural daylight. Set the lux switching thresholds for the light dependent relays in the order of decreasing lux, starting with K1.

List of components:

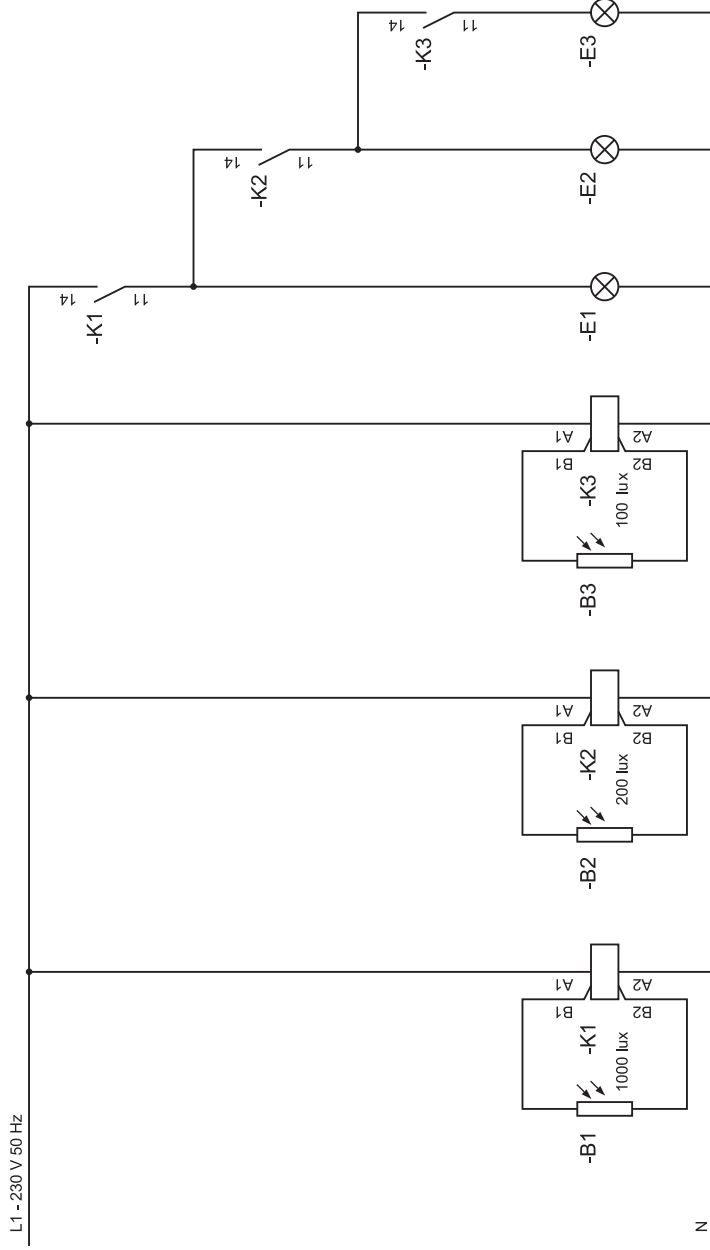


K1-K2-K3 = light dependent relay
type 11.01.8.230.0000

E1-E2-E3 = light fittings



WIRING SCHEMATIC



LEGEND

- K1 = 11.01.8.230.0000
- K2 = 11.01.8.230.0000
- K3 = 11.01.8.230.0000

Drawing: E21
 Project: Regulation to maintain steady lighting level

Controlling the play of a water fountain, with night illumination.

Examples of applications:

- fountain

Description:

When contact S1 closes it energises the timer K1 set for cyclic function (SW). This applies power to the light dependent relay K3, and energises the electric valve Y3 such that the water jets associated with Y3 are now permanently playing.

During it's "on" time, K1 applies power to timer K2 which is also set for cyclic function, but for a time approximately 25% of that for K1.

The cycling CO contact of K2 ensures that, additional to Y3, the water jets associated with valves Y1 and Y2 play cyclically during the "on" time of K1.

At dusk the light dependent relay K3 causes the introduction of the illumination of E1 and E2.

The system voltage is 24v AC because of the humidity and the location of the electrical equipment.

List of elements:



K1-K2 = modular timer
type 80.01.0.240.0000



K3 = modular light dependent relay
type 11.71.0.024.0000

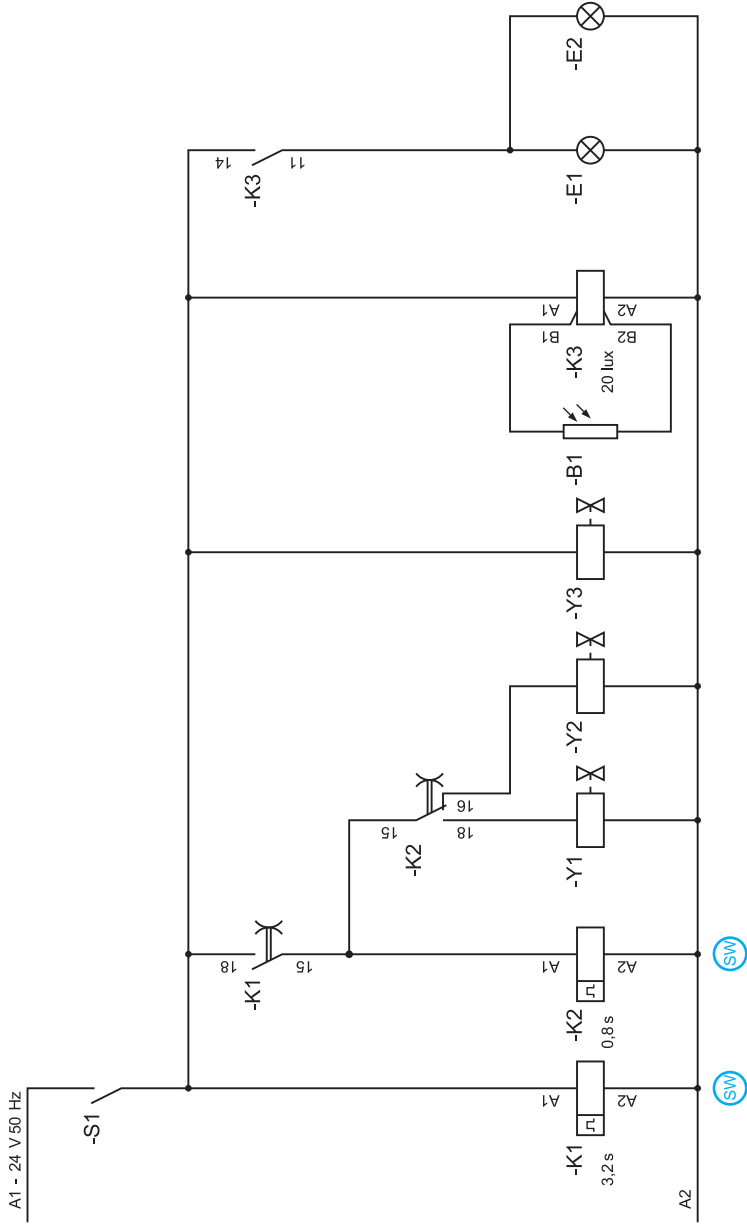
E1-E2 = light fittings

S1 = switch

Y1-Y2-Y3 = electric valves



WIRING SCHEMATIC



LEGEND

- K1 = 80.01.0.240.0000
- K2 = 80.01.0.240.0000
- K3 = 11.71.0.024.0000

Drawing: E22
Project: Controlling the play of a water fountain, with night illumination

Control of a multizone irrigation system.

Examples of applications:

- gardens
- greenhouse cultivation

Description:

Contact of time switch P1 applies power to timer K1, which is set to "On delay" function (AI). Through the normally closed contact of K1, power is applied to electric valve Y1. When the time set for K1 has expired, valve Y1 is de-activated, and timer K2 introduced and electric valve Y2 activated. The sequence continues until the electric valve Y4 has been activated and de-activated according to the time set by K4.

Note: the circuit is modular and therefore expandable. But, always ensure that the time switch contact P1 is closed for a time equal or greater than the sum of the times set on the timers.

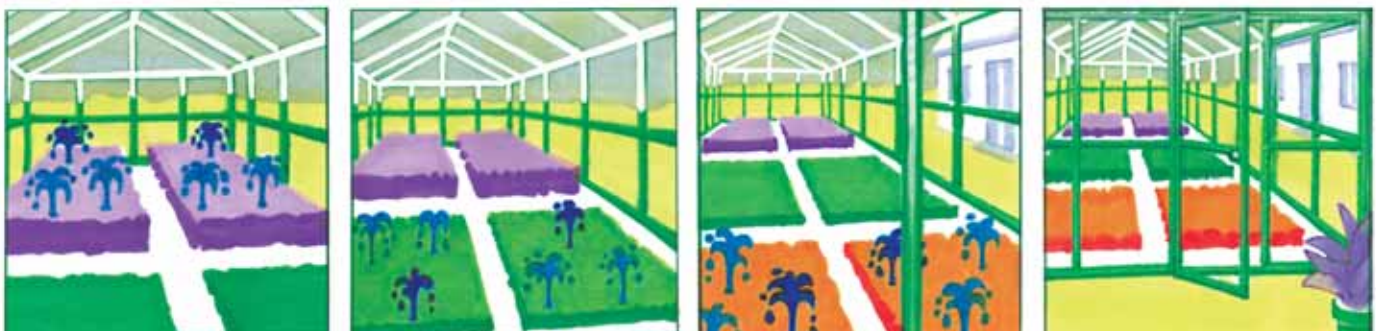
List of components:



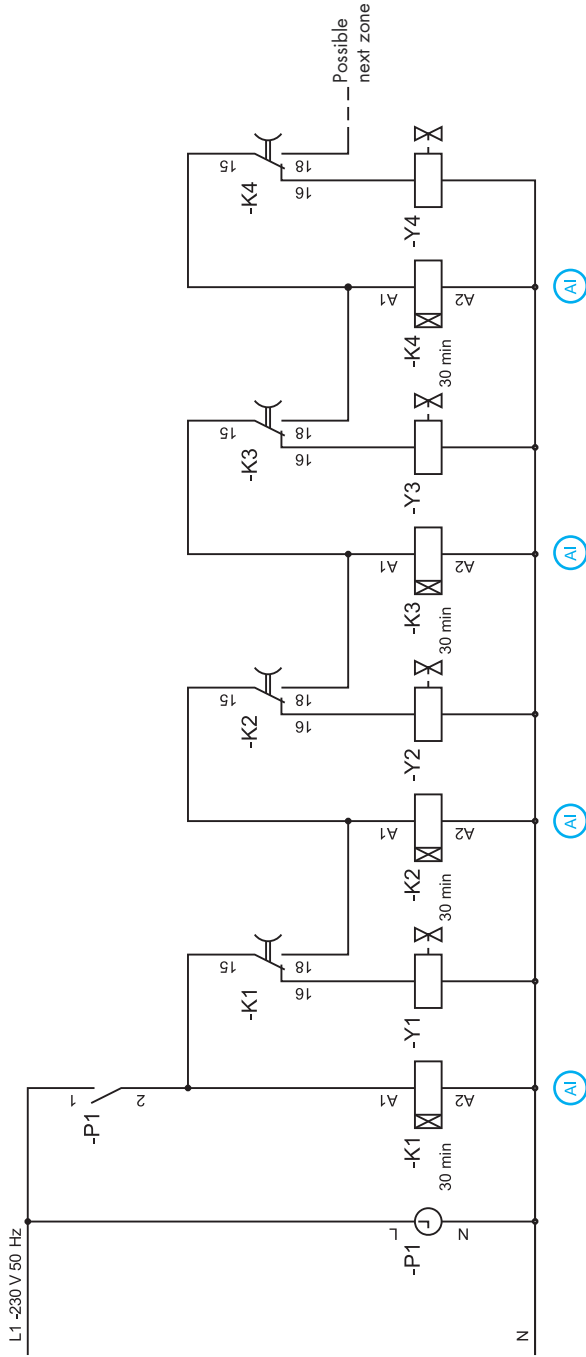
K1-K2-K3-K4 = modular timers
type 80.11.0.240.0000



P1 = time switch type 12.21.8.230.0000
Y1-Y2-Y3-Y4 = electric valve



WIRING SCHEMATIC



LEGEND

- P1 = 12.21.8.230.0000
- K1 = 80.11.0.240.0000
- K2 = 80.11.0.240.0000
- K3 = 80.11.0.240.0000
- K4 = 80.11.0.240.0000

Drawing: E23
 Project: Control of a multizone irrigation system

Time switch and light dependent relay control.

Examples of applications:

- automatic lighting installations

Description:

At dusk the output contact of light dependent relay K1 closes providing power to light fittings E1 and E2. At the end of the time set on the time switch P1, E2 switches-off. E1 will switch-off at dawn.

Note: Set the On time for P1 such that it will occur in advance of the time that light dependent relay K1 senses dusk.

List of components:



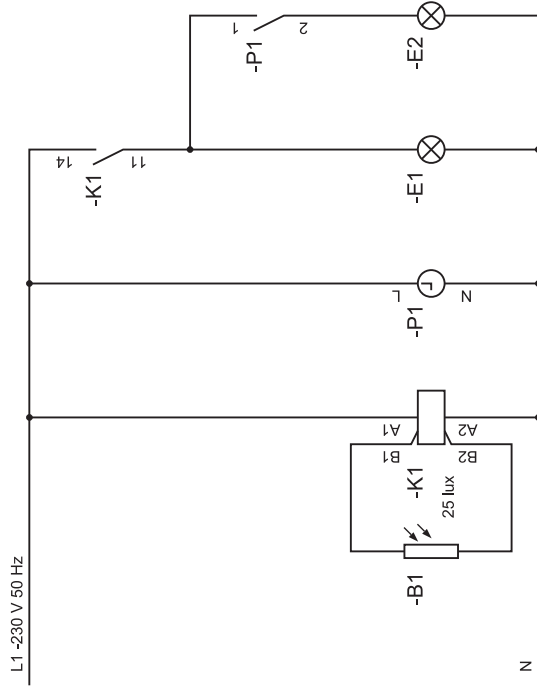
K1 = modular light depending relay
type 11.01.8.230.0000



P1 = time switch type 12.21.8.230.0000
E1-E2 = light fittings



WIRING SCHEMATIC



LEGEND

K1 = 11.01.8.230.0000
 P1 = 12.21.8.230.0000

Drawing: E24
 Project: Time switch and light dependent relay control

Central heating management.

Examples of applications:

- home heating systems

Description:

The normally open contact of time switch P1 activates miniature power relay K1 which controls the heating system pump M1. The equivalent contact of P2 activates miniature power relay K2 and its normally open contact will activate the domestic hot water system pump M2. Miniature power relay K3 controls the burner B1 provided that at least one pump, M1 or M2, is running and that the contact of the thermostat S1 is closed. The first normally open contact of K3 activates the timer K4 set to provide a delay function when switching off. The timer K4 ensures that the anti-condensation pump M4 operates at the same time as the burner B1, but will also continue to run for the time set on K4, after burner B1 stops. Note: S2 is an overriding thermal or safety control contact

List of components:



K1-K2-K3 = miniature power relay
type 62.32.8.230.0040 +
socket type 92.03 +
LED module/varistor
type 99.02.0.230.98



K4 = timer
type 80.41.0.240.0000

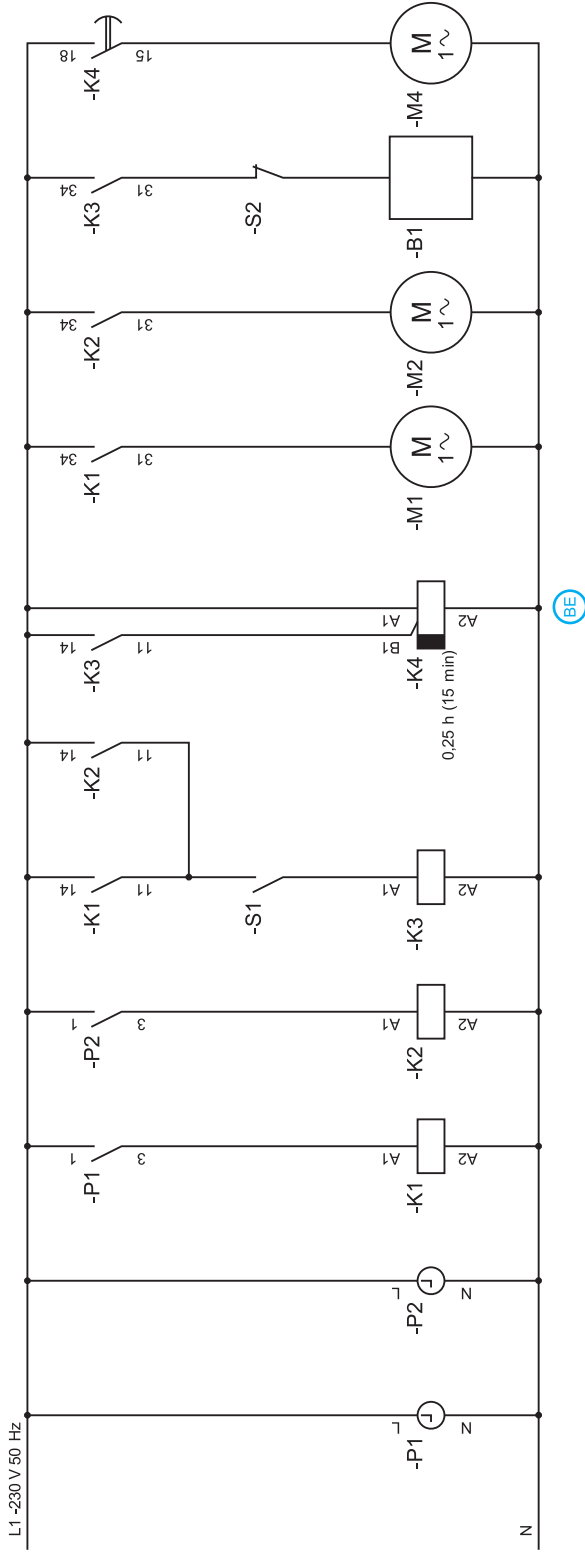


P1-P2 = time switch
type 12.01.8.230.0000

M1 = heating system pump
M2 = sanitary system pump
B1 = burner
M4 = anti-condensation pump
S1 = room thermostat
S2 = safety thermostat



WIRING SCHEMATIC



LEGEND

- P1 = 12.01.8.230.0000
- P2 = 12.01.8.230.0000
- K1 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K2 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K3 = 62.32.8.230.0040 + 92.03 + 99.02.0.230.98
- K4 = 80.41.0.240.0000

Drawing: E25
 Project: Central heating management

Independent management of several lights by push-button or remote control.

Examples of applications:

- home lighting system

Description:

This example shows 3 lighting groups or areas, each comprising 2 light fittings.

It is required that each group of 2 light fittings can be controlled such that all 4 permutations for the 2 lights can be achieved.

Taking the first group comprising lights E1 and E2; these are to be controlled by stepping relay K1, which will sequentially, provide for:

- E1 & E2 off
- E1 on
- E2 on
- E1 & E2 on

Similar provision is made for the other two groups or areas, using stepping relays K2 and K3.

The 3 stepping relays can be individually controlled by respective push-buttons S1, S2 and S3, or by output contacts of a remote control, CR1, CR2 and CR3.

List of components:

K1-K2-K3 = step relay
type 27.05.8.230.0000



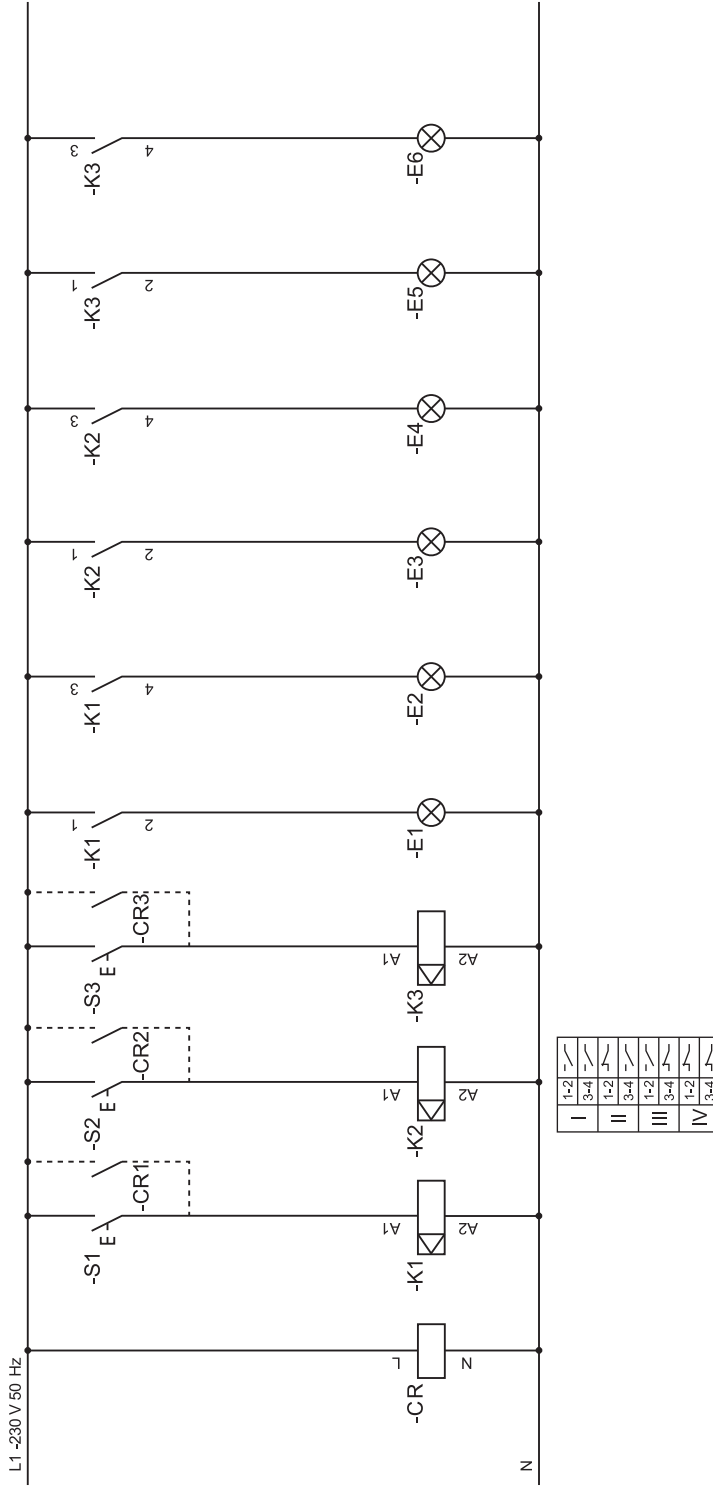
E1-E2-E3-E4-E5-E6 = light fittings

CR = remote control output contacts

S1-S2-S3 = push-buttons



WIRING SCHEMATIC



LEGEND

- K1 = 27.05.8.230.0000
- K2 = 27.05.8.230.0000
- K3 = 27.05.8.230.0000

Drawing: E26
 Project: Independent management of several lights
 by push-button or remote control

Control of lighting by time switch and light dependent relay.

Examples of applications:
- energy saving lighting system

Description:

The light fitting E1 switches on under the control of a contact of time switch P1. At dusk the light dependent relay K1 switches on lighting fitting E2. At the end of the time set by time switch P1, both lighting fittings E1 and E2 will switch off.

List of components:



K1 = modular light dependent relay
type 11.01.8.230.0000

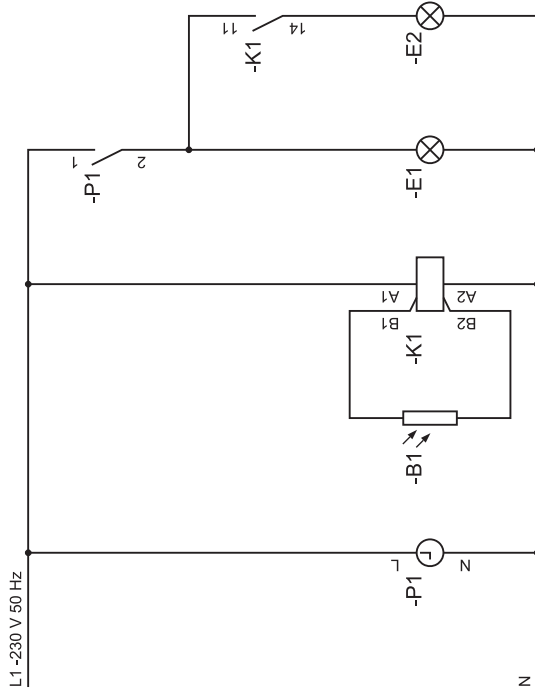


P1 = digital electronic weekly time switch
type 12.21.8.230.0000

E1-E2 = light fitting



WIRING SCHEMATIC



LEGEND

- P1 = 12.21.8.230.0000
- K1 = 11.01.8.230.0000

Drawing: E27
 Project: Control of lighting by time switch and light dependent relay

Control of lighting using a PIR movement detector.

Examples of applications:

- garage, junctions, entrances

Description:

When movement detector SP1 detects movement in a room, it will close it's output contact and activate light E1.

A light dependent sensor in the movement detector can be adjusted to detect movement only when the ambient light intensity is below a specific level. The light will be switched on only for the duration of the time set on the movement detector – after which it resets ready for the next detection of movement.

List of components:

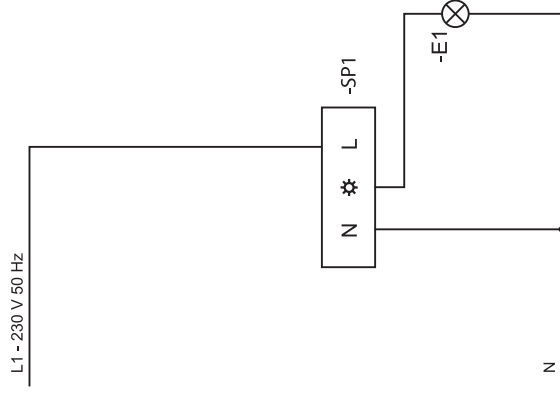


SP1 = movement detector
type 18.01.8.230.0000

E1 = light



WIRING SCHEMATIC



LEGEND

Drawing: E28
Project: Control of lighting using a PIR movement detector

SP1 = 18.01.8.230.0000

Control of light dimmer by push-button or remote control.

Examples of applications:

- lighting in homes

Description:

A Short press of the remote control CR, or switch S1, will alternately switch the Dimmer D1 On or Off – changing the state of the light E1.

Longer operation of CR or S1 will ensure that the light level is progressively raised or lowered through a maximum of 10 steps.

It is important to note that lights must conform to the technical requirements for the dimmer, as detailed in the Instruction manual for the dimmer.

List of components:



D1 = regulatable step relay – dimmer
type 15.51.8.230.0400

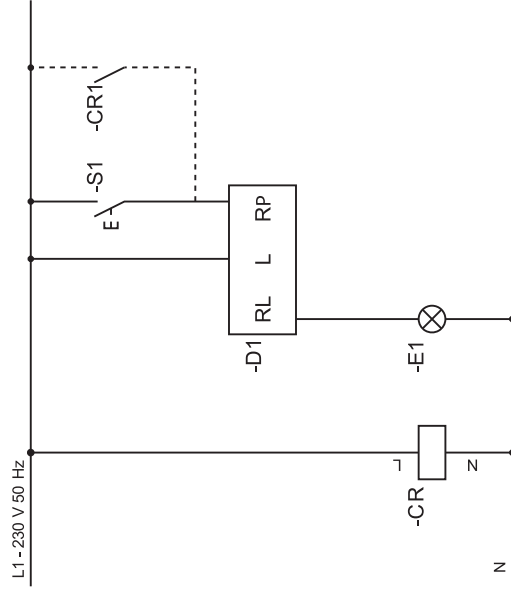
CR = remote control contact

E1 = light

S1 = push-button



WIRING SCHEMATIC



LEGEND

Drawing: E29
 Project: Control of the light dimmer by button or remote control

D1 = 15.51.8.230.0400

Control of mechanized roller shutter by push-button or remote control.

Examples of applications:

- homes
- shops

Description:

Momentarily pressing the remote control causes contact CR1 to momentarily close - pulsing the coil of step relay K1. The contacts of K1 control the power to motor M1. Successive pulses to K1 will result in the contacts of K1 changing in a sequence that will drive the roller shutter sequentially; Up – Stop – Down – Stop - Up and so forth.

The motor/shutter mechanism should be fitted with internal end of travel limit switches to disconnect the power to the motor when the fully Up or fully Down positions have been reached.

However, pressing the remote whilst the shutter is moving allows the shutter to be stopped at any desired intermediate position.

Push-button S1 may be used to perform the same function as the remote control.

List of components:



K1 = step relay
type 26.08.8.230.0000

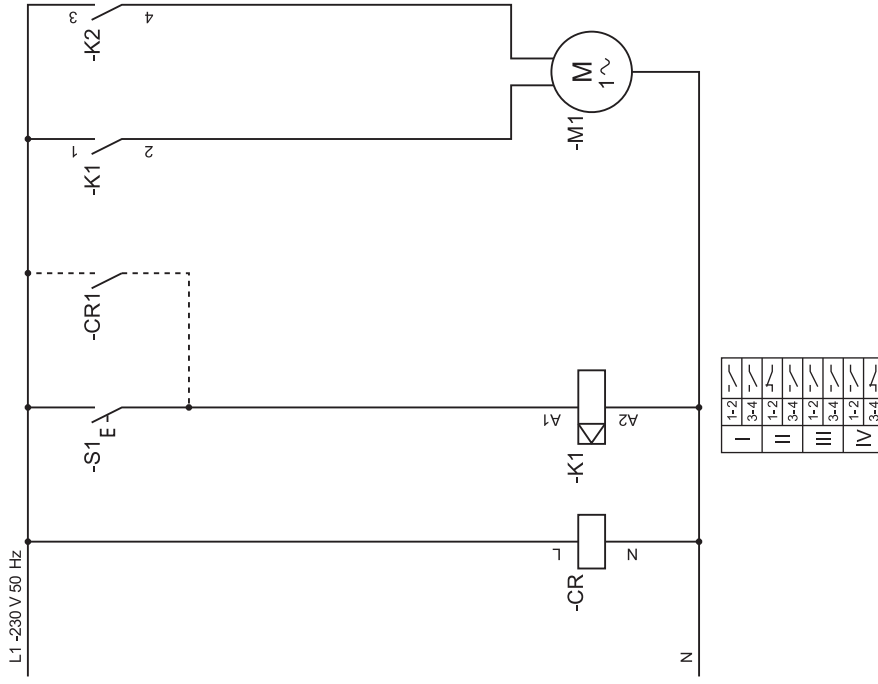
CR = remote control M1

M1 = single-phase reversing motor

S1 = push-button



WIRING SCHEMATIC



LEGEND

Drawing: E30
 Project: Control of motorized roller shutter by button or remote control

K1 = 26.08.8.230.0000

Control of lighting using a movement detector and a timer.

Examples of applications:

- lighting of premises, classrooms

Description:

When detector (SP) senses movement within the room it triggers timer K1 (set for signal Off delay – BE) which switches on light E1.

The light will switch off only after; movement ceases to be detected, the time set for SP has elapsed, and the time set for K1 has elapsed.

If the detector re-registers movement before the total time delay has expired, then E1 will remain switched on and the time will be reset.

Note: the Off delay incorporated in the 18.01 can be set to 12 minutes maximum. Consequently for a total time of 12 minutes or less, it is possible to utilize just the 18.01 detector.

List of components:

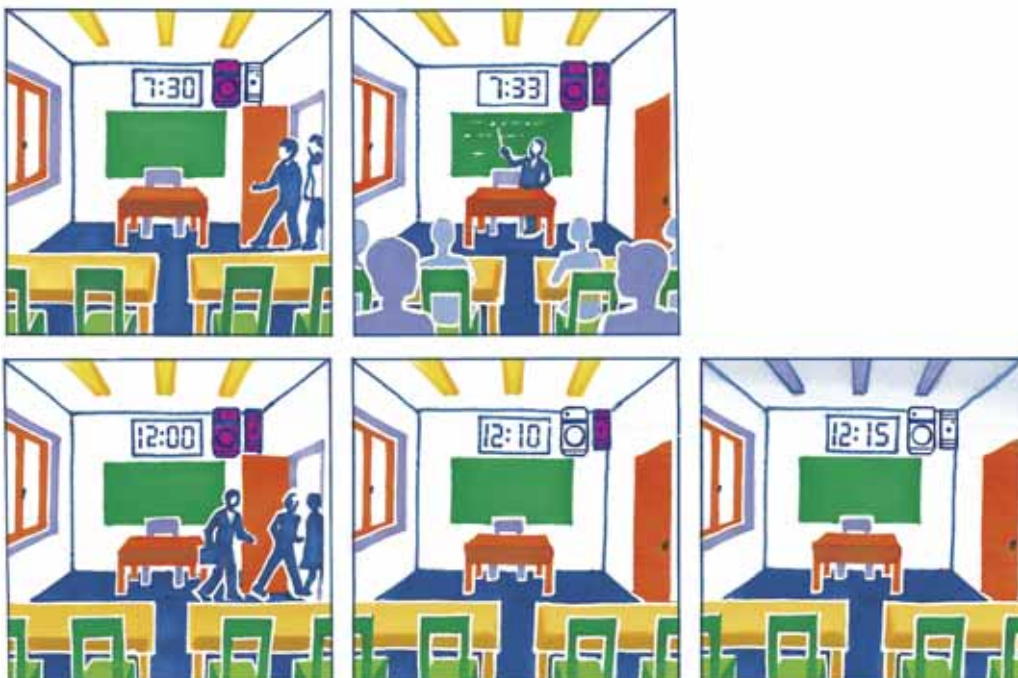


K1 = modular timer
type 80.41.0.240.0000

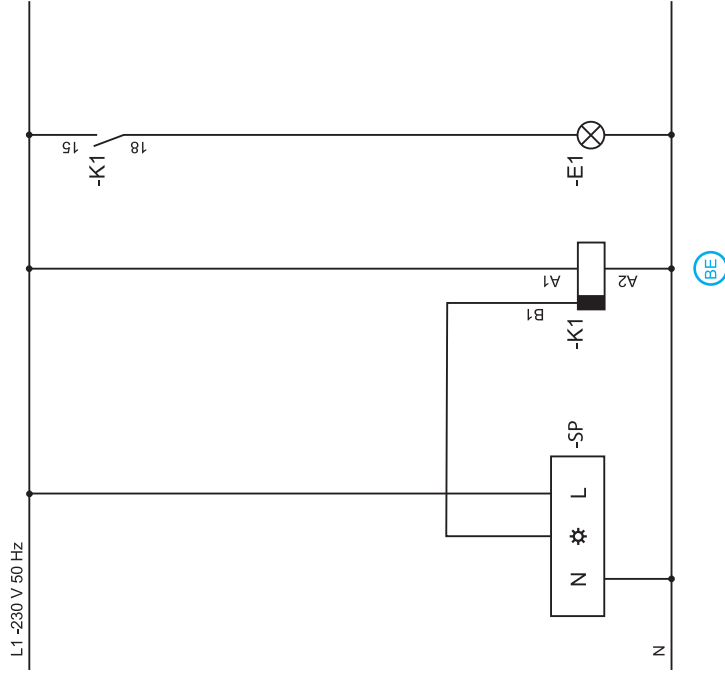


SP = movement detector
type 18.01.8.230.0000

E1 = light



WIRING SCHEMATIC



LEGEND

Drawing: E31
 Project: Control of lighting using a movement detector and a timer

SP = 18.01.8.230.0000
 K1 = 80.41.0.240.0000

Control for manual or automatic operation of a hydraulic pump using a level control relay.

Examples of applications:

- house heating systems, plumbing

Description:

Pressing button S1, pulses relay coil K1, changing the status of its contacts; powering up level control relay K4 and time-switch P1. In this situation, automatic control of pumps C1 and C2 is achieved according to the level of the hydraulic liquid, and the time of day. By pressing S1 again, K1 changes the status of its contacts and switches on K3; a contact of which powers indicator light E1 which indicates "manual operation". The other contact of K1 enables a feed to the coil of K2, via push-button S2.

Consequently, successive pushes of S2 will alternately turn pumps C3 and C4 On or Off - via the contacts of K2.

List of components:



K1 = modular step relay
type 20.23.8.230.0000



K2 = modular step relay
type 20.28.8.230.0000



K3 = timed interface relay
type 48.52.8.230.0060



K4 = level control relay
type 72.01.8.230.0000

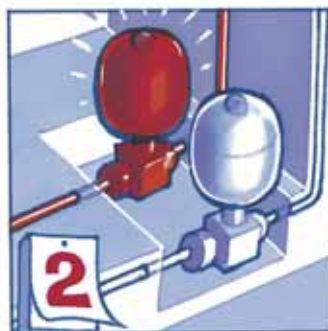
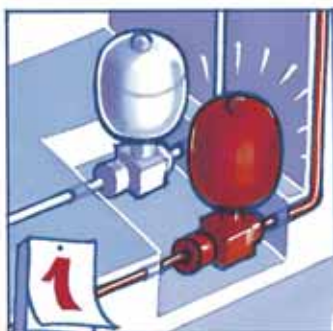
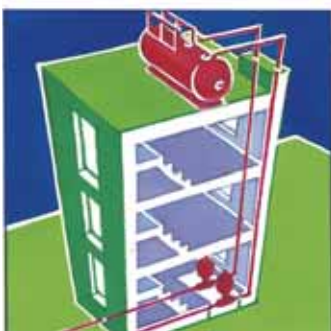


P1 = timer switch
type 12.22.8.230.0000

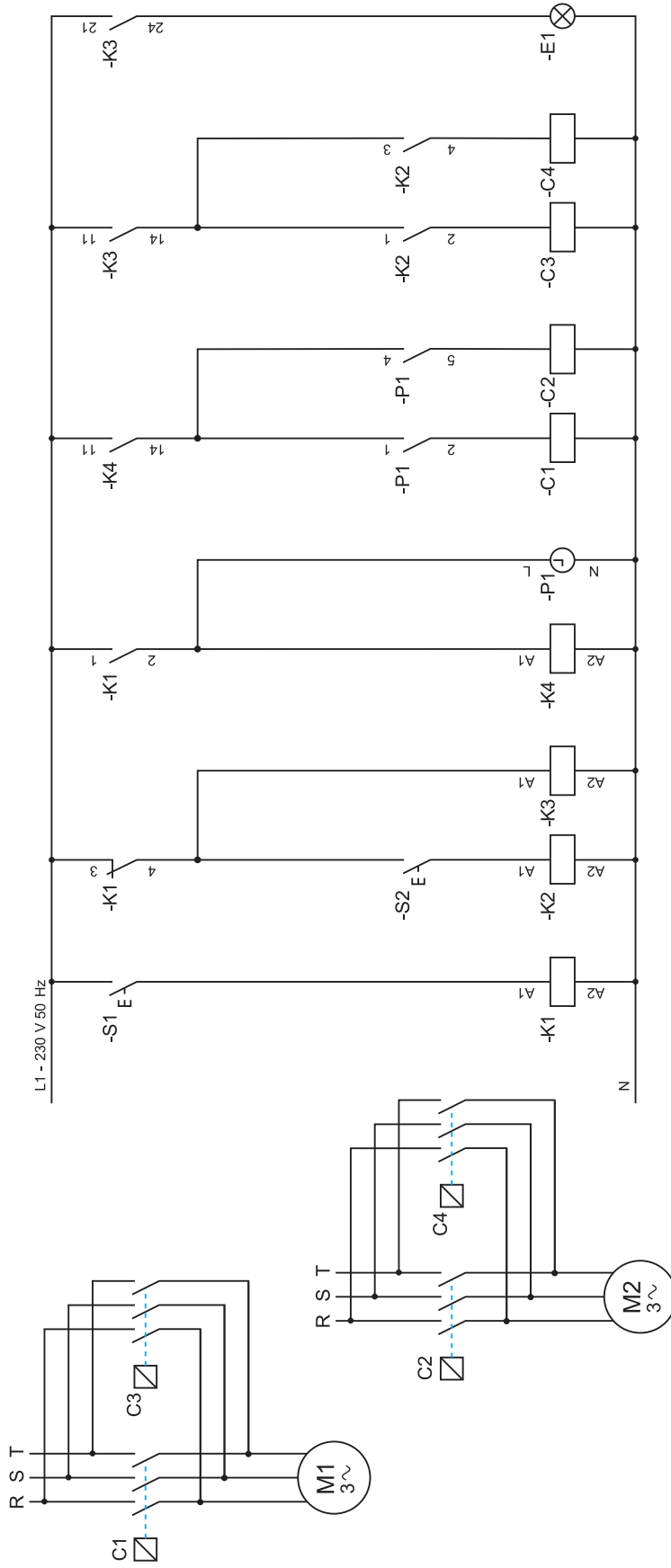
E1 = illuminating part

C1-C2-C3-C4 = contactors

S1-S2 = push-buttons



WIRING SCHEMATIC



LEGEND

- K1 = 20.23.8.230.0000
- K2 = 20.28.8.230.0000
- K3 = 48.52.8.230.0060
- K4 = 72.01.8.230.0000
- P1 = 12.22.8.230.0000

Drawing: E32
Project: Control for manual or automatic operation of a hydraulic pump using a monitoring relay

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