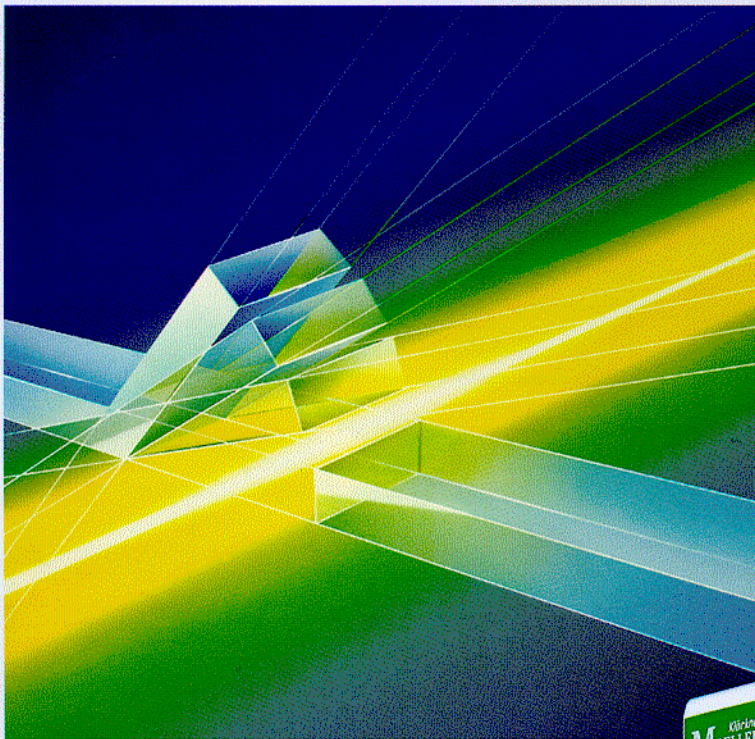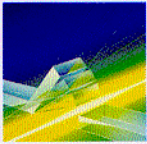# Klöckner MOELLER

Switching and Control –
Simply *easy*

Using the *easy* control relay

Inputting the Circuit Configuration – Simply easy

Since it was founded in 1899, Klockner-Moeller has grown into a world-wide respected player in the electrical industry.
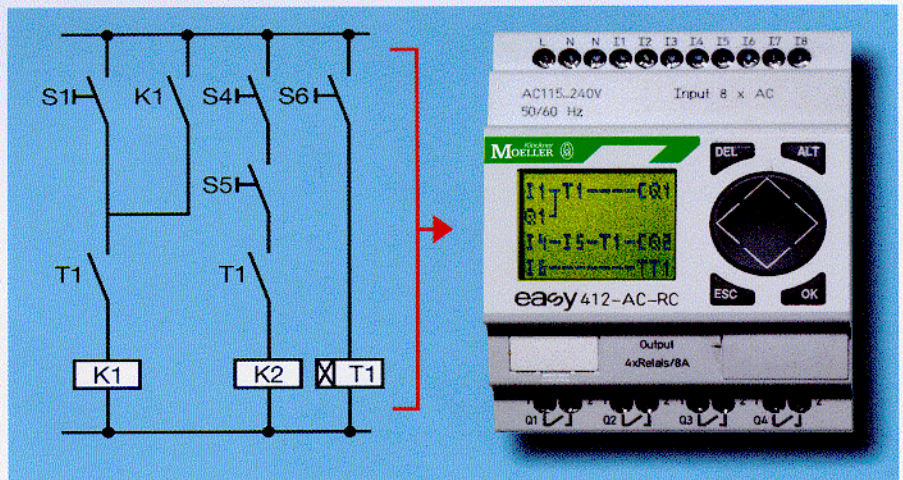
Our experience in the field of switchgear design combined with the very latest manufacturing techniques result in efficient and compact devices. A case in point is the new easy control relay. easy in name, and easy in application with its more than 20 standard functions combined in one unit, – an all-rounder for switching and control.

Logic links instead of wiring

Circuit diagrams form the basis for all electrical applications and, conventionally, the resulting circuits are implemented by wiring of switching and control devices. easy uses keystrokes for making the logic connections. This saves mounting and wiring costs and above all, precious time.

Simply easy to save space

An impressive characteristic of the new relay is its size: 71.5 x 90 x 53 mm and it has the standard 45 mm front dimension. There is space for easy anywhere, in a service distribution board, in a building services installation or in the control panel on a machine.

Direct implementation of the classic wiring diagram in the easy display window.

Quick commissioning

easy shows you where current is flowing in the circuit – whether for testing purposes or in actual operation. This makes for quick and safe commissioning.
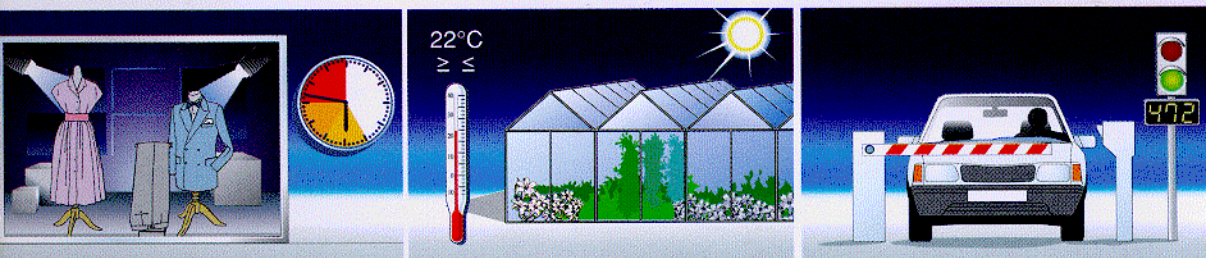
Flexible in application

3 contacts linked with 1 coil can be input into each of up to 41 lines of logic to implement the circuit diagram configuration. Plenty of space for modifying or extending your application. No more time-consuming re-wiring.

Access, Yes or No

easy has a password function which enables access to be selectively allocated, for example to the circuit and to parameters such as timing and timer values. Specific areas, of course, can also be made accessible to users.

Practical in application:
Timed control
of lighting

Numerous functions:
Measured value acquisition
and regulation

Simply easy:
Control, signalling
and counting

e*asy* **Function Blocks**

Under the

Magnifying Glass

8 timing relays with a wide range of diverse characteristics
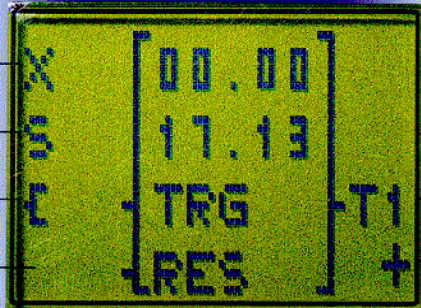
Timing relay operating mode
x   On-delayed
■   Off-delayed
⊥⊥ Pulse-shaping
Л   Flashing
?x On-delayed with random switching
?■ Off-delayed with random switching

Time setting
S   Seconds
M:S Minutes : Seconds
H:M Hours : Minutes
Setting the timing relay
Resetting the timing relay

— Actual timed value (time run)
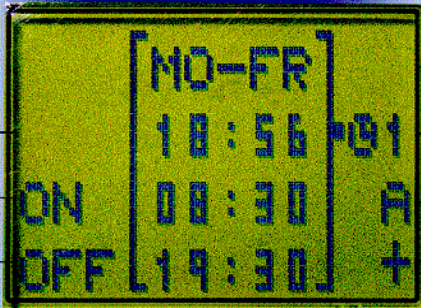
— Set time value

— Timing relay number T1...T8

— Parameter input mode

```
X   [00.00]
S    17.13
[   ┤TRG   ├T1
    └RES   ┘  +
```

Four weekly timers with four channels each, each with one seven-day dial (0 to 24 hours)

Actual time —————

Switch-on time —————

Switch-off time —————

— Weekly setting

— Timer number 1...4

— 24-hour channels A, B , C, D

— Parameter input mode

```
    [MO-FR]
     18:56 ├01
ON   08:30   A
OFF └19:30┘  +
```
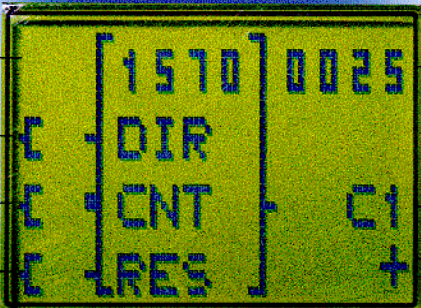
Eight up/down counters, with a counting range from 0 to 9999

Counter reference value —————

Counting direction (up/down) —————

Counting pulse —————

Counter reset —————

— Counter actual value

— Counter number C1 ...C8

— Parameter input mode

```
  [1510]0025
[ ┤DIR
[ ┤CNT  ├  C1
[ └RES ┘   +
```

Eight analog comparators, for comparison ≥ or ≤ of analog inputs I7 and I8 or a fixed value.

Comparator input 1 —————

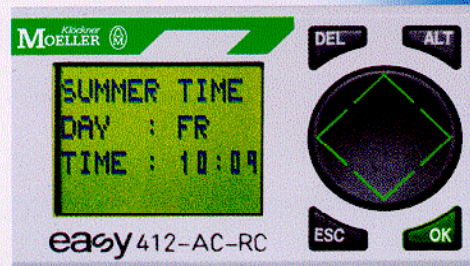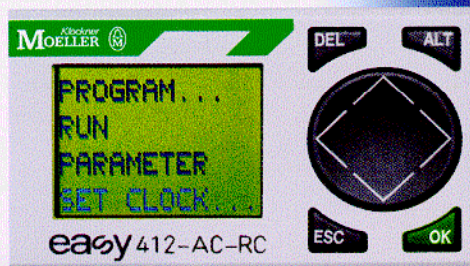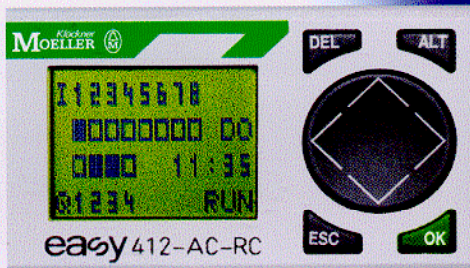Type of comparison ≥, ≤ —————

Comparator input 2 —————

— Analog comparator number A1 ...A8

— Parameter input mode

```
   ANALOG
I7 ┤5.8 V├
      ≥   ├A1
I8 └5.3 V┘  +
```

easy to Operate by Using the Cursor Keys

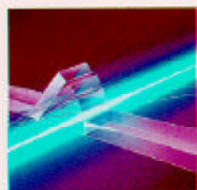|	easy 412-AC-R	easy 412-AC-RC	easy 412-DC-R	easy 412-DC-RC
Inputs	8 230 V AC	8 230 V AC	8 24 V DC	8 24 V DC
2 inputs to be used as analog inputs			0–10 V	0–10 V
Power supply	115/230 V AC	115/230 V AC	24 V DC	24 V DC
Outputs	4 relay	4 relay	4 relay	4 relay
Real-time clock		Yes		Yes
Power loss	norm. 3 W	norm. 3 W	norm. 2 W	norm. 2 W
Continuous current	8 A with resistive loads (10 A UL) 3 A with inductive loads			
Short-circuit proof $\cos \varphi = 1$	Cable protection B 16, 600 A			
Short-circuit proof $\cos \varphi = 0.5$ to 0.7	Cable protection B 16, 900 A			
Connection cables	$0.2 \times 2.5\ mm^2$, $0.2 \times 4\ mm^2$			
Degree of protection	IP20			
Interference suppression	EN 55011/55022 Class B			
Ambient temperature	0° to 55°C			
Storage temperature	−40° to +70°C			
Approvals certification	IEC 947, UL, CSA, EN 50178			
Fitting	On 35 mm top-hat rail or fixing brackets (mounting plate)			
Dimensions	71.5 x 90 x 53 mm, 4 standard space units (MCB width)			

SIMPLY easy

❶ AC versions 115/230 V DC versions 24 V, with or without real-time clock

❷ Eight inputs On the 24 V version, option of using 2 inputs as analog inputs

❸ Clear function layout:
ESC = go back by one menu item
OK = confirm input
DEL = delete
ALT = multi-function key

❹ Cursor keys: Selection of menu items, input of circuit configuration and setting of outputs in operating mode 'run'

❺ Optional plug-in memory module: For archiving circuit and system settings and for transferring them to another easy relay.

Design using easy-soft:

Circuits can be simply designed on the PC, simulated, printed out and transferred.

❻ Four-line LCD display: Three contacts and one coil per line up to a maximum of 41 lines of logic

❼ Four relay outputs

❽ Symbols in the easy circuit:
I = input, Q = output, M = marker, P = control actuator make/break switching contacts Relay coils and relay outputs Q and auxiliary relays M as:

relay, impulse relay and latched relay with 'set' or 'reset' function.
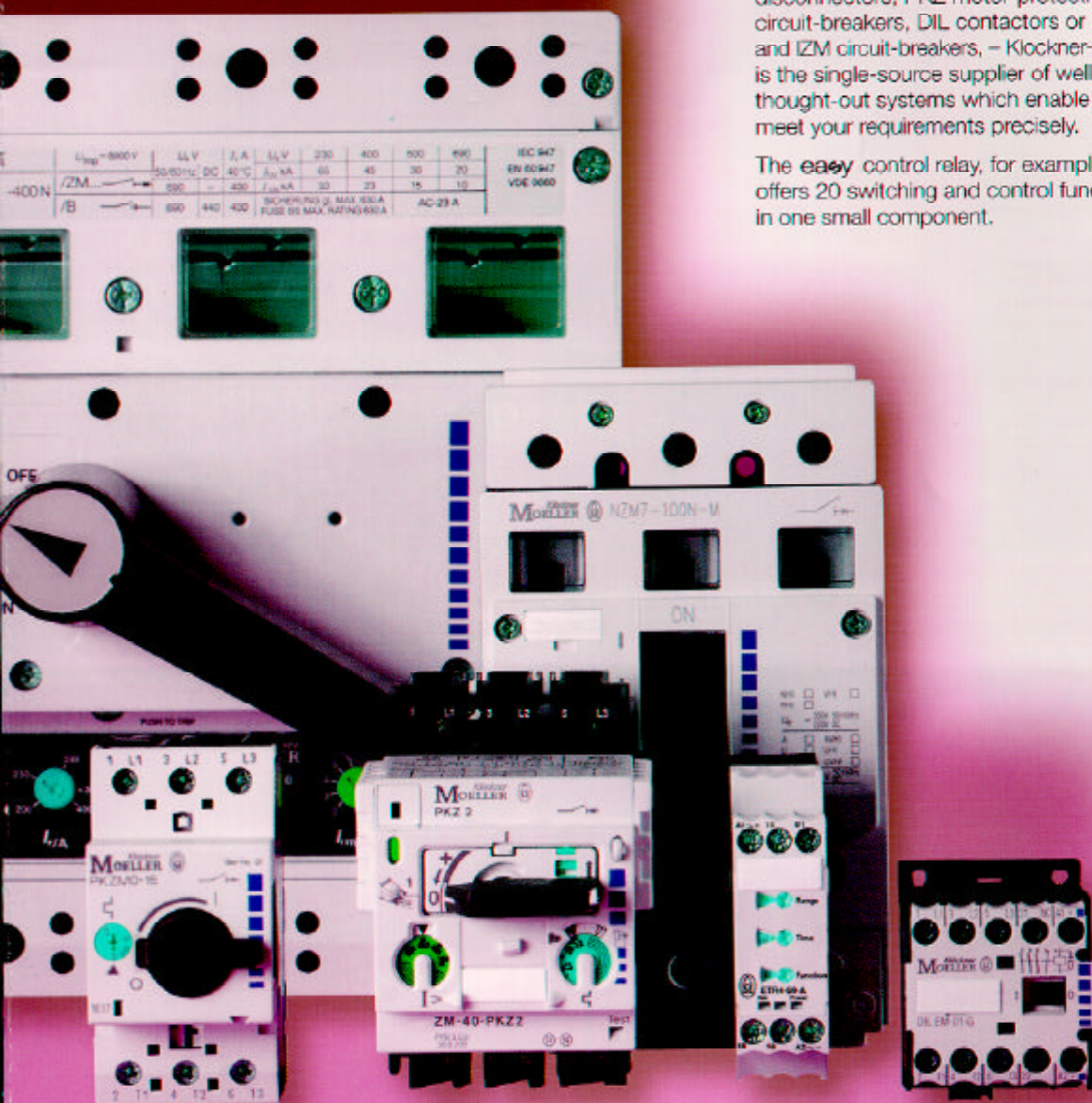
5

Switchgear for Safety in the System

Wherever switching and protection are concerned, Klockner-Moeller is the right partner for your applications.

Whether it is T rotary switches, P switch-disconnectors, PKZ motor-protective circuit-breakers, DIL contactors or NZM and IZM circuit-breakers, – Klockner-Moeller is the single-source supplier of well thought-out systems which enable you to meet your requirements precisely.

The easy control relay, for example, offers 20 switching and control functions in one small component.