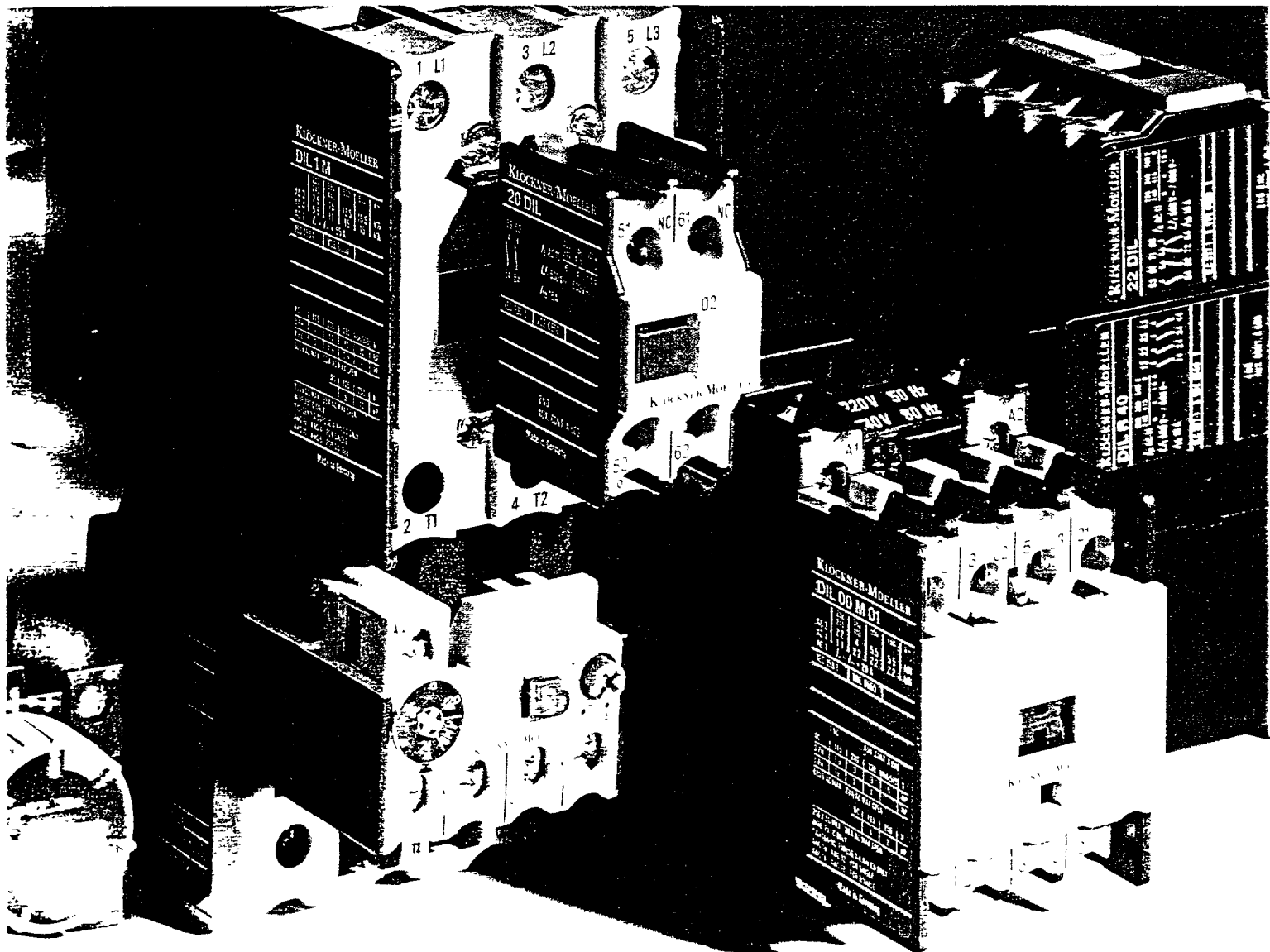
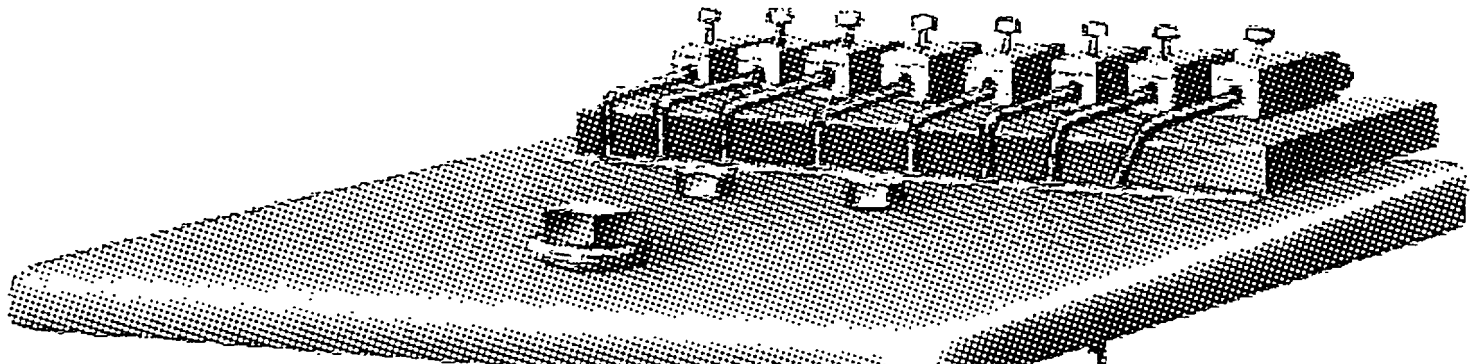




176-139 TC 168

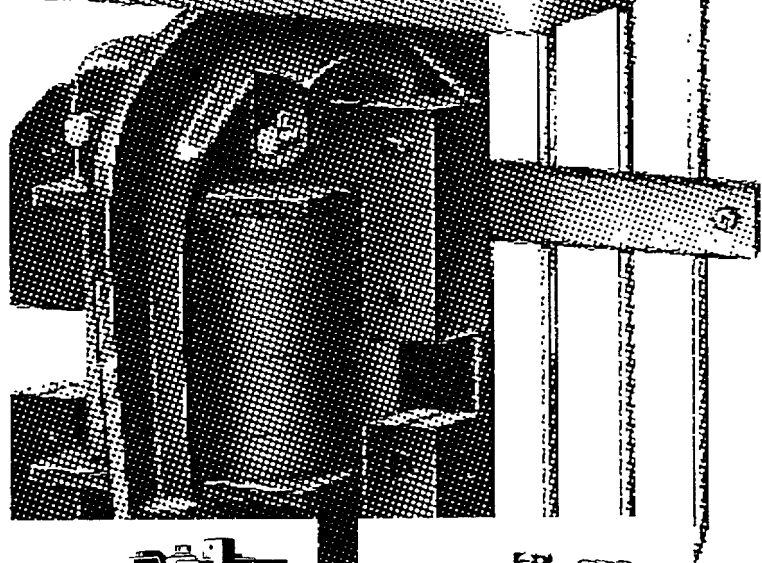
## DIL R System Relays DIL M System Contactors Z Overload Relays



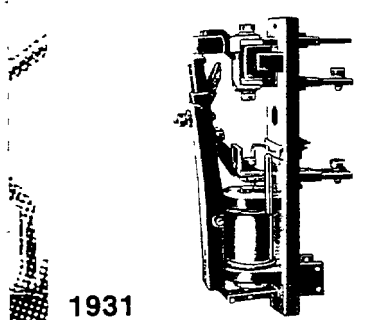


# 1912

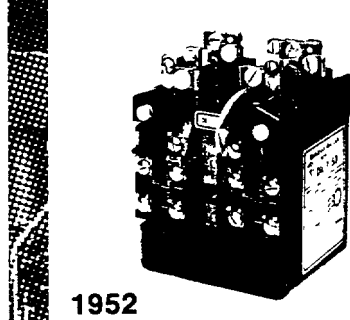
The first three-phase oil-immersed contactor in the world, with tulip-shaped copper contacts and double break feature



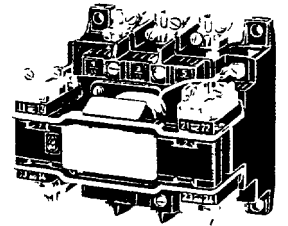
1904



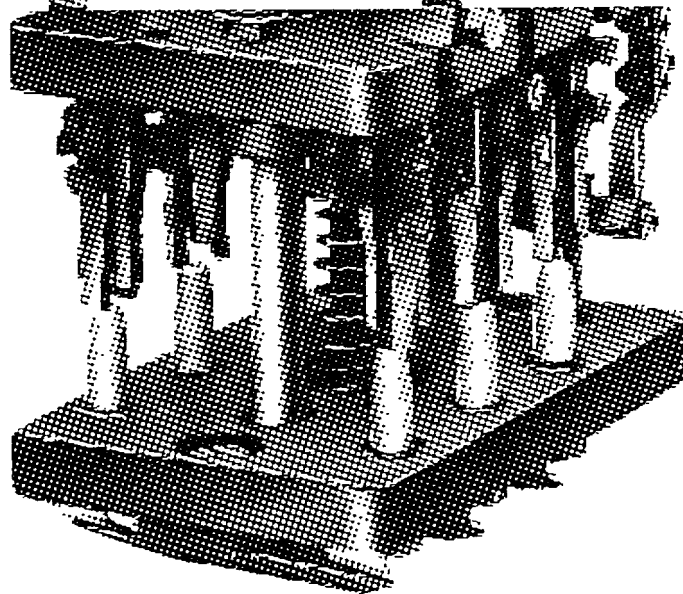
1931



1952



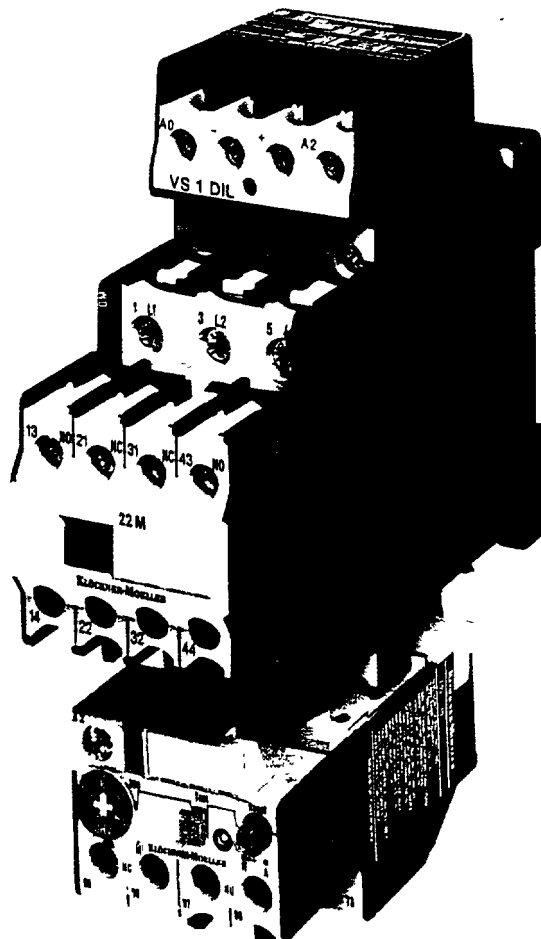
1970



- 1904 Three-phase air-break contactor with pot magnet and copper contacts
- 1931 Four-pole oil-immersed contactor with direct power transfer and insulating encapsulation
- 1952 Three-phase air-break contactor with lifting armature and double break feature
- 1970 Three-phase air-type contactor with double break and noble metal contacts

# DIL System Contactors

## The new contactor generation



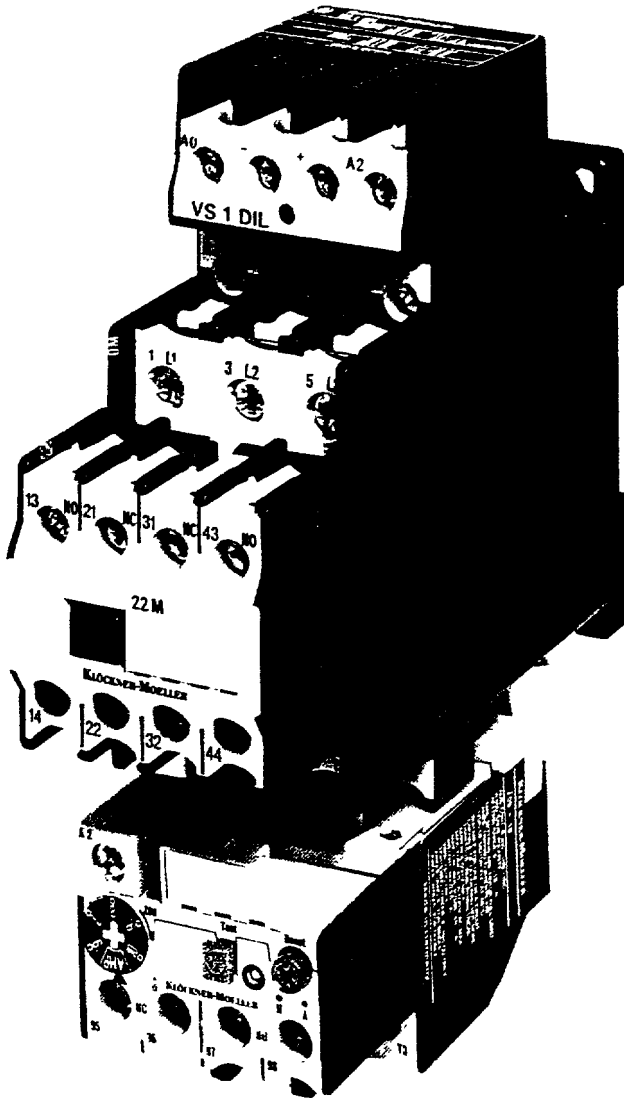
Contactors are among the "classics" of switchgear in electrical engineering. In the course of time they have undergone many stages of development. Again and again they have been adapted to suit production facilities, scientific research and the needs of the customers. Klockner-Moeller has been in the vanguard of this work from the beginning.

Practice is a hard taskmaster. For 85 years Klockner-Moeller contactors have proved themselves throughout the world.

The new contactor generation – DIL system contactors – is the result of continuous development and intensive research.

# DIL System Contactors

**DIL M**  
with auxiliary contact  
overload relay and  
amplifier module



The outstanding feature of the DIL system contactors is the modular system which is consistently adhered to throughout both versions. DIL R system relays DIL M system contactors

## Basic units

Basic units are the smallest units which are capable of operating on their own.

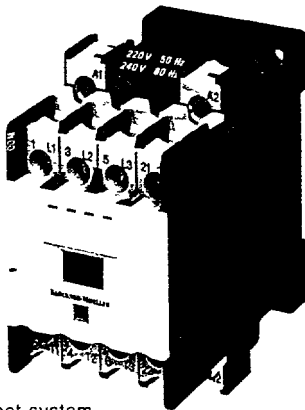
## Add-on modules

The add-on modules are a snap-on fit on the basic units and mechanically coupled with the drive magnet system.

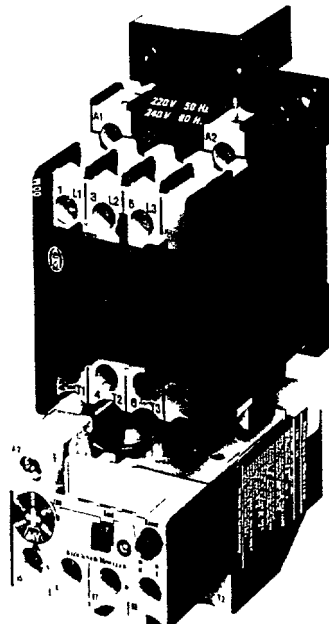
This group includes auxiliary contact modules, timer modules, and latching modules.

## Additional devices

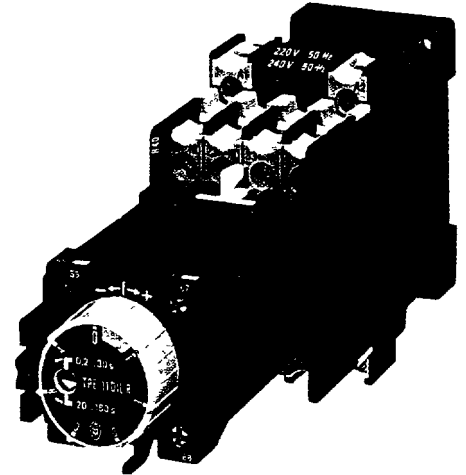
Suppressor units and free wheel diodes, amplifier modules and overload relays belong to this group.



**DIL 00M**  
Basic unit  
with drive magnet system  
contact system  
and enclosure



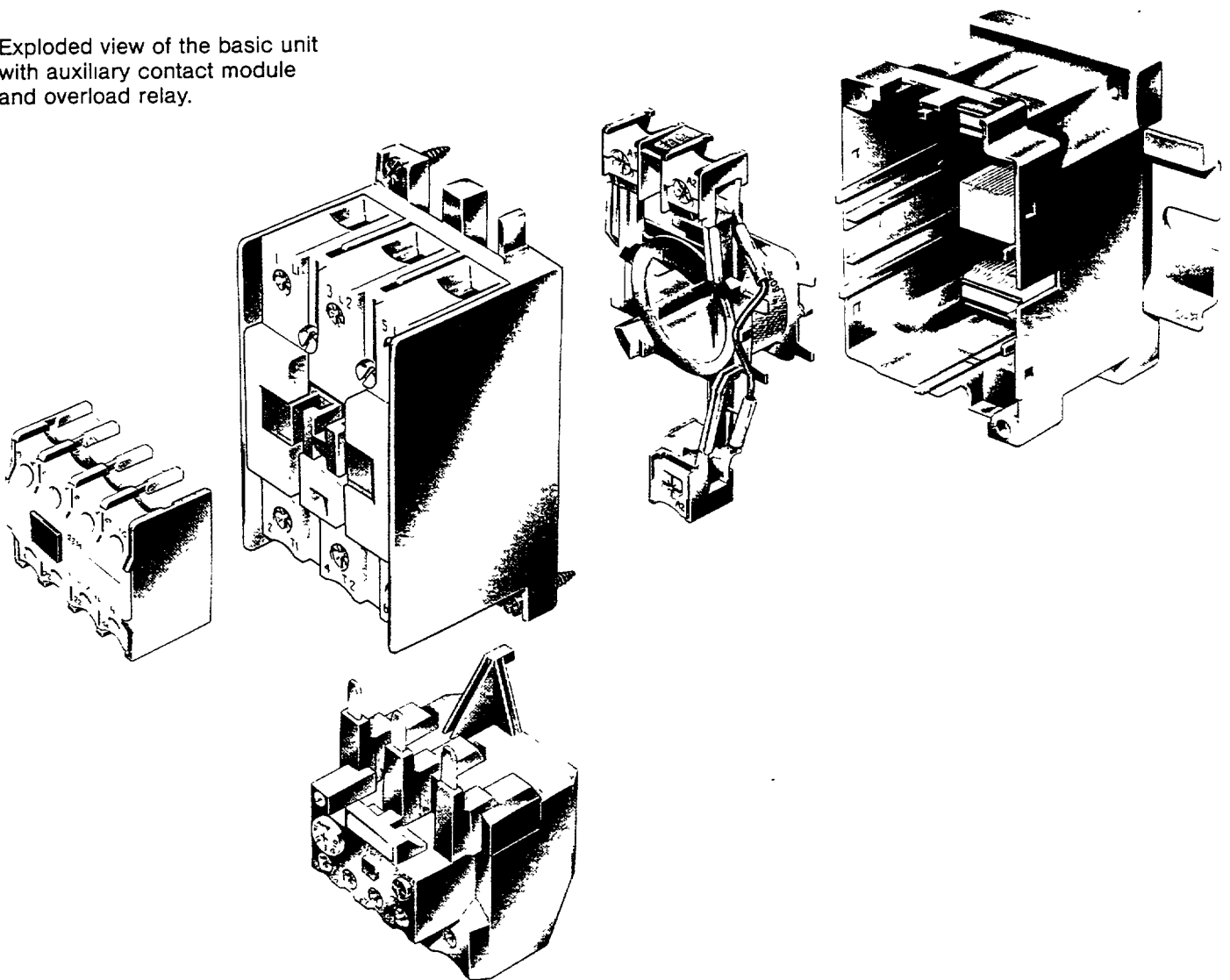
**DIL 00M**  
**Z 00M**  
**RCB DIL 250**  
DIL M system contactor  
with overload relay  
and RC suppressor unit



**DIL R 40 + TPE 11 DIL R**  
Timer module  
Snap-on fitting on  
DIL R system relays

# Features and Benefits

Exploded view of the basic unit with auxiliary contact module and overload relay.



Interlocking of opposing auxiliary contacts

*Safety throughout the entire life span*

Enclosed contact chambers

*Wiring debris totally excluded*

Protective standard IP 20

*Finger-safe to VDE*

Raised, captive terminal screws with selflifting clamping washers

*Reduced wiring time*

Cross-head screws

*For chisel blade or cross-head screwdrivers*

Wiring entry guides

*Reduce wiring time*

Switch position indicator

*Quick identification of operative state*

Component labelling system

*Quick identification of each device*

Identical base areas for a.c. and d.c. devices

*Simplified design work*

Screwdriver guides

*No slipping of tools*

Clearly legible terminal markings to DIN 50 011, DIN 50 005

*Help to prevent wiring errors*

3 Coil terminals

*Single-side and diagonal wiring*

Worldwide approvals

*No problems with export*

Plug-fitting add-on units

*Increased areas of application*

Numerous accessories

*Reduce main-component inventories*

Coil voltage legible from the front

*Simple control of fitted devices*

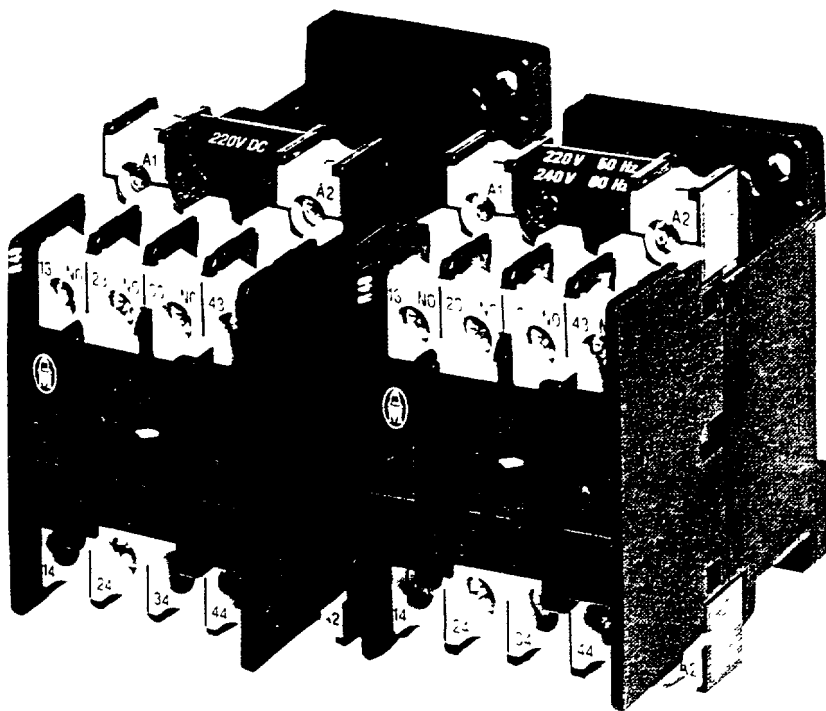
Overload relay fits directly on to contactor

*Saves fitting time*

Duplicate coil terminal for overload relay

*Quick wiring*

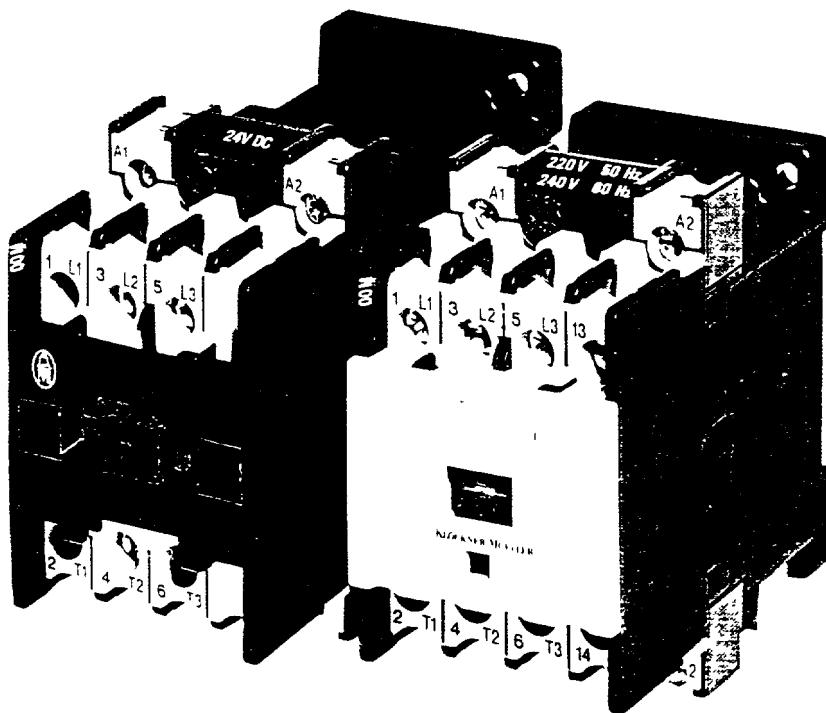
# DIL R DIL M Basic Units



DIL R system relays with  
d c or a c magnet system

DIL R basic unit with 4 contacts

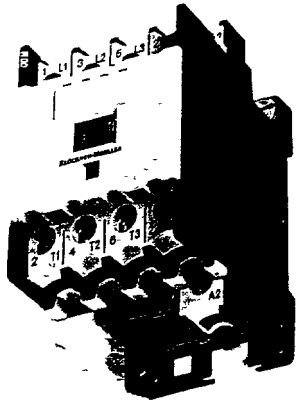
Same base area for both  
magnet systems



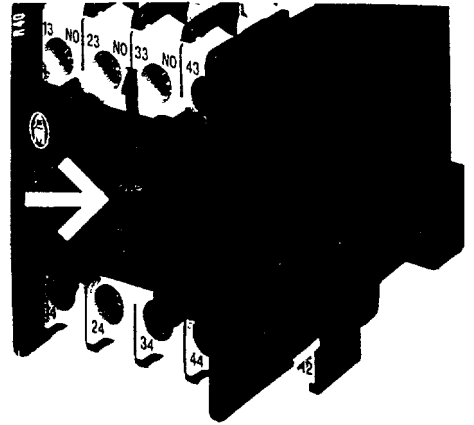
DIL M system contactors with a c or  
d c magnet system

DIL M basic unit with  
3 main contacts

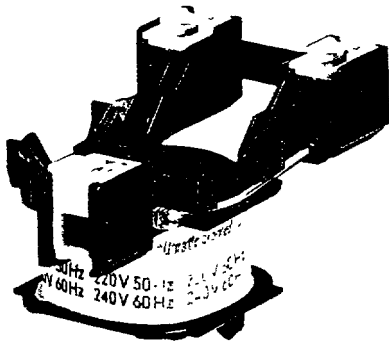
Same base area for both  
magnet systems



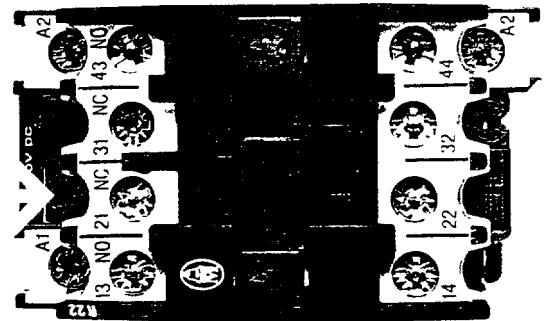
Snap-on or screw fixing



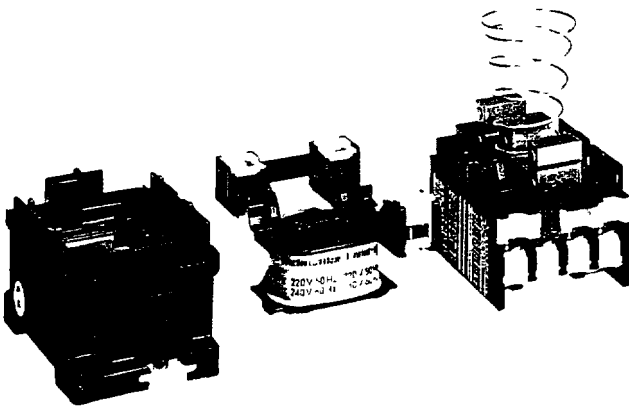
Simple latch coupling for add-on modules



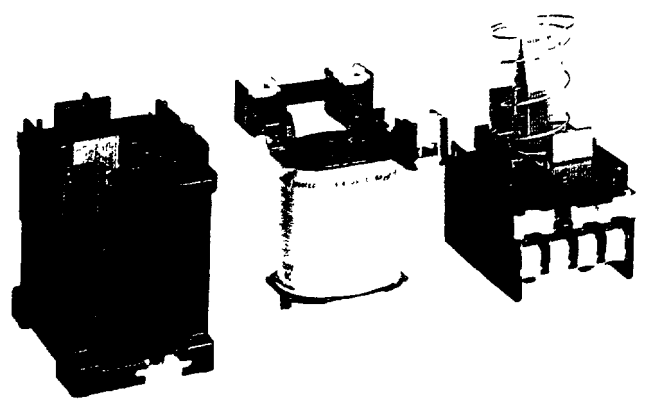
Exchangeable coils



Coil can be exchanged after undoing only 2 screws



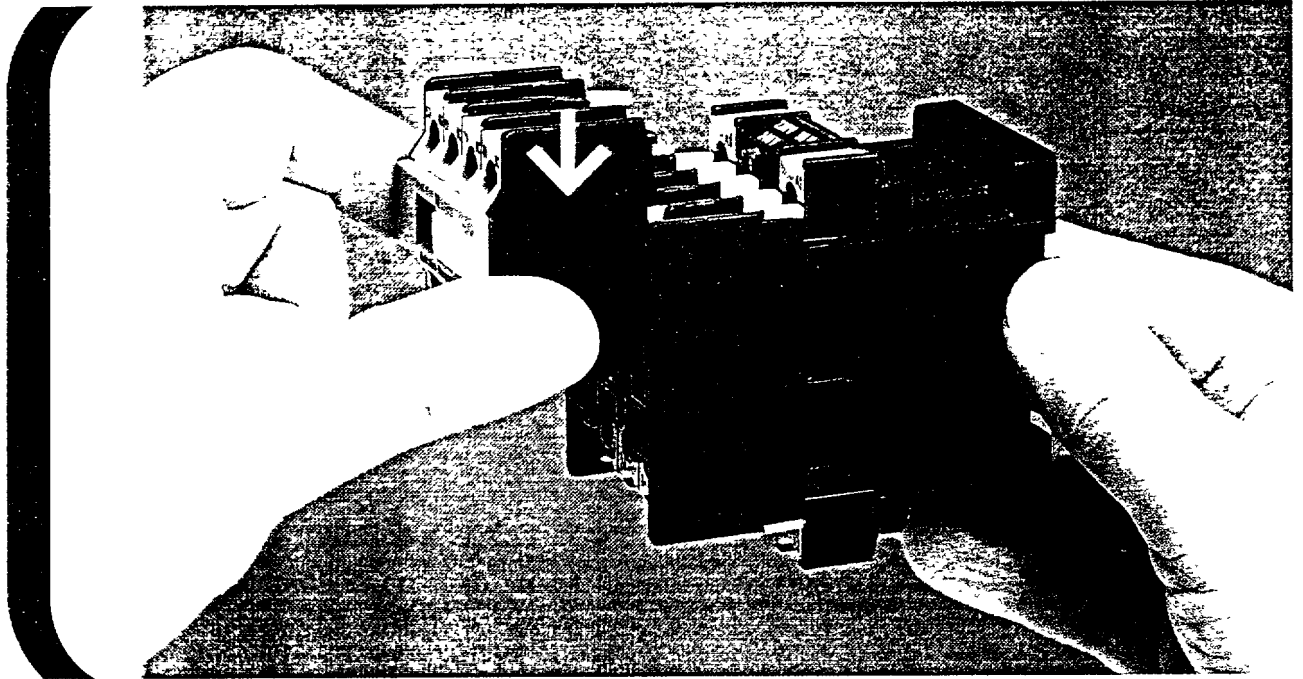
A.C. magnet system with exchangeable coil.  
Voltage clearly visible even after contactor is fitted



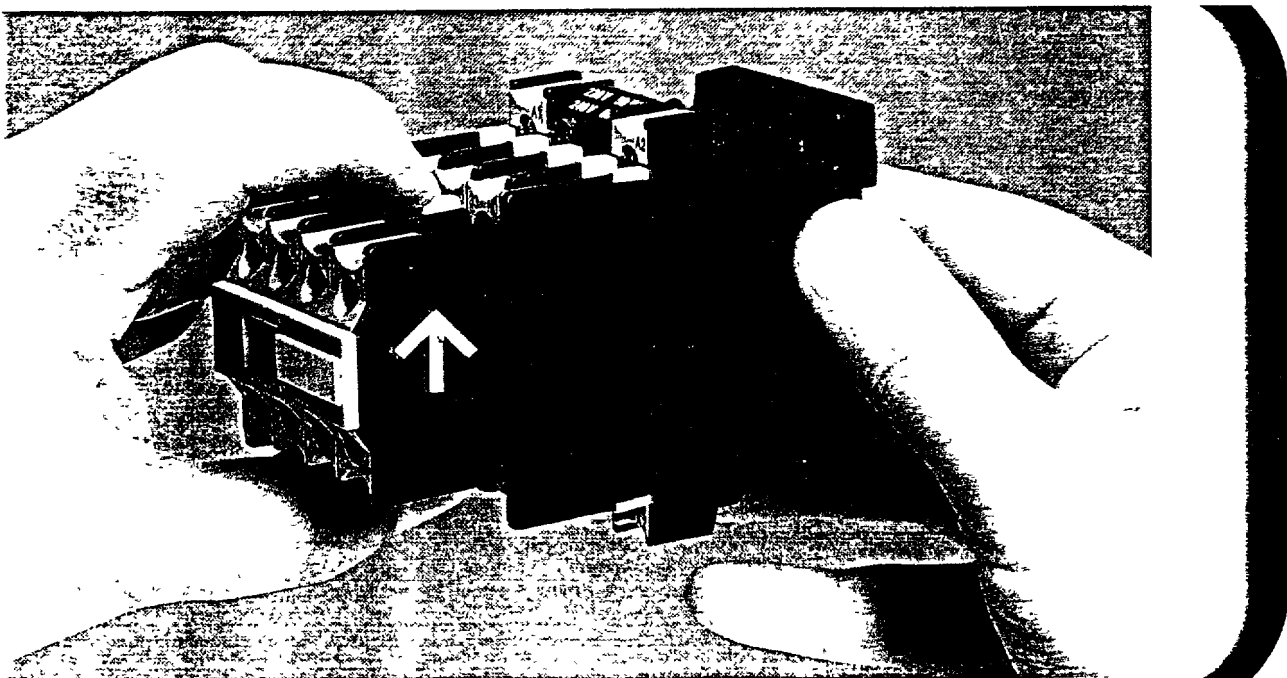
D.C. magnet system with exchangeable coils.  
Voltage clearly visible even after contactor is fitted

# Add-on Modules

Fitting the add-on modules:  
Place module in position and push downwards lightly until latch engages



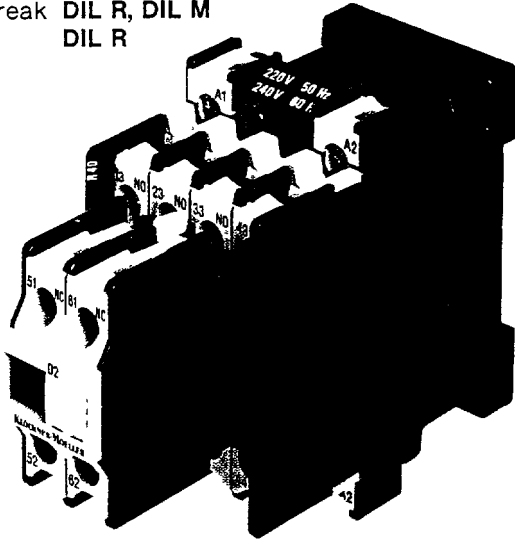
Removing modules:  
Press unlatching mechanism and push module upwards





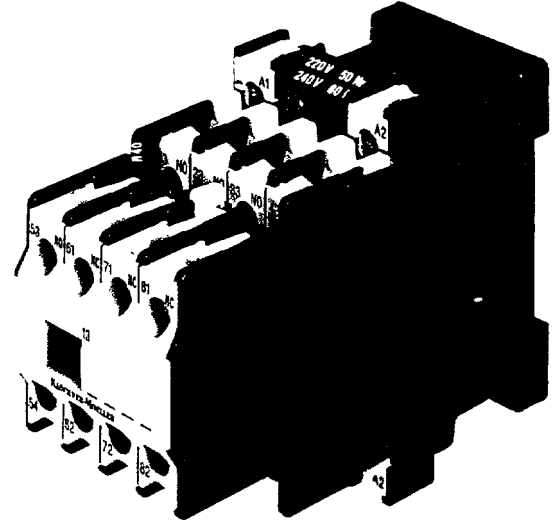
Basic unit and auxiliary contact module with 2 contacts

- 2 Make                   DIL R
- 1 Make + 1 Break   DIL R, DIL M
- 2 Break                DIL R

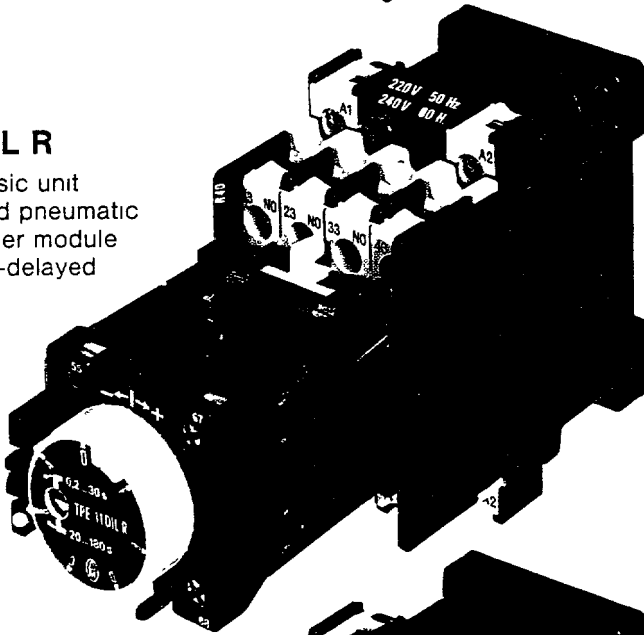


Basic unit and auxiliary contact module with 4 contacts

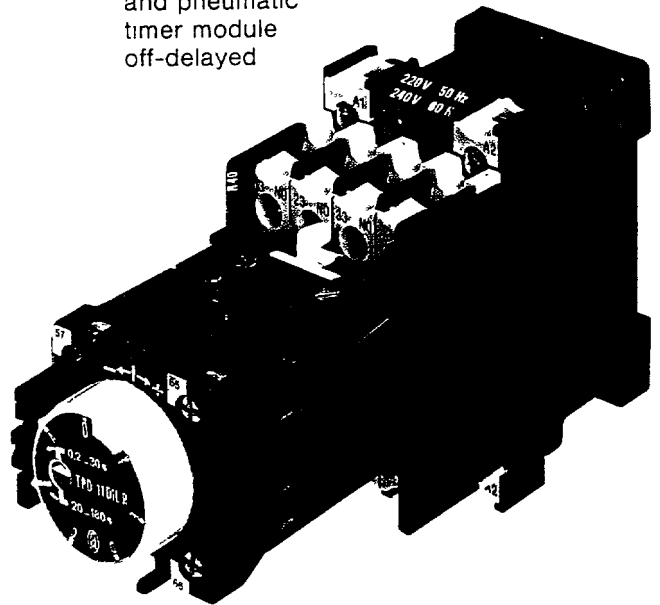
- 4 Make                   DIL R
- 2 Make + 2 Break   DIL R, DIL M
- 1 Make + 3 Break   DIL R
- 4 Break                DIL R
- 3 Make + 1 Break    DIL M



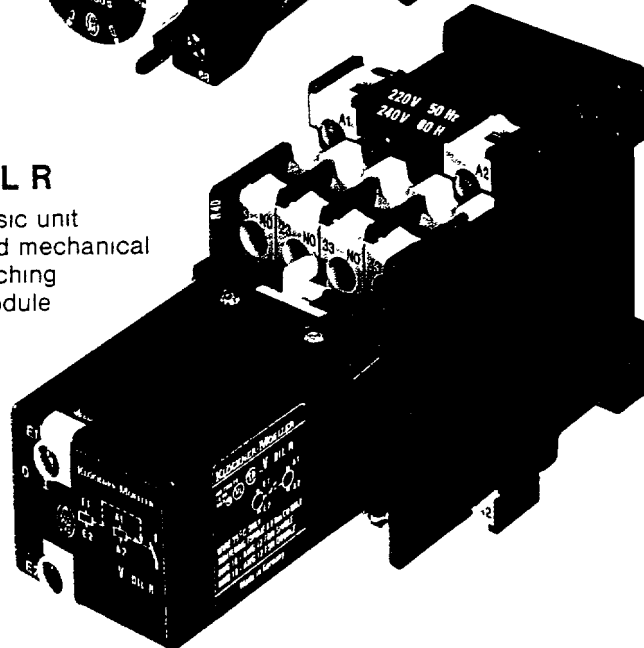
**DIL R**  
basic unit  
and pneumatic  
timer module  
on-delayed



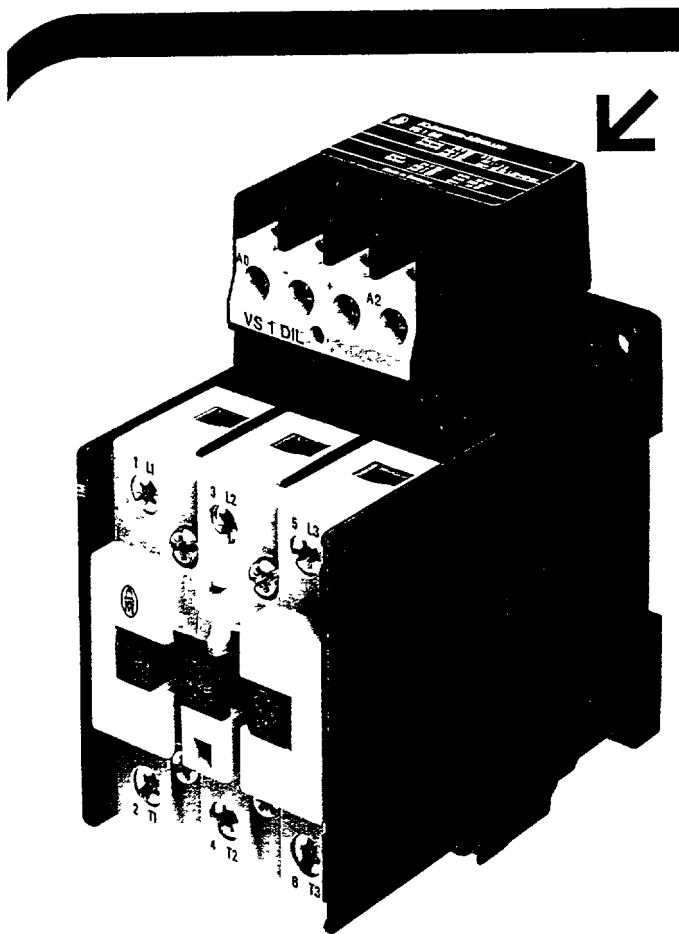
**DIL R**  
basic unit  
and pneumatic  
timer module  
off-delayed



**DIL R**  
basic unit  
and mechanical  
latching  
module

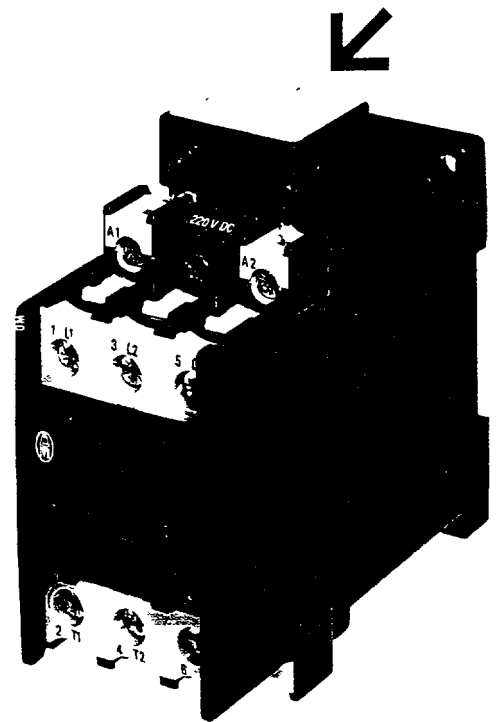


# Accessories



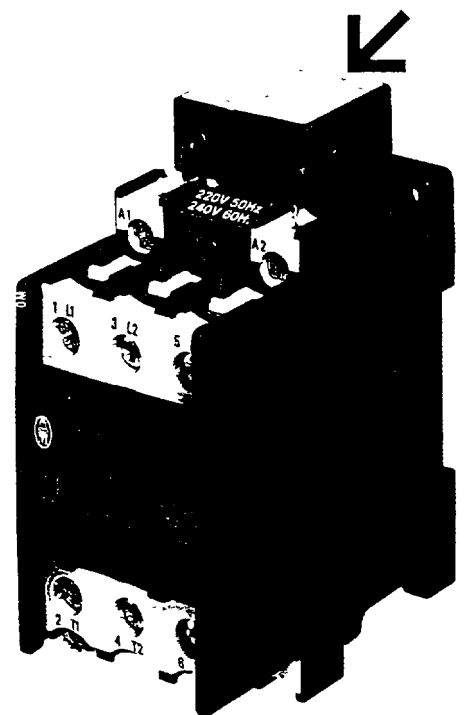
## DIL R, DIL M

Amplifier module for matching of contactors with a.c magnet systems to electronic systems



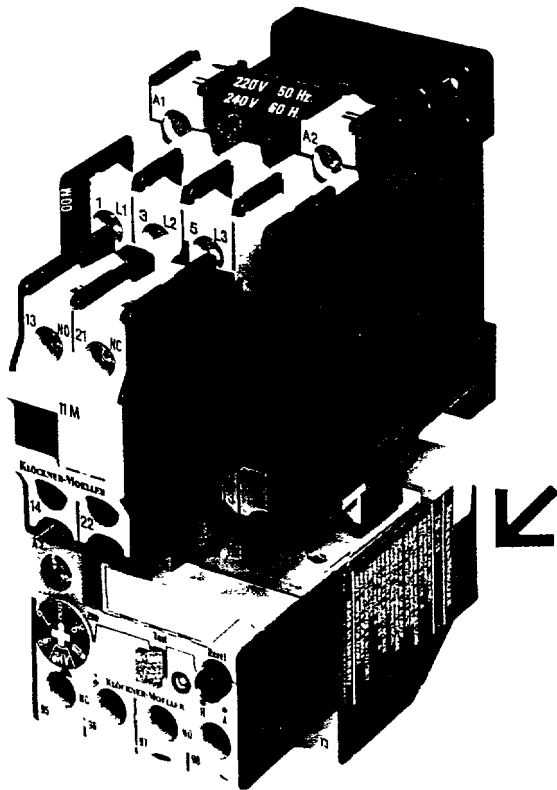
## DIL R, DIL M

Free wheel diodes for d.c magnet systems



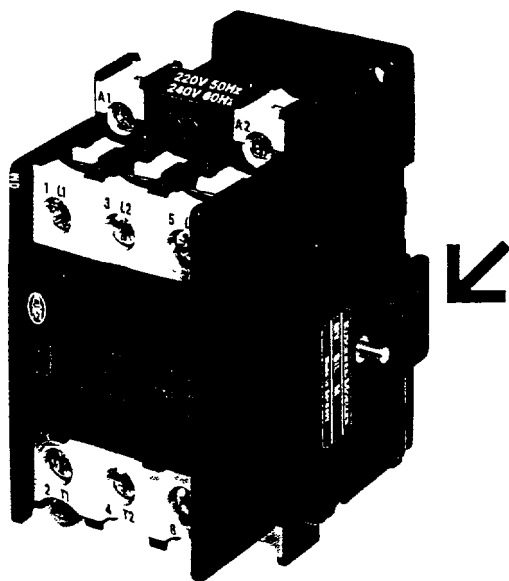
## DIL R, DIL M

RC suppressor units for a.c magnet systems



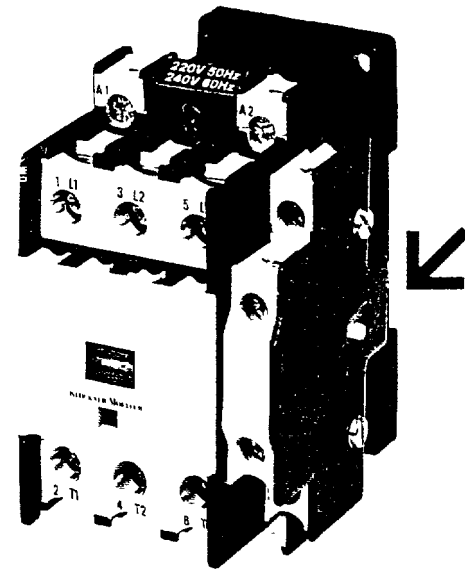
**DIL M**

Overload relay  
can be fitted directly for  
time-saving assembly  
Duplicate coil terminal for  
overload relay speeds exchange



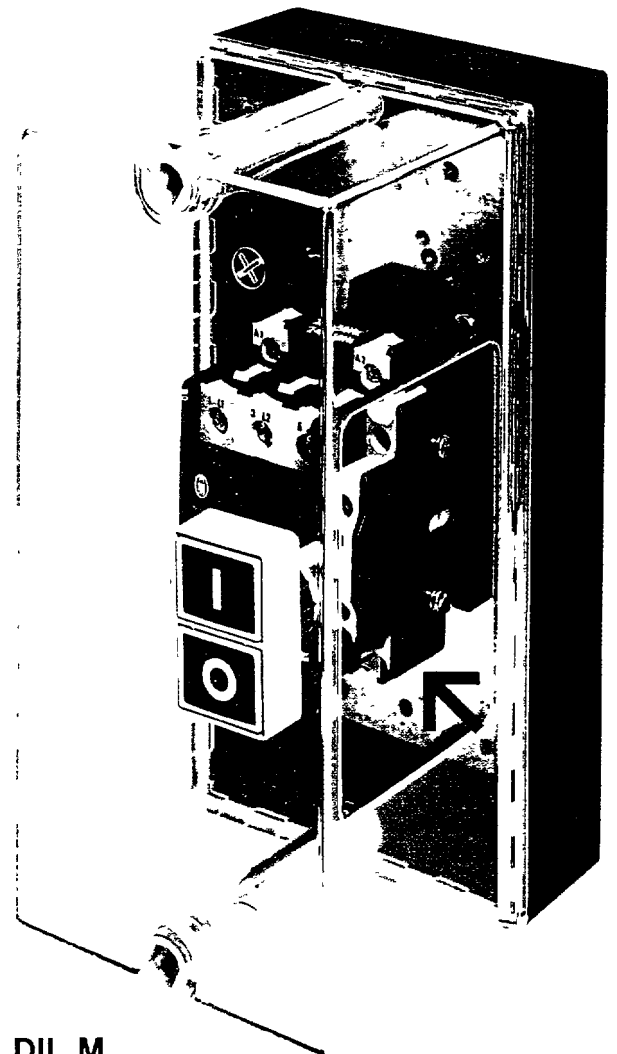
**DIL M**

Latching module for contactors  
of equal or unequal sizes



**DIL 0 M**

Auxiliary contact unit  
for side mounting



**DIL M**

On-off push button for side-fitting,  
can also be used as self-maintaining circuit

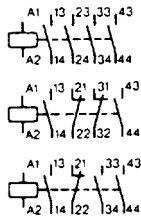
# Modular System

Outstanding feature of the DIL system contactors is the modular system which is consistently adhered to throughout both versions:

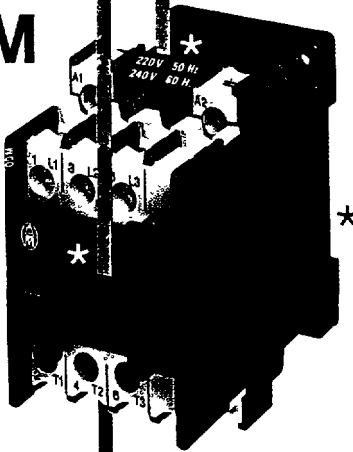
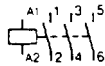
- DIL R system relays
- DIL M system contactors

Basic units for a.c. or d.c. operation

**DIL R**



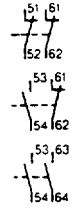
**DIL M**



★ One module can be fitted

Auxiliary contacts

**DIL R**

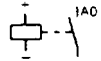
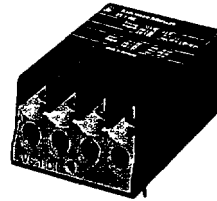


**DIL M**



Amplifier module with protective circuit

**DIL R/DIL M**



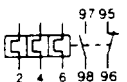
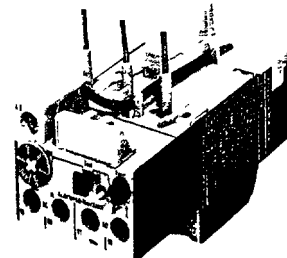
Latching unit

**DIL M**



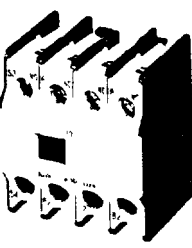
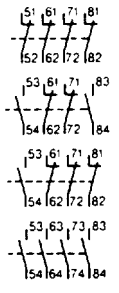
Z overload relay

**DIL M**

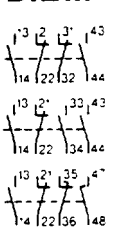
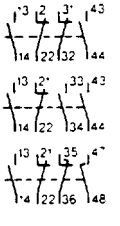


**Auxiliary contacts**

**DIL R**

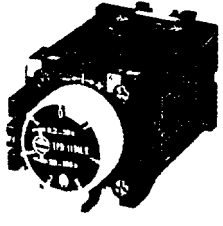
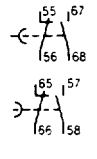



**DIL M**

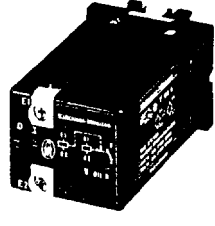
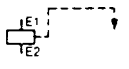
**Timer module**


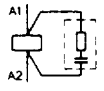
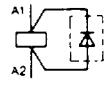
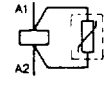
**DIL R**

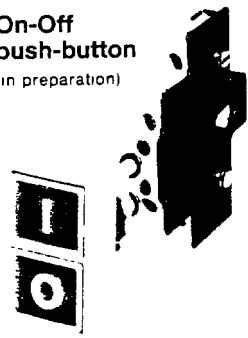
**Latching module**

**DIL R**

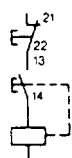



	<b>RC suppressor unit</b>	<b>Free wheel diode</b>	<b>Varistor suppressor</b>
	<p><b>DIL R/DIL M</b></p> 	<p><b>DIL R/DIL M</b></p> 	<p><b>DIL R/DIL M</b></p> 


**On-Off push-button**  
(in preparation)



**DIL M**

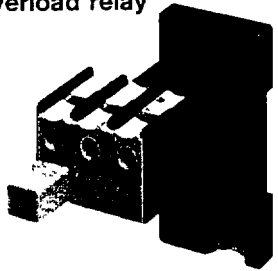


**Auxiliary contact module for side mounting** (in preparation)



**DIL M**

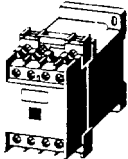




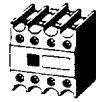
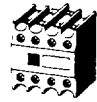
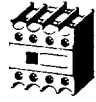
**Base for separate mounting of Z overload relay**



## Which contactor for which motor? Selection table for DIL M system contactors

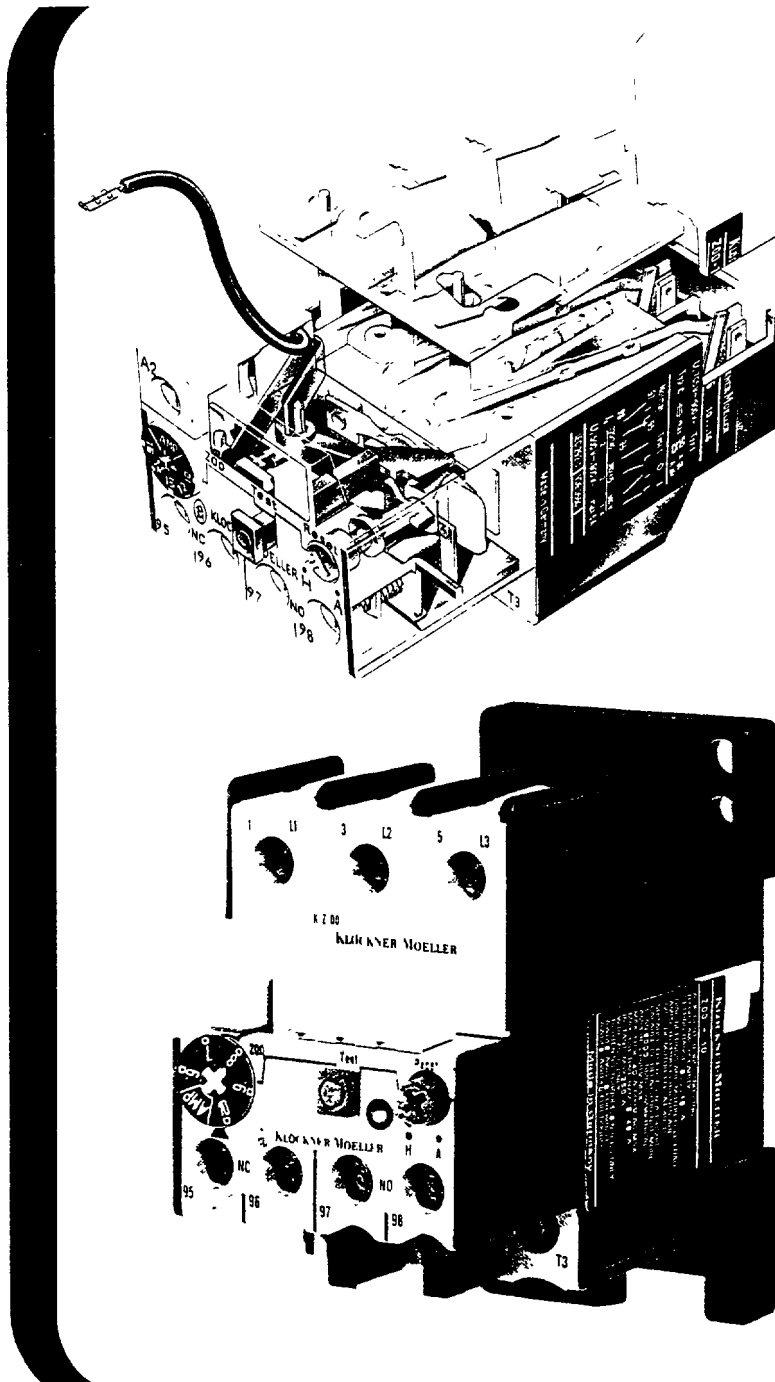
Component life under load conditions Operations	Utilization category	Operating voltage	Three-phase motor ratings 50 60 Hz							
			kW	kW	kW	kW	kW	kW	kW	kW
<b>1 Million</b>	AC-3 including 0,1% AC-4	220/240V	2,2	3	4	5,5	7,5	11	15	18,5
		380/440V	4	5,5	7,5	11	15	18,5	22	30
		500 V	5,5	7,5	11	15	18,5	22	30	37
		660 V	5,5	7,5	11	15	18,5	22	30	37
<b>30 000</b>	AC-4	220/240V	1,5	2,2	3	4	5,5	7,5	11	15
		380/440V	3	4	5,5	7,5	11	15	18,5	22
		500 V	4	5,5	7,5	11	15	18,5	22	30
		660 V	4	5,5	7,5	11	15	18,5	22	30
Rated thermal current I <sub>th</sub>	AC-1	open A	20	20	35	35	55	55	90	90
		enclosed A	16	16	30	30	44	44	80	80
Type			DIL 00M	DIL 00AM	DIL 0M	DIL 0AM	DIL 1M	DIL 1AM	DIL 2M	DIL 2AM

## Summary of terminal markings to DIN 50 011 for various combinations

Basic unit	Auxiliary contact modules							
	without							
DIL R 40 4 M	40 E	42 E	51 E	60 E	44 E	53 E	62 E	80 E
DIL 31 3 M + 1 B	31 E	33 X	42 Y	51 X	35	44 X	53 Y	71
DIL R 22 2 M + 2 B	22 E	24	33 Y	42 X	26 Y	35	44 Y	62 X

# Z Overload Relays

In the event of a dangerous condition arising, Z overload relays switch off the associated DIL M system contactor – and thus the motor – by means of their auxiliary contacts. Hence Z overload relays provide motors with effective protection against overload, against destruction under stalled rotor conditions, and ensure undisturbed operation under normal conditions. Their special design also offers effective protection if one phase should fail. (Single-phasing sensitivity to IEC 292-1 C and VDE.) Z00 and Z1 overload relays are designed for direct fitting on to DIL M system contactors. They can be mounted separately by using the KZ. base in which case they can be affixed either by screws, or by the time-saving snap-on fastening to EN 50 022-35 top-hat rail Z overload relays have one make and one break contact.



## Features

Single-phasing sensitivity to IEC 292-1 C and VDE

Linear setting scale  
*Exact setting to rated current*

Temperature compensated trips  
*Constant tripping characteristic in varying ambient temperatures*

Separate make and break contacts  
*Permits use of different potentials*

Red multi-function button  
*for test and de-energizing*

Yellow switch position indicator  
*for immediate indication of tripping*

Blue multi-function button  
*for manual reset*

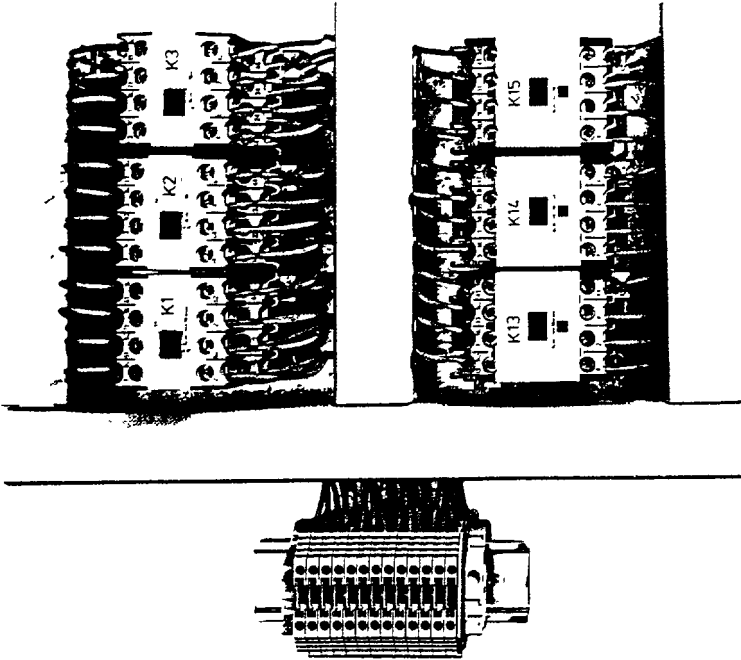
Duplicate coil terminal  
*Easy wiring*

Screwdriver guides  
*No slipping of tools during wiring*

Cross-head screws  
*for chisel blade or cross-head screwdrivers*

Protective standard IP 20  
*"Fingersafe" to VDE*

# DIL System Contactors

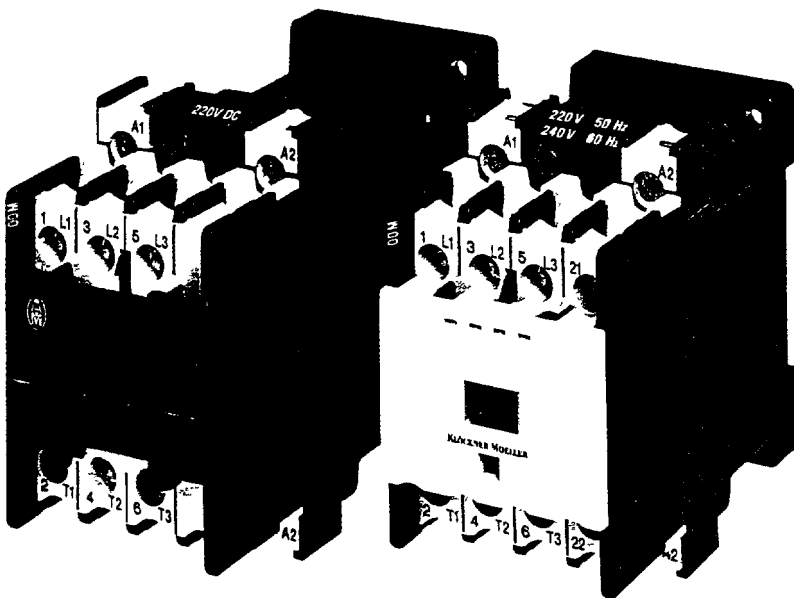


## Mounting positions

DIL system contactors can be mounted in virtually any position.\*

Relays are often mounted on vertical rails, which makes wiring out to terminal strips more easy as these are normally fitted horizontally at the bottom

\* see Technical Data



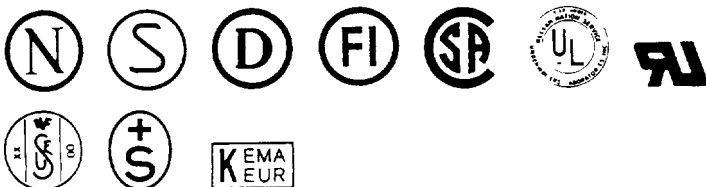
## Ambient temperature

VDE 0660 specifies +40 °C as the upper limit of ambient temperature and -5 °C as the lower limit. DIL system contactors exceed these requirements by far, the upper limit being +50 °C and the lower limit -25 °C.

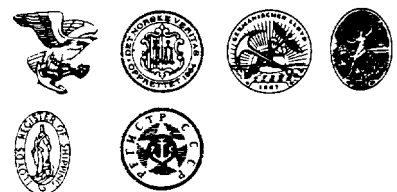
°C	-25°	-5°	0°	+40°	+50°
DIL R					
DIL M					
VDE					

DIL system contactors are devices for world markets. Even in North America they can be used in their standard versions. Approvals applied for worldwide.

Standard devices

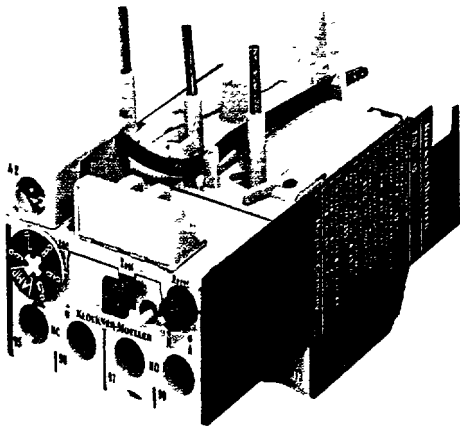


Standard devices for shipboard use in accordance with the Classification Societies.

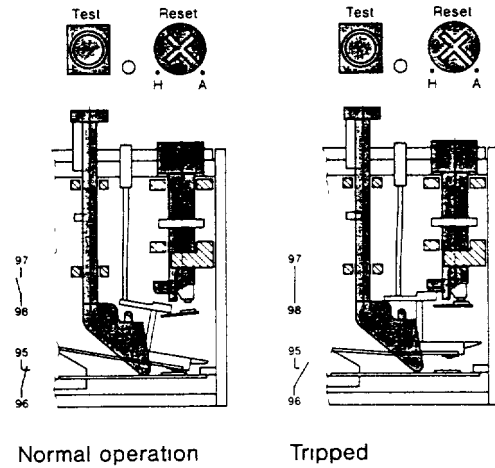
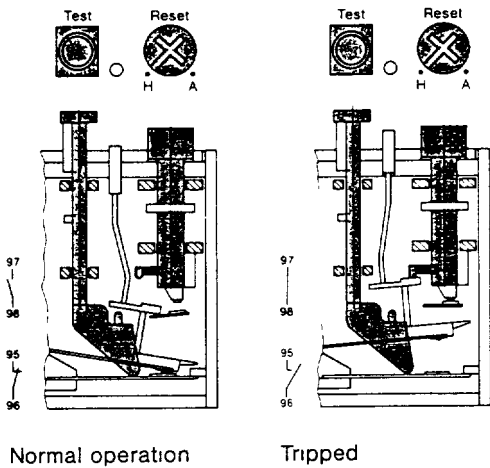
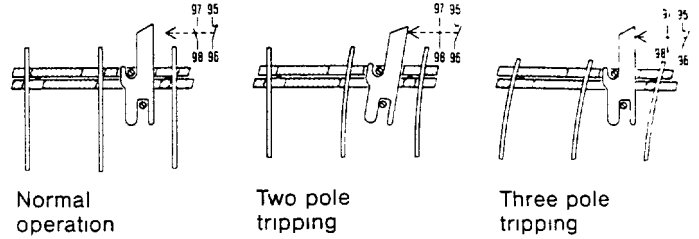




## Function control



Clear setting and function control  
Tripping by means of differential slide

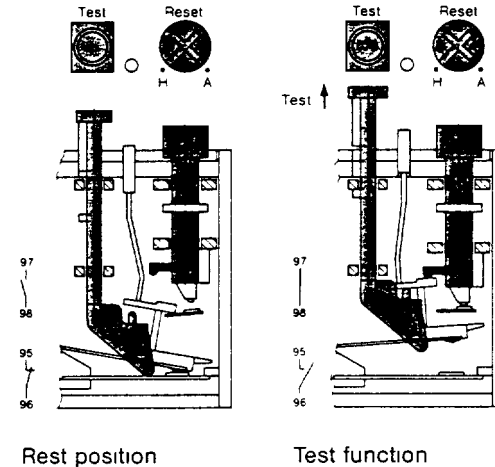
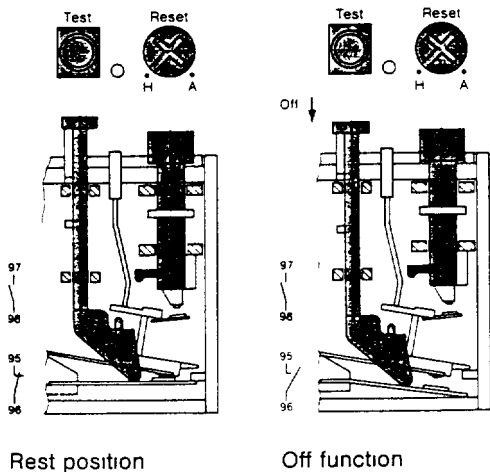


### Manual reset in H position (hand) (as supplied)

A yellow pin projects from the enclosure to indicate tripping  
Resetting by pressing reset button

### Manual reset in A position (automatic)

No tripped indication.  
Automatic reset



### Off function

When the test button is pushed, break contact 95-96 opens and closes again when the button is released.  
(To de-energize contactors with self-maintaining circuit)  
The make contact 97-98 is not actuated

### Test function

Pulling the test button opens break contact 95-96 and closes make contact 97-98. In the auto position, the contacts return to the rest position automatically as soon as the test button is released. In the hand position this only happens after pushing the reset button

# Technical Data

## DIL R System Relays

				Type →	DIL R	TPE 11 DIL R TPD 11 DIL R	V DIL R	VS 1 DIL R VS 2 DIL R
<b>General</b>					BSS, IEC, VDE, CSA, UL, NEC, EEMAC, NEMA, SEV, UTE, AEI, NBN, DEMKO, NEMKO, SEMKO, Finland, LRS, GL, BV etc			
Specifications								
Mechanical life span	a c operated d c operated	Operations Operations	x 10 <sup>6</sup> x 10 <sup>6</sup>		20 20	1 1	5 5	- 30
Climatic test					Damp heat, constant, to IEC 68 Pt 2-3 Damp heat, cyclic, to IEC 68 Pt 2-30			
Ambient temperature	Open Enclosed	max /min max /min	°C °C		+50/-25 +40/-25			
Mounting position					As required, except inverted			
Impact resistance (duration 20 ms)		Make/break contacts	g		10/10	10/10	20	10/-
Dimensions					Page 20			
<b>Contacts</b>								
Rated insulation voltage U	Insulation group C, VDE 0110 Insulation group B, VDE 0110		a c / d c a c / d c		500/600	380/450	380/450	250/300(VS1) 380/450(VS2)
Rated making capacity								
To AC-11	cos φ = 0.7		A		80	50	-	22
To DC-11	L/R ≤ 300 ms L/R ≤ 40 ms		x I <sub>e</sub> x I <sub>e</sub>		1,1 -	1,1 -	- -	- 1,1
Rated breaking capacity								
To AC-11	cos φ = 0.7	220/240 V 380/415 V	A A		80 45	45 45	- -	22 22
To DC-11	L/R ≤ 300 ms L/R ≤ 40 ms		x I <sub>e</sub> x I <sub>e</sub>		1,1 -	1,1 -	- -	- 1,1
Rated operating current I <sub>e</sub>		220/240 V 380/415 V 500 V	A A A		6 4 1,5	4 4 -	- - -	2 2 -
To DC-11		Contacts in series						
Above 110 V and at L/B	L/R ≤ 15 ms	1 24 V	A		10	-	-	1,7
> 50 ms it is essential that means of arc suppression (RC circuit) be used in parallel with the contacts	e.g. contactor coils	2(1) 60 V	A		10(6)	-	-	(0,7)
Required capacitor C = 1 μF and resistor R = 0.5 Ω in series	solenoid valves	2(1) 110 V	A		6(3)	-	-	(0,4)
	d.c. motors	3(1) 220 V	A		5(1)	-	-	(0,2)
	L/R ≤ 50 ms	2 24 V	A		6	-	-	-
	e.g. magnetic clutches	2 60 V	A		6	-	-	-
	solenoid brakes	3(1) 110 V	A		3(1,5)	-	-	-
		3(1) 220 V	A		2(1)	-	-	-
	L/R ≥ 50 ms		A		Please enquire			
Motor rating to AC-3	50 60 Hz	220/240 V 380/415 V	kW kW		2,2 4	- -	- -	- -
Rated thermal current I <sub>th</sub>			A		16	10	-	6
Component life span to AC-11 at I <sub>e</sub> = 1,2 A to DC-11 at I <sub>e</sub> = 0,25 A		Operations Operations	x 10 <sup>6</sup> x 10 <sup>6</sup>		1 1	1 1	- -	1 1
Short circuit capacity without welding	Maximum fuse		A slow, gL A fast		16 -	6 -	- -	- 4
	Maximum overcurrent protective device	220/240 V 380/415 V	PKZM 1 PKZM 1		4 4	2,4 1,6	- -	- -
Current heat loss when loaded with I <sub>th</sub>	Per contact	max	W		0,8	0,3	-	-
Terminal capacity, one or two wires Solid		min max min	mm <sup>2</sup> mm <sup>2</sup> mm <sup>2</sup>		0,75 4 0,75	0,75 2,5 0,75	0,75 4 0,75	0,75 4 0,75
Flexible or stranded with ferrules to DIN 46228 AWG wiring		max min max	mm <sup>2</sup> AWG AWG		2,5 14 12	1,5 16 14	2,5 14 12	2,5 14 12
<b>Magnet system</b>								
Pick-up and drop-out values	a c operated	Pick-up Drop-out Unlatch			0,8, 1,1 U <sub>c</sub> 0,4 0,6 U <sub>c</sub> -	- - -	- - 0,8 1,1	- - -
	d c operated* or coil 50/60 Hz	Pick-up Drop-out			0,85 1,1 U <sub>c</sub> 0,2 0,4 U <sub>c</sub>	- -	- -	0,9 1,2 U <sub>c</sub> -
Power consumption of coil	a c operated 50 Hz	Pick-up Sealing	VA/W VA/W		60/45 8,5/3	- -	13/12 5/2	- -
	d c operated	Pick-up Sealing	W W		8 8	- -	2 2	0,8 0,8
Relative duty factor			% DF		100%		100% with AC 500 ms with DC	100%
Hourly frequency of operation		max	ops/h		9000	3600	2000	9000
Switching times at 100% U <sub>c</sub>	a c / d c operated	Closing delay	ms		8 16/12 16	-	-	-/10
Make contacts (guide only)		Opening delay	ms		5 13/16 18	-	-	-/10
Minimum command time	Latching Unlatching		ms ms		- -	- -	35 25	- -
Special coils 50/60 Hz	Mechanical life span				at 50 Hz approximately 30% less than for standard types			

# DIL M System Contactors

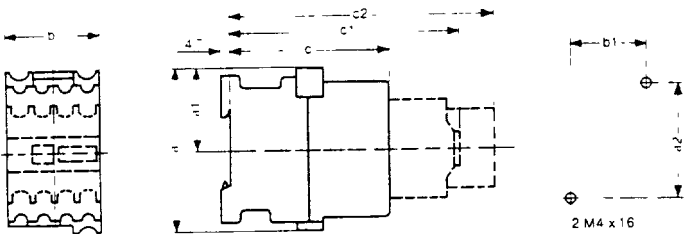
Frame size →			00 M	00A M	0 M	0A M	1 M	1A M	2 M	2A M	
<b>General</b>			BSS, IEC, VDE, CSA, UL, NEC, EEMAC, NEMA, SEV, UTE, AEI, NBN, DEMKO, NEMKO, SEMKO Finland, LRS, GL, BV etc								
Specifications											
Mechanical life span			10-15 x 10 <sup>6</sup>								
a c operated			10-15 x 10 <sup>6</sup>								
d c operated			9000								
Max operating frequency, mechanical			5000								
Climatic test			Damp heat, constant, to IEC 68 Pt 2-3 Damp heat, cyclic, to IEC 68 Pt 2-30								
Ambient temperature			+50/-25								
Open			+40/-25								
Enclosed			Any except inverted								
Mounting position			Vertical and inclined up to 30° in any direction from the vertical								
Impact resistance Make (Break) contacts			10(6)								
Impact duration 30 ms			g								
Dimensions			7(6)								
			Page 20								
<b>Main contacts</b>											
Rated insulation voltage U to VDE 0110			750								
Group C			V a c								
Rating making capacity at cos φ = 0,35			200								
at cos φ = 1			210								
Rated breaking capacity at cos φ = 0,35			270								
220/240 V			230								
380/415 V			230								
500 V			230								
660 V			230								
75			80								
200			200								
700			700								
700			700								
840			840								
840			840								
720			370								
720			370								
720			370								
700			280								
700			280								
520			200								
520			200								
See selection pages											
Short-circuit capacity											
Maximum fuse											
Without welding			20								
slow, gL			20								
aM			25								
A			35								
Normal			25								
slow, gL			25								
aM			25								
A			35								
100			100								
125			125								
160			160								
125			125								
<b>A.C.</b>			triple-pole								
<b>A.C.-1 duty</b>			Open								
Rated thermal current I <sub>th</sub>			A								
Enclosed			A								
Rated oper current I <sub>e</sub>			single-pole								
16-200 Hz			Open								
A			A								
Enclosed			A								
A			A								
220/240 V			8,7								
A.C.-3 duty			11,5								
Rated operating current I <sub>e</sub>			15								
380/415 V			20								
Open and enclosed			22,5								
500 V			30								
A			28								
50-60 Hz			32								
660 V			43								
A			33								
A			42								
6			27								
A.C.-4 duty			11,5								
Rated operating current I <sub>e</sub>			15								
380/415 V			22,5								
Open and enclosed			30								
500 V			28								
A			32								
50-60 Hz			43								
660 V			33								
A			21								
21			25								
25			33								
Terminal capacity, one wire											
Solid			min mm <sup>2</sup>								
min mm <sup>2</sup>			0,75								
max mm <sup>2</sup>			0,75								
4			4								
Flexible/stranded			min mm <sup>2</sup>								
min mm <sup>2</sup>			0,75								
with ferrules to DIN 46228			max mm <sup>2</sup>								
max mm <sup>2</sup>			2,5								
AWG wiring			min AWG								
min AWG			14								
max AWG			14								
12			8								
8			8								
4			4								
4			4								
2			2								
2			2								
Terminal capacity, two wires											
Solid			min mm <sup>2</sup>								
min mm <sup>2</sup>			0,75								
max mm <sup>2</sup>			0,75								
4			4								
Flexible/stranded			min mm <sup>2</sup>								
min mm <sup>2</sup>			0,75								
with ferrules to DIN 46228			max mm <sup>2</sup>								
max mm <sup>2</sup>			2,5								
DiL /P1 solid			min mm <sup>2</sup>								
min mm <sup>2</sup>			16								
flexible/stranded			max mm <sup>2</sup>								
max mm <sup>2</sup>			10								
10			10								
10			10								
25			25								
25			25								
25			25								
25			25								
<b>Magnet system</b>											
Pick-up and drop-out values											
a c operated			Pick-up								
Drop-out			0,8 1,1 U <sub>c</sub>								
d c operated*			Drop-out								
Pick-up			0,4 0,6 U <sub>c</sub>								
Drop-out			0,85 1,1 U <sub>c</sub>								
0,2 0,4 U <sub>c</sub>											
Power consumption of the coil											
a c operated 50 Hz			Pick-up								
Pick-up			VA/W								
VA/W			60/45								
Sealing			8,5/3								
W			11/3,5								
W			10								
Sealing			10								
W			140/85								
15/4			200/120								
18			20/6								
18			18								
18			18								
Duty factor DF			%								
100											
Switching times at 100% U <sub>c</sub> (guide only)											
Main contacts											
a c operated											
Closing delay			ms								
ms			8-16								
Opening delay			ms								
ms			5-13								
ms			8-15								
ms			23-38								
ms			8-15								
ms			25-38								
ms			10-15								
Arcing time			ms								
ms			≤ 10								
ms			≤ 20								
Special coils 50/60 Hz			Mechanical life span at 50 Hz approximately 30% less than for standard types								

\* Smoothed d c or three-phase bridge rectifier

# Dimensions

## DIL R system relays, DIL M system contactors

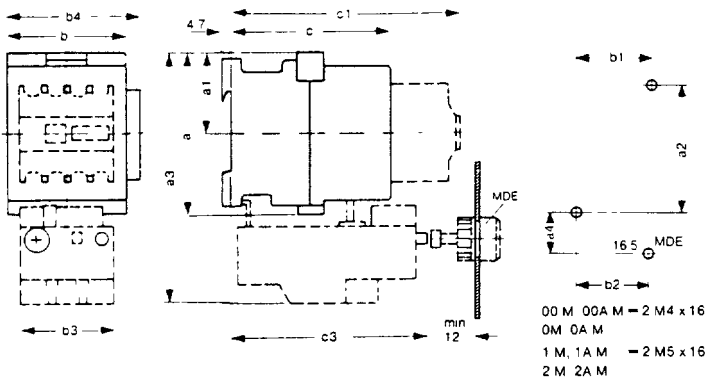
### DIL R, DIL R...-G system relays



DIL	R22 (-G)	R31 (-G)	R40 (-G)	R40/ (-G)	R44 D (-G)	R53 D (-G)	R22/TPE (-G)	R22/TPD (-G)	R22/V (-G)	R31/V (-G)	R40/V (-G)
a	77	(77)	77	(77)	77	(77)	77	(77)	77	(77)	77
a1	39	(39)	39	(39)	39	(39)	39	(39)	39	(39)	39
a2	60	(60)	60	(60)	60	(60)	60	(60)	60	(60)	60
b	45	(45)	45	(45)	45	(45)	45	(45)	45	(45)	45
b1	35	(35)	35	(35)	35	(35)	35	(35)	35	(35)	35
c	79	(104)	-	-	-	-	-	-	-	-	-
c1	-	-	110	(135)	-	-	-	-	-	-	-
c2	-	-	-	-	136	161	136	161	-	-	-

c1 = with DIL auxiliary contact module  
 c2 = with V DIL R mechanical interlock module  
 or with TP 11 DIL R pneumatic timer module

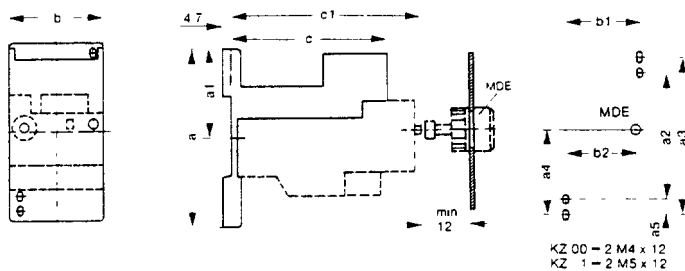
### DIL M, DIL M-G system contactors



DIL	00 M (-G)	00A M (-G)	0 M (-G)	0A M (-G)	1 M (-G)	1A M (-G)	2 M (-G)	2A M (-G)
Z	00	00	00	00	1	1	1	1
a	77	(77)	91	(91)	98	(98)	118	(118)
a1	39	(39)	46	(46)	49	(49)	59	(59)
a2	60	(60)	75	(75)	75	(75)	90	(90)
a3	120	(120)	133	(133)	153	(153)	171	(171)
a4	19	(19)	18	(18)	26	(26)	27	(27)
b	45	(45)	45	(45)	60	(60)	70	(70)
b1	35	(35)	35	(35)	50	(50)	60	(60)
b2	34	(34)	34	(34)	42	(42)	47	(47)
b3	45	(45)	45	(45)	60	(60)	60	(60)
b4	-	-	55	(55)	70	(70)	70	(70)
c	79	(104)	84	(109)	102	(127)	107	(132)
c1	110	(135)	116	(141)	134	(159)	138	(163)
c3	90	(115)	96	(121)	91	(116)	91	(116)

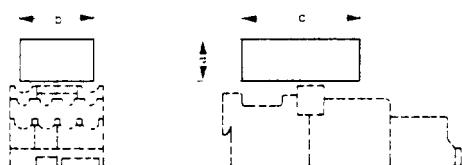
b4 = with 11s DIL M auxiliary contact module  
 c1 = with DIL M auxiliary contact module

### KZ plinth for the individual mounting of overload relays



	KZ 00	KZ 1
a	85	86
a1	42,5	42,5
a2	60	-
a3	75	75
a4	41	36
a5	7,5	-
b	45	60
b1	35	50
b2	34	41,5
c	73	112
c1	90	102

### VS amplifier module, RC suppressor unit, FD free wheel diode



	VS 1 DIL	VS 2 DIL	FD A DIL	RC A DIL	FD B DIL	RC B DIL
a	26	15	15	15	15	15
b	45	33	33	33	33	33
c	55	30	30	30	30	30

### MV mechanical interlock

