

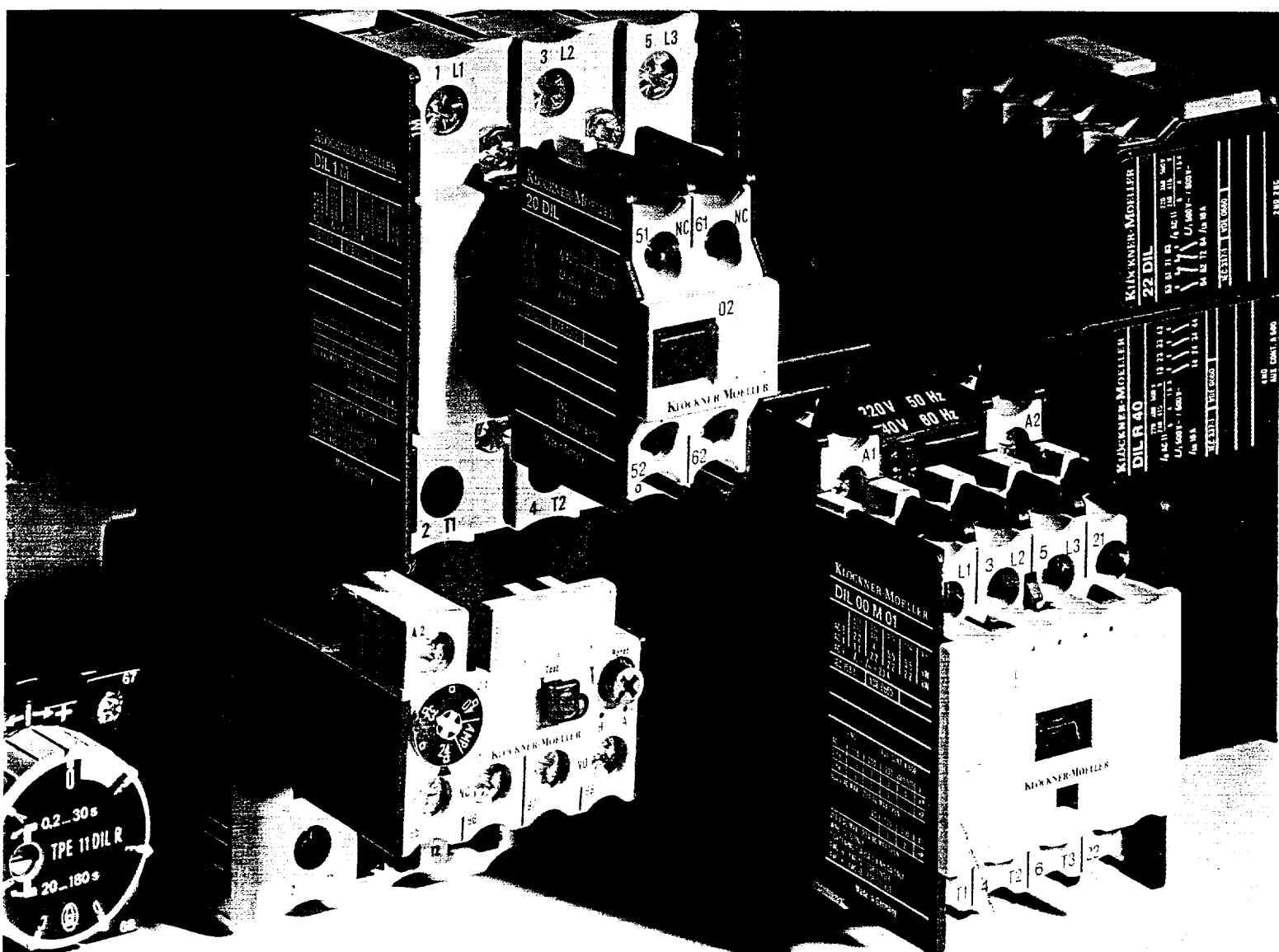
KLOCKNER-MOELLER



576-931 to 577-054

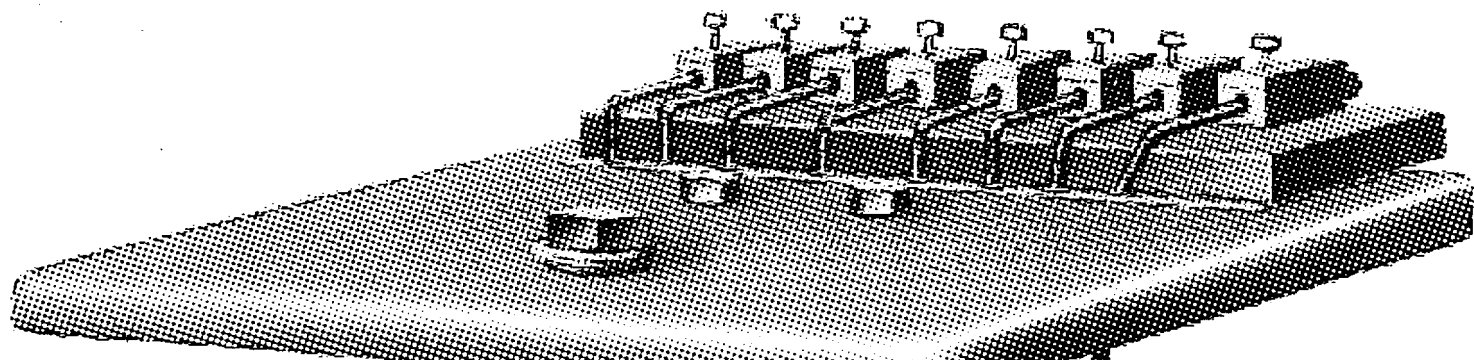
also
176-139
to
176-168
file
number

DIL R System Relays DIL M System Contactors Z Overload Relays



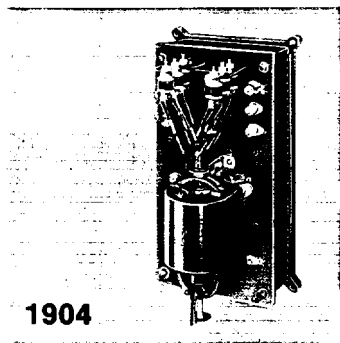
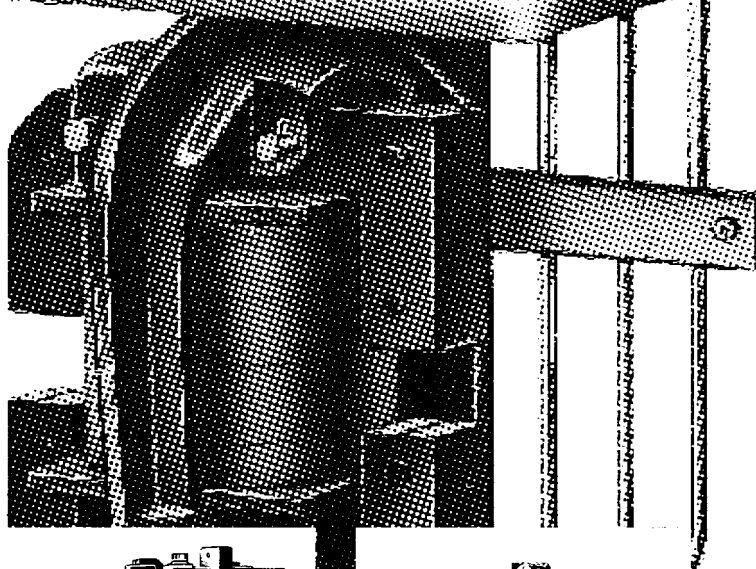
G 21-2070 GB

G 21-2070 GB

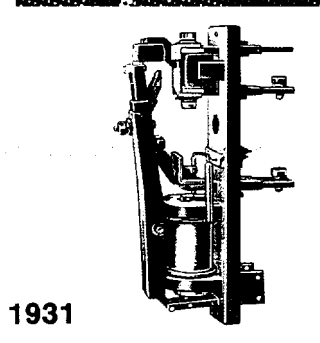


1912

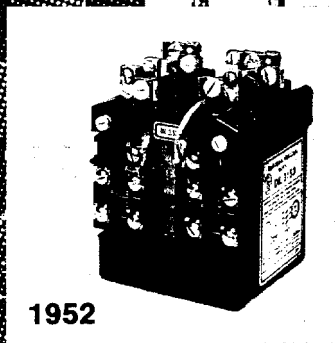
The first three-phase oil-immersed contactor in the world, with tulip-shaped copper contacts and double break feature.



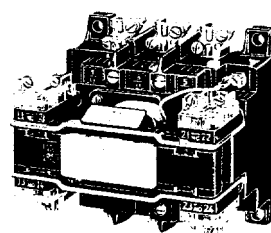
1904



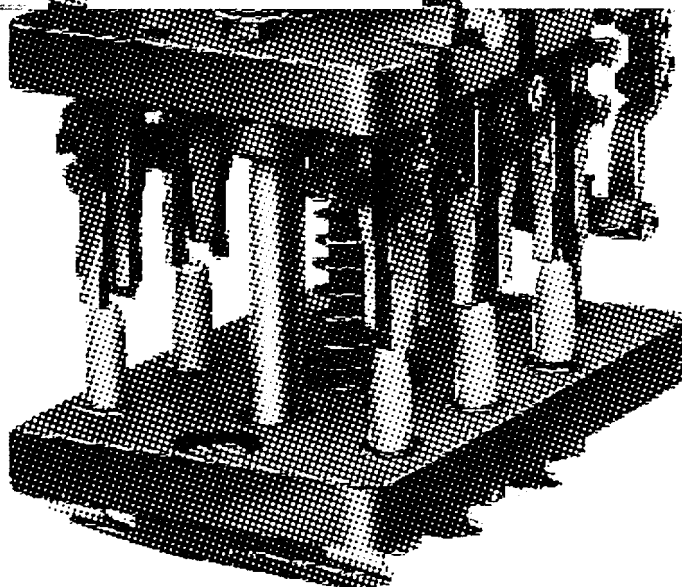
1931



1952



1970



1904 Three-phase air-break contactor with pot magnet and copper contacts.

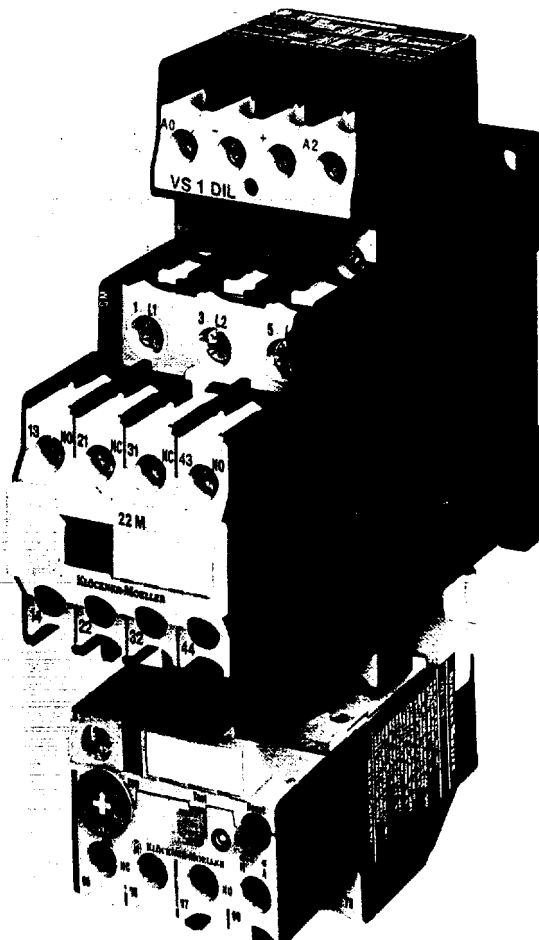
1931 Four-pole oil-immersed contactor with direct power transfer and insulating encapsulation.

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.

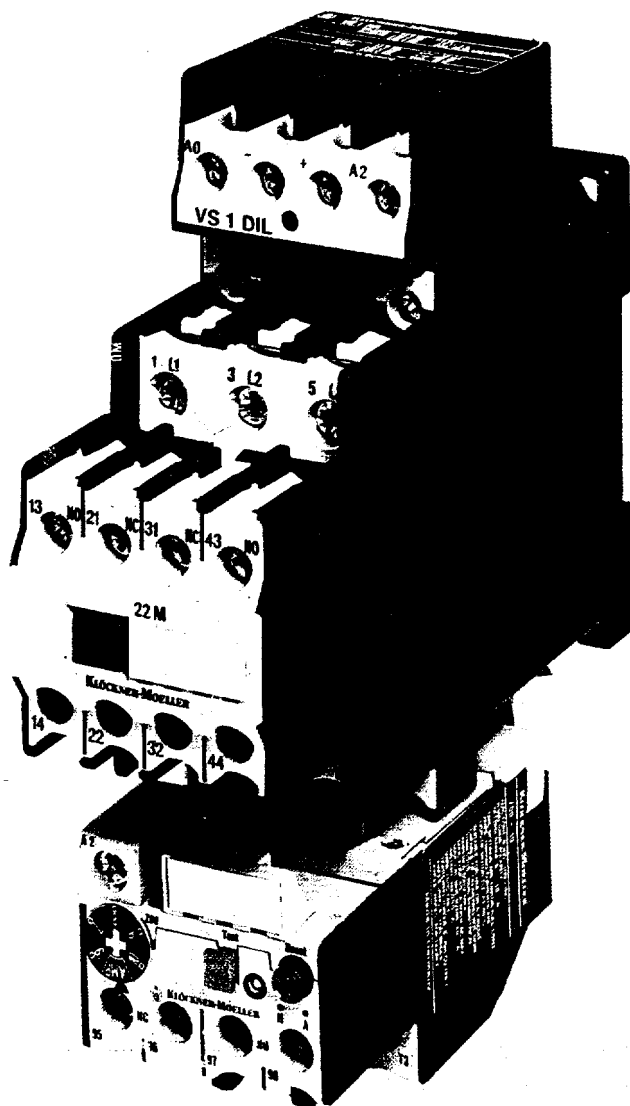
Practice is a hard taskmaster. For 85 years Klockner-Moeller contactors have proved themselves throughout the world.

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.

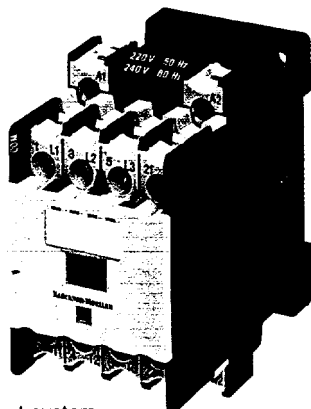
This group includes auxiliary contact modules, timer modules, and latching modules.

Additional devices

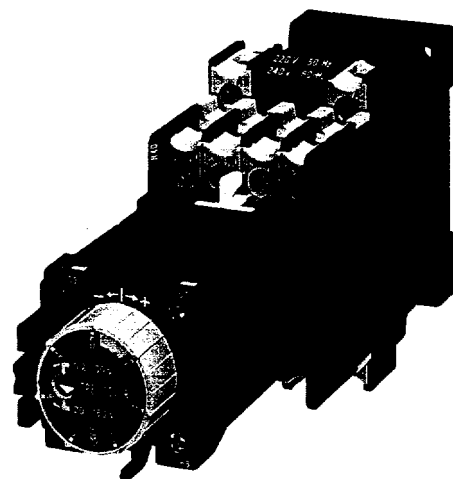
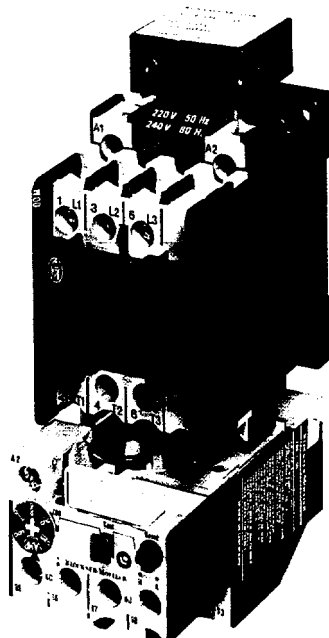
Suppressor units and free wheel diodes, amplifier modules and overload relays belong to this group.

DIL 00M

Basic unit
with drive magnet system
contact system
and enclosure



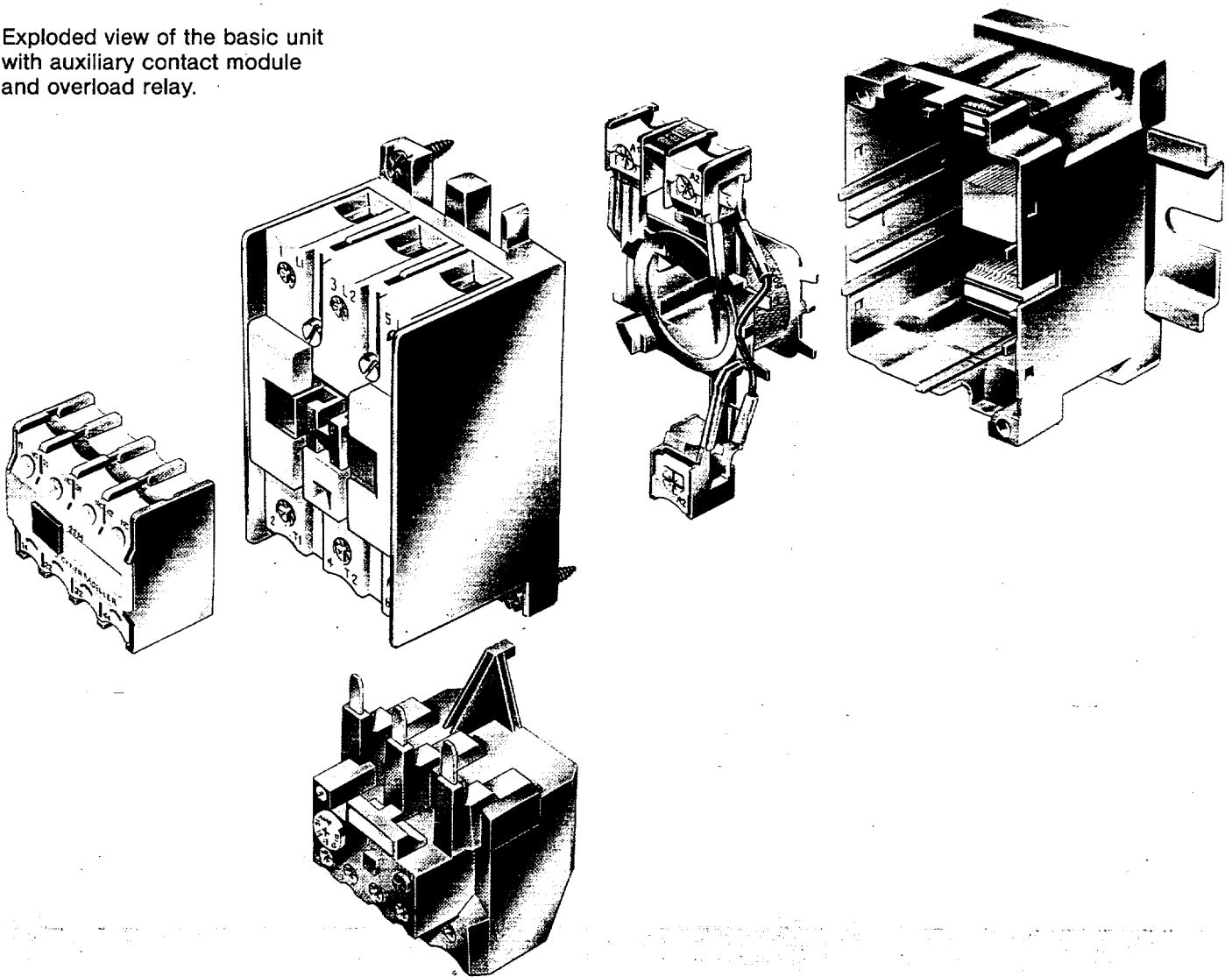
**DIL 00M
Z 00M
RCB DIL 250**
DIL M system contactor
with overload relay
and RC suppressor unit



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
self-lifting 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

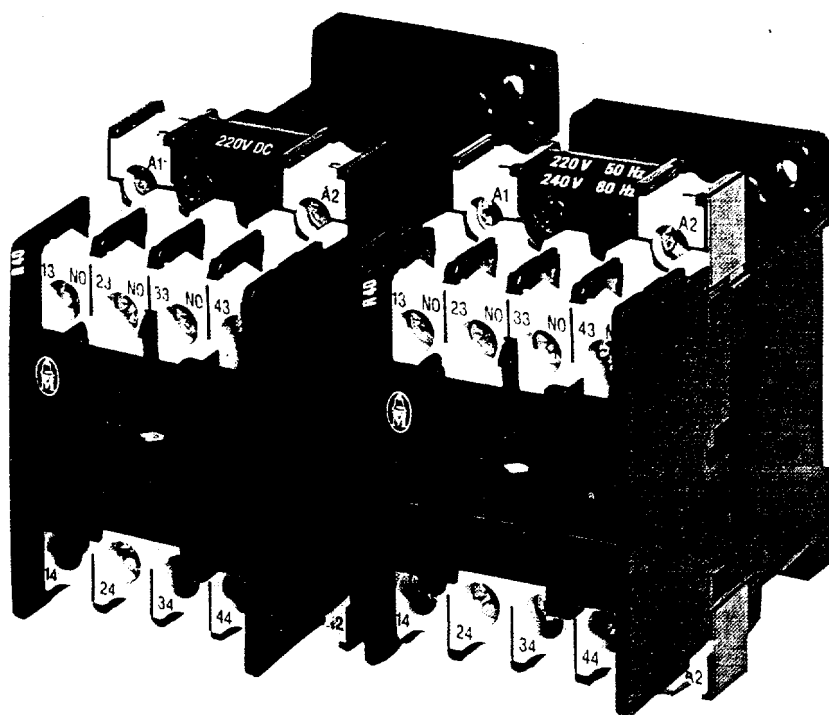
Overload relay fits directly on to
contactor

Saves fitting time

Duplicate coil terminal for overload
relay

Quick wiring

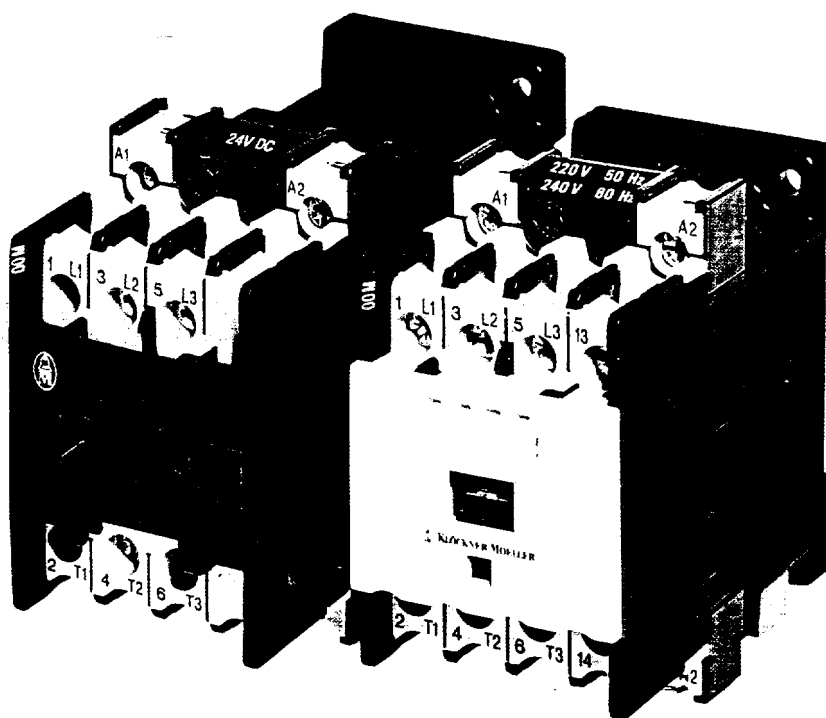
DIL R DIL M Basic Units



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

DIL R basic unit with 4 contacts

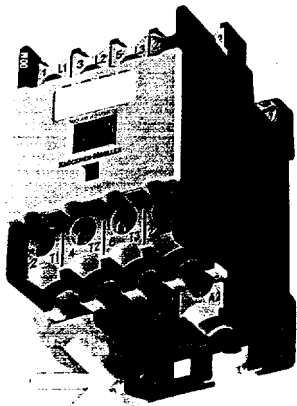
Same base area for both
magnet systems



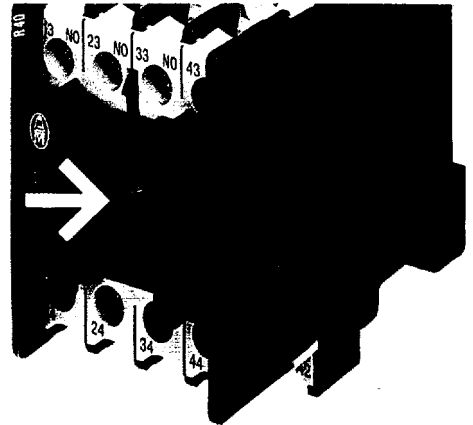
DIL M system contactors with a.c. or
d.c. magnet system

DIL M basic unit with
3 main contacts

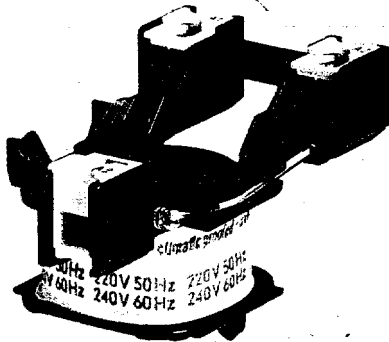
Same base area for both
magnet systems



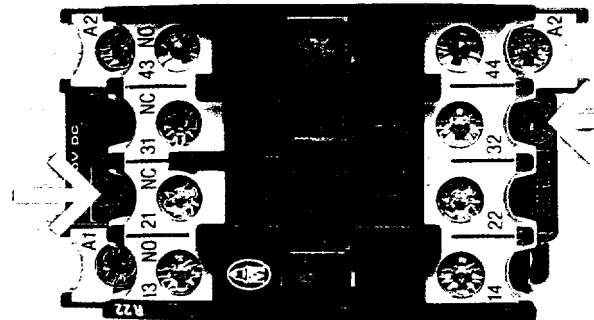
Snap-on or screw fixing



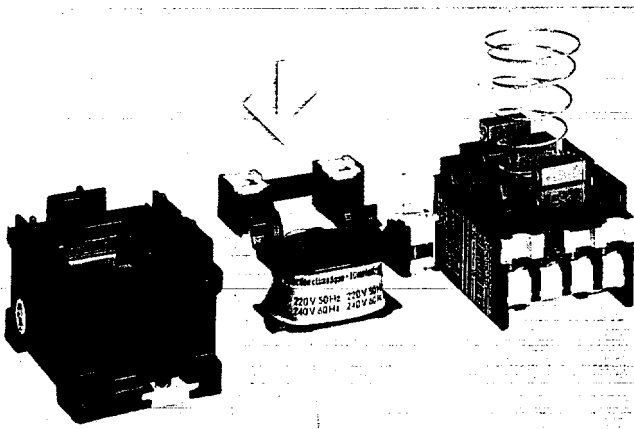
Simple latch coupling for add-on modules



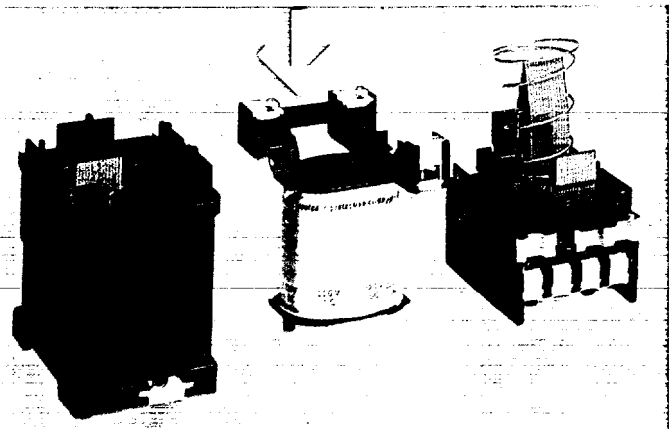
Exchangeable coils



Coil can be exchanged after undoing only 2 screws



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

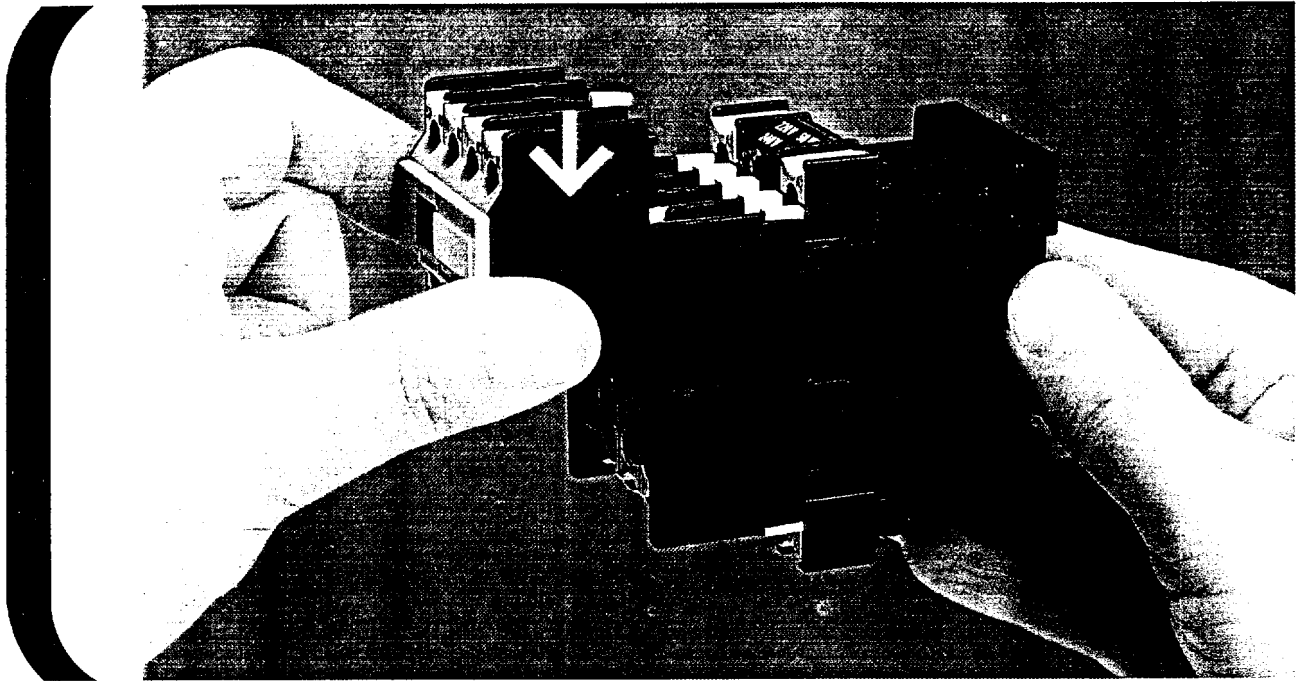


D.C. magnet system with exchangeable coils.
Voltage clearly visible even after contactor is fitted.

Add-on Modules

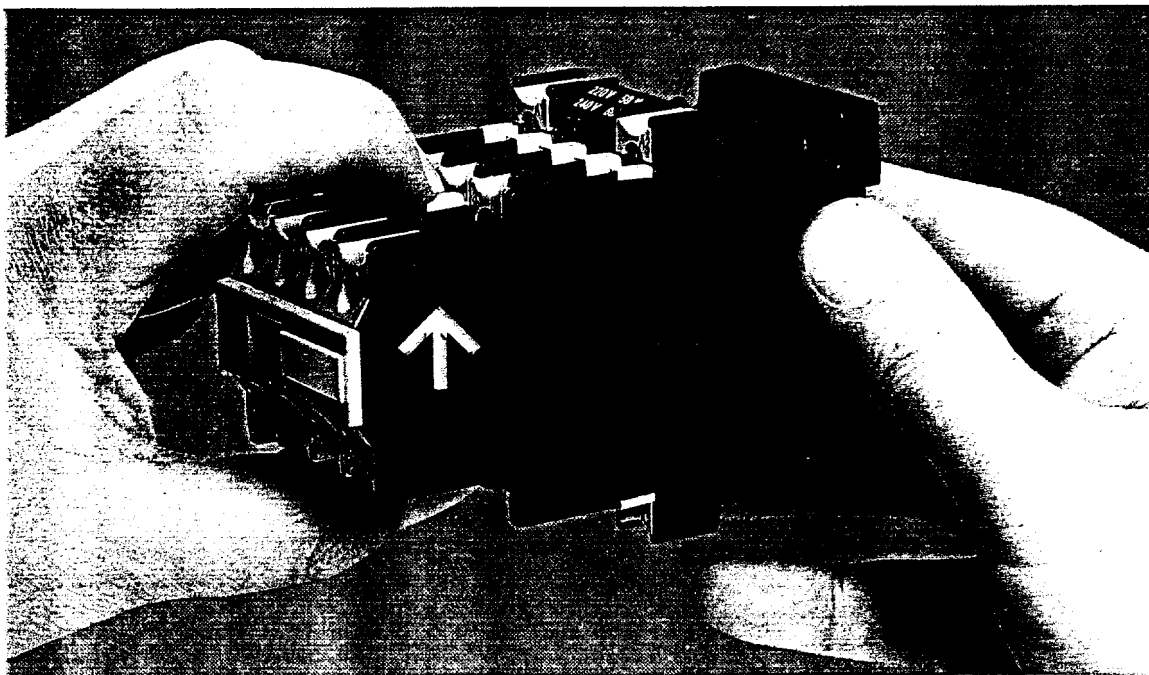
Fitting the add-on modules:

Place module in position and push downwards lightly until latch engages.



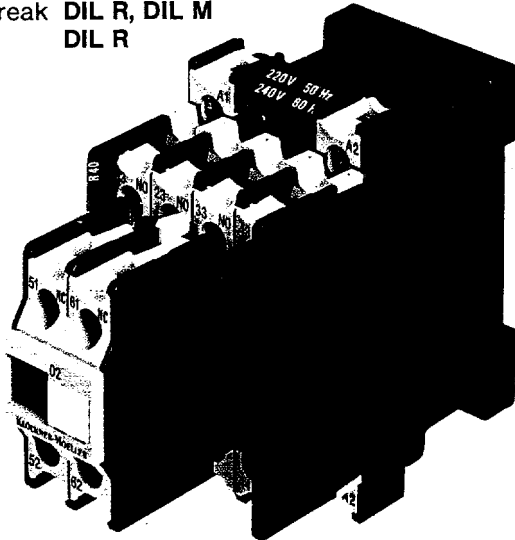
Removing modules:

Press unlatching mechanism and push module upwards.



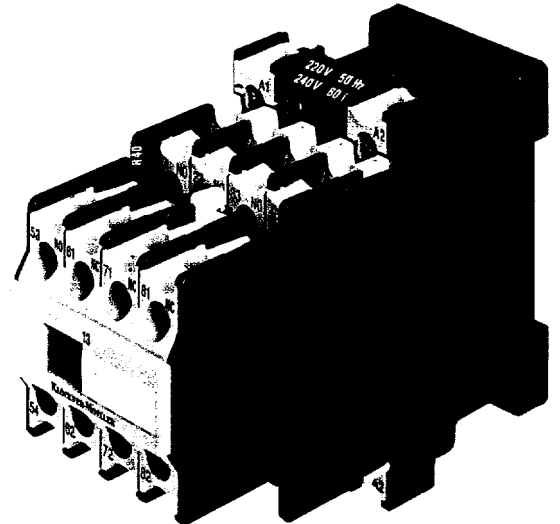
Basic unit and auxiliary contact module with 2 contacts

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



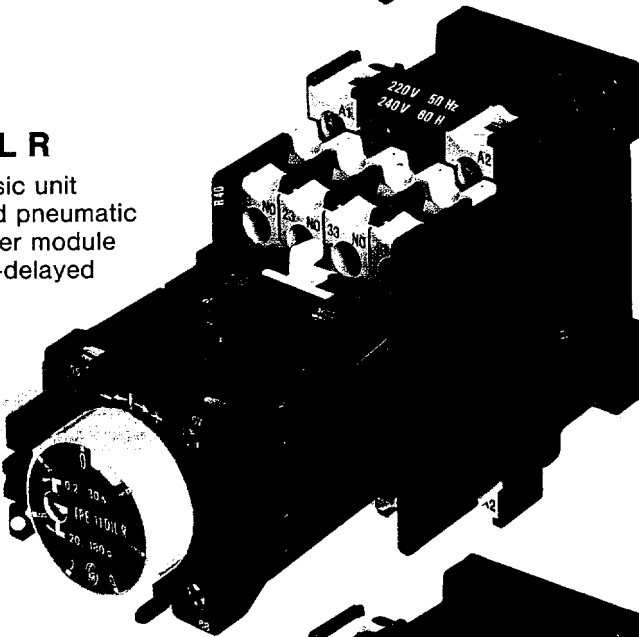
Basic unit and auxiliary contact module with 4 contacts

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



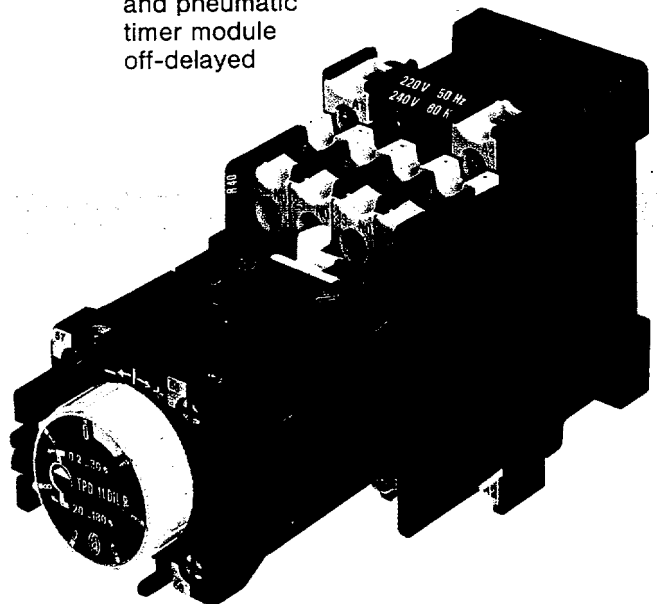
DIL R

basic unit
and pneumatic
timer module
on-delayed



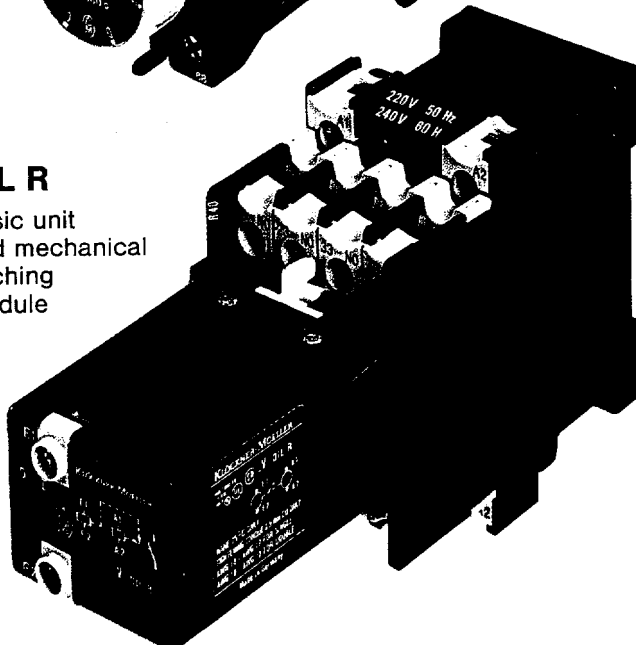
DIL R

basic unit
and pneumatic
timer module
off-delayed

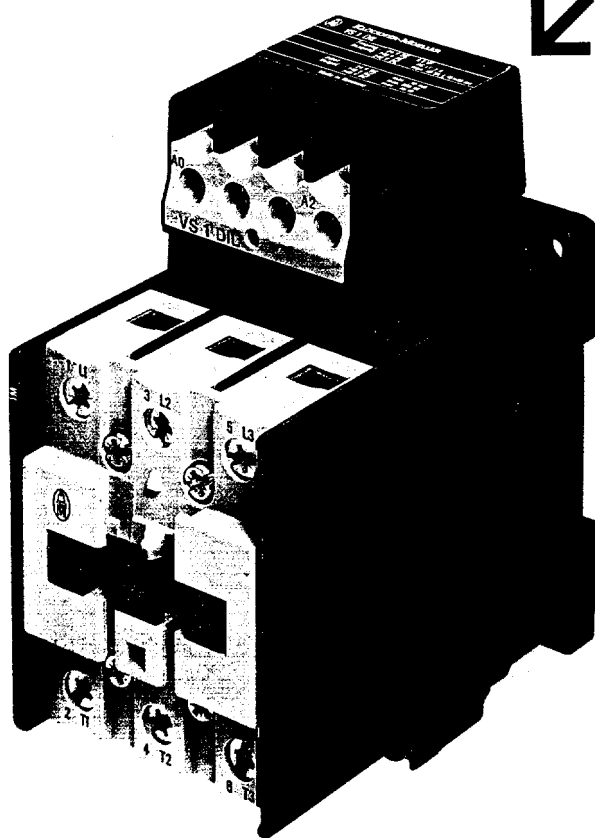


DIL R

basic unit
and mechanical
latching
module

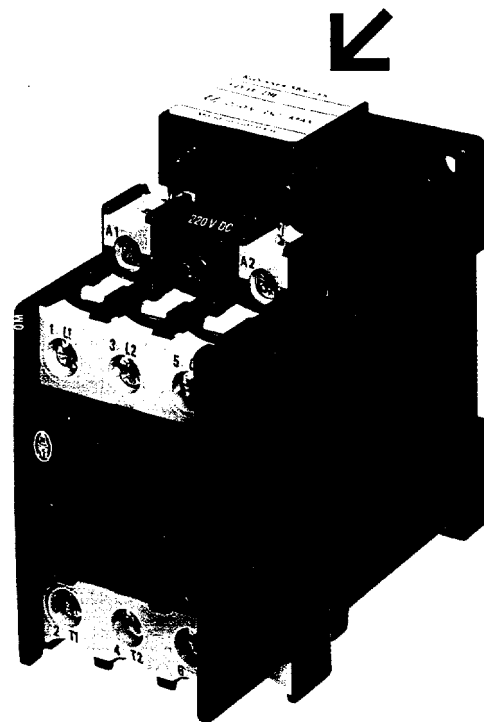


Accessories



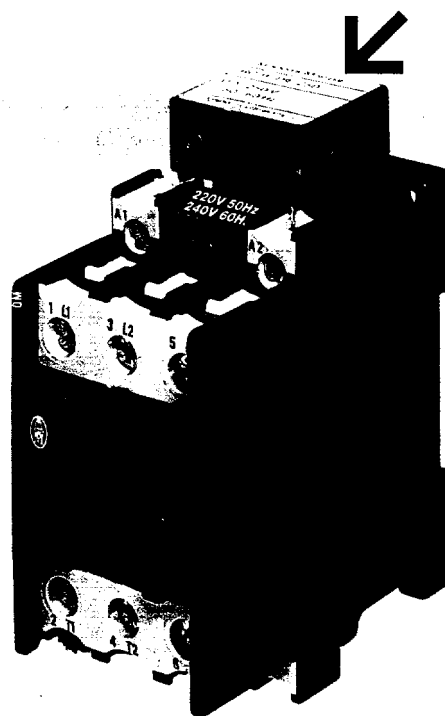
DIL R, DIL M

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



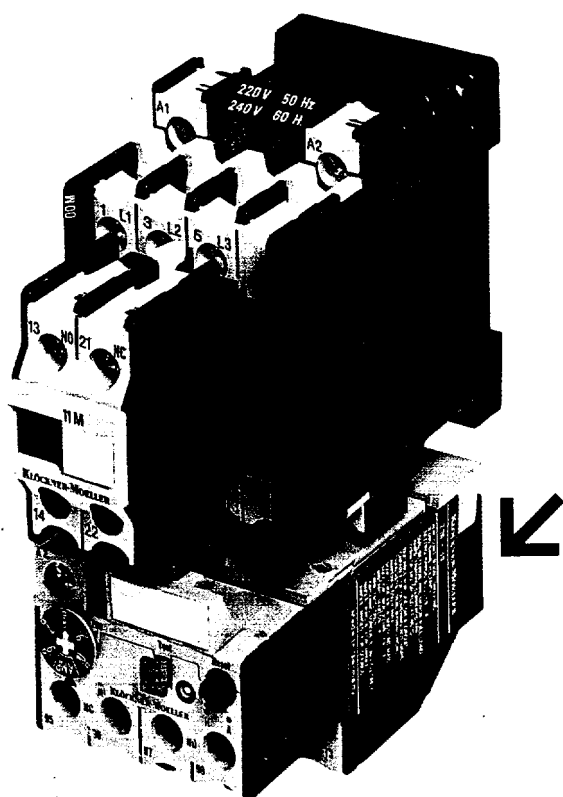
DIL R, DIL M

Free wheel diodes for d. c. magnet systems



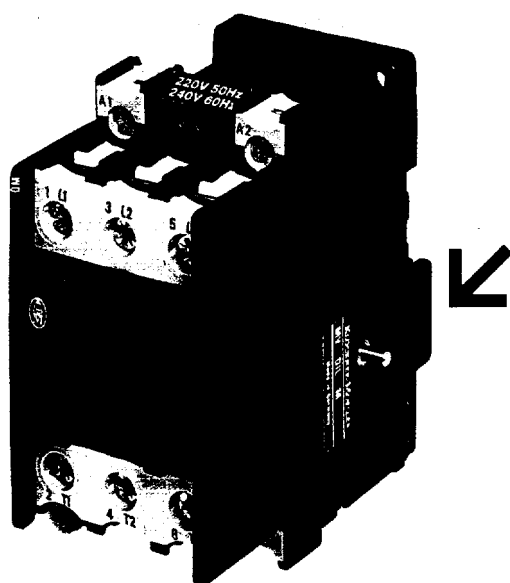
DIL R, DIL M

RC suppressor units for a. c. magnet systems



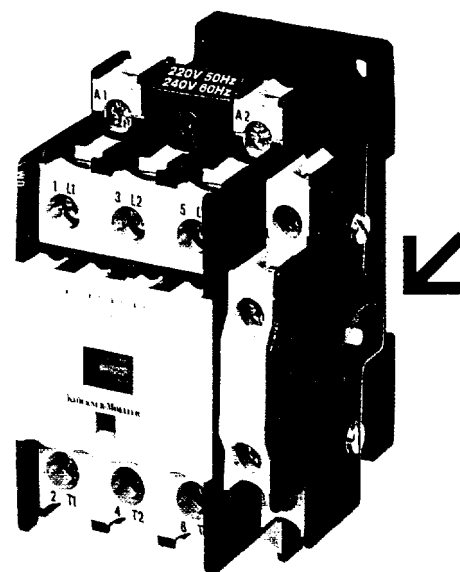
DIL M

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



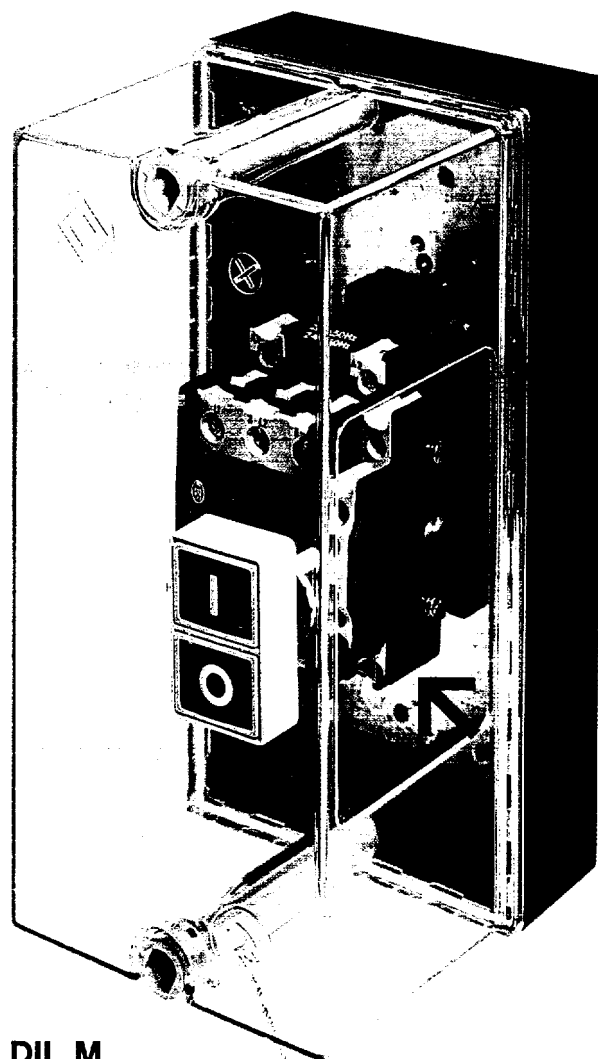
DIL M

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

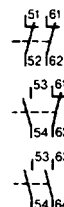
Outstanding feature of the DIL system contactors is the modular system which is consistently adhered to throughout both versions:

DIL R system relays

DIL M system contactors

Auxiliary contacts

DIL R

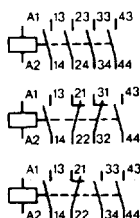


DIL M

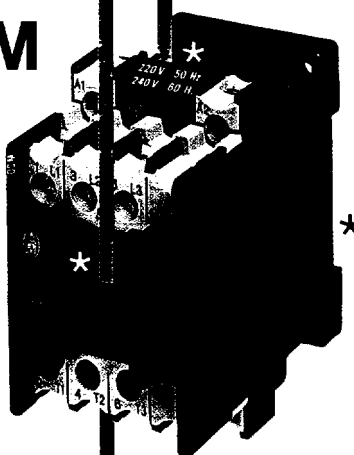
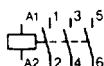


**Basic units
for a.c. or d.c.
operation**

DIL R



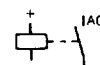
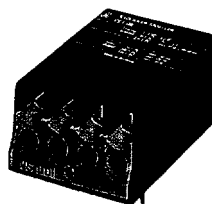
DIL M



★ One module can be fitted

**Amplifier module
with protective circuit**

DIL R/DIL M



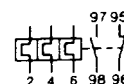
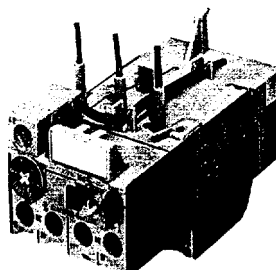
Latching unit

DIL M

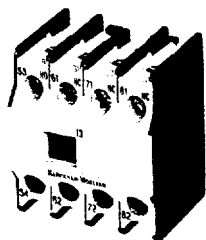


Z overload relay

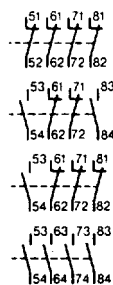
DIL M



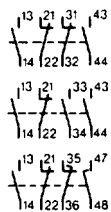
Auxiliary contacts



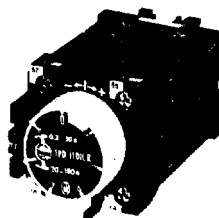
DIL R



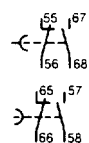
DIL M



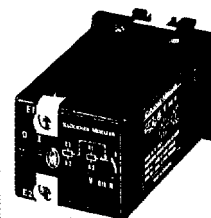
Timer module



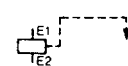
DIL R



Latching module



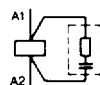
DIL R



RC suppressor unit

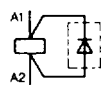


DIL R/DIL M



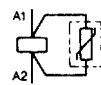
Free wheel diode

DIL R/DIL M

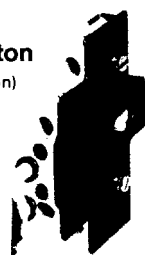


Varistor suppressor

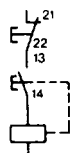
DIL R/DIL M



On-Off push-button (in preparation)



DIL M

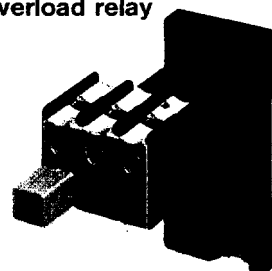


Auxiliary contact module for side mounting (in preparation)

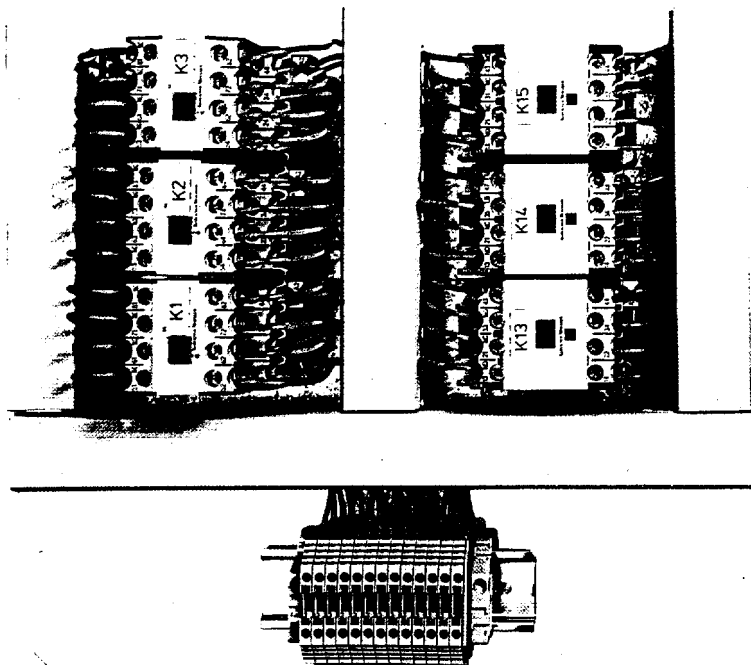


DIL M

Base for separate mounting of Z overload relay



DIL System Contactors

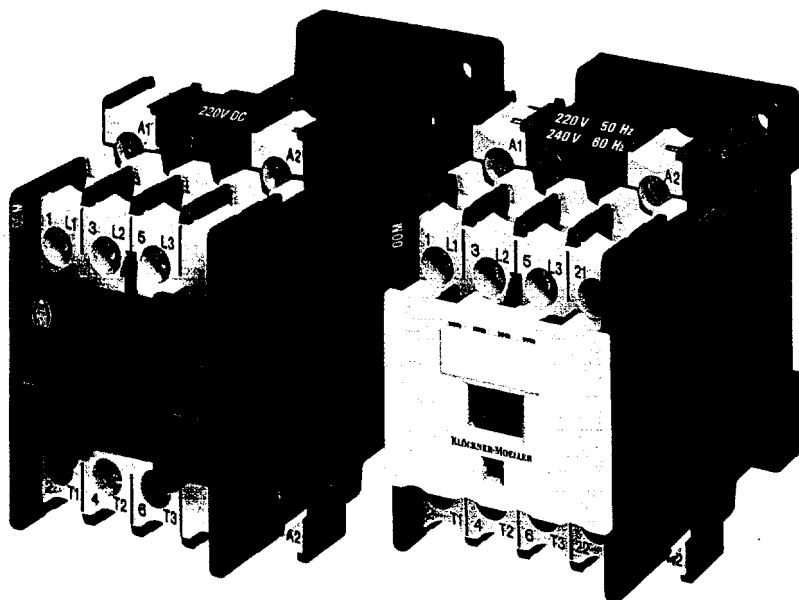


Mounting positions

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



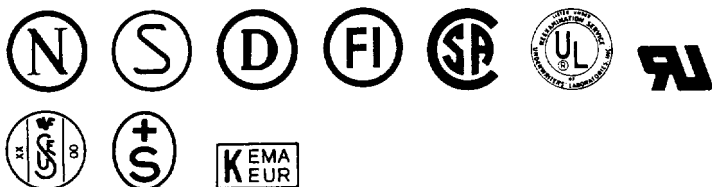
Ambient temperature

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.

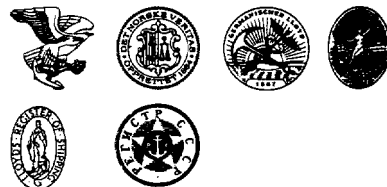
°C	-25°	-5°	0°	+40°	+50°
DIL R					
DIL M					
VDE					

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.



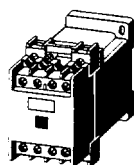
Which contactor for which motor?

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
1 Million	AC-3 including 0,1% AC-4	220/240 V	2,2	3	4	5,5	7,5	11	15	18,5
		380/440 V	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
30 000	AC-4	220/240 V	1,5	2,2	3	4	5,5	7,5	11	15
		380/440 V	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 _{th}	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



02 DIL
2 B



11 DIL
1 M + 1 B



20 DIL
2 M



04 DIL
4 B



13 DIL
1 M + 3 B



22 DIL
2 M + 2 B

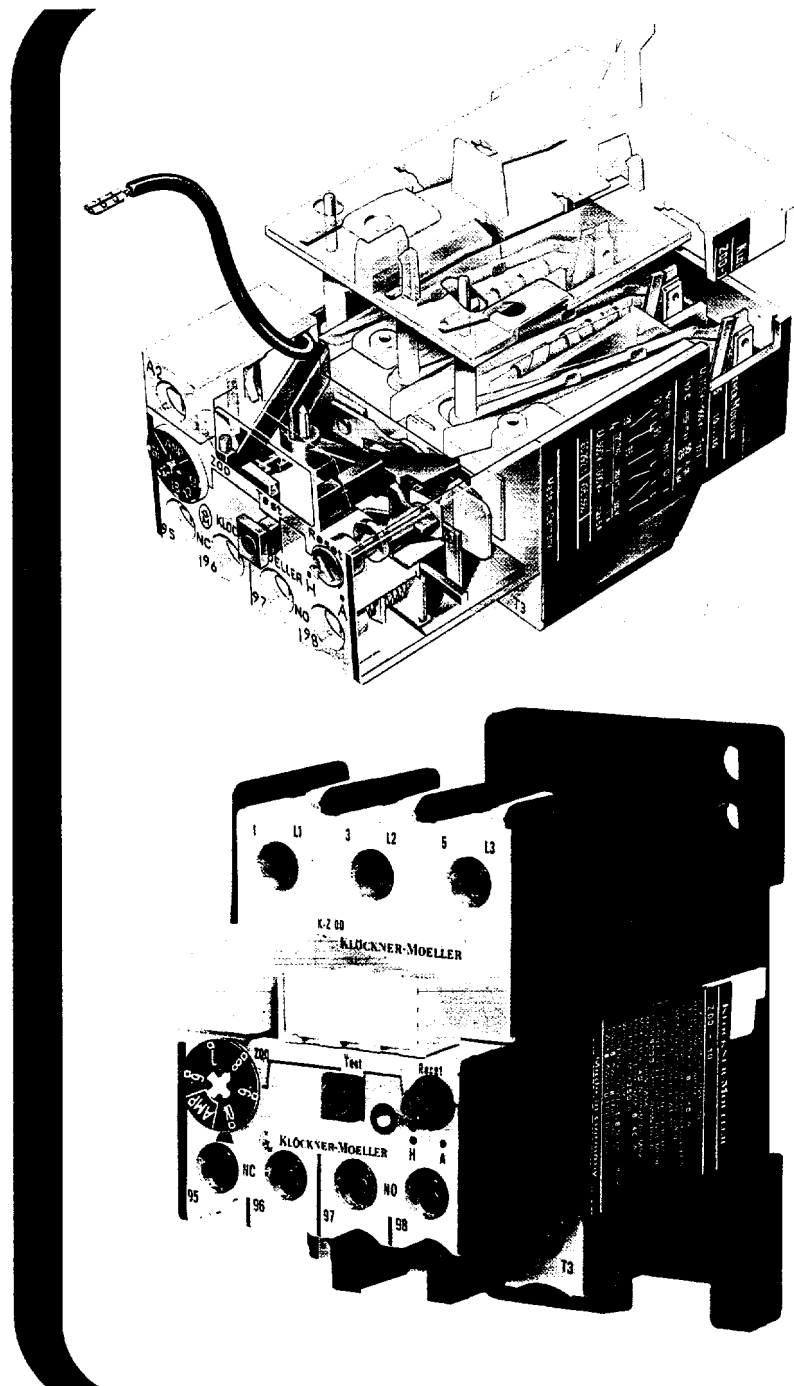


40 DIL
4 M

	without	02 DIL 2 B	11 DIL 1 M + 1 B	20 DIL 2 M	04 DIL 4 B	13 DIL 1 M + 3 B	22 DIL 2 M + 2 B	40 DIL 4 M
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

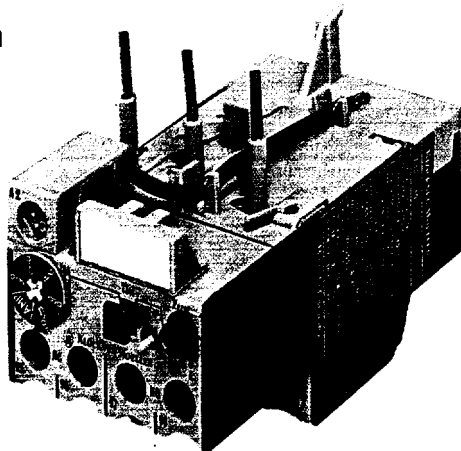
Duplicate coil terminal
Easy wiring

Screwdriver guides
No slipping of tools during wiring

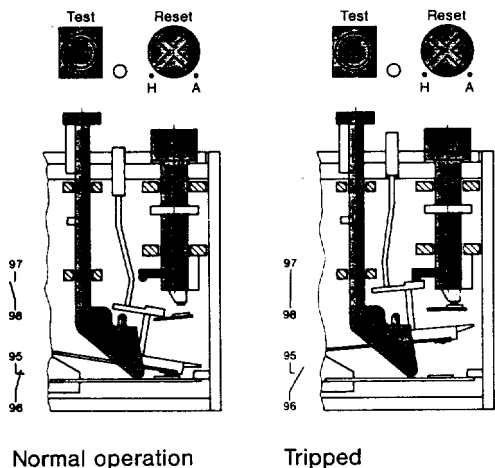
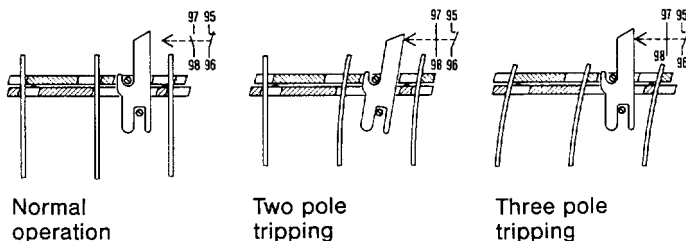
Cross-head screws
for chisel blade or cross-head screwdrivers

Protective standard IP 20
"Fingersafe" to VDE

Function control

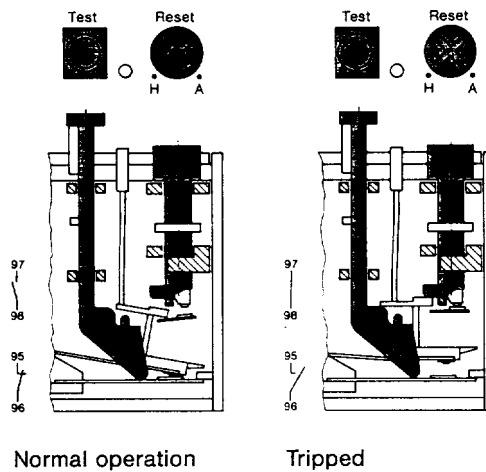


Clear setting and function control.
Tripping by means of differential slide.



Normal operation

Tripped



Normal operation

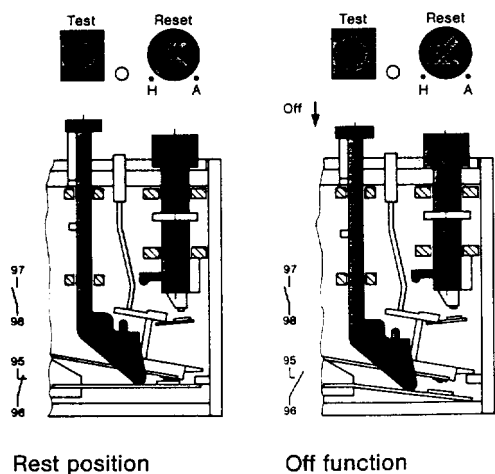
Tripped

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

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

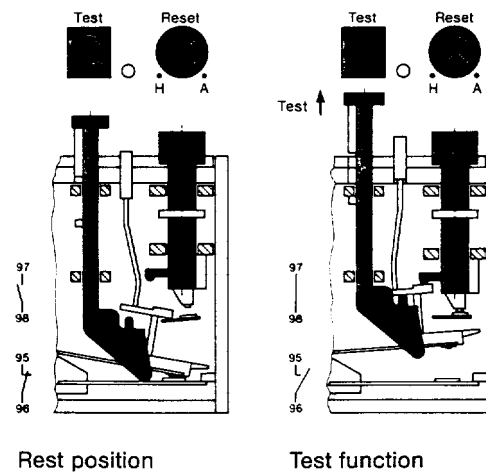
Manual reset in A position (automatic)

No tripped indication.
Automatic reset.



Rest position

Off function



Rest position

Test function

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
General					BSS, IEC, VDE, CSA, UL, NEC, EEMAC, NEMA, SEV, UTE, AEI, NBN, DEMKO, NEMKO, SEMKO, Finland, LRS, GL, BV etc.			
Specifications					Damp heat, constant, to IEC 68 Pt. 2-3 Damp heat, cyclic, to IEC 68 Pt. 2-30			
Mechanical life span	a.c. operated d.c. operated	Operations Operations	x 10 ⁶ x 10 ⁶		20 20	1 1	5 5	- 30
Climatic test					+50/-25 +40/-25 As required, except inverted			
Ambient temperature	Open Enclosed	max./min. max./min.	°C °C		10/10	10/10	20	10/-
Mounting position					Page 20			
Impact resistance (duration 20 ms)		Make/break contacts	g					
Dimensions								
Contacts								
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 _e x I _e		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 _e x I _e		1,1 -	1,1 -	- -	- 1,1
Rated operating current I _e		220/240 V 380/415 V 500 V	A A A		6 4 1,5	4 4 -	- -	2 2 -
To DC-11								
Above 110 V and at L/B	L/R ≤ 15 ms	Contacts in series	A		10	-	-	1,7
> 50 ms it is essential that	e.g. contactor coils	1 24 V	A		10(6)	-	-	(0,7)
means of arc suppression	solenoid valves	2(1) 60 V	A		6(3)	-	-	(0,4)
(RC circuit) be used in	d.c. motors	2(1) 110 V	A		5(1)	-	-	(0,2)
parallel with the contacts:	L/R ≤ 50 ms	2 24 V	A		6	-	-	-
Required capacitor	e.g. magnetic clutches	2 60 V	A		6	-	-	-
C - 1 μF and resistor	solenoid brakes	3(1) 110 V	A		3(1,5)	-	-	-
R - 0.5 Ω in series		3(1) 220 V	A		2(1)	-	-	-
	L/R ≥ 50 ms		A		Please enquire.			
Motor rating	50...60 Hz	220/240 V 380/415 V	kW kW		2,2 4	- -	- -	- -
to AC-3					16	10	-	6
Rated thermal current I _{th}			A					
Component life span								
to AC-11 at I _e = 1,2 A		Operations	x 10 ⁶		1	1	-	1
to DC-11 at I _e = 0,25 A		Operations	x 10 ⁶		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	Per contact	max.	W		0,8	0,3	-	-
when loaded with I _{th}								
Terminal capacity, one or two wires		min. max. min.	mm ² mm ² mm ²		0,75 4 0,75	0,75 2,5 0,75	0,75 4 0,75	0,75 4 0,75
Solid								
Flexible or stranded with ferrules		max. min. max.	mm ² AWG AWG		2,5 14 12	1,5 16 14	2,5 14 12	2,5 14 12
to DIN 46228								
AWG wiring								
Magnet system								
Pick-up and drop-out values	a.c. operated	Pick-up Drop-out Unlatch			0,8...1,1 U _c 0,4...0,6 U _c -	- - -	- - 0,8...1,1	- - -
	d.c. operated * or coil 50/60 Hz	Pick-up Drop-out			0,85...1,1 U _c 0,2...0,4 U _c	- -	- -	0,9...1,2 U _c -
Power consumption of coil	a.c. operated 50 Hz	Pick-up Sealing Pick-up Sealing	VA/W VA/W W W		60/45 8,5/3 8 8	- - - -	13/12 5/2 2 2	- - 0,8 0,8
	d.c. operated							
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 _c	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

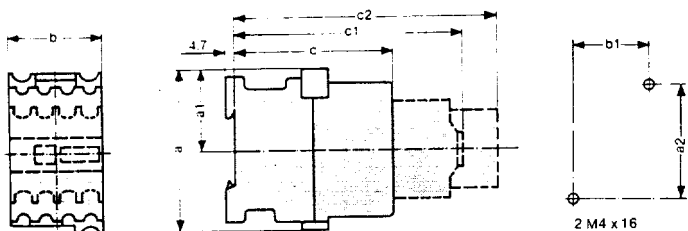
Frame size →			00 M	00A M	0 M	0A M	1 M	1A M	2 M	2A M	
General											
Specifications			BSS, IEC, VDE, CSA, UL, NEC, EEMAC, NEMA, SEV, UTE, AEI, NBN, DEMKO, NEMKO, SEMKO Finland, LRS, GL, BV etc.								
Mechanical life span			10-15 x 10 ⁶								
a. c. operated		Operations	10-15 x 10 ⁶								
d. c. operated		Operations	9000..... 5000.....								
Max. operating frequency, mechanical			Damp heat, constant, to IEC 68 Pt. 2-3								
Climatic test			Damp heat, cyclic, to IEC 68 Pt. 2-30								
Ambient temperature		Open	+50/-25.....								
		Enclosed	+40/-25.....								
Mounting position			Any except inverted Vertical and inclined up to 30° in any direction from the vertical								
Impact resistance Make (Break) contacts			10(6)..... 7(6).....								
Impact duration 30 ms			g.....								
Dimensions			Page 20.....								
Main contacts											
Rated insulation voltage U to VDE 0110		Group C	V a.c.	750.....							
Rating making capacity at cos φ = 0,35		A	200	200	270	270	700	700	840	840	
at cos φ = 1		A	210	210	270	270	700	700	840	840	
Rated breaking capacity at cos φ = 0,35		220/240 V	A	130	130	230	230	370	370	720	720
		380/415 V	A	120	120	230	230	370	370	720	720
		500 V	A	100	100	230	230	280	280	700	700
		660 V	A	75	75	80	80	200	200	520	520
Contactor life span AC-3, AC-4			Operations	See selection pages.....							
Short-circuit capacity											
Maximum fuse											
Without welding		slow, gL	A	20	20	25	35	80	80	125	125
		aM	A	—	—	20	25	50	50	100	100
Normal		slow, gL	A	25	25	35	50	125	125	160	160
		aM	A	20	20	25	35	100	100	125	125
A.C.											
AC-1 duty		triple-pole	A	20	20	35	35	55	55	90	90
Rated thermal current I _{th}		Open	A	16	16	30	30	44	44	80	80
Rated oper. current I _e		Enclosed	A	—	—	—	—	—	—	—	—
16-200 Hz		single-pole	A	50	50	85	85	140	140	225	225
		Open	A	40	40	75	75	110	110	200	200
		Enclosed	A	8,7	11,5	15	20	27	39	52	64
AC-3 duty		220/240 V	A	8,5	11,5	15,5	22,5	30	36	43	58
Rated operating current I _e		380/415 V	A	9	11,5	17	22,5	28	32	43	54
Open and enclosed		500 V	A	6,7	9	13	17,5	21	25	33	42
50-60 Hz		660 V	A	6	8,7	11,5	15	20	27	39	52
AC-4 duty		220/240 V	A	6,6	8,5	11,5	15,5	22,5	30	36	43
Rated operating current I _e		380/415 V	A	6,4	9	11,5	17	22,5	28	32	43
Open and enclosed		500 V	A	4,9	6,7	9	13	17,5	21	25	33
50-60 Hz		660 V	A								
Terminal capacity, one wire											
Solid		min. mm ²	0,75	0,75	2,5	2,5	2,5	2,5	2,5	2,5	
		max. mm ²	4	4	6	6	16	16	16	16	
Flexible/stranded		min. mm ²	0,75	0,75	1	1	2,5/16	2,5/16	2,5/16	2,5/16	
with ferrules to DIN 46 228		max. mm ²	2,5	2,5	6	6	16	16	25/35	25/35	
AWG wiring		min. AWG	14	14	14	14	10	10	8	8	
		max. AWG	12	12	8	8	4	4	2	2	
Terminal capacity, two wires											
Solid		min. mm ²	0,75	0,75	1,5	1,5	2,5	2,5	2,5	2,5	
		max. mm ²	4	4	6	6	16	16	16	16	
Flexible/stranded		min. mm ²	0,75	0,75	0,75	0,75	2,5	2,5	2,5	2,5	
with ferrules to DIN 46 228		max. mm ²	2,5	2,5	6	6	10	10	10	10	
DIL.../P1 solid		max. mm ²	16	16	16	16	16	16	16	16	
flexible/stranded		max. mm ²	10	10	10	10	25	25	25	25	
Magnet system											
Pick-up and drop-out values											
a. c. operated		Pick-up	0,8...1,1 U _c								
		Drop-out	0,4...0,6 U _c								
d. c. operated*		Pick-up	0,85...1,1 U _c								
		Drop-out	0,2...0,4 U _c								
Power consumption of the coil											
a. c. operated 50 Hz		Pick-up	60/45.....	100/75.....	140/85.....	200/120.....					
		Sealing	8,5/3.....	11/3,5.....	15/4.....	20/6.....					
d. c. operated		Pick-up	8.....	10.....	16.....	18.....					
		Sealing	8.....	10.....	16.....	18.....					
Duty factor DF			%								
Switching times at 100% U _c (guide only)											
Main contacts											
a. c. operated											
Closing delay		ms	8-16.....	15-29.....	23-38.....	25-38.....					
Opening delay		ms	5-13.....	8-15.....	8-15.....	10-15.....					
Arcing time		ms	≤ 10.....	≤ 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

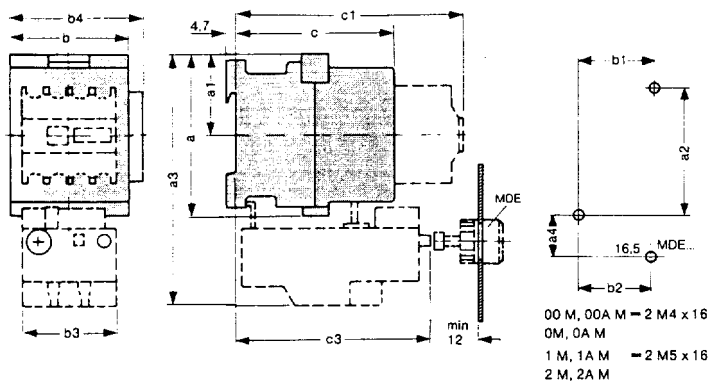


DIL	R22 (-G)	R31 (-G)	R40 (-G)	R22 D (-G)	R40/... (-G)	R44 D (-G)	R53 D (-G)	R22/TPE (-G)	R22/TPD (-G)	R22/V (-G)	R31/V (-G)	R40/V (-G)
a	77	(77)	77	(77)	77	(77)	77	(77)	77	(77)	77	(77)
a1	39	(39)	39	(39)	39	(39)	39	(39)	39	(39)	39	(39)
a2	60	(60)	60	(60)	60	(60)	60	(60)	60	(60)	60	(60)
b	45	(45)	45	(45)	45	(45)	45	(45)	45	(45)	45	(45)
b1	35	(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

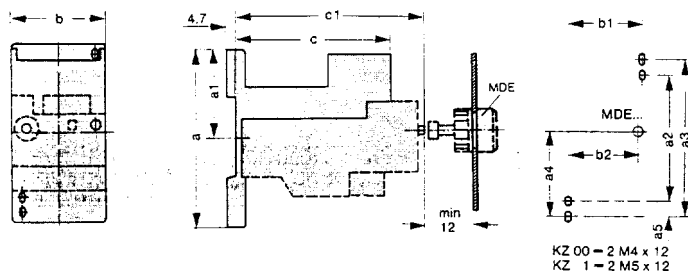


DIL	00 M (-G)	0M (-G)	1 M (-G)	2 M (-G)
	00AM (-G)	0AM (-G)	1AM (-G)	2AM (-G)
Z	00	00	1	1
a	77	(77)	91	(91)
a1	39	(39)	46	(46)
a2	60	(60)	75	(75)
a3	120	(120)	133	(133)
a4	19	(19)	18	(18)
b	45	(45)	45	(45)
b1	35	(35)	35	(35)
b2	34	(34)	34	(34)
b3	45	(45)	45	(45)
b4	-	-	55	(55)
c	79	(104)	84	(109)
c1	110	(135)	116	(141)
c3	90	(115)	96	(121)

b4 = with 11s DIL M auxiliary contact module

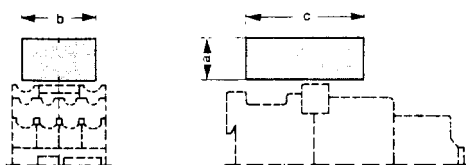
c1 = with ...DIL M auxiliary contact module

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

