



OKE2



MKE2



TFE2



TFA2



OKN



CSDU

Motor Technology

Industries



OKE2

Manual motor starters with push-button
3-pole operation
Thermal trip
Setting range 1.0 – 25.0 A; 500 V AC
Switching capacity 11 kW
Switching operations 60/h

P. 129

Motor Technology,
cost-saving device for standard tasks;
separate auxiliary switch is available!

MKE2

Manual motor starters with push-button
3-pole operation
Thermal/magnetic trip
Setting range 1.0 – 25.0 A; 500 V AC
Switching capacity 11 kW
Switching operations 60/h

P. 129

Motor Technology,
works with high short-circuit currents;
separate auxiliary switch is available!

TFE2

Manual motor starters with push-button
2-pole operating
Thermal/magnetic trip
Thermal contact
Operating range 0.40 – 10.0 A; 230 V AC

P. 135

Motor Technology, ventilation, agricultural technology:
thermocline monitoring for alternating current; separate
auxiliary switch is available!

TFA2

Manual motor starters with push-button
3-pole operation
Electronic release
Thermal contact
Operating range 0.10 – 25.0 A; 400 V AC

P. 135

Motor Technology, ventilation, agricultural technology:
thermocline monitoring for direct current; separate
auxiliary switch is available!

OKN

Manual motor starters with rotary knob
3-pole operation
Thermal trip with phase drop protection Setting
range 0.25 – 27.0 A; 500 V AC
Switching capacity 7.5 kW
Switching operations 30/h

P. 139

Motor Technology,
A motor protection switch in a compact design –
high-pressure washer

CSDU

Star/delta connection CSDU

P. 142

Motor Technology

Manual Motor Starters OKE2 / MKE2

Manual Motor Starter OKE2, 3-pole



- Thermal trip
- Setting range 1.0 – 25.0 A; 500 V AC
- Switching capacity 11 kW
- Switching operations 60/h
- Including PE/N bar (left side)
- short-circuit release

Order reference	Description Rated current setting range (A)	Packing (units)	Weight (in g)	Part No.
OKE2 016	1,00 – 1,60 A	1	280	202 721
OKE2 025	1,60 – 2,50 A	1	280	202 738
OKE2 040	2,50 – 4,00 A	1	280	202 745
OKE2 063	4,00 – 6,30 A	1	280	202 752
OKE2 100	6,30 – 10,00 A	1	280	202 769
OKE2 160	10,00 – 16,00 A	1	280	202 776
OKE2 250	16,00 – 25,00 A	1	280	202 783

Manual Motor Starter MKE2, 3-pole



- Thermal/magnetic trip
- Setting range 0.10 – 25.0 A; 500 V AC
- Switching capacity 11 kW
- Switching operations 60/h
- Including PE/N bar (left side)
- short-circuit release

Order reference	Description Rated current setting range (A)	Packing (units)	Weight (in g)	Part No.
MKE2 001	0,10 – 0,16 A	1	300	202 158
MKE2 002	0,16 – 0,25 A	1	300	202 165
MKE2 004	0,25 – 0,40 A	1	300	202 172
MKE2 006	0,40 – 0,63 A	1	300	202 189
MKE2 010	0,63 – 1,0 A	1	300	202 196
MKE2 016	1,0 – 1,6 A	1	300	202 202
MKE2 025	1,6 – 2,5 A	1	300	202 219
MKE2 040	2,5 – 4,0 A	1	300	202 226
MKE2 063	4,0 – 6,3 A	1	300	202 233
MKE2 100	6,3 – 10,0 A	1	300	202 240
MKE2 160	10,0 – 16,0 A	1	300	202 257
MKE2 250	16,0 – 25,0 A	1	300	202 264



Manual Motor Starters OKE2 / MKE2

Technical Data OKE2 / MKE2	
Rated insulation voltage U_j acc. to IEC 947-4-2 / VDE 0110	500 V AC
Permissible ambient temperature	
Storage temperature	-25...+ 70 °C
open	-25...+ 60 °C
enclosed type	-25...+ 40 °C
Temperature compensation	no
Climatic resistance	IEC 68 T2-3, 2-30
Glow wire resistance acc. to IEC 695-2-1	Intensity 850°C
Working position any position	preferably vertical
Permissible altitude	3000 m
Permissible vibration resistance IEC 68-2-6	25 Hz b./- 1 mm Amplitude (2,5 g)
Permissible impact direction sine impact (critical direction IEC 68-2-27)	5 g (11 ms)
Surface mounting screws DIN-rail	2 x M4** integrated
Mechanical life in cycles	100.000
Maximum switching operations Cycles/hour	60

**not included in the scope of delivery

Conductor cross-section OKE2 / MKE2		
Manual motor starters	rigid cable 1 x	1 ... 6,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 6,0 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Auxiliary contact	rigid cable 1 x	1 ... 2,5 mm ²
	rigid cable 2 x	1 ... 2,5 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Undervoltage/ shunt release	rigid cable 1 x	1 ... 2,5 mm ²
	rigid cable 2 x	1 ... 2,5 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Enclosure/ PE/N terminal	rigid cable 1 x	1 ... 4,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Degree of Protection acc. to DIN 40050 open type enclosed type	IP 20 IP 55...65	

* with cable end sleeve

Undervoltage release OKE2 / MKE2		
Energizing voltage % von U_c	≥ 85	
De-energizing voltage % von U_c	35 .. 70	
Relative Duty factor % von U_c	100	
Power consumption	Closing	6,0 VA
	Holding	3,0 VA

Technical Data OKE2 / MKE2	
Main current paths Number	3
Rated operational voltage U_e bis	16 A 550 V AC 25 A 500 V AC
Rated operational current I_e	25 A
Permissible frequency only for magnetic short-circuit release	40...60 Hz
Current setting ranges I_e OKE2 / MKE2 acc. to VDE 0660 Part 102 A, IEC 947-4-1	1-25 / 0,1-25
Numbers of ranges OKE2 / MKE2	7 / 12
Current dissipation loss	1,9...3,7 W
	Main current paths at I_e max./Phase
Tripping curves	10A
Electro-magnetic trip	8 - 13 x I_n

Auxiliary contact OKE2 / MKE2	
Auxiliary current paths Rated insulation voltage IEC 947	230 V
Thermal current I_{th2}	6 A
Short-circuit protection back-up fuse g_L MCB B 6 A	10 A
	B 6 A

Max. switching capacity OKE2 / MKE2		
Auxiliary contact I_e at AC 15 up to	24 V AC	6 A
	230 V AC	4 A
	400 V AC	3 A
	500 V AC	1 A
may be used for low voltage and PLC inputs acc. to DIN 19240		

Shunt release OKE2 / MKE2		
Energizing voltage % von U_c	ca. 70	
Power consumption	Closing	6,0 VA
	Holding	3,0 VA

Manual Motor Starters OKE2 / MKE2

Short circuit switching capacity OKE2 / MKE2	
40 ... 60 Hz P1 / I _{cn} acc. to VDE 0660 / IEC 155-1 Taking the mains back-up fuse into consideration	
230 V	6 kA
400 V	3 kA
440 V	3 kA
500 V	1 kA

Correction factor OKE2 / MKE2	
Ambient temperature	Correction factor
5° C	1,12
+ 20° C	1,00
+ 40° C	0,89

Setting ranges, intrinsic safety and max. back-up fuse OKE2		
Order reference	Setting ranges A	Max. back-up fuse gl (A) 440 / 500 V
OKE2 016	1,0 – 1,6	16
OKE2 025	1,6 – 2,5	25
OKE2 040	2,5 – 4,0	35
OKE2 063	4,0 – 6,3	50
OKE2 100	6,3 – 10,0	63
OKE2 160	10,0 – 16,0	63
OKE2 250	16,0 – 25,0	50

Setting ranges, intrinsic safety and max. back-up fuse MKE2					
Order reference	Setting ranges A	Actuating current of the magn. short-circuit release (A)	max. back-up fuse gl (A)		
			230 V	400 V	500 V
MKE2 001	0,10 – 0,16	1,3	No back-up fuse required		
MKE2 002	0,16 – 0,25	2,0			
MKE2 004	0,25 – 0,40	3,5			
MKE2 006	0,40 – 0,63	5			
MKE2 010	0,63 – 1,0	8			
MKE2 016	1,0 – 1,6	13			
MKE2 025	1,6 – 2,5	20			
MKE2 040	2,5 – 4,0	32			
MKE2 063	4,0 – 6,3	50	63	50	50
MKE2 100	6,3 – 10,0	80	63	63	50
OKE2 160	10,0 – 16,0	128	63	63	50
OKE2 250	16,0 – 25,0	200	63	63	50

Permissible wire protection MKE2					
Order reference	Min. protected cross-section at 400 / 500 V AC, Cu mm ²				
	4	2,5	1,5	1,0	0,75
MKE2					
I _n (A)					
0,16 bis 6,3	X	X	X	X	X
10	X	X	X	X	
16	X	X	X		
25	X	X			

Protection of PVC-insulated cables against thermal overload due to short-circuit:

According to VDE 0100 Parts 430 and 523, cables and wires have to be protected against overload and short-circuit.

The table shows which cable cross-sections are protected against short circuit by the MKE 2.

Accessories OKE2 / MKE2

Order reference	Description	Packing (units)	Weight (in g)	Part No.
Auxiliary contacts *				
Hi 10	Auxiliary contact 1 N.O., right	1	7,5	202 288
Hi 01	Auxiliary contact 1 N.C., right	1	7,5	202 301
Hi 11	Auxiliary contact 1 N.O./1 N.C.	1	7,5	202 325
Shunt release				
AS 230-50	Shunt release 230 V / 50 Hz	1	60	202 479
AS 400-50	Shunt release 400 V / 50 Hz	1	60	202 486
Undervoltage release				
US 110-50	Undervoltage release 110 V / 50 Hz	1	60	202 370
US 230-50	Undervoltage release 230 V / 50 Hz	1	60	202 387
US 400-50	Undervoltage release 400 V / 50 Hz	1	60	202 400
Enclosure/Special accessories				
A IP 41	Enclosure, protection IP 41, up to 16 A	1	285	202 547
A IP 55	Enclosure, protection IP 55, up to 16 A	1	210	202 554
B IP 55	Enclosure with large terminal box, protection IP 55	1	450	202 561
C IP 54	Enclosure, protection IP 54, 5-pole, CEE-plug 16 A	1	375	202 585
E IP 54	Front plate, protection IP 54	1	125	202 622
Enclosure-accessories				
NAK	Emergency-OFF-device IP 55	1	55	202 653
V	Padlock blockade device IP 55	1	40	202 660

*Auxiliary contacts, shunt and undervoltage releases must be factory installed.

Manual Motor Starters



Manual motor starter
MKE2 + AS



Manual motor starter
MKE2 + US



Front plate E IP-54

Enclosure



Enclosure A



Enclosure A +
Emergency-OFF-device NAK

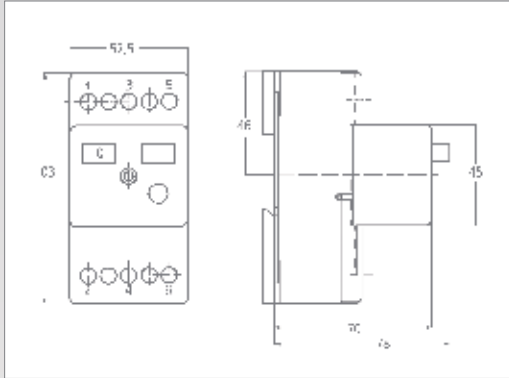


Enclosure B + Padlock
blockade device V

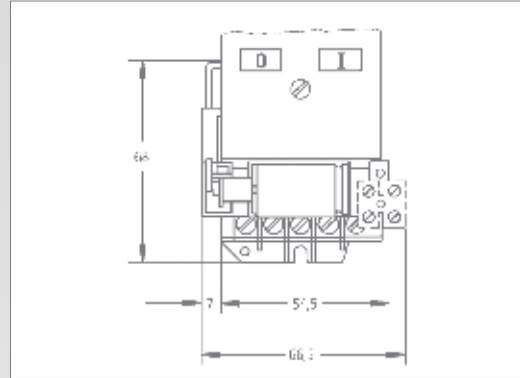


Enclosure C

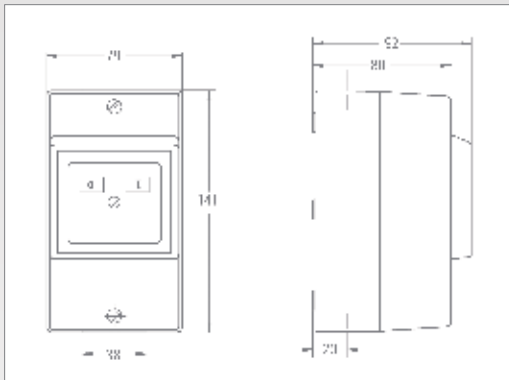
Manual Motor Starters OKE2 / MKE2



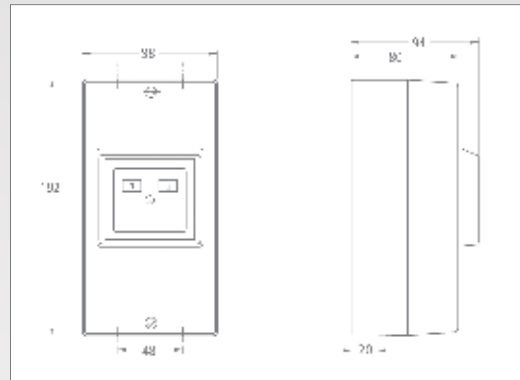
Manual motor starter OKE2 / MKE2



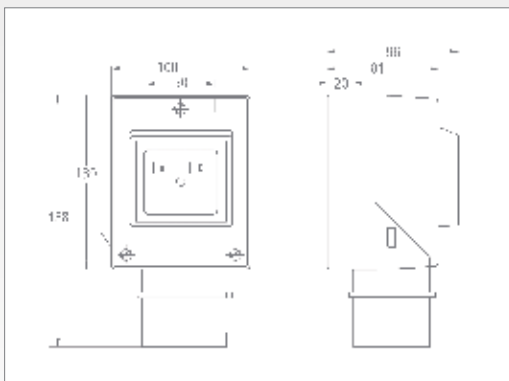
Undervoltage release US, Shunt release AS



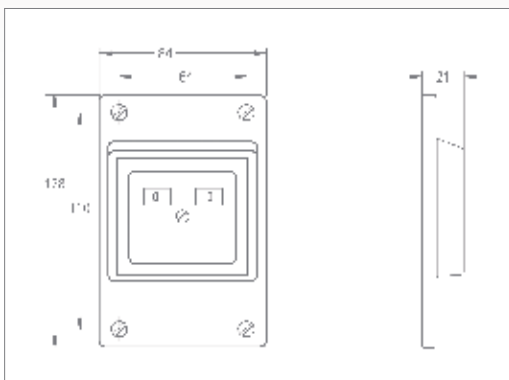
Enclosure A



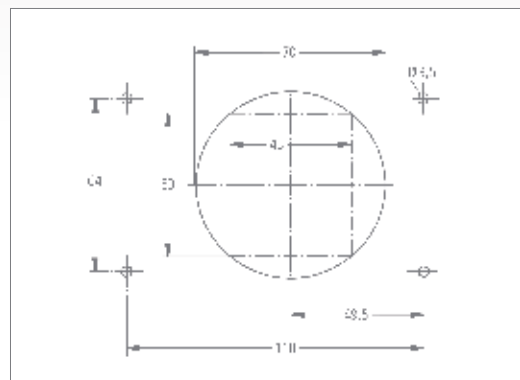
Enclosure B



Enclosure C

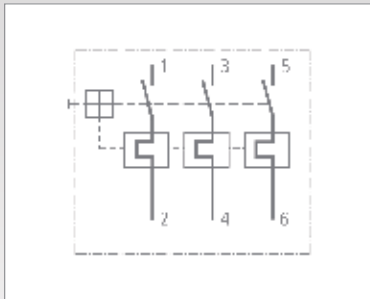


Front plate, protection E

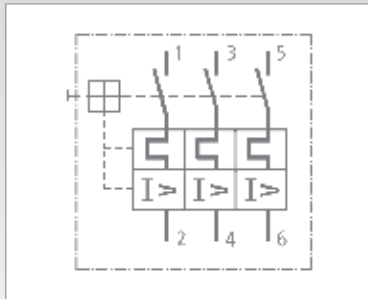


Mounting template for Front plate E

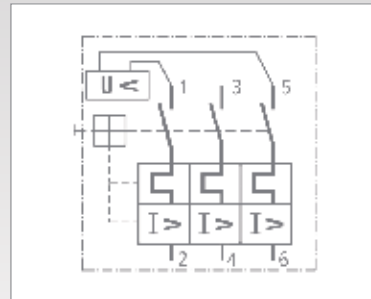
Circuit Diagrams OKE2 / MKE2



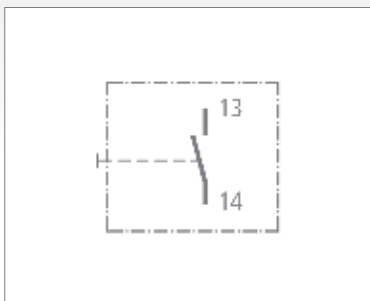
Manual motor starter OKE2



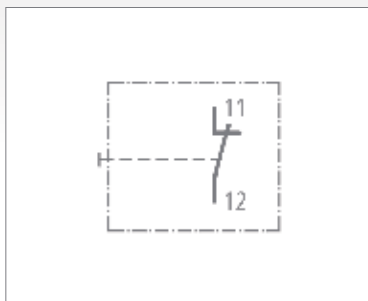
Manual motor starter MKE2



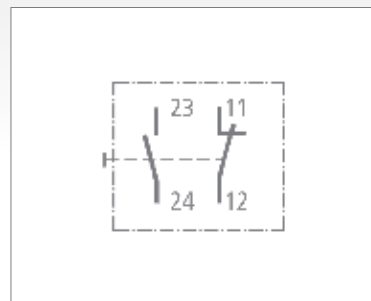
Manual motor starter MKE2 with undervoltage release



Auxiliary contact Hi 10 (1 N.O.)

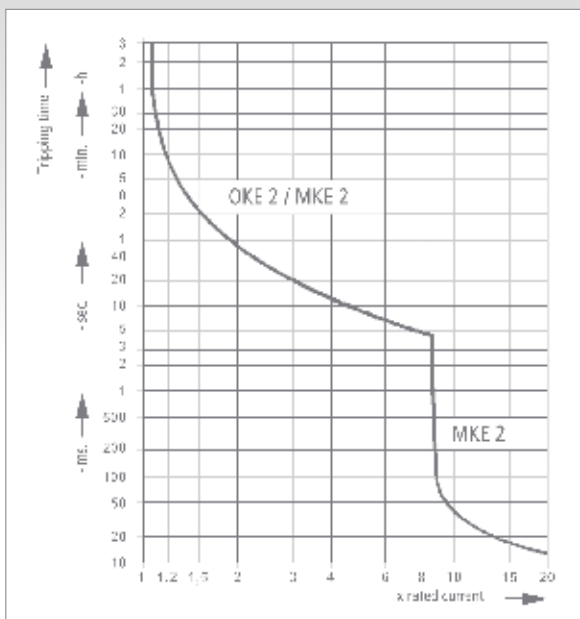


Auxiliary contact Hi 01 (1 N.C.)



Auxiliary contact Hi 11 (1 N.O. / 1 N.C.)

Tripping curves OKE2 / MKE2



Motor starter for motors with integrated thermal contacts TFE



- 1-phase version 230 V (1~)
- Thermal/magnetic trip
- Thermal contact
- Operating range 0.4 – 10.0 A; 230 V AC

Order reference	Type Code	Description Rated operational current setting range	Packing (units)	Weight (in g)	Part No.
TFE2 230		Standard unit 0,40 – 10,0 A	1	280	210 078

Motor starter for motors with integrated thermal contacts TFA



- 3-phase version 400 V (3~)
- Electronic trip
- Thermal contact
- Operating range 0.10 – 25.0 A; 400 V AC

Order reference	Type Code	Description Rated operational current setting range	Packing (units)	Weight (in g)	Part No.
TFA2 400		Standard unit 0,10 – 25,0 A	1	340	210 061

Use and function

The manual motor starters of the series TFA and TFE protect the electronic motors from damages caused by thermal overload.

Contrary to the manual motor starters of the series MKE2 / OKE 2 the adapted motor current is not monitored but the coil temperature.

For this the motor needs to be equipped with a thermal contact (Klixon, PTC-resistance). When critical temperatures are achieved these will get highly resistive. As a result the motor protection stops the power supply.

The applications are motors which are used in very dusty environments (e.g. fans, saws...). The motor cooling is often effected by deposits.

Technical Data TFE2 / TFA2	
Rated insulation voltage U_i acc. to IEC 947-4-2 / VDE 0110	500 V AC
Permissible ambient temperature Storage temperature open	-25...+ 70 °C
enclosed type	-25...+ 60 °C
Temperature compensation	no
Climatic resistance	IEC 68 T2-3, 2-30
Glow wire resistance acc. to IEC 695-2-1	Intensity 850°C
Working position any position	preferably vertical
Permissible altitude	3000 m
Permissible vibration resistance IEC 68-2-6	25 Hz b./± 1 mm Amplitude (2,5 g)
Permissible impact direction sine impact (critical direction IEC 68-2-27)	5 g (11 ms)
Surface mounting screws DIN-rail	2 x M4** integrated
Mechanical life in cycles	100.000
Maximum switching operations Cycles/hour	60

**not included in the scope of delivery

Conductor cross-section TFE2 / TFA2		
Manual motor starters	rigid cable 1 x	1 ... 6,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 6,0 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Auxiliary contact	rigid cable 1 x	1 ... 2,5 mm ²
	rigid cable 2 x	1 ... 2,5 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Undervoltage/ shunt release	rigid cable 1 x	1 ... 2,5 mm ²
	rigid cable 2 x	1 ... 2,5 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Enclosure/ PE/N terminal	rigid cable 1 x	1 ... 4,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 2,5 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Degree of Protection acc. to DIN 40050 open type enclosed type	IP 20 IP 55...65	

* with cable end sleeve

Undervoltage release OKE2 / MKE2		
Energizing voltage % von U_c	≥ 85	
De-energizing voltage % von U_c	35 .. 70	
Relative Duty factor % von U_c	100	
Power consumption	Closing	6,0 VA
	Holding	3,0 VA

Technical Data TFE2 / TFA2	
Main current paths Number	3
Rated operational voltage U_e up to	16 A 550 V AC 25 A 500 V AC
Rated operational current I_e	25 A
Permissible frequency only for magnetic short-circuit release	40...60 Hz
Current setting ranges I_e TFE2 / TFA2 Acc to VDE 0660 Part 102 A, IEC 947-4-1	0,4-10 / 0,1-25
Numbers of ranges TFE2 / TFA2	1 / 1
Current dissipation loss Main current paths at I_e max./Phase	ca. 4,2 W
Tripping curves	10A
Electro-magnetic trip	8 - 13 x I_n

Auxiliary contact OKE2 / MKE2	
Auxiliary current paths Rated insulation voltage IEC 947	230 V
Thermal current I_{th2}	6 A
Short-circuit protection back-up fuse gL MCB B 6 A	10 A B 6 A

Max. switching capacity TFE2 / TFA2	
Auxiliary contact I_e at AC 15 up to	
24 V AC	6 A
230 V AC	4 A
400 V AC	3 A
500 V AC	1 A
may be used for low voltage and PLC inputs acc. to DIN 19240	

Shunt release OKE2 / MKE2		
Energizing voltage % von U_c	approx. 70	
Power consumption	Closing	6,0 VA
	Holding	3,0 VA

Manual Motor Starters TFE2 / TFA2

Accessories TFE2 / TFA2

Order reference	Description	Packing (units)	Weight (in g)	Part No
Auxiliary contacts*				
Hi 10	Auxiliary contact 1 N.O., right	1	7,5	202 288
Hi 01	Auxiliary contact 1 N.C., right	1	7,5	202 301
Hi 11 (nur TFE)	Auxiliary contact 1 N.O./1 N.C.	1	7,5	202 325
Enclosure/Special accessories				
A IP 55	Enclosure, protection IP 55, up to 16 A	1	210	202 554
B IP 55	Enclosure with large terminal box, protection IP 55	1	450	202 561
E IP 54	Front plate, protection IP 54	1	125	202 622
Enclosure-accessories				
NAK	Emergency-OFF-device IP 55	1	55	202 653
V	Padlock blockade device IP 55	1	40	202 660
AZ	Supplementary set for enclosure, protection IP 41 to IP 55	1	25	216 742

*Auxiliary contacts, shunt and undervoltage releases must be factory installed.

Enclosure / Padlock



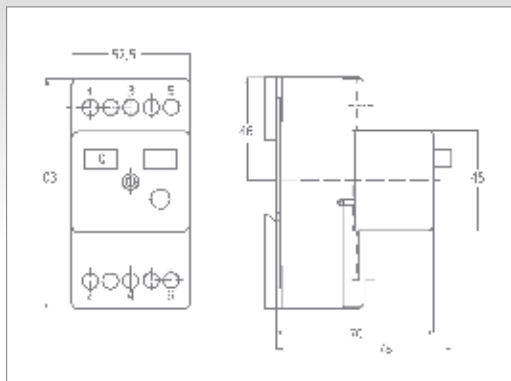
Enclosure A

Enclosure A +
Emergency-OFF-device NAK

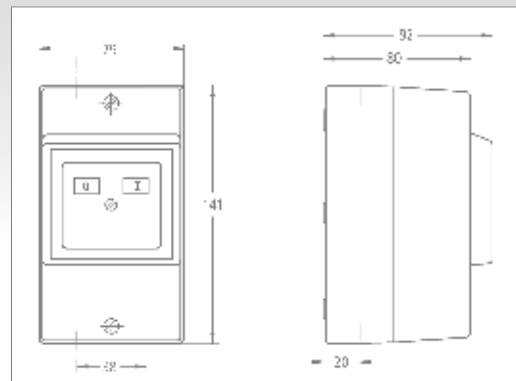
Enclosure B +
Padlock blockade device V

Front plate E

Dimensions / Circuit Diagrams TFE2 / TFA2

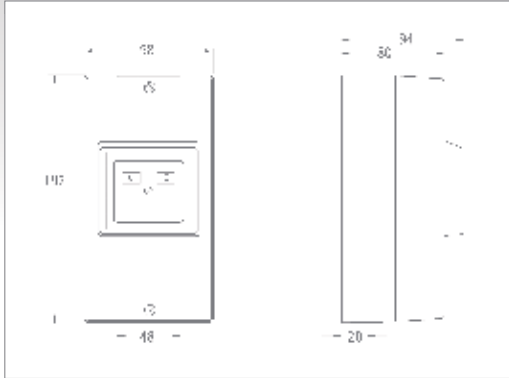


Manual motor starter TFE2 / TFA2

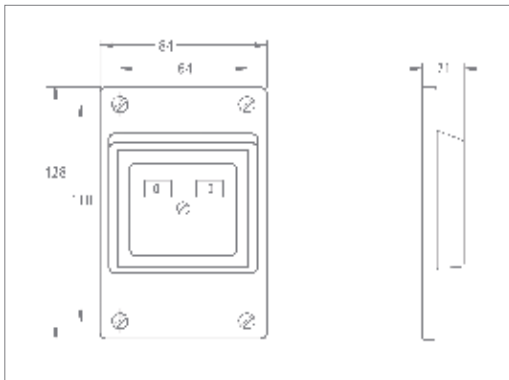


Enclosure A

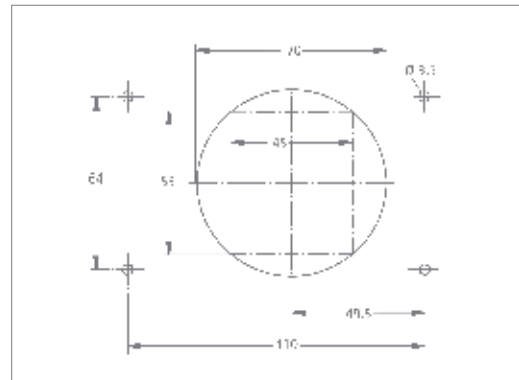
Dimensions / Circuit Diagrams TFE2 / TFA2



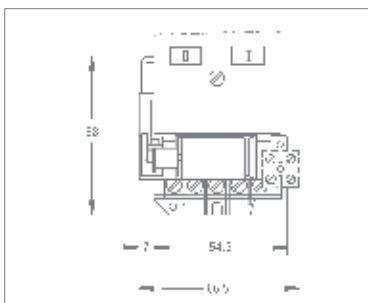
Enclosure B



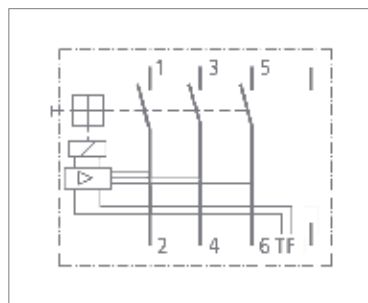
Front plate E



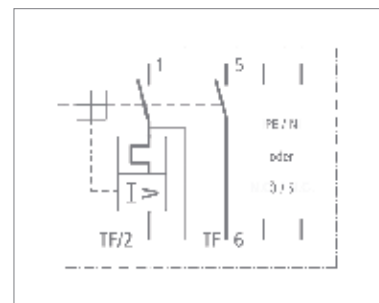
Mounting template for Front plate E



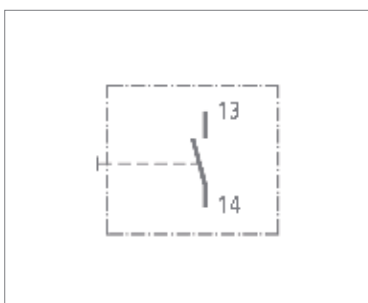
Undervoltage release US (TFA2)



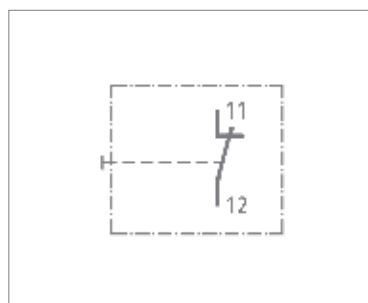
Manual motor starter TFA2



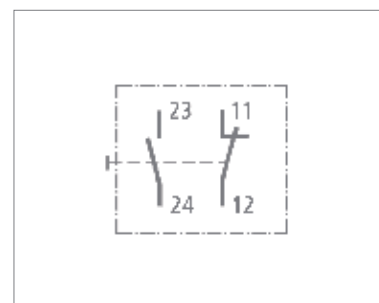
Manual motor starter TFE2
optional 1N.O. and/or 1N.C.



Auxiliary contact Hi 10 (1 N.O.)



Auxiliary contact Hi 01 (1 N.C.)



Auxiliary contact Hi 11 (1 N.O. / N.C.)

Manual motor starter with rotary knob, 2/3-pole



- Thermal trip with phase-drop protection
- Manual motor starters with rotary knob
- Setting range 0.25 – 27.0 A; 500 V AC
- Switching capacity 7.5 kW
- Switching operations 30/h

Order reference	Type Code	Description Rated current setting range (A)	Packing (units)	Weight (in g)	Part No.
OKN 0,4		0,25 – 0,40 A	1	170	203 391
OKN 0,63		0,40 – 0,63 A	1	170	203 407
OKN 1,0		0,63 – 1,00 A	1	170	203 414
OKN 1,6		1,00 – 1,60 A	1	170	203 421
OKN 2,5		1,60 – 2,50 A	1	170	203 438
OKN 4,0		2,50 – 4,00 A	1	170	203 445
OKN 6,3		4,00 – 6,30 A	1	170	203 452
OKN 10,0		6,30 – 10,0 A	1	170	203 469
OKN 16,0		10,0 – 16,0 A	1	170	203 476
OKN 22,0		16,0 – 22,0 A	1	170	203 483
OKN 27,0		22,0 – 27,0 A	1	170	203 490
OKN 30,0		22,0 – 30,0 A (2-pole)	1	170	203 506
OKN 37,0		28,0 – 37,0 A (2-pole)	1	170	236 665

Technical Data OKN	
Rated insulation voltage U_i acc. to IEC 947-4-7 / VDE 0110	500 V AC
Permissible ambient temperature Storage temperature open enclosed type	-25...+ 70 °C -25...+ 60 °C -25...+ 40 °C
Temperature compensation	yes
Climatic resistance	IEC 68 T2-3, 2-30
Glow wire resistance acc. to IEC 695-2-1	Intensity 850°C
Working position	preferably vertical
Permissible altitude	3000 m
Permissible vibration resistance IEC 68-2-6	25 Hz b.+/- 1 mm Amplitude (2,5 g)
impact (critical direction IEC 68-2-27)	5 g (11 ms)

Technical Data OKN	
Surface mounting Screw mounting	2 x M4*
Mechanical life in cycles	100.000
Maximum switching operations Cycles/hour	30
Main current paths Number	2 / 3
Rated operational voltage U_e up to	37 A / 250 V 27 A / 500 V
Thermal current I_{th} Rated operational current I_e	37 A, 2-pol / 27 A, / 3-pol
Current setting ranges I_e acc. to VDE 0660 Teil 102 A, IEC 947-4-1	22 – 37 A, 2-pol 0,25 – 27 A, 3-pol
Numbers of ranges	2 / 11
Current dissipation loss Main current paths at I_e max./Phase	1,8...3,2 W
Trip class	10A

*not included

Conductor cross-section OKN		
Manual motor starters	rigid cable 1 x	1 ... 6,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 4,0 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Enclosure/ PE/N terminal	rigid cable 1 x	1 ... 6,0 mm ²
	rigid cable 2 x	1 ... 4,0 mm ²
	flexible cable* 1 x	1 ... 4,0 mm ²
	flexible cable* 2 x	1 ... 2,5 mm ²
Degr. of protection acc. to DIN 40050		IP 20
open type / enclosed type		IP 54

* with cable end sleeve

Contact rating at AC 3 OKN	
230 V	- 7,5 kW
400 V	- 11,5 kW
500 V	- 14 kW

Switching capacity OKE2 / MKE2	
40 ... 60 Hz P1 / I _{CN} acc. to VDE 0660 / IEC 155-1 allowing for the mains back-up fuse	
230 V	6 kA
400 V	3 kA
440 V	3 kA
500 V	1 kA

Setting ranges, intrinsic safety and max. back-up fuses OKN

Order reference	Setting range A	max. back-up fuse gL (A)	
		1 x 250 V	3 x 230 V, 3 x 500 V
OKN 0,4	0,25 – 0,40 A	-	2
OKN 0,63	0,40 – 0,63 A	-	6
OKN 1,0	0,63 – 1,00 A	-	10
OKN 1,6	1,00 – 1,60 A	-	16
OKN 2,5	1,60 – 2,50 A	-	25
OKN 4,0	2,50 – 4,00 A	-	35
OKN 6,3	4,00 – 6,30 A	-	63
OKN 10,0	6,30 – 10,0 A	-	63
OKN 16,0	10,0 – 16,0 A	-	63
OKN 22,0	16,0 – 22,0 A	-	35
OKN 27,0	22,0 – 27,0 A	-	35
OKN 30,0	22,0 – 30,0 A	50	-
OKN 37,0	28,0 – 37,0 A	50	-

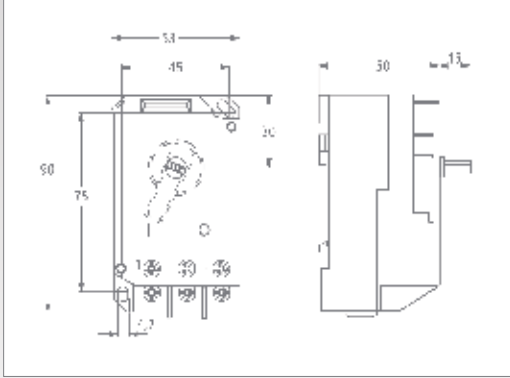
Accessories OKE2 / MKE2

Order reference	Description	Packing (units)	Weight (in g)	Part No
	Enclosure-accessories			
H	Enclosure H, protection IP 41	1	225	203 513

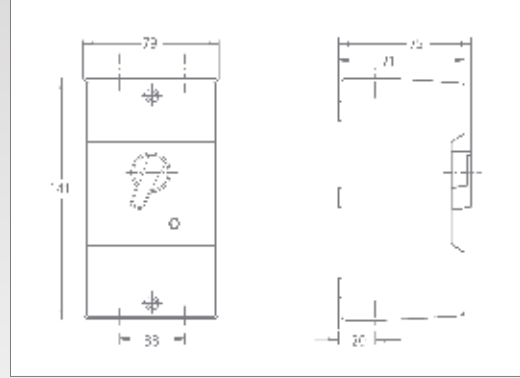
Enclosure



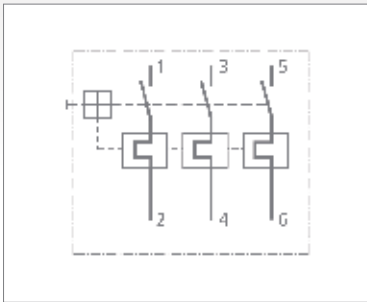
Dimensions OKN



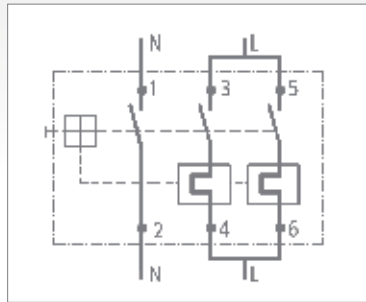
Manual motor starter OKN



Enclosure H

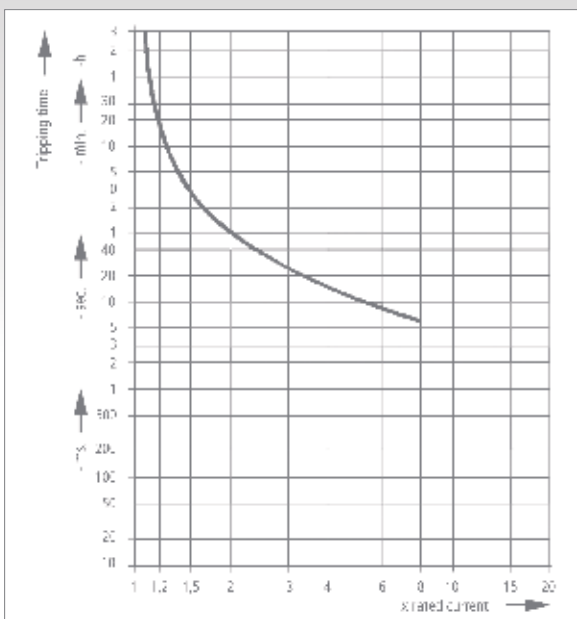


Manual motor starter OKN



Manual motor starter
OKN 30 u. OKN 37 (2-pol.)

Tripping curves OKN



Star/delta connection for the protective start of the motor



Fig. CSDU 7,5 complete

The Condor Pressure Control GmbH CSDU Star/delta connection offers, in due consideration of the relevant standards, the possibility of economically operating motors with a switching capacity greater than 4 kW using public mains networks.

With this 2-stage starter the inrush current (star circuit) is reduced by 1/3 of the height to be expected when starting the motor directly. The torque is equally reduced during start-up phase.

During the start-up phase (1 – 32 seconds), a special change-over relay with a contact switching time of 50 ms, guarantees reliable change over from star to delta operation.

During continuous operation, all motors connected to the Star/delta connection are protected by a manual motor starter with thermal and magnetic trip.

Standard executions contain a manual motor starter and an on / off switch for the control circuit. Complete star/delta connections additionally have a main circuit-breaker with enclosure locking, an emergency button, an hour meter and an operating LED.

Star/delta connections as standard-version with an additional transformer are used, if there is no neutral leader connected.

Type overview CSDU

Order reference	Description	Weight (in g)	Part No.
Complete version			
CSDU 5,5 complete	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter: 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4100	256601
CSDU 7,5 complete	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4250	256618
CSDU 11,0 complete	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4400	256625
CSDU 15,0 complete	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	4550	256632
Standard version			
CSDU 5,5 standard	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3500	256656
CSDU 7,5 standard	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3650	256663
CSDU 11,0 standard	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	3800	256670
CSDU 15,0 standard	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	3950	256687
Standard version with transformer (trafo)			
CSDU 5,5 trafo	5,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 9 - 13 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4300	256717
CSDU 7,5 trafo	7,5 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 14 - 20 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4450	256724
CDU 11,0 trafo	11 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 19 - 25 A (Rated current) Enclosure 200 x 400 x 140 mm (width x height x depth)	4600	256731
CSDU 15,0 trafo	15 kW, Ue: 400V AC / 50 Hz, Supply line: 3L/N/PE Manual motor starter 28 - 40 A (Rated current) Enclosure 300 x 400 x 140 mm (width x height x depth)	4750	256748

Other manual motor starters on request.