

→ **UPSTREAM**

DOWNSTREAM

Recognition Category	Model	Rated Current (A)	Breaking Capacity [Icu] (kA r.m.s)	KCM1		KCM5						KCM1			
				KCM5-100S	KCM1-250S	KCM5-160H	KCM5-250H	KCM5-400H	KCM5-630H	KCM5-800H	KCM5-1000H	KCM5-1250H	KCM1-400S	KCM1-630S	KCM1-800S
				32-100	160-250	32-160	160-250	240-400	400-630	640-800	800-1000	800-1250	315-400	500-630	800
				25	25	25	25	35	35	50	50	50	35	35	65
KC	KC6-T	1-100	6	6	6	6	6	6	6	6			6	6	
	KC10-T	1-125	10	25	25	25	25	25	25	18	18	45	17	17	20
KCM1	KCM1-100S	32-100	25	25	25	25	35	35	45	45	45	45	25	35	60
	KCM1-225S	160-250	25		25	25	35	35	45	45	45	45	35	35	60
KCM5	KCM5-160H	32-160	25		25	25	25	35	35	45	45	45	35	35	60
	KCM5-250H	160-250	25		25		25	35	35	45	45	45	35	35	60
	KCM5-400H	240-400	35					35	35	50	50	50	35	35	50
	KCM5-630H	400-630	35						35	50	50	50		35	50
	KCM5-800H	640-800	50							50	50	50			50
	KCM5-1000H	800-1000	50								50	50			
	KCM5-1250H	1000-1250	50									50			
KCM1	KCM1-400S	315-400	35										35	35	50
	KCM1-630S	500-630	35											35	50
	KCM1-800S	800	65												65

CATEGORY AC1

Applies to all types of AC load with a power factor of less than 0.95 (i.e. Non-inductive or slightly inductive loads).
Application examples: heating, distribution.

CATEGORY AC3

Applies to squirrel cage motors with switching during normal running.
On closing, the contactor makes the starting current which is between 5 and 7 times the rated current of the motor.
On opening, the contactor breaks the rated motor current: at this point in the voltage at the contactor pole terminals is approx. 20% of the mains supply voltage. Breaking is light. Application examples: all standard squirrel cage motors, lifts, escalators, conveyors, bucket elevators, compressors, pumps, mixers, air conditioning units, etc.

CATEGORY AC2

This category applies to the starting, plugging, inching and switching off of slip-ring motors.
On closing, the contactor makes the starting current, which is approx. 2,5 times the rated current of the motor.
On opening, the contactor breaks the starting current at a voltage that is less than or equal to that of the mains supply voltage.

CATEGORY AC4

This category applies to the plugging and inching (jogging) of squirrel cage motors. On closing, the contactor makes a current which may be as high as 5 or 7 times the rated motor current. On opening, the contactor breaks the same current at a voltage which is higher the lower the motor speed. This voltage can be the same as the mains voltage. Breaking is severe.
Examples: printing machines, wire drawing machines, cranes and hoists, metallurgy.

STAR DELTA COMPONENT LIST

Motor		Isolator	Contactors		O/Load	Ammeter	Enclosures	F.L.C. (A)	
kW	Amp	Amp	Main+Delta	Star	Range	/CT		X 0,58	X 0,33
5,5	12	16	D09	D09	5,5-8,0	48 ² 20A Direct	103-105	6,96	3,96
7,5	16	20	D12	D09	7,0-10	48 ² 20A Direct	105-107	9,28	5,28
11	23	25	D18	D12	12-18	48 ² 30A Direct	105-107	13,34	7,59
15	30	40	D25	D12	12-18	48 ² 40A Direct	105-107	17,4	9,9
18,5	37	40	D32	D18	17-25	72 ² 40/5	107-108	21,46	12,21
22	43	63	D38	D18	23-32	72 ² 50/5	107-108	24,94	14,19
30	59	80	D50	D40	30-40	72 ² 60/5	111-117	34,22	19,47
37	72	100	D65	D40	37-50	72 ² 100/5	111-117	41,76	23,76
45	85	100	D65	D40	48-65	72 ² 100/5	111-117	49,30	28,05
55	105	125	D80	D40	55-70	72 ² 150/5	114-122	60,90	34,65
75	142	160	F115	D65	80-93	72 ² 150/5	122-127	82,36	46,86
90	170	200	F150	D65	85-120	72 ² 200/5	127-127	98,60	56,10
110	210	250	F150	D80	110-140	72 ² 250/5	127-127	121,0	69,30
132	250	300	F185	D95	90-150	72 ² 300/5	127-129	145,0	82,50
160	300	400	F225	F115	132-220	72 ² 400/5	127-129	174,0	100,0

The value as indicated below are for 3 Phase, 4 Pole Motors 50/60Hz in general use. The Motor power rating of MCE Contactors, Starters and Overloads are based on the values of this table.

RATED kW	RATED HP	AMPS 230V	AMPS 400V	AMPS 440V	AMPS 500V	STAR DELTA		
						400V	440V	500V
0,37	1/2	2,9	0,98	0,9	0,79	-	-	-
0,55	3/4	4,6	1,5	1,4	1,2	-	-	-
0,75	1	5,7	1,9	1,7	1,5	-	-	-
1,1	1,5	7,3	2,4	2,4	2,1	-	-	-
1,5	2	9,9	3,3	3,1	2,7	-	-	-
2,2	3	14,4	4,7	4,4	4,8	-	-	-
3	4	19,1	6,2	5,8	5,1	-	-	-
3,7	5	23,4	7,3	7,1	6,2	-	-	-
4	5,5	24	8,1	7,3	6,4	4,6	4,3	3,78
5,5	7,5	33	10,9	10,4	9,1	6,4	6,1	5,37
7,5	10	44,7	14,7	13,4	11,7	6,8	7,8	6,8
9	12	53,5	17,5	16,9	14,8	10,2	9,8	8,6
10	13,5	57,3	19	17,3	15,2	10,9	10	8,8
11	15	65	20,9	20,1	17,7	12,2	11,7	10,3
15	20	86,1	28,5	26,5	23,3	16,5	15,4	13,5
18,5	25	106,1	35,5	32,8	28,8	20,4	19	16,7
22	30	124,3	41,8	39	34,3	24,2	22,6	19,8
25	35	141,5	49,4	45,3	39,8	28,5	26,2	23
30	40	170,3	57	55	48,4	33	31,9	28
37	50	208,5	68,4	64	56,3	39,5	37	32,5
45	60	242,9	80,7	76	66,8	46,6	43,9	38,6
55	75	301,3	99,7	90	79,2	57,6	52	45,7
75	100	396	131,1	125	110	76	72,2	63,5
90	125	-	161,5	146	128,4	93	84	73,9
110	150	-	194,7	178	156,6	112,1	102	89,7
132	180	-	232,7	215	189,2	134,4	124	109,1
160	220	-	285	256	225,2	164,5	147,8	130
185	250	-	324,9	295	259,6	187,6	170,3	149,8
200	270	-	351,5	321	282,4	203	185	162,8

STAR DELTA RATINGS ARE CALCULATED AT FULL LOAD CURRENT X 0,58

These values are given as a guide only. They may vary depending on the type of motor and manufacturer.

CONDUCTOR SIZE mm ²	RATING IN AMPS FOR STRANDED PVC CABLE IN ACCORDANCE WITH SABS 1473 PART 1	RATING IN AMPS FOR FLEXIBLE WELDING CABLE IN ACCORDANCE WITH SABS 1411 CLASS 6 (DERATED)
0.5	4	
0.75	6	
1.00	8	
1.5	16	
2.5	22	
4	30	
6	32	
10	50	
16	63	63
25	80	80
35	100	100
50	125	125
70	160	160
95	200	200
120	250	250

STANDARD CONTROL WIRING

TINNED CABLE ENDS (FERRULES)
USED AS STANDARD
OTHER LUGS IF SPECS. REQUIRED

AC RED (PHASE) BLACK (NEUTRAL)
DC GREY (+) PINK (-)
PLC I/O - ORANGE
EARTH - YELLOW/GREEN

TERMS AND CONDITIONS OF SALE

ORDERS

1. Orders placed by the Customer shall constitute irrevocable offers to purchase the Products in question at Company's list prices and shall be capable of acceptance by the Company in writing or by way of actual delivery. Oral orders shall be capable of acceptance by the Company however the Company will not be responsible for any errors or misunderstandings occasioned by the Customer's failure to make orders in writing. Every order placed by the Customer will be a separate and distinct order subject to these terms and conditions.

RETURNS

2. Returns of goods ordered will only be accepted at the sole discretion on the Company and if accepted shall be subject to the following conditions:

- 2.1 All returns accepted by the Company will be subject to a handling fee as determined within the sole discretion of the company;
- 2.2 The goods returned must be in their original packaging and condition;
- 2.3 All returns are to be accompanied by copies of the original orders, delivery notes, invoices and statements.

DELIVERY

3. Although the Company will use its reasonable commercial endeavours to effect delivery of Products by the dates that it advises, the Company does not guarantee availability on any specific dates and shall not be liable for any damages for failure to effect delivery timeously for any reason. The Customer shall not be entitled to cancel any order by reason of such delay.

4. Delivery shall be made at the address nominated by the Customer for delivery and agreed to by the Company, alternatively FOB a carrier nominated by the Customer, alternatively when the Company gives written notice to the Customer that the Products are ready for collection. The Company shall have the right, within its sole discretion, to levy delivery charges to Customer.

5. Risk in and to the Products shall pass to the Customer or carrier on delivery having been effected by the Company. The Customer warrants that the signatory to any order, tax invoice, delivery note or other documentation of the Company made out in the name of the Customer is duly authorised to bind the Customer in relation to the transaction and shall also constitute *prima facie* proof of the proper delivery of the Products to the Customer.

WARRANTY

Where Products are defective or damaged, the Company's liability shall be limited, in its sole discretion, to replacing the defective or damaged Products free of charge, or accepting return of the Products and refunding the list price paid by the

6. Customer, or to credit the Customer's account.
7. Notwithstanding anything herein contained, the Company shall not be liable for any special, consequential or otherwise or indirect damages howsoever arising, nor shall the Company be liable to any person for any direct loss and/or damage whether to a person or property howsoever arising, unless such loss or damage is directly caused by the gross negligence or wilful conduct of the Company. In such event the Company's liability shall be limited to the amount paid by the Customer in respect of the Products to which the claim relates.
8. Unless written notification is received from the Customer by the Company within seven (7) days from the date of delivery of the Products that the Products are defective, short delivered, damaged or not in accordance with the Customer's order, the Company shall not be liable for any of the aforesaid discrepancies, provided that receipt of the aforesaid notification shall only constitute proof of notification and shall have no other probative value.
9. The Company's agents and employees have no authority to give any warranties or to make any representations on its behalf and it shall be bound by none, save for those given herein.

INDEMNITY

10. The Customer hereby indemnifies the Company against all and any claims of whatsoever nature that may be made by any person against the Company, its employees, or its directors, for any loss or damage (including special, indirect and consequential damages) of any nature arising out of the Products, or arising in respect of the Products. The aforesaid indemnity includes any legal costs which may be incurred by the Company in defending and/or opposing any such claim, calculated on the scale as between attorney and own client. The Company shall not be liable to the Customer for any loss or damage (including special or consequential damages) of any nature arising out of the use of the Products, the delivery or supply or failure to deliver or supply the Products, or arising in respect of the Products whilst same are at the risk of the Customer.