Contactors with DC solenoid system 3-pole, 55 ... 200 kW

#### Technical specifications

Contactor	Туре			3TB50	3TB52 to 3TB56
Rated data for the	auxiliary contacts			to IEC 60947-5-1/DIN	VDE 0660 Part 200
Rated insulation volta (Pollution degree 3)	age <i>U</i> i		V	690	
Conventional therma  Ith = Rated operating			А	10	
AC load Rated operating curre For rated operating vo					
		110 V 125 V 220 V 230 V 380 V 400 V 500 V 660 V	A A A A A A A A A	10 10 10 6 5.6 4 3.6 2.5 2.5	
DC load Rated operating curre For rated operating vo	ent $I_e$ /DC-12 Itage $U_e$				
		48 V 110 V 125 V	A A A A	10 10 3.2 2.5 0.9	10 10 8 6 2
		440 V	A A	0.33 0.22	0.6 0.4
Rated operating curre For rated operating vo					
		48 V 110 V 125 V 220 V	A A A A	10 (10) <sup>1)</sup> 5 (7) 1.14 (3.2) 0.98 (2.5) 0.48 (0.9)	10 (10) <sup>1)</sup> 5 (4) 2.4 (1.8) 2.1 (1.6) 1.1 (0.9)
			A A	0.13 (0.33) 0.075 (0.22)	0.32 (0.27) 0.21 (0.18)

Contactor Type	3TB50 to 3TB56
CSA and UL rated data for the auxiliary contacts	
Rated voltage AC \ max	600
Switching capacity	A 600, P 600

<sup>1)</sup> Values in brackets apply to auxiliary contacts with offset NC contact.

#### Contactors with DC solenoid system 3-pole, 55 ... 200 kW

#### Contact endurance of main contacts

The characteristics show the contact endurance of contactors when switching resistance and inductive AC loads (AC-1/AC-3) depending on the breaking current and rated operating voltage. It is assumed that the operating mechanisms are switched randomly, i.e. not synchronized with the phase angle of the supply system.

The rated operating current *I*<sub>e</sub> complies with utilization category AC-4 (breaking of 6 times the rated operating current) and is intended for a contact endurance of about 200,000 operating

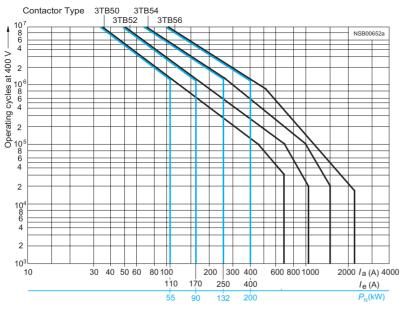
If a shorter endurance is sufficient, the rated operating current I<sub>a</sub>/AC-4 can be increased.

If the contacts are used for mixed operation i.e. if standard switching (breaking of the rated operating current in accordance with utilization category AC-3) is sometimes mixed with iog mode (breaking of multiples of the rated operating current in accordance with utilization category AC-4), the endurance of the contacts can be estimated with the following formula:

$$X = \frac{A}{1 + \frac{C}{100} \left(\frac{A}{B} - 1\right)}$$

The following abbreviations are used in the formula:

- Contact endurance for mixed operation in operating cycles
- Contact endurance for normal operation  $(I_a = I_e)$  in operating cycles Contact endurance for jog mode  $(I_a = \text{multiples of } I_e)$  in operating cycles Number of jog operations of total operations in percent



3TB50 to 3TB56 contactors

Legend for the diagrams:

 $P_{\rm N}$  = Rated output for squirrel-cage motors at 400 V

Breaking current

Rated operating current

Contactors with DC solenoid system 3-pole, 55 ... 200 kW

Permissible mounting position, assembly note	Contactor	Type Size		3TB50 6	3TB52 8	3TB54 10	3TB56 12	
Seambly note   1	General data							
Seamethy note				22.5°, 22.5° 22.5°	22.5°			
Comparison on a vertical mounting uniform   Comparison					650a			
Surface					/— - <del> </del>			
Section   Control Circuit				14-1-4-1	/  ž			
Part			Oner-	10 million				
State insulation voltage U <sub>1</sub>	incomanical chadrance			10 111111011				
Safe isolation between cell and main contacts   V   Safe isolation   V			cycles					
Safe Isolation between coil and main contacts (to DIN VDE 100 Part 101 and At Draft 02/89)	Electrical endurance			2)				
(to DIN VPC 0106 Part 101 and A1 Draft 02/89)	Rated insulation voltage <i>U</i> i		V	1000				
Positively-driven operation applies when the NC and NO contact cannot be closed at the same time.				690				
Positive -forwer operation applies when the NC and NO contact cannot be closed at the same time.   Yes, between main contacts and auxiliary NC contacts as well be closed at the same time.   Yes, between main contacts and auxiliary NC contacts as well be closed at the same time.   Yes, between main contacts and auxiliary NC contacts as well be closed at the same time.   Yes, between main contacts and auxiliary NC contacts as well be closed at the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 22H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457, IEC 60947-4-1, Append Prince of the auxiliary switch blocks to 24H 1/457,	(to DIN VDE 0106 Part 101 and A1 [	Oraft 02/89)						
be closed at the same time. The aximal time aximal time aximal time and time. The reference of the control of the time and time at the time and time at the time at t								
Permissible ambient temperature		when the NC and NO contact cannot						
Por storage					ch blocks to ZH 1	/457, IEC 60947-	-4-1, Appendix F	
Pool (open), coil assembly IP40	Permissible ambient temperature							
Shork-eistance (rectangular pulse)  Shork-eircuit protection  Walkania circuit  Fuse-links gLigG  Type of coordination **1* Fuse-links gLigG  Type of coordination **2*  A 250 315 400 830  Auxillary circuit short-circuit current ℓ <sub>k</sub> ≥ 1 kA  Fuse-links gLigG  DIAZED SSB  NEOZED SSB  NEOZED SSB  Main circuit  Control circuit  Control circuit  Coli operating times at 0.8 to 1.1 x ℓ <sub>k</sub> Operating times at 0.8 to 1.1 x ℓ <sub>k</sub> Operating times at 0.8 to 1.1 x ℓ <sub>k</sub> Operating times at 0.8 to 1.1 x ℓ <sub>k</sub> Operating times at 1.0 x ℓ <sub>k</sub> Operating delay  The 10 x 10			*C		11 15 15			
Short-circuit protection           Main circuit ruse-links gL/gG         Type of coordination '1'         A         250         315         400         630           NH 3VAX, DIAZED SSB         Type of coordination '2'         A         250         315         400         630           Auxiliary circuit short-circuit current l <sub>k</sub> ≥ 1 kA         A         16         18         20         20         20         20         20         20         20         20         20         20         20         20								
Main circuit   Fisse-links glyGG   Type of coordination "1"   A   250   315   400   630	( 0 1	ee)	g/ms	5/10	5.9/10	5.9/10	5.9/10	
Figure—links gL/gG   Type of coordination "1"   A   250   315   400   630    Auxiliary circuit short-circuit current l <sub>k</sub> ≥ 1 kA    Fluse—links gL/gG   Lyg of coordination "2"   A   250   315   500    Auxiliary circuit short-circuit current l <sub>k</sub> ≥ 1 kA    Fluse—links gL/gG   Lyg of coordination "2"   A   16    DIAZED SSB   NEOZED SSE    Miniature circuit-breaker with C characteristic   A   10    Control circuit    Control circuit    Control circuit    Control circuit    Coli operating range   0.8 1.1 x U <sub>8</sub>    Power consumption of the magnetic coil (for cold coil and 1.0 x U <sub>8</sub> )    Oberja = Closed   Coll (and the consumption of the magnetic coil (for cold coil and 1.0 x U <sub>8</sub> )    Oberja = Closed   Coll (and the coll should be consumption of the magnetic coil (for cold coil and 1.0 x U <sub>8</sub> )    Oberja = Closed   Coll (and the coll should be coll should be consumption of the magnetic coil (for cold coil and 1.0 x U <sub>8</sub> )    Oberja = Closed   Coll (and the coll should be collected by collected	Short-circuit protection							
NH 3NA, DÍAZED 5SB Type of coordination '2" A 224 250 315 500 Auxiliary circuit short-circuit current $I_k \ge 1$ kA 4 16		T ( ) 11 11 11 11 11 11 11 11 11 11 11 11 1		050	0.15	400	000	
Auxiliary circuit short-circuit current I <sub>k</sub> ≥ 1 kA  • Fuse-links gL/gG,								
Fuse-links gL/gG		**	^	LC4	200	313	300	
DIAZED 5SB, NEOZED 5SE   Miniature circuit-breaker with C characteristic   A   10	•	II / <sub>k</sub> ≥ I KA						
• Miniature circuit-breaker with C characteristic  Control circuit  Coil operating range  Power consumption of the magnetic coil (for cold coil and 1.0 × U <sub>6</sub> )  Closing = Closed  Oberating times at 0.8 to 1.1 x U <sub>8</sub> Total break time = Opening delay + Arcing time  • Closing delay • Opening times at 0.8 to 1.1 x U <sub>8</sub> • Closing delay • Opening times at 1.0 x U <sub>8</sub> • Closing delay • Opening times at 1.0 x U <sub>8</sub> • Closing	• Fuse-links gL/gG,		А	16				
Control circuit   Coil operating range   0.8 1.1 x U <sub>s</sub>	, , , , , , , , , , , , , , , , , , , ,			10				
Coil operating range		iaracteristic	А	10				
Power consumption of the magnetic coil (for cold coil and 1.0 × U <sub>s</sub> )   V   25   30   60   86								
Closing = Closed				0.8 1.1 x <i>U</i> <sub>s</sub>				
Values apply to 20 % low voltage,   10% overvoltage as well as when the coil is cold and warm)		<b>tic coil</b> (for cold coil and $1.0 \times U_s$ )	14/	O.F.	20	60	0.0	
Total break time = Opening delay \$\frac{4}{4}\$ Arcing time   10 % overvioltage as well as when the coll is cold and warm)    • Closing delay   ms   105 360   105 400   105 400   110 45   40 11    • Arcing time   ms   10 15   10 15   10 15   10 15   10 15    • Closing delay   ms   120 230   130 250   115 250   120 25    • Opening delay   ms   120 230   130 250   115 250   120 25    • Opening delay   ms   120 26   24 32   35 50   60 95    Main circuit  Load rating with AC  Utilization category AC-1, switching resistive loads  Rated operating current \$I_e\$   at 40 °C up to 690 V   A   160   200   300   400    • P.f. = 0.95 (for 55 °C)   400 V   W   138   173   260   345    • Minimum conductor cross-section for loads with \$I_e\$   mm²   70   95   185   240    Utilization category AC-2 and AC-3  Utilization category AC-4 (for \$I_a = 6 \times I_e\$)  • The following applies to contact endurances of about 200,000 operating cycles:  - Rated operating current \$I_e\$   52   72   103   120    - Rated output power for squirrel-   230 V   kW   15.6   21   31   37.5    - Rated output power for squirrel-   230 V   kW   35   48   72   85.5    - Good of the contact			VV		-		86	
• Closing delay ○ Opening delay ³)		Aroing time					and warm)	
<ul> <li>Opening deláy ³)</li> <li>Arcing time</li> <li>Mis 1830 2235 2455 4015 10</li></ul>	, , ,	Arcing time		J.				
• Arcing time								
Operating times at 1.0 x U <sub>s</sub> • Closing delay • Opening delay 3)  • Closing delay •								
• Closing delay 9 • Opening delay 3) • Opening delay 3) • Opening delay 3) • Opening delay 3)  Main circuit  Load rating with AC  Utilization category AC-1, switching resistive loads  Rated operating current I₂ at 40 °C up to 690 ∨ A 160 200 300 400  Rated output power of AC loads 4) 230 ∨ kW 61 76 114 152 260 345 5°C up to 690 ∨ kW 138 173 260 345 260 345 690 ∨ kW 183 228 340 455  Minimum conductor cross-section for loads with I₂ mm² 70 95 185 240  Utilization category AC-2 and AC-3  Utilization category AC-4 (for I₃ = 6 ∨ I₂) • Rated operating current I₂ • R								
• Opening delay <sup>3)</sup> ms 20 26 24 32 35 50 60 95  Main circuit  Load rating with AC  Utilization category AC-1, switching resistive loads  Rated operating current I <sub>e</sub> at 40 °C up to 690 ∨ A 160 200 300 400  Rated output power of AC loads <sup>4)</sup> 230 ∨ kW 61 76 114 152 195 262 195	•		me	120 230	130 250	115 250	120 250	
Main circuit         Load rating with AC         Utilization category AC-1, switching resistive loads         Rated operating current $l_e$ at 40 °C up to 690 V A 160 200 300 400         Rated output power of AC loads $^4$ )       230 V kW 61 76 114 152         p.f. = 0.95 (for 55 °C)       400 V kW 105 132 195 262         500 V kW 138 173 260 345       345         Minimum conductor cross-section for loads with $l_e$ mm² 70 95 185 240         Utilization category AC-2 and AC-3         Utilization category AC-4 (for $l_a = 6 \times l_e$ )         • The following applies to contact endurances of about 200,000 operating cycles:       52       72       103       120         • Rated output power for squirrel-cage motors at 50 Hz and 60 Hz       230 V kW 15.6 21 31 31 37.5 55 65 65 65 65 65 65 690 V kW 35 48 72 85.5 64 99 2 106         Maximum permissible rated operating voltage $l_e/AC-4$ for 400 V A 110 170 250 400       400	Opening delay 3)						60 95	
Load rating with AC         Utilization category AC-1, switching resistive loads         Rated operating current $I_e$ at 40 °C up to 690 V       A       170       230       325       425         Rated output power of AC loads $^{4}$ )       230 V       kW       61       76       114       152         p.f. = 0.95 (for 55 °C)       400 V       kW       105       132       195       262         500 V       kW       138       173       260       345         690 V       kW       183       228       340       455         Utilization category AC-2 and AC-3         Utilization category AC-4 (for $I_a = 6 \times I_e$ )         • The following applies to contact endurances of about 200,000 operating cycles:       -       -       -       72       103       120         - Rated output power for squirrel-cage motors at 50 Hz and 60 Hz       230 V       kW       15.6       21       31       37.5       65       65         690 V       kW       35       48       72       85.5       65       65       65       66       64       92       106         Maximum permissible rated operating voltage $I_e/AC-4$ for 400 V       A <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
### Display Series of the Computer Part of the Com				•				
Rated operating current $l_{\rm e}$ at 40 °C up to 690 V A 170 230 325 425 at 55 °C up to 690 V A 160 200 300 400 Rated output power of AC loads <sup>4)</sup> 230 V kW 61 76 114 152 p.f. = 0.95 (for 55 °C) 400 V kW 105 132 195 262 500 V kW 138 173 260 345 690 V kW 183 228 340 455 Williamum conductor cross-section for loads with $l_{\rm e}$ mm² 70 95 185 240 Williation category AC-2 and AC-3 5) Williation category AC-4 (for $l_{\rm a} = 6 \times l_{\rm e}$ ) • The following applies to contact endurances of about 200,000 operating cycles:  - Rated output power for squirrel- 230 V kW 15.6 21 31 37.5 cage motors at 50 Hz and 60 Hz 400 V kW 27 37 55 65 65 690 V kW 35 48 72 85.5 690 V kW 45 64 92 106 Maximum permissible rated operating for 400 V A 110 170 250 400 Ming voltage $l_{\rm e}/{\rm AC-4}$		na resistive loads						
Rated output power of AC loads $^4$ )	• • •	<u>-</u>	٨	170	220	205	405	
Rated output power of AC loads $^4$ )  p.f. = 0.95 (for 55 °C)  Rated output power of AC loads $^4$ )  p.f. = 0.95 (for 55 °C)  Rated output power of AC loads $^4$ )  p.f. = 0.95 (for 55 °C)  Rated output power of AC loads $^4$ )  Rated output power of AC loads $^4$ )  Rated output power of AC loads $^4$ )  Rated output power for loads with $I_e$ Rated operating current $I_e$ Rated output power for squirrel-  cage motors at 50 Hz and 60 Hz  Raximum permissible rated operat-  for 400 V  Rated output power loads $^4$ )  Raximum permissible rated operat-  for 400 V  Rated output power loads $^4$ )  Raximum permissible rated operat-  for 400 V  Rated output power loads $^4$ )  Raximum permissible rated operat-  for 400 V  Rated output power loads $^4$ )  Raximum permissible rated operat-  for 400 V  Rated output power loads $^4$ Raximum permissible rated operat-  for 400 V  Ratical Naw Maximum permissible rated operat-  for 400 V  Ratical N	nateu operating current l <sub>e</sub>							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Pated output power of AC loads 4)							
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	p.f. = 0.95 (for 55 °C)							
Minimum conductor cross-section for loads with $l_{\rm e}$ mm <sup>2</sup> 70 95 185 240   Utilization category AC-2 and AC-3  Utilization category AC-4 (for $l_{\rm a}=6\times l_{\rm e}$ )  • The following applies to contact endurances of about 200,000 operating cycles:  - Rated operating current $l_{\rm e}$ 52 72 103 120  - Rated output power for squirrel- 230 V kW 15.6 21 31 37.5 cage motors at 50 Hz and 60 Hz 400 V kW 27 37 55 65 65 65 690 V kW 35 48 72 85.5 690 V kW 45 64 92 106   Maximum permissible rated operating voltage $l_{\rm e}/A$ C-4	0.00 (.0. 00 0)							
Utilization category AC-2 and AC-3  Utilization category AC-4 (for <i>l</i> <sub>a</sub> = 6 x <i>l</i> <sub>e</sub> )   ↑ The following applies to contact endurances of about 200,000 operating cycles:  - Rated operating current <i>l</i> <sub>e</sub> - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  400 V kW 27 37 55 65 500 V kW 35 48 72 85.5 690 V kW 45 64 92 106  Maximum permissible rated operat- ing voltage <i>l</i> <sub>e</sub> /AC-4			kW				455	
Utilization category AC-4 (for $l_{\rm a}=6\times l_{\rm e}$ )  • The following applies to contact endurances of about 200,000 operating cycles:  - Rated operating current $l_{\rm e}$ - Rated output power for squirrel-cage motors at 50 Hz and 60 Hz	Minimum conductor cross-section for	or loads with I <sub>e</sub>	$\rm mm^2$	70	95	185	240	
Utilization category AC-4 (for I <sub>a</sub> = 6 x I <sub>e</sub> )         ● The following applies to contact endurances of about 200,000 operating cycles:         - Rated operating current I <sub>e</sub> 52       72       103       120         - Rated output power for squirrel-cage motors at 50 Hz and 60 Hz       230 V kW 15.6       21       31       37.5         500 V kW 35       48       72       85.5         690 V kW 45       64       92       106         Maximum permissible rated operating current I <sub>e</sub> 100 V A       110       170       250       400	Utilization category AC-2 and AC-	3		5)				
• The following applies to contact endurances of about 200,000 operating cycles:  - Rated operating current $I_e$ - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz								
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	<ul> <li>The following applies to contact er</li> </ul>							
- Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- cage motors at 50 Hz and 60 Hz  - Rated output power for squirrel- c	•			52	72	103	120	
cage motors at 50 Hz and 60 Hz     400 V kW 35 48 72 85.5       500 V kW 35 690 V kW 45     64 92 106       Maximum permissible rated operating voltage I <sub>e</sub> /AC-4     for 400 V A 110 170 250 400		000 V	L\\\					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	24g331010 at 00 112 and 00 112							
ing voltage l <sub>e</sub> /AC-4								
1) For reversing duty, deviations from the vertical axis are not permitted		for 400 V	Α	110	170	250	400	
	) For reversing duty deviations from	the vertical axis are not permitted						

- 1) For reversing duty, deviations from the vertical axis are not permitted.
- 2) See Page 2/80.
- 3) The opening delays can increase if the contactor coils are damped against voltage peaks.
- Industrial furnaces and electric heaters with resistance heating, for example (increased power consumption on heating up has been taken into account).
- 5) See selection tables, Page 2/84

# Contactors with DC solenoid system 3-pole, 55 ... 200 kW

Contactor	Type Size		3TB50 6	3TB52 8	3TB54 10	3TB56 12
Main circuit						
Load rating with AC						
Switching of low-induct AC capacitors <sup>1)</sup>	ance (low-loss, metallized diele	ctric)				
Rated operating current	/ <sub>e</sub> at 400 V	А	87	144	217	289
Rated output power of sin	ngle capaci-	230 V kv		58	87	115
tors at 50 Hz		400 V kv 500 V kv		100 130	150 190	200 265
		690 V kv		100	150	200
Rated output power of bacapacitors (minimum ind		230 V kv 400 V kv		40 70	66 115	85 150
between 6 µH connected		400 V kv 500 V kv		90	145	195
capacitors) at 50 Hz		690 V kv	ar 50	70	115	150
Load rating with DC						
Utilization category DC Switching of resistive lo Rated operating curren	oad (L/R ≤1 ms)					
<ul> <li>1 conducting path</li> </ul>		24 V A	160 80	200 80	300 300	400 330
		60 V A 110 V A	18	18	33	33
		220 V A 440 V A	3.4 0.8	3.4 0.8	3.8 0.9	3.8 0.9
		600 V A	0.5	0.5	0.6	0.6
2 series-connected cor	nducting	24 V A	160	200	300	400
paths		60V A	160	200	300	400
		110 V A 220 V A	160 20	200 20	300 300	400 400
		440 V A	3.2	3.2	4	4
		600 V A	1.6	1.6	2	2
<ul> <li>3 series-connected cor paths</li> </ul>	nducting	24 V A	160	200	300	400
1		60 V A	160 160	200 200	300 300	400 400
		110 V A 220 V A	160	200	300	400
		440 V A 600 V A	11.5 4	11.5 4	11 5.2	11 5.2
Utilization category DC Shunt-wound and serie Rated operating curren	s-wound motors (L/R ≤15 ms)	*****		<u> </u>		
1 conducting path	6 ( 1 1 1 1 )	24 V A	16	16	35	35
		60 V A 110 V A	7.5 2.5	7.5 2.5	11 3	11 3
		220 V A	0.6	0.6	0.6	0.6
		440 V A 600 V A	0.17 0.12	0.17 0.12	0.18 0.125	0.18 0.125
<ul> <li>2 conducting paths in s</li> </ul>	series	24 V A	160	200	300	400
3 1 2		60 V A 110 V A	160 160	200 200	300 300	400 400
		220 V A	2.5	2.5	2.5	2.5
		440 V A 600 V A	0.65 0.37	0.65 0.37	0.65 0.37	0.65 0.37
3 series-connected cor	nducting	24 V A	160	200	300	400
paths	9					
		60 V A 110 V A	160 160	200 200	300 300	400 400
		220 V A 440 V A	160 1.4	200 1.4	300 1.4	400 1.4
		600 V A	0.75	0.75	0.75	0.75
Operating frequency						
Operating frequency z		AO 4	1000			
<ul> <li>Contactors without ove</li> </ul>	noau relay	AC-1 h <sup>-</sup> AC-2 h <sup>-</sup>	500			
		AC-3 h <sup>-</sup> AC-4 h <sup>-</sup>	500			
Contactors with overload	ad relav (mean value)	AC-4 II				
) Contact lifetime 0.1 mil						
,	non operating by bles.					

# Contactors with DC solenoid system 3-pole, 55 ... 200 kW

Contactor	Type Size		3TB50 6	3TB52 8	3TB54 10	3TB56 12
Conductor cross-sections						
Screw terminals	Main conductors • Finely stranded with cable lug • Stranded with cable lug • Busbars • Terminal screw	mm <sup>2</sup> mm <sup>2</sup> mm	1670 2570 15 x 3 M 6	35 95 50 120 20 x 3 M 8	50 240 70 240 25 x 5 M 10	50 240 70 240 2 x (25 x 3) M 10
	<ul> <li>Finely stranded with end sleeve mm<sup>2</sup></li> </ul>		12.5 0.75 1.5 2 x 1 2.5			
	Protective conductor: • Stranded with cable lug	mm <sup>2</sup>	-	2570	3570	50120
CSA and UL rated data					•	
CSA rated data						
Continuous current	Open Enclosed	A A	150 135	170 153	240 215	300 270
Rated output power for induction motors at 60 Hz (enclosed)	115 V 230 V 460 V 575 V	hp hp hp hp	25 50 100 125	30 60 120 160	40 75 150 200	50 100 200 250
Overload relay	Type Adjustment range	А	3RB1056 50 200	3RB1056 50 200	3RB1066 50 250	3RB1066 200 540
NEMA/EEMAC size	Contactors Starter (= contactors + overload relay, enclosed)		4 3	4	4 4	5 5
UL rated data						
Continuous current	Open Enclosed	A A	150 135	150 135	240 215	390 350
Rated output power for induction motors at 60 Hz	115 V 230 V 460 V 575 V	hp hp hp hp	25 50 100 125	25 50 100 125	30 75 150 200	- 125 250 300 <sup>1)</sup>
Overload relay	Type Adjustment range		3RB1056 50 200	3RB1056 50 200	3RB1066 50 250	3RB1066 200 540
NEMA/EEMAC size	Contactors Starter (= contactors + overload relay, enclosed)		4 3	4 4	4 4	5 5
Short-circuit protection devices						
• Fuse CLASS RK5		Α	400	400	450	600
Power switch to UL 489		Α	175	175	250	600

1) At AC 575/AC 600 V.