## SIEMENS

## Data sheet

## 3RH2140-1BB40



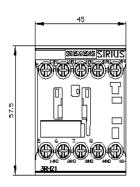
Contactor relay, 4 NO, 24 V DC, Size S00, screw terminal

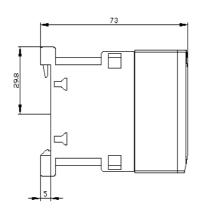
product brand nameSIRIUSproduct designationAuxiliary contactorproduct type designation3RH2General technical dataS00size of contactorS00product extension auxiliary switchYespower loss [W] for rated value of the current without load current share typical4 Winsulation voltage with degree of pollution 3 at AC rated value690 Vdegree of pollution3surge voltage resistance rated value6 kVshock resistance at rectangular impulse • at DC10g / 5 ms, 5g / 10 msmechanical service life (operating cycles)10g / 5 ms, 8g / 10 ms• of contactor typical30 000 000• of the contactor with added electronically optimized auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical10 000 000• of the contactor with added auxiliary switch block typical2 000 m	
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shock resistance at rectangular impulse       10g / 5 ms, 5g / 10 ms         • at DC       10g / 5 ms, 5g / 10 ms         shock resistance with sine pulse       15g / 5 ms, 8g / 10 ms         • at DC       15g / 5 ms, 8g / 10 ms         mechanical service life (operating cycles)       30 000 000         • of contactor typical       30 000 000         • of the contactor with added electronically optimized auxiliary switch block typical       10 000 000         • of the contactor with added auxiliary switch block typical       10 000 000         reference code according to IEC 81346-2       K         Substance Prohibitance (Date)       10/01/2009         Ambient conditions       10	
• at DC       10g / 5 ms, 5g / 10 ms         shock resistance with sine pulse       -         • at DC       15g / 5 ms, 8g / 10 ms         mechanical service life (operating cycles)       -         • of contactor typical       30 000 000         • of the contactor with added electronically optimized auxiliary switch block typical       5 000 000         • of the contactor with added auxiliary switch block typical       10 000 000         reference code according to IEC 81346-2       K         Substance Prohibitance (Date)       10/01/2009         Ambient conditions	
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reference code according to IEC 81346-2       K         Substance Prohibitance (Date)       10/01/2009         Ambient conditions       10/01/2009	
Substance Prohibitance (Date)     10/01/2009       Ambient conditions     10/01/2009	
Ambient conditions	
installation altitude at height above sea level maximum 2 000 m	
ambient temperature	
• during operation -25 +60 °C	
• during storage -55 +80 °C	
relative humidity minimum 10 %	
relative humidity at 55 °C according to IEC 60068-2-30 95 % maximum	
Environmental footprint	
Environmental Product Declaration(EPD) Yes	
Global Warming Potential [CO2 eq] total 133 kg	
Global Warming Potential [CO2 eq] during manufacturing 1.3 kg	
Global Warming Potential [CO2 eq] during operation 132 kg	
Global Warming Potential [CO2 eq] after end of life -0.227 kg	
Main circuit	
no-load switching frequency	
• at AC 10 000 1/h	
• at DC 10 000 1/h	
Control circuit/ Control	

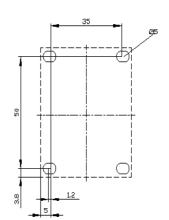
control supply voltage at DC rated value       24 V         operating range factor control supply voltage rated value of magnet coil at DC       0.8         • initial value       0.8         • full-scale value       1.1         closing power of magnet coil at DC       4 W         holding power of magnet coil at DC       4 W         closing delay       30 100 ms         • at DC       7 13 ms         at DC       10 15 ms		
Number of a body water of a set of a body water of a body wate	type of voltage of the control supply voltage	DC
operation and DC08• Initial value08• Initial value11closing power of magnet coil at DC4/W• Initial value11closing power of magnet coil at DC4/W• Initial value00 m• Initial value <td< td=""><td>control supply voltage at DC rated value</td><td></td></td<>	control supply voltage at DC rated value	
majer coil at DC	•	24 V
• eld-scale value1elosing power of magnet coll al DC4 Wclosing power of magnet coll al DC4 Welosing delay0• el DC0• el DC0• ar DC713 msarcing delay10.15 ms• el DC4• el DC3• el DC3• el DC3• el DC3• el DC3• el DC10• el DC10 </td <td></td> <td></td>		
electing power of magnet coil at DC         4W           holding power of magnet coil at DC         4W           el DC         30 - 100 ms           opening disly         -           • at DC         713 ms           acring dm         1015 ms           Ansitagy clouit         4           et DC         713 ms           acring dm         1015 ms           Ansitagy clouit         4           et at Act 2t maximum         10A           operational current at Act 2t maximum         10A           operational current at Act 2t maximum         10A           et 800 V rated value         3A           et 800 V rated value         3A           et 800 V rated value         10A	initial value	0.8
holding power of magnet col at DC         4 W           closing delay         -           • at DC         30 100 ms           opening delay         -           • at DC         7 13 ms           arcing dive         -           • at DC         0 15 ms           Arcling price         4           • instantaneous contrat         10           • instantaneous contrat         10           • instantaneous contrat         10           • instant	• full-scale value	1.1
closing fairy     -       • it DC     -       • it DC     713 ms       • it DC     15 ms       Auxiliary circuit     -       • itstantaneous contact.     4       • itstantaneous contact.     4       • itstantaneous contact.     40       • itstantaneous contact.     40       • operational current at AC-12 maximum     10A       operational current at AC-12 maximum     10A       • operational current at AC-12 maximum     0.3A       • operational current at AC-12 maximum </td <td>closing power of magnet coil at DC</td> <td>4 W</td>	closing power of magnet coil at DC	4 W
• + ICC09, - 100 msopening felaly713 msarcing time015 msAuxiliary circuit4Auxiliary circuit4destination number and lotter for switching elements40 Eoperational current at AC-12 maximum00 Aoperational current at AC-12 maximum10 Aoperational current at AC-15-• 4.220 V ratel value0 A• 4.600 V ratel value3 A• 4.600 V ratel value1 A• 4.600 V ratel value0.3 A• 4.6100 V ratel value0.3 A• 4.6100 V ratel value0.3 A• 4.6100 V ratel value0.3 A• 6160 V ratel value0.3 A• 6160 V ratel value0.4 A• 6160 V ratel value0.4 A• 6160 V ratel value0.4 A• 6160 V ratel value0.5 A• 6160 V rat	holding power of magnet coil at DC	4 W
opening delay	closing delay	
i cl C713 msarcing time015 msAuxilary circuit4Auxilary circuit4adentification number and letter for switching elements40 Eoperational current at AC-12 maximum40 AOperational current at AC-12 maximum10 Aoperational current at 1 Current path at DC-1210 Aoil 10 V tried value10 Aoperational current at 1 Current path at DC-1210 Aoil 11 O V tried value10 Aoperational current with 2 current paths in series at DC-12oil 20 V tried value10 Aoil 11 V tried value10 Aoil 20 V tried value	• at DC	30 100 ms
arcing time         10 15 ms           Auxiliary calculi         -           Auxiliary calculi         -           Auxiliary calculi         -           Instantaneous context         4           Instantaneous context         -           Operational current at AC-12 maximum         10A           operational current at AC-15         -           -::::::::::::::::::::::::::::::::::::	opening delay	
Auxillary circuit         4           instantinacios contact         4           Identification number and latter for switching elements         40 E           operational current at AC-17 maximum         10 A           operational current at AC-17 maximum         10 A           • at 300 V rated value         3.A           • at 300 V rated value         10.A           operational current at 1 current path at DC-12	• at DC	7 13 ms
number of NO contacts for auxillary contacts         4           instantaneous contact         4           identification number and letter for switching elements         40 E           operational current at AC-15         10 A           et 230 V rated value         3.A           et 230 V rated value         3.A           et 300 V rated value         3.A           et 300 V rated value         10.A           et 300 V rated value         1.A           operational current at AC-15         10.A           et 300 V rated value         1.A           operational current at A Current path at DC-12         1.A           et 300 V rated value         10.A           et 300 V rated value         2.A           et 300 V rated value         10.A           et 300 V rated value		10 15 ms
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Identification number and letter for switching elements         40 E           operational current at AC-12 maximum         10 A           operational current at AC-12 maximum         10 A           at 200 V rated value         10 A           at 400 V rated value         2A           at 600 V rated value         2A           at 600 V rated value         10 A           operational current at 1 Current path at DC-12	number of NO contacts for auxiliary contacts	4
operational current at AC-12 maximum         10 A           operational current at AC-15         10 A           at 300 V raded value         3A           at 600 V raded value         3A           at 600 V raded value         3A           at 600 V raded value         1A           operational current at 1 current path at DC-12         -           at 220 V raded value         3A           at 100 V raded value         3A           at 220 V raded value         3A           at 400 V raded value         0.15A           operational current with 2 current paths in series at DC-12         -           at 400 V raded value         10A           at 400 V raded value         0.5A           operational current with 3 current paths in series at DC-12         -           at 400 V raded value         10A           at 400 V raded value	<ul> <li>instantaneous contact</li> </ul>	4
operational current at AC-15         10 A           • at 230 V rade value         10 A           • at 300 V rade value         3 A           • at 500 V rade value         2 A           • at 500 V rade value         1 A           operational current at 1 current path at DC-12         1 A           • at 24 V rade value         10 A           • at 120 V rade value         3 A           • at 120 V rade value         10 A           • at 120 V rade value         0.5 A           • at 220 V rade value         0.5 A           • at 20 V rade value         0.5 A           • at 20 V rade value         0.5 A           operational current with 2 current paths in series at DC-12         • 10 A           • at 20 V rade value         0.5 A           operational current with 2 current paths in series at DC-12         • 10 A           • at 20 V rade value         0.65 A           operational current with 2 current paths in series at DC-12         • 10 A           • at 20 V rade value         0	identification number and letter for switching elements	40 E
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• at 220 Y rated value         1 A           • at 440 Y rated value         0.5 A           • at 600 Y rated value         0.6 A           operational current with 2 current paths in series at DC-12         10 A           • at 24 V rated value         10 A           • at 60 V rated value         2 A           • at 100 V rated value         2 A           • at 400 V rated value         2 A           • at 400 V rated value         10 A           • at 600 V rated value         2 A           • at 600 V rated value         0 A           • at 600 V rated value         10 A           • at 600 V rated value         3.6 A           • at 600 V rated value         0 A           • at 24 V rated value         0 A           • at 24 V rated value         0 A <td>at 24 V rated value</td> <td>10 A</td>	at 24 V rated value	10 A
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• at 600 Vrated value         0.15 Å           operational current with 2 current paths in series at DC-12         0           • at 64 V rated value         10 Å           • at 64 V rated value         10 Å           • at 61 V rated value         4 Å           • at 22 V rated value         2 Å           • at 60 V rated value         0.65 Å           • at 60 V rated value         0.65 Å           • at 60 V rated value         10 Å           • at 64 V rated value         3.6 Å           • at 64 V rated value         3.6 Å           • at 60 V rated value         10 Å           • at 60 V rated value         0.3 Å           • at 60 V rated value         0.3 Å           • at 60 V rated value         0.4 Å           • at 60 V rated value         10 Å           • at 60 V rated value         3.5 Å	• at 220 V rated value	1 A
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• at 24 V rated value         10 A           • at 60 V rated value         10 A           • at 10 V rated value         4 A           • at 220 V rated value         2 A           • at 440 V rated value         0.65 A           • operational current with 3 current paths in series at DC-12		0.15 A
at 8 OV rated value         10 A           • at 110 V rated value         4 A           • at 220 V rated value         2 A           • at 440 V rated value         13 A           • at 600 V rated value         0.65 A           operational current with 3 current paths in series at DC-12		
• at 110 V rated value         4 A           • at 220 V rated value         2 A           • at 440 V rated value         0.65 A           • operational current with 3 current paths in series at DC-12         -           • at 24 V rated value         10 A           • at 600 V rated value         10 A           • at 600 V rated value         3.6 A           • at 440 V rated value         3.6 A           • at 440 V rated value         3.6 A           • at 440 V rated value         1.0 A           • at 440 V rated value         3.6 A           • at 440 V rated value         1.0 A           • at 220 V rated value         1.0 A           • at 24 V rated value         0.1 A           • at 24 V rated value         0.1 A           • at 440 V rated value         0.1 A           • at 440 V rated value         0.1 A           • at 600 V rated value         0.1 A           • at 440 V rated value         0.1 A           • at 600 V rated value         0.1 A           • at 600 V rated value		
• at 220 V rated value         2 A           • at 440 V rated value         13 A           • at 600 V rated value         065 A           operational current with 3 current paths in series at DC-12         1           • at 24 V rated value         10 A           • at 600 V rated value         10 A           • at 600 V rated value         3.6 A           • at 400 V rated value         3.6 A           • at 400 V rated value         3.6 A           • at 600 V rated value         1000 1/h           operating frequency at DC-12 maximum         1000 1/h           operational current at 1 current path at DC-13         Image: State S		
• at 440 V rated value         1.3 A           • at 600 V rated value         0.65 A           operational current with 3 current paths in series at DC-12            • at 24 V rated value         10 A           • at 60 V rated value         10 A           • at 60 V rated value         10 A           • at 10 V rated value         3.6 A           • at 400 V rated value         2.5 A           • at 600 V rated value         10 A           • at 600 V rated value         10 A           • at 440 V rated value         00 //h           • at 440 V rated value         0.8 A           • at 24 V rated value         0.8 A           • at 24 V rated value         10 A           • at 24 V rated value         10 A           • at 24 V rated value         10 A           • at 24 V rated value         0.1 A           • at 24 V rated value         0.3 A           • at 400 V rated value         0.1 A           • at 600 V rated value         0.1 A           • at 400 V rated value         0.5 A           • at 400 V rated value         0.5 A           • at 400 V rated value         0.5 A           • at 400 V rated value         0.2 A           • at 400 V rated value <td< td=""><td></td><td></td></td<>		
• at 600 V rated value         0.65 Å           operational current with 3 current paths in series at DC-12         V           • at 24 V rated value         10 Å           • at 60 V rated value         10 Å           • at 60 V rated value         10 Å           • at 10 V rated value         0.6 Å           • at 220 V rated value         3.6 Å           • at 220 V rated value         2.5 Å           • at 600 V rated value         1.8 Å           operational current at 1 current path at DC-13         V           • at 24 V rated value         10 Å           • at 24 V rated value         0.00 1/h           • at 24 V rated value         10 Å           • at 24 V rated value         0.4 Å           • at 24 V rated value         0.4 Å           • at 24 V rated value         0.14 Å           • at 600 V rated value         0.14 Å           • at 600 V rated value         1.3 Å           • at 24 V rated value         0.4 Å           • at 24 V rated value         0.9 Å           • at 400 V rated value         0.9 Å           • at 40 V rated value         0.9 Å           • at 40 V rated value         0.9 Å           • at 40 V rated value         0.4 Å           • at 600 V rated		
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• at 24 V rated value         10 A           • at 60 V rated value         10 A           • at 10 V rated value         10 A           • at 20 V rated value         3.6 A           • at 440 V rated value         2.5 A           • at 600 V rated value         100 //h           operating frequency at DC-12 maximum         1000 //h           operational current at 1 current path at DC-13		0.65 A
• at 60 V rated value10 A• at 110 V rated value0 A• at 220 V rated value36 A• at 440 V rated value2.5 A• at 600 V rated value1.8 A• operating frequency at DC-12 maximum00 //• operational current at 1 current path at DC-1300 //• at 24 V rated value10 A• at 24 V rated value0.1 A• at 24 V rated value0.3 A• at 24 V rated value0.1 A• at 24 V rated value0.1 A• at 24 V rated value0.1 A• at 24 V rated value3.5 A• at 24 V rated value3.5 A• at 20 V rated value0.2 A• at 20 V rated value0.2 A• at 20 V rated value0.1 A• at 20 V rated value0.2 A• at 20 V rated value0.2 A• at 400 V rated value0.2 A• at 400 V rated value0.1 A		40.4
• at 110 V rated value       10 A         • at 220 V rated value       36 A         • at 440 V rated value       25 A         • at 600 V rated value       18 A         operating frequency at DC-12 maximum       1000 1/h         operational current at 1 current path at DC-13       -         • at 24 V rated value       10 A         • at 24 V rated value       10 A         • at 24 V rated value       0.3 A         • at 220 V rated value       0.14 A         • at 600 V rated value       0.14 A         • at 600 V rated value       0.5 A         • at 600 V rated value       0.5 A         • at 220 V rated value       0.14 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.0 A         • at 600 V rated value       0.0 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.2 A         • at 400 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.1 A		
• at 220 V rated value       3.6 A         • at 440 V rated value       2.5 A         • at 600 V rated value       1.8 A         • operating frequency at DC-12 maximum       1 000 1/h         • operational current at 1 current path at DC-13       -         • at 24 V rated value       10 A         • at 24 V rated value       0.3 A         • at 220 V rated value       0.14 A         • at 24 V rated value       0.14 A         • at 600 V rated value       0.14 A         • at 600 V rated value       10 A         • at 24 V rated value       0.14 A         • at 600 V rated value       0.5 A         • at 220 V rated value       0.5 A         • at 220 V rated value       0.0 A         • at 60 V rated value       0.0 A         • at 60 V rated value       0.0 A         • at 220 V rated value       0.14 A         • at 220 V rated value       0.0 A         • at 440 V rated value       0.0 A         • at 60 V rated value       0.0 A         • at 440 V rated value       0.1 A         • at 400 V rated value		
• at 440 V rated value       2.5 A         • at 600 V rated value       1.8 A         operating frequency at DC-12 maximum       1000 1/h         operational current at 1 current path at DC-13       10         • at 24 V rated value       10 A         • at 24 V rated value       1.4 A         • at 220 V rated value       0.14 A         • at 600 V rated value       0.14 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 24 V rated value       0.1 A         • at 20 V rated value       0.1 A         • at 20 V rated value       0.2 A         • at 20 V rated value       0.9 A         • at 440 V rated value       0.2 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 440 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 600 V rated value <td< td=""><td></td><td></td></td<>		
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• at 24 V rated value       10 A         • at 110 V rated value       1 A         • at 220 V rated value       0.3 A         • at 440 V rated value       0.14 A         • at 600 V rated value       0.1 A         • at 600 V rated value       10 A         • at 24 V rated value       10 A         • at 24 V rated value       10 A         • at 24 V rated value       10 A         • at 600 V rated value       3.5 A         • at 10 V rated value       0.9 A         • at 220 V rated value       0.9 A         • at 440 V rated value       0.2 A         • at 600 V rated value       0.2 A         • at 600 V rated value       0.1 A		
• at 110 V rated value       1 A         • at 220 V rated value       0.3 A         • at 440 V rated value       0.14 A         • at 600 V rated value       0.1 A         • at 600 V rated value       0.1 A         • at 220 V rated value       0.1 A         • at 24 V rated value       10 A         • at 60 V rated value       3.5 A         • at 10 V rated value       0.9 A         • at 220 V rated value       0.2 A         • at 600 V rated value       0.1 A		10 A
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• at 110 V rated value1.3 A• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 Aoperational current with 3 current paths in series at DC-1310 A		10 A
• at 220 V rated value0.9 A• at 440 V rated value0.2 A• at 600 V rated value0.1 A• at 24 V rated value10 A	● at 60 V rated value	3.5 A
• at 440 V rated value     0.2 A       • at 600 V rated value     0.1 A       operational current with 3 current paths in series at DC-13     10 A	• at 110 V rated value	1.3 A
• at 600 V rated value     0.1 A       operational current with 3 current paths in series at DC-13     10 A	• at 220 V rated value	0.9 A
operational current with 3 current paths in series at DC-13         • at 24 V rated value         10 A	• at 440 V rated value	0.2 A
• at 24 V rated value 10 A	• at 600 V rated value	0.1 A
	operational current with 3 current paths in series at DC-13	
• at 60 V rated value 4.7 A	• at 24 V rated value	10 A
	• at 60 V rated value	4.7 A

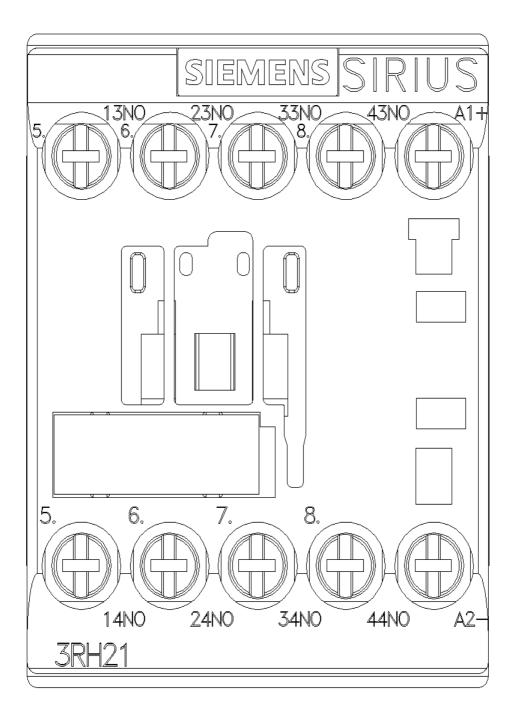
at 110 V rated value	3 A
at 220 V rated value	1.2 A
• at 440 V rated value	0.5 A
at 600 V rated value	0.26 A
operating frequency at DC-13 maximum	1 000 1/h
design of the miniature circuit breaker for short-circuit protection of the auxiliary circuit up to 230 V	C characteristic: 6 A; 0.4 kA
contact reliability of auxiliary contacts	1 faulty switching per 100 million (17 V, 1 mA)
UL/CSA ratings	
contact rating of auxiliary contacts according to UL	A600 / Q600
Short-circuit protection	
design of the fuse link for short-circuit protection of the auxiliary switch required	fuse gL/gG: 10 A
Installation/ mounting/ dimensions	
mounting position	+/-180° rotation possible on vertical mounting surface; can be tilted forward and backward by +/- 22.5° on vertical mounting surface
fastening method	screw and snap-on mounting onto 35 mm DIN rail
height	57.5 mm
width	45 mm
depth	73 mm
required spacing	
with side-by-side mounting	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	0 mm
<ul> <li>for grounded parts</li> </ul>	
— forwards	10 mm
— upwards	10 mm
— at the side	6 mm
— downwards	10 mm
• for live parts	
— forwards	10 mm
— upwards	10 mm
— downwards	10 mm
— at the side	6 mm
Connections/ Terminals	
type of electrical connection for auxiliary and control circuit	screw-type terminals
type of connectable conductor cross-sections	
<ul> <li>for auxiliary contacts</li> </ul>	
— solid or stranded	2x (0.5 1.5 mm²), 2x (0.75 2.5 mm²), 2x 4 mm²
<ul> <li>finely stranded with core end processing</li> </ul>	2x (0.5 1.5 mm <sup>2</sup> ), 2x (0.75 2.5 mm <sup>2</sup> )
<ul> <li>for AWG cables for auxiliary contacts</li> </ul>	2x (20 16), 2x (18 14), 2x 12
Safety related data	
product function	
positively driven operation according to IEC 60947-5-1	Yes
suitable for safety function	Yes
suitability for use safety-related switching OFF	Yes
service life maximum	20 a
proportion of dangerous failures	40.07
with low demand rate according to SN 31920	40 %
with high demand rate according to SN 31920	73 %
B10 value with high demand rate according to SN 31920 failure rate [FIT] with low demand rate according to SN	1 000 000; With 0.3 x le 100 FIT
31920	
ISO 13849	
device type according to ISO 13849-1	3
overdimensioning according to ISO 13849-2 necessary	Yes
IEC 61508	Ture A
safety device type according to IEC 61508-2	Туре А
Electrical Sofaty	
Electrical Safety protection class IP on the front according to IEC 60529	IP20

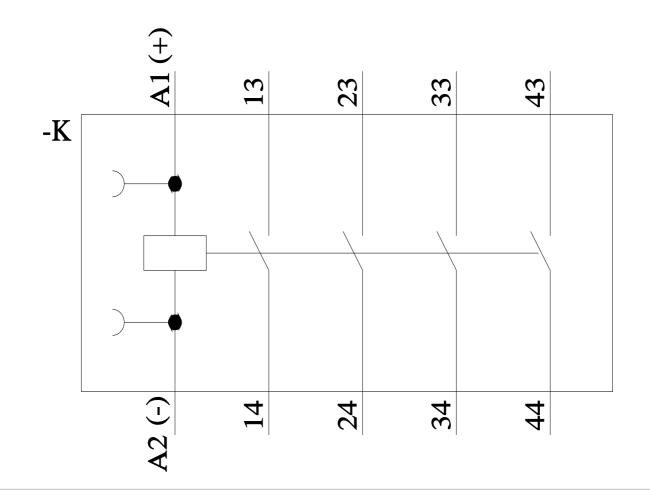
provals Certificates		C 60529 fing	er-safe, for vertical contact		
General Product App	proval				
(SP) CEA	CE EG-Konf.	UK CA		<u>Confirmation</u>	(UL) u
General Product App	proval	EMV	Functional Saftey	Test Certificates	
KC	EHC	RCM	<u>Type Examination Cer-</u> tificate	Type Test Certific- ates/Test Report	<u>Special Test Certific</u> ate
Test Certificates	Marine / Shipping				
<u>Miscellaneous</u>	ABS	BUREAU VERITAS		Hoyd's Register uis	PRS
Marine / Shipping		other		Railway	Dangerous Good
RINA	RMRS	<u>Miscellaneous</u>	<u>Confirmation</u>	<u>Special Test Certific-</u> <u>ate</u>	Transport Informatio
Environment					
EPD	Environmental Con- firmations				
rther information					
nformation on the pa https://support.industry	ackaging /.siemens.com/cs/ww/en/\	view/109813875			
nformation- and Dov ttps://www.siemens.c	vnloadcenter (Catalogs, om/ic10	Brochures,)			
ax online generator	emens.com/mall/en/en/Ca	Xorder/default.aspx?lang	2140-1BB40 =en&mlfb=3RH2140-1BB4(	2	
ttps://support.industry	v.siemens.com/cs/ww/en/p	os/3RH2140-1BB40	ls, device circuit diagrams		
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