# SIEMENS

## **Product data sheet**

## 3RV2021-4CA10



CIRCUIT-BREAKER SZ S0, FOR MOTOR PROTECTION, CLASS 10, A-RELEASE 17...22A, N-RELEASE 286A, SCREW CONNECTION, STANDARD SW. CAPACITY,

General technical data:			
Product brand name		SIRIUS	
product designation		3RV2 circuit breaker	
Size of the circuit-breaker		SO	
Trip class		CLASS 10	
Protection class IP / on the front		IP20	
Degree of pollution		3	
Installation altitude / at a height over sea level / maximum	m	2,000	
Ambient temperature			
during storage	°C	-50 80	
during operating	°C	-20 60	
during transport	°C	-50 80	
Resistance against shock		25g / 11 ms	
Impulse voltage resistance / rated value	kV	6	
Insulation voltage / rated value	V	690	
Active power loss / total / typical	W	9.9	
Item designation			
<ul> <li>according to DIN 40719 extendable after IEC 204-2 / according to IEC 750</li> </ul>		F	
according to DIN EN 61346-2		F	

• of the main contacts / typical100,000• of the auxiliary contacts / typical100,000Type of the driving mechanism / motor driveNoDesign of the operating mechanismSector switch• overload protectionYes• prises disturbance recognitionYes• product functionNo• auxiliary switchNo• undervolage release mechanismNo• auxiliary switchNo• undervolage release mechanismNo• auxiliary cortext of valueNo• auxiliary cortext of valueNo• auxiliary cortext of valueNo• auxiliary cortext of valueNo• auxiliary cortext of valueW• auxiliary cortext of rom and current circuitInfin• auxiliary cortext of rom and current circuitNo• auxiliary cortext of rom and current circuitNo• auxiliary cortext of rom anxiliary cortext of instantaneousA<	Mechanical operating cycles as operating time	-	
Type of the driving mechanism / motor drive         No           Design of the operating mechanism         selector switch           Product function         Yes           • oreidoal protection         Yes           • phase disturbance recognition         Yes           Product component         Yes           • audilary switch         No           • undervoltage release mechanism         No           • trip indicator         No           Product extension / optional / motor drive         No           Main circuit:         3           Operating current / at AC-3 / rated value / maximum         V         690           Operating current / at AC-3 / at 400 V / rated value         W         11,000           • at 400 V / rated value         W         11,000           • at 600 V / rated value         W         11,000           • at 600 V / rated value         W         11,000           • at 600 V / rated value         W         12,000           • at 600 V / rated value         W         12,000           • at 600 V / rated value         W         12,000           • at 600 V / rated value         W         12,000           • at 600 V / rated value         W         12,000           • of th	of the main contacts / typical		100,000
Design of the operating mechanism         selector switch           Product function         Yes           • overload protection         Yes           • phase disturbance recognition         Yes           Product component         Yes           • auditary switch         No           • undervoltage release mechanism         No           • trip indicator         No           Product extension / optional / motor drive         No           Main circuit:         3           Number of poles / for main current circuit         3           Operating voltage / at AC-3 / at do V / rated value         3           Operating current / at AC-3 / at do V / rated value         W           • at 400 V / rated value         W           • at 600 V / rated value         W           • at 600 V / rated value         W           • of th	<ul> <li>of the auxiliary contacts / typical</li> </ul>		100,000
Product function     Yes       • overfoad protection     Yes       • phase disturbance recognition     Yes       Product component     No       • auxiliary switch     No       • undervoltage release mechanism     No       • trip indicator     No       Product extension / optional / motor drive     No       Main circuit:     3       Number of poles / for main current circuit     3       Operating voltage / at AC-3 / rated value / maximum     V     690       Operating current / at AC-3 / at 400 V / rated value     A     22       Service power / at AC-3	Type of the driving mechanism / motor drive	-	No
• overlead protectionYes• phase disturbance recognitionYesProduct componentYes• auxiliary switchNo• undervoltage release mechanismNo• trip indicatorNoProduct extension / optional / motor driveNoMain circcuit:3Mumber of poles / for main current circuit3Operating voltage / at AC-3 / rated value / maximumV690690Operating current / at AC-3 / at 400 V / rated valueA22Service power / at AC-3• at 400 V / rated valueW• at 400 V / rated valueA• at 400 V / rated valueA• at 400 V / rated valueA <td>Design of the operating mechanism</td> <td>-</td> <td>selector switch</td>	Design of the operating mechanism	-	selector switch
• phase distubance recognition         Yes           Product component	Product function		
Product component       No         • auxiliary switch       No         • undervoltage release mechanism       No         • trip indicator       No         Product extension / optional / motor drive       No         Main circuit:       3         Number of poles / for main current circuit       3         Operating voltage / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / rated value       A       22         Service power / at AC-3	overload protection		Yes
• auxiliary switchNo• undervoltage release mechanismNo• trip indicatorNoProduct extension / optional / motor driveNoMumber of poles / for main current circuit3Operating voltage / at AC-3 / rated value / maximumV650Operating current / at AC-3 / rated value / maximumV0Operating current / at AC-3 / rated value / maximumV000	phase disturbance recognition	_	Yes
• undervoltage release mechanismNo• trip indicatorNoProduct extension / optional / motor driveNoMain circuit:3Number of poles / for main current circuit3Operating current / at AC-3 / rated value / maximumV690Operating current / at AC-3 / at 400 V / rated valueA22Service power / at AC-3 / at 400 V / rated valueW• at 690 V / rated valueM• of the non-delayed short-circuit releaseA• of the non-delayed short-circuit releaseA• of the non-delayed short-circuit releaseA• of the current / rated valueM• of the current / rated valueM• of the current / rated valueA• of the current / rated valueM• of the current / rated valueYesNumber of NO contacts / for	Product component		
• trip indicator       No         Product extension / optional / motor drive       No         Main circuit:       No         Number of poles / for main current circuit       3         Operating voltage / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / at 400 V / rated value       A       22         Service power / at AC-3       W       11,000         • at 400 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 690 V / rated value       W       18,500         Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum       1/h       15         Arrangement of electrical connectors / for main current circuit       Top and bottom         Adjustable response current        286       286         • of the non-delayed short-circuit release       A       17	auxiliary switch		No
Product extension / optional / motor drive       No         Main circuit:       3         Number of poles / for main current circuit       3         Operating voltage / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / at 400 V / rated value       A       22         Service power / at AC-3       W       11,000         • at 400 V / rated value       W       11,000         • at 500 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       18,500         Frequency of operation / at AC-3 / according to IEC 60947-6-2/ maximum       Top and bottom         • of the non-delayed short-circuit release       A       286 286         • of the current-dependent overload release       A       17 22         Service power / at AC-3 / at 230 V / rated value       Y es         Number of NC contacts / for aux	undervoltage release mechanism		No
Main circuit:       3         Operating voltage / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / at 400 V / rated value       A       22         Service power / at AC-3       -       -         • at 400 V / rated value       W       11,000         • at 500 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       18,500         Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum       Top and bottom         Arrangement of electrical connectors / for main current circuit       Top and bottom         Adjustable response current       -       -         • of the non-delayed short-circuit release       A       286 286         • of the current-dependent overload release       A       17 22         Service power / at AC-3 / at 230 V / rated value       W       5,500         Continuous current / rated value       A       22         Auxiliary circuit:       Yes       -         Product extension / auxiliary contacts / instantaneous switching       0       0         Number of NO contacts / for auxiliary contacts / instantaneous switching	trip indicator	_	No
Number of poles / for main current circuit         3           Operating voltage / at AC-3 / rated value / maximum         V         690           Operating current / at AC-3 / rated value         A         22           Service power / at AC-3         W         11,000           • at 400 V / rated value         W         11,000           • at 600 V / rated value         W         11,000           • at 600 V / rated value         W         18,500           Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum         Top and bottom           Arrangement of electrical connectors / for main current circuit         Top and bottom           Adjustable response current         -         -           • of the non-delayed short-circuit release         A         286 286           • of the current-dependent overload release         A         17 22           Service power / at AC-3 / at 230 V / rated value         W         5.500           Continuous current / rated value         A         22           Auxiliary circuit:         Yes           Product extension / auxiliary contacts / instantaneous switching         0           Number of NO contacts / for auxiliary contacts / instantaneous switching         0           Number of change-over switches / for auxiliary contacts         0	Product extension / optional / motor drive		No
Operating voltage / at AC-3 / rated value / maximum       V       690         Operating current / at AC-3 / at 400 V / rated value       A       22         Service power / at AC-3       V       11,000         • at 400 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       11,000         • at 600 V / rated value       W       18,500         Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum       1/h       15         Arrangement of electrical connectors / for main current circuit       Top and bottom         Adjustable response current        286       .286         • of the non-delayed short-circuit release       A       286       .286         • of the current-dependent overload release       A       17       .22         Service power / at AC-3 / at 230 V / rated value       W       5,500       20         Continuous current / rated value       A       22       22         Auxiliary circuit:       Yes       90       90       90         Number of NC contacts / for auxiliary contacts / instantaneous switching       0       0       90 <t< td=""><td>Main circuit:</td><td></td><td></td></t<>	Main circuit:		
Operating current / at AC-3 / at 400 V / rated valueA22Service power / at AC-3V11,000• at 400 V / rated valueW11,000• at 500 V / rated valueW11,000• at 690 V / rated valueW18,500Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum1/h15Arrangement of electrical connectors / for main current circuitTop and bottomAdjustable response currentA286 286• of the non-delayed short-circuit releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueA22Auxiliary circuit:YesProduct extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of ND contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0	Number of poles / for main current circuit		3
Service power / at AC-3W11,000• at 400 V / rated valueW11,000• at 500 V / rated valueW11,000• at 690 V / rated valueW18,500Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum1/h15Arrangement of electrical connectors / for main current circuitTop and bottomAdjustable response current286 286• of the non-delayed short-circuit releaseA286 286• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueA22Auxiliary circuit:YesProduct extension / auxiliary switchYes0Number of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts / instantaneous switching0	Operating voltage / at AC-3 / rated value / maximum	V	690
• at 40 V / rated valueW11,000• at 500 V / rated valueW11,000• at 690 V / rated valueW18,500Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum1/h15Arrangement of electrical connectors / for main current circuitTop and bottomAdjustable response current-Top and bottom• of the non-delayed short-circuit releaseA286 286• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueW5,500Continuous current / rated valueV9Product extension / auxiliary contacts / instantaneous switching0Number of NC contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0Inputs/Outputs:-0	Operating current / at AC-3 / at 400 V / rated value	А	22
• at 500 V / rated valueW11,000• at 690 V / rated valueW18,500Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum1/h15Arrangement of electrical connectors / for main current circuitTop and bottomAdjustable response current-Top and bottom• of the non-delayed short-circuit releaseA286 286• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueW5,500Continuous current / rated valueVesProduct extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0Number of change-over switches / for auxiliary contacts0	Service power / at AC-3	-	
• at 690 V / rated valueW18,500Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum1/h15Arrangement of electrical connectors / for main current circuitTop and bottomAdjustable response currentTop and bottom• of the non-delayed short-circuit releaseA286 286• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueW5,500Auxiliary circuit:YesProduct extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0Inputs/ Outputs:0	• at 400 V / rated value	W	11,000
Frequency of operation / at AC-3 / according to IEC 60947-6-2 / maximum       1/h       15         Arrangement of electrical connectors / for main current circuit       Top and bottom         Adjustable response current       Top and bottom         • of the non-delayed short-circuit release       A       286 286         • of the current-dependent overload release       A       17 22         Service power / at AC-3 / at 230 V / rated value       W       5,500         Continuous current / rated value       A       22         Auxiliary circuit:       Yes         Product extension / auxiliary switch       Yes         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       Inputs/ Outputs:	• at 500 V / rated value	W	11,000
maximum       Imaximum       Imaximum         Arrangement of electrical connectors / for main current circuit       Top and bottom         Adjustable response current       Imaximum       Imaximum         • of the non-delayed short-circuit release       A       286 286         • of the current-dependent overload release       A       17 22         Service power / at AC-3 / at 230 V / rated value       W       5,500         Continuous current / rated value       A       22         Auxiliary circuit:       Imaximum       Imaximum         Product extension / auxiliary switch       Yes       Imaximum         Number of NC contacts / for auxiliary contacts / instantaneous switching       0       Imaximum         Number of change-over switches / for auxiliary contacts       0       Imaximum         Inputs/ Outputs:       Imaximum       0       Imaximum	• at 690 V / rated value	W	18,500
Adjustable response currentA• of the non-delayed short-circuit releaseA• of the current-dependent overload releaseA• of the current-dependent overload releaseA• of the current / rated valueWService power / at AC-3 / at 230 V / rated valueWContinuous current / rated valueA22Auxiliary circuit:Product extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0		1/h	15
• of the non-delayed short-circuit releaseA286 286• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueA22Auxiliary circuit:YesProduct extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0Inputs/ Outputs:Inputs/ Outputs	Arrangement of electrical connectors / for main current circuit		Top and bottom
• of the current-dependent overload releaseA17 22Service power / at AC-3 / at 230 V / rated valueW5,500Continuous current / rated valueA22Auxiliary circuit:YesProduct extension / auxiliary switchYesNumber of NC contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of NO contacts / for auxiliary contacts / instantaneous switching0Number of change-over switches / for auxiliary contacts0Inputs/ Outputs:U	Adjustable response current		
Service power / at AC-3 / at 230 V / rated value       W       5,500         Continuous current / rated value       A       22         Auxiliary circuit:       Yes         Product extension / auxiliary switch       Yes         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       U	of the non-delayed short-circuit release	А	286 286
Continuous current / rated value       A       22         Auxiliary circuit:       Yes         Product extension / auxiliary switch       Yes         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       Inputs/ Outputs:	of the current-dependent overload release	А	17 22
Auxiliary circuit:       Yes         Product extension / auxiliary switch       Yes         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       0	Service power / at AC-3 / at 230 V / rated value	W	5,500
Product extension / auxiliary switch       Yes         Number of NC contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of NO contacts / for auxiliary contacts / instantaneous switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       0	Continuous current / rated value	А	22
Number of NC contacts / for auxiliary contacts / instantaneous       0         Switching       0         Number of NO contacts / for auxiliary contacts / instantaneous       0         switching       0         Number of change-over switches / for auxiliary contacts       0         Inputs/ Outputs:       0	Auxiliary circuit:		
switching     0       Number of NO contacts / for auxiliary contacts / instantaneous switching     0       Number of change-over switches / for auxiliary contacts     0       Inputs/ Outputs:     0	Product extension / auxiliary switch		Yes
switching     0       Number of change-over switches / for auxiliary contacts     0       Inputs/ Outputs:     0			0
Inputs/ Outputs:			0
	Number of change-over switches / for auxiliary contacts		0
Number of digital inputs 0	Inputs/ Outputs:		
	Number of digital inputs		0

Short-circuit:		
Breaking capacity limit short-circuit current (lcu)		
• at 400 V / rated value	А	55,000
• at 500 V / rated value	А	10,000
• at 690 V / rated value	А	4,000
Design of the overcurrent release and short-circuit release		thermomagnetic
Installation/mounting/dimensions:		
Built in orientation		any
Type of mounting		screw and snap-on mounting onto 35 mm standard mounting rail according to DIN EN 60715
Width	mm	45
Height	mm	97
Depth	mm	91
Distance, to be maintained, to the ranks assembly		
• forwards	mm	0
backwards	mm	0
• upwards	mm	50
downwards	mm	50
• sidewards	mm	0
Distance, to be maintained, to earthed part		
• forwards	mm	0
backwards	mm	0
• upwards	mm	50
• sidewards	mm	30
downwards	mm	50
Distance, to be maintained, conductive elements		
• forwards	mm	0
backwards	mm	0
• upwards	mm	50
downwards	mm	50
• sidewards	mm	30
Connections:		
Product function		
removable terminal for main circuit		No
removable terminal for auxiliary and control circuit		No
Design of the electrical connection		
for main current circuit		screw-type terminals
Type of the connectable conductor cross-section		

• solid				2x (1 .	2.5 mm²), 2x (2.5 .	10 mm²)
<ul> <li>stranded</li> </ul>				2x (1 .	2.5 mm²), 2x (2.5 .	10 mm²)
<ul> <li>finely strand</li> </ul>	led					
with cond	luctor end processing			2x (1 .	2.5 mm²), 2x (2.5 .	6 mm²), 1x 10 mm²
<ul> <li>for AWG condu</li> </ul>	uctors / for main contac	ts		2x (16	12), 2x (14 8)	
Certificates/app	rovals:					
Verification of sui	tability			CE / U	L/CSA	
• für Staubexplos	sionsschutz für Zone 2 <sup>°</sup>	1/22		no		
<ul> <li>for gas explosion</li> </ul>	on protection for zone 1	1/2		no		
General Product	Approval				For use in hazar	dous locations
COC	(SA)	ROSTEST			DEKRA EXAM, DMT	
Test Certificates						
Manufacturer	other					
Shipping Approv	/al					
ABS	GL	Lloyd's Kegister LRS	PRS		RINA	RMRS
other						
Manufacturer	<u>other</u>					
UL/CSA ratings						
yielded mechanica	al performance (hp)					
<ul> <li>for single-phas</li> </ul>	e squirrel cage motors					
• at 110/120 \	/ / rated value		hp	1.5		
• at 230 V / rated value		hp	3			
<ul> <li>for three-phase</li> </ul>	e squirrel cage motors					
• at 200/208 \	/ / rated value		hp	5		
• at 220/230 V / rated value			hp	7.5		
• at 460/480 V / rated value			hp	15		
• at 400/400 \			-			
	(FLA) / for three-phase	se squirrei cage motors				

Safety:			
B10 value / with high demand rate			
according to SN 31920		50,000	
T1 value / for proof test interval or service life			

according to IEC 61508	а	10
Failure rate (FIT value) / with low demand rate		
according to SN 31920	FIT	50
Proportion of dangerous failures		
with low demand rate / according to SN 31920	%	40
with high demand rate / according to SN 31920	%	40
Protection against electrical shock		finger-safe

## Further information:

Information- and Downloadcenter (Catalogs, Brochures,...) http://www.siemens.com/industrial-controls/catalogs

#### Industry Mall (Online ordering system)

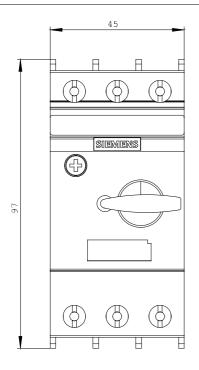
http://www.siemens.com/industrial-controls/mall

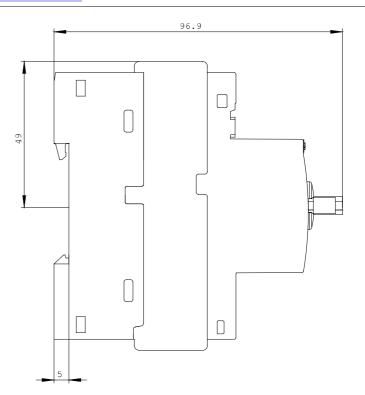
#### **CAx-Online-Generator**

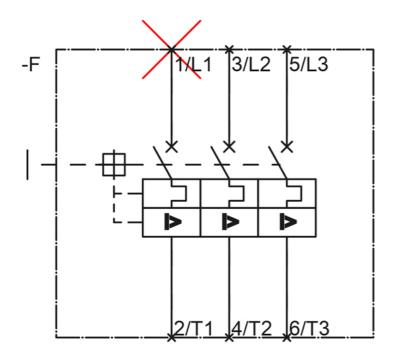
http://www.siemens.com/cax

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) http://support.automation.siemens.com/WW/view/en/3RV2021-4CA10/all

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax\_en.aspx?mlfb=3RV2021-4CA10







last change:

Oct 24, 2011