## **SIEMENS**

Data sheet 3RV2021-4NA10



Circuit breaker size S0 for motor protection, CLASS 10 A-release 23...28 A N-release 364 A screw terminal Standard switching capacity

product designation design of the product product type designation 3RV2  General technical data size of the circuit-breaker size of contactor can be combined company-specific product extension auxiliary switch power loss [W] for rated value of the current • at AC in hot operating state • at AC in hot operating state per pole insulation voltage with degree of pollution 3 at AC rated value surge voltage resistance rated value surge voltage resistance rated value  * between main and auxiliary circuit • between main and auxiliary circuit • between main and auxiliary circuit • of the main contacts typical • of the main contacts typical • of auxiliary contacts typical   of auxiliary contacts typical   of of auxiliary according to ATEX directive 2014/34/EU certificate of suitability accor	product brand name	SIRIUS
product type designation  General technical data  size of the circuit-breaker  size of contactor can be combined company-specific product extension auxiliary switch  e at AC in hot operating state  • at AC in hot operating state per pole  insulation voltage with degree of pollution 3 at AC rated value value  surge voltage resistance rated value  maximum permissible voltage for safe isolation in networks with grounded star point  • between main and auxiliary circuit  • between main and auxiliary circuit  • between main and auxiliary circuit  • of the main contacts typical  • of the main contacts typical  • of the main contacts typical  electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Q Substance Prohibitance (Date)  Anbient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation • during storage • during iransport  temperature compensation relative humidity during operation  ### AC in hot operating to ATEX directive 20 +60 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation  ### AC in hot operation to 12 +80 °C relative humidity during operation 10 95 %	product designation	Circuit breaker
size of the circuit-breaker size of contactor can be combined company-specific product extension auxiliary switch power loss [W] for rated value of the current • at AC in hot operating state per pole at AC in hot operating state per pole insulation voltage with degree of pollution 3 at AC rated value surge voltage resistance rated value maximum permissible voltage for safe isolation in networks with grounded star point • between main and auxiliary circuit • of the main contacts typical • of auxiliary contacts typical • of auxiliary contacts typical electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability acc	design of the product	For motor protection
size of the circuit-breaker  size of contactor can be combined company-specific product extension auxiliary switch  power loss [W] for rated value of the current  • at AC in hot operating state   13.25 W  • at AC in hot operating state per pole   4.4 W   690 V  surge voltage resistance rated value   680 V  surge voltage resistance rated value   6 kV  maximum permissible voltage for safe isolation in networks with grounded star point  • between main and auxiliary circuit   400 V  shock resistance acc. to IEC 60068-2-27   25g / 11 ms  mechanical service life (switching cycles)  • of the main contacts typical   100 000   electrical endurance (switching cycles)   100 000   expo of protection according to ATEX directive   2014/34/EU   certificate of suitability according to ATEX directive   2014/34/EU   reference code acc. to IEC 81346-2   Q Substance Prohibitance (Date)   01.10.2009   Ambient conditions   installation altitude at height above sea level maximum   2 000 m   ambient temperature   - 40 m; 60 °C   - 6 uring storage   -50 m; 80 °C   - 6 uring torage   -50 m; 80 °C   - 7 urit elative humidity during operation   -20 m; 95 %	product type designation	3RV2
size of contactor can be combined company-specific product extension auxillary switch  power loss [W] for rated value of the current  • at AC in hot operating state   13.25 W   • at AC in hot operating state per pole   4.4 W   insulation voltage with degree of pollution 3 at AC rated value   surge voltage resistance rated value   680 V   maximum permissible voltage for safe isolation in networks with grounded star point   • between main and auxiliary circuit   400 V   • between main and auxiliary circuit   400 V   • between main and auxiliary circuit   400 V   • between main contacts typical   100 000   • of suxiliary contacts typical   100 000   • of auxiliary contacts typical   100 000   • of auxiliary contacts typical   100 000   • of protection according to ATEX directive   2014/34/EU   certificate of suitability according to ATEX directive   2014/34/EU   certificate of suitability according to ATEX directive   2014/34/EU   certificate of suitability according to ATEX directive   01.10.2009   Ambient conditions   installation altitude at height above sea level maximum   400 W   • during operation   -20 +60 °C   • during transport   -50 +80 °C   temperature compensation   -20 +60 °C   • during transport   -50 +80 °C   temperature compensation   -20 +60 °C   • during transport   -50 +80 °C   temperature to poles for main current circuit   3	General technical data	
product extension auxiliary switch  power loss [W] for rated value of the current  at AC in hot operating state at AC in hot operating state per pole tusulation voltage with degree of pollution 3 at AC rated value  surge voltage resistance rated value  surge voltage resistance rated value  maximum permissible voltage for safe isolation in networks with grounded star point between main and auxiliary circuit between main contacts typical between a point between main and auxiliary circuit between main auxiliary circuit between main and auxiliary circuit between main aux	size of the circuit-breaker	SO
power loss [W] for rated value of the current  at AC in hot operating state at AC in hot operating state e at AC in hot operating state e at AC in hot operating state e at AC in hot operating state per pole insulation voltage with degree of pollution 3 at AC rated value  surge voltage resistance rated value  maximum permissible voltage for safe isolation in networks with grounded star point  between main and auxiliary circuit betwee	size of contactor can be combined company-specific	S00, S0
at AC in hot operating state e At AC in hot operating state per pole insulation voltage with degree of pollution 3 at AC rated value  surge voltage resistance rated value  armaimum permissible voltage for safe isolation in networks with grounded star point  between main and auxiliary circuit be	product extension auxiliary switch	Yes
• at AC in hot operating state per pole insulation voltage with degree of pollution 3 at AC rated value  surge voltage resistance rated value maximum permissible voltage for safe isolation in networks with grounded star point • between main and auxiliary circuit • of the main contacts typical • of the main contacts typical • of auxiliary contacts typical • pof protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 20	power loss [W] for rated value of the current	
insulation voltage with degree of pollution 3 at AC rated value  surge voltage resistance rated value  maximum permissible voltage for safe isolation in networks with grounded star point  • between main and auxiliary circuit  • of the main contacts typical  • of the main contacts typical  • of auxiliary contacts typical  • of auxiliary contacts typical  • of auxiliary contacts typical  • of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Question of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Questinate Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation  • during storage  • during transport  temperature compensation  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	<ul> <li>at AC in hot operating state</li> </ul>	13.25 W
surge voltage resistance rated value  maximum permissible voltage for safe isolation in networks with grounded star point  • between main and auxiliary circuit • both versistance acc. to IEC 60068-2-27  25g / 11 ms  mechanical service life (switching cycles) • of the main contacts typical • of auxiliary contacts typical • of auxiliary contacts typical • of auxiliary contacts typical 100 000  electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum ambient temperature • during operation • 20 +60 °C • during storage • during transport  temperature compensation 10 95 %  Main circuit number of poles for main current circuit  3	<ul> <li>at AC in hot operating state per pole</li> </ul>	4.4 W
maximum permissible voltage for safe isolation in networks with grounded star point  • between main and auxiliary circuit • obtween main and auxiliary circuit • obtween main and auxiliary circuit • of the main contacts (pical) • of the main contacts typical • of auxiliary contacts typical  type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 20 Q  Substance Prohibitance (Date)  01.10.2009  Ambient conditions  installation altitude at height above sea level maximum ambient temperature  • during operation  • 20 +60 °C  • during transport  • 20 +60 °C  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	9 9 1	690 V
networks with grounded star point  • between main and auxiliary circuit • between main and auxiliary circuit shock resistance acc. to IEC 60068-2-27  mechanical service life (switching cycles) • of the main contacts typical • of auxiliary contacts typical electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ambient temperature • during sporation • during storage • during transport  temperature compensation relative humidity during operation  Main circuit number of poles for main current circuit  3	surge voltage resistance rated value	6 kV
between main and auxiliary circuit     shock resistance acc. to IEC 60068-2-27     z5g / 11 ms      mechanical service life (switching cycles)         • of the main contacts typical         • of auxiliary contacts typical		
shock resistance acc. to IEC 60068-2-27  mechanical service life (switching cycles)  of the main contacts typical of auxiliary contacts typical electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ambient temperature of during storage of during transport -50 +80 °C temperature compensation relative humidity during operation  Main circuit number of poles for main current circuit  25g / 11 ms  100 000 100 000  EX II (2) GD  DMT 02 ATEX F 001  20 00  DMT 02 ATEX F 001  20 00  0 0.1.10.2009  ATEX Group Compensation -20 +60 °C	<ul> <li>between main and auxiliary circuit</li> </ul>	400 V
mechanical service life (switching cycles)  of the main contacts typical of auxiliary contacts typical electrical endurance (switching cycles) typical  type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ambient temperature of during operation of during storage of during transport  temperature compensation relative humidity during operation  Main circuit number of poles for main current circuit  100 000  EX II (2) GD  DMT 02 ATEX F 001  DMT 02 ATEX F 001  20 Un 000  EX II (2) GD  OU 01  EX II (2) G	between main and auxiliary circuit	400 V
of the main contacts typical     of auxiliary contacts typical     electrical endurance (switching cycles) typical     type of protection according to ATEX directive     2014/34/EU  certificate of suitability according to ATEX directive     2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum     ambient temperature     oduring operation     during storage     during transport     during transport     temperature compensation  relative humidity during operation  Main circuit  number of poles for main current circuit  100 000  EX II (2) GD  DMT 02 ATEX F 001  DMT 02 ATEX F 001  20 U  0 U  0 U  0 U  0 U  0 U  0 U  0	shock resistance acc. to IEC 60068-2-27	25g / 11 ms
of auxiliary contacts typical electrical endurance (switching cycles) typical type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2 Quantity and the suitability according to ATEX directive 2014/34/EU  reference Prohibitance (Date)  Ambient conditions installation altitude at height above sea level maximum ambient temperature     ouring operation     during storage     during transport     during transport temperature compensation relative humidity during operation  Main circuit number of poles for main current circuit  100 000 Ex II (2) GD  DMT 02 ATEX F 001  2 01.10.2009  DMT 02 ATEX F 001  2 0 460°C  Q  2 0 +60°C  -20 +60°C  -20 +80°C  -50 +80°C  -50 +80°C  -50 +80°C  -50 +80°C  -50 +95°C	mechanical service life (switching cycles)	
electrical endurance (switching cycles) typical  type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage • during transport • during transport  temperature compensation relative humidity during operation  Main circuit  number of poles for main current circuit  2 000 000  Ex II (2) GD  DMT 02 ATEX F 001  2 01.10.2009  DMT 02 ATEX F 001  2 000 000  C 000 000  C 000 000  C 000 000	<ul> <li>of the main contacts typical</li> </ul>	100 000
type of protection according to ATEX directive 2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum 2 000 m  ambient temperature  • during operation • during storage • during transport  temperature compensation -20 +60 °C  -50 +80 °C  temperature compensation -20 +60 °C  relative humidity during operation 10 95 %  Main circuit  number of poles for main current circuit 3	of auxiliary contacts typical	100 000
2014/34/EU  certificate of suitability according to ATEX directive 2014/34/EU  reference code acc. to IEC 81346-2  Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  • during transport  temperature compensation  relative humidity during operation  Main circuit  number of poles for main current circuit  2 DMT 02 ATEX F 001  DMT 02 ATEX F 001  DMT 02 ATEX F 001  20 +60°C  01.10.2009  -20 +60°C  -20 +60°C  -20 +60°C  -20 +60°C  -20 +60°C	electrical endurance (switching cycles) typical	100 000
reference code acc. to IEC 81346-2 Q Substance Prohibitance (Date) 01.10.2009  Ambient conditions installation altitude at height above sea level maximum 2 000 m  ambient temperature  • during operation -20 +60 °C  • during storage -50 +80 °C  • during transport -50 +80 °C  temperature compensation -20 +60 °C  relative humidity during operation 10 95 %  Main circuit  number of poles for main current circuit 3		Ex II (2) GD
Substance Prohibitance (Date)  Ambient conditions  installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage • during transport • during transport • c50 +80 °C  temperature compensation -20 +60 °C  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	, ,	DMT 02 ATEX F 001
Ambient conditions installation altitude at height above sea level maximum  ambient temperature  • during operation • during storage • during transport • during transport • c50 +80 °C  temperature compensation -20 +60 °C  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	reference code acc. to IEC 81346-2	Q
installation altitude at height above sea level maximum  ambient temperature  • during operation  • during storage  • during transport  • 10 +80 °C  temperature compensation  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	Substance Prohibitance (Date)	01.10.2009
ambient temperature  • during operation  • during storage  • during transport  • during transport  -50 +80 °C  • during transport  -50 +80 °C  temperature compensation  -20 +60 °C  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	Ambient conditions	
<ul> <li>during operation</li> <li>during storage</li> <li>temperature compensation</li> <li>relative humidity during operation</li> <li>mumber of poles for main current circuit</li> </ul>	installation altitude at height above sea level maximum	2 000 m
<ul> <li>during storage</li> <li>during transport</li> <li>temperature compensation</li> <li>relative humidity during operation</li> <li>mumber of poles for main current circuit</li> </ul>	ambient temperature	
● during transport  -50 +80 °C  temperature compensation  -20 +60 °C  relative humidity during operation  10 95 %  Main circuit  number of poles for main current circuit  3	<ul> <li>during operation</li> </ul>	-20 +60 °C
temperature compensation -20 +60 °C relative humidity during operation 10 95 %  Main circuit number of poles for main current circuit 3	during storage	-50 +80 °C
relative humidity during operation 10 95 %  Main circuit  number of poles for main current circuit 3	during transport	-50 +80 °C
Main circuit number of poles for main current circuit 3	temperature compensation	-20 +60 °C
number of poles for main current circuit 3	relative humidity during operation	10 95 %
·	Main circuit	
adjustable current response value current of the 23 28 A	number of poles for main current circuit	3
	adjustable current response value current of the	23 28 A

current-dependent overload release	
operating voltage	
rated value	690 V
• rated value	20 690 V
at AC-3 rated value maximum	690 V
operating frequency rated value	50 60 Hz
operational current rated value	28 A
operational current at AC-3 at 400 V rated value	28 A
operating power at AC-3	
• at 230 V rated value	7.5 kW
at 400 V rated value	15 kW
at 500 V rated value	18.5 kW
at 690 V rated value	22 kW
operating frequency at AC-3 maximum	15 1/h
Auxiliary circuit	
number of NC contacts for auxiliary contacts	0
number of NO contacts for auxiliary contacts	0
number of CO contacts for auxiliary contacts	0
Protective and monitoring functions	
product function	
<ul> <li>ground fault detection</li> </ul>	No
phase failure detection	Yes
trip class	CLASS 10
design of the overload release	thermal
breaking capacity operating short-circuit current (lcs) at AC	
at 240 V rated value	100 kA
<ul> <li>at 400 V rated value</li> </ul>	25 kA
<ul> <li>at 500 V rated value</li> </ul>	5 kA
at 690 V rated value	2 kA
breaking capacity maximum short-circuit current (lcu)	
<ul> <li>at AC at 240 V rated value</li> </ul>	100 kA
<ul> <li>at AC at 400 V rated value</li> </ul>	55 kA
<ul> <li>at AC at 500 V rated value</li> </ul>	10 kA
at AC at 690 V rated value	4 kA
response value current of instantaneous short-circuit trip	364 A
unit	
UL/CSA ratings	
full-load current (FLA) for 3-phase AC motor	
at 480 V rated value	28 A
at 600 V rated value	28 A
yielded mechanical performance [hp]	
• for single-phase AC motor	
— at 110/120 V rated value	2 hp
— at 230 V rated value	5 hp
• for 3-phase AC motor	
— at 200/208 V rated value	7.5 hp
— at 220/230 V rated value	10 hp
— at 460/480 V rated value	20 hp
Short-circuit protection	
product function short circuit protection	Yes
design of the short-circuit trip	magnetic
design of the fuse link for IT network for short-circuit	
protection of the main circuit	-1 /-O 00 A
• at 400 V	gL/gG 63 A
• at 500 V	gL/gG 63 A
• at 690 V	gL/gG 63 A
Installation/ mounting/ dimensions	
mounting position	any
fastening method	screw and snap-on mounting onto 35 mm standard mounting rail

	according to DIN EN COZAS
1 . 14	according to DIN EN 60715
height	97 mm
width	45 mm
depth	97 mm
required spacing	
<ul> <li>for grounded parts at 400 V</li> </ul>	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
<ul> <li>for live parts at 400 V</li> </ul>	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
<ul> <li>for grounded parts at 500 V</li> </ul>	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
<ul> <li>for live parts at 500 V</li> </ul>	
— downwards	30 mm
— upwards	30 mm
— at the side	9 mm
<ul> <li>for grounded parts at 690 V</li> </ul>	
— downwards	50 mm
— upwards	50 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
• for live parts at 690 V	
— downwards	50 mm
— upwards	50 mm
— backwards	0 mm
— at the side	30 mm
— forwards	0 mm
Connections/ Terminals	
product component removable terminal for auxiliary	No
and control circuit	
type of electrical connection	
for main current circuit	screw-type terminals
arrangement of electrical connectors for main current	Top and bottom
circuit	
type of connectable conductor cross-sections	
for main contacts	
— solid or stranded	2x (1 2.5 mm²), 2x (2.5 10 mm²)
<ul> <li>finely stranded with core end processing</li> </ul>	2x (1 2.5 mm²), 2x (2.5 6 mm²), 1x 10 mm²
at AWG cables for main contacts	2x (16 12), 2x (14 8)
tightening torque	
<ul> <li>for main contacts with screw-type terminals</li> </ul>	2 2.5 N·m
design of screwdriver shaft	Diameter 5 to 6 mm
size of the screwdriver tip	Pozidriv size 2
design of the thread of the connection screw	
• for main contacts	M4
Safety related data	
B10 value	
<ul> <li>with high demand rate acc. to SN 31920</li> </ul>	5 000
proportion of dangerous failures	
with low demand rate acc. to SN 31920	50 %
with high demand rate acc. to SN 31920	50 %
failure rate [FIT]	
with low demand rate acc. to SN 31920	50 FIT
T1 value for proof test interval or service life acc. to	10 y

protection class IP on the front acc. to IEC 60529

IP20

touch protection on the front acc. to IEC 60529

finger-safe, for vertical contact from the front

Handle

Certificates/ approvals

## **General Product Approval**

display version for switching status





Confirmation



<u>KC</u>



For use in hazardous locations

**Declaration of Conformity** 

**Test Certificates** 







UK Declaration of Conformity Type Test Certificates/Test Report

Special Test Certificate

## Marine / Shipping













Marine / Shipping

other

Railway



Confirmation



Vibration and Shock

Confirmation

## Further information

Information- and Downloadcenter (Catalogs, Brochures,...)

https://www.siemens.com/ic10

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/en/Catalog/product?mlfb=3RV2021-4NA10

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RV2021-4NA10

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-4NA10

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

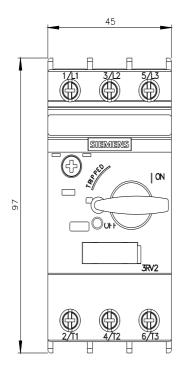
http://www.automation.siemens.com/bilddb/cax\_de.aspx?mlfb=3RV2021-4NA10&lang=en

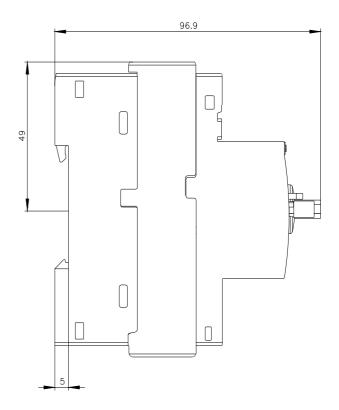
Characteristic: Tripping characteristics, I²t, Let-through current

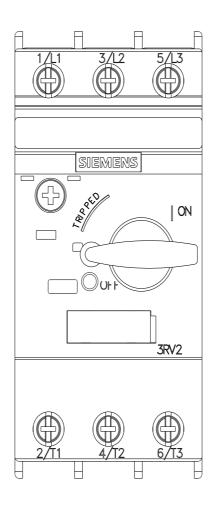
https://support.industry.siemens.com/cs/ww/en/ps/3RV2021-4NA10/char

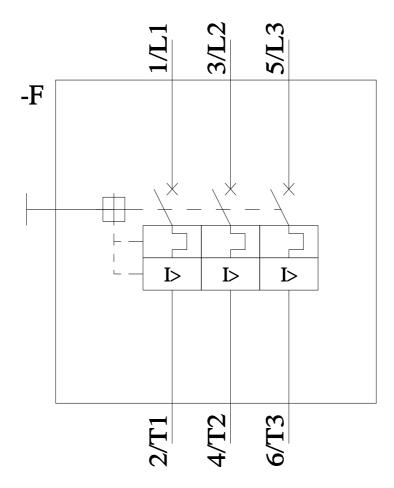
Further characteristics (e.g. electrical endurance, switching frequency)

http://www.automation.siemens.com/bilddb/index.aspx?view=Search&mlfb=3RV2021-4NA10&objecttype=14&gridview=view1









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