SIEMENS

Data sheet 3RA2816-0EW20

0101110

function module star-delta (wye-delta), consisting of lateral basic module and two coupling modules, time range 0.05-60 s, 24-240 V AC/DC, 50/60 Hz, varistor for attenuation of the contactor coils integrated, for contactors 3RT20



product brand name	SIRIUS
product designation	function module
design of the product	comprising basic module and two coupling modules
product type designation	3RA28
General technical data	
size of contactor can be combined company-specific	S00, S0, S2, S3
product component semi-conductor output	No
product extension required remote control	No
product extension optional remote control	No
insulation voltage for overvoltage category III according to IEC 60664 with degree of pollution 3 rated value	300 V
test voltage for isolation test	1.5 kV
degree of pollution	3
surge voltage resistance rated value	4 kV
test voltage for surge voltage test	4 800 V
consumed current	
• at 24 V	24 mA
● at 240 V	7 mA
protection class IP of the terminal	IP20
shock resistance according to IEC 60068-2-27	15g / 11 ms
vibration resistance according to IEC 60068-2-6	10 59 Hz: 0.35 mm, 60 150 Hz: 2g
mechanical service life (operating cycles) typical	10 000 000
mechanical service life (operating cycles)	
 with contactor 3R.2 of frame size S00 	10 000 000
 with contactor 3R.2 of frame size S0 	10 000 000
 with contactor 3R.2 of frame size S2 	10 000 000
with contactor 3R.2 of frame size S3	10 000 000
electrical endurance (operating cycles) at AC-15 at 230 V typical	100 000
electrical endurance (operating cycles)	
 with contactor 3R.2 of frame size S00 	100 000
 with contactor 3R.2 of frame size S0 	100 000
 with contactor 3R.2 of frame size S2 	100 000
with contactor 3R.2 of frame size S3	100 000
adjustable time	0.5 60 s
relative setting accuracy relating to full-scale value	15 %
recovery time	150 ms
reference code according to IEC 81346-2	К
active principle	electronic
relative repeat accuracy	1 %
influence of the surrounding temperature	±1 %

Substance Prohibitance (Date) SVHC substance name Lead - 7439-92-1 Lead monoxide (lead oxide) - 1317-36-8 Weight Product Function product function star-delta circuit Yes Control circuit/ Control type of voltage of the control supply voltage	nover cumply influence	12.0/
Weight 0.22 kg Troduct Function star-data circuit Troduct Function star-data circuit Troduct Carenti Control Type of voltage of the control supply voltage ACIDC Control supply voltage frequency 1 at 50 Hz at 50 Hz at 50 Hz at 50 Hz bill scale value bil	power supply influence Substance Prohibitance (Date)	±2 %
Lead monoxide (lead dixide) - 1317-38-8 Product Function start-data circuit Yes		
Weight 0.221 kg Product function star-data circuit Yes Control circuit Centrol Ves Control circuit Centrol Corticol circuit Centrol Upped violating of the control supply voltage ACDIC control supply voltage frat AC 4 - 240 V 4 at 50 Hz 50 - 00 Hz control supply voltage fraquency 1 50 - 00 Hz control supply voltage frated DC 24 - 240 V e-initial value 1.1 f-initial value 1.1 f-initial value 0.55 f-initial value 0.5 e-sign of the surge suppressor 0.0 volume 1.1 Color-delayinstantaneous contact No o-OR-delayinstantaneous contact No p-assing passing econtact No	OALIO SUNSTUICE HAIRE	
Product function star-delta circuit	Weight	
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upoe of voltage of the control supply voltage 1 at AC ACDDC control supply voltage 1 at AC 44 240 V at 50 Hz 55 60 Hz control supply voltage frequency 1 55 60 Hz control supply voltage frequency 1 55 60 Hz control supply voltage frequency 1 24 240 V control supply voltage frequency 1 0.85 i initial value 0.85 i limital value 0.85 i initial value 0.95 i initial value 0.95 i initial value 0.85 i initial value 0.80 i initial value 0.80 i initial value 0.80 i initial value	product function star-delta circuit	Yes
	Control circuit/ Control	
* al 50 Hz	type of voltage of the control supply voltage	AC/DC
* al IO Hz	control supply voltage 1 at AC	
control supply voltage f at DC 24240 V control supply voltage rated value at DC 24240 V initial value 0.85 initial value 1.1 e Initial value 0.85 full-cacle value 1.1 operating range factor control supply voltage rated value at Act at 69 Hz 0.85 full-cacle value 0.85 full-cacle value 1.1 oberating range factor control supply voltage rated value at Act at 69 Hz 0.80 full-cacle value 1.1 oberating range factor control supply voltage rated value at Act at 62 Hz 0.80 full-cacle value 0.80 o Ch-Gelay No o OFF delay No	• at 50 Hz	24 240 V
control supply voltage 1 at DC operating range factor control supply voltage rated value at initial value initial	• at 60 Hz	24 240 V
operating range factor control supply voltage rated value at DC initial value	control supply voltage frequency 1	50 60 Hz
e Initial value full-scale value full-scale value operating range factor control supply voltage rated value at Act at 50 Kz initial value operating range factor control supply voltage rated value at Act at 50 Kz initial value operating range factor control supply voltage rated value at Act at 60 Kz at 61 60 Kz e Initial value full-scale value operating range factor control supply voltage rated value at Act at 60 Kz e Initial value full-scale value design of the surge suppressor with variator switching function ***ON-delay instantaneous contact		24 240 V
• full-scale value operating range factor control supply voltage rated value at Act at 50 kz • initial value operating range factor control supply voltage rated value at Act at 60 kz • full-scale value Operating range factor control supply voltage rated value at Act at 60 kz • full-scale value operating range factor control supply voltage rated value at Act at 60 kz • full-scale value design of the surge suppressor with variator switching function • ON-delay in the surge suppressor voltage on the surge suppresso		
Operating range factor control supply voltage rated value a fill stall value	• initial value	0.85
AC at 50 ftz initial value initial value full-scale value full-scale value operating range factor control supply voltage rated value at AC at 60 ftz initial value initial value full-scale value design of the surge suppressor with varistor Switching Function switching function ON-delay No ON	full-scale value	1.1
• full-scale value operating range factor control supply voltage rated value at AC at 60 Hz. • initial value • initial value • full-scale value design of the surge suppressor with varistor switching Function switching Function • ON-delay • ON-delay instantaneous contact • passing make contact/instantaneous • CIFF delay • No • Switching function • flashing symmetrically with interval start/instantaneous • flashing symmetrically with pulse start • flashing asymmetrically with pulse start • flashing prometrically with pulse start • flashing asymmetrically with pulse sta		
Operating range factor control supply voltage rated value at AC at 10 Hz	• initial value	0.85
initial value initial value initial value initial value sufficient value design of the surge suppressor switching function ON-delay instantaneous contact passing make contact passing symmetrically with interval start passing symmetrically with interval start passing symmetrically with pulse start passing traction passing traction passing break contact passing break contact passing break contact passing break contact (passing passing break contact (passing passing break contact (passing passing break contact (passing passing passing break contact (passing passing passi	• full-scale value	1.1
• full-scale value design of the surge suppressor witching function • ONI-delay • ONI-delay • ONI-delay (No • passing make contact (No • passing symmetrically with interval start/instantaneous (No • flashing symmetrically with interval start (No • flashing symmetrically with pulse start (No • switching function • constant clock cycle with pulse start (No • constant clock cycle with interval start (No • constant clock cycle with interval start (No • constant clock cycle with pulse start (No • const		
design of the surge suppressor with varistor	• initial value	0.85
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passing make contact/instantaneous contact OFF delay witching function flashing symmetrically with interval start /	•	
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flashing symmetrically with interval start	_	No
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star-delta circuit with delay time star-delta circuit yes switching function with control signal additive ON-delay passing break contact passing break contact/instantaneous OFF delay OFF delay/instantaneous pulse delayed pulse delayed/instantaneous pulse-shaping pulse-shaping/instantaneous additive ON-delay/instantaneous No additive ON-delay/instantaneous No additive ON-delay/instantaneous	variably clocked with interval start	No
 ◆ star-delta circuit ★ switching function with control signal ◆ additive ON-delay ◆ passing break contact ◆ passing break contact/instantaneous ◆ OFF delay ◆ OFF delay ◆ OFF delay/instantaneous ◆ pulse delayed ◆ pulse delayed/instantaneous ◆ pulse-shaping ◆ pulse-shaping/instantaneous ◆ additive ON-delay/instantaneous No 	switching function	
switching function with control signal additive ON-delay passing break contact passing break contact/instantaneous OFF delay OFF delay OFF delay/instantaneous pulse delayed pulse delayed/instantaneous pulse-shaping pulse-shaping pulse-shaping/instantaneous additive ON-delay/instantaneous No No No No No No No No No N	star-delta circuit with delay time	No
 additive ON-delay passing break contact passing break contact/instantaneous No OFF delay OFF delay/instantaneous No pulse delayed pulse delayed/instantaneous pulse shaping pulse-shaping/instantaneous no pulse-shaping/instantaneous No additive ON-delay/instantaneous No 		Yes
 passing break contact passing break contact/instantaneous OFF delay OFF delay/instantaneous No pulse delayed pulse delayed/instantaneous pulse delayed/instantaneous No pulse-shaping No pulse-shaping/instantaneous No additive ON-delay/instantaneous No 		
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 pulse-shaping/instantaneous additive ON-delay/instantaneous No 		
additive ON-delay/instantaneous No		
	•	No

 ON-delay/OFF-delay/instantaneous 	No
passing make contact	No
passing make contact/instantaneous contact	No
switching function of interval relay with control signal	
 retrotriggerable with deactivated control signal/instantaneous contact 	No
 retrotriggerable with switched-on control signal 	No
 retrotriggerable with switched-on control signal/instantaneous contact 	No
retriggerable with deactivated control signal	No
design of the control terminal non-floating	No
Short-circuit protection	
design of the fuse link for short-circuit protection of the auxiliary	fuse gL/gG: 4 A
switch required	
Auxiliary circuit	
material of switching contacts	AgSnO2
number of NO contacts	
delayed switching	2
operating frequency with 3RT2 contactor maximum	2 500 1/h
Main circuit	1070
type of voltage	AC/DC
Inputs/ Outputs	
product function	
at the relay outputs switchover delayed/without delay	No No
• non-volatile	No
Electromagnetic compatibility	Facility and A (industrial and)
EMC immunity according to IEC 61812-1	Environment A (industrial area)
conducted interference	2 kV network connection / 4 kV central servestion
due to burst according to IEC 61000-4-4 due to conductor couth current according to IEC 61000 4.5	2 kV network connection / 1 kV control connection
due to conductor-earth surge according to IEC 61000-4-5 due to conductor conductor curren according to IEC.	2 kV
 due to conductor-conductor surge according to IEC 	1 kV
61000-4-5	
field-based interference according to IEC 61000-4-3	10 V/m
	10 V/m 8 kV
field-based interference according to IEC 61000-4-3	
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2	
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data	8 kV
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529	8 kV
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety	8 kV none
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529	8 kV none IP20
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529	none IP20 finger-safe, for vertical contact from the front
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation	none IP20 finger-safe, for vertical contact from the front
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and	none IP20 finger-safe, for vertical contact from the front Basic insulation
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit	none IP20 finger-safe, for vertical contact from the front Basic insulation
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions	none IP20 finger-safe, for vertical contact from the front Basic insulation No
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor)
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm 0 mm 0 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards — downwards — at the side	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards — at the side • for grounded parts	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm
field-based interference according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards — at the side • for grounded parts — forwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm
electrostatic discharge according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards — at the side • for grounded parts — forwards — backwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm
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electrostatic discharge according to IEC 61000-4-3 electrostatic discharge according to IEC 61000-4-2 Safety related data category according to EN 954-1 Electrical Safety protection class IP on the front according to IEC 60529 touch protection on the front according to IEC 60529 type of insulation Connections/ Terminals product component removable terminal for auxiliary and control circuit Installation/ mounting/ dimensions mounting position fastening method height width depth required spacing • with side-by-side mounting — forwards — backwards — upwards — downwards — at the side • for grounded parts — forwards — backwards	none IP20 finger-safe, for vertical contact from the front Basic insulation No any (like contactor) clip-on 38 mm 45 mm 74 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm 0 mm

 for live parts 	
— forwards	0 mm
— backwards	0 mm
— upwards	0 mm
— downwards	0 mm
— at the side	0 mm
Ambient conditions	
installation altitude at height above sea level maximum	2 000 m
	2 000 m
installation altitude at height above sea level maximum	2 000 m -25 +60 °C
installation altitude at height above sea level maximum ambient temperature	
installation altitude at height above sea level maximum ambient temperature • during operation	-25 +60 °C
installation altitude at height above sea level maximum ambient temperature • during operation • during storage	-25 +60 °C -40 +85 °C

General Product Approval



Confirmation









Test Certificates

Marine / Shipping

Type Test Certificates/Test Report











Marine / Shipping

other

Railway

Environment





Confirmation

Special Test Certificate

Environmental Confirmations

Further information

Information on the packaging https://support.industry.siemens.com/cs/ww/en/view/109813875

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=3RA2816-0EW20

Cax online generator

http://support.automation.siemens.com/WW/CAXorder/default.aspx?lang=en&mlfb=3RA2816-0EW20

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

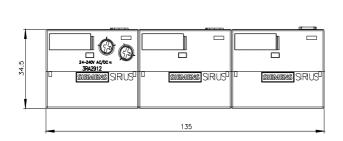
https://support.industry.siemens.com/cs/ww/en/ps/3RA2816-0EW20

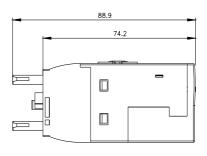
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

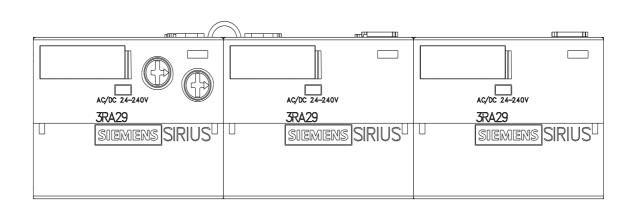
http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=3RA2816-0EW20&lang=en

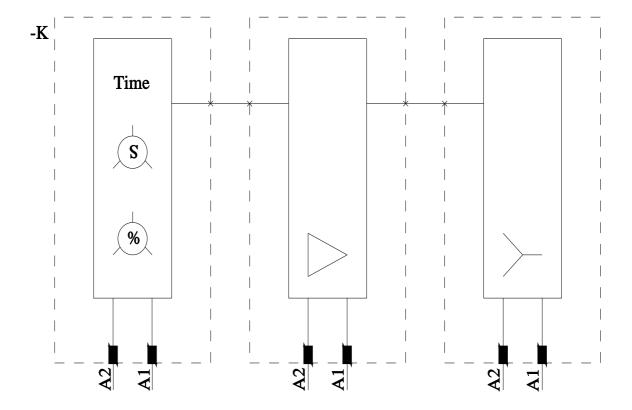
Characteristic: Derating

https://support.industry.siemens.com/cs/ww/en/ps/3RA2816-0EW20/manual









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