SIEMENS

Data sheet

3VA1116-3EF42-0AA0



CIRCUIT BREAKER 3VA1 IEC FRAME 160 BREAKING CAPACITY CLASS N ICU=25KA @ 415 V 4-POLE, LINE PROTECTION TM240, ATAM, IN=160A OVERLOAD PROTECTION IR=112A ...160A SHORT CIRCUIT PROTECTION II=5...10 X IN NEUTRAL UNPROTECTED BUSBAR CONNECTION

Figure similar

Model	
product brand name	SENTRON
Product designation	Molded case circuit breaker
Design of the product	Line protection
Product variations	General Applications
Ground fault monitoring version	Without
Design of the auxiliary release	Without auxiliary release
Design of the auxiliary switch	Without
Design of the operating mechanism	toggle handle
Type of the driving mechanism / motor drive	No
Design of the overcurrent release	TM240

General technical data			
Number of poles		4	
Trip class / of the L-trip / with I2t characteristic / initial value		1	
Trip class / of the L-trip / with I2t characteristic / Full-scale value		1	
Electrical endurance (switching cycles)			
● at AC-1 / at 380/415 V / at 50/60 Hz		8 000	
circuit-breaker / Design		3VA	
Mechanical service life (switching cycles) / typical		15 000	

Voltage		
Insulation voltage / Rated value	V	800

Protection class

Protection class IP / on the front IP40 Protective function of the overcurrent release Switching capacity Switching capacity class of the circuit breaker N Dissipation Active power loss • maximum W 38 Electricity Continuous current / Rated value / maximum Adjustable response value current • of the current-dependent overload release / Full-scale value • of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value V 690 Operating voltage • with AC / at 50/60 Hz / Rated value • of ror DC / Rated value • at 40 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 55 °C / Rated value • at 60 °C / Rated valu	Protection class IP		IP40
Switching capacity Switching capacity class of the circuit breaker Dissipation Active power loss • maximum W 38 Electricity Continuous current / Rated value / maximum • of the current-dependent overload release / A 160 Adjustable response value current • of the current-dependent overload release / Full-scale value • of the instantaneous short-circuit release / initial value Main circuit Operating voltage • with AC / at 50/60 Hz / Rated value • for DC / Rated value • at 40 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 55 °C / Rated value • at 65 °C / Rated value • at 60 °C / Rated value •	Protection class IP / on the front		IP40
Switching capacity class of the circuit breaker Dissipation Active power loss • maximum W 38 Electricity Continuous current / Rated value / maximum • of the current-dependent overload release / Full-scale value • of the instantaneous short-circuit release / initial value Main circuit Operating voltage • with AC / at 50/80 Hz / Rated value • for DC / Rated value • for DC / Rated value • at 40 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 60 °C / Rated value • at 70 °C / Rated value • at 60 °C / Rated value	Protective function of the overcurrent release		LI
Switching capacity class of the circuit breaker Dissipation Active power loss • maximum W 38 Electricity Continuous current / Rated value / maximum • of the current-dependent overload release / Full-scale value • of the instantaneous short-circuit release / initial value Main circuit Operating voltage • with AC / at 50/80 Hz / Rated value • for DC / Rated value • for DC / Rated value • at 40 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 60 °C / Rated value • at 70 °C / Rated value • at 60 °C / Rated value	Switching capacity		
Active power loss			N
Active power loss • maximum Maximum Maxi	Dissipation		
Electricity Continuous current / Rated value / maximum A 160 Continuous current / Rated value Adjustable response value current • of the current-dependent overload release / Full-scale value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value • of the instantaneous short-circuit release / initial value Adjustable response value current / of the current-dependent overload release / initial value			
Continuous current / Rated value / maximum Continuous current / Rated value Adjustable response value current of the current-dependent overload release / Full-scale value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value of the current-circuit release / initial value of the instantaneous short-circuit release / initial value of the current-circuit release / initial value of the current-dependent overload release / initial value A 150 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	• maximum	W	38
Continuous current / Rated value Adjustable response value current of the current-dependent overload release / Full-scale value of the instantaneous short-circuit release / initial value of the instantaneous short-circuit release / initial value Main circuit Operating voltage with AC / at 50/60 Hz / Rated value of or DC / Rated value of or DC / Rated value of or DC / Rated value at 40 °C / Rated value at 55 °C / Rated value at 60 °C / Rated value at 70 °C / Rated value Adjustable parameters Adjustable parameters Adjustable parameters Adjustable response value current of 1-trip / Full-scale value for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value Adjustable response value current / of the current-dependent overload release / initial value	Electricity		
Adjustable response value current of the current-dependent overload release / Full-scale value of the instantaneous short-circuit release / initial value Adjustable response value current / of the current-dependent overload release / initial value	Continuous current / Rated value / maximum	А	160
of the current-dependent overload release / Full-scale value of the instantaneous short-circuit release / initial value Main circuit Operating voltage with AC / at 50/60 Hz / Rated value of DC / Rated value vertice of Pated value of DC / Rated value of Pated value of Core of Pated value of Core of Pated value of Core of Pated value of Section of Section of Pated value of Section	Continuous current / Rated value	Α	160
Full-scale value • of the instantaneous short-circuit release / initial value Main circuit Operating voltage • with AC / at 50/60 Hz / Rated value • for DC / Rated value Operating current • at 40 °C / Rated value A 160 • at 55 °C / Rated value A 160 • at 55 °C / Rated value A 155 • at 60 °C / Rated value A 155 • at 60 °C / Rated value A 153 • at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts O Suitability Suitabile parameters Adjustable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / Full-scale value Adjustable response value current of the current-dependent overload release / initial value Adjustable response value current of the current-dependent overload release / initial value	Adjustable response value current		
Main circuit Operating voltage ● with AC / at 50/60 Hz / Rated value V 690 ● for DC / Rated value V 600 Operating current ● at 40 °C / Rated value A 160 ● at 55 °C / Rated value A 158 ● at 60 °C / Rated value A 155 ● at 65 °C / Rated value A 153 ● at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts 0 Suitability Suitability for use system protection Adjustable parameters Adjustable response value current ● for N-conductor protection / initial value A 0 ● for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value A 0.7		Α	1
Operating voltage • with AC / at 50/60 Hz / Rated value • for DC / Rated value V 600 Operating current • at 40 °C / Rated value A 160 • at 50 °C / Rated value A 160 • at 50 °C / Rated value A 158 • at 60 °C / Rated value A 155 • at 60 °C / Rated value A 155 • at 60 °C / Rated value A 153 • at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts O Suitability Suitability Suitable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / initial value • for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value A 0.7		Α	5
• with AC / at 50/60 Hz / Rated value • for DC / Rated value V 600 Operating current • at 40 °C / Rated value A 160 • at 50 °C / Rated value A 160 • at 55 °C / Rated value A 158 • at 60 °C / Rated value A 155 • at 65 °C / Rated value A 153 • at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts O Suitability Suitability for use Adjustable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / initial value • for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value A 0.7	Main circuit		
for DC / Rated value	Operating voltage		
Operating current • at 40 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 50 °C / Rated value • at 60 °C / Rated value • at 60 °C / Rated value • at 60 °C / Rated value • at 65 °C / Rated value • at 70 °C / Rated value A 153 • at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts O Suitability Suitability Suitability for use Adjustable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / initial value • for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value	• with AC / at 50/60 Hz / Rated value	V	690
at 40 °C / Rated value at 50 °C / Rated value at 55 °C / Rated value at 60 °C / Rated value at 60 °C / Rated value at 65 °C / Rated value at 65 °C / Rated value at 65 °C / Rated value at 70 °C / Rated value At 153 Auxiliary circuit Number of CO contacts / for auxiliary contacts Suitability Suitability for use Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value A 0.7	• for DC / Rated value	V	600
at 50 °C / Rated value at 55 °C / Rated value at 60 °C / Rated value at 60 °C / Rated value at 65 °C / Rated value at 65 °C / Rated value at 65 °C / Rated value at 70 °C / Rated value At 153 Auxiliary circuit Number of CO contacts / for auxiliary contacts Suitability Suitability Suitability for use system protection Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value of or N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value A 0.7	Operating current		
at 55 °C / Rated value at 60 °C / Rated value At 155 at 60 °C / Rated value At 155 at 65 °C / Rated value At 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts Suitability Suitability Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value of or N-conductor protection / Full-scale value Adjustable response value current of N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value A 0.7	• at 40 °C / Rated value	Α	160
at 60 °C / Rated value at 65 °C / Rated value At 153 at 70 °C / Rated value At 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts Suitability Suitability Suitabile parameters Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / Initial value of or N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / Initial value Adjustable response value current / of the current-dependent overload release / Initial value A 10 Adjustable response value current / of the current-dependent overload release / Initial value	• at 50 °C / Rated value	Α	160
at 65 °C / Rated value at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts O Suitability Suitability or use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value Adjustable response value current / of the current-dependent overload release / initial value A 0.7	• at 55 °C / Rated value	Α	158
at 70 °C / Rated value A 150 Auxiliary circuit Number of CO contacts / for auxiliary contacts 0 Suitability Suitability for use Adjustable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / initial value • for N-conductor protection / Full-scale value Adjustable response value current / of the current Adjustable response value current / of the current-dependent overload release / initial value A 0.7	• at 60 °C / Rated value	Α	155
Auxiliary circuit Number of CO contacts / for auxiliary contacts Suitability Suitability for use Adjustable parameters Adjustable response value current • of I-trip / Full-scale value • for N-conductor protection / initial value • for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value	• at 65 °C / Rated value	Α	153
Number of CO contacts / for auxiliary contacts Suitability Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value 0 System protection A 10 A 0 0 A 0 O Adjustable response value current / of the current-dependent overload release / initial value	• at 70 °C / Rated value	Α	150
Number of CO contacts / for auxiliary contacts Suitability Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value 0 System protection A 10 0 0 0 0 0 0 0 0 0 0 0 0	Auxiliary circuit		
Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value system protection A 0 0 0 0 0 0 0 0 0 0 0 0 0			0
Suitability for use Adjustable parameters Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value system protection A 0 0 0 0 0 0 0 0 0 0 0 0 0	Suitability		
Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value	· · · · · · · · · · · · · · · · · · ·		system protection
Adjustable response value current of I-trip / Full-scale value for N-conductor protection / initial value for N-conductor protection / Full-scale value A 0 Adjustable response value current / of the current-dependent overload release / initial value	Adjustable parameters		
 for N-conductor protection / initial value for N-conductor protection / Full-scale value Adjustable response value current / of the current-dependent overload release / initial value A 0 0.7			
• for N-conductor protection / Full-scale value Adjustable response value current / of the current- dependent overload release / initial value A 0 0.7	• of I-trip / Full-scale value	A	10
Adjustable response value current / of the current- dependent overload release / initial value	• for N-conductor protection / initial value	Α	0
dependent overload release / initial value	• for N-conductor protection / Full-scale value	Α	0
	•	Α	0.7
Product details	Product details		
Product component			

		N
• Trip indicator		No
display		No
Voltage trigger		No
undervoltage release		No
 undervoltage release with leading contact 		No
Product property		
 for neutral conductors / upgradeable/retrofittable / Short-circuit and overload proof 		No
Product expansion / optional / motor drive		Yes
Product function		
Product function		
 Intrinsic device protection 		Yes
• communication function		No
Phase failure detection		No
 other measurement function 		No
Accessories		
Manufacturer article number / of the supplied basic		3VA1116-3EF42-0AA0
switch		
Short circuit		
Operational short-circuit current breaking capacity		
(lcs)		
• at 240 V / Rated value	kA	36
• at 415 V / Rated value	kA	25
• at 440 V / Rated value	kA	16
• at 500 V / Rated value	kA	8
● at 690 V / Rated value	kA	5
Maximum short-circuit current breaking capacity (Icu)		
• at 240 V / Rated value	kA	36
● at 415 V / Rated value	kA	25
● at 440 V / Rated value	kA	16
• at 500 V / Rated value	kA	8
• at 690 V / Rated value	kA	7
Short-circuit current making capacity (lcm)		
• at 240 V / Rated value	kA	75.6
• at 415 V / Rated value	kA	52.5
• at 690 V / Rated value	kA	7.5
Connections		
Arrangement of electrical connectors / for main		Front terminal
current circuit		
Type of connectable conductor cross-section		

• for flat-bar terminal connection / minimum	12 x 0
• for flat-bar terminal connection / maximum	17 x 6.5
Type of electrical connection / for main current circuit	Lug terminal

Mechanical Design				
Height	mm	130		
Width	mm	101.6		
Depth	mm	70		
Mounting type		fixed mounting		

Environmental conditions			
Ambient temperature			
during operation / minimum	°C	-25	
during operation / maximum	°C	70	
during storage / minimum	°C	-40	
• during storage / maximum	°C	80	

Cer	шп	cate	es	

Equipment marking

Q • acc. to DIN EN 61346-2 • acc. to DIN EN 81346-2 Q

General Product Approval	EMC	Declaration of	Shipping Approval
		Conformity	





other







 GL

other

other

Further information

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

http://www.siemens.com/lowvoltage/catalogs

Industry Mall (Online ordering system)

 $\underline{\text{https://eb.automation.siemens.com/mall/en/WW/Catalog/Product/3VA11163EF420AA0}}$

Service&Support (Manuals, Certificates, Characteristics, FAQs,...) http://support.automation.siemens.com/WW/view/en/3VA11163EF420AA0/all

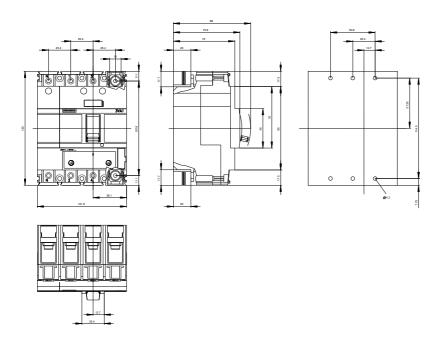
Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, ...) http://www.automation.siemens.com/bilddb/cax_en.aspx?mlfb=3VA11163EF420AA0

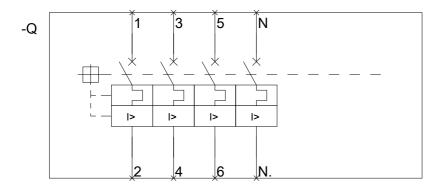
CAx-Online-Generator

http://www.siemens.com/cax

Tender specifications

http://ausschreibungstexte.siemens.com/tiplv





last modified: 11.03.2015