



Short-Circuit Current Ratings (SCCR) and Branch Circuit Protection



The Short-Circuit Current Ratings (SCCR) and Branch Circuit Protection combinations have been tested per IEC61800-5-1 and are in the Altivar Solar ATV320 User manual. For more information refer to the Altivar Solar ATV320 User manual (<https://www.se.com/ww/en/download/document/PKR47019/>).

The combinations in the tables below have been tested per UL61800-5-1 (Reference UL file E116875). These ratings allow proper coordination of short circuit protection. Connected to AC network, the product would exceed a 100 kA interrupt rating on the output; and connected to PV panels, the product would not exceed 5 kA interrupt rating on the output. But the product would never be connected to AC network and PV panels at the same time.

Altivar Solar ATV320.....C412 drives are provided with integral overload and over-speed monitoring after activation of the function [Mot THR memo] $\overline{I} \overline{L} \overline{H}$ and can provide motor overload protection at 100% of the full load motor current. The motor thermal protection current [Mot. therm. current] $\overline{I} \overline{L} \overline{H}$ must be set to the rated current indicated on the motor nameplate. For more information refer to the ATV320 Solar User manual (PKR42507).

The opening of the branch circuit protective device may be an indication that a fault current has been interrupted.

⚠ ⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Current-carrying parts and other components of the controller should be examined and replaced if damaged.
 - If burnout of the current element of an overload relay occurs, the complete overload relay must be replaced.
- Failure to follow these instructions will result in death or serious injury.**

75°C (167°F) copper conductor with the AWG wire size shown on nameplate for all sizes.

Suitable for use on a circuit capable of delivering not more than X rms symmetrical kiloAmperes, Y Volts maximum, when protected by Z1 with a maximum rating of Z2 .

Solar panels - DC

Altivar Solar Short Circuit Current Ratings ^{1 2} With Enclosure,			Minimum Enclosure Volume	IEC DC Fuses		UL DC Fuses		Recommended Blocking Diode			
DC Input Voltage (V)	Power Ratings			Catalog Number	500/1000V ³ (Z1, Z2)	PV SCCR (X)	Mersen - SF Catalog Number E2137 (500Vdc) E76491 (1200Vdc) (Z1, Z2)	PV SCCR (X)	Voltage rating	Current rating	
	(kW)	(HP)	(L)								(in3)
150-378 Vdc	0.37	1/2	ATV320U04M2C412	53	3223	10	4.6	HSJ10	4.6	600	12
	0.55	3/4	ATV320U06M2C412	53	3223	10	4.6	HSJ10	4.6	600	12
	0.75	1	ATV320U07M2C412	53	3223	15	4.6	HSJ15	4.6	600	25
	1.1	1 1/2	ATV320U11M2C412	53	3223	17.5	4.6	HSJ15	4.6	600	25
	1.5	2	ATV320U15M2C412	53	3223	20	4.6	HSJ20	4.6	600	40
	2.2	3	ATV320U22M2C412	53	3223	25	4.6	HSJ25	4.6	600	40
	3	3	ATV320U30M3C412	53	3223	30	4.6	HSJ30	4.6	600	50
	4	5	ATV320U40M3C412	53	3223	40	4.6	HSJ40	4.6	600	70
	5.5	7.5	ATV320U55M3C412	53	3223	60	4.6	HSJ60	4.6	600	85
	7.5	10	ATV320U75M3C412	53	3223	80	4.6	HSJ80	4.6	600	120
280-778 Vdc	11	15	ATV320D11M3C412	53	3223	125	4.6	HSJ125	4.6	600	120
	15	20	ATV320D15M3C412	53	3223	150	4.6	HSJ150	4.6	600	150
	0.37	1/2	ATV320U04N4C412	53	3223	4	4.6	D70SF120V20QF	4.6	1200	6
	0.55	3/4	ATV320U06N4C412	53	3223	5	4.6	D70SF120V20QF	4.6	1200	6
	0.75	1	ATV320U07N4C412	53	3223	6	4.6	D70SF120V20QF	4.6	1200	12
	1.1	1 1/2	ATV320U11N4C412	53	3223	8	4.6	D70SF120V20QF	4.6	1200	12
	1.5	2	ATV320U15N4C412	53	3223	10	4.6	D70SF120V20QF	4.6	1200	12
	2.2	3	ATV320U22N4C412	53	3223	15	4.6	D70SF120V20QF	4.6	1200	16
	3	3	ATV320U30N4C412	53	3223	20	4.6	D70SF120V20QF	4.6	1200	25
	4	5	ATV320U40N4C412	53	3223	25	4.6	D70SF120V25QF	4.6	1200	40
5.5	7.5	ATV320U55N4C412	53	3223	40	4.6	D70SF120V40QF	4.6	1200	40	
7.5	10	ATV320U75N4C412	53	3223	40	4.6	D70SF120V40QF	4.6	1200	70	
11	15	ATV320D11N4C412	53	3223	63	4.6	D70SF120V63QF	4.6	1200	70	
15	20	ATV320D15N4C412	53	3223	100	4.6	D70SF120V100QF	4.6	1200	150	

1. The amp rating of the short circuit protection devices in the table are maximum values. Smaller amp sizes may be used. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.
2. Ratings apply to an Altivar 320.....C412 drive mounted in a Type 1, 3R, 4(X) or 12 rated enclosure. Minimum enclosure volume allows for specified SCCR. Thermal requirements may require a larger enclosure.
3. Use Protistor Class gR (FRxx) or gS (NH00) fast acting full range protection fuse.

Note:

- Integral solid state short circuit protection in the drive does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any local codes.
- The Altivar ATV320.....C412 drive has a 5 kA interrupt rating on the output of the drive. In addition to providing a rating based on shorting the output of the drive, these short circuit current ratings have been obtained by shorting components internal to the Altivar ATV320.....C412. These ratings allow proper coordination of short circuit protection.

Grid - AC

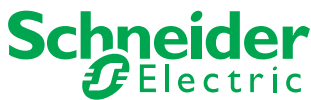
Ativar Solar Short Circuit Current Ratings ^{1 2} With Enclosure, Without Line Reactor															
AC Input Voltage 50/60 Hz (Y)	Power Ratings		Catalog Number	Minimum Enclosure Volume		With Circuit Breaker		With GV•P			Fuses		Line Reactor Min Value ⁸		
						PowerPact Catalog Number (Z1, Z2)	SCCR (X)	GV•P (Z1, Z2)			SCCR (X)	600 V Class J ⁶ (Z1, Z2)			SCC R (X)
	Type E ⁴	Voltage Rating		Power ⁷	(kA)			(A)	(kA)	(mH)			(A)		
(kW)	(HP)	(L)	(in3)	(kA)	(kA)	–	(V)	(HP)	(kA)	(A)	(kA)	(mH)	(A)		
240 Vac Single-phase	0.37	1/2	ATV320U04M2C412	53	3223	H•L36015	5 ⁹	GV2P10	240	1/2	5 ⁹	15	5 ⁹	–	–
	0.55	3/4	ATV320U06M2C412	53	3223	H•L36015	5 ⁹	GV2P14	240	1 1/2	5 ⁹	25	5 ⁹	–	–
	0.75	1	ATV320U07M2C412	53	3223	H•L36015	5 ⁹	GV2P16	240	2	5 ⁹	25	5 ⁹	–	–
	1.1	1 1/2	ATV320U11M2C412	53	3223	H•L36020	5 ⁹	GV2P16	240	2	5 ⁹	25	5 ⁹	–	–
	1.5	2	ATV320U15M2C412	53	3223	H•L36030	5 ⁹	GV2P20	240	3	5 ⁹	40	5 ⁹	–	–
	2.2	3	ATV320U22M2C412	53	3223	H•L36035	5 ⁹	GV3P32	240	3	5 ⁹	45	5 ⁹	–	–
240 Vac Three-phase	3	3	ATV320U30M3C412	53	3223	H•L36020	5	GV2P20	240	5	5	45	5	–	–
	4	5	ATV320U40M3C412	53	3223	H•L36030	5	GV2P21	240	7.5	5	45	5	–	–
	5.5	7.5	ATV320U55M3C412	53	3223	H•L36040	22	GV3P40	240	10	22	60	22	–	–
	7.5	10	ATV320U75M3C412	53	3223	H•L36050	22	GV3P50	240	15	22	70	22	–	–
	11	15	ATV320D11M3C412	53	3223	H•L36070	22	GV3P65	240	20	22	100	22	–	–
15	20	ATV320D15M3C412	53	3223	H•L36090	22	GV4PB80S	240	20	22	100	22	–	–	
480 Vac Three-phase	0.37	1/2	ATV320U04N4C412	53	3223	H•L36015	5	GV2P07	480Y/277	1	5	6	5	–	–
	0.55	3/4	ATV320U06N4C412	53	3223	H•L36015	5	GV2P07	480Y/277	1	5	6	5	–	–
	0.75	1	ATV320U07N4C412	53	3223	H•L36015	5	GV2P08	480Y/277	2	5	6	5	–	–
	1.1	1 1/2	ATV320U11N4C412	53	3223	H•L36015	5	GV2P08	480Y/277	2	5	12	5	–	–
	1.5	2	ATV320U15N4C412	53	3223	H•L36015	5	GV2P10	480Y/277	3	5	12	5	–	–
	2.2	3	ATV320U22N4C412	53	3223	H•L36015	5	GV2P14	480Y/277	5	5	15	5	–	–
	3	3	ATV320U30N4C412	53	3223	H•L36015	5	GV2P14	480Y/277	5	5	17.5	5	–	–
	4	5	ATV320U40N4C412	53	3223	H•L36015	5	GV3P13 ⁵	480Y/277	7.5	5	25	5	–	–
	5.5	7.5	ATV320U55N4C412	53	3223	H•L36020	22	GV3P18 ⁵	480Y/277	10	22	40	22	–	–
	7.5	10	ATV320U75N4C412	53	3223	H•L36030	22	GV3P25 ⁵	480Y/277	15	22	40	22	–	–
11	15	ATV320D11N4C412	53	3223	H•L36040	22	GV3P32	480Y/277	20	22	60	22	–	–	
15	20	ATV320D15N4C412	53	3223	H•L36050	22	GV3P40	480Y/277	25	22	60	22	–	–	

Ativar Solar Short Circuit Current Ratings ^{1 2} With Enclosure, With Line Reactor															
AC Input Voltage 50/60 Hz (Y)	Power Ratings		Catalog Number	Minimum Enclosure Volume		With Circuit Breaker		With GV•P			Fuses		Line Reactor Min Value ⁸		
						PowerPact Catalog Number (Z1, Z2)	SCCR (X)	GV•P (Z1, Z2)			SCCR (X)	600 V Class J ⁶ (Z1, Z2)			SCC R (X)
	Type E ⁴	Voltage Rating		Power ⁷	(kA)			(A)	(kA)	(mH)			(A)		
(kW)	(HP)	(L)	(in3)	(kA)	(kA)	–	(V)	(HP)	(kA)	(A)	(kA)	(mH)	(A)		
240 Vac Single-phase	0.37	1/2	ATV320U04M2C412	53	3223	H•L36015	65	GV2P10	240	1/2	65	15	100	2.5	5
	0.55	3/4	ATV320U06M2C412	53	3223	H•L36015	65	GV2P14	240	1 1/2	65	25	100	2.5	5
	0.75	1	ATV320U07M2C412	53	3223	H•L36015	65	GV2P16	240	2	65	25	100	2.5	7
	1.1	1 1/2	ATV320U11M2C412	53	3223	H•L36020	65	GV2P16	240	2	65	25	100	1	10
	1.5	2	ATV320U15M2C412	53	3223	H•L36030	65	GV2P20	240	3	65	40	100	1	13
	2.2	3	ATV320U22M2C412	53	3223	H•L36035	65	GV3P32	240	3	65	45	100	1	18
240 Vac Three-phase	3	3	ATV320U30M3C412	53	3223	H•L36020	65	GV2P20	240	5	65	45	100	0.8	12
	4	5	ATV320U40M3C412	53	3223	H•L36030	65	GV2P21	240	7.5	65	45	100	0.8	15
	5.5	7.5	ATV320U55M3C412	53	3223	H•L36040	65	GV3P40	240	10	65	60	100	0.5	21
	7.5	10	ATV320U75M3C412	53	3223	H•L36050	65	GV3P50	240	15	65	70	100	0.4	28
	11	15	ATV320D11M3C412	53	3223	H•L36070	65	GV3P65	240	20	65	100	100	0.3	41
	15	20	ATV320D15M3C412	53	3223	H•L36090	65	GV4PB80S	240	20	65	100	100	0.2	55
480 Vac Three-phase	0.37	1/2	ATV320U04N4C412	53	3223	H•L36015	65	GV2P07	480Y/277	1	65	6	100	12	1
	0.55	3/4	ATV320U06N4C412	53	3223	H•L36015	65	GV2P07	480Y/277	1	65	6	100	12	1.3
	0.75	1	ATV320U07N4C412	53	3223	H•L36015	65	GV2P08	480Y/277	2	65	6	100	12	1.7
	1.1	1 1/2	ATV320U11N4C412	53	3223	H•L36015	65	GV2P08	480Y/277	2	65	12	100	6.8	2.4
	1.5	2	ATV320U15N4C412	53	3223	H•L36015	65	GV2P10	480Y/277	3	65	12	100	6.8	3.2
	2.2	3	ATV320U22N4C412	53	3223	H•L36015	65	GV2P14	480Y/277	5	65	15	100	5	4.7
	3	3	ATV320U30N4C412	53	3223	H•L36015	65	GV2P14	480Y/277	5	65	17.5	100	3	6.2
	4	5	ATV320U40N4C412	53	3223	H•L36015	65	GV3P13 ⁵	480Y/277	7.5	65	25	100	3	8
	5.5	7.5	ATV320U55N4C412	53	3223	H•L36020	65	GV3P18 ⁵	480Y/277	10	65	40	100	2.5	11
	7.5	10	ATV320U75N4C412	53	3223	H•L36030	65	GV3P25 ⁵	480Y/277	15	65	40	100	1.5	15
11	15	ATV320D11N4C412	53	3223	H•L36040	65	GV3P32	480Y/277	20	65	60	100	1.2	22	
15	20	ATV320D15N4C412	53	3223	H•L36050	65	GV3P40	480Y/277	25	65	60	100	0.8	29	

1. The amp rating of the short circuit protection devices in the table are maximum values. Smaller amp sizes may be used. Branch circuit protection must be provided in accordance with the National Electrical Code and any additional local codes.
2. Ratings apply to an Altivar 320.....C412 drive mounted in a Type 1, 3R, 4(X) or 12 rated enclosure. Minimum enclosure volume allows for specified SCCR. Thermal requirements may require a larger enclosure.
3. Circuit breaker part number designations: ● = short circuit current rating.
For 240 V range, use ● = D for 25 kA, G for 65 kA, J for 65 kA, L for 65 kA, R for 65 kA.
For 480 V range, use ● = D for 18 kA, G for 35 kA, J for 65 kA, L for 65 kA, R for 65 kA.
4. For GV2P/3P use, 480 V ratings are for Wye connected electrical distribution systems. GV2P●● self protected manual combination starter must be used with GV2GH7 insulating barrier to meet UL 508 Type E rating. GV3P●● self protected manual combination starter must be used with GV3G66 + GVAM11 insulating barrier and auxiliary contact to meet UL 508 Type E rating. The GVAM11 provides a visual indication if the GV3P has tripped.
5. GV2P products detailed below can be used in place of the GV3P products for obtaining the ratings listed in the SCCR column for ratings listed lower than 10kA, or ratings limited to 10kA for ratings listed higher than 10kA. GV2P16 for GV3P13, GV2P20 for GV3P18, GV2P22 for GV3P25.
6. Use Class CC or J fast acting or time delay.
7. UL61800-5-1 Par. 6.3.7DV.2.1.1 require publishing the standard Type E combination motor controller power rating since this is a basic identification marking of type E devices. However, when applied as an input overcurrent protective device for a drive, the rated current of the Type E combination motor controller, not the rated power, is the key parameter for dimensioning (reference UL61800-5-1Par. 5.2.3.6.2DV.4.1.11 & 5.2.3.6.2DV.4.1.12). Schneider Electric GV●P Type E combination motor controllers are adjustable, their current range is shown on the adjustment dial and their selection is based on the input current and not the power rating of the drive.
8. Reactor from Altivar 320 catalog or MTE series: RLW, do not substitute.
9. Despite a 5kA SCCR, the thermal design is for 1kA as indicated in the catalog. For an operating at 5kA, do not exceed 45 °C (113 °F) ambient temperature at nominal load, or reduce slightly the load not to operate over the input current given in the catalog.

Note:

- Integral solid state short circuit protection in the drive does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any local codes.
- The Altivar ATV320.....C412 drive has a 100 kA interrupt rating on the output of the drive. In addition to providing a rating based on shorting the output of the drive, these short circuit current ratings have been obtained by shorting components internal to the Altivar ATV320.....C412. These ratings allow proper coordination of short circuit protection.



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Преобразователь частоты серии Altivar

Основные параметры и характеристики указаны на маркировке изделия.
Наименование страны, где изготовлено изделие, указано на упаковке.

Преобразователь частоты предназначен для управления асинхронными и синхронными электродвигателями с постоянными магнитами (может отличаться для разных типов преобразователей частоты).

Безопасность применения оборудования обеспечивается его эксплуатацией в установленных изготовителем условиях квалифицированным персоналом.

Правила и условия монтажа, хранения, перевозки (транспортирования), реализации и утилизации согласно инструкции по эксплуатации, размещенной на сайте изготовителя.

Отключите силовое питание от преобразователя частоты в случае возникновения не сбрасываемой неисправности и дождитесь погасания экрана графического терминала.

Найдите причину неисправности и устраните ее.

Подключите питание: это приведет к сбросу блокировки преобразователя частоты по ошибке, если причина возникновения устранена.

В некоторых случаях может произойти автоматический повторный запуск в работу после исчезновения неисправности и сброса ошибки, если эта функция была запрограммирована.

Уполномоченный поставщик в Республике Казахстан:

ТОО «Шнейдер Электрик»

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Номер службы поддержки клиентов:

Тел.: +7 (727) 339 24 52

Дата изготовления указана на упаковке (под текстом "Made in"):

PPYYWW, где PP – код завода, YY – год изготовления, WW – номер недели изготовления.

Altivar сериясының жиілік түрлендіргіші

Негізгі параметрлер мен сипаттамалар өнімнің жапсырмасында көрсетілген.
Өнім шығарылған мемлекеттің атауы қаптамада көрсетілген.

Жиілік түрлендіргіші тұрақты магниттері бар асинхронды және синхронды электр қозғалтқыштарын басқаруға арналған (жиілік түрлендіргіштерінің әр түрлі типтері үшін әр түрлі болуы мүмкін).

Жабдықты пайдалану қауіпсіздігі оның өндіруші белгілеген жағдайларда білікті маманның жұмыс жасауымен қамтамасыз етіледі.

Өндірушінің веб-сайтында пайдалану жөніндегі нұсқаулыққа сәйкес орнату, сақтау, тасымалдау, сату және жою ережелері мен шарттары көрсетілген.

Қалпына келтіруге болмайтын ақаулық туындаған жағдайда электр желісін реттелетін жиіліктік жетектен ажыратыңыз және графикалық дисплей терминалы сөнгенше күтіңіз.

Мәселенің себебін тауып, оны түзетіңіз.

Қуатты қосыңыз: егер бұл себеп жойылған болса, жиілік түрлендіргішінің құлыпталуын қайта қалпына келтіреді.

Кейбір жағдайларда ақаулық жойылып, құлыпталуы қайта қалпына келтірілгеннен кейін, автоматты түрде қайта іске қосылуы мүмкін, егер бұл функция бағдарламаланған болса.

Қазақстан Республикасында ресми жеткізуші:

ЖШС «Шнейдер Электрик»

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Дайындалу күні қаптамада көрсетілген (мәтіннің астында көрсетілген

"Made in"): PPYYWW, мұндағы PP - зауыт коды, YY - дайындалу жылы, WW - дайындалу аптасы.

China RoHS Hazardous Substances Table

The data shown in this spreadsheet are related to the following version of the China RoHS 2.0: "Administrative Measures for the Restriction of Hazardous Substances in Electric Appliances and Electronic Products" released January 21st 2016.



部件名称 Part Name	有害物质 - Hazardous Substances					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal Parts	X	O	O	O	O	O
塑料部件 Plastic Parts	O	O	O	O	O	O
电子件 Electronic	X	O	O	O	O	O
触点 Contacts	O	O	O	O	O	O
线缆和线缆附件 Cables and cabling accessories	O	O	O	O	O	O

本表格依据SJ/T11364的规定编制。

O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。

X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。

This table is made according to SJ/T 11364.

O: indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is **below** the limit as stipulated in GB/T 26572.

X: indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is **above** the limit as stipulated in GB/T 26572