

Variable speed drives

Altivar Machine ATV320

Motor starters (circuit breaker + drive)

Supply voltage 200...240 V

Applications

Two types of combination are possible:

- Circuit breaker + variable speed drive: minimum combination. The circuit breaker can be mounted directly on **ATV320 book type less than 4kW** drives using the bracket for GV2/ATV320 direct mounting (**VW3A9921**) and the adapter plate (**GV2AF5**) (see [page 18](#)).
- Circuit breaker + contactor + variable speed drive combination. The circuit breaker provides protection against accidental short circuits, disconnection and isolation.

For ATV320●●●●WS, circuit breaker can't be integrated inside.

For ATV320●●●●W, the combination table of Circuit breaker, Rotary handle kit (GVAPB65S or GV2APN03), and Base plate (VW3A9922) is indicated in the installation manual.

Example:

ATV320U07N4W + GV2L08 + GVAPB65S + VW3A9922

ATV320U55N4W + GV2L22 + GV2APN03

GVAPB65S used below 4 kW, GV2APN03 used for 5.5 kW and 7.5 kW motor power.

A contactor can be used downstream of the drive to help ensure the motor is isolated on stopping. In this case, the contactor size should be category AC-3 depending on the associated motor, only for operation between 25 Hz and 500 Hz.

The Altivar Machine ATV320 drive is protected electronically against short circuits between phases and between phase and ground. It therefore provides continuity of service and thermal monitoring of the motor.



GV2 / ATV320 direct mounting:
GV2L08
+
(**VW3A9921** + **GV2AF5**)
(5) (6)
+
ATV320U07N4B

Motor starters: Circuit breaker + Drive

Standard power ratings of three-phase 4-pole 50/60 Hz motors (2)	Variable speed drive Reference (3)	Circuit breaker (1)	
		Reference	Circuit breaker mounted directly on ATV320 (4)
kW	HP		
Single-phase supply voltage: 200...240 V 50/60 Hz			
0.18	0.25	ATV320U02M2●	GV2L08 (5)
0.37	0.5	ATV320U04M2●	GV2L10 (5)
0.55	0.75	ATV320U06M2●	GV2L14 (5)
0.75	1	ATV320U07M2●	GV2L16 (5)
1.1	1.5	ATV320U11M2●	GV2L16 (5)
1.5	2	ATV320U15M2●	GV2L20 (5)
2.2	3	ATV320U22M2●	GV2L22 (5)
Three-phase supply voltage: 200...240 V 50/60 Hz			
0.18	0.25	ATV320U02M3C	GV2L07 (5)
0.37	0.5	ATV320U04M3C	GV2L08 (5)
0.55	0.75	ATV320U06M3C	GV2L10 (5)
0.75	1	ATV320U07M3C	GV2L14 (5)
1.1	1.5	ATV320U11M3C	GV2L14 (5)
1.5	2	ATV320U15M3C	GV2L16 (5)
2.2	3	ATV320U22M3C	GV2L20 (5)
3	—	ATV320U30M3C	GV2L22 (5)
4	5	ATV320U40M3C	GV2L22 (5)
5.5	7.5	ATV320U55M3C	GV3L40 (5)
7.5	10	ATV320U75M3C	GV3L50 (5)
11	15	ATV320D11M3C	GV3L65 (5)
15	20	ATV320D15M3C	GV3L80

(1) GV2L, GV3L: TeSys magnetic motor circuit breakers; accessories (see [page 55](#)).

(2) The HP values given are NEC-compliant (National Electrical Code).

(3) For the complete reference, replace ● with B or C.

(4) The circuit breaker can be mounted directly only on the book format drive **ATV320U●●M2B** and **ATV320U04N4B...U40N4B**.

(5) **GV●L●●** circuit breaker reference are not UL compliant. To achieve UL Type E compliance **GV●P●●** thermal magnetic circuit breaker must be used.

(6) To be ordered separately (see [page 17](#)), see note (4) for compatibility.

Variable speed drives

Altivar Machine ATV320

Motor starters (circuit breaker + drive)

Supply voltage 380...600 V

Motor starters: Circuit breaker + Drive				
Standard power ratings of three-phase 4-pole 50/60 Hz motors (2)		Variable speed drive Reference (3)	Circuit breaker (1) Reference	
			Circuit breaker mounted directly on ATV320 (4)	
kW	HP			
Three-phase supply voltage: 380...500 V 50/60 Hz				
0.37	0.5	ATV320U04N4●	GV2L07 (5) (7)	With accessories VW3A9921 + GV2AF5 (6)
0.55	0.75	ATV320U06N4●	GV2L08 (5) (7)	
0.75	1	ATV320U07N4●	GV2L08 (5) (7)	
1.1	1.5	ATV320U11N4●	GV2L10 (5) (7)	
1.5	2	ATV320U15N4●	GV2L14 (5) (7)	
2.2	3	ATV320U22N4●	GV2L14 (5) (7)	
3	—	ATV320U30N4●	GV2L16 (5) (7)	
4	5	ATV320U40N4●	GV2L16 (5) (7)	
5.5	7.5	ATV320U55N4●	GV2L22 (5)	—
7.5	10	ATV320U75N4●	GV2L32 (5)	
11	15	ATV320D11N4●	GV3L40 (5)	
15	20	ATV320D15N4●	GV3L50 (5)	
18.5	25	ATV320D18N4C	GV3L65 (5)	
22	30	ATV320D22N4C	GV3L65 (5)	
Three-phase supply voltage: 525...600 V 50/60 Hz				
0.75	1	ATV320U07S6C	GV3P13	—
1.5	2	ATV320U15S6C	GV3P13	
2.2	3	ATV320U22S6C	GV3P13	
4	5	ATV320U40S6C	GV3P13	
5.5	7.5	ATV320U55S6C	GV3P13	
7.5	10	ATV320U75S6C	GV3P18	
11	15	ATV320D11S6C	GV3P25	
15	20	ATV320D15S6C	GV3P32	

(1) GV2L, GV3L: TeSys magnetic motor circuit breakers; accessories (see page 55).

(2) The HP values given are NEC-compliant (National Electrical Code).

(3) For the complete reference, replace ● with B or C.

(4) The circuit breaker can be mounted directly only on the book format drive ATV320U●●M2B and ATV320U04N4B...U40N4B.

(5) GV●L●● circuit breaker reference are not UL compliant. To achieve UL Type E compliance GV●P●● thermal magnetic circuit breaker must be used.

(6) To be ordered separately (see page 17), see note (4) for compatibility.

(7) A GV2P TeSys thermal magnetic circuit breaker with the same rating can also be used with ATV320U04N4●...U40N4● drives. The thermal release should then be set to maximum to inhibit this function.



ATV320U07S6C

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Motor starters (circuit breaker + contactor + drive)

Supply voltage 200...240 V



GV2L14
+
LC1D09
+
ATV320U07M3C

Motor starters: Circuit breaker + Contactor + Drive

Standard power rating of 50/60 Hz 4-pole motors (3)		Variable speed drive Reference (4)	Circuit breaker (1)			Contactor (2) Reference (5)
			Rating	LRM		
kW	HP		A	A		
Single-phase supply voltage: 200...240 V 50/60 Hz						
0.18	0.25	ATV320U02M2●	GV2L08 (6)	4	51	LC1D09●●
0.37	0.5	ATV320U04M2●	GV2L10 (6)	6.3	78	LC1D09●●
0.55	0.75	ATV320U06M2●	GV2L14 (6)	10	138	LC1D09●●
0.75	1	ATV320U07M2●	GV2L16 (6)	14	170	LC1D09●●
1.1	1.5	ATV320U11M2●	GV2L16 (6)	14	170	LC1D09●●
1.5	2	ATV320U15M2●	GV2L20 (6)	18	223	LC1D09●●
2.2	3	ATV320U22M2●	GV2L22 (6)	25	327	LC1D09●●
Three-phase supply voltage: 200...240 V 50/60 Hz						
0.18	0.25	ATV320U02M3C	GV2L07 (6)	2.5	33.5	LC1D09●●
0.37	0.5	ATV320U04M3C	GV2L08 (6)	4	51	LC1D09●●
0.55	0.75	ATV320U06M3C	GV2L10 (6)	6.3	78	LC1D09●●
0.75	1	ATV320U07M3C	GV2L14 (6)	10	138	LC1D09●●
1.1	1.5	ATV320U11M3C	GV2L14 (6)	10	138	LC1D09●●
1.5	2	ATV320U15M3C	GV2L16 (6)	14	170	LC1D09●●
2.2	3	ATV320U22M3C	GV2L20 (6)	18	223	LC1D09●●
3	—	ATV320U30M3C	GV2L22 (6)	25	327	LC1D09●●
4	5	ATV320U40M3C	GV2L22 (6)	25	327	LC1D09●●
5.5	7.5	ATV320U55M3C	GV3L40 (6)	40	560	LC1D25●●
7.5	10	ATV320U75M3C	GV3L50 (6)	50	700	LC1D32●●
11	15	ATV320D11M3C	GV3L65 (6)	65	910	LC1D50●●
15	20	ATV320D15M3C	GV3L80	80	1100	LC1D65●●

(1) GV2L, GV3L: TeSys magnetic motor circuit breakers; accessories (see page 55).

(2) Composition of TeSys contactors LC1D09/D18/D25/D32/D50/D65: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact.

(3) The HP values given are NEC-compliant (National Electrical Code).

(4) For the complete reference, replace ● with B or C.

(5) Replace ●● with the control circuit voltage reference given in the table below:

AC control circuit

	Volts ~	24	48	115	230	230/240
LC1D	50/60 Hz	B7	E7	FE7	P7	U7

For other voltages between 24 V and 660 V, or a DC control circuit, please refer to the TeSys catalog.

(6) GV●L●● circuit breaker reference are not UL compliant. To achieve UL Type E compliance GV●P●● thermal magnetic circuit breaker must be used.

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Supply voltage 380...600 V



GV2L14
+
LC1D09
+
ATV320U15N4B/ATV320U04N4C

Motor starters: Circuit breaker + Contactor + Drive						
Standard power rating of 50/60 Hz 4-pole motors (3)		Variable speed drive Reference (4)	Circuit breaker (1)			Contactor (2)
			Reference	Rating	LRM	Reference (5)
kW	HP			A	A	
Three-phase supply voltage: 380...500 V 50/60 Hz						
0.37	0.5	ATV320U04N4●	GV2L07 (6)	2.5	33.5	LC1D09●●
0.55	0.75	ATV320U06N4●	GV2L08 (6)	4	51	LC1D09●●
0.75	1	ATV320U07N4●	GV2L08 (6)	4	51	LC1D09●●
1.1	1.5	ATV320U11N4●	GV2L10 (6)	6.3	78	LC1D09●●
1.5	2	ATV320U15N4●	GV2L14 (6)	10	138	LC1D09●●
2.2	3	ATV320U22N4●	GV2L14 (6)	10	138	LC1D09●●
3	—	ATV320U30N4●	GV2L16 (6)	14	170	LC1D09●●
4	5	ATV320U40N4●	GV2L16 (6)	14	170	LC1D09●●
5.5	7.5	ATV320U55N4●	GV2L22 (6)	25	327	LC1D09●●
7.5	10	ATV320U75N4●	GV2L32 (6)	32	416	LC1D18●●
11	15	ATV320D11N4●	GV3L40 (6)	40	560	LC1D25●●
15	20	ATV320D15N4●	GV3L50 (6)	50	700	LC1D40A●●
18.5	25	ATV320D18N4C	GV3L65 (6)	65	910	LC1D40A●●
22	30	ATV320D22N4C	GV3L65 (6)	65	910	LC1D50A●●
Three-phase supply voltage: 525...600 V 50/60 Hz						
0.75	1	ATV320U07S6C	GV3P13	13	182	LC1D09●●
1.5	2	ATV320U15S6C	GV3P13	13	182	LC1D09●●
2.2	3	ATV320U22S6C	GV3P13	13	182	LC1D09●●
4	5	ATV320U40S6C	GV3P13	13	182	LC1D09●●
5.5	7.5	ATV320U55S6C	GV3P13	13	182	LC1D09●●
7.5	10	ATV320U75S6C	GV3P18	18	252	LC1D09●●
11	15	ATV320D11S6C	GV3P25	25	350	LC1D18●●
15	20	ATV320D15S6C	GV3P32	32	448	LC1D25●●

(1) GV2L, GV3L: TeSys magnetic motor circuit breakers; accessories (see page 55).

(2) Composition of TeSys contactors LC1D09/D18/D25/D32: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact.

(3) The HP values given are NEC-compliant (National Electrical Code).

(4) For the complete reference, replace ● with B or C.

(5) Replace ●● with the control circuit voltage reference given in the table below:

AC control circuit						
	Volts ~	24	48	115	230	230/240
LC1D	50/60 Hz	B7	E7	FE7	P7	U7

For other voltages between 24 V and 660 V, or a DC control circuit, please refer to the TeSys catalog.

(6) GV●L●● circuit breaker reference are not UL compliant. To achieve UL Type E compliance GV●P●● thermal magnetic circuit breaker must be used.