

PB108363



GV3L40

+

PB108335



LC1D40A●●

+

PF151202



ATV930D11M3

Applications

Circuit breaker/contactors/drive combinations help to ensure continuity of service in the installation.

The type of circuit breaker/contactors coordination selected can reduce maintenance costs in the event of a short-circuit on the drive input by minimizing the time required to make the necessary repairs and the cost of replacement equipment. The suggested combinations provide coordination according to the drive rating.

The drive controls the motor, provides a monitoring function against short-circuits between the drive and the motor, and helps protect the motor cable against overloads. Overload monitoring is provided by the drive's motor thermal monitoring function if this has been enabled. Otherwise, an external monitoring device such as a probe or thermal overload relay must be provided.

Selecting short-circuit protection devices (fuses or circuit breakers) is key to helping to protect the overall installation against potential damages due to short circuits. It is recommended that you refer to the ["EcoStruxure™ Motor Control Configurator"](#) and [Installation Manual](#) for more information.

IEC standard motor starters

Motor	Drive	Circuit breaker			Line contactor	
Power (1)	Reference	Reference (2)	Rating	I _{rm}	Reference (3) (4)	
kW	HP		A	A		
Three-phase supply voltage: 200...240 V 50/60 Hz						
0.75	1	ATV930U07M3	GV2L08	4	51	LC1D09●●
1.5	2	ATV930U15M3	GV2L10	6.3	78	
2.2	3	ATV930U22M3	GV2L14	10	138	
3	—	ATV930U30M3	GV2L16	14	170	LC1D18●●
4	5	ATV930U40M3	GV2L20	18	223	
5.5	7.5	ATV930U55M3	GV2L22	25	327	LC1D25●●
7.5	10	ATV930U75M3	GV2L32	32	448	LC1D40A●●
11	15	ATV930D11M3	GV3L40	40	560	
15	20	ATV930D15M3	GV3L65	65	910	LC1D65A●●
18.5	25	ATV930D18M3	GV4L/LE80●	80	480	LC1D65A●●
22	30	ATV930D22M3				LC1D80●●
30	40	ATV930D30M3/M3C	GV4L/LE115●	115	690	LC1D95●●
37	50	ATV930D37M3/M3C	NSX160●MA150	150	1,350	LC1D115●●
45	60	ATV930D45M3/M3C				LC1D150●●
55	75	ATV930D55M3C	NSX250●MA220	220	1,980	LC1G185●●●●
75	100	ATV930D75M3C	NSX400● Micrologic 1.3-M	320	1,600	LC1G265●●●●

(1) Standard power ratings for 230 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S, or L). You can use the ["EcoStruxure™ Motor Control Configurator"](#) tool to support your customization. Breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	I _{cu} (kA) for 200...240 V						
	B	F	N	H	S	L	
GV2L08...L20	>100	—	—	—	—	—	—
GV2L22...L32	50	—	—	—	—	—	—
GV3L40...L65	100	—	—	—	—	—	—
GV4L80/115●	—	50	—	100	—	—	—
GV4LE80/115●	—	50	—	100	—	120	—
NSX160●MA150	—	—	85	90	100	120	150
NSX250●MA220	—	—	85	90	100	120	150
NSX400● Micrologic 1.3-M	—	—	40	85	100	120	150

(3) Composition of contactors:

LC1D09...D150: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact

LC1G185...G265: 3 poles

To add auxiliary contacts or other accessories, please refer to the ["TeSys"](#) catalog.

(4) Replace ●● with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D150	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	—	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
	AC/DC volts	24...48	48...130	100...250	200...500		
LC1G185...265		BEEA	EHEN	KUEN	LSEA		

For other voltages available between 24 V and 660 V, or a DC control circuit, please consult our [Customer Care Teams](#).



GV4LE115



LC1D80●●



ATV930D45N4

IEC standard motor starters

Motor	Drive	Circuit breaker			Line contactor	
Power (1)	Reference	Reference (2)	Rating	Irm	Reference (3) (4)	
kW	HP		A	A		
Three-phase supply voltage: 380...415 V 50/60 Hz						
0.75	1	ATV930U07N4	GV2L07	2.5	33.5	LC1D09●●
1.5	2	ATV930U15N4	GV2L08	4	51	
2.2	3	ATV930U22N4	GV2L10	6.3	78	
3	—	ATV930U30N4	GV2L14	10	138	
4	5	ATV930U40N4				
5.5	7.5	ATV930U55N4	GV2L16	14	170	LC1D18●●
7.5	10	ATV930U75N4	GV2L20	18	223	
11	15	ATV930D11N4	GV2L22	25	327	LC1D25●●
15	20	ATV930D15N4	GV3L32	32	448	
18.5	25	ATV930D18N4	GV3L40	40	560	LC1D40A●●
22	30	ATV930D22N4	GV3L50	50	700	LC1D50A●●
30	40	ATV930D30N4	GV3L65	65	910	
37	50	ATV930D37N4	GV4L/LE80●	80	480	LC1D65A●●
45	60	ATV930D45N4	GV4L/LE115●	115	690	LC1D80●●
55	75	ATV930D55N4/N4C				
75	100	ATV930D75N4/N4C	NSX160●MA150	150	1,350	LC1D115●●
90	125	ATV930D90N4/N4C	NSX250●MA220	220	1,980	LC1G185●●●●
110	150	ATV930C11N4/N4C				LC1G225●●●●
132	200	ATV930C13N4/N4C	NSX400● Micrologic 1.3-M	320	1,600	LC1G265●●●●
160	250	ATV930C16N4/N4C				LC1G330●●●●
220	350	ATV930C22N4/N4C	NSX630● Micrologic 1.3-M	500	3,000	LC1G400●●●●
250	400	ATV930C25N4C				LC1G500●●●●
315	500	ATV930C31N4C	NS800L Micrologic 2 or 5	800	1,600	LC1G630●●●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S, or L). You can use the "EcoStruxure™ Motor Control Configurator" tool to support your customization.

Breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	Icu (kA) for 380...415 V					
	B	F	N	H	S	L
GV2L07...L14	100	–	–	–	–	–
GV2L16...L22	50	–	–	–	–	–
GV3L32...L65	50	–	–	–	–	–
GV4L80/115●	–	25	–	50	–	–
GV4LE80/115●	–	25	–	50	–	100
NSX160●MA150	–	–	36	50	70	100
NSX250●MA220	–	–	36	50	70	100
NSX400●, NSX630●	–	–	36	50	70	100
NS800L Micrologic 2 or 5	–	–	–	–	–	150

(3) Composition of contactors:

LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact

LC1G185...G630: 3 poles

To add auxiliary contacts or other accessories, please refer to the "TeSys" catalog.

(4) Replace ●● with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
	AC/DC volts	24...48	48...130	100...250	200...500		
LC1G185...500		BEEA	EHEN	KUEN	LSEA		
LC1G630		–	EHEN	KUEN	LSEA		

For other voltages available between 24 V and 660 V, or a DC control circuit, please consult our [Customer Care Teams](#).

PB114912



GV4L115

+

PB108308



LC1D80●●

+

PF151215A



ATV950D45N4

IEC standard motor starters

Motor	Drive	Circuit breaker			Line contactor	
Power (1)	Reference	Reference (2)	Rating	Irm	Reference (3) (4) (5)	
kW	HP		A	A		
Three-phase supply voltage: 380...415 V 50/60 Hz						
0.75	1	ATV950U07N4/N4E	GV2L07	2.5	33.5	LC1D09●●
1.5	2	ATV950U15N4/N4E	GV2L08	4	51	
2.2	3	ATV950U22N4/N4E	GV2L10	6.3	78	
3	—	ATV950U30N4/N4E	GV2L14	10	138	
4	5	ATV950U40N4/N4E				
5.5	7.5	ATV950U55N4/N4E	GV2L16	14	170	LC1D18●●
7.5	10	ATV950U75N4/N4E	GV2L20	18	223	
11	15	ATV950D11N4/N4E	GV2L22	25	327	LC1D25●●
15	20	ATV950D15N4/N4E	GV3L32	32	448	
18.5	25	ATV950D18N4/N4E	GV3L40	40	560	LC1D40A●●
22	30	ATV950D22N4/N4E	GV3L50	50	700	LC1D50A●●
30	40	ATV950D30N4/N4E	GV3L65	65	910	
37	50	ATV950D37N4/N4E	GV4L/LE80●	80	480	LC1D65A●●
45	60	ATV950D45N4/N4E	GV4L/LE115●	115	690	LC1D80●●
55	75	ATV950D55N4/N4E				
75	100	ATV950D75N4/N4E	NSX160●MA150	150	1,350	LC1D115●●
90	125	ATV950D90N4/N4E	NSX250●MA220	220	1,980	LC1G185●●●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S, or L). You can use the [EcoStruxure™ Motor Control Configurator](#) tool to support your customization. Breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	Icu (kA) for 380...415 V	B	F	N	H	S	L
GV2L07...L14	100	—	—	—	—	—	—
GV2L16...L22	50	—	—	—	—	—	—
GV3L32...L65	50	—	—	—	—	—	—
GV4L80/115●	—	25	—	50	—	—	—
GV4LE80/115●	—	25	—	50	—	100	—
NSX160●MA150	—	—	36	50	70	100	150
NSX250●MA220	—	—	36	50	70	100	150

(3) Composition of contactors:

LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact

LC1G185: 3 poles

To add auxiliary contacts or other accessories, please refer to the [TeSys](#) catalog.

(4) Replace ●● with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	—	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
LC1G185	AC/DC volts	24...48	48...130	100...250	200...500		
		BEEA	EHEN	KUEN	LSEA		

For other voltages available between 24 V and 660 V, or a DC control circuit, please consult our [Customer Care Teams](#).

(5) When used with ATV950U07N4/N4E...D90N4/N4E drives, the motor starters must be installed in a separate enclosure to maintain IP55 protection for the installation.



GV2L08



LC1D09●●



ATV930U15N4

IEC standard motor starters

Motor		Drive	Circuit breaker		Line contactor	
Power (1)		Reference	Reference (2)	Rating	Irm	Reference (3) (4)
kW	HP			A	A	
Three-phase supply voltage: 440 V 50/60 Hz						
0.75	1	ATV930U07N4	GV2L07	2.5	33.5	LC1D09●●
1.5	2	ATV930U15N4	GV2L08	4	51	
2.2	3	ATV930U22N4	GV2L10	6.3	78	
3	—	ATV930U30N4				
4	5	ATV930U40N4	GV2L14	10	138	
5.5	7.5	ATV930U55N4	GV2L16	14	170	LC1D18●●
7.5	10	ATV930U75N4				
11	15	ATV930D11N4	GV2L22	25	327	LC1D25●●
15	20	ATV930D15N4	GV3L32	32	448	
18.5	25	ATV930D18N4	GV3L40	40	560	LC1D40A●●
22	30	ATV930D22N4	GV3L50	50	700	LC1D50A●●
30	40	ATV930D30N4	GV3L65	65	910	LC1D50A●●
37	50	ATV930D37N4				LC1D65A●●
45	60	ATV930D45N4	GV4L/LE80●	80	480	LC1D65A●●
55	75	ATV930D55N4/N4C	GV4L/LE115●	115	690	LC1D80●●
75	100	ATV930D75N4/N4C	NSX160●MA150	150	1,350	LC1D115●●
90	125	ATV930D90N4/N4C	NSX250●MA220	220	1,980	LC1D115●●
110	150	ATV930C11N4/N4C				LC1G185●●●●
132	200	ATV930C13N4/N4C				
160	250	ATV930C16N4/N4C	NSX400● Micrologic 1.3-M	320	1,600	LC1G265●●●●
220	350	ATV930C22N4/N4C	NSX630● Micrologic 1.3-M	500	3,000	LC1G400●●●●
250	400	ATV930C25N4C				LC1G500●●●●
315	500	ATV930C31N4C	NS800L Micrologic 2 or 5	800	1,600	LC1G630●●●●

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S, or L). You can use the ["EcoStruxure™ Motor Control Configurator"](#) tool to support your customization. Breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	Icu (kA) for 440 V					
	B	F	N	H	S	L
GV2L07...L10	>100	—	—	—	—	—
GV2L14...L22	50	—	—	—	—	—
GV3L32...L65	50	—	—	—	—	—
GV4L80/115●	—	25	—	50	—	—
GV4LE80/115●	—	25	—	50	—	70
NSX160●MA150	—	—	35	50	65	90
NSX250●MA220	—	—	35	50	65	90
NSX400● Micrologic 1.3-M	—	—	30	42	65	90
NSX630●	—	—	30	42	65	90
NS800L Micrologic 2 or 5	—	—	—	—	—	130

(3) Composition of contactors:

LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact

To add auxiliary contacts or other accessories, please refer to the ["TeSys"](#) catalog.

(4) Replace ●● with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	—	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7
	AC/DC volts	24...48	48...130	100...250	200...500		
LC1G185...500		BEEA	EHEN	KUEN	LSEA		
LC1G630		—	EHEN	KUEN	LSEA		

For other voltages available between 24 V and 660 V, or a DC control circuit, please consult our [Customer Care Teams](#).

2

PE103196



NSX250●MA220

+

105517



LC1D115●●

+

PE15126A



ATV950D90N4

IEC standard motor starters

Motor		Drive	Circuit breaker			Line contactor
Power (1)		Reference	Reference (2)	Rating	I _{rm}	Reference (3) (4) (5)
kW	HP			A	A	
Three-phase supply voltage: 440 V 50/60 Hz						
0.75	1	ATV950U07N4/N4E	GV2L07	2.5	33.5	LC1D09●●
1.5	2	ATV950U15N4/N4E	GV2L08	4	51	
2.2	3	ATV950U22N4/N4E	GV2L10	6.3	78	
3	–	ATV950U30N4/N4E				
4	5	ATV950U40N4/N4E	GV2L14	10	138	
5.5	7.5	ATV950U55N4/N4E	GV2L16	14	170	LC1D18●●
7.5	10	ATV950U75N4/N4E				
11	15	ATV950D11N4/N4E	GV2L22	25	327	LC1D25●●
15	20	ATV950D15N4/N4E	GV3L32	32	448	
18.5	25	ATV950D18N4/N4E	GV3L40	40	560	LC1D40A●●
22	30	ATV950D22N4/N4E	GV3L50	50	700	LC1D50A●●
30	40	ATV950D30N4/N4E	GV3L65	65	910	LC1D50A●●
37	50	ATV950D37N4/N4E				LC1D65A●●
45	60	ATV950D45N4/N4E	GV4L/LE80●	80	480	LC1D65A●●
55	75	ATV950D55N4/N4E	GV4L/LE115●	115	690	LC1D80●●
75	100	ATV950D75N4/N4E	NSX160●MA150	150	1,350	LC1D115●●
90	125	ATV950D90N4/N4E	NSX250●MA220	220	1,980	

(1) Standard power ratings for 400 V 50/60 Hz 4-pole motors.

The values expressed in HP conform to the NEC (National Electrical Code).

(2) For references to be completed, replace the dot with the letter corresponding to the breaking performance of the circuit breaker (F, N, H, S, or L). You can use the [EcoStruxure™ Motor Control Configurator](#) tool to support your customization. Breaking capacity of circuit breakers according to standard IEC 60947-2:

Circuit breaker	Icu (kA) for 440 V						
		B	F	N	H	S	L
GV2L07...L10	>100	–	–	–	–	–	–
GV2L14...L22	50	–	–	–	–	–	–
GV3L32...L65	50	–	–	–	–	–	–
GV4L80/115●	–	25	–	50	–	–	–
GV4LE80/115●	–	25	–	50	–	70	–
NSX160●MA150	–	–	35	50	65	90	130
NSX250●MA220	–	–	35	50	65	90	130

(3) Composition of contactors:

LC1D09...D115: 3 poles + 1 NO auxiliary contact + 1 NC auxiliary contact

To add auxiliary contacts or other accessories, please refer to the [TeSys](#) catalog.

(4) Replace ●● with the control circuit voltage code indicated in the table below:

	Volts ~	24	48	110	220	230	240
LC1D09...D115	50 Hz	B5	E5	F5	M5	P5	U5
	60 Hz	B6	E6	F6	M6	–	U6
	50/60 Hz	B7	E7	F7	M7	P7	U7

For other voltages available between 24 V and 660 V, or a DC control circuit, please consult our [Customer Care Teams](#).

(5) When used with ATV950U07N4/N4E...D90N4/N4E drives, the motor starters must be installed in a separate enclosure to maintain IP55 protection for the installation.



GV2L10



LC1D09●●



ATV930U22Y6

IEC standard motor starters

Motor Power		Drive	Circuit breaker			Line contactor
		Reference	Reference (1)	Rating	Irm	Reference
kW	HP			A	A	
Three-phase supply voltage: 500 V 50/60 Hz						
1.5	2	ATV930U22Y6	GV2L10	6.3	78	LC1D09●●
2.2	3	ATV930U30Y6				
3	—	ATV930U40Y6	GV2L14	10	138	LC1D18●●
4	5	ATV930U55Y6				
5.5	7.5	ATV930U75Y6	GV2L16	14	170	LC1D25●●
7.5	10	ATV930D11Y6	GV2L20	18	223	
11	15	ATV930D15Y6	GV2L22	25	327	LC1D40A●●
15	20	ATV930D18Y6	GV3L25	25	350	
18.5	25	ATV930D22Y6	GV3L32	32	448	
22	30	ATV930D30Y6	GV3L40	40	560	
30	40	ATV930D37Y6	GV3L50	50	700	LC1D50A●●
37	50	ATV930D45Y6	GV3L65	65	910	LC1D65A●●
45	60	ATV930D55Y6	NSX100●MA100	100	600	LC1D80●●
55	75	ATV930D75Y6				
75	100	ATV930D90Y6	NSX160●MA150	150	1,350	LC1D150●●
Three-phase supply voltage: 690 V 50/60 Hz						
2.2	3	ATV930U22Y6	GV2L08	4	51	LC1D09●●
3	—	ATV930U30Y6	GV2L10	6.3	78	
4	5	ATV930U40Y6	GV2L14	10	138	LC1D18●●
5.5	7.5	ATV930U55Y6				
7.5	10	ATV930U75Y6	GV2L16	14	170	
11	15	ATV930D11Y6	GV2L20	18	223	
15	20	ATV930D15Y6	GV2L22	25	327	LC1D25●●
18.5	25	ATV930D18Y6	GV3L25	25	350	LC1D40A●●
22	30	ATV930D22Y6	GV3L32	32	448	
30	40	ATV930D30Y6	GV3L40	40	560	
37	50	ATV930D37Y6	GV3L50	50	700	LC1D50A●●
45	60	ATV930D45Y6	GV3L65	65	910	LC1D65A●●
55	75	ATV930D55Y6	NSX100●MA100	100	600	LC1D80●●
75	100	ATV930D75Y6				
90	125	ATV930D90Y6	NSX160●MA150	150	1,350	LC1D150●●

(1) For references to be completed, replace ● with the letter corresponding to the breaking performance of the circuit breaker (H, HB1, or HB2). You can use the ["EcoStruxure™ Motor Control Configurator"](#) tool to support your customization.

Circuit breaker	Supply voltage (V)	I _{cu} (kA)	Breaking performance		
			H	HB1	HB2
GV2L07...L10	500	>100	–	–	–
	690	4	–	–	–
GV2L14...L22	500	10	–	–	–
	690	4	–	–	–
GV2L25...L32	500	12	–	–	–
	690	4	–	–	–
GV3L40...L66	500	12	–	–	–
	690	5	–	–	–
NSX100●MA100	500	–	50	85	100
	690	–	–	75	100
NSX160●MA150	500	–	50	–	–
NSX250●MA220	690	–	–	75	100