



Instruction Manual

FRENIC 5000G11S/P11S

Addendum

**This is an update to the Instruction Manual publication number INR-S147-1206-E.
New or revised information is highlighted for easy identification.**

1. Standard Specifications

1) 230V series (G11S: 1/4 to 125HP, P11S: 7.5 to 150HP)

Items		Specifications																			
G11	Type FRN□□□G11S-2UX	F25	F50	001	002	003	005	007	010	015	020	025	030	040	050	060	075	100	125	—	
	Nominal applied motor for three phase input [HP]	1/4	1/2	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	100	125	—	
	Three phase input	Rated output capacity ^{*1} [kVA]	0.6	1.2	2.0	3.2	4.4	6.8	10	13	18	24	29	35	46	58	72	86	113	138	—
		Rated output current ^{*2} [A]	1.5	3.0	5.0	8.0	11	17	25	33	46	59	74	87	115	145	180	215	283	346	—
	Single phase input	Rated output capacity ^{*1} [kVA]	0.3	0.6	1.0	1.6	2.3	3.9	5.0	6.8	9.3	11	14	16	21	27	32	34	39	47	—
		Rated output current ^{*2} [A]	1.0	1.7	2.8	4.6	6.6	11	14	19	26	33	39	47	59.4	75	91	95	109	131	—
	Overload capability	150% of rated output current for 1 min. 200% of rated output current for 0.5 s									150% of rated output current for 1 min. 180% of rated output current for 0.5 s										
	Starting torque	200% or more (under torque vector control)									180% or more (under torque vector control)										
	Braking torque ^{*3} [%]	150% or more			100% or more					Approx. 20%			Approx. 10 to 15%								
	Braking time [s]	10	5	5					No limit												
Braking duty cycle [%ED]	10	5	3	5	3	2	3	2	No limit												
Mass [lbs(kg)]	4.9 (2.2)	4.9 (2.2)	5.5 (2.5)	8.4 (3.8)	8.4 (3.8)	8.4 (3.8)	13 (6.1)	13 (6.1)	22 (10)	22 (10)	23 (10.5)	23 (10.5)	64 (29)	79 (36)	97 (44)	101 (46)	154 (70)	254 (115)	—		
P11	Type FRN□□□P11S-2UX	—	—	—	—	—	—	007	010	015	020	025	030	040	050	060	075	100	125	150	
	Nominal applied motor for three phase input [HP]	—	—	—	—	—	—	7.5	10	15	20	25	30	40	50	60	75	100	125	150	
	Three phase input	Rated output capacity ^{*1} [kVA]	—	—	—	—	—	—	8.8	12	17	22	27	31	46	58	72	86	113	138	165
		Rated output current ^{*2} [A]	—	—	—	—	—	—	22	29	42	55	68	80	115	145	180	215	283	346	415
	Single phase input	Rated output capacity ^{*1} [kVA]	—	—	—	—	—	—	4.6	6.1	8.7	11	12	16	21	27	32	34	36	44	51
		Rated output current ^{*2} [A]	—	—	—	—	—	—	13	17	24.2	31	36	46.2	59.4	75	91	95	102	123	143
	Overload capability	110% of rated output current for 1 min.																			
	Starting torque	50% or more																			
	Braking torque ^{*3} [%]	Approx. 20%												Approx. 10 to 15%							
	Braking time [s]	No limit																			
Braking duty cycle [%ED]	No limit																				
Mass [lbs(kg)]	—	—	—	—	—	—	13 (5.7)	13 (5.7)	13 (5.7)	22 (10)	22 (10)	23 (10.5)	64 (29)	64 (29)	79 (36)	97 (44)	101 (46)	154 (70)	254 (115)		
Output ratings	Rated output voltage ^{*4} [V]	3-phase, 200V/50Hz, 200V,220V,230V/60Hz																			
	Rated output frequency [Hz]	50,60Hz																			
Input ratings	Phases, voltage, frequency for three phase input	3-phase, 200 to 230V, 50/60Hz												3-phase, 200 to 220V / 50Hz 3-phase, 200 to 230V / 60Hz							
	Phases, voltage, frequency for single phase input	Single-phase, 200 to 230V, 50/60Hz												Single-phase, 200 to 220V / 50Hz Single-phase, 200 to 230V / 60Hz							
	Voltage/frequency variations for three phase input	Voltage: +10% to -15% (Imbalance rate between phases: 2% or less ^{*5} , Frequency: +5% to -5%																			
	Voltage/frequency variations for single phase input	Voltage: +10% to -10%, Frequency: +5% to -5%																			
	Momentary voltage dip capability ^{*6}	Operation will continue with 165V or more. If voltage drops below 165V, operation will continue for up to 15 ms. If "Continuous operation" is selected, the output frequency will be lowered to withstand the load until normal voltage is resumed.																			
G11	Required power supply capacity for three phase input ^{*7} [kVA]	0.4	0.7	1.3	2.2	3.1	5.0	7.2	9.7	15	20	24	29	38	47	56	69	93	111	—	
	Required power supply capacity for single phase input ^{*7} [kVA]	0.3	0.5	0.8	1.4	2.0	3.8	5.2	7.1	11	14	17	20	27	33	39	48	51	59	—	
P11	Required power supply capacity for three phase input ^{*7} [kVA]	—	—	—	—	—	—	7.2	9.7	15	20	24	29	38	47	56	69	93	111	134	
	Required power supply capacity for single phase input ^{*7} [kVA]	—	—	—	—	—	—	5.2	7.1	11	14	17	20	27	33	39	42	47	55	65	

Note:

*1 Indicated capacities are at the rated output voltage 230V for the three-phase input and 208V for the single-phase input. The rated capacity will be lowered if the supply voltage is lowered.^{b)}

*2 In the case of a low impedance load, such as a high-frequency motor, the current may drop below the rated current.

*3 Indicates when a nominal applied motor is used (the average torque when decelerated to stoppage from 60 Hz, which varies depending on motor loss).

*4 An output voltage exceeding the supply voltage cannot be generated.

*5 If the imbalance between phases exceeds 2%, use a power-factor correcting DC reactor (DCR).

$$\text{Imbalance rate between phases [\%]} = \frac{(\text{Max. Voltage [V]} - \text{Min. voltage [V]})}{3 - \text{phase average voltage [V]}} \times 67[\%]$$

*6 Test was conducted under the standard load conditions stipulated by the JEMA committee (at the load equivalent to 85% of the nominal applied motor).

*7 Indicates the values required when using a power-factor correcting DC reactor (DCR) (optional for inverters of 75HP or less) with a loaded nominal applied motor.

- When utilized on a single phase input applications the drive's output voltage may be lower than the nominal rated voltage.

2) 460V series (G11S: 1/2 to 75HP, P11S: 7.5 to 75HP)

Items		Specifications															
G11	Type FRN□□□G11S-4UX	F50	001	002	003	005	007	010	015	020	025	030	040	050	060	075	
	Nominal applied motor for three phase input [HP]	0.5	1	2	3	5	7.5	10	15	20	25	30	40	50	60	75	
	Three phase input	Rated output capacity ^{*1} [kVA]	1.2	2.0	2.9	4.4	7.2	10	14	19	24	31	36	48	60	73	89
		Rated output current ^{*2} [A]	1.5	2.5	3.7	5.5	9	13	18	24	30	39	45	60	75	91	112
	Single phase input	Rated output capacity ^{*1} [kVA]	0.7	1.1	1.8	2.3	4.4	6.7	9.5	11	14	18	20	26	33	39	47
		Rated output current ^{*2} [A]	0.9	1.5	2.3	3.0	5.6	8.5	12	15	18	23	26	33	42	49	59
	Overload capability	150% of rated output current for 1 min. 200% of rated output current for 0.5 s											150% of rated output current for 1 min. 180% of rated output current for 0.5 s				
	Starting torque	200% or more (under torque vector control)											180% or more (under torque vector control)				
	Braking torque ^{*3} [%]	50% or more			100% or more				20% or more				10 to 15%				
	Braking time [s]	5			5				No limit				No limit				
Braking duty cycle [%ED]	5	3	5	3	2	3	2	No limit									
Mass [lbs(kg)]	4.9 (2.2)	5.5 (2.5)	8.4 (3.8)	8.4 (3.8)	8.4 (3.8)	14 (6.5)	14 (6.5)	22 (10)	22 (10)	23 (10.5)	23 (10.5)	64 (29)	75 (34)	86 (39)	88 (40)		
P11	Type FRN□□□P11S-4UX	—	—	—	—	—	007	010	015	020	025	030	040	050	060	075	
	Nominal applied motor for three phase input [HP]	—	—	—	—	—	7.5	10	15	20	25	30	40	50	60	75	
	Three phase input	Rated output capacity ^{*1} [kVA]	—	—	—	—	—	10	13	18	24	29	35	48	60	73	89
		Rated output current ^{*2} [A]	—	—	—	—	—	12.5	16.5	23	30	37	44	60	75	91	112
	Single phase input	Rated output capacity ^{*1} [kVA]	—	—	—	—	—	6.5	8.7	11	14	17	19	25	31	36	43
		Rated output current ^{*2} [A]	—	—	—	—	—	8.2	11	14	18	22	25	32	39	46	54
	Overload capability	110% of rated output current for 1 min.															
	Starting torque	50% or more															
	Braking torque ^{*3} [%]	Approx. 20%											Approx. 10 to 15%				
	Braking time [s]	No limit															
Braking duty cycle [%ED]	No limit																
Mass [lbs(kg)]	—	—	—	—	—	13 (6.1)	13 (6.1)	13 (6.1)	22 (10)	22 (10)	23 (10.5)	64 (29)	64 (29)	75 (34)	86 (39)		
Output ratings	Rated output voltage ^{*4} [V]	3-phase, 380V, 400V, 415V (440V) / 50Hz, 380V, 400V, 440V, 460V / 60Hz															
	Rated output frequency [Hz]	50, 60Hz															
Input ratings	Phases, voltage, frequency for three phase input	3-phase, 380 to 480V, 50/60Hz											3-phase, 380 to 440V / 50Hz ^{*5} 3-phase, 380 to 480V / 60Hz				
	Phases, voltage, frequency for single phase input	Single-phase, 380 to 480V, 50/60Hz											Single-phase, 380 to 440V / 50Hz ^{*5} Single-phase, 380 to 480V / 60Hz				
	Voltage/frequency variations for three phase input	Voltage: +10% to -15% (Imbalance rate between phases: 2% or less ^{*6} , Frequency: +5% to -5%															
	Voltage/frequency variations for single phase input	Voltage: +10% to -10%, Frequency: +5% to -5%															
	Momentary voltage dip capability ^{*7}	Operation will continue with 310V or more. If voltage drops below 310V, operation will continue for up to 15 ms. If "Continuous operation" is selected, the output frequency will be lowered to withstand the load until normal voltage is resumed.															
	G11	Required power supply capacity for three phase input ^{*8} [kVA]	0.7	1.2	2.2	3.1	5.0	7.2	9.7	15	20	24	29	38	47	57	70
Required power supply capacity for single phase input ^{*8} [kVA]		0.5	0.9	1.7	2.2	4.0	6.0	8.3	12	16	19	22	30	36	43	51	
P11	Required power supply capacity for three phase input ^{*8} [kVA]	—	—	—	—	—	7.2	9.7	15	20	24	29	38	47	57	70	
	Required power supply capacity for single phase input ^{*8} [kVA]	—	—	—	—	—	6.0	8.3	12	16	18	21	28	34	40	46	

Note:

*1 Indicated capacities are at the rated output voltage 460V for the three-phase input and single-phase input. The rated capacity will be lowered if the supply voltage is lowered. ^{b)}

*2 In the case of a low impedance load, such as a high-frequency motor, the current may drop below the rated current.

*3 Indicates when a nominal applied motor is used (the average torque when decelerated to stoppage from 60 Hz, which varies depending on motor loss).

*4 An output voltage exceeding the supply voltage cannot be generated.

*5 The taps within the inverter must be changed for a power supply rated at 380 to 398V / 50 Hz or 380 to 430V / 60 Hz.

*6 If the imbalance between phases exceeds 2%, use a power-factor correcting DC reactor (DCR).

$$\text{Imbalance rate between phases [\%]} = \frac{(\text{Max. Voltage [V]} - \text{Min. voltage [V]})}{3 - \text{phase average voltage [V]}} \times 67[\%]$$

*7 Test was conducted under the standard load conditions stipulated by the JEMA committee (at the load equivalent to 85% of the nominal applied motor).

*8 Indicates the values required when using a power-factor correcting DC reactor (DCR) (optional for inverters of 75HP or less) with a loaded nominal applied motor.

- When utilized on a single phase input applications the drive's output voltage may be lower than the nominal rated voltage.

3) 460V series (G11S: 100 to 600HP, P11S: 100 to 800HP)

Items		Specifications													
G11	Type FRN□□□G11S-4UX	100	125	150	200	250	300	350	400	450	500	600	—	—	
	Nominal applied motor for three phase input [HP]	100	125	150	200	250	300	350	400	450	500	600	—	—	
	Three phase input	Rated output capacity ¹ [kVA]	120	140	167	202	242	300	331	414	466	518	590	—	—
		Rated output current ² [A]	150	176	210	253	304	377	415	520	585	650	740	—	—
	Single phase input	Rated output capacity ¹ [kVA]	48	57	68	82	97	118	133	162	184	206	236	—	—
		Rated output current ² [A]	61	72	86	103	122	149	167	204	231	259	297	—	—
	Overload capability	150% of rated output current for 1 min. 180% of rated output current for 0.5 s													
	Starting torque	180% or more (under torque vector control)													
	Braking torque ³ [%]	10 to 15%													
	Braking time [s]	No limit													
Braking duty cycle [%ED]	No limit														
Mass [lbs(kg)]	106 (48)	154 (70)	154 (70)	220 (100)	220 (100)	309 (140)	309 (140)	705 (320)	705 (320)	904 (410)	904 (410)	—	—		
P11	Type FRN□□□P11S-4UX	100	125	150	200	250	300	350	400	450	500	600	700	800	
	Nominal applied motor for three phase input [HP]	100	125	150	200	250	300	350	400	450	500	600	700	800	
	Three phase input	Rated output capacity ¹ [kVA]	120	140	167	202	242	300	331	386	414	518	590	669	765
		Rated output current ² [A]	150	176	210	253	304	377	415	485	520	650	740	840	960
	Single phase input	Rated output capacity ¹ [kVA]	47	55	65	78	96	116	128	155	160	198	229	259	305
		Rated output current ² [A]	59	70	82	99	121	146	161	195	202	250	288	326	384
	Overload capability	110% of rated output current for 1 min.													
	Starting torque	50% or more													
	Braking torque ³ [%]	Approx. 10 to 15%													
	Braking time [s]	No limit													
Braking duty cycle [%ED]	No limit														
Mass [lbs(kg)]	88 (40)	106 (48)	154 (70)	154 (70)	220 (100)	220 (100)	309 (140)	309 (140)	309 (140)	705 (320)	705 (320)	904 (410)	904 (410)		
Output ratings	Rated output voltage ⁴ [V]	3-phase, 380V, 400V, 415V (440V) / 50Hz, 380V, 400V, 440V, 460V / 60Hz													
	Rated output frequency [Hz]	50, 60Hz													
Input ratings	Phases, voltage, frequency for three phase input	3-phase, 380 to 440V / 50Hz ⁵ 3-phase, 380 to 480V / 60Hz													
	Phases, voltage, frequency for single phase input	Single-phase, 380 to 440V / 50Hz ⁵ Single-phase, 380 to 480V / 60Hz													
	Voltage/frequency variations for three phase input	Voltage: +10% to -15% (Imbalance rate between phases: 2% or less ⁶ , Frequency: +5% to -5%)													
	Voltage/frequency variations for single phase input	Voltage: +10% to -10%, Frequency: +5% to -5%													
	Momentary voltage dip capability ⁷	Operation will continue with 310V or more. If voltage drops below 310V, operation will continue for up to 15 ms. If "Continuous operation" is selected, the output frequency will be lowered to withstand the load until normal voltage is resumed.													
	G11	Required power supply capacity for three phase input ⁸ [kVA]	93	111	136	161	196	244	267	341	383	433	488	—	—
Required power supply capacity for single phase input ⁸ [kVA]		53	63	76	89	108	132	147	182	206	236	265	—	—	
P11		Required power supply capacity for three phase input ⁸ [kVA]	93	111	136	161	196	244	267	341	383	433	488	549	610
		Required power supply capacity for single phase input ⁸ [kVA]	51	61	73	87	105	130	143	167	181	227	257	291	330

Note:

*1 Indicated capacities are at the rated output voltage 460V for the three-phase input and single-phase input. The rated capacity will be lowered if the supply voltage is lowered. ^{b)}

*2 In the case of a low impedance load, such as a high-frequency motor, the current may drop below the rated current.

*3 Indicates when a nominal applied motor is used (the average torque when decelerated to stoppage from 60 Hz, which varies depending on motor loss).

*4 An output voltage exceeding the supply voltage cannot be generated.

*5 The taps within the inverter must be changed for a power supply rated at 380 to 398V / 50 Hz or 380 to 430V / 60 Hz.

*6 If the imbalance between phases exceeds 2%, use a power-factor correcting DC reactor (DCR).

$$\text{Imbalance rate between phases [\%]} = \frac{(\text{Max. Voltage [V]} - \text{Min. voltage [V]})}{3 - \text{phase average voltage [V]}} \times 67[\%]$$

*7 Test was conducted under the standard load conditions stipulated by the JEMA committee (at the load equivalent to 85% of the nominal applied motor).

*8 Indicates the values required when using a power-factor correcting DC reactor (DCR) (optional for inverters of 75HP or less) with a loaded nominal applied motor.

- When utilized on a single phase input applications the drive's output voltage may be lower than the nominal rated voltage.