

APPLICATION NOTE	FECA-AN-176A
Frenic-Ace Single Phase Ratings	

Inverter type	Frenic-Ace
Software version	All
Required options	None
Related documentation	Frenic-Ace Instruction Manual
Author	J. Orlicki
Date	3/2016
Revision	A

Introduction

The Frenic-Ace has been approved by UL for a single phase input. This Application note will list the single phase input and output ratings of the Frenic-Ace. The 230V models will be listed first, followed by the 460V rated drives. When selecting a model, use the amperage of the motor to select the drive.

UL File Number

UL File Number	E132902
----------------	---------

Conformity to UL Standards

When applying single-phase to a three-phase drive, the applied motor must not exceed the specifications in the table below. Specifications other than those shown below are the same as those in the "Three-phase 230 V series" and "Three-phase 460 V series".

Function Code Settings

The Ace has built in protection from input phase loss. To use single phase input and to shut off this protection. Set function code H98 Bit 1 Off.

Due to extra ripple on the DC bus, the performance of Ace may not be as accurate as with 3 phase. Therefore, set function code F2 – 0 for “V/F control without slip compensation”.

Wiring

Connect the wiring to L1 & L3.

Refer to the 3 phase wiring gauges for the related drive model number for all wiring.

Refer to the MCCB or RCD/ELCB ratings for the same 3 phase drive model number.

***Note:** The Frenic-ACE also offers a single phase 230V model from the factory. These models range from 1/8-3HP in an HHD model. The model numbers follow this format: FRN_ _ _ E2S-7GB.

Single-phase 230V series

HND (High carrier, Normal Duty 120% overload for 1 minute) inverters for variable torque load.

Item		Specifications												
Type (FRN____E2S-2GB)		0001	0002	0004	0006	0010	0012	0020	0030	0040	0056	0069	0088	0115
Nominally Applied motor (HP) (outputrating) *1		-	-	-	-	-	-	-	5	7.5	10	10	15	20
Output Ratings	Rated Capacity (kVA) *2	-	-	-	-	-	-	-	9.2	11.9	12.8	15.5	17.5	23.1
	Rated Current (A)	-	-	-	-	-	-	-	23.0	30.0	32.0	39.0	44.0	58.0
Input Ratings	Rated Current (w/o DCR) (A)	-	-	-	-	-	-	-	42.7	60.7	80.0	97.0	112	151
	Rated Current (with DCR) (A)	-	-	-	-	-	-	-	28.8	42.2	57.6	71.0	84.4	114
	Voltage, Frequency	Single-phase, 200 to 240V, 50/60Hz												
	Allowable Voltage/Frequency	Voltage: +10 to -10%, Frequency: +5 to -5%												

Note: If inverter capacity is not available above, use the equivalent HHD model from the table below.

Single-phase 230V series

HHD (High carrier, Heavy Duty 150% overload for 1 minute and 200% for 0.5 seconds) inverters for constant torque load.

Item		Specifications												
Type (FRN____E2S-2GB)		0001	0002	0004	0006	0010	0012	0020	0030	0040	0056	0069	0088	0115
Nominally Applied motor (HP) (outputrating) *1		-	1/8	1/4	1/2	1	1.5	2	3	5	7.5	10	10	15
Output Ratings	Rated Capacity (kVA) *2	-	0.32	0.67	1.15	1.83	2.62	3.9	6.8	9.2	10.4	13.2	15.1	18.0
	Rated Current (A)	-	0.8	1.7	2.8	4.6	6.6	9.7	17.0	23.0	26.0	33.0	38.0	45.0
Input Ratings	Rated Current (w/o DCR) (A)	-	2.6	4.9	6.7	12.8	17.9	31.9	42.7	60.7	80.0	97.0	112	151
	Rated Current (with DCR) (A)	-	1.6	3.0	4.3	8.3	11.7	19.9	28.8	42.2	57.6	71.0	84.4	114
	Voltage, Frequency	Single-phase, 200 to 240V, 50/60Hz												
	Allowable Voltage/Frequency	Voltage: +10 to -10%, Frequency: +5 to -5%												

*1 US 4P standard induction motor

*2 Rated capacity is calculated assuming the rated voltage as 230V for 230V and 460V for 460V series

Single-phase 460V series

HND (High carrier, Normal Duty 120% overload for 1 minute) inverters for variable torque load.

Item		Specifications																						
Type (FRN_ _ _ _ E2S-4GB)		0002	0004	0006	0007	0012	0022	0029	0037	0044	0059	0072	0085	0105	0139	0168	0203	0240	0290	0361	0415	0520	0590	
Nominally Applied motor (HP) (outputrating) *1		-	-	-	-	-	5	7.5	10	10	15	20	25	30	30	40	50	50	60	75	100	100	125	
Output Ratings	Rated Capacity (kVA) *2	-	-	-	-	-	8.8	11.9	13.5	16	18.3	23.1	29.5	36.7	43	47	55.8	65.3	78.9	96.4	116	128	161	
	Rated Current (A)	-	-	-	-	-	11.0	15.0	17.0	20.0	23.0	29.0	37.0	46.0	54.0	59.0	70.0	82.0	99.0	121.0	146.0	161.0	202.0	
Input Ratings	Rated Current (w/o DCR) (A)	-	-	-	-	-	23.2	33	43.8	52.3	60.6	77.9	94.3	114	140	-	-	-	-	-	-	-	-	
	Rated Current (with DCR) (A)	-	-	-	-	-	14.4	21.1	28.8	35.5	42.2	57.0	68.5	83.2	102	138	164	201	238	286	357	390	500	
	Voltage, Frequency	Single-phase, 380 to 480V, 50/60Hz																						
	Allowable Voltage/Frequency	Voltage: +10 to -10%, Frequency: +5 to -5%																						

Note: If inverter capacity is not available above, use the equivalent HHD model from the table below.

Single-phase 460V series

HHD (High carrier, Heavy Duty 150% overload for 1 minute and 200% for 0.5 seconds) inverters for constant torque load.

Item		Specifications																					
Type (FRN _ _ _ _ E2S-4GB)		0002	0004	0006	0007	0012	0022	0029	0037	0044	0059	0072	0085	0105	0139	0168	0203	0240	0290	0361	0415	0520	0590
Nominally Applied motor (HP) (outputrating) *1		1/4	1/2	1	1.5	3	3	5	7.5	10	10	15	20	25	30	30	40	50	60	60	75	100	100
Output Ratings	Rated Capacity (kVA) *2	0.71	1.2	1.9	2.4	4.5	6.4	9.6	11.1	13.5	16.0	18.3	24.0	30.3	36.0	43.9	48.6	57.4	68.5	82.0	97.2	118.8	133.0
	Rated Current (A)	0.9	1.5	2.3	3.0	5.6	8.0	12.0	14.0	17.0	20.0	23.0	30.0	38.0	45.0	55.0	61.0	72.0	86.0	103.0	122.0	149.0	167.0
Input Ratings	Rated Current (w/o DCR) (A)	1.7	3.1	5.9	8.2	13.0	23.2	33	43.8	52.3	60.6	77.9	94.3	114	140	-	-	-	-	-	-	-	-
	Rated Current (with DCR) (A)	0.85	1.6	3.0	4.4	7.3	14.4	21.1	28.8	35.5	42.2	57.0	68.5	83.2	102	138	164	201	238	286	357	390	500
	Voltage, Frequency	Single-phase, 380 to 480V, 50/60Hz																					
	Allowable Voltage/Frequency	Voltage: +10 to -10%, Frequency: +5 to -5%																					

*1 US 4P standard induction motor

*2 Rated capacity is calculated assuming the rated voltage as 230V for 230V and 460V for 460V series

For further information:
Refer to the **Frenic-Ace** Instruction Manual.