

APPLICATION NOTE	FECA-AN-118B
Internal Braking Unit Ratings	

Inverter type FRENIC-Multi series
Software version All versions
Required options None
Related documentation -
Author Terry Webb
 Shane Spencer
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Introduction

This application note will address the **FRENIC Multi** inverters' internal braking unit (chopper/transistor) dynamic braking capability. The **FRENIC-Multi** can be applied in systems that require controlled speed operation (under various 4 quadrant running conditions), where the loads are overhauling, and/or there is a specific stopping time required. These types of applications often require dynamic braking, composed of a braking unit paired with braking resistor. The following table details the brake unit ratings, and necessary braking resistor specifications.

FRENIC- MULTI Inverter	Applicable braking Unit	Chopper Voltage [V]	Minimum braking resistor [Ω]	Maximum ED for braking chopper [%]	Max. Braking Torque	Maximum braking time [s]	Proposed braking resistor [Ω]	ED of proposed resistor [%]
230V 3-Phase								
FRNF12E1S-2U	Braking Transistor Included	398	100	100	150	Continuous	100	10% but depends on the application
FRNF25E1S-2U								
FRNF50E1S-2U								
FRN001E1S-2U			40	50		50	40	
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
FRN001E1S-2U	33	50	50	33				
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
FRN001E1S-2U	20	50	50	20				
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
FRN001E1S-2U	15	50	50	15				
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
FRN001E1S-2U	10	50	50	10				
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
FRN001E1S-2U	8.6	50	50	8.6				
FRN002E1S-2U								
FRN003E1S-2U								
FRN005E1S-2U								
FRN007E1S-2U								
FRN010E1S-2U								
FRN015E1S-2U								
FRN020E1S-2U								
460V 3-Phase								
FRNF50E1S-4U	Braking Transistor Included	796	200	100	150	Continuous	200	10% but depends on the application
FRN001E1S-4U								
FRN002E1S-4U			160	50		50	160	
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								
FRN001E1S-4U								
FRN002E1S-4U								
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								
FRN001E1S-4U	80	50	50	80				
FRN002E1S-4U								
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								
FRN001E1S-4U	60	50	50	60				
FRN002E1S-4U								
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								
FRN001E1S-4U	40	50	50	40				
FRN002E1S-4U								
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								
FRN001E1S-4U	34.4	50	50	34.4				
FRN002E1S-4U								
FRN003E1S-4U								
FRN005E1S-4U								
FRN007E1S-4U								
FRN010E1S-4U								
FRN015E1S-4U								
FRN020E1S-4U								

FRENIC- MULTI Inverter 230V Single-Phase	Applicable braking Unit	Chopper Voltage [V]	Minimum braking resistor [Ω]	Maximum ED for braking chopper [%]	Max. Braking Torque	Maximum braking time [s]	Proposed braking resistor [Ω]	ED of proposed resistor [%]
FRNF12E1S-7U	Braking Transistor Included	398	100	100	150	Continuous	100	10% but depends on the application
FRNF25E1S-7U								
FRNF50E1S-7U								
FRN001E1S-7U			40	50		50	40	
FRN002E1S-7U								
FRN003E1S-7U								

Note 1: Dynamic braking consists of the built-in braking unit, and a braking resistor that must be purchased separately.

Note 2: Refer to **FRENIC-Multi Instruction Manual INR-S147-1204-E** for more information.