

FRAME FGL10031 WINDING M



MODELS FGL10031

REF: FGL10031WM-1 AUG 2020

WINDING DETAILS			
Code	M	Insulation class	H
Phase	1	Leads	3
Pole number	4	Pitch	2/3

MECHANICAL DETAILS		
Standard protection		IP23
Overspeed	rpm	2250
Air flow 50Hz/60Hz	m ³ /s	0.06/0.07

EXCITATION DETAILS	
Excitation system	SHUNT
AVR model	R121
Sustained short-circuit current	-
Steady state voltage regulation	±1%

WAVEFORM	
<i>No load or linear rated load</i>	
Total harmonic content THC	<3.5%
Telephone influence factor TIF (NEMA)	<100
Telephone harmonic factor THF (IEC)	<2%

VOLTAGE							
Frequency / speed Series	V	50Hz / 1500rpm			60Hz / 1800rpm		
		220	230	240	220	230	240

RATING								
<i>Power factor 1.0, Altitude <=1000m</i>								
Class H rise BR	125/40	kVA	12.0	12.0	12.0	13.0	13.5	13.5
			kW	12.0	12.0	12.0	13.0	13.5
Class H rise PR	150/40	kVA	12.7	12.7	12.7	13.8	14.3	14.3
			kW	12.7	12.7	12.7	13.8	14.3
Class H rise PR	163/27	kVA	13.2	13.2	13.2	14.3	14.9	14.9
			kW	13.2	13.2	13.2	14.3	14.9
Class F rise BR	105/40	kVA	10.9	10.9	10.9	11.8	12.3	12.3
			kW	10.9	10.9	10.9	11.8	12.3

EFFICIENCIES								
<i>Power factor 1.0</i>								
110%	Class H BR	%	83.2	83.5	83.5	82.3	82.8	83.5
100%	Class H BR	%	84.1	84.5	84.4	83.2	83.7	84.2
75%	Class H BR	%	86.0	86.1	85.8	85.3	85.6	86.0
50%	Class H BR	%	86.8	86.5	85.9	86.4	86.5	86.6
25%	Class H BR	%	83.6	82.6	81.3	83.8	83.7	83.2

CHARACTERISTIC PARAMETERS								
<i>Reactance base class H BR rating</i>								
K _c	Short-circuit ratio		0.57	0.65	0.75	0.40	0.43	0.47
X _d	D-Axis synchronous reactance (unsaturated)	pu	2.01	1.84	1.69	2.61	2.48	2.28
X' _d	D-Axis transient reactance (saturated)	pu	0.35	0.32	0.29	0.45	0.43	0.39
X'' _d	D-Axis sub-transient reactance (saturated)	pu	0.174	0.159	0.146	0.226	0.214	0.197
X _q	Q-Axis synchronous reactance (unsaturated)	pu	1.00	0.92	0.84	1.31	1.24	1.14
X'' _q	Q-Axis sub-transient reactance (saturated)	pu	0.337	0.309	0.283	0.438	0.416	0.383
X ₂	Negative-sequence reactance (saturated)	pu	-	-	-	-	-	-
X ₀	Zero-sequence reactance (independent)	pu	-	-	-	-	-	-
T' _d	D-Axis transient time constant	ms		74		74		
T'' _d	D-Axis sub-transient time constant	ms		7.4		7.4		
T' _{do}	D-Axis open-circuit time constant	ms		429		429		
T _a	Armature time constant	ms		11.1		11.1		
T _r	Voltage recovery time	ms		< 300		< 300		

EXCITATION VOLTAGE AND CURRENT							
No load excitation voltage	V	9.3	10.2	11.4	7.1	7.6	8.0
No load excitation current	A	0.76	0.83	0.92	0.58	0.62	0.65
Class H BR excitation voltage	V	23.8	24.3	25.2	22.5	22.7	22.3
Class H BR excitation current	A	1.94	1.97	2.04	1.83	1.85	1.81

WINDING RESISTANCE							
<i>At 20° C</i>							
Stator (series)	Ω	0.220	Exciter field			Ω	12.3
Main field	Ω	3.24					

According to: IEC 60034, UTE NFC51.111, VDE 0530, BS 4999/5000, NEMA MG 1-33
 Values quoted are typical. In line with our policy of continuous improvement, we reserve the right to change specification without notice.
 Manufactured for FG Wilson by Leroy Somer - Nidec.

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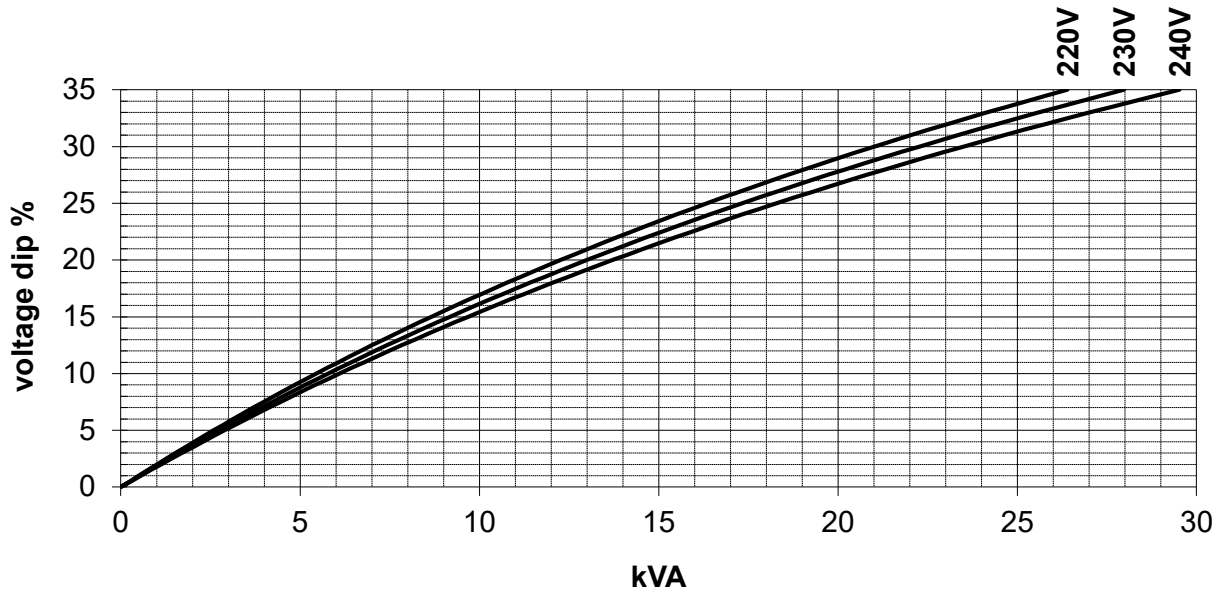
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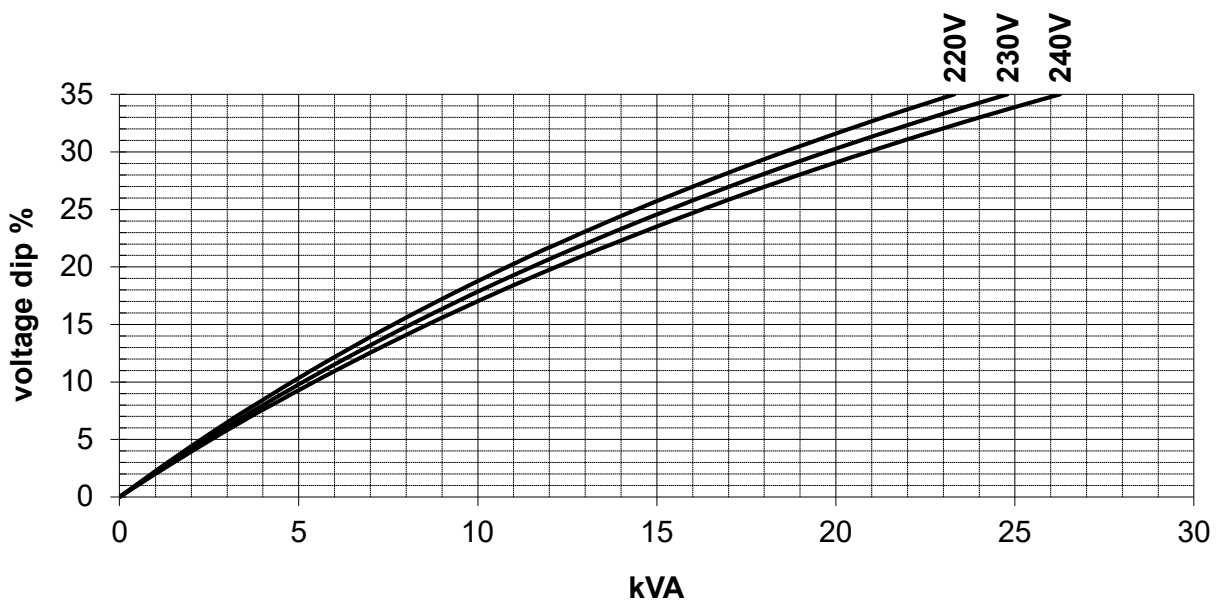
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.9

50 Hz SHUNT



60 Hz SHUNT



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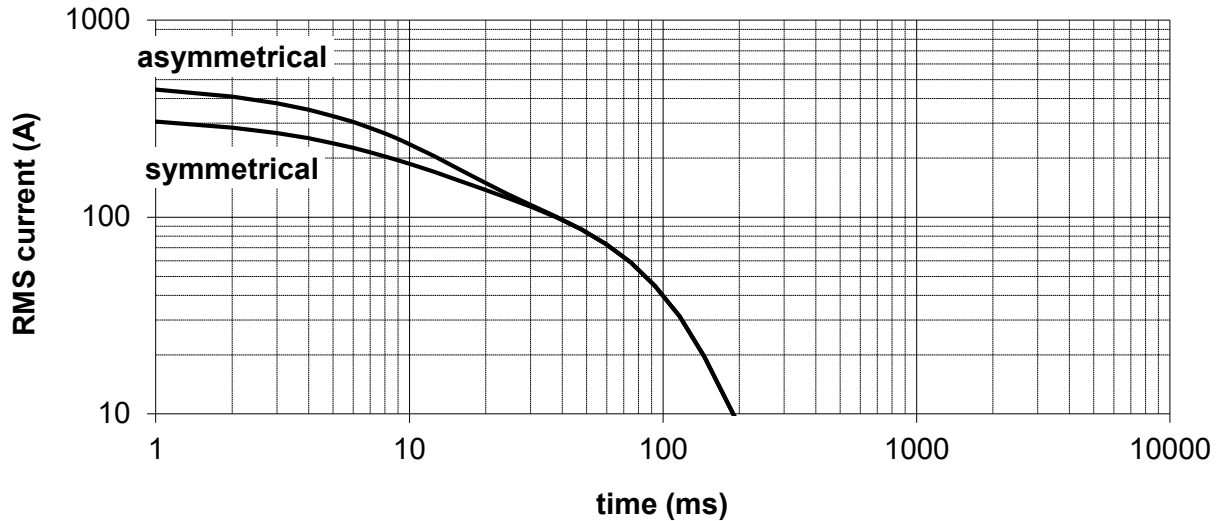


SHORT-CIRCUIT DECREMENT CURVES

No-load excitation at rated speed

230V 50Hz

Series



Multiplication Factors

50Hz Voltages	220	230	240
Multiplication Factor	0.96	1.00	1.04

Apply factor up to 2xT'd, remainder of curve unchanged

60Hz Voltages	220	230	240
Multiplication Factor	0.80	0.83	0.87

Apply factor up to 2xT'd, remainder of curve unchanged