FRAME FGL20050 WINDING M

MODELS FGL20050

REF: FGL20050WM-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	0.1/0.13

EXCITATION DETAILS

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

WAVEFORM

No load or linear rated load

Total harmonic content THC	<3.5%
Telephone influence factor TIF (NEMA)	<100
Telephone harmonic factor THF (IEC)	<2%

VOLTAGE

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

RATING

Power factor 1.0, Altitude <=1000m

Class H rise BR	**125/40**	**kVA**	**28.0**	**28.0**	**28.0**	**31.0**	**31.0**	**31.0**
		kW	*28.0*	*28.0*	*28.0*	*31.0*	*31.0*	*31.0*
Class H rise PR	**150/40**	**kVA**	**29.7**	**29.7**	**29.7**	**32.9**	**32.9**	**32.9**
		kW	*29.7*	*29.7*	*29.7*	*32.9*	*32.9*	*32.9*
Class H rise PR	**163/27**	**kVA**	**30.8**	**30.8**	**30.8**	**34.1**	**34.1**	**34.1**
		kW	*30.8*	*30.8*	*30.8*	*34.1*	*34.1*	*34.1*
Class F rise BR	**105/40**	**kVA**	**25.5**	**25.5**	**25.5**	**28.2**	**28.2**	**28.2**
		kW	*25.5*	*25.5*	*25.5*	*28.2*	*28.2*	*28.2*

EFFICIENCIES

Power factor 1.0

110%	Class H BR	%	89.3	89.6	89.8	88.1	88.8	89.3
100%	Class H BR	%	89.8	90.1	90.2	88.8	89.4	89.8
75%	Class H BR	%	91.0	91.1	91.0	90.3	90.6	90.9
50%	Class H BR	%	91.5	91.3	90.9	91.1	91.2	91.2
25%	Class H BR	%	89.3	88.5	87.4	89.5	89.2	88.8

CHARACTERISTIC PARAMETERS

Reactance base class H BR rating

K_c	Short-circuit ratio		0.55	0.69	0.77	0.41	0.44	0.46
X_d	D-Axis synchronous reactance (unsaturated)	pu	2.08	1.90	1.75	2.76	2.52	2.32
X'_d	D-Axis transient reactance (saturated)	pu	0.23	0.21	0.19	0.30	0.28	0.26
X''_d	D-Axis sub-transient reactance (saturated)	pu	0.115	0.105	0.096	0.152	0.139	0.128
X_q	Q-Axis synchronous reactance (unsaturated)	pu	1.04	0.95	0.87	1.38	1.26	1.16
X''_q	Q-Axis sub-transient reactance (saturated)	pu	0.163	0.149	0.137	0.217	0.198	0.182
X_2	Negative-sequence reactance (saturated)	pu	-	-	-	-	-	-
X_0	Zero-sequence reactance (independent)	pu	-	-	-	-	-	-
T'_d	D-Axis transient time constant	ms		50			50	
T''_d	D-Axis sub-transient time constant	ms		5			5	
T'_{do}	D-Axis open-circuit time constant	ms		453			453	
T_a	Armature time constant	ms		7.5			7.5	
T_r	Voltage recovery time	ms		< 500			< 500	

EXCITATION VOLTAGE AND CURRENT

No load excitation voltage	V	7.7	8.4	9.5	5.8	6.2	6.5
No load excitation current	A	0.44	0.48	0.54	0.33	0.35	0.37
Class H BR excitation voltage	V	20.2	20.4	20.9	19.7	19.2	18.7
Class H BR excitation current	A	1.15	1.16	1.19	1.12	1.09	1.06

WINDING RESISTANCE

At 20° C

Stator (series)	Ω	0.076		
Main field	Ω	0.78	Exciter field	Ω 17.6

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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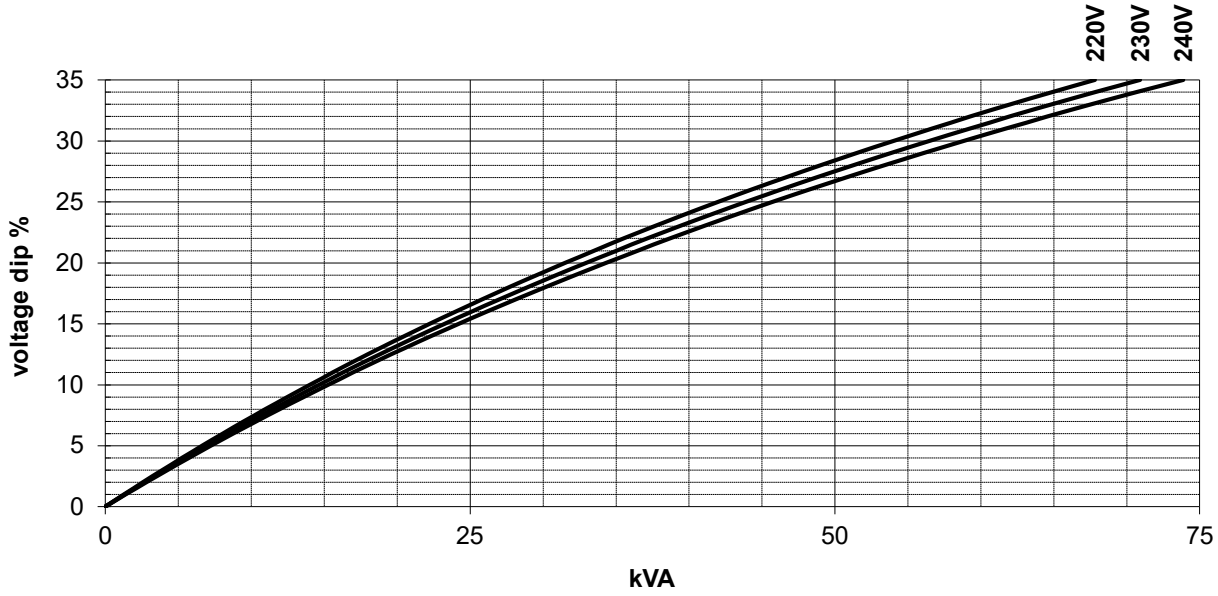
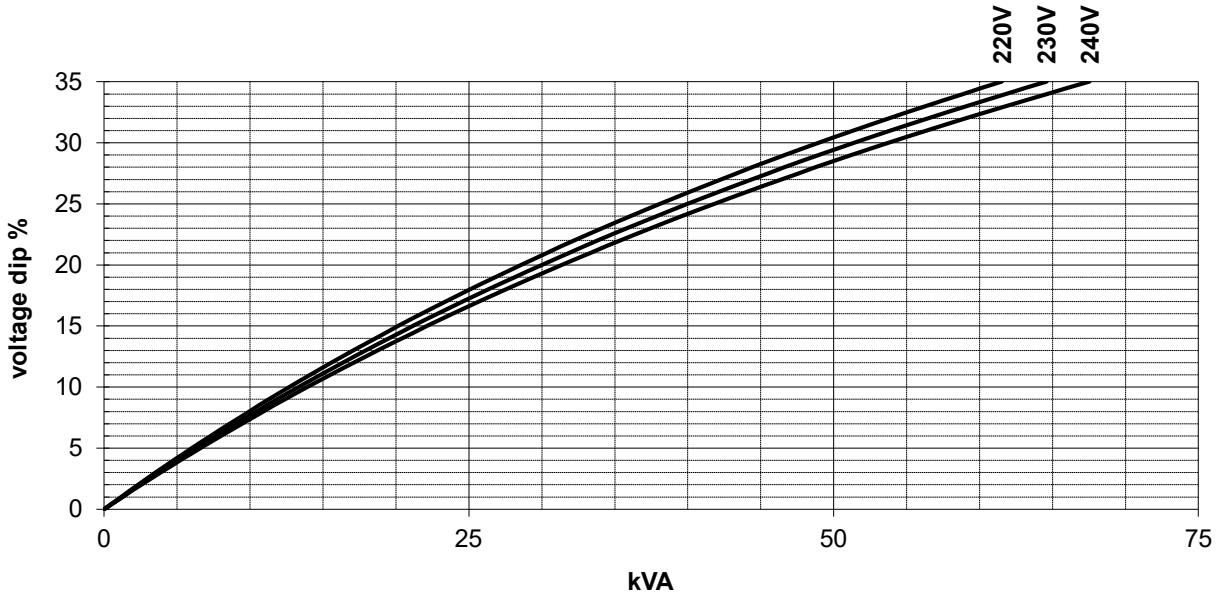
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.9

50 Hz SHUNT



60 Hz SHUNT



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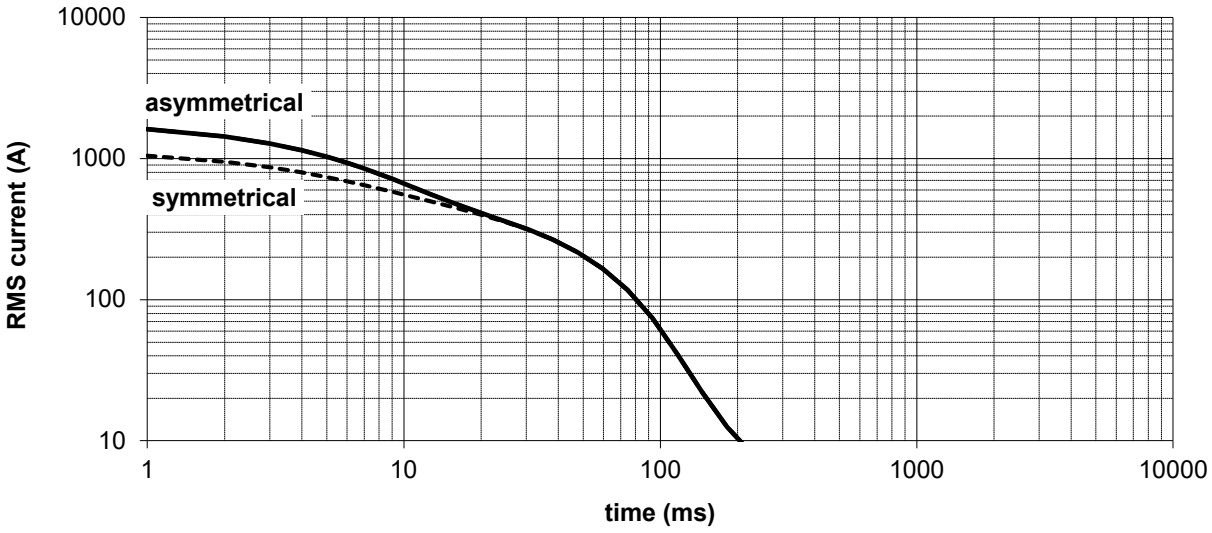
SHORT-CIRCUIT DECREMENT CURVES

No-load excitation at rated speed

230V 50Hz



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

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