

FRAME FGL30100 WINDING M



MODELS FGL30100

REF: FGL30100WM-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		0.25/0.3

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	82.2	82.2	82.2	90.4	90.4	90.4		
		<i>kW</i>	<i>82.2</i>	<i>82.2</i>	<i>82.2</i>	<i>90.4</i>	<i>90.4</i>	<i>90.4</i>		
Class H rise PR	150/40	kVA	87.1	87.1	87.1	95.8	95.8	95.8		
		<i>kW</i>	<i>87.1</i>	<i>87.1</i>	<i>87.1</i>	<i>95.8</i>	<i>95.8</i>	<i>95.8</i>		
Class H rise PR	163/27	kVA	90.5	90.5	90.5	99.5	99.5	99.5		
		<i>kW</i>	<i>90.5</i>	<i>90.5</i>	<i>90.5</i>	<i>99.5</i>	<i>99.5</i>	<i>99.5</i>		
Class F rise BR	105/40	kVA	75.0	75.0	75.0	82.5	82.5	82.5		
		<i>kW</i>	<i>75.0</i>	<i>75.0</i>	<i>75.0</i>	<i>82.5</i>	<i>82.5</i>	<i>82.5</i>		

EFFICIENCIES										
<i>Power factor 1.0</i>										
110%	Class H BR	%	91.7	92.0	92.0	90.5	90.9	91.3		
100%	Class H BR	%	92.1	92.3	92.3	90.9	91.4	91.7		
75%	Class H BR	%	92.8	92.8	92.6	92.0	92.2	92.4		
50%	Class H BR	%	92.9	92.6	92.1	92.4	92.4	92.4		
25%	Class H BR	%	90.5	89.6	88.4	90.3	90.0	89.6		

CHARACTERISTIC PARAMETERS										
<i>Reactance base class H BR rating</i>										
K _c	Short-circuit ratio		0.60	0.68	0.88	0.38	0.44	0.49		
X _d	D-Axis synchronous reactance (unsaturated)	pu	2.21	2.02	1.85	2.91	2.67	2.45		
X' _d	D-Axis transient reactance (saturated)	pu	0.20	0.18	0.17	0.27	0.24	0.22		
X'' _d	D-Axis sub-transient reactance (saturated)	pu	0.121	0.111	0.102	0.160	0.146	0.134		
X _q	Q-Axis synchronous reactance (unsaturated)	pu	1.32	1.21	1.11	1.75	1.60	1.47		
X'' _q	Q-Axis sub-transient reactance (saturated)	pu	0.243	0.223	0.205	0.321	0.294	0.270		
X ₂	Negative-sequence reactance (saturated)	pu	-	-	-	-	-	-		
X ₀	Zero-sequence reactance (independent)	pu	-	-	-	-	-	-		
T' _d	D-Axis transient time constant	ms		100			100			
T'' _d	D-Axis sub-transient time constant	ms		10			10			
T' _{do}	D-Axis open-circuit time constant	ms		1093			1093			
T _a	Armature time constant	ms		15			15			
T _r	Voltage recovery time	ms		< 500			< 500			

EXCITATION VOLTAGE AND CURRENT										
No load excitation voltage	V		7.0	7.9	9.1	4.9	5.2	5.7		
No load excitation current	A		0.54	0.61	0.70	0.38	0.40	0.44		
Class H BR excitation voltage	V		17.0	17.2	18.1	16.3	15.9	15.5		
Class H BR excitation current	A		1.31	1.33	1.40	1.26	1.23	1.20		

WINDING RESISTANCE										
<i>At 20°C</i>										
Stator (series)	Ω	0.014				Exciter field			Ω	12.9
Main field	Ω	3.03								

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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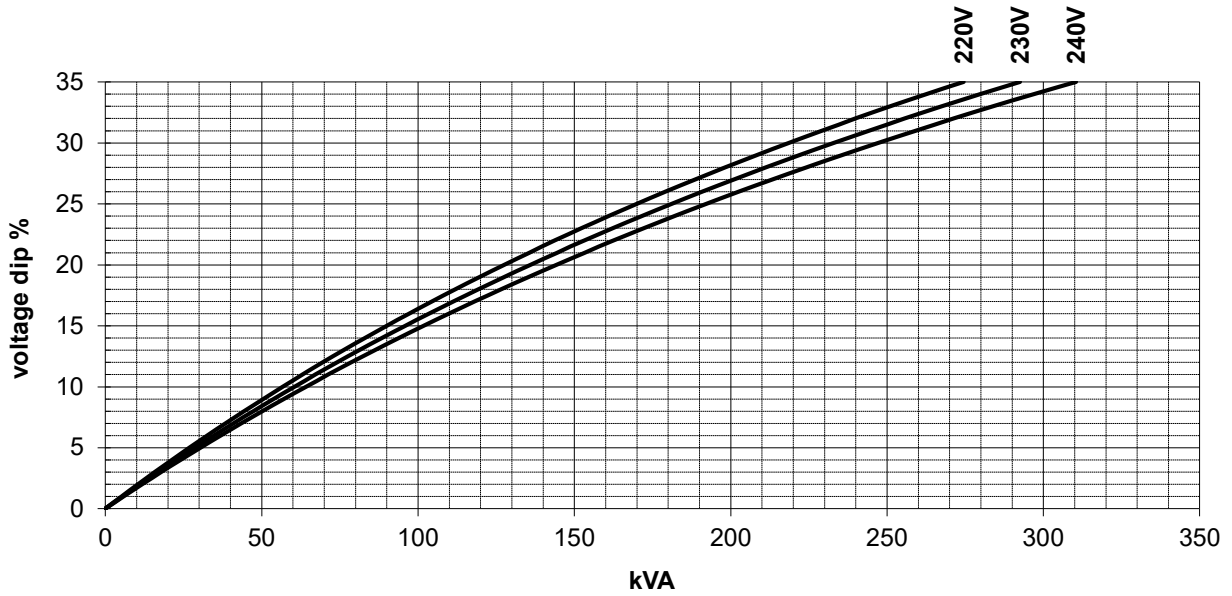
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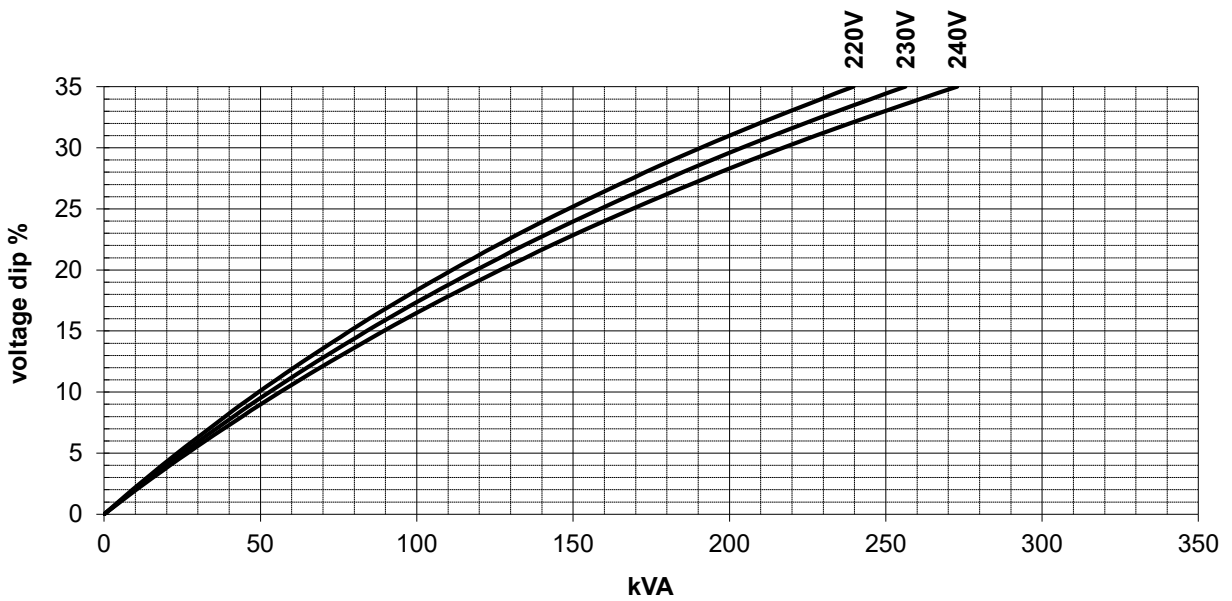
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.9

50 Hz SHUNT



60 Hz SHUNT



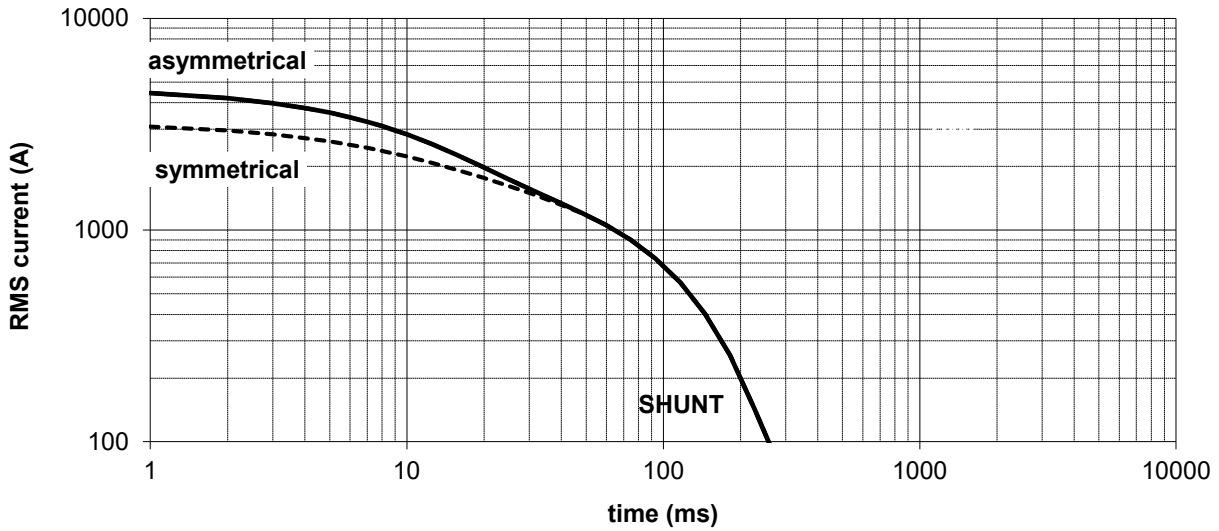
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SHORT-CIRCUIT DECREMENT CURVES

No-load excitation at rated speed

230V 50Hz



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