

FRAME FGL20030**WINDING 6P****MODELS FGL20030**

REF: FGL20030W6P-1 AUG 2020

WINDING DETAILS

Code	6P	Insulation class	H
Phase	3	Leads	4
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	PMG
AVR model	R120	R180
Sustained short-circuit current	-	270%:5s
Steady state voltage regulation	±1.0%	±1.0%

WAVEFORM

<i>Line voltage on no load</i>	
Total harmonic content THC	< 2.0%
Telephone influence factor TIF (NEMA)	< 50
Telephone harmonic factor THF (IEC)	< 2%

LINE VOLTAGE*No overvoltage tolerance for 440V 50Hz excitation level*

Frequency / speed	V	50Hz / 1500rpm			60Hz / 1800rpm					
		200	208	220	200	208	220	230	240	
Star										

RATING*Power factor 0.8, Altitude <=1000m*

Class H rise BR	125/40	kVA	32	32	30	37	38	40	40	40
		<i>kW</i>	26	26	24	29	30	32	32	32
Class H rise PR	150/40	kVA	34	34	32	39	40	42	42	42
		<i>kW</i>	27	27	25	31	32	34	34	34
Class H rise PR	163/27	kVA	35	35	33	40	42	44	44	44
		<i>kW</i>	28	28	26	32	33	35	35	35
Class F rise BR	105/40	kVA	29	29	27	33	35	36	36	36
		<i>kW</i>	23	23	22	27	28	29	29	29

EFFICIENCIES*Power factor 0.8*

110%	Class H BR	%	87.1	87.1	87.1	86.8	87.0	87.3	87.7	87.9
100%	Class H BR	%	87.7	87.7	87.5	87.5	87.7	87.9	88.3	88.4
75%	Class H BR	%	88.9	88.8	88.1	89.0	89.1	89.3	89.4	89.4
50%	Class H BR	%	89.4	89.0	87.6	89.9	89.9	89.9	89.8	89.5
25%	Class H BR	%	87.0	86.0	83.0	88.2	88.1	87.9	87.2	86.3

CHARACTERISTIC PARAMETERS*Reactance base class H BR rating*

K _c	Short-circuit ratio		0.42	0.48	0.65	0.27	0.28	0.31	0.36	0.40
X _d	D-Axis synchronous reactance (unsaturated)	pu	2.80	2.60	2.17	3.83	3.69	3.47	3.18	2.92
X' _d	D-Axis transient reactance (saturated)	pu	0.16	0.15	0.13	0.22	0.21	0.20	0.18	0.17
X'' _d	D-Axis sub-transient reactance (saturated)	pu	0.082	0.076	0.064	0.112	0.108	0.102	0.093	0.085
X _q	Q-Axis synchronous reactance (unsaturated)	pu	1.42	1.32	1.10	1.94	1.87	1.76	1.61	1.48
X'' _q	Q-Axis sub-transient reactance (saturated)	pu	0.116	0.108	0.090	0.159	0.153	0.144	0.132	0.121
X ₂	Negative-sequence reactance (saturated)	pu	0.098	0.091	0.076	0.134	0.129	0.121	0.111	0.102
X ₀	Zero-sequence reactance (independent)	pu	0.007	0.006	0.005	0.009	0.009	0.008	0.007	0.007
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	861			861				
T _a	Armature time constant	ms	8			8				
T _r	Voltage recovery time	ms	< 500			< 500				

EXCITATION VOLTAGE AND CURRENT

No load excitation voltage	V	9.4	10.9	12.5	6.3	7.8	7.8	7.8	9.4
No load excitation current	A	0.60	0.70	0.80	0.40	0.50	0.50	0.50	0.60
Class H BR excitation voltage	V	34.4	36.0	36.0	32.8	34.4	34.4	34.4	34.4
Class H BR excitation current	A	2.20	2.30	2.30	2.10	2.20	2.20	2.20	2.20

WINDING RESISTANCE*At 20°C*

Stator line-to-line (series star)	Ω	0.426	Exciter field - Shunt		Ω	15.6
Main field	Ω	0.67				

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.

FRAME FGL20030 WINDING 6P



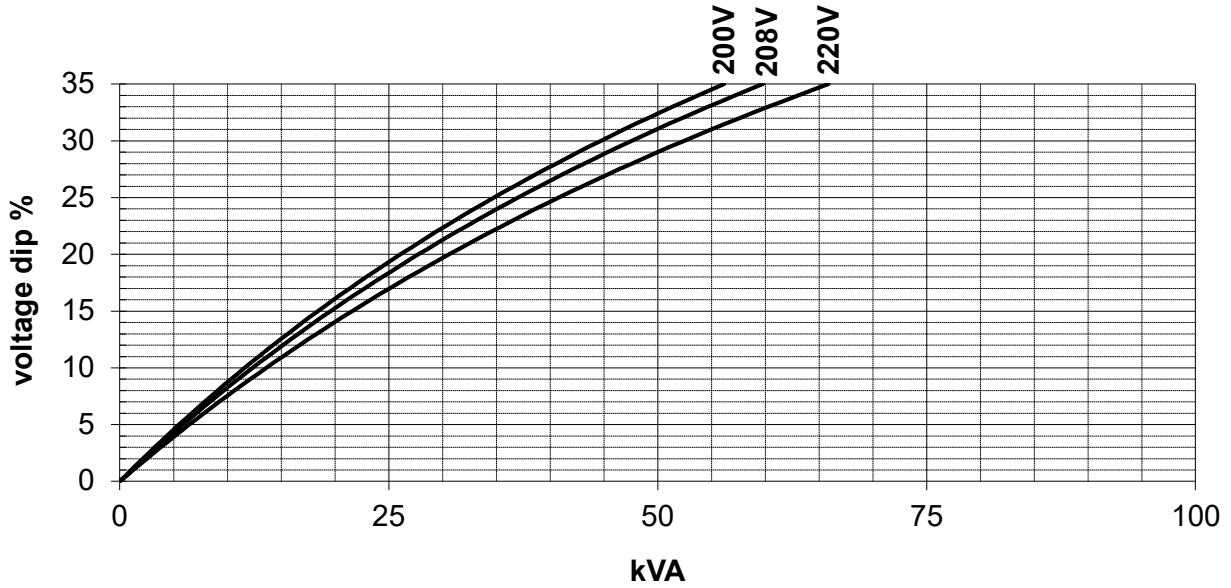
MODELS FGL20030

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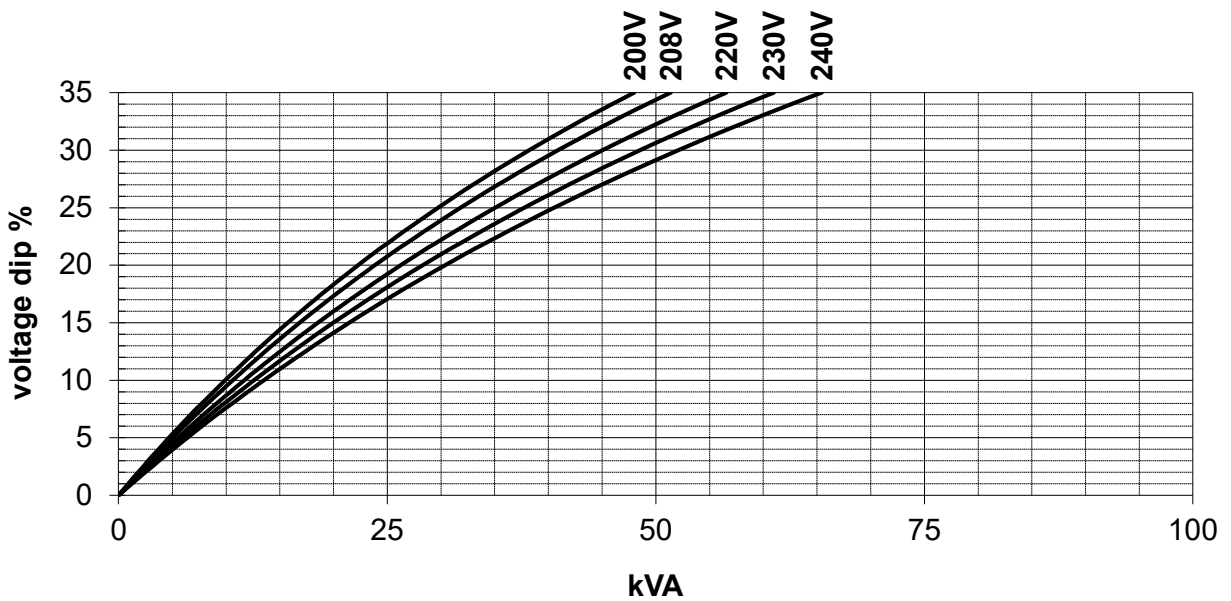
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.6

50 Hz SHUNT



60 Hz SHUNT



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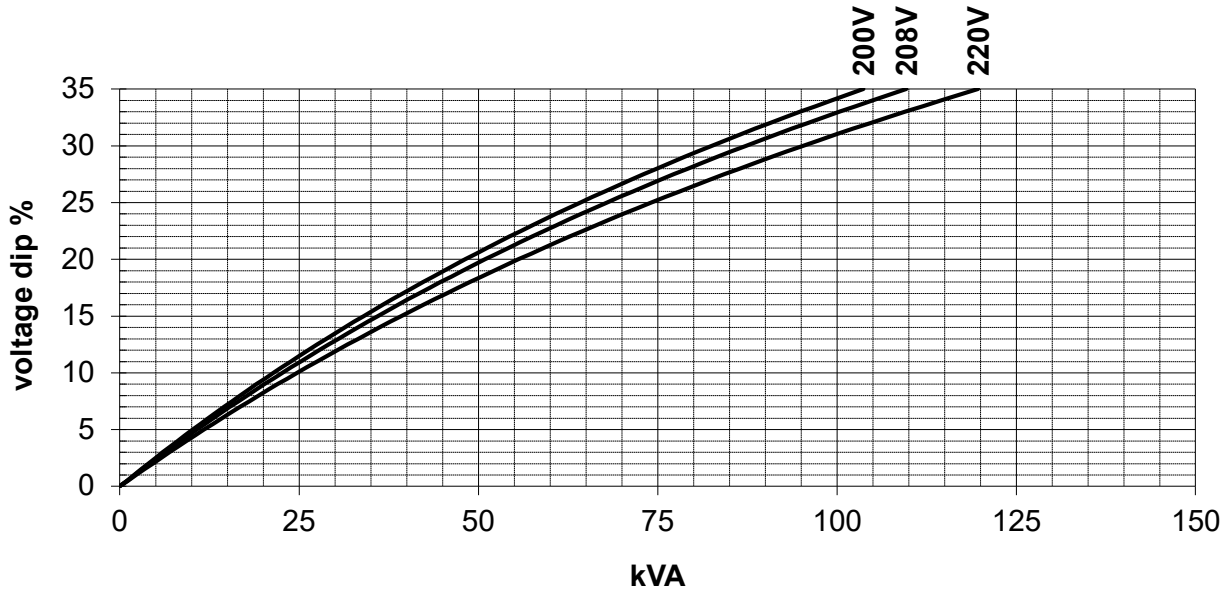
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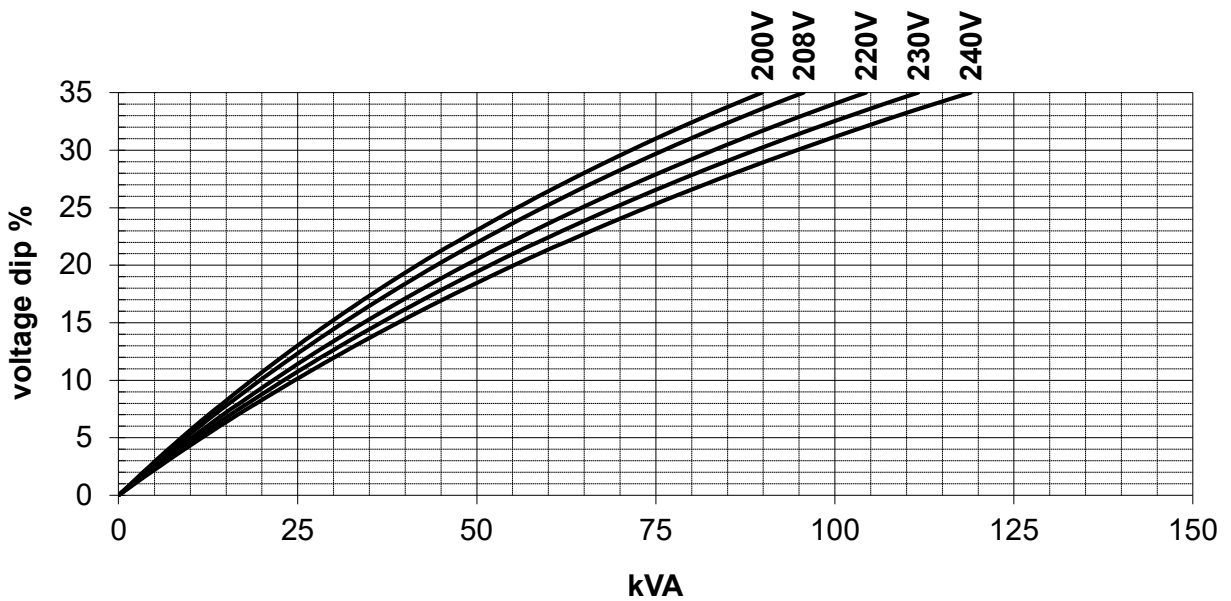
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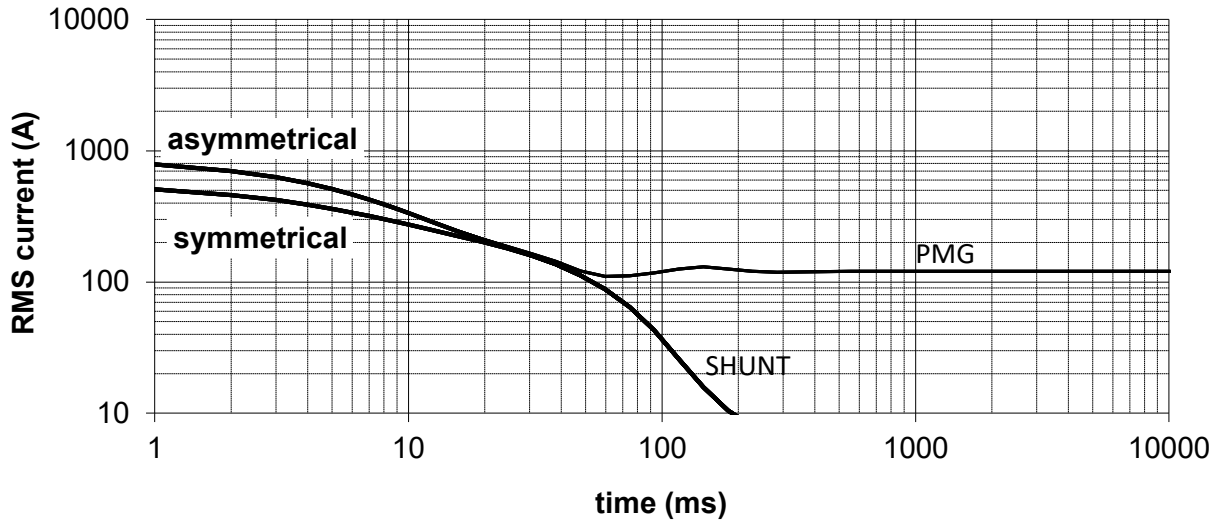
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THREE-PHASE SHORT-CIRCUIT DECREMENT CURVES

No-load excitation at rated speed

200V 50Hz, 240V 60Hz

Star



Multiplication Factors

50Hz Voltages

	200	208	220
Multiplication Factor	1.00	1.04	1.10

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

60Hz Voltages

	200	208	220	230	240
Multiplication Factor	0.83	0.87	0.92	0.96	1.00

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

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