

**FRAME FGL30020****WINDING 6P****MODELS FGL30020**

REF: FGL30020W6P-1 SEP 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 <sup>3</sup> /s 0.25 / 0.3

**EXCITATION DETAILS**

Excitation system	<b>SHUNT</b>	<b>PMG</b>
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%
Telephone influence factor TIF (NEMA)	< 50
Telephone harmonic factor THF (IEC)	< 2%

**LINE VOLTAGE***No overvoltage tolerance for 220V 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*

<b>Class H rise BR</b>	<b>125/40</b>	<b>kVA</b>	<b>85</b>	<b>85</b>	<b>75</b>	<b>88</b>	<b>92</b>	<b>98</b>	<b>102</b>	<b>106</b>
		<i>kW</i>	68	68	60	70	74	78	82	85
<b>Class H rise PR</b>	<b>150/40</b>	<b>kVA</b>	<b>90</b>	<b>90</b>	<b>80</b>	<b>93</b>	<b>98</b>	<b>104</b>	<b>108</b>	<b>112</b>
		<i>kW</i>	72	72	64	75	78	83	86	90
<b>Class H rise PR</b>	<b>163/27</b>	<b>kVA</b>	<b>94</b>	<b>94</b>	<b>83</b>	<b>97</b>	<b>101</b>	<b>108</b>	<b>112</b>	<b>117</b>
		<i>kW</i>	75	75	66	77	81	86	90	93
<b>Class F rise BR</b>	<b>105/40</b>	<b>kVA</b>	<b>77</b>	<b>77</b>	<b>68</b>	<b>80</b>	<b>84</b>	<b>89</b>	<b>93</b>	<b>97</b>
		<i>kW</i>	62	62	55	64	67	71	74	77

**EFFICIENCIES***Power factor 0.8*

110%	Class H BR	%	89.3	88.8	87.4	90.4	90.5	90.5	90.4	90.1
100%	Class H BR	%	89.8	89.3	87.7	90.8	90.9	90.9	90.8	90.4
75%	Class H BR	%	90.7	90.0	87.8	91.6	91.7	91.6	91.4	91.0
50%	Class H BR	%	90.8	89.9	86.6	91.7	91.7	91.6	91.2	90.7
25%	Class H BR	%	88.1	86.5	80.8	89.2	89.1	88.7	88.1	87.2

**CHARACTERISTIC PARAMETERS***Reactance base class H BR rating*

K <sub>c</sub>	Short-circuit ratio		0.46	0.57	0.97	0.26	0.28	0.32	0.37	0.44
X <sub>d</sub>	D-Axis synchronous reactance (unsaturated)	pu	3.58	3.33	2.61	4.45	4.30	4.09	3.90	3.72
X' <sub>d</sub>	D-Axis transient reactance (saturated)	pu	0.14	0.13	0.11	0.18	0.17	0.17	0.16	0.15
X'' <sub>d</sub>	D-Axis sub-transient reactance (saturated)	pu	0.087	0.081	0.063	0.108	0.104	0.099	0.094	0.090
X <sub>q</sub>	Q-Axis synchronous reactance (unsaturated)	pu	1.83	1.70	1.33	2.27	2.19	2.09	1.99	1.90
X'' <sub>q</sub>	Q-Axis sub-transient reactance (saturated)	pu	0.195	0.182	0.143	0.243	0.235	0.223	0.213	0.203
X <sub>2</sub>	Negative-sequence reactance (saturated)	pu	0.141	0.131	0.103	0.175	0.169	0.161	0.154	0.147
X <sub>0</sub>	Zero-sequence reactance (independent)	pu	0.006	0.006	0.004	0.007	0.007	0.007	0.007	0.006
T' <sub>d</sub>	D-Axis transient time constant	ms	100			100				
T'' <sub>d</sub>	D-Axis sub-transient time constant	ms	10			10				
T' <sub>do</sub>	D-Axis open-circuit time constant	ms	2475			2475				
T <sub>a</sub>	Armature time constant	ms	15			15				
T <sub>r</sub>	Voltage recovery time	ms	< 500			< 500				

**EXCITATION VOLTAGE AND CURRENT**

No load excitation voltage	V	9.8	11.7	16.4	5.7	6.2	7.1	8.3	9.8
No load excitation current	A	0.84	1.00	1.41	0.49	0.53	0.61	0.71	0.84
Class H BR excitation voltage	V	36.6	39.8	44.4	28.2	29.1	31.0	33.0	36.0
Class H BR excitation current	A	3.14	3.42	3.81	2.42	2.50	2.66	2.83	3.09

**WINDING RESISTANCE***At 20°C*

Stator line-to-line (series star)	Ω	0.135	Exciter field - Shunt		Ω	11.7
Main field	Ω	2.07				

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 FGL30020 WINDING 6P**



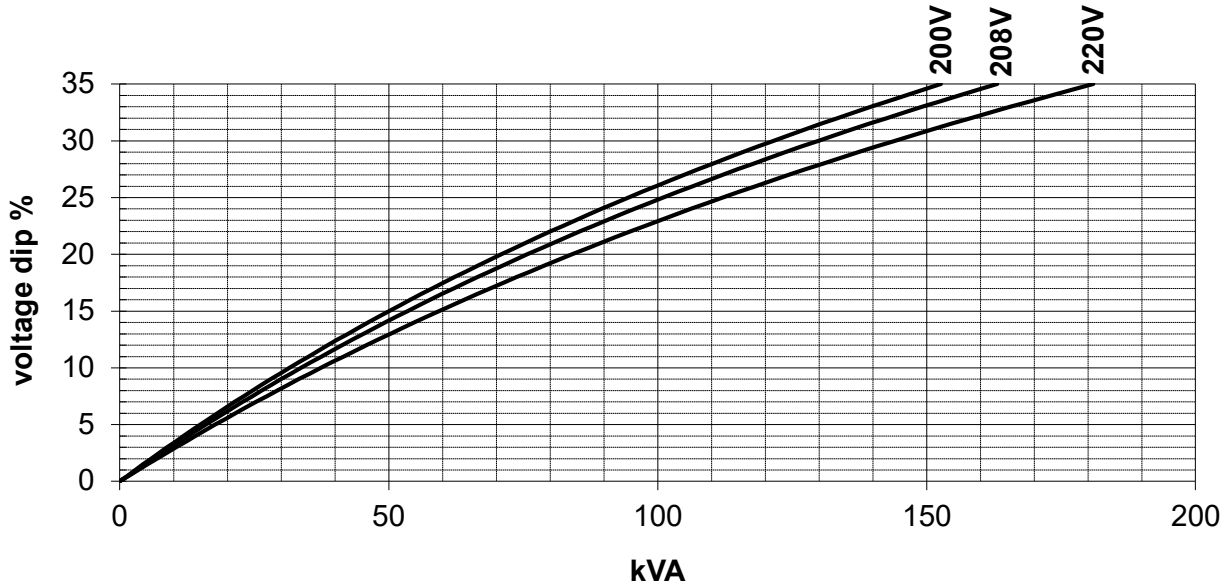
**MODELS FGL30020**

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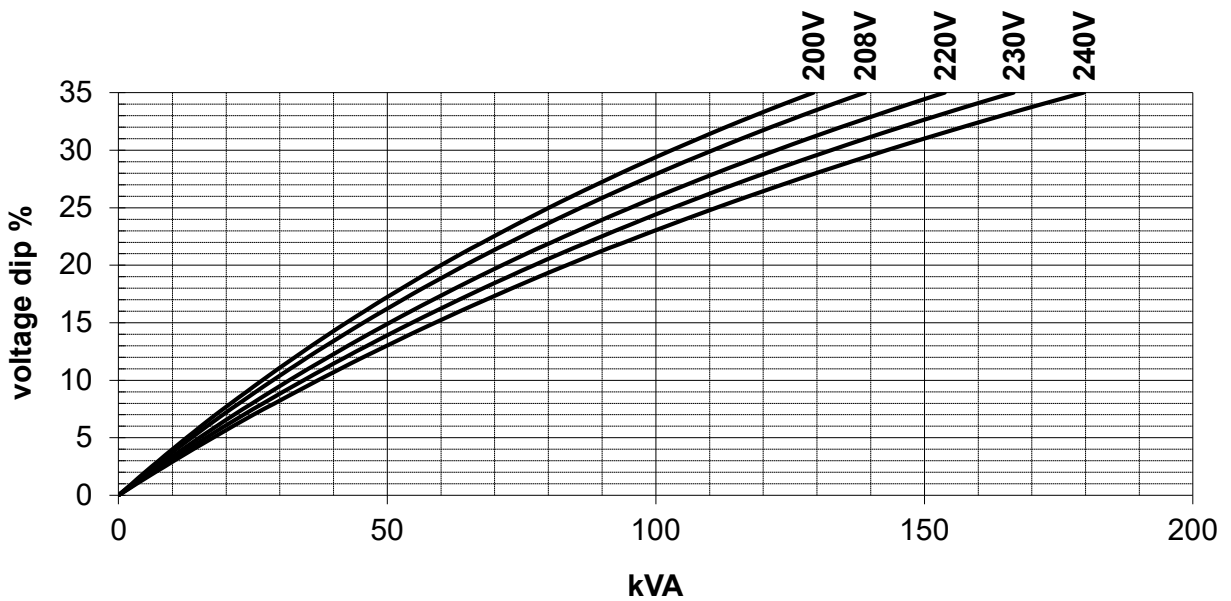
**LOCKED ROTOR MOTOR STARTING CURVES**

*Power factor 0.6*

**50 Hz SHUNT**



**60 Hz SHUNT**



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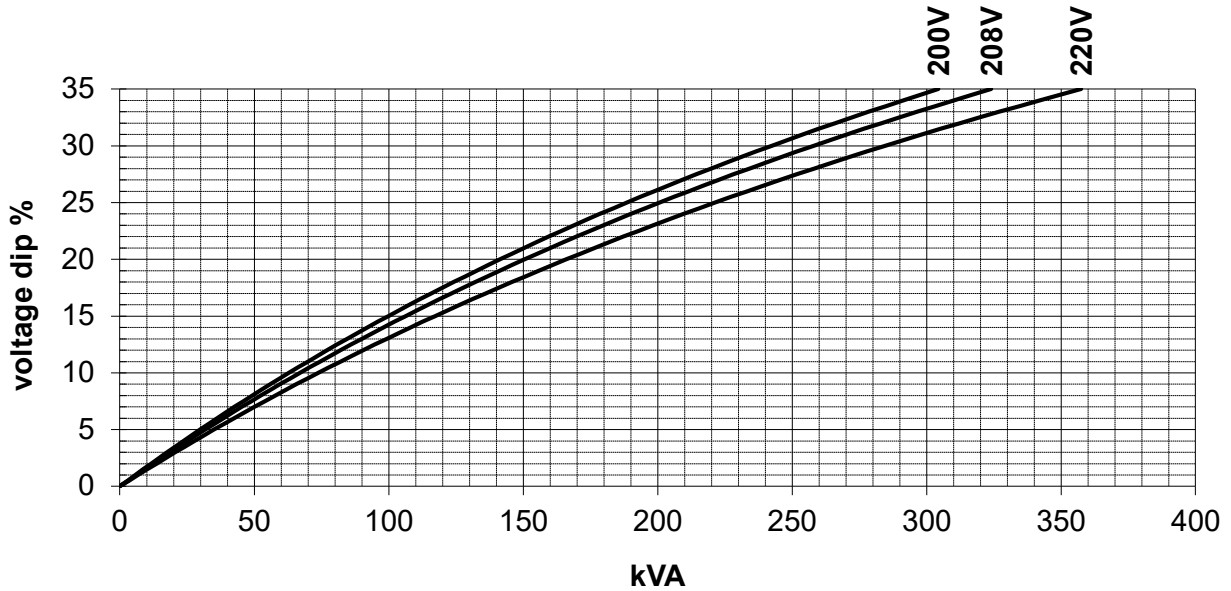
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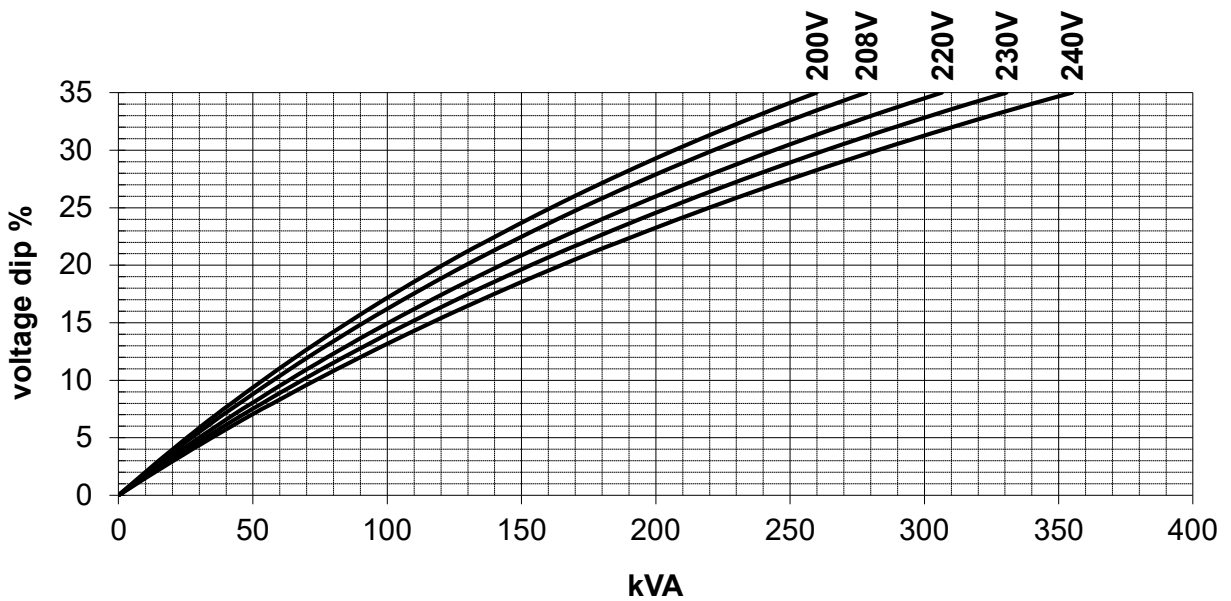
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**50 Hz PMG**



**60 Hz PMG**



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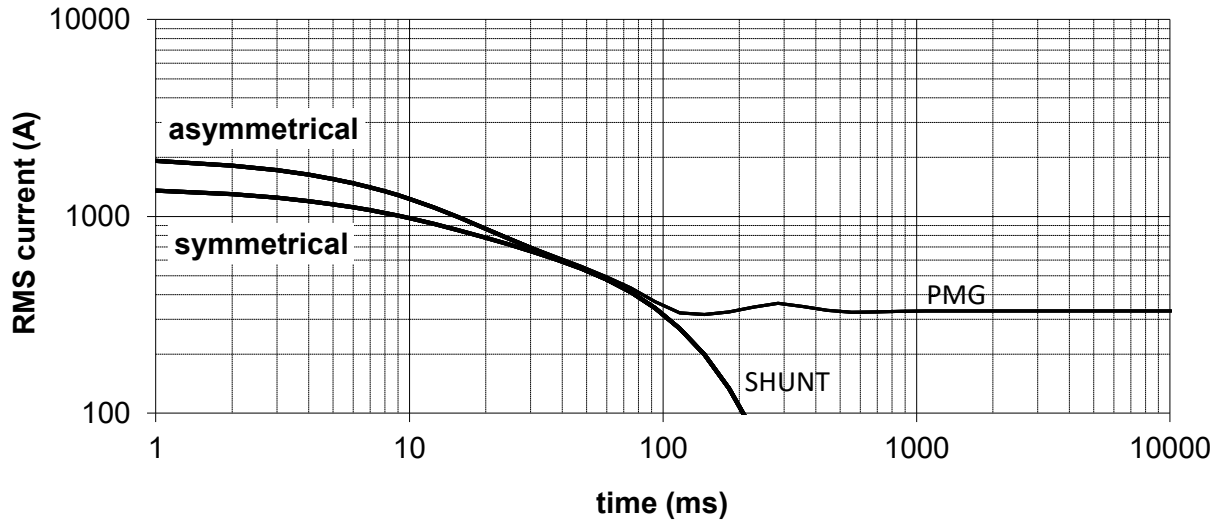
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**THREE-PHASE SHORT-CIRCUIT DECREMENT CURVES**

*No-load excitation at rated speed*

**200V 50Hz, 240V 60Hz**

*Star*



**Multiplication Factors**

**50Hz Voltages**

	<b>200</b>	<b>208</b>	<b>220</b>
<b>Multiplication Factor</b>	1.00	1.04	1.10

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

**60Hz Voltages**

	<b>200</b>	<b>208</b>	<b>220</b>	<b>230</b>	<b>240</b>
<b>Multiplication Factor</b>	0.83	0.87	0.92	0.96	1.00

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

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