FRAME FGL10020 WINDING 6P

MODELS FGL10020

REF: FGL10020W6P-0 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	0.06/0.07

EXCITATION DETAILS

Excitation system	**SHUNT**	**AREP**
AVR model	R120	R180
Sustained short-circuit current	-	270%:5s
Steady state voltage regulation	±1.0%	±0.5%

WAVEFORM

Line voltage on no load

Total harmonic content THC	< 3.5%
Telephone influence factor TIF (NEMA)	< 50
Telephone harmonic factor THF (IEC)	< 2%

LINE VOLTAGE

No overvoltage tolerance for 440V 50Hz excitation level

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

RATING

Power factor 0.8, Altitude <=1000m

Class H rise BR	**125/40**	**kVA**	**13.0**	**13.0**	**11.5**	**16.0**	**16.3**	**16.3**	**16.3**	**16.3**
		kW	*10.4*	*10.4*	*9.2*	*12.8*	*13.0*	*13.0*	*13.0*	*13.0*
Class H rise PR	**150/40**	**kVA**	**13.8**	**13.8**	**12.2**	**17.0**	**17.3**	**17.3**	**17.3**	**17.3**
		kW	*11.0*	*11.0*	*9.8*	*13.6*	*13.8*	*13.8*	*13.8*	*13.8*
Class H rise PR	**163/27**	**kVA**	**14.3**	**14.3**	**12.7**	**17.6**	**17.9**	**17.9**	**17.9**	**17.9**
		kW	*11.4*	*11.4*	*10.2*	*14.1*	*14.3*	*14.3*	*14.3*	*14.3*
Class F rise BR	**105/40**	**kVA**	**11.8**	**11.8**	**10.5**	**14.6**	**14.8**	**14.8**	**14.8**	**14.8**
		kW	*9.4*	*9.4*	*8.4*	*11.7*	*11.8*	*11.8*	*11.8*	*11.8*

EFFICIENCIES

Power factor 0.8

110%	Class H BR	%	81.1	81.1	81.2	80.6	81.0	81.9	82.3	82.4
100%	Class H BR	%	81.9	81.8	81.7	81.5	81.9	82.6	83.0	83.1
75%	Class H BR	%	83.5	83.2	82.3	83.6	83.8	84.2	84.4	84.3
50%	Class H BR	%	83.9	83.4	81.4	84.8	84.8	84.8	84.6	84.3
25%	Class H BR	%	80.3	79.2	75.1	82.5	82.2	81.5	80.8	79.8

CHARACTERISTIC PARAMETERS

Reactance base class H BR rating

K_c	Short-circuit ratio		0.52	0.60	0.84	0.32	0.34	0.39	0.44	0.50
X_d	D-Axis synchronous reactance (unsaturated)	pu	2.18	2.02	1.59	3.22	3.03	2.71	2.48	2.28
X'_d	D-Axis transient reactance (saturated)	pu	0.22	0.21	0.16	0.33	0.31	0.28	0.26	0.23
X''_d	D-Axis sub-transient reactance (saturated)	pu	0.112	0.104	0.082	0.166	0.156	0.139	0.128	0.117
X_q	Q-Axis synchronous reactance (unsaturated)	pu	1.11	1.03	0.81	1.64	1.55	1.38	1.27	1.16
X''_q	Q-Axis sub-transient reactance (saturated)	pu	0.209	0.194	0.153	0.308	0.290	0.260	0.238	0.218
X_2	Negative-sequence reactance (saturated)	pu	0.161	0.149	0.118	0.238	0.224	0.200	0.183	0.168
X_0	Zero-sequence reactance (independent)	pu	0.009	0.009	0.007	0.014	0.013	0.012	0.011	0.010
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	719			719				
T_a	Armature time constant	ms	11			11				
T_r	Voltage recovery time	ms	< 500			< 500				

EXCITATION VOLTAGE AND CURRENT

No load excitation voltage	V	9.5	10.4	12.1	7.2	7.5	8.1	8.8	9.5
No load excitation current	A	0.77	0.84	0.98	0.58	0.61	0.66	0.71	0.77
Class H BR excitation voltage	V	29.3	30.1	29.5	29.8	30.0	29.5	29.5	30.0
Class H BR excitation current	A	2.38	2.44	2.39	2.42	2.43	2.39	2.39	2.43

WINDING RESISTANCE

At 20° C

Stator line-to-line (series star)	Ω	1.308	Exciter field - Shunt	Ω 12.3
Main field	Ω	2.96		

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 **FGL10020** **WINDING** **6P**

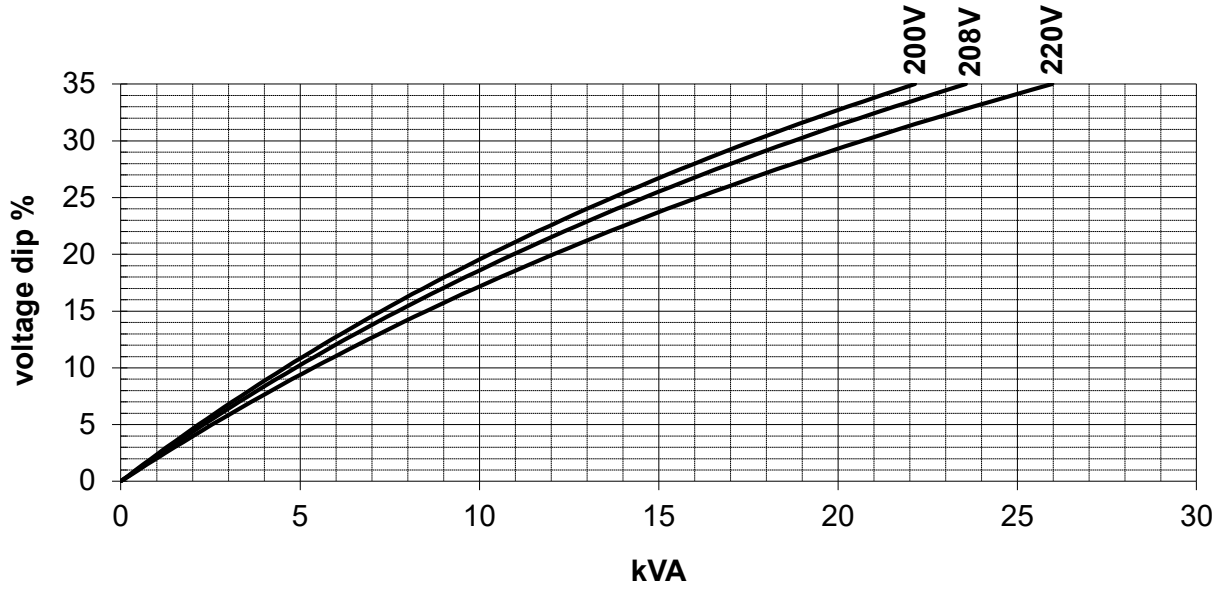
MODELS **FGL10020**

REF: FGL10020W6P-0 AUG 2020

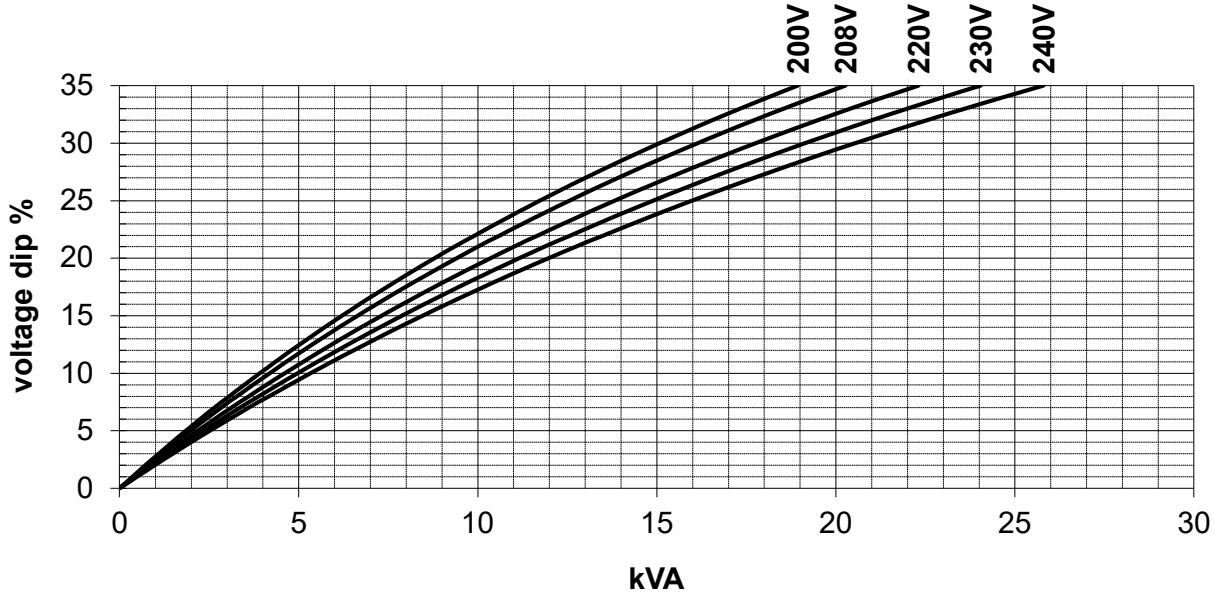
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.6

50 Hz SHUNT



60 Hz SHUNT



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MODELS **FGL10020**

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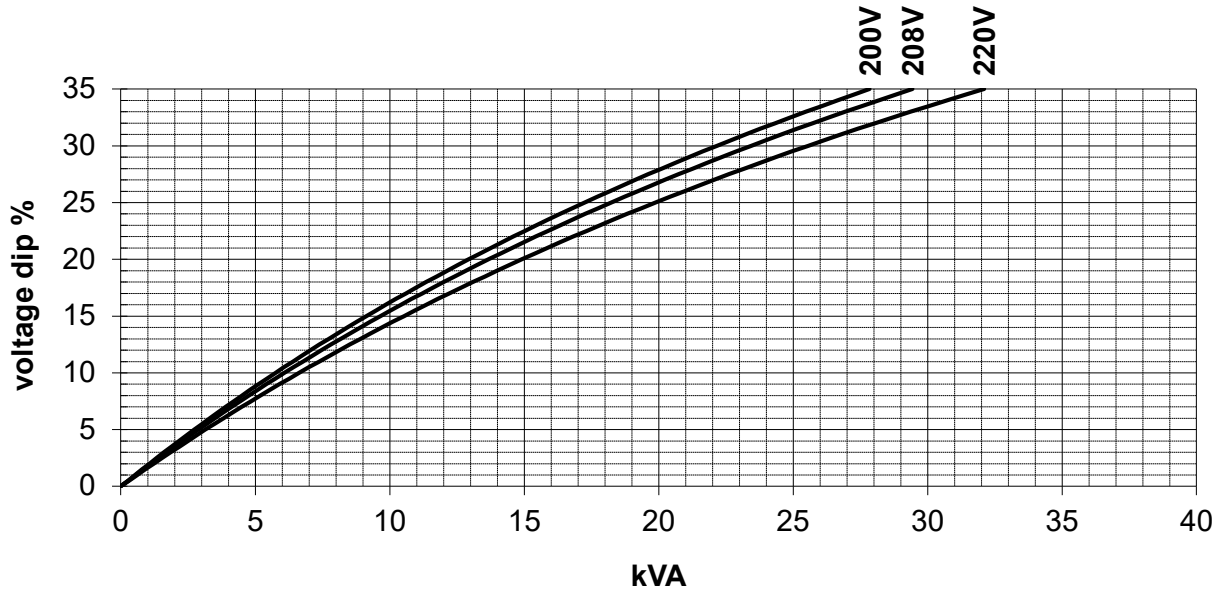
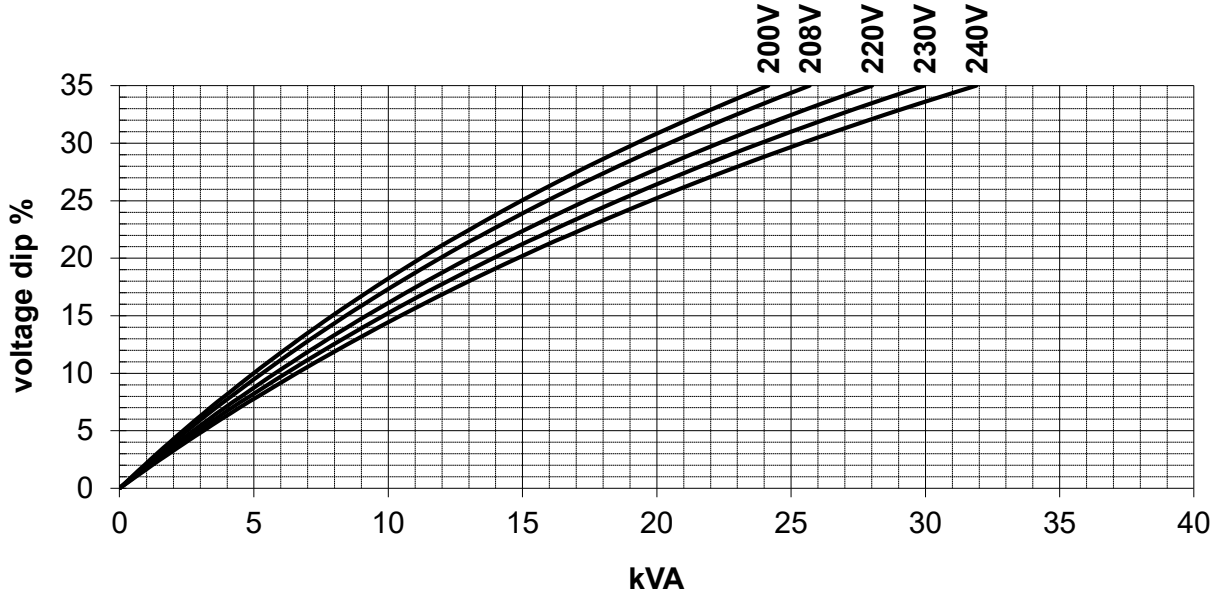
LOCKED ROTOR MOTOR STARTING CURVES

Power factor 0.6

50 Hz AREP



60 Hz AREP



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FRAME FGL10020 WINDING 6P

MODELS **FGL10020**

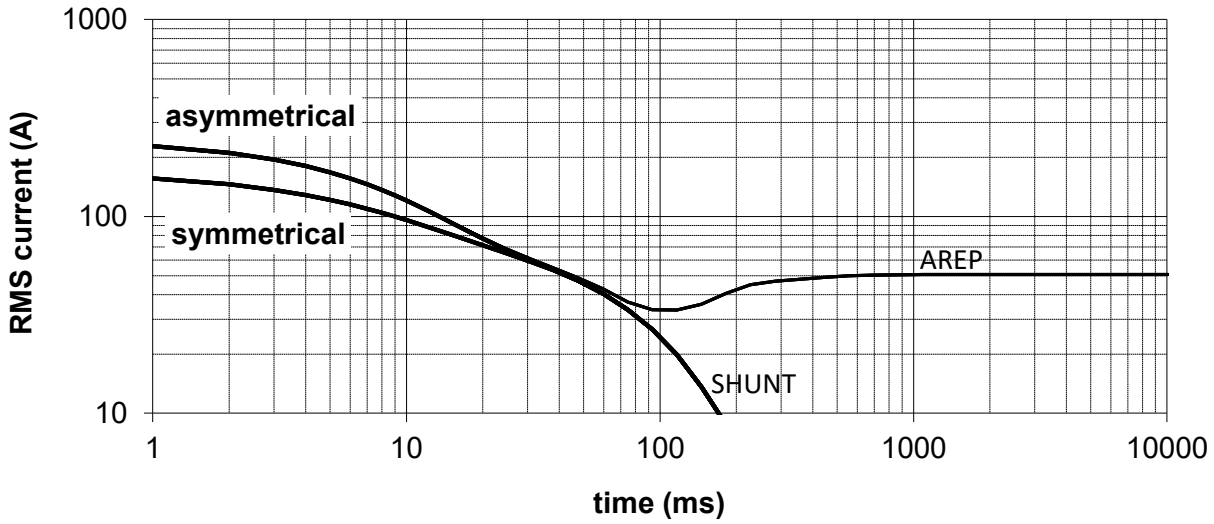
REF: FGL10020W6P-0 AUG 2020

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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