

DATA SHEET

Three Phase Induction Motor - Squirrel Cage



Customer : QUANTUM CONTROLS

Product line : W22 - IE3 Premium Efficiency Multivoltage Product code : 15839317

Frame	: 132M	Cooling method	: IC411 - TEFC
Insulation class	: F	Mounting	: B5T
Duty cycle	: S1	Rotation ¹	: Both
Ambient temperature	: -20 °C to +40 °C	Starting method	: Direct On Line
Altitude	: 1000 m.a.s.l	Approx. weight ³	: 74.0 kg
Protection degree	: IP55	Moment of inertia (J)	: 0.0563 kgm ²
Design	: N		

Output	7.5 kW	7.5 kW	7.5 kW
Poles	4	4	4
Frequency	50 Hz	50 Hz	50 Hz
Rated voltage	380/660 V	400/690 V	415 V
Rated current	14.7/8.46 A	14.2/8.23 A	14.1 A
L. R. Amperes	122/70.2 A	121/70.0 A	123 A
LRC	8.3	8.5	8.7
No load current	6.00/3.45 A	6.50/3.77 A	7.00 A
Rated speed	1460 rpm	1465 rpm	1465 rpm
Slip	2.67 %	2.33 %	2.33 %
Rated torque	49.1 Nm	48.9 Nm	48.9 Nm
Locked rotor torque	220 %	240 %	260 %
Pull up torque	185 %	200 %	220 %
Breakdown torque	310 %	350 %	380 %
Service factor	1.00	1.00	1.00
Noise level ²	56.0 dB(A)	56.0 dB(A)	56.0 dB(A)
Locked rotor time (hot)	13 s	12 s	11 s
Locked rotor time (cold)	23 s	22 s	20 s
Efficiency (%)	50%	90.0	89.2
	75%	90.2	90.3
	100%	90.4	90.4
Power Factor	50%	0.66	0.60
	75%	0.79	0.73
	100%	0.86	0.82

Bearing type	Drive end	Non drive end	Foundation loads	Max. traction	: 3079 N
	6308-ZZ	6207-ZZ			
Lubrication interval	-	-	Load type	:-	
Lubricant amount	-	-	Load torque	:-	
Lubricant type	MOBIL POLYREX EM		Load inertia (J=GD ² /4)	:-	

Notes
See notes on page 2.

This revision replaces and cancel the previous one, which must be eliminated.

- (1) Looking the motor from the shaft end.
- (2) Measured at 1m and with tolerance of +3dB(A).
- (3) Approximate weight, subject to be changed after manufacturing process.
- (4) At 100% of full load.

These are average values based on tests with sinusoidal power supply, subject to the tolerances stipulated in IEC 60034-1.

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Performed by	dang	1230955474		
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Thermal protection

ID	Application	Type	Quantity	Sensing Temperature
1	Winding	Thermistor - 2 wires	1 x Phase	155°C

Space heater information
Voltage: 110-127/200-240 V
Output: 25-33/25-35 W

Notes

Standards	Specification	: IEC 60034-1	Vibration	: IEC 60034-14
	Test	: IEC 60034-2	Tolerance	: IEC 60034-1
	Noise	: IEC 60034-9		

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THERMAL LIMIT CURVE

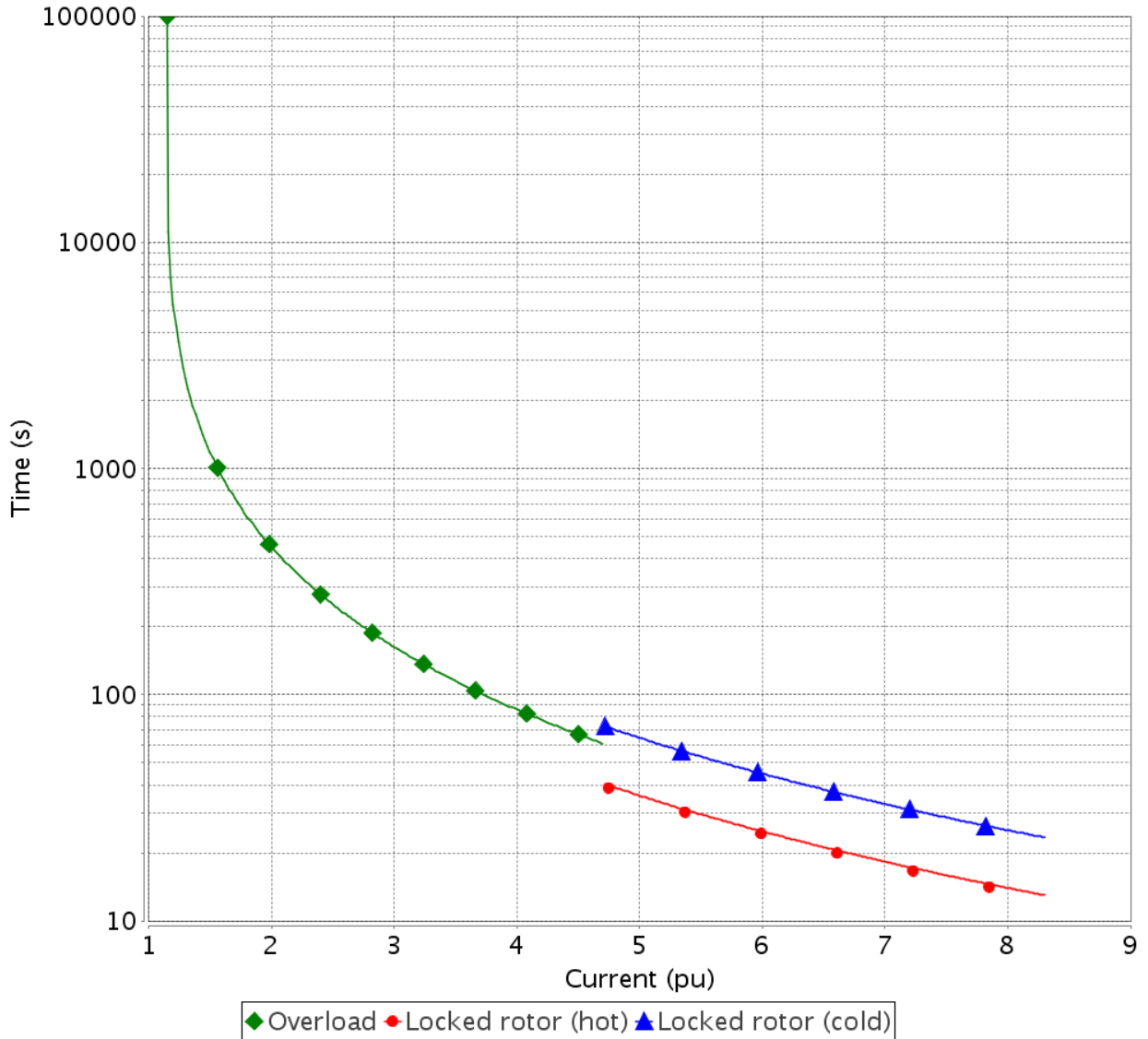
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Performance : 7.5 kW 380/660 V 50 Hz 4P 132M

Rated current	: 14.7/8.46 A	Moment of inertia (J)	: 0.0563 kgm ²
LRC	: 8.3	Duty cycle	: S1
Rated torque	: 49.1 Nm	Insulation class	: F
Locked rotor torque	: 220 %	Service factor	: 1.00
Breakdown torque	: 310 %	Temperature rise	: 80 K
Rated speed	: 1460 rpm	Design	: N
Heating constant	: 21.8 min		
Cooling constant	: 65.4 min		

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LOAD PERFORMANCE CURVE

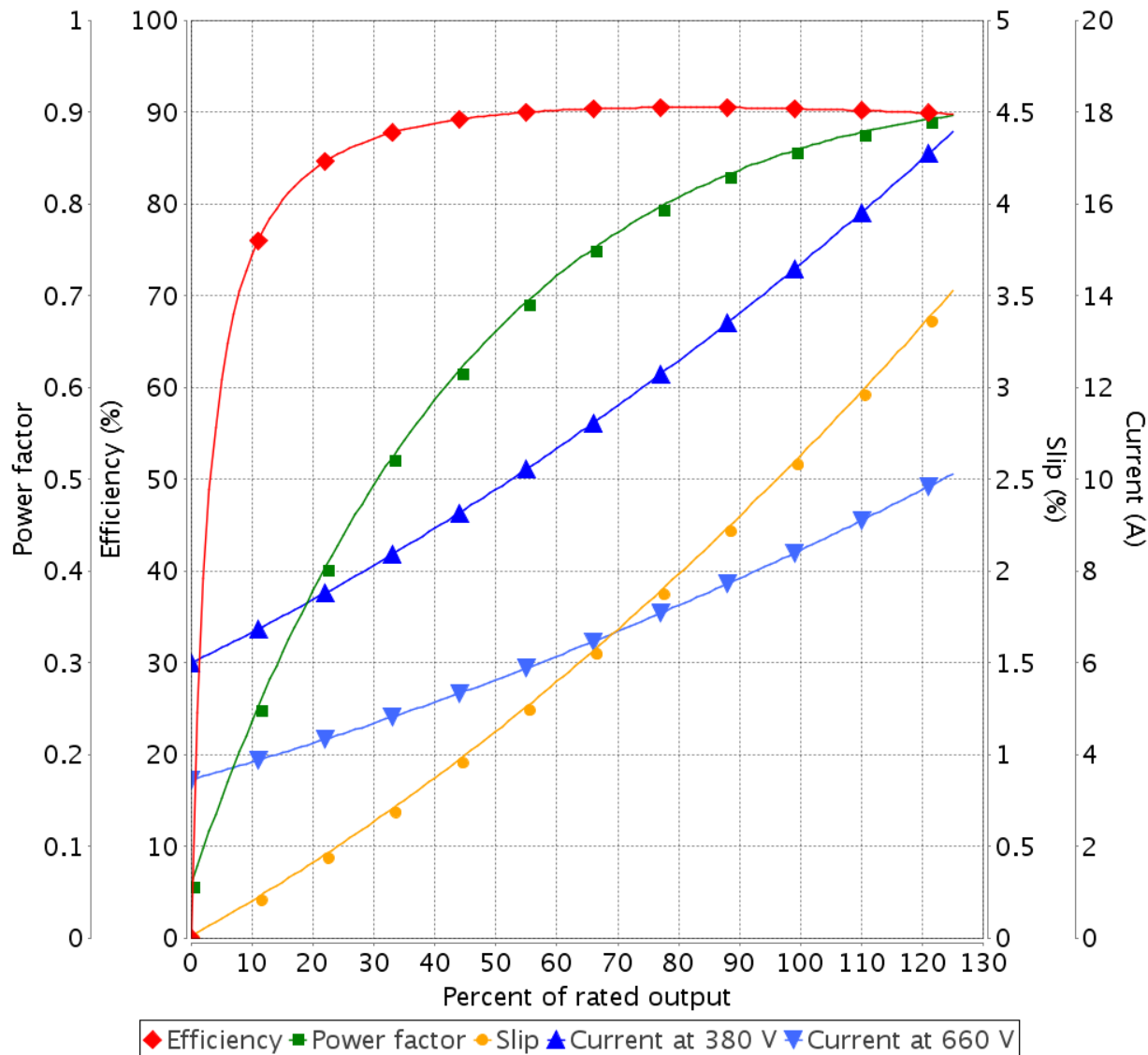
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 Breakdown torque : 310 %
 Rated speed : 1460 rpm

Moment of inertia (J) : 0.0563 kgm²
 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

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VFD OPERATION CURVE

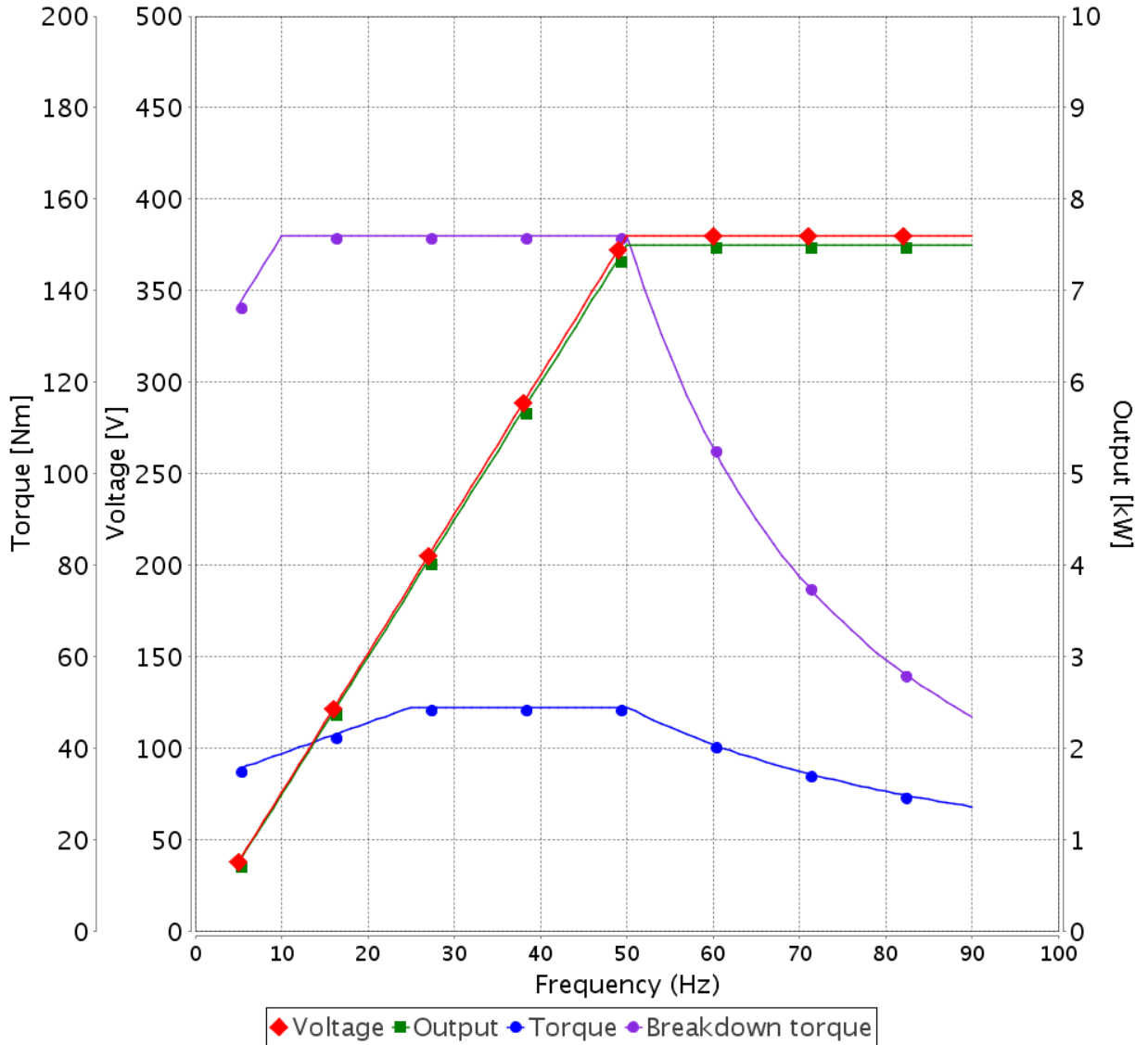
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 Duty cycle : S1
 Insulation class : F
 Service factor : 1.00
 Temperature rise : 80 K
 Design : N

Voltage Peak Phase-Phase = 1600.0
 dV/dt = 5200.0
 Rise time = 0.1

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TORQUE AND CURRENT VS SPEED CURVE

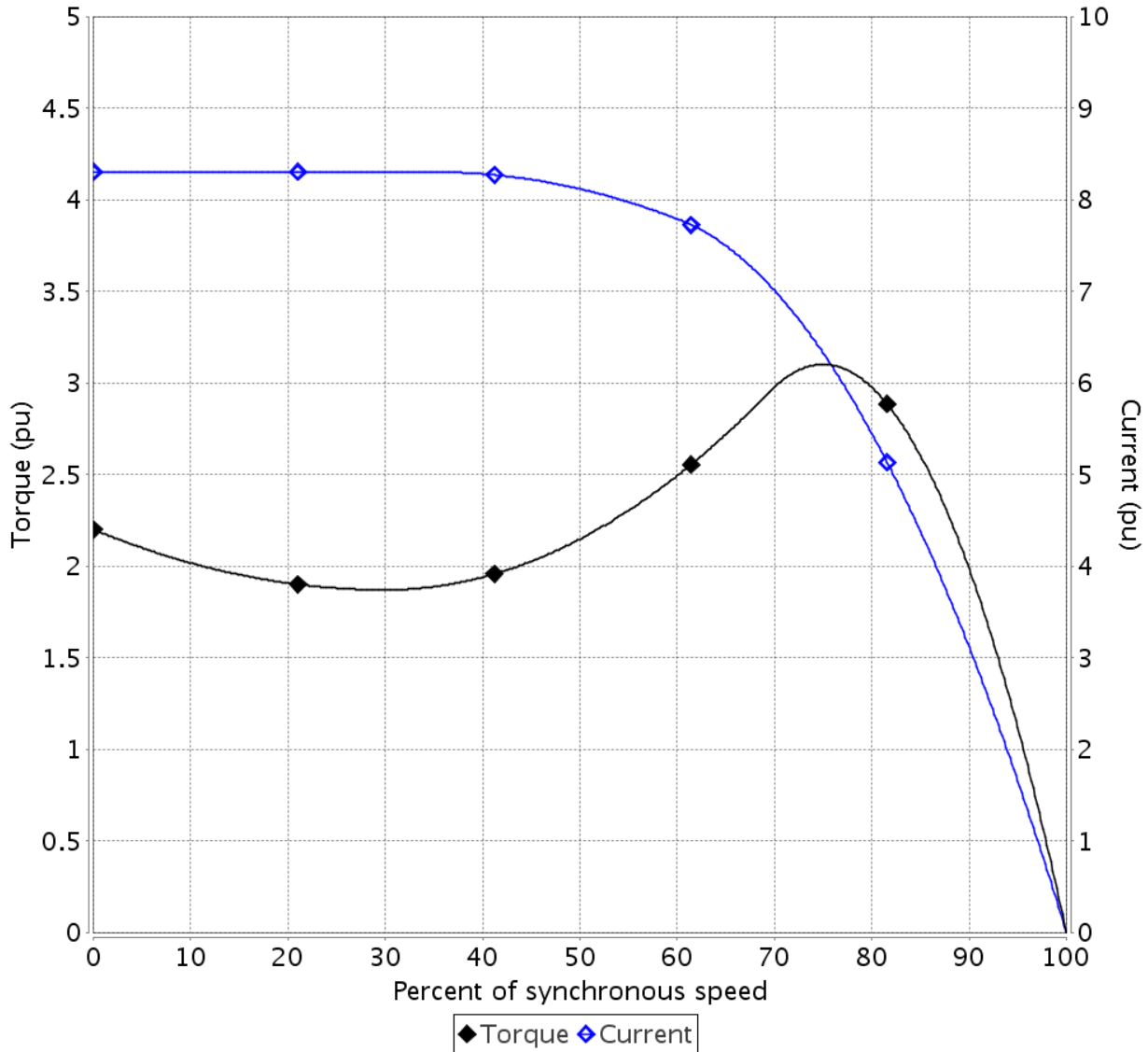
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Moment of inertia (J) : 0.0563 kgm²

LRC : 8.3

Duty cycle : S1

Rated torque : 49.1 Nm

Insulation class : F

Locked rotor torque : 220 %

Service factor : 1.00

Breakdown torque : 310 %

Temperature rise : 80 K

Rated speed : 1460 rpm

Design : N

Locked rotor time 100% : 13 s (hot) 23 s (cold)

Load inertia (J=GD²/4) : 0.0563 kgm²

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EQUIVALENT CIRCUIT

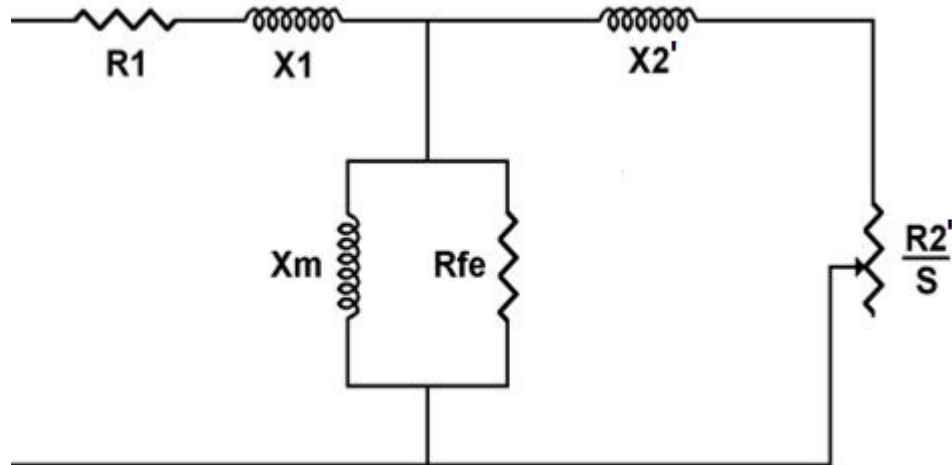
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Rated			
R1	1.3220 omhs / 0.0687 p.u.	X1	2.9124 omhs / 0.1513 p.u.
R2'	0.8769 omhs / 0.0455 p.u.	X2'	3.4945 omhs / 0.1815 p.u.
Rfe	2913.7620 omhs / 151.3383 p.u.	Xm	90.9684 omhs / 4.7248 p.u.

Locked rotor			
R1	1.5605 omhs / 0.0811 p.u.	X1	2.2914 omhs / 0.1190 p.u.
R2'	1.2210 omhs / 0.0634 p.u.	X2'	2.0658 omhs / 0.1073 p.u.
Rfe	2255.7010 omhs / 117.1592 p.u.	Xm	105.5329 omhs / 5.4813 p.u.

T"do	0.2632 s	X/R	2.4188 p.u.
T"d	0.0122 s	RS	0.2163 omhs / 0.0112 p.u.
Ta	0.0077 s	X"d = Xs	4.3573 omhs / 0.2263 p.u.
Zbase	19.2533 omhs	X2(-)	2.9020 omhs / 0.1507 p.u.

All parameters reflected to stator side.

Per phase values, for T connection.

Resistances at 20.0 °C, reactances at rated voltage and frequency.

R1	: Stator resistance	T"do	: Open circuit AC time constant
R2'	: Rotor resistance	T'd	: Short circuit AC time constant
Rfe	: Core loss resistance	Ta	: Short circuit DC time constant
X1	: Stator leakage reactance	X/R	: X/R ratio
X2'	: Rotor leakage reactance	RS	: Supplementary losses resistance
Xm	: Magnetizing reactance	X"d = Xs	: Subtransient reactance
Zbase	: Base impedance	X2(-)	: Negative sequence reactance

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