

# DATA SHEET

## Three Phase Induction Motor - Squirrel Cage



Customer : QUANTUM CONTROLS

Product line : W22 - IE3 Premium Efficiency Multivoltage Product code : 15832315

Frame	: 132S	Cooling method	: IC411 - TEFC
Insulation class	: F	Mounting	: B3T
Duty cycle	: S1	Rotation <sup>1</sup>	: Both
Ambient temperature	: -20 °C to +40 °C	Starting method	: Direct On Line
Altitude	: 1000 m.a.s.l	Approx. weight <sup>3</sup>	: 70.0 kg
Protection degree	: IP55	Moment of inertia (J)	: 0.0234 kgm <sup>2</sup>
Design	: N		

Output	7.5 kW	7.5 kW	7.5 kW
Poles	2	2	2
Frequency	50 Hz	50 Hz	50 Hz
Rated voltage	380/660 V	400/690 V	415 V
Rated current	14.4/8.29 A	14.1/8.17 A	13.9 A
L. R. Amperes	115/66.3 A	120/69.5 A	125 A
LRC	8.0	8.5	9.0
No load current	5.40/3.11 A	6.05/3.51 A	6.60 A
Rated speed	2930 rpm	2935 rpm	2940 rpm
Slip	2.33 %	2.17 %	2.00 %
Rated torque	24.5 Nm	24.4 Nm	24.4 Nm
Locked rotor torque	240 %	280 %	300 %
Pull up torque	200 %	235 %	255 %
Breakdown torque	300 %	330 %	350 %
Service factor	1.00	1.00	1.00
Noise level <sup>2</sup>	63.0 dB(A)	63.0 dB(A)	63.0 dB(A)
Locked rotor time (hot)	9 s	9 s	9 s
Locked rotor time (cold)	16 s	16 s	16 s
Efficiency (%)	50%	89.2	87.9
	75%	90.1	89.7
	100%	90.1	90.2
Power Factor	50%	0.73	0.63
	75%	0.83	0.76
	100%	0.88	0.83

Bearing type	Drive end	Non drive end	Foundation loads
	6308-ZZ	6207-ZZ	
Lubrication interval	-	-	Max. compression : 1923 N
Lubricant amount	-	-	Load type :-
Lubricant type	MOBIL POLYREX EM		Load torque :-
			Load inertia (J=GD <sup>2</sup> /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			1230949897	
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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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(1) Looking the motor from the shaft end.  
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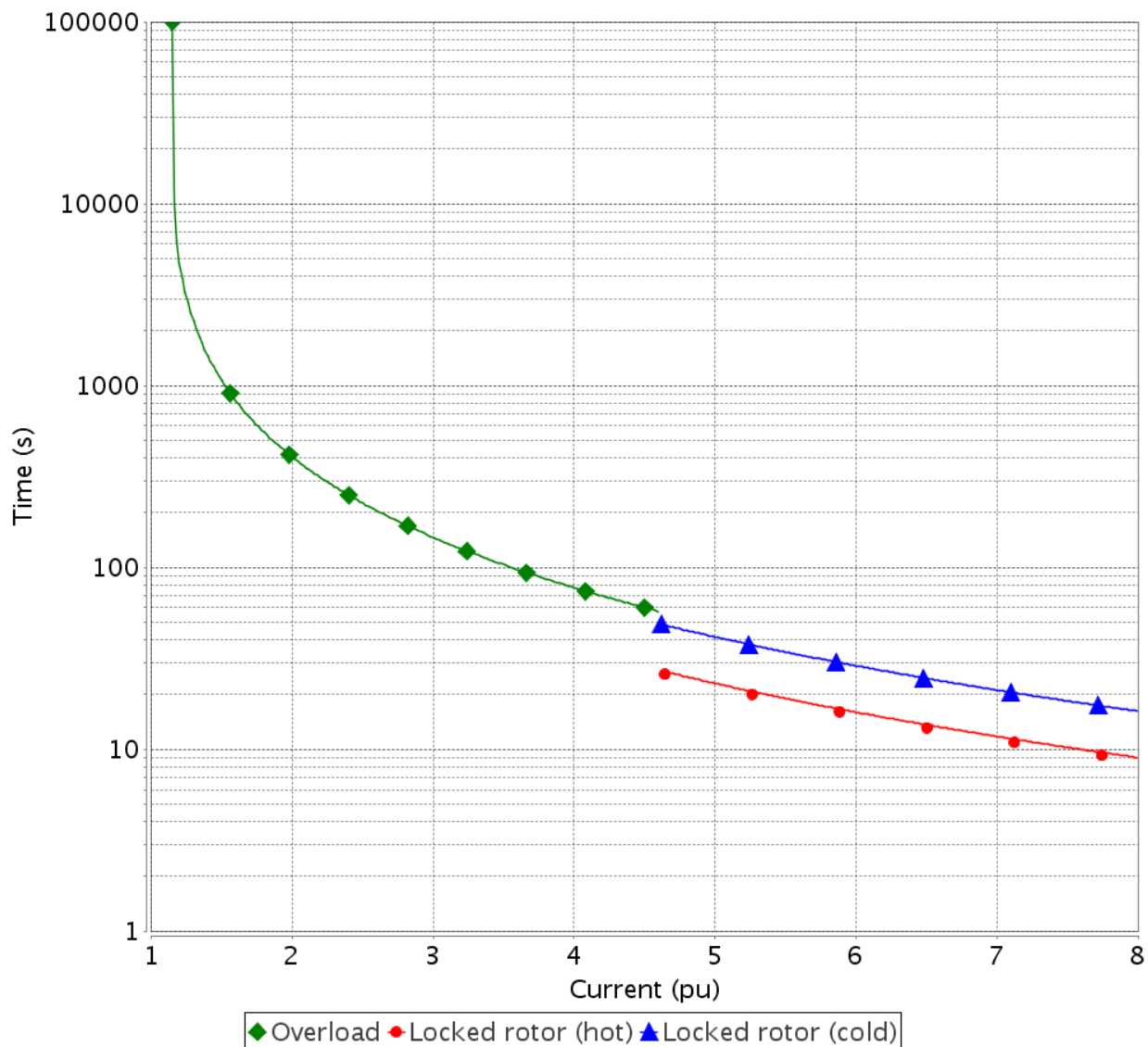
# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



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Performance : 7.5 kW 380/660 V 50 Hz 2P 132S

Rated current	: 14.4/8.29 A	Moment of inertia (J)	: 0.0234 kgm <sup>2</sup>
LRC	: 8.0	Duty cycle	: S1
Rated torque	: 24.5 Nm	Insulation class	: F
Locked rotor torque	: 240 %	Service factor	: 1.00
Breakdown torque	: 300 %	Temperature rise	: 80 K
Rated speed	: 2930 rpm	Design	: N
Heating constant	: 19.6 min		
Cooling constant	: 58.8 min		

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# LOAD PERFORMANCE CURVE

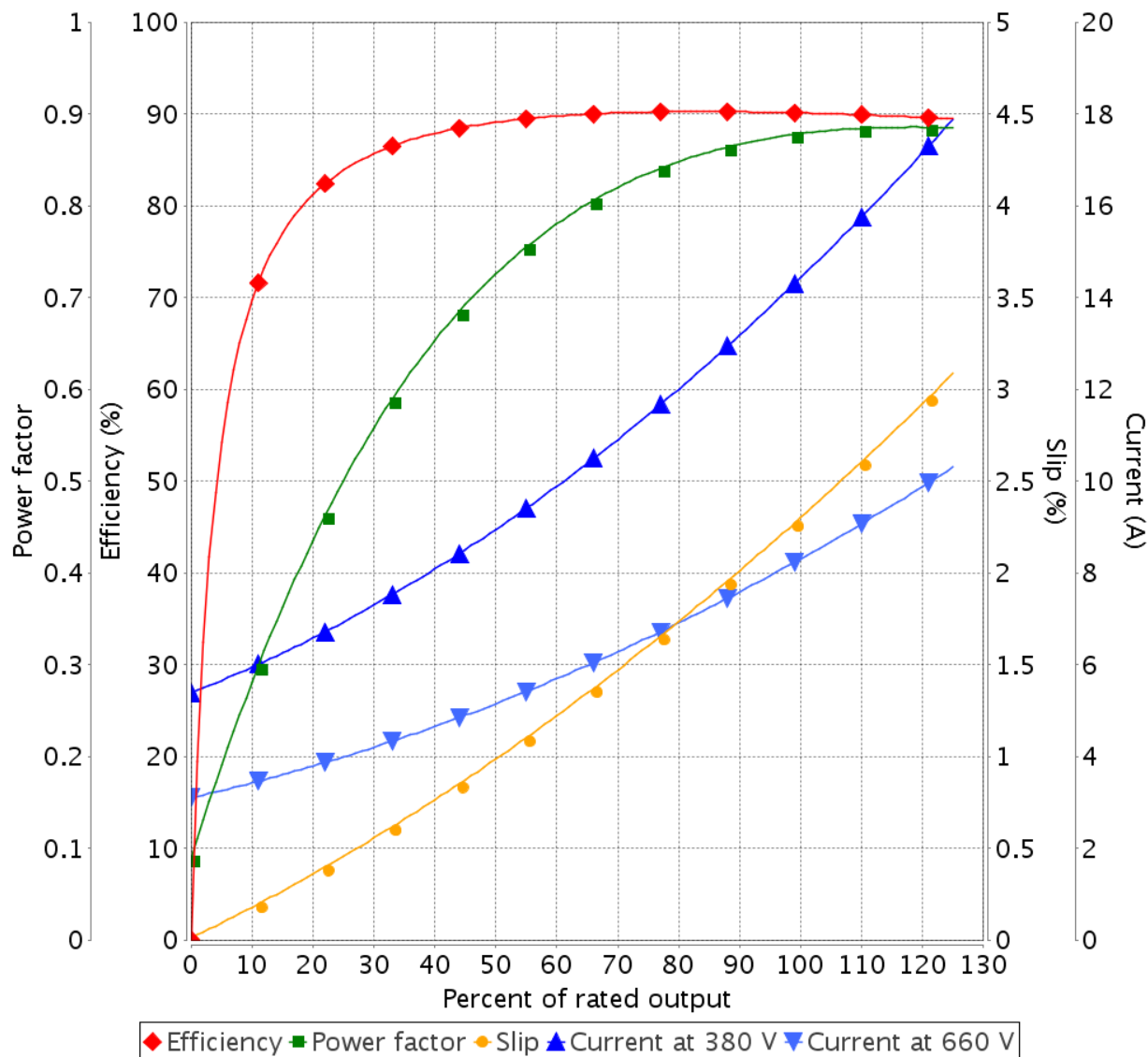
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Product code : 15832315



Performance : 7.5 kW 380/660 V 50 Hz 2P 132S

Rated current : 14.4/8.29 A  
 LRC : 8.0  
 Rated torque : 24.5 Nm  
 Locked rotor torque : 240 %  
 Breakdown torque : 300 %  
 Rated speed : 2930 rpm

Moment of inertia (J) : 0.0234 kgm<sup>2</sup>  
 Duty cycle : S1  
 Insulation class : F  
 Service factor : 1.00  
 Temperature rise : 80 K  
 Design : N

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# VFD OPERATION CURVE

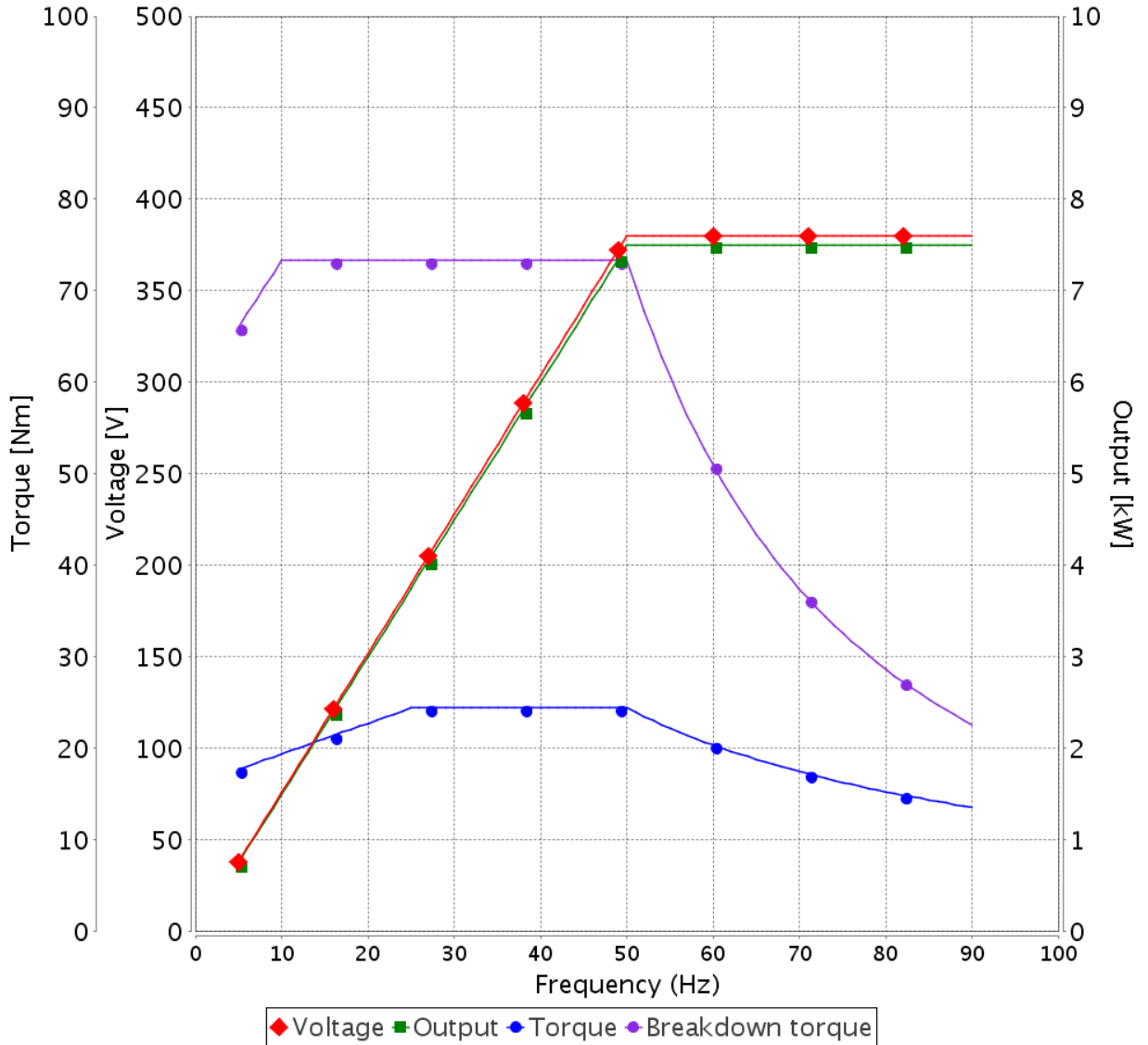
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Performance : 7.5 kW 380/660 V 50 Hz 2P 132S

Rated current : 14.4/8.29 A  
 LRC : 8.0  
 Rated torque : 24.5 Nm  
 Locked rotor torque : 240 %  
 Breakdown torque : 300 %  
 Rated speed : 2930 rpm

Moment of inertia (J) : 0.0234 kgm<sup>2</sup>  
 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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# EQUIVALENT CIRCUIT

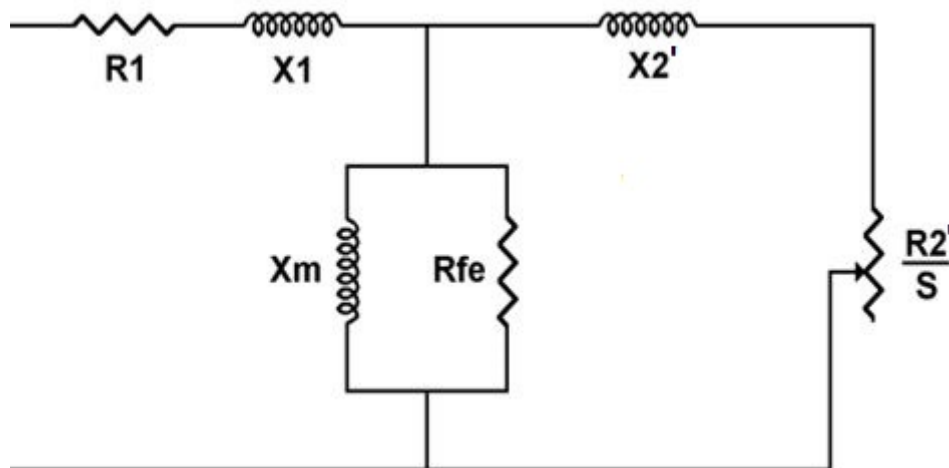
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Rated			
<b>R1</b>	1.3744 omhs / 0.0714 p.u.	<b>X1</b>	2.5090 omhs / 0.1303 p.u.
<b>R2'</b>	0.7379 omhs / 0.0383 p.u.	<b>X2'</b>	3.2310 omhs / 0.1678 p.u.
<b>Rfe</b>	2390.4610 omhs / 124.1585 p.u.	<b>Xm</b>	94.1389 omhs / 4.8895 p.u.

Locked rotor			
<b>R1</b>	1.6891 omhs / 0.0877 p.u.	<b>X1</b>	2.2265 omhs / 0.1156 p.u.
<b>R2'</b>	1.2868 omhs / 0.0668 p.u.	<b>X2'</b>	2.0658 omhs / 0.1073 p.u.
<b>Rfe</b>	2244.3470 omhs / 116.5695 p.u.	<b>Xm</b>	122.2057 omhs / 6.3473 p.u.

<b>T"do</b>	0.3128 s	<b>X/R</b>	2.2322 p.u.
<b>T"d</b>	0.0139 s	<b>RS</b>	0.2159 omhs / 0.0112 p.u.
<b>Ta</b>	0.0071 s	<b>X"d = Xs</b>	4.2923 omhs / 0.2229 p.u.
<b>Zbase</b>	19.2533 omhs	<b>X2(-)</b>	2.9044 omhs / 0.1509 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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