

# DATA SHEET



## Three Phase Induction Motor - Squirrel Cage

Customer	:			
Product line	: Premium Efficiency Three-Phase	Product code :	12809206	
		Catalog # :	.5018OT3E56-S	
Frame	: 56	Cooling method	: IC01 - ODP	
Insulation class	: F	Mounting	: F-1	
Duty cycle	: Cont.(S1)	Rotation <sup>1</sup>	: Both (CW and CCW)	
Ambient temperature	: -20°C to +40°C	Starting method	: Direct On Line	
Altitude	: 1000 m.a.s.l.	Approx. weight <sup>2</sup>	: 20.7 lb	
		Moment of inertia (J)	: 0.0584 sq.ft.lb	
Output [HP]	0.5	0.5	0.5	
Poles	4	4	4	
Frequency [Hz]	60	50	50	
Rated voltage [V]	208-230/460	190/380	220/415	
Rated current [A]	1.90-1.72/0.861	1.89/0.943	1.79/0.948	
L. R. Amperes [A]	13.7-12.4/6.20	10.9/5.47	10.9/5.78	
LRC [A]	7.2x(Code L)	5.8x(Code J)	6.1x(Code K)	
No load current [A]	1.12-1.30/0.650	1.23/0.617	1.29/0.683	
Rated speed [RPM]	1765	1450	1455	
Slip [%]	1.94	3.33	3.00	
Rated torque [ft.lb]	1.49	1.81	1.80	
Locked rotor torque [%]	240	180	200	
Breakdown torque [%]	330	260	290	
Service factor		1.25	1.25	
Temperature rise	80 K	80 K	80 K	
Locked rotor time	48s (cold) 27s (hot)	55s (cold) 31s (hot)	50s (cold) 28s (hot)	
Noise level <sup>2</sup>	52.0 dB(A)	49.0 dB(A)	49.0 dB(A)	
Efficiency (%)	25%	67.5	71.5	68.9
	50%	70.0	72.6	70.6
	75%	75.5	76.6	75.7
	100%	78.2	77.4	77.2
Power Factor	25%	0.26	0.31	0.28
	50%	0.47	0.55	0.51
	75%	0.60	0.68	0.64
	100%	0.69	0.77	0.73
Bearing type	: Drive end 6203 ZZ Non drive end 6202 ZZ	Foundation loads		
Sealing	: Without Without Bearing Seal Bearing Seal	Max. traction	: 41 lb	
		Max. compression	: 61 lb	
Lubrication interval	: - -			
Lubricant amount	: - -			
Lubricant type	: Mobil Polyrex EM			
Notes USABLE @208V SF 1.00				
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 changes 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 NEMA MG-1.		
Rev.	Changes Summary	Performed	Checked	Date
Performed by				
Checked by			Page	Revision
Date	11/04/2022		1 / 13	

# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Premium Efficiency Three-Phase

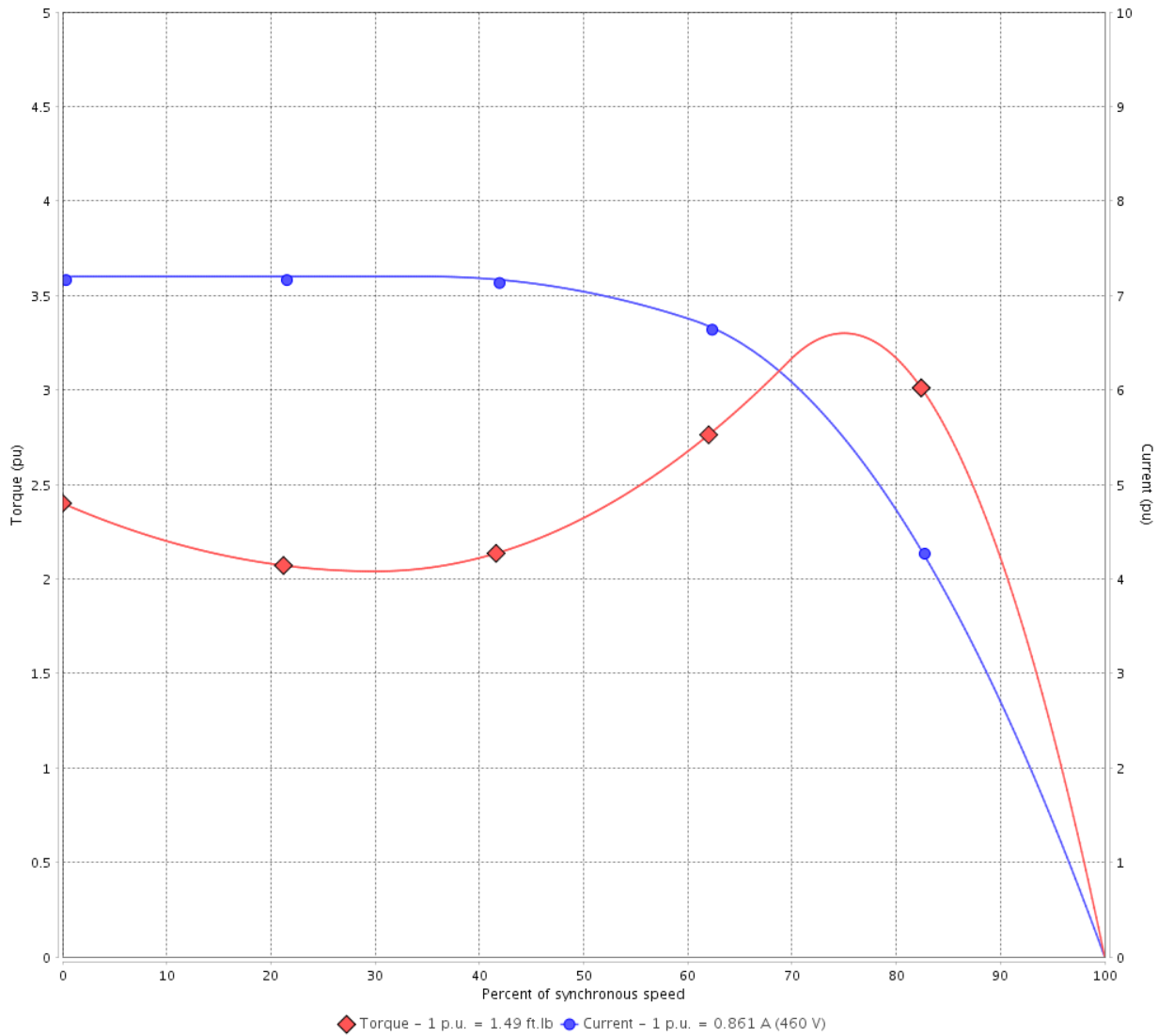
Product code :

12809206

Catalog # :

.5018OT3E56-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.90-1.72/0.861 A  
 LRC : 7.2  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 330 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

Locked rotor time : 48s (cold) 27s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 2 / 13	Revision
Checked by				
Date	11/04/2022			

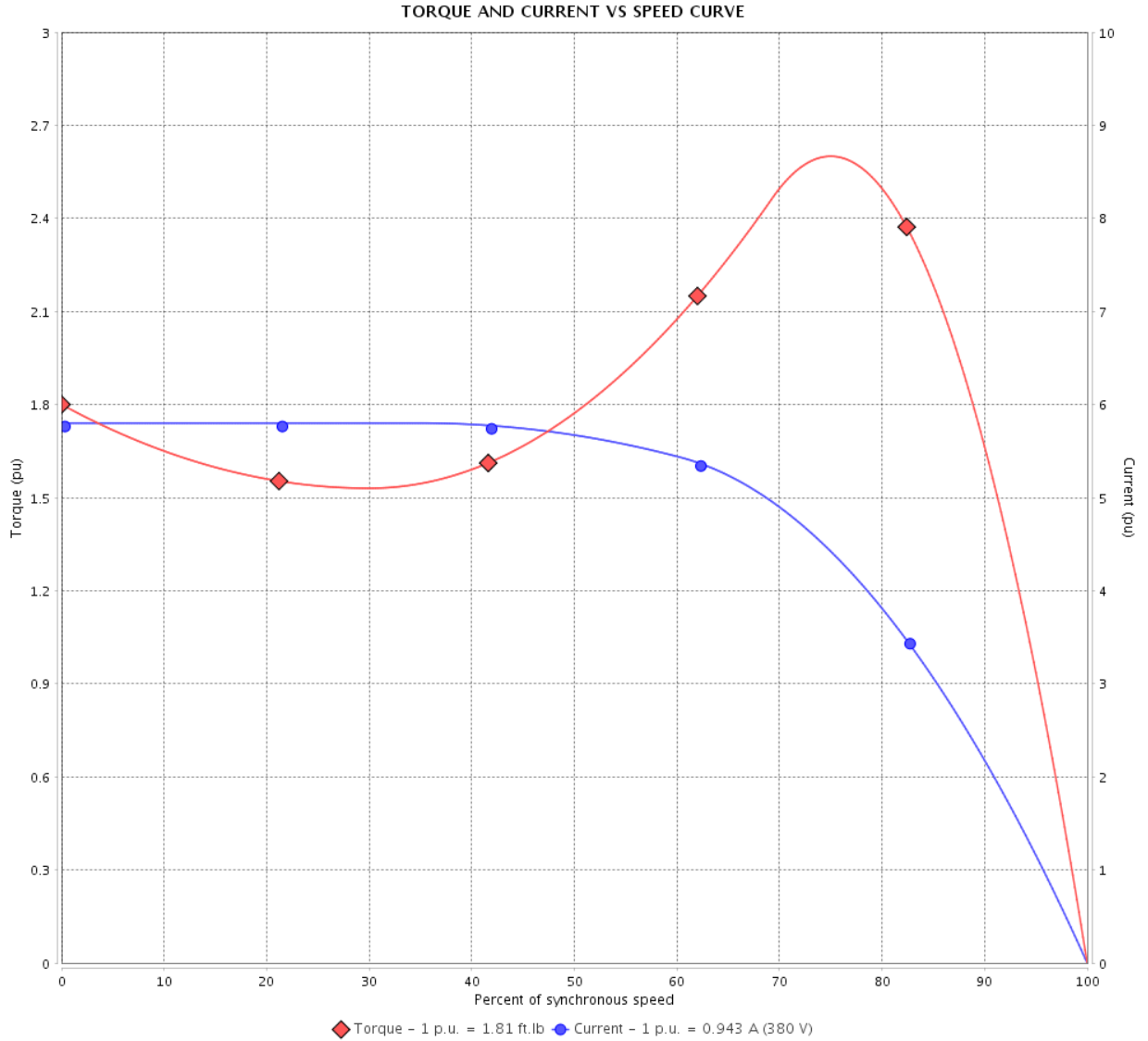
# TORQUE AND CURRENT VS SPEED CURVE



## Three Phase Induction Motor - Squirrel Cage

Customer :

Product line : Premium Efficiency Three-Phase      Product code : 12809206  
 Catalog # : .5018OT3E56-S



Performance : 190/380 V 50 Hz 4P

Rated current : 1.89/0.943 A	Moment of inertia (J) : 0.0584 sq.ft.lb
LRC : 5.8	Duty cycle : Cont.(S1)
Rated torque : 1.81 ft.lb	Insulation class : F
Locked rotor torque : 180 %	Service factor : 1.25
Breakdown torque : 260 %	Temperature rise : 80 K
Rated speed : 1450 rpm	

Locked rotor time : 55s (cold) 31s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 3 / 13	Revision
Checked by				
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# TORQUE AND CURRENT VS SPEED CURVE

Three Phase Induction Motor - Squirrel Cage



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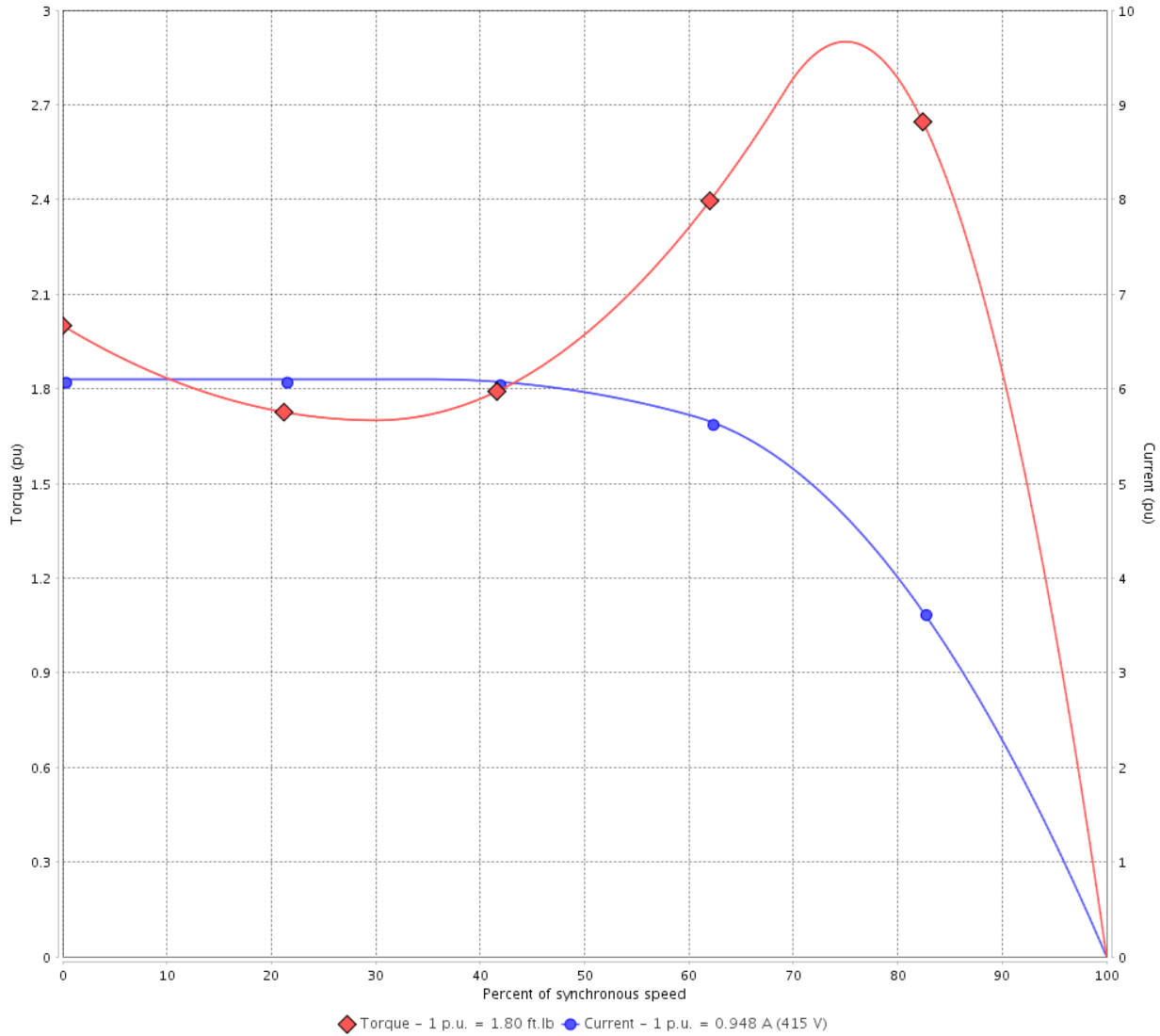
Product code :

12809206

Catalog # :

.5018OT3E56-S

TORQUE AND CURRENT VS SPEED CURVE



Performance : 220/415 V 50 Hz 4P

Rated current : 1.79/0.948 A  
 LRC : 6.1  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K

Locked rotor time : 50s (cold) 28s (hot)

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 4 / 13	Revision
Checked by				
Date	11/04/2022			

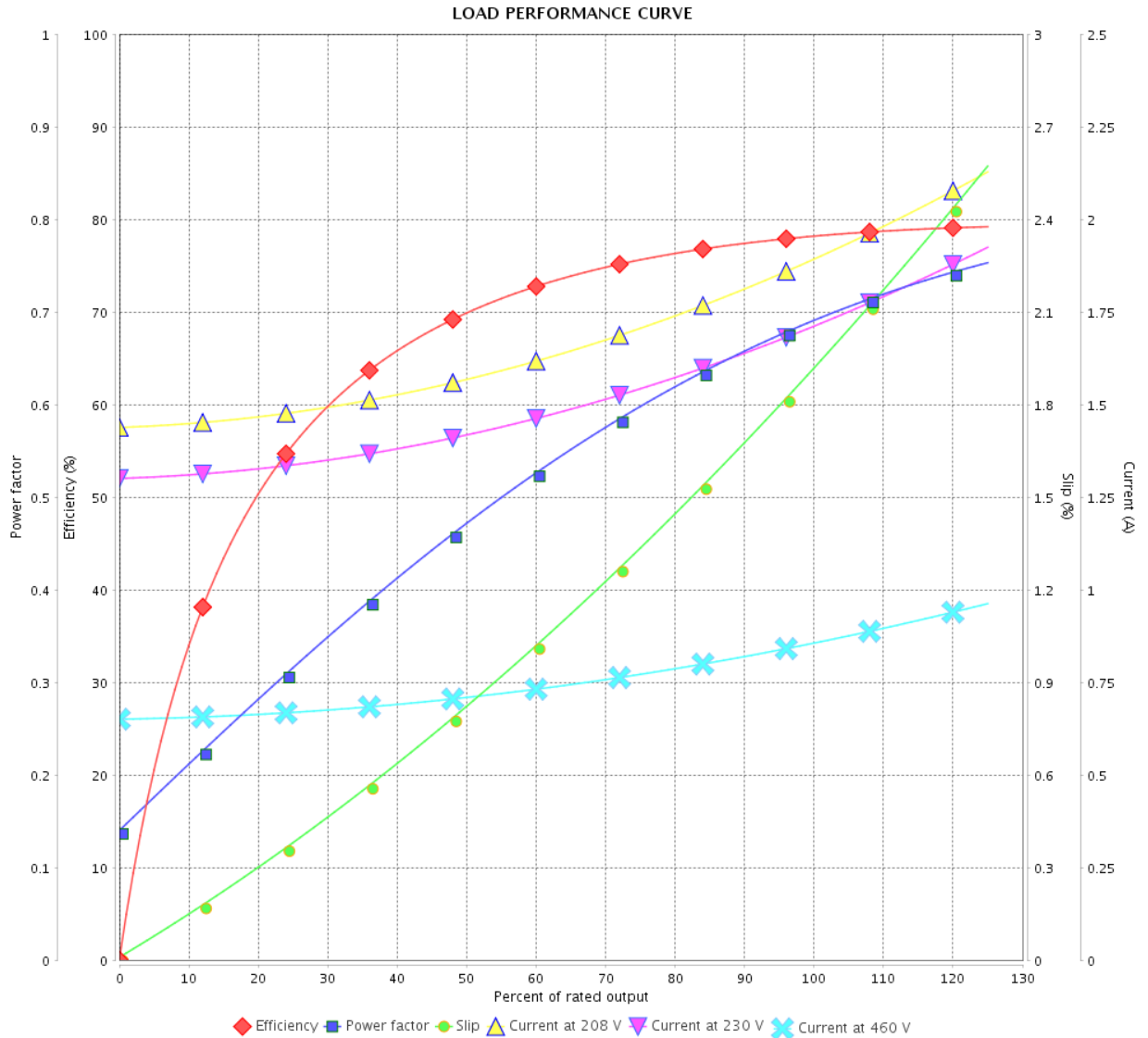
# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

Product line : Premium Efficiency Three-Phase      Product code : 12809206  
 Catalog # : .5018OT3E56-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.90-1.72/0.861 A  
 LRC : 7.2  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 330 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

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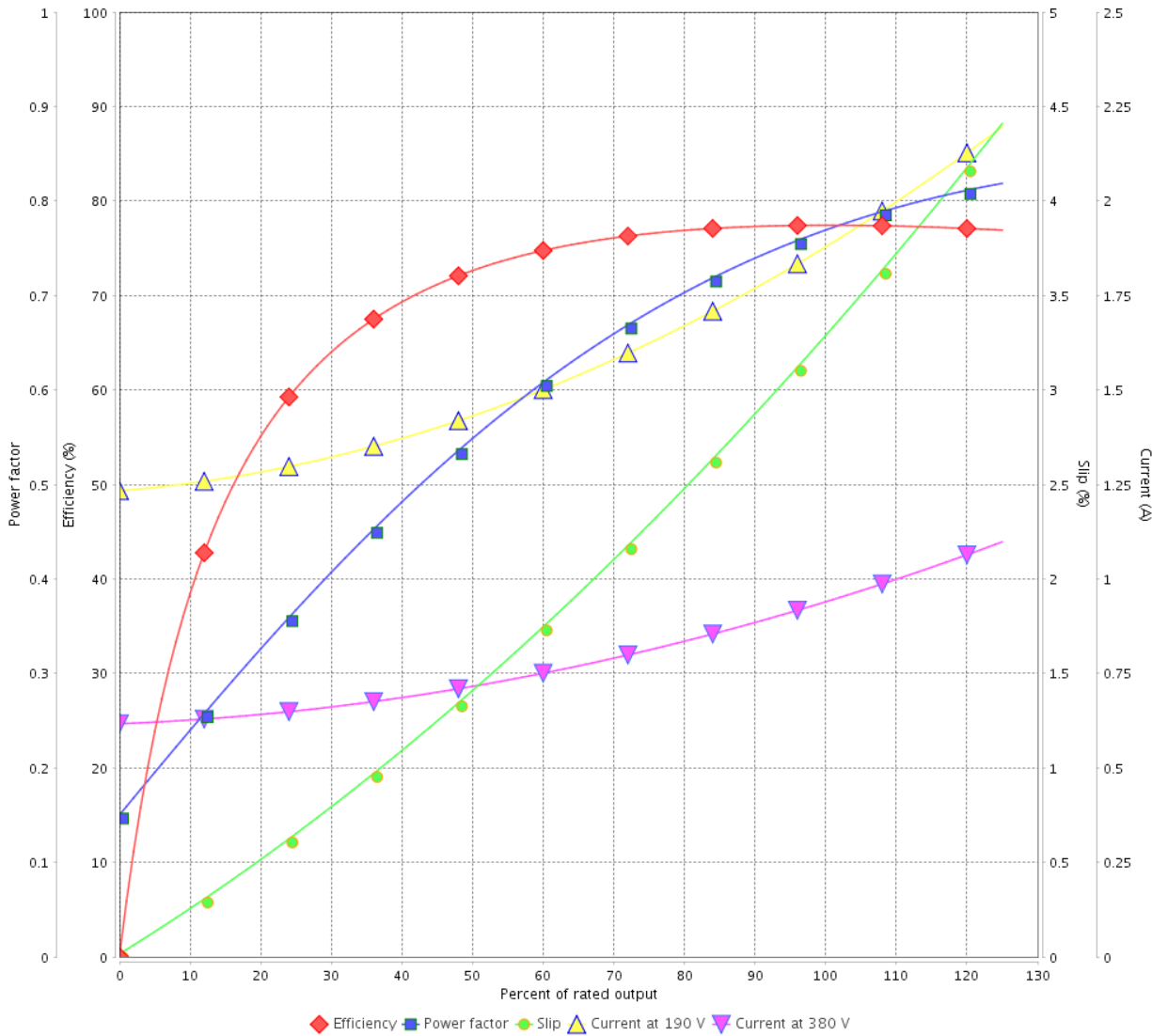
Product code :

12809206

Catalog # :

.5018OT3E56-S

LOAD PERFORMANCE CURVE



Performance : 190/380 V 50 Hz 4P

Rated current : 1.89/0.943 A  
 LRC : 5.8  
 Rated torque : 1.81 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 260 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 6 / 13	Revision
Checked by				
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# LOAD PERFORMANCE CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

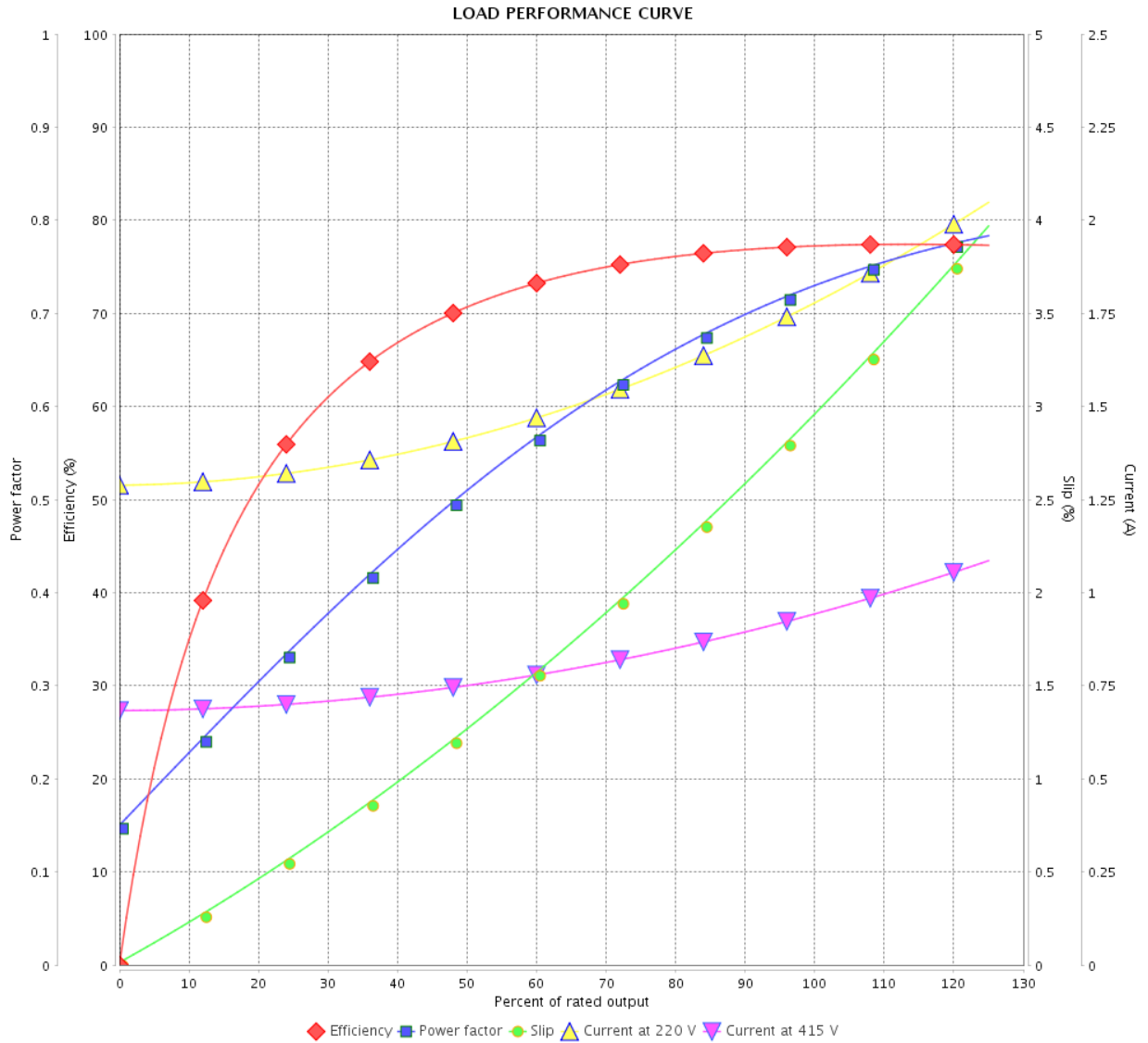
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Product code :

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.5018OT3E56-S



Performance : 220/415 V 50 Hz 4P

Rated current : 1.79/0.948 A  
 LRC : 6.1  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
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Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page	Revision
Checked by				
Date				
			7 / 13	

# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



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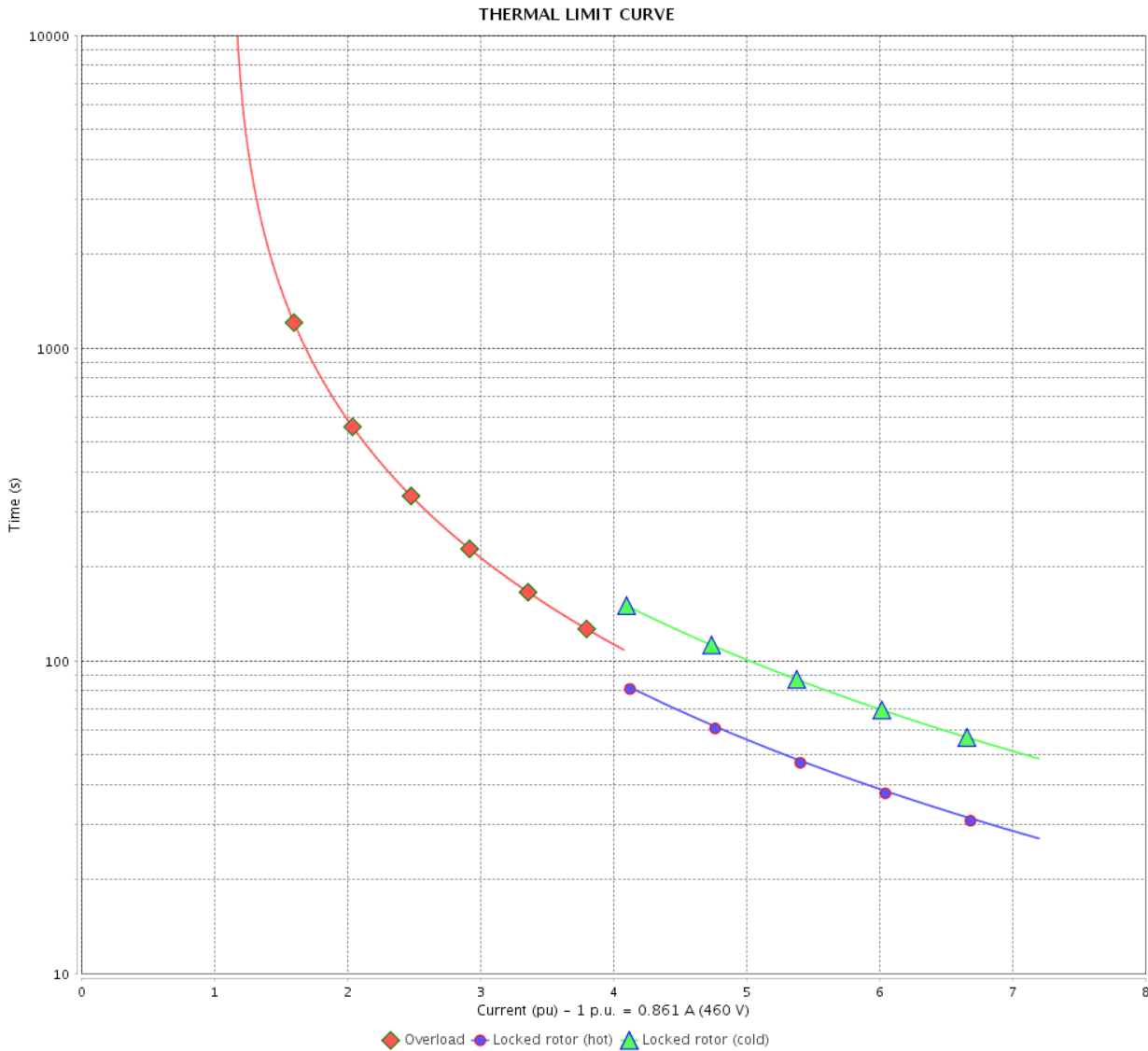
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12809206

Catalog # :

.5018OT3E56-S



Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.90-1.72/0.861 A  
 LRC : 7.2  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 330 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

Heating constant

Cooling constant

Rev.	Changes Summary	Performed	Checked	Date
Performed by	11/04/2022	Page		Revision
Checked by		8 / 13		
Date				



# THERMAL LIMIT CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer : \_\_\_\_\_

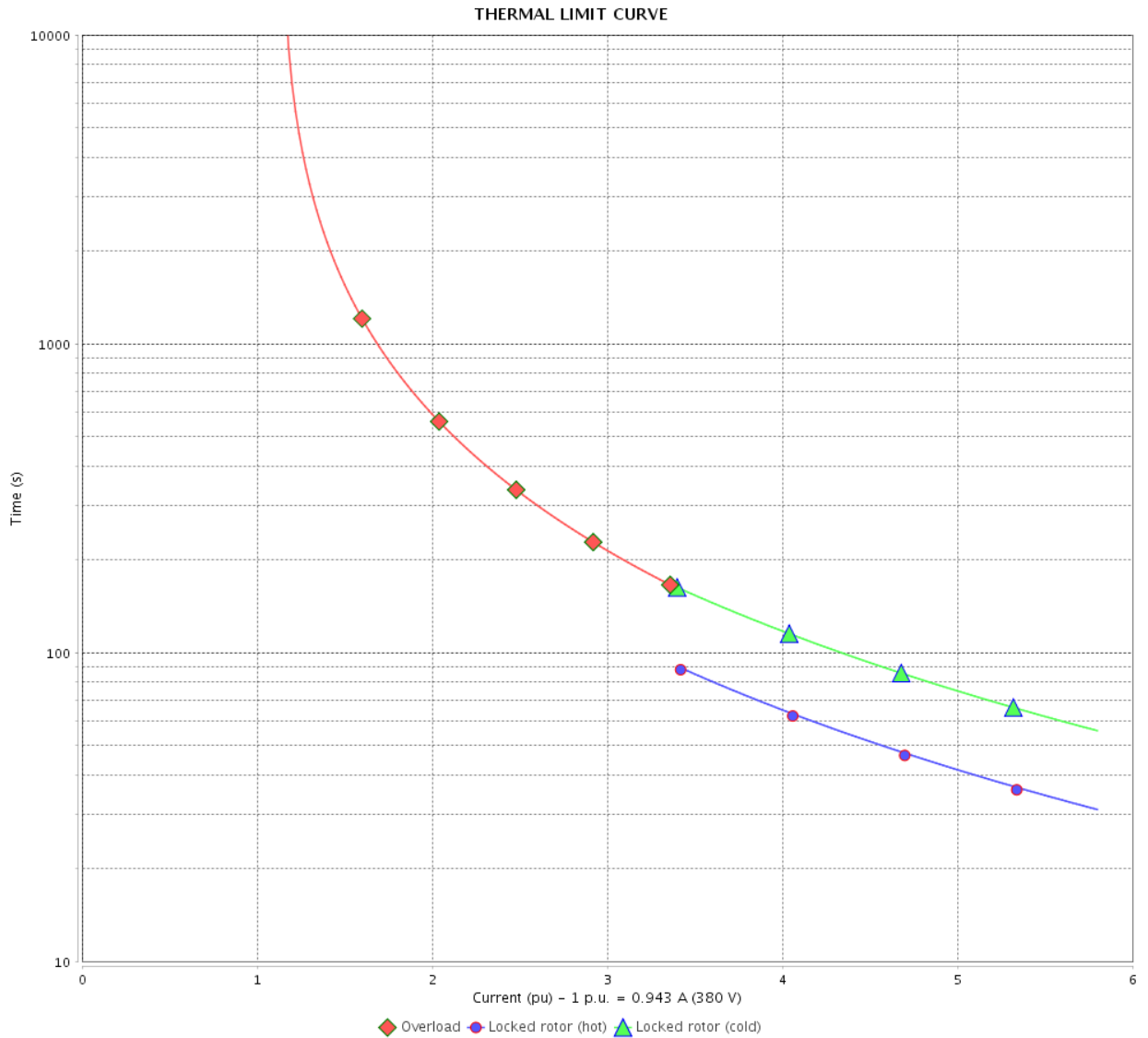
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Performance : 190/380 V 50 Hz 4P

Rated current : 1.89/0.943 A  
 LRC : 5.8  
 Rated torque : 1.81 ft.lb  
 Locked rotor torque : 180 %  
 Breakdown torque : 260 %  
 Rated speed : 1450 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
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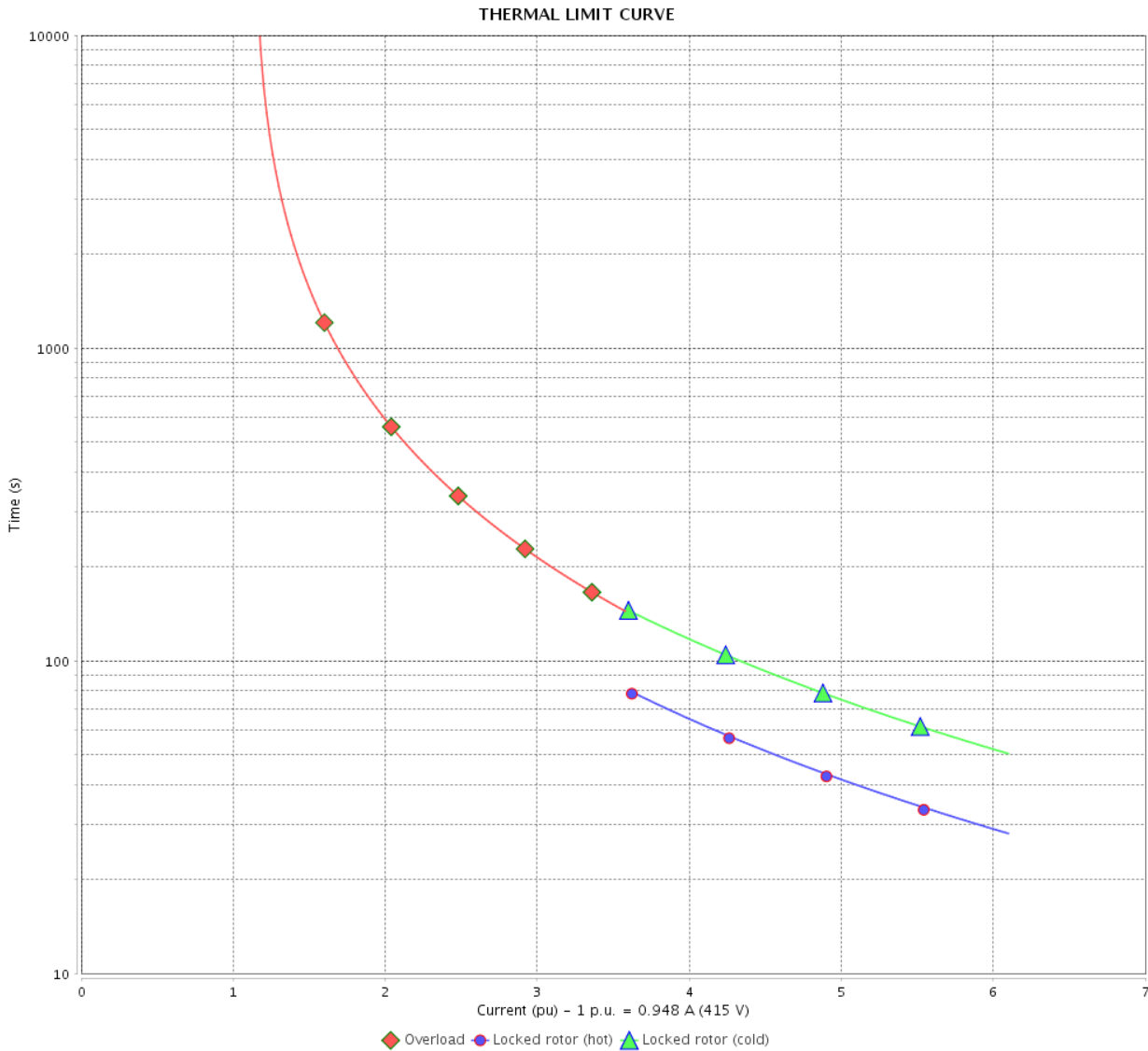
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Performance : 220/415 V 50 Hz 4P

Rated current : 1.79/0.948 A  
 LRC : 6.1  
 Rated torque : 1.80 ft.lb  
 Locked rotor torque : 200 %  
 Breakdown torque : 290 %  
 Rated speed : 1455 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor : 1.25  
 Temperature rise : 80 K

Heating constant

Cooling constant

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Performed by		Page		Revision
Checked by		10 / 13		
Date		11/04/2022		

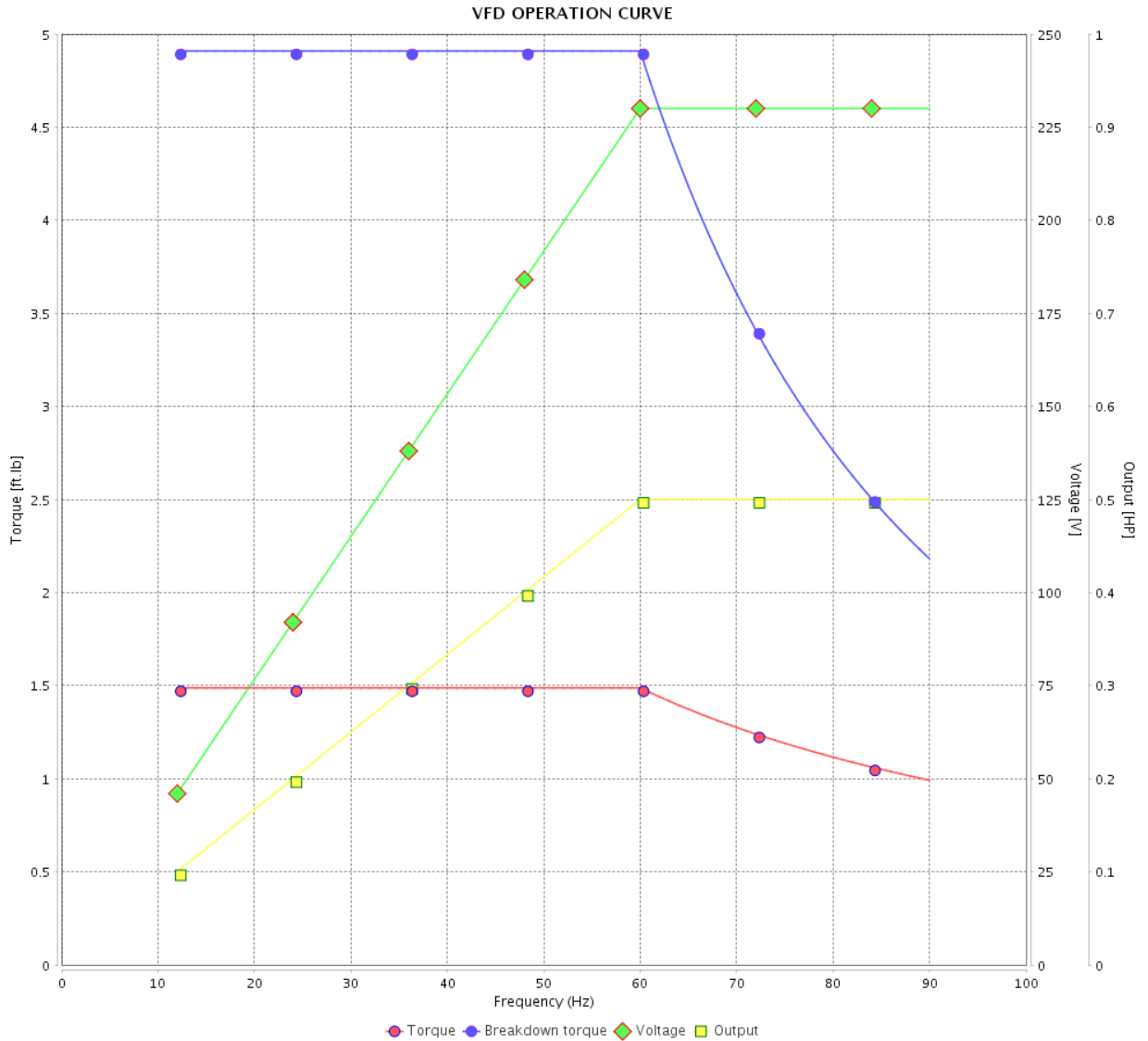
# VFD OPERATION CURVE

## Three Phase Induction Motor - Squirrel Cage



Customer :

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Performance : 208-230/460 V 60 Hz 4P

Rated current : 1.90-1.72/0.861 A  
 LRC : 7.2  
 Rated torque : 1.49 ft.lb  
 Locked rotor torque : 240 %  
 Breakdown torque : 330 %  
 Rated speed : 1765 rpm

Moment of inertia (J) : 0.0584 sq.ft.lb  
 Duty cycle : Cont.(S1)  
 Insulation class : F  
 Service factor :  
 Temperature rise : 80 K

Rev.	Changes Summary	Performed	Checked	Date
Performed by			Page 11 / 13	Revision
Checked by				
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# VFD OPERATION CURVE

Three Phase Induction Motor - Squirrel Cage



Customer :

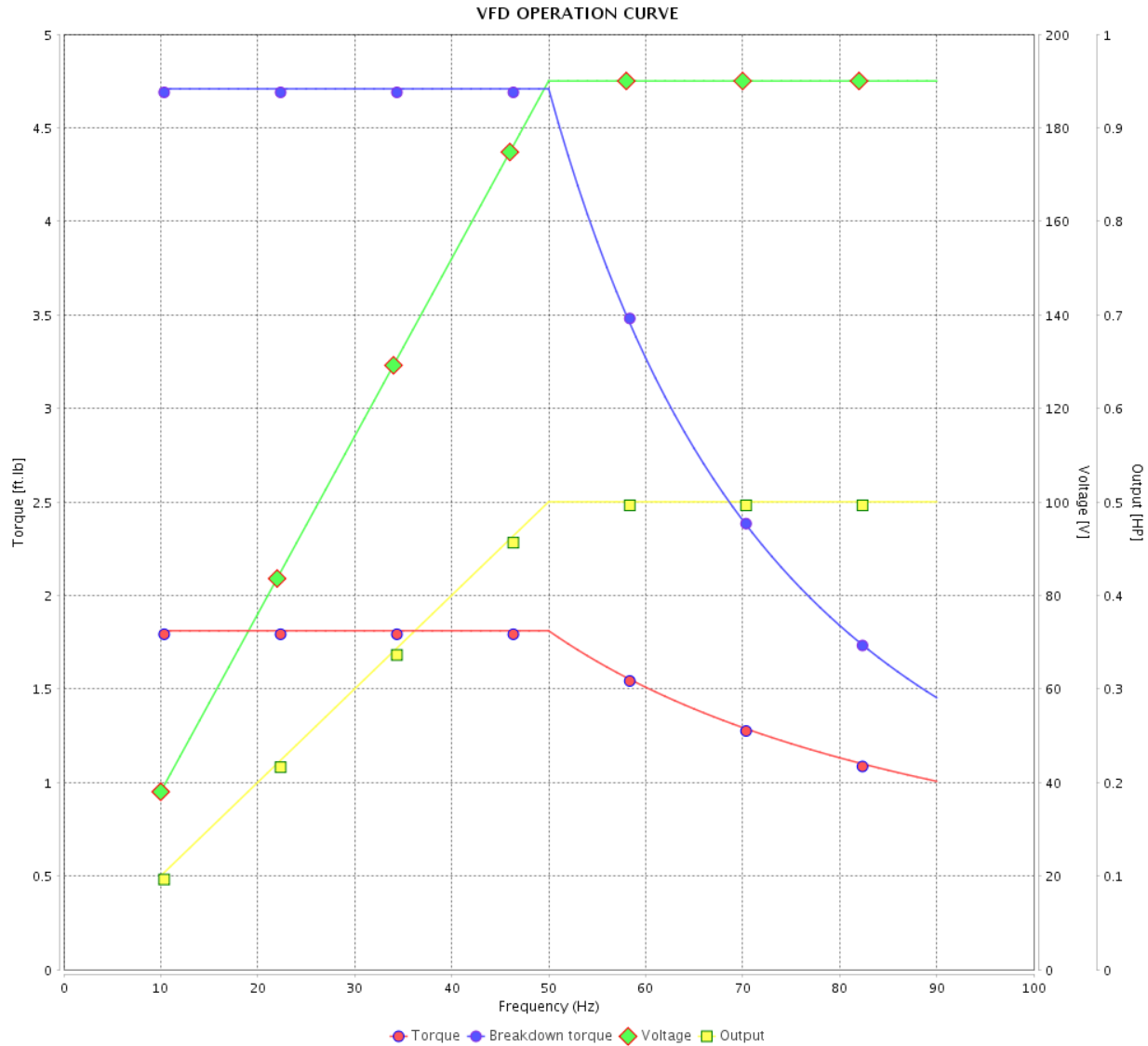
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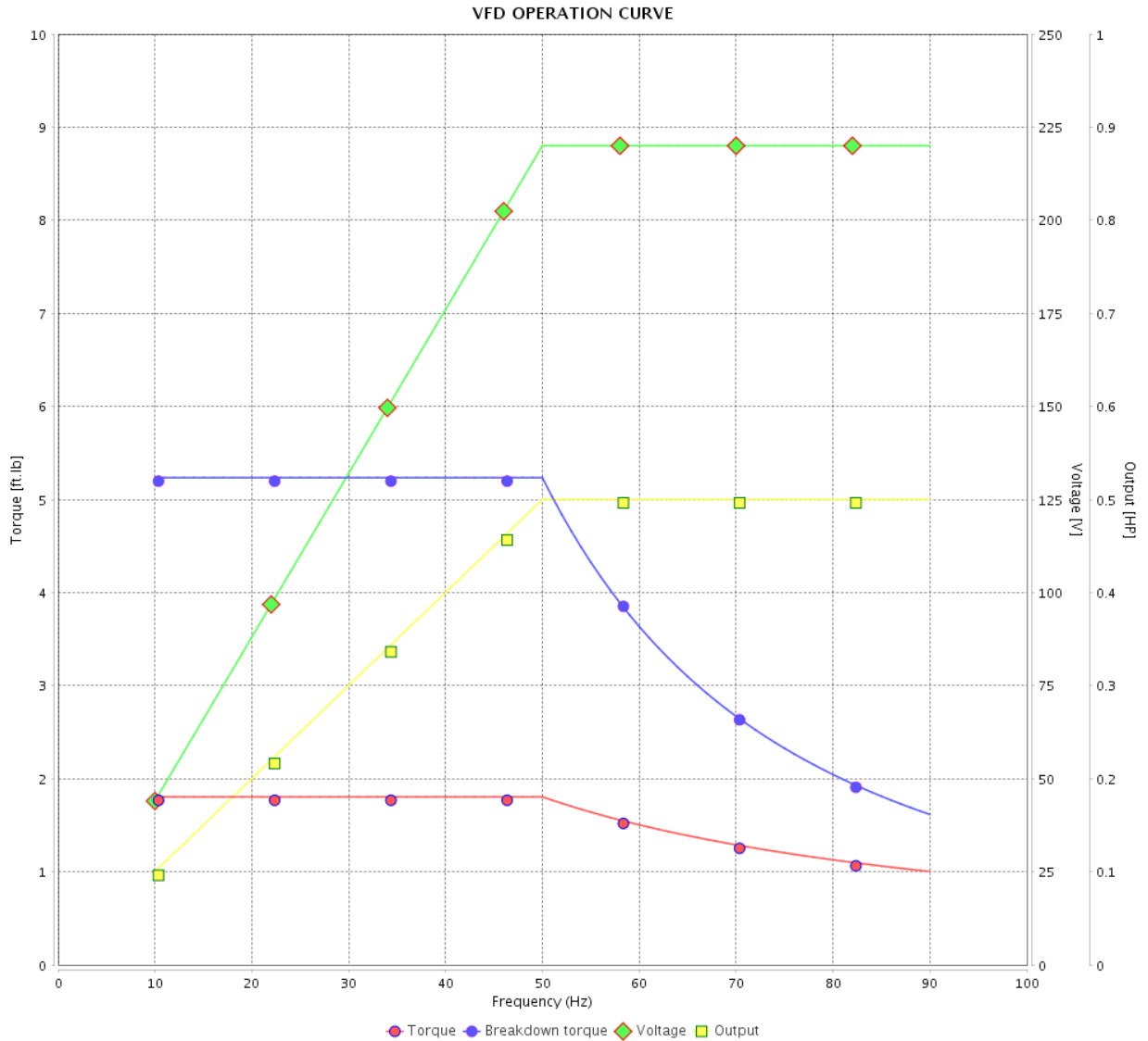
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 Duty cycle : Cont.(S1)  
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 Temperature rise : 80 K

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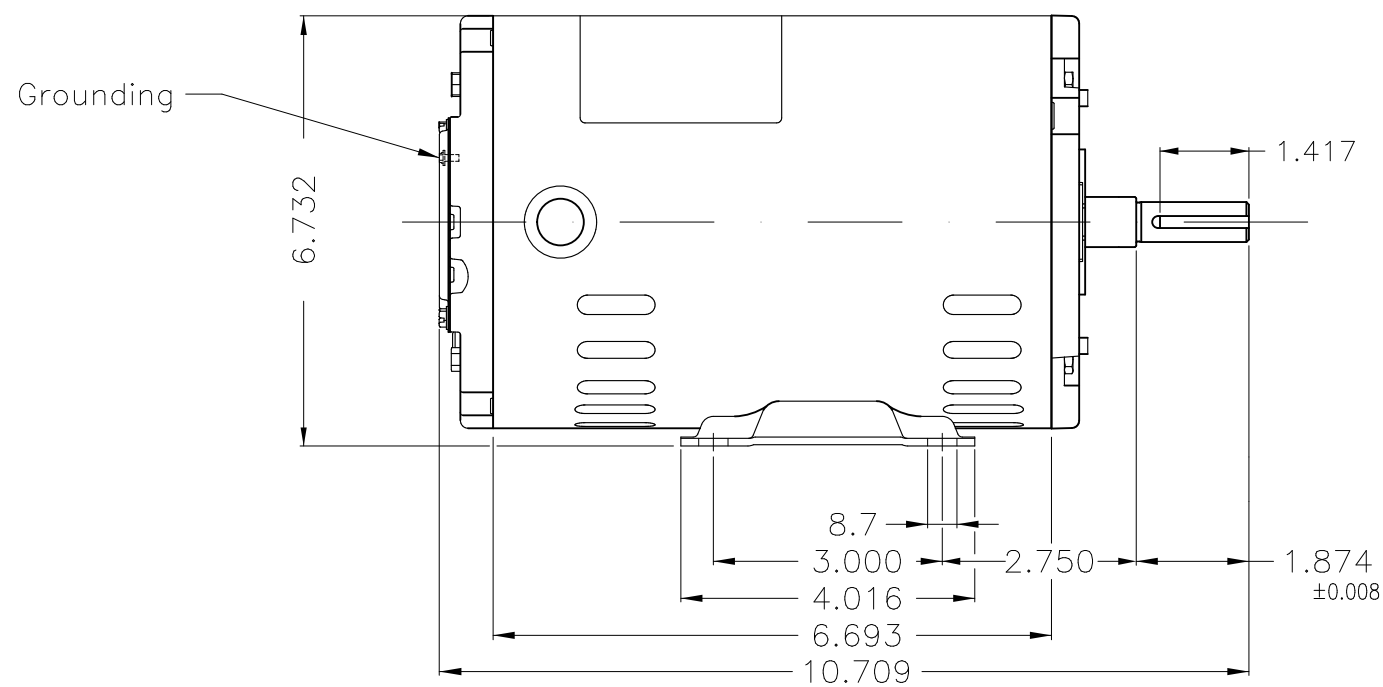
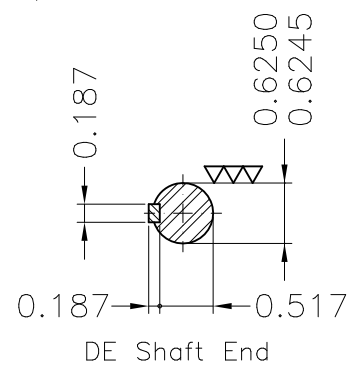
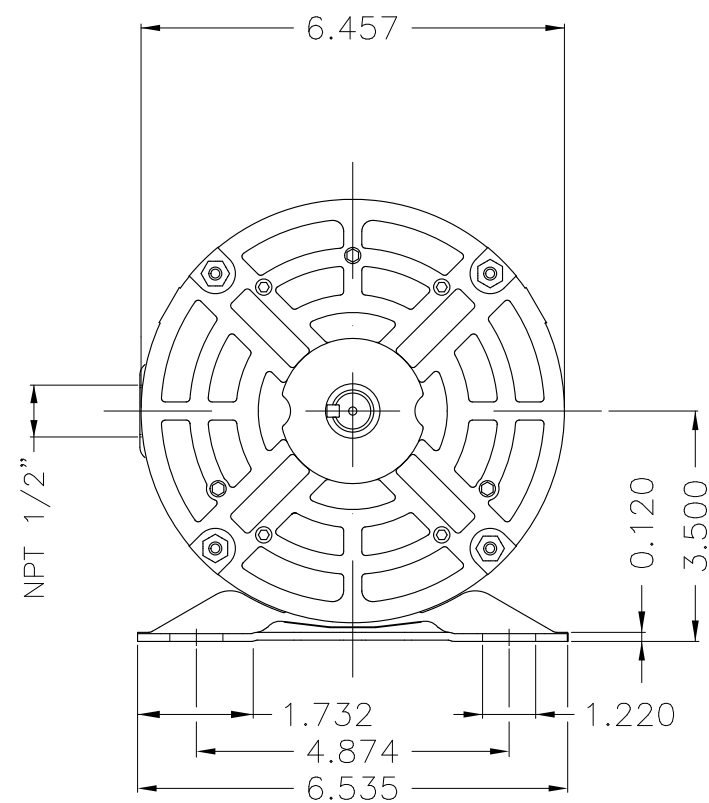
A

B

C

D

E



Without coating									
Mounting F-1/B3R(D)									
ECM	LOC	SUMMARY OF MODIFICATIONS			EXECUTED	CHECKED	RELEASED	DATE	VER
EXECUTED	PIRWUSER	THREE PH. MOTOR ROLLED STEEL PREM. EFF.			PREVIEW	WDD	SHEET	1 / 1	
CHECKED		FRAME 56 IP21 ODP							
RELEASED									
REL DT.	WMO	Jaragua do Sul	Product Engineering						

0.5 HP 04 Poles 60 Hz

A



**NEMA**  
**Premium**



MADE IN BRAZIL

**MAT: 12809206**

**W01.T00IC0X0X**

**MODEL 50180T3E56-S**

**31MAR2022 B/N:**



PH 3	Hz 60	HP 0.50
FR 56		KW 0.37
DUTY CONT.		V 230/460
ALT 1000 m.a.s.l.		A 1.72/0.861
INS CL F AT 80K		SFA 2.15/1.08
AMB 40°C	DES -	SF 1.25
ENCL ODP	CODE L	PF 0.69
USABLE @ 208V 1.90A		RPM 1765
SF1.00		AVG.F.L. 78.2% EFF.

**ALTERNATE RATING: 0.50HP 50Hz 190-220/380-415V SF1.25**  
**1.89-1.81/0.943-0.959A 1450RPM EFF 78.7% (IE2) IEC 60034-1**

Inverter duty motor For 80Hz use on VPWM 1000:1 VT, 5:1 CT

DE 6203-ZZ	ODE 6202-ZZ	MOBIL POLYREX EM
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T1-BLU T2-WHT  
 T3-ORG T4-YEL  
 T5-BLK T6-GRY  
 T7-PNK T8-RED  
 T9-BRK RED

INTERCHANGE ANY TWO LINE WIRES TO REVERSE THE ROTATION

**WARNING:** Motor must be grounded in accordance with local and national electrical codes to prevent serious electrical shocks. Disconnect power source before servicing unit.



**AVERTISSEMENT:** Le moteur doit être mis à la terre conformément aux codes électriques locaux et nationaux afin d'éviter tout choc électrique grave. Déconnectez l'alimentation avant l'entretien de la machine.

