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Inverter (Vector) Duty Motors

Model No: 256THTCD8038
Catalog No: Y510A

Inverter (Vector) Duty Motor, 20 HP, 3 Ph, 60 Hz, 230/460 V, 1800 RPM, 256TC Frame, TENV

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Product Information Packet: Model No: 256THTCD8038, Catalog No: Y510A Inverter (Vector) Duty Motor, 20 HP, 3 Ph, 60 Hz, 230/460 V, 1800 RPM, 256TC Frame, TENV

Nameplate Specifications

Phase	**3**	Output HP	**20 Hp**
Output KW	**14.9 kW**	Voltage	**230/460 V**
Speed	**1778 r/min**	Synchronous RPM	**1800 r/min**
Service Factor	**1.00**	Frame	**256TC**
Enclosure	**Totally Enclosed Non Ventilated**	Thermal Protection	**Thermostat**
Efficiency	**93.6 %**	Ambient Temperature	**40 °C**
Frequency	**60 Hz**	Current	**49.0/24.5 A**
Power Factor	**84**	Duty	**Continuous**
Insulation Class	**H**	Design Code	**INV**
KVA Code	**M**	Drive End Bearing Size	**6309**
Opp Drive End Bearing Size	**6209**	UL	**Recognized**
CSA	**Y**	CE	**Y**
IP Code	**55**	Number of Speeds	**1**

Technical Specifications

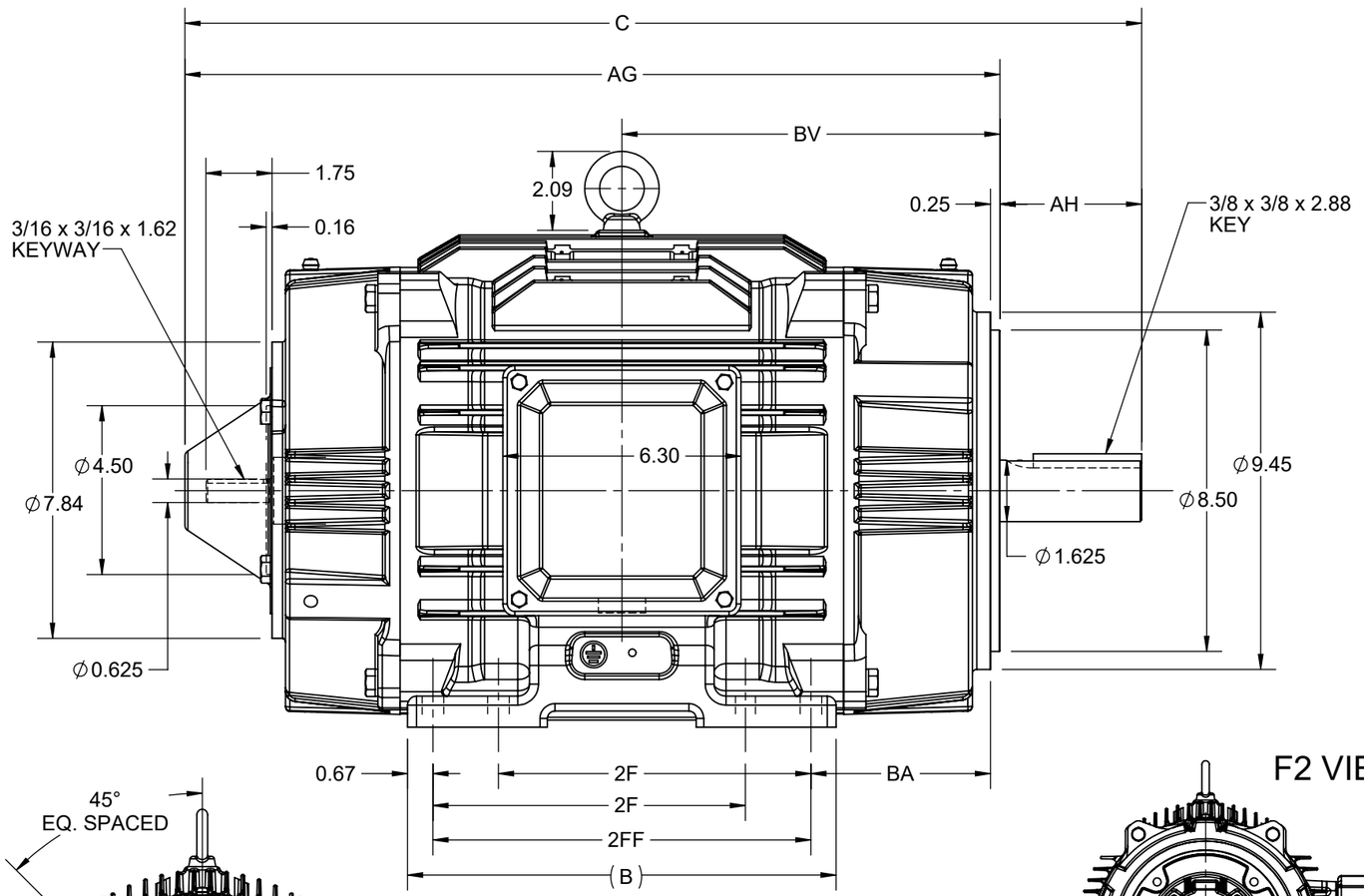
Electrical Type	**Squirrel Cage Inverter Duty**	Starting Method	**Inverter Only**
Poles	**4**	Rotation	**Reversible**
Resistance Main	**.333 O**	Mounting	**Rigid Base**
Motor Orientation	**Horizontal**	Drive End Bearing	**Ball**
Opp Drive End Bearing	**Ball**	Frame Material	**Cast Iron**
Shaft Type	**T**	Shaft Diameter	**1.625 in**
Assembly/Box Mounting	**F1/F2 Capable**	Inverter Load	**Constant 2000:1**

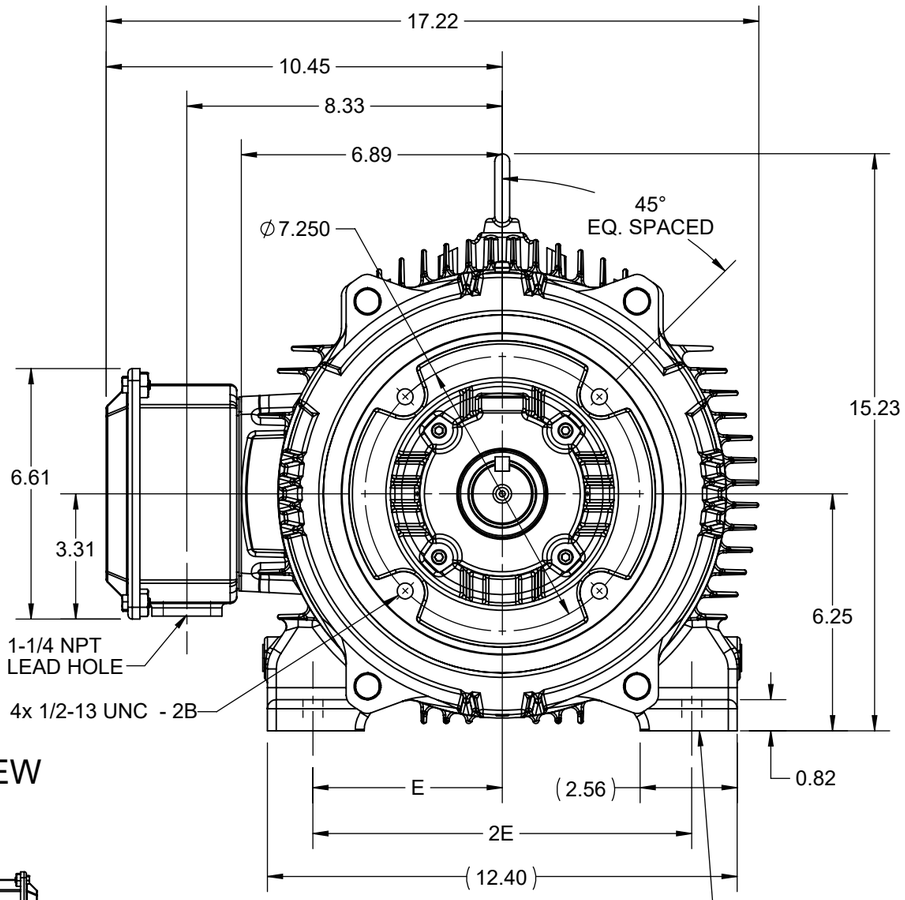
Drawings

Connection Drawing	**EE7308T**	Outline Drawing	**SS209617-200**

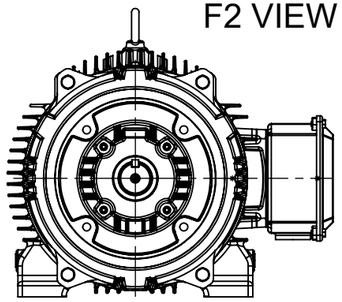
This is an uncontrolled document once printed or downloaded and is subject to change without notice. Date Created: 15/10/2026

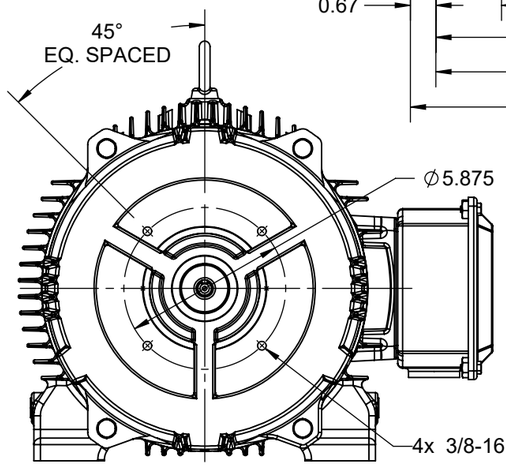
DASH NO.	B	C	E	2E	2F	2FF	AG	AH	BA	BV	MOUNTING	FRAME
100	9.60	23.56	5.00	10.00	---	8.25	19.72	3.75	4.75	9.14	F1 OR F2	254TC
200	11.34	25.31			8.25	10.00	21.56			10.00		254/256TC





F2 VIEW





ODE VIEW
COVER REMOVED

DRAWING REVISION	REVISION BY	REV DATE/© DATE
D	SB	07/23/2025
REQUEST NUMBER	APPROVED BY	DATE
CR-0023556	SBD	07/23/2025

REQUEST NUMBER DESCRIPTION
DRAWING TITLE BLOCK UPDATED

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PRIMARY DIMENSIONS ARE INCH
mm DIMENSIONS IN [BRACKETS]
ARE FOR REFERENCE ONLY

DRAWN BY	VS
DATE	28-05-2020
APPROVED BY	SBD
DATE	28-05-2020
REFERENCE	SS203158
THIRD ANGLE PROJECTION	

marathon™

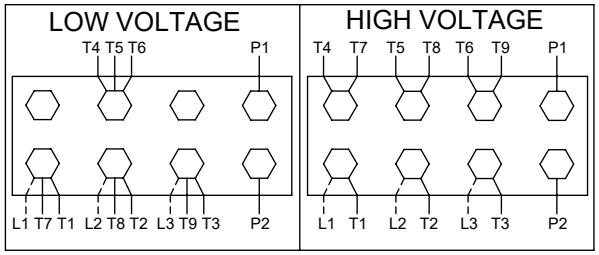
DESCRIPTION
OUTLINE
254/256TC FR NEMA TENV ODE 4.5 AK BRKT

MATERIAL | PROCESS/FINISH

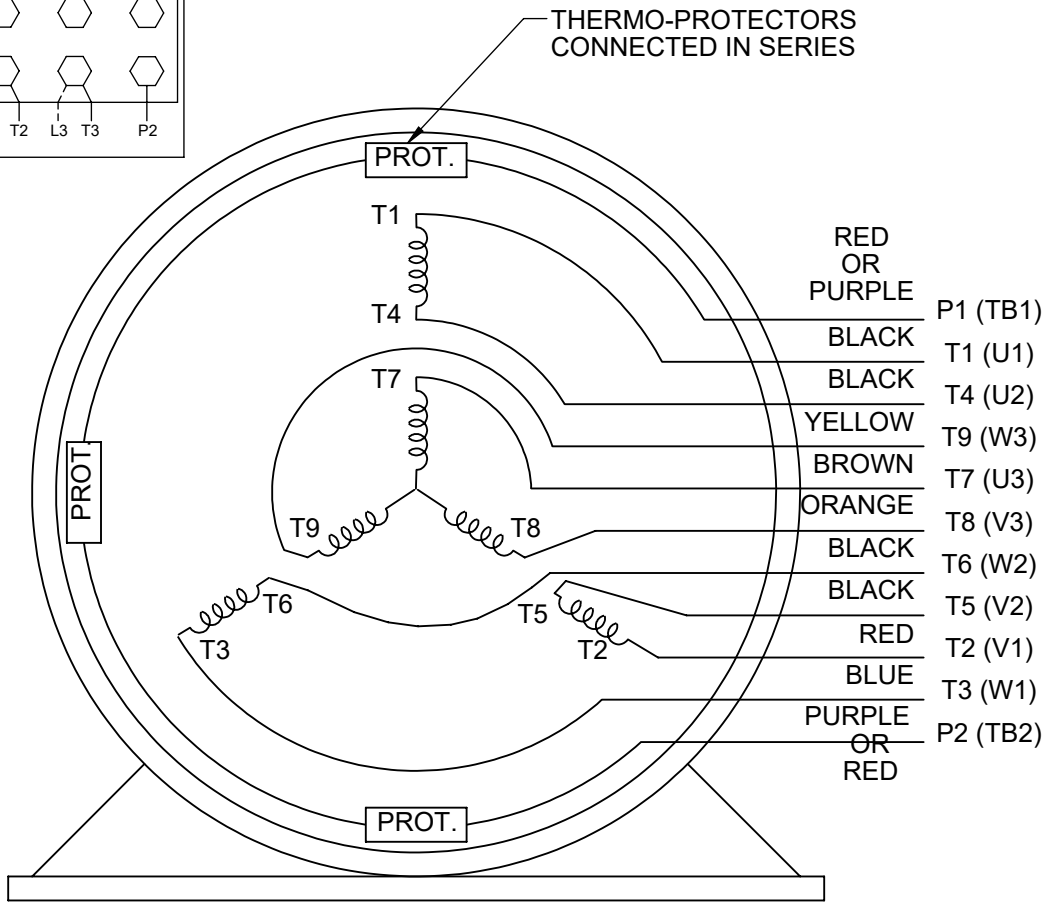
SIZE	DRAWING NUMBER	SHEET
B	SS209617	1 OF 1

HIGH VOLTAGE

(U1) T1 — L1
(V1) T2 — L2
(W1) T3 — L3
(U2) T4
(U3) T7
(V2) T5
(V3) T8
(W2) T6
(W3) T9



THREE PHASE
DUAL VOLTAGE MOTOR



VIEW OF TERMINAL END

NOTE FOR FACTORY USE ONLY:
TO SURGE TEST FOR COMMON CONNECT:
HIGH VOLT: CONNECT P1 TO T1
THEN P2 TO L1
LOW VOLT: CONNECT P1 TO T1 & T7,
THEN P2 TO L1

LOW VOLTAGE

(U1) T1 — L1
(U3) T7 — L1
(V1) T2 — L2
(V3) T8 — L2
(W1) T3 — L3
(W3) T9 — L3
(U2) T4
(V2) T5
(W2) T6

NOTE: LEAD'S COLOR CAN BE YELLOW OR WHITE FOR IMG PLANT

DRAWING REVISION: U	REVISION BY: SB	REV DATE/© DATE: 08/01/2025	PRIMARY DIMENSIONS ARE INCH mm DIMENSIONS IN [BRACKETS] ARE FOR REFERENCE ONLY	DRAWN BY: SMC	marathon™
REQUEST NUMBER: CR-0023654	APPROVED BY: SBD	DATE: 08/01/2025		DATE: 05-13-1992	
REQUEST NUMBER DESCRIPTION: DRAWING TITLE BLOCK UPDATED				APPROVED BY: TB	DESCRIPTION: CONN DIAGRAM-EXTERNAL
				DATE: 05-13-1992	3 PHASE - DUAL VOLTAGE MOTOR
				REFERENCE: EE7308/EE7300	MATERIAL / PROCESS/FINISH
				THIRD ANGLE PROJECTION	SIZE: A — DRAWING NUMBER: EE7308T — SHEET: 1 OF 1

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Data Sheet

Date: 9/27/2021
Customer:
Attention:
Submitted by:

marathon® Motors

256THTCD8038

Submittal

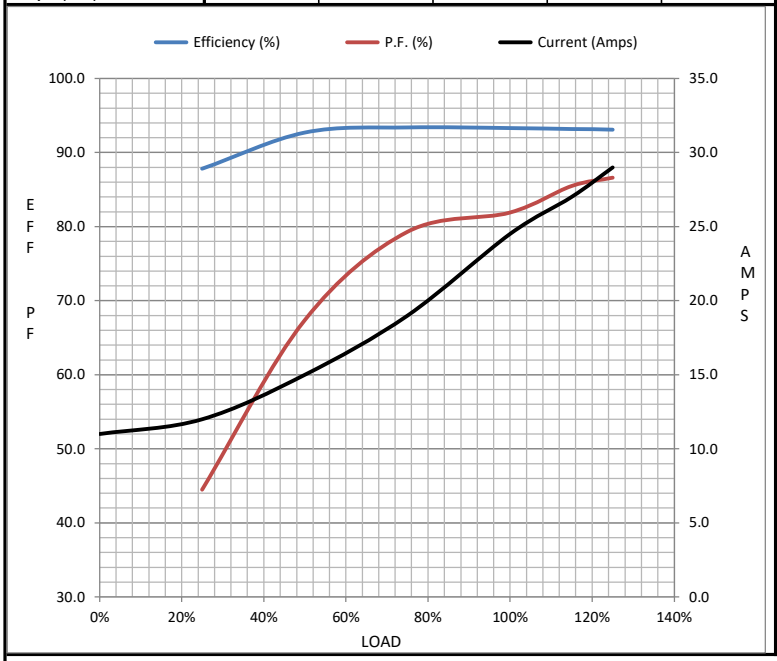
Data @ 460 V

Motor Load Data

Load	0%	25%	50%	75%	100%	115%	125%	LR	
Current (Amps)	11.0	12.0	15.0	19.0	24.5	27.0	29.0	255	
Torque (ft-lb)	0.00	14.6	29.4	44.2	59.0	68.0	74.0	180	
RPM	1800	1795	1790	1785	1778	1,776	1774	0	
Efficiency (%)		87.8	92.7	93.4	93.3	93.2	93.1		
P.F. (%)	5.7	44.5	67.4	79.3	81.9	85.5	86.6	40.0	

Motor Speed Data

	LR	Pull-Up	BD	Rated	Idle
Speed (RPM)	0	889	1505	1778	1800
Current (Amps)	255	230	170	24.5	11.0
Torque (ft-lb)	180	153	260	59.0	0.00



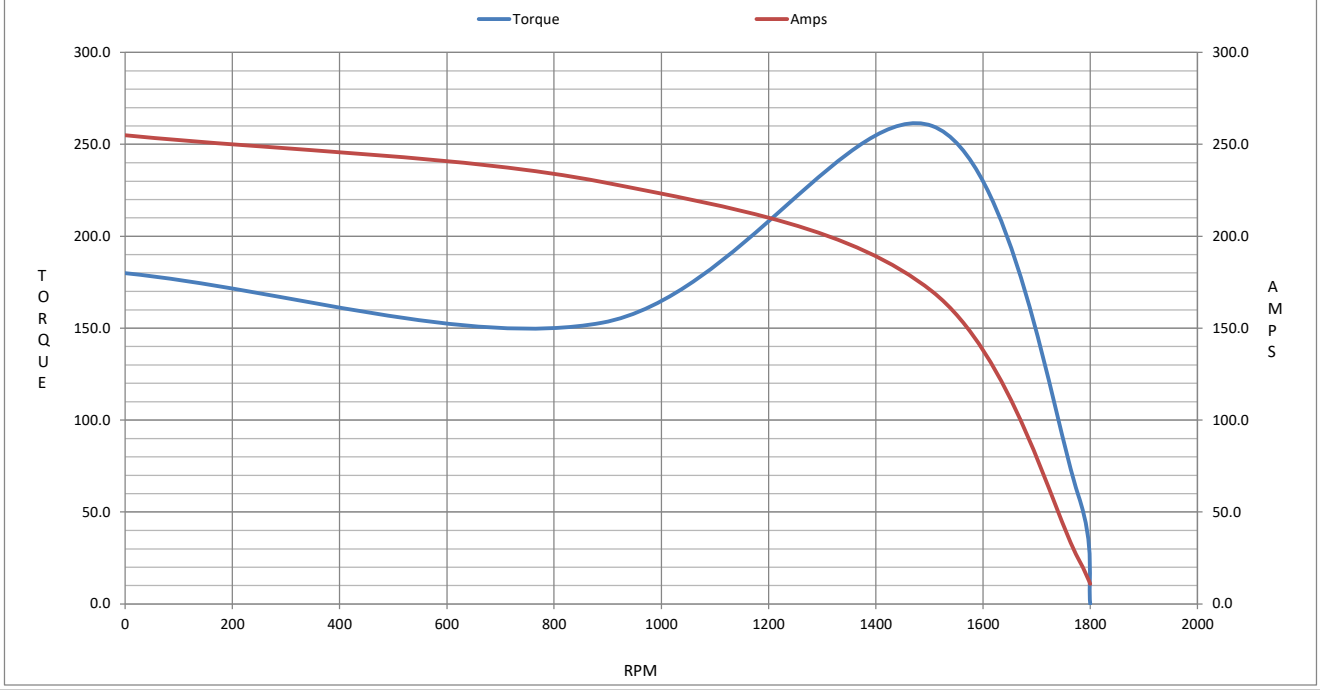
Information Block

HP	20.0	
Sync. RPM	1800	
Frame	256	
Enclosure	TENV	
Construction	TTC	
Voltage	230/460	V
Frequency	60	Hz
Design	INV	
LR Code letter	M	
Service Factor	1.0	
Temp Rise @ FL	105	° C
Duty	CONT	
Ambient	40	° C
Elevation	3,300	feet
Rotor/Shaft wk²	0.869	Lb-Ft²
Ref Wdg	HA31604035 NONE	
Sound Pressure @ 1M	62	dBA
VFD Rating	CONSTANT 2000:1	
Outline Dwg	SS209617-200	
Conn. Diag	EE7308T	
Additional Specifications:		
0		
0		

EQUIV CKT (OHMS / PHASE)

R1	R2	X1	X2	Xm
0.2080	0.1350	0.7290	0.6810	21.0430

Speed -Torque Curve



P.O. BOX 8003
WAUSAU, WI 54401-8003
PH. 715-675-3311

DATA VOLTS: 460

CERTIFICATION DATA SHEET

CUSTOMER:
ORDER #:
CONN. DIAGRAM: EE7308T
OUTLINE: SS209617-200
WINDING: HA31604035 NONE 2
SPEED:

CUSTOMER P.O. #:
REFERENCE MODEL #: 256THTCD8038
CAT #: Y510A
CUSTOMER PART #:
MOUNTING: F1/F2 CAPABLE

TYPICAL MOTOR PERFORMANCE DATA

HP	KW	SYNC RPM	FL RPM	FRAME	ENCLOSURE	TYPE	KVA CODE	DESIGN
20	14.9	1800	1778	256TC	TENV	TTC	M	INV

PH	HZ	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB	ELEV.
3	60	230/460	49/24.5	INVERTER ONLY	CONT	H	1.15	40	3300

F.L. EFF	93.3	3/4 LD EFF	93.4	1/2 LD EFF	92.7	GTD EFF	ELECT. TYPE
F.L. PF	81.9	3/4 LD PF	79.3	1/2 LD PF	67.4	92.7	SQ CAGE INV DUTY

F.L. TORQUE	LR AMPS @ 460 V	L.R. TORQUE	B.D. TORQUE	F.L. RISE (° C)	
59.0 LB-FT	255	180 LB-FT 305%	260 LB-FT 441%	105	

SOUND PRESSURE @ 3 FT.	SOUND POWER	ROTOR WK²	MAX. LOAD WK²	SAFE STALL TIME	STARTS/HOUR	APROX. MOTOR WGT
62 dBA	71 dBA	0.869 LB-FT²	30 LB-FT²	18 SEC.	2	340 LB.

*** SUPPLEMENTAL INFORMATION ***

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	MOTOR ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
C-FACE	BRAKE OR ENCODER	RIGID	HORIZONTAL	NO	NONE	NO	NONE	BLUE (ENAMEL)

BEARINGS DE	BEARINGS ODE	GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT MATERIAL	FRAME MATERIAL
BALL	BALL	POLYREX EM	T	NONE	NONE	1045 HOT ROLLED (C-204)	CAST IRON
6309	6209						

THERMOSTATS	PROTECTORS	WDG RTD's	BRG RTD's	THERMISTORS	CONTROL	SPACE HEATERS
TSTATS (N/C)	NOT	NONE	NONE	NONE	FALSE	NA

R1 (ohms/ph)	R2 (ohms/ph)	X1 (ohms/ph)	X2 (ohms/ph)	Xm (ohms/ph)	VIBRATION (in/sec)	FLOAT
0.208	0.135	0.729	0.681	21.043	0.150	ODE

* NOTES *

INVERTER TORQUE: CONSTANT 2000:1
INV. HP SPEED RANGE: 2.0 X BASE SPEED

ENCODER: NORTHSTAR
ST56
NONE NONE PPR

BRAKE: NONE
NONE NONE
FT-LB: NA
VOLTAGE: NONE HZ:

PREPARED BY:
DATE: 9/27/2021

FORM: 3531 REV_4 2/27/06

UL: V-INS, CONST, OVERHEAT PRT DEV UL REC