

PRODUCT INFORMATION PACKET



Model No: 193319.60

Catalog No: 193319.60

LEESON® PASSPORT 20 HP General Purpose, 3 phase, 1800 RPM, 230/460 V, 160L Frame, TEFC



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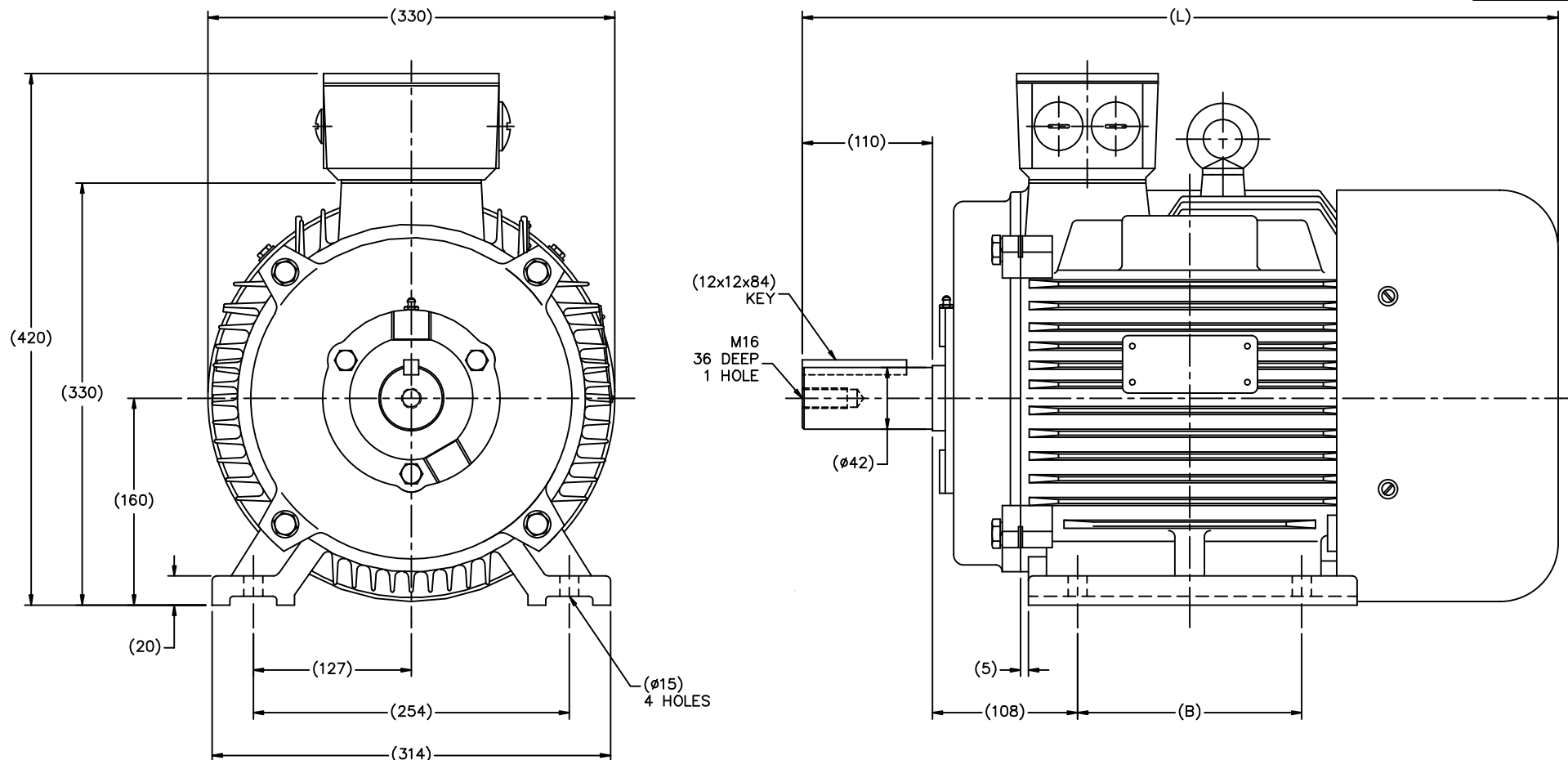


Nameplate Specifications

Phase	3	Output HP	20 & 15 Hp
Output KW	14.9 & 11.2 kW	Voltage	230/460 & 200/400 V
Speed	1770 & 1475 rpm	Service Factor	1.15 & 1.15
Frame	160L	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	93 & 91.7 %
Ambient Temperature	40 °C	Frequency	60 & 50 Hz
Current	50/25 & 43/21.5 A	Power Factor	82
Duty	Continuous	Insulation Class	F
Design Code	B	KVA Code	G
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 Rated	Starting Method	Wye Start Delta Run Or Inverter
Poles	4	Rotation	Reversible
Resistance Main	.322 Ohms	Mounting	Rigid Base
Motor Orientation	Horizontal	Drive End Bearing	Ball
Opp Drive End Bearing	Ball	Frame Material	Cast Iron
Shaft Type	IEC	Overall Length	23.62 in
Shaft Diameter	1.625 in	Shaft Extension	4.33 in
Assembly/Box Mounting	F3		
Outline Drawing	B-SS622239	Connection Drawing	004172.01



(MAY NOT BE DRAWN TO SCALE)

(DIMENSIONS ARE IN MILLIMETERS)

DF160M1-2R	193315.60	600	210
DF160M2-2R	193318.60	600	210
DF160M-4R	193316.60	600	210
DF160L-2R	193321.60	645	254
DF160L-4R	193319.60	645	254
DF160M-6R	193314.60	600	210
FRAME	PART #	L	B

TOLERANCES UNLESS SPECIFIED				DRAWN MSG 11-17-2010			
		DEC.	METRIC	CHK		MJS 11-18-2010	
		.X	±2.5			APPD SB 11-18-2010	
		.XX	±.76			SCALE 5=16	
		.XXX	±.127			REF	
		.XXXX	±.0127			FMF HEBE	
NO.	REVISION	BY & DATE	CHK	ANG	FINISH	PREV	
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				DIST		SIZE	B
				DRAWING NO. PAGE OF REV.			
				SS622239			

WYE - DELTA STARTING USEABLE ON 2,4 AND 6 POLE MOTORS.

LOW VOLTAGE CONNECTION

HIGH VOLTAGE CONNECTION



REFER TO THE WYE-DELTA STARTER CONNECTION INSTRUCTIONS FOR PROPER CONNECTION OF POWER LINES TO STARTER.

PART WINDING START USABLE ON 4 & 6 POLE MOTORS
LOW VOLTAGE CONNECTION ONLY

REFER TO THE PART WINDING STARTER INSTRUCTIONS FOR PROPER CONNECTION OF POWER LINES TO STARTER.

REFER TO THE CUTLER - HAMMER OR EQUIV. FOR PROPER SELECTION OF OVERLOAD HEATER COILS.

LINE LEADS



ACROSS THE LINE START & RUN

	LINE 1	LINE 2	LINE 3	JOIN & INSULATE SEPARATELY
HIGH VOLT	T1,T12	T2,T10	T3,T11	(T4,T7) (T5,T8) (T6,T9)
LOW VOLT	T1,T6 T7,T12	T2,T4 T8,T10	T3,T5 T9,T11	

TOLERANCES
UNLESS SPECIFIED

DEC. INCHES

.X ±.1

.XX ±.01

.XXX ±.005

.XXXX ±.0005

ANG ±1/2"



ELECTRIC MOTORS
GEARMOTORS
AND DRIVES

DRAWN WLW 09/08/77

CHK RPB 09/12/77

APPD JCW 09/12/77

SCALE 1=1

REF

FMF

PREV

NO.	REVISION	BY & DATE	CHK	ANG
03	REV'D LOW VOLTAGE CONN. LEADS PER ELEC.	BJB 06/07/00	.XX	±.01
02	ADDED T-STAT. NOTES PER ELECTRICAL	KMM 06/02/98	.XXX	±.005
01	REDRAWN TO CAD	DBT 06/02/97	.XXXX	±.0005

TITLE DELTA - WYE CONNECTION DIAGRAM

MAT'L.

FINISH

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RFP

DIST

CAD FILE 00417201

SIZE

A

DRAWING NO.

004172-01

REV.

03



**1051 CHEYENNE AVE.
GRAFTON, WI 53024
PH. 262-377-8810**

CERTIFICATION DATA SHEET

CONN. DIAGRAM: 004172.01

CATALOG #: 193319.60

OUTLINE: B-SS622239

MOUNTING: F3

WINDING #: T12904020 3

TYPICAL MOTOR PERFORMANCE DATA

HP	kW	SYNC. RPM	F.L. RPM	FRAME	ENCLOSURE	KVA CODE	DESIGN
20&15	14.9&11.2	1800	1770&1475	160L	TEFC	G	B

PH	Hz	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB°C
3	60/50	230/460&200/400	50/25&43/21.5	Y START D RUN OR INV	CONTINUOUS	F5	1.15/1.15	40

FULL LOAD EFF:	93&91.7	3/4 LOAD EFF:	93	1/2 LOAD EFF:	92.4	GTD. EFF		ELEC. TYPE
FULL LOAD PF:	82&80	3/4 LOAD PF:	77	1/2 LOAD PF:	68	91.7		SQ CAGE INV RATED

F.L. TORQUE	LOCKED ROTOR AMPS	L.R. TORQUE	B.D. TORQUE	F.L. RISE°C
59.5 LB-FT	290 / 145	115 LB-FT 192 %	195 LB-FT 328 %	75

SOUND PRESSURE @ 3 FT.	SOUND POWER	ROTOR WK^2	MAX. WK^2	SAFE STALL TIME	STARTS / HOUR	APPROX. MOTOR WGT
75 dBA	85 dBA	2.97 LB-FT^2	- LB-FT^2	20 SEC.	2	- LBS.

***** SUPPLEMENTAL INFORMATION *****

DE BRACKET TYPE	ODE BRACKET TYPE	MOUNT TYPE	ORIENTATION	SEVERE DUTY	HAZARDOUS LOCATION	DRIP COVER	SCREENS	PAINT
STANDARD	STANDARD	RIGID	HORIZONTAL	PREMIUM SEVERE DUTY	NONE	FALSE	NONE	BLUE (ENAMEL)

BEARINGS		GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT MATERIAL	FRAME MATERIAL
DE	ODE						
BALL	BALL						
6309	6209	POLYREX EM	STANDARD IEC	NONE	NONE	AISI 1045 (C-240)	CAST IRON

THERMO-PROTECTORS				THERMISTORS	CONTROL	SPACE HEATERS
THERMOSTATS	PROTECTORS	WDG RTDs	BRG RTDs			
NONE	NOT	NONE	NONE	NONE	FALSE	NONE VOLTS

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INVERTER TORQUE: CONSTANT 10:1
INV. HP SPEED RANGE: NONE

ENCODER: NONE
NONE NONE
NONE NONE PPR

BRAKE: NONE NONE
NONE P/N NONE
NONE NONE
NONE FT-LB NONE V NONE Hz

Data Sheet

Date: 1/24/2018

193319.60



Data @ 460 V

Motor Load Data

Load	0%	25%	50%	75%	100%	115%	125%	LR	
Current (Amps)	9.4	11.5	15.0	19.5	24.5	28.0	30.5	145	
Torque (ft-lb)	0.00	15.0	30.0	45.0	59.5	70.0	75.0	115	
RPM	1800	1795	1782	1778	1775	1,768	1765	0	
Efficiency (%)		88.5	92.4	93.0	93.0	92.4	91.7		
P.F. (%)	5.5	47.0	68.0	77.0	82.2	82.5	83.0	37.0	

Motor Speed Data

	LR	Pull-Up	BD	Rated	Idle	Information Block	
Speed (RPM)	0	900	1650	1775	1800	HP	20.0
Current (Amps)	145	135	98.0	24.5	9.4	Sync. RPM	1800
Torque (ft-lb)	115	95.0	195	59.5	0.00	Frame	256
						Enclosure	TEFC
						Construction	TFC
						Voltage	230/460#200/400 V
						Frequency	60 Hz
						Design	B
						LR Code letter	G
						Service Factor	1.15
						Temp Rise @ FL	43 °C
						Duty	CONT
						Ambient	40 °C
						Elevation	1,000 feet
						Rotor/Shaft wk²	2.97 Lb-Ft²
						Ref Wdg	T12904020 NONE
						Sound Pressure @ 1M	75 dBA
						VFD Rating	CONSTANT 10:1
						Outline Dwg	B-SS622239
						Conn. Diag	004172.01
Additional Specifications:						0	
193316.60						EQUIV CKT (OHMS / PHASE)	
						R1	R2
						0.0000	0.0000
						X1	X2
						0.0000	0.0000
						Xm	
						0.0000	0.0000

Speed - Torque Curve

