

# PRODUCT INFORMATION PACKET



Model No: 170033.60

Catalog No: 170033.60

WATTSaver® General Purpose Motor, 20 & 15 HP, 3 Ph, 60 & 50 Hz, 208-230/460 & 190/380 V,  
3600 & 3000 RPM, 256T Frame, TEFC



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## Nameplate Specifications

Phase	3	Output HP	20 & 15 Hp
Output KW	14.9 & 11.2 kW	Voltage	208-230/460 & 190/380 V
Speed	3550 & 2957 rpm	Service Factor	1.15 & 1.15
Frame	256T	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	Thermostat	Efficiency	92.4 & 92.4 %
Ambient Temperature	40 °C	Frequency	60 & 50 Hz
Current	49-46/23 & 40/20 A	Power Factor	88.5
Duty	Continuous	Insulation Class	F
Design Code	B	KVA Code	G
Drive End Bearing Size	6309	Opp Drive End Bearing Size	6308
UL	Recognized	CSA	Y
CE	Y	IP Code	43
Number of Speeds	1		

## Technical Specifications

Electrical Type	Squirrel Cage Inverter Rated	Starting Method	Wye Start Delta Run Or Inverter
Poles	2	Rotation	Reversible
Resistance Main	.295 Ohms	Mounting	Rigid Base
Motor Orientation	Horizontal	Drive End Bearing	Ball
Opp Drive End Bearing	Ball	Frame Material	Cast Iron
Shaft Type	T	Overall Length	24.92 in
Shaft Diameter	1.625 in	Shaft Extension	4 in
Assembly/Box Mounting	F1 ONLY		
Connection Drawing	004172.01	Outline Drawing	16953860-256T

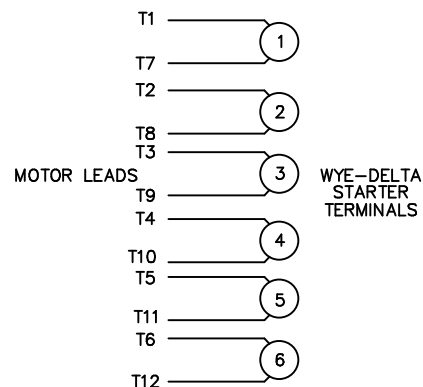


FRAME	"C"	"B"	"BV"
254T	23.19	10.25	8.19
256T	24.92	12.00	9.06

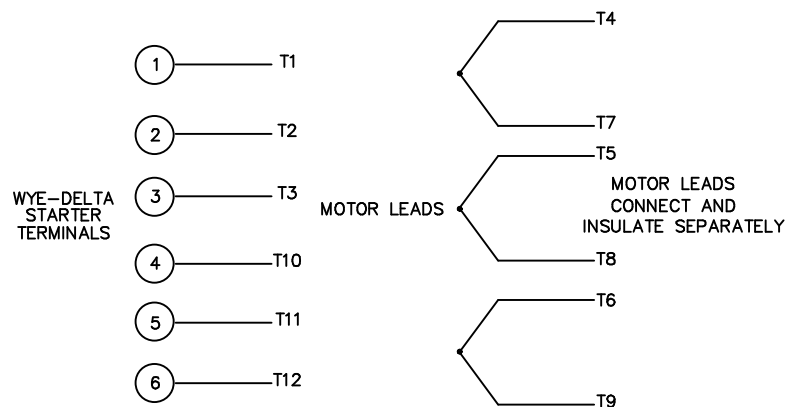
			TOLERANCES UNLESS OTHERWISE SPECIFIED			LEESON ELECTRIC CORPORATION		
			DEC.	INCHES	METRIC			
			.X	±.1	±2.5	DRAWN DRZ 05/22/01	TITLE OUTLINE - 250 FRAME TEFC - RIGID, NEW CON-BOX	
			.XX	±.03	±.76	APPR.		
01	REDRAWN TO CURRENT CAD STANDARDS	CJK 8/3/01	.XXX	±.005	±.127	R.F.P.	MAT'L CAST IRON	
NO.	REVISION	BY & DATE	CHK'D.	.XXXX	±.0005	±.0127	SCALE	5=16
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK. ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED. THIS IS AN ELECTRONICALLY GENERATED DOCUMENT - DO NOT SCALE THIS PRINT			FRACTIONS	±1/64	REF.	FINISH	REV.	DRAWING NO.
			ANGLES	±1/2°	FMF		01	169538-60

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

## LOW VOLTAGE CONNECTION

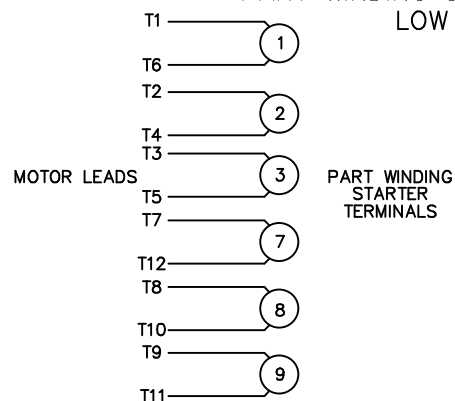


## HIGH VOLTAGE CONNECTION



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

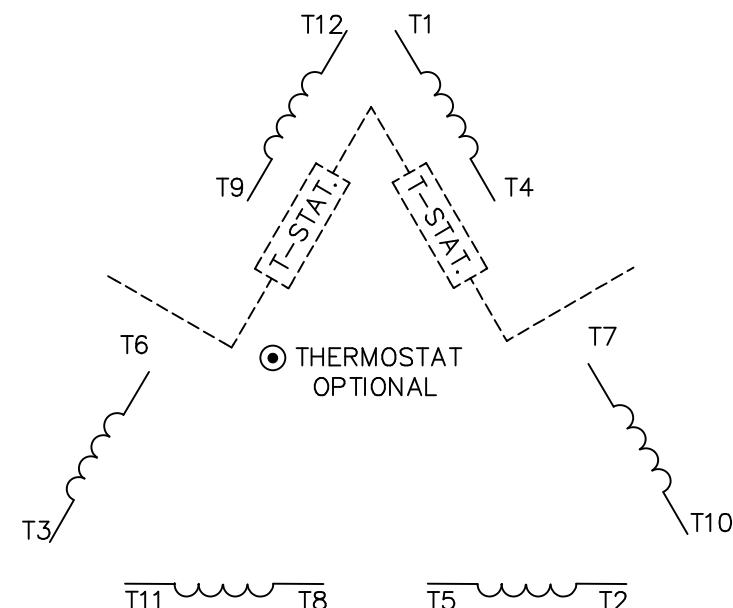
PART WINDING START USABLE ON 4 & 6 POLE MOTORS  
LOW VOLTAGE CONNECTION ONLY



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



ROTATION CAN BE REVERSED BY  
INTERCHANGING ANY TWO LINE LEADS  
● RED LEADS OR P1, P2, FOR N/C THERMOSTAT

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		 ELECTRIC MOTORS GEARMOTORS AND DRIVES		DRAWN WLW 09/08/77	
				DEC.	INCHES			CHK RPB 09/12/77	
				.X	±.1			APPD JCW 09/12/77	
03	REV'D LOW VOLTAGE CONN. LEADS PER ELEC.	BJB 06/07/00		.XX	±.01	TITLE DELTA – WYE CONNECTION DIAGRAM		SCALE 1=1	
02	ADDED T–STAT. NOTES PER ELECTRICAL	KMM 06/02/98		.XXX	±.005			REF	
01	REDRAWN TO CAD	DBT 06/02/97		.XXXX	±.0005	MAT'L.		FMF	
NO.	REVISION	BY & DATE	CHK	ANG	±1/2"	FINISH		PREV	
THIS DRAWING IN DESIGN AND DETAIL IS OUR PROPERTY AND MUST NOT BE USED EXCEPT IN CONNECTION WITH OUR WORK ALL RIGHTS OF DESIGN AND INVENTION ARE RESERVED THIS IS AN ELECTRONICALLY GENERATED DOCUMENT – DO NOT SCALE THIS PRINT			RFP		CAD FILE 00417201		SIZE	DRAWING NO.	REV.
			DIST				A	004172–01	03



## CERTIFICATION DATA SHEET

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

CATALOG #: 170033.60

CONN. DIAGRAM: 004172.01

OUTLINE: 16953860-256T

MOUNTING: F1 ONLY

WINDING #: T12902023 1

## TYPICAL MOTOR PERFORMANCE DATA

HP	kW	SYNC. RPM	F.L. RPM	FRAME	ENCLOSURE	KVA CODE	DESIGN
20&15	14.9&11.2	3600	3550&2957	256T	TEFC	G	B

PH	Hz	VOLTS	AMPS	START TYPE	DUTY	INSL	S.F.	AMB°C
3	60/50	208-230/460&190/380	49-46/23&40/20	Y START D RUN OR INV	CONTINUOUS	F5	1.15/1.15	40

FULL LOAD EFF:	92.4&92.4	3/4 LOAD EFF:	92.4	1/2 LOAD EFF:	91.7	GTD. EFF	ELEC. TYPE
FULL LOAD PF:	88.5&91	3/4 LOAD PF:	87.5	1/2 LOAD PF:	82	91	SQ CAGE INV RATED

F.L. TORQUE	LOCKED ROTOR AMPS	L.R. TORQUE	B.D. TORQUE	F.L. RISE°C
30 LB-FT	290 / 145	75 LB-FT 250 %	81.5 LB-FT 272 %	60

SOUND PRESSURE @ 3 FT.	SOUND POWER	ROTOR WK^2	MAX. WK^2	SAFE STALL TIME	STARTS / HOUR	APPROX. MOTOR WGT
69 dBA	79 dBA	2 LB-FT^2	- LB-FT^2	20 SEC.	-	- LBS.

## \*\*\* SUPPLEMENTAL INFORMATION \*\*\*

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

BEARINGS		GREASE	SHAFT TYPE	SPECIAL DE	SPECIAL ODE	SHAFT MATERIAL	FRAME MATERIAL
DE	ODE						
BALL	BALL	POLYREX EM	T	NONE	NONE	1045 HOT ROLLED (C-204)	CAST IRON
6309	6308						

THERMO-PROTECTORS				THERMISTORS	CONTROL	SPACE HEATERS
THERMOSTATS	PROTECTORS	WDG RTDs	BRG RTDs			
TSTATS (N/C)	NOT	NONE	NONE	NONE	FALSE	NONE VOLTS

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INVERTER TORQUE: CONSTANT 2:1

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: 1/17/2018

170033.60



Data @ 460 V

## Motor Load Data

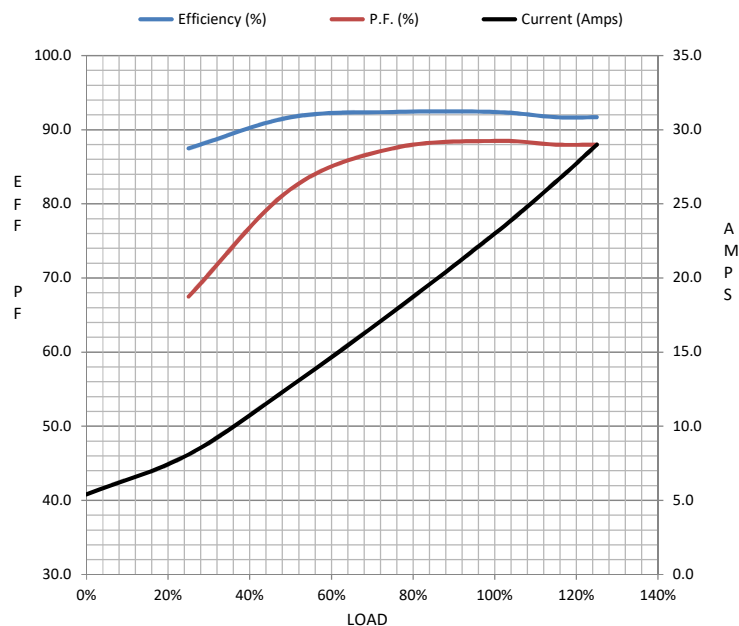
Load	0%	25%	50%	75%	100%	115%	125%	LR	
Current (Amps)	5.4	8.1	12.7	17.7	23.0	26.5	29.0	145	
Torque (ft-lb)	0.00	7.5	15.0	22.5	30.0	34.5	37.5	75.0	
RPM	3600	3590	3578	3565	3550	3,545	3540	0	
Efficiency (%)		87.5	91.7	92.4	92.4	91.7	91.7		
P.F. (%)	10.0	67.5	82.0	87.5	88.5	88.0	88.0	0.0	

## Motor Speed Data

	LR	Pull-Up	BD	Rated	Idle
Speed (RPM)	0	1800	3450	3550	3600
Current (Amps)	145	130	95.0	23.0	5.4
Torque (ft-lb)	75.0	67.5	81.5	30.0	0.00

## Information Block

HP	20.0			
Sync. RPM	3600			
Frame	256			
Enclosure	TEFC			
Construction	TFC			
Voltage	208-230/460#190/380 V			
Frequency	60 Hz			
Design	A			
LR Code letter	G			
Service Factor	1.15			
Temp Rise @ FL	60 ° C			
Duty	CONT			
Ambient	40 ° C			
Elevation	1,000 feet			
Rotor/Shaft wk²	2.00 Lb-Ft²			
Ref Wdg	T12902023 NONE			
Sound Pressure @ 1M	69 dBA			
VFD Rating	CONSTANT 2:1			
Outline Dwg	16953860			
Conn. Diag	004172.01			
Additional Specifications:				
0				
0				
EQUIV CKT (OHMS / PHASE)				
R1	R2	X1	X2	Xm
0.0000	0.0000	0.0000	0.0000	0.0000



## Speed - Torque Curve

