

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: SCA0902A3113GAAD01

Catalog No: SCA0902A3113GAAD01

90kW, General Purpose Low Voltage IEC Motor, 3 phase, 4 Pole, 415V, B3, 50Hz, 94.2%, 280M Frame, TEFC
Cast Iron IE2 Efficiency Motors



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Nameplate Specifications

Output HP	120 Hp	Output KW	90.0 kW
Frequency	50 Hz	Voltage	415 V
Current	151.4 A	Speed	1484 rpm
Service Factor	1	Phase	3
Efficiency	94.2 %	Power Factor	0.88
Duty	S1	Insulation Class	F
Frame	280M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6317
Opp Drive End Bearing Size	6317	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	4	Rotation	Bi-Directional
Mounting	B3	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1061 mm	Frame Length	550 mm
Shaft Diameter	75 mm	Shaft Extension	140 mm
Assembly/Box Mounting	SIDE		
Outline Drawing	0228001214	Connection Drawing	8442000085

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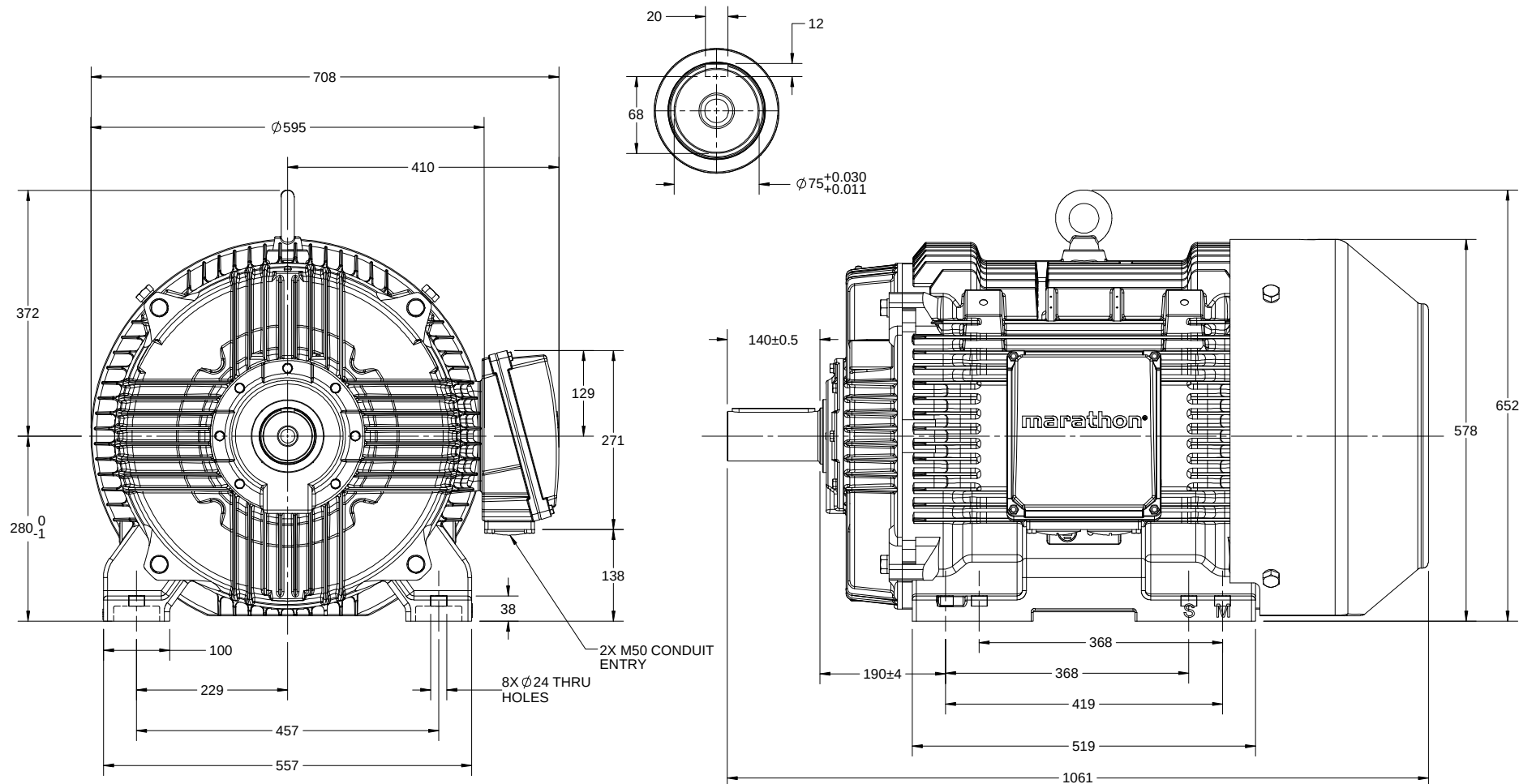
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DRAWING REVISION A	REVISION BY A. KEETHA	DATE 13/11/2018
ECO ECO-0153779	APPROVED BY JAY	DATE 13/11/2018
ECO DESCRIPTION NEW DRAWING RELEASE		
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DRAWN BY A. KEETHA
DATE 13/11/2018
APPROVED BY JAY
DATE 13/11/2018
REFERENCE

THIRD ANGLE
PROJECTION

DESCRIPTION OUTLINE	
280M FRAME B3 MTG. MOTOR TYPE:SCA RHS TB	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER 0228001214
	SHEET 1 OF 1

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Model No. SCA0902A3113GAAD01

U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I _A /I _N [pu]	T _A /T _N [pu]	T _d /T _N [pu]
415	Δ	50	90	120	151.4	1484	575.69	IE2	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	5.8	2.0	2.9
									-	94.2	94.2	94.4	0.88	0.85	0.77			

Motor type	SCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	280M	Motor weight - approx.	725 kg
Duty	S1	Gross weight - approx.	760 kg
Voltage variation *	± 10%	Motor inertia	1.8419 kgm ²
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.2 mm/s
Design	N	Noise level (1meter distance from motor)	80 dB(A)
Service factor	1.0	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	F	Starting method	DOL
Ambient temperature	-20 to +50 °C	Type of coupling	Direct
Temperature rise (by resistance)	70 [Class B] K	LR withstand time (hot/cold)	6/10 s
Altitude above sea level	1000 meter	Direction of rotation	Bi-directional
Hazardous area classification	NA	Standard rotation	Clockwise form DE
Zone classification	NA	Paint shade	RAL 5014
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	-
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6317 C3 / 6317 C3	Terminal box position	RHS
Lubrication method	Regreaseable	Maximum cable size/conduit size	1R x 3C x 95mm ² /2 x M50 x 1.5
Type of grease	Shell Gadus S5 V100 or Equivalent	Auxiliary terminal box	Available on Request

I_A/I_N - Locked Rotor Current / Rated CurrentT_d/T_N - Breakdown Torque / Rated TorqueT_A/T_N - Locked Rotor Torque / Rated Torque
NOTE

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

* Voltage, Frequency and combine variation are as per IEC60034-1

Technical data are subject to change. There may be discrepancies between calculated and name plate values.

Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	-	IS 12615 : 2018	-	-	-



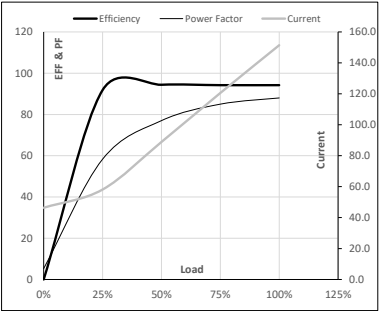
Model No. SCA0902A3113GAAD01

Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg·m ²]	Weight [kg]
TEFC	415	Δ	50	90	120	151.4	1484	58.70	575.69	IE2	50	S1	1000	1.8419	725

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	46.4	58.1	88.9	120.5	151.4	
Torque	Nm	0.0	142.8	286.3	430.5	575.7	
Speed	r/min	1500	1496	1493	1489	1484	
Efficiency	%	0.0	91.8	94.4	94.2	94.2	
Power Factor	%	5.3	58.3	77.0	85.0	88.0	

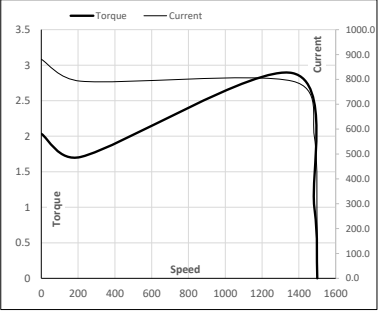
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	214	1365	1484	1500
Current	A	880.9	792.8	570.1	151.4	46.4
Torque	pu	2.0	1.7	2.9	1	0

Starting Characteristics Chart



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

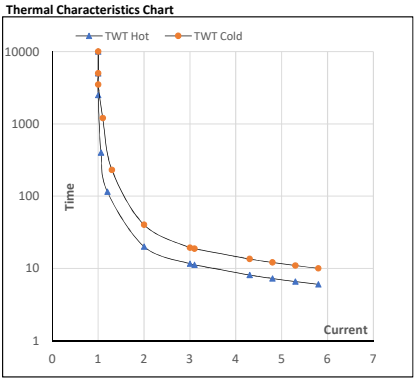
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Enclosure	U (V)	Δ / Y Conn	f (Hz)	P (kW)	P (hp)	I (A)	n (rpm)	T (kgm)	T (Nm)	IE Class	Amb (°C)	Duty	Elevation (m)	Inertia (kg·m ²)	Weight (kg)
TEFC	415	Δ	50	90	120	151.4	1484	58.70	575.69	IE2	50	S1	1000	1.8419	725

Motor Speed Torque Data								
Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s 10000	20	12	10	8	7	6	
TWT Cold	s 10000	40	19	17	12	11	10	
Current	pu	1	2	3	4	5	5.5 5.8	



NOTE Refer data sheet for applicable standard and tolerances on performance parameters

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