

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA0902A3121GACD01

Catalog No: TCA0902A3121GACD01

90.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1500 RPM, 415 V, 280M Frame, TEFC
Cast Iron IE3 Efficiency Motors



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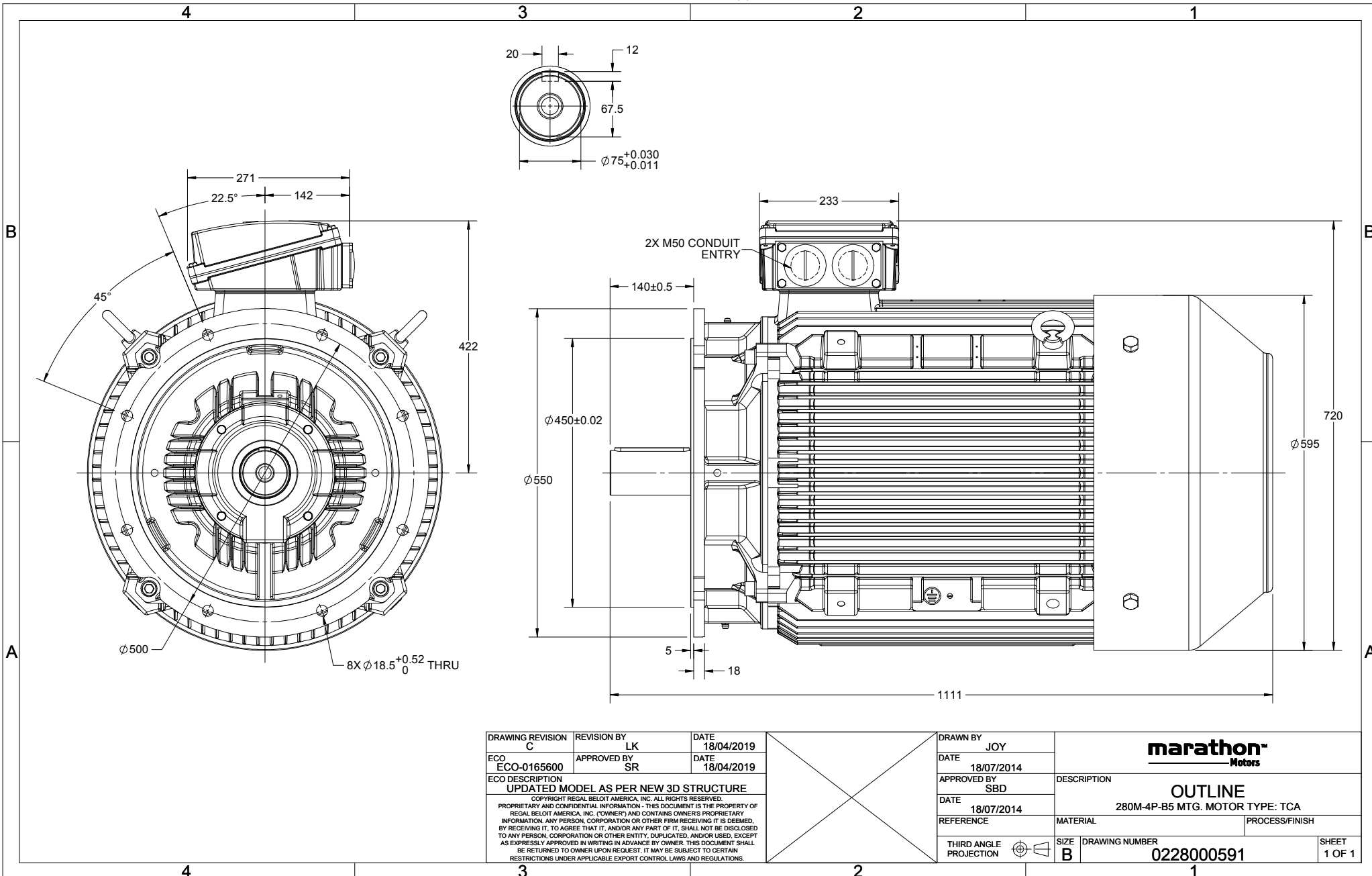
Nameplate Specifications

Output HP	120 Hp	Output KW	90.0 kW
Frequency	50 Hz	Voltage	415 V
Current	151.2 A	Speed	1490 rpm
Service Factor	1	Phase	3
Efficiency	95.2 %	Power Factor	0.87
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		

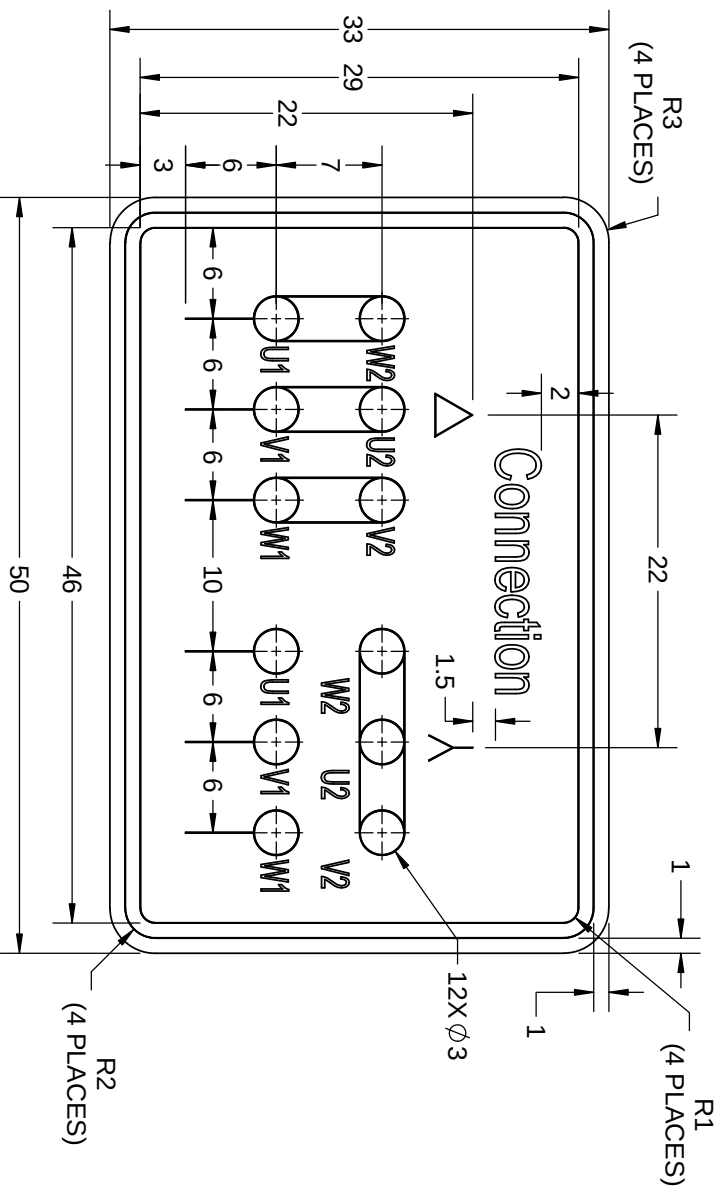
Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	4	Rotation	Bi-Directional
Mounting	B5	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1111 mm	Frame Length	600 mm
Shaft Diameter	75 mm	Shaft Extension	140 mm
Assembly/Box Mounting	Top		
Outline Drawing	0228000591	Connection Drawing	8442000085

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GEOMETRIC TOLERANCE		
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



- NOTES:
1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
 2. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.
 - 3.

Regal Beloit America, Inc.

		DRAWN BY		SN					
		DATE		16/12/2016					
		APPROVED BY		SBD					
		DATE		16/12/2016					
		REFERENCE							
THIRD ANGLE PROJECTION				SIZE		DRAWING NUMBER		SHEET	
A				84420000085				1 OF 1	
MATERIAL		PROCESS/FINISH		DESCRIPTION					
				CONN DIAGRAM-NAMEPLATE					

Model No. TCA0902A3121GACD01

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 _b /T _N [pu]
415	Δ	50	90	120	151.2	1490	573.57	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	6.8	2.6	2.8

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	280M	Motor weight - approx.	846 kg
Duty	S1	Gross weight - approx.	881 kg
Voltage variation *	± 10%	Motor inertia	2.7914 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)	68 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)	15/30 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 bearing	Accessory - 3	-
DE / NDE bearing	6317 C3 / 6317 C3	Terminal box position	TOP
Lubrication method	Regreasable	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	NA

I_a/I_N - Locked Rotor Current / Rated CurrentT_b/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 Standards	Europe	China	India	Aus/Nz	Brazil	Global IEC
	-	-	IS 12615 : 2018	-	-	-



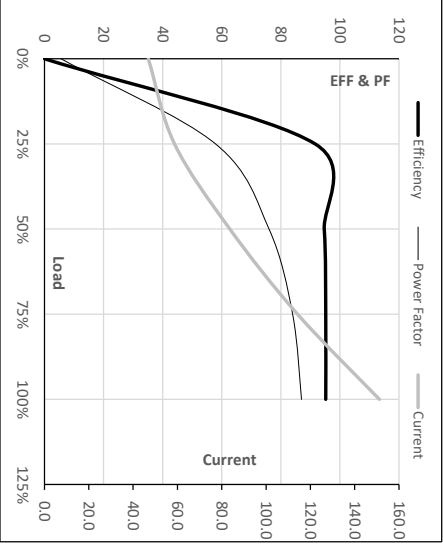
Model No. TCA0902A3121GACD01

Enclosure	U	Δ / Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
	(V)	Com	[Hz]	[kW]	[hp]	[A]	[RPM]	[kgm]	[Nm]	Class	[°C]		[m]	[kg·m ²]	[kg]
TEFC	415	Δ	50	90	120	151.2	1490	58.49	573.57	IE3	50	S1	1000	2.7914	846

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	46.9	58.7	83.7	114.2	151.2
Torque	Nm	0.0	142.7	285.8	429.4	573.6
Speed	r/min	1500	1498	1495	1493	1490
Efficiency	%	0.0	91.6	94.7	95.2	95.2
Power Factor	%	5.6	57.9	76.0	84.0	87.0

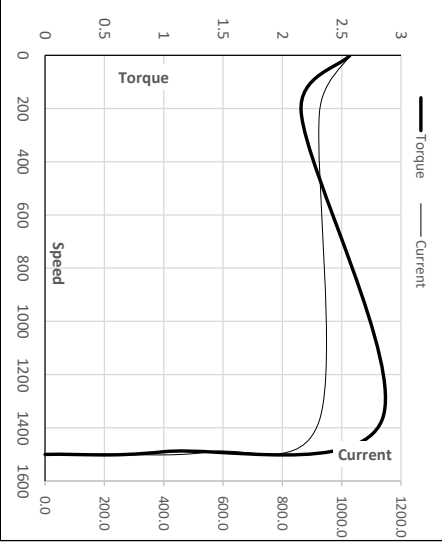
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	214	1371	1490	1500
Current	A	1028.0	925.2	557.3	151.2	46.9
Torque	pu	2.6	2.2	2.8	1	0

Starting Characteristics Chart



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

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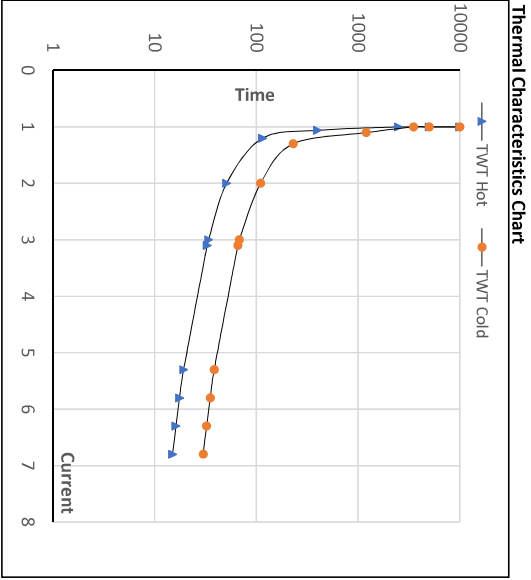


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Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [rpm]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg·m ²]	Weight [kg]
TEFC	415	Δ	50	90	120	151.2	1490	58.45	573.57	IE3	50	S1	1000	2.7914	846

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	51	34	30	22	18	15
TWT Cold	s	10000	110	68	60	40	37	30
Current	pu	1	2	3	4	5	5.5	6.8



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

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