PRODUCT INFORMATION PACKET

Model No: TCA0901A3121GACD01
Catalog No: TCA0901A3121GACD01
90.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 280M Frame, TEFC
Cast Iron IE3 Efficiency Motors

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marathon® Motors

Nameplate Specifications

Output HP	**120 Hp**	Output KW	**90.0 kW**
Frequency	**50 Hz**	Voltage	**415 V**
Current	**144.8 A**	Speed	**2981 rpm**
Service Factor	**1**	Phase	**3**
Efficiency	**95 %**	Power Factor	**0.91**
Duty	**S1**	Insulation Class	**F**
Frame	**280M**	Enclosure	**Totally Enclosed Fan Cooled**
Ambient Temperature	**50 °C**	Drive End Bearing Size	**6314**
Opp Drive End Bearing Size	**6314**	UL	**No**
CSA	**No**	CE	**Yes**
IP Code	**55**		

Technical Specifications

Electrical Type	**Squirrel Cage**	Starting Method	**Direct On Line**
Poles	**2**	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	**65 mm**	Shaft Extension	**140 mm**
Assembly/Box Mounting	**Top**		
Outline Drawing	**0228000587**	Connection Drawing	**8442000085**

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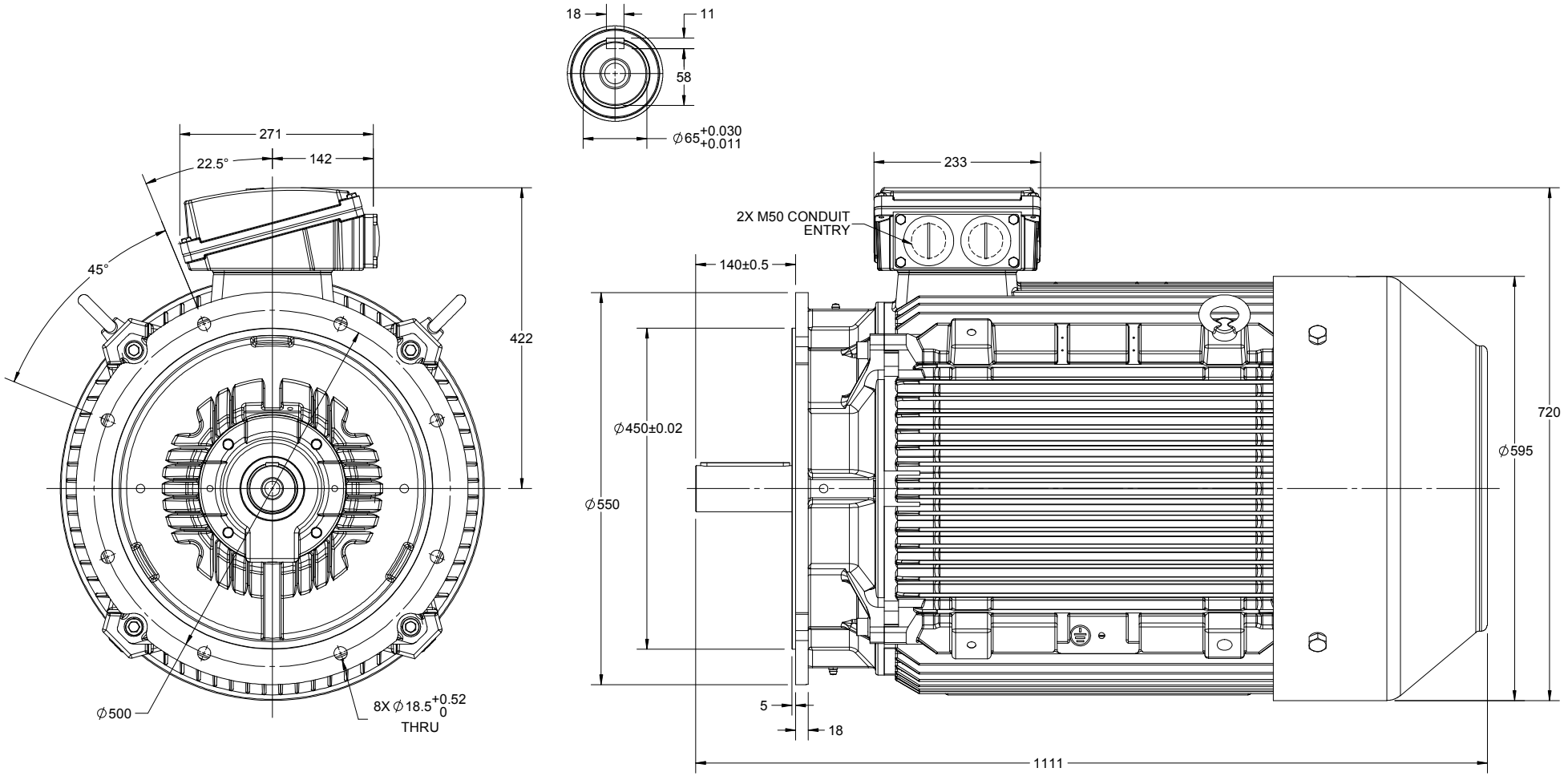

DRAWING REVISION C	REVISION BY LK	DATE 23/04/2019		DRAWN BY JOY	marathon Motors
ECO ECO-0165600	APPROVED BY SR	DATE 23/04/2019		DATE 18/07/2014	
ECO DESCRIPTION UPDATED MODEL AS PER NEW 3D STRUCTURE				APPROVED BY SBD	DESCRIPTION OUTLINE 280M-2P-B5 MTG. MOTOR TYPE: TCA
				DATE 18/07/2014	
				REFERENCE	MATERIAL / PROCESS/FINISH
				THIRD ANGLE PROJECTION	SIZE B / DRAWING NUMBER 0228000587 / SHEET 1 OF 1

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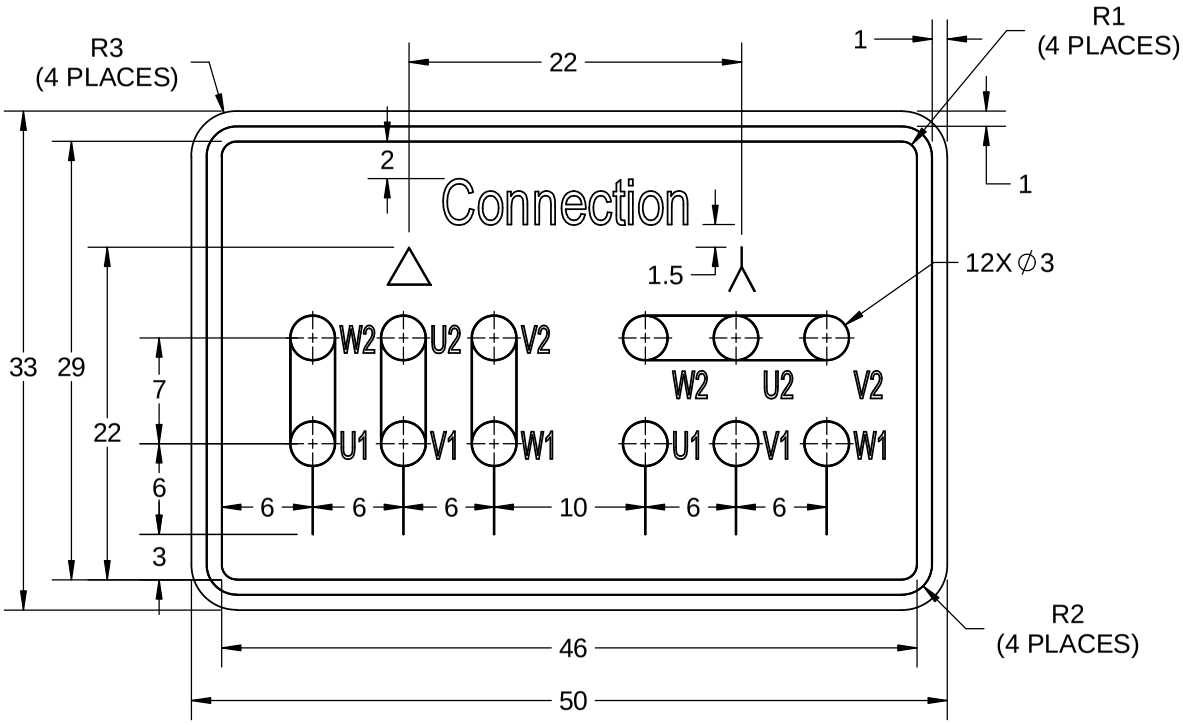
DRAWING REVISION	REVISION BY	DATE
A	SN	13/01/2017
ECO	APPROVED BY	DATE
ECO-0116390	SBD	13/01/2017
ECO DESCRIPTION		
NEW DRAWING RELEASE		

GEOMENTRIC 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.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.442.2017

DRAWN BY: SN	REGAL™ Regal Beloit America, Inc.	
DATE: 16/12/2016		
APPROVED BY: SBD	DESCRIPTION: CONN DIAGRAM-NAMEPLATE	
DATE: 16/12/2016		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE: A / DRAWING NUMBER: 8442000085	SHEET: 1 OF 1

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marathon® Motors

TerraMAX®

Model No. TCA0901A3121GACD01

U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load 5/4FL	FL	3/4FL	1/2FL	PF at __ load FL	3/4FL	1/2FL	I_A/I_N [pu]	T_A/T_N [pu]	T_K/T_N [pu]
415	Δ	50	90	120	144.8	2981	286.70	IE3	-	95	95	94.2	0.91	0.89	0.82	7.2	2.0	3.4

Motor type	TCA	
Enclosure	TEFC	
Frame Material	Cast Iron	
Frame size	280M	
Duty	S1	
Voltage variation *	± 10%	
Frequency variation *	± 5%	
Combined variation *	10%	
Design	N	
Service factor	1.0	
Insulation class	F	
Ambient temperature	-20 to +50	°C
Temperature rise (by resistance)	70 [Class B]	K
Altitude above sea level	1000	meter
Hazardous area classification	NA	
Zone classification	NA	
Gas group	NA	
Temperature class	NA	
Rotor type	Aluminum Die cast	
Bearing type	Anti-friction ball bearing	
DE / NDE bearing	6314 C3 / 6314 C3	
Lubrication method	Regreasable	
Type of grease	Shell Gadus S5 V100 or Equivalent	

Degree of protection	IP 55	
Mounting type	IM B5	
Cooling method	IC 411	
Motor weight - approx.	824	kg
Gross weight - approx.	859	kg
Motor inertia	1.4160	kgm^2
Load inertia	Customer to Provide	
Vibration level	2.2	mm/s
Noise level (1meter distance from motor)	76	dB(A)
No. of starts hot/cold/Equally spread	2/3/4	
Starting method	DOL	
Type of coupling	Direct	
LR withstand time (hot/cold)	15/30	s
Direction of rotation	Bi-directional	
Standard rotation	Clockwise form DE	
Paint shade	RAL 5014	
Accessories		
Accessory - 1	-	
Accessory - 2	-	
Accessory - 3	-	
Terminal box position	TOP	
Maximum cable size/conduit size	1R x 3C x 95mm^2/2 x M50 x 1.5	
Auxiliary terminal box	NA	

I_A/I_N - Locked Rotor Current / Rated Current
T_A/T_N - Locked Rotor Torque / Rated Torque
T_K/T_N - Breakdown 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	-	-	-

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marathon® Motors

TerraMAX®

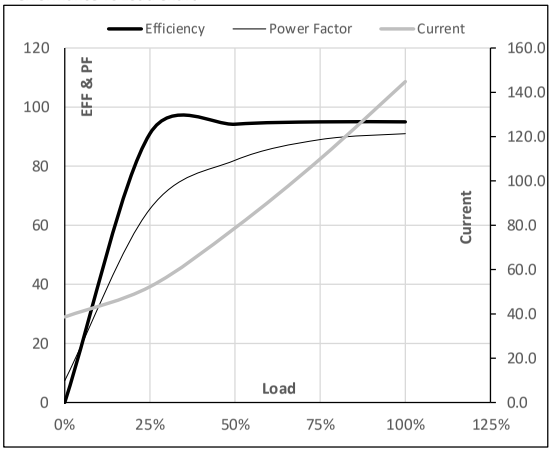
Model No. TCA0901A3121GACD01

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	144.8	2981	29.24	286.70	IE3	50	S1	1000	1.416	824

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	38.6	52.3	78.8	109.9	144.8	
Torque	Nm	0.0	71.3	142.9	214.7	286.7	
Speed	r/min	3000	2995	2991	2986	2981	
Efficiency	%	0.0	91.0	94.2	95.0	95.0	
Power Factor	%	7.4	65.5	82.0	89.0	91.0	

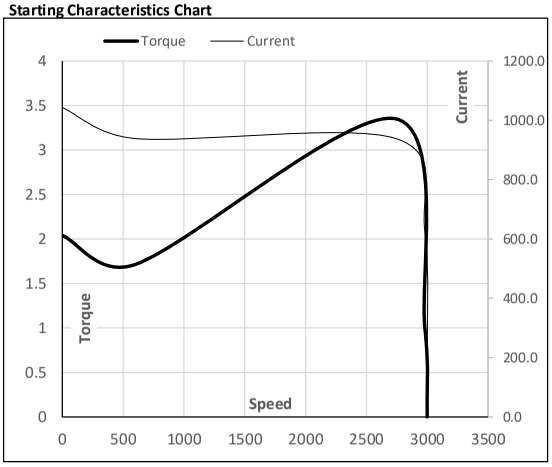
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2743	2981	3000
Current	A	1042.8	938.5	623.3	144.8	38.6
Torque	pu	2.0	1.7	3.4	1	0

Starting Characteristics Chart



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

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marathon® Motors

TerraMAX®

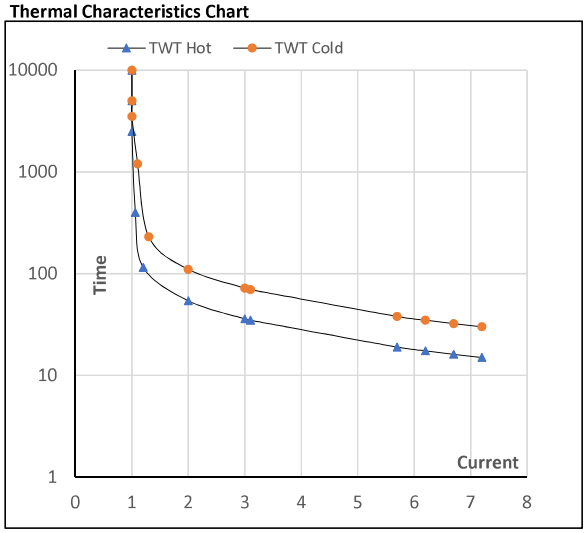
Model No. TCA0901A3121GACD01

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	144.8	2981	29.21	286.70	IE3	50	S1	1000	1.4160	824

Motor Speed Torque Data

Load		FL	I_1	I_2	I_3	I_4	I_5	LR
TWT Hot	s	10000	54	36	30	25	20	15
TWT Cold	s	10000	110	72	60	45	40	30
Current	pu	1	2	3	4	5	5.5	7.2

Thermal Characteristics Chart



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

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