

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA2P23A3131GACD01

Catalog No: TCA2P23A3131GACD01

2.2 kW General Purpose Low Voltage IEC Motor, 3 phase, 1000 RPM, 415 V, 112M Frame, TEFC
Cast Iron IE3 Efficiency Motors



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REGAL

Nameplate Specifications

Output HP	3 Hp	Output KW	2.2 kW
Frequency	50 Hz	Voltage	415 V
Current	5.0 A	Speed	958 rpm
Service Factor	1	Phase	3
Efficiency	84.3 %	Power Factor	0.73
Duty	S1	Insulation Class	F
Frame	112M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6306
Opp Drive End Bearing Size	6206	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	6	Rotation	Bi-Directional
Mounting	B35	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	399 mm	Frame Length	174 mm
Shaft Diameter	28 mm	Shaft Extension	60 mm
Assembly/Box Mounting	Top		
Outline Drawing	0211200263	Connection Drawing	8442000085

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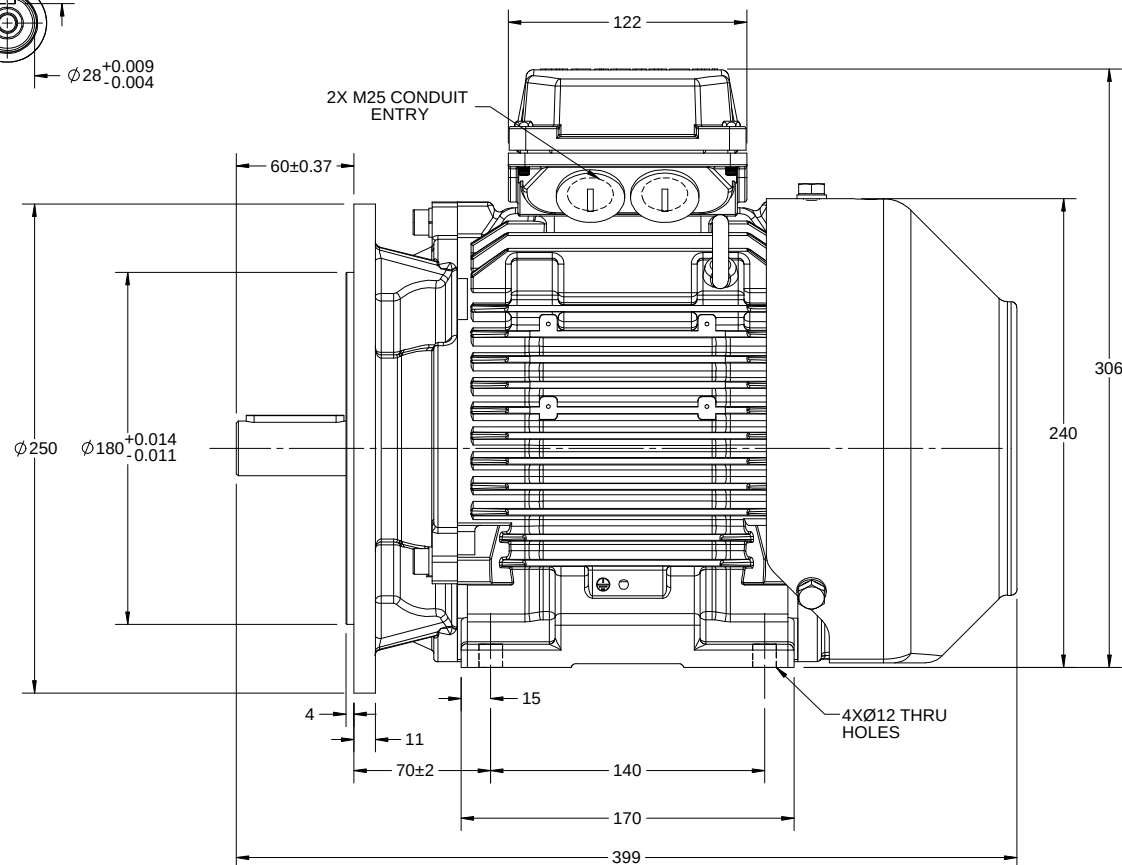
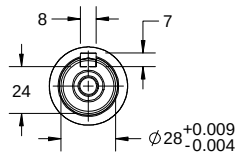
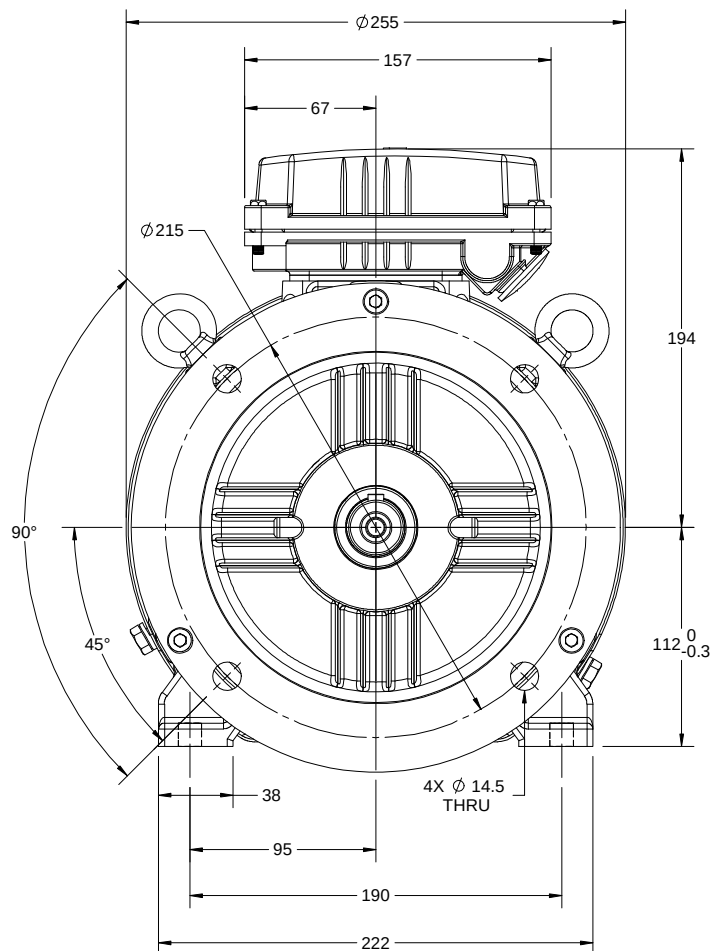
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B

B

A

A



DRAWING REVISION B	REVISION BY S.MUDDA	DATE 5/7/2018
ECO ECO-0147359	APPROVED BY JAY	DATE 5/7/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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DRAWN BY KCS		
DATE 03/06/14		
APPROVED BY SBD	DESCRIPTION OUTLINE 112 FR.- B35 MTG. MOTOR TYPE: TCA	
DATE 03/06/14		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0211200263
		SHEET 1 OF 1

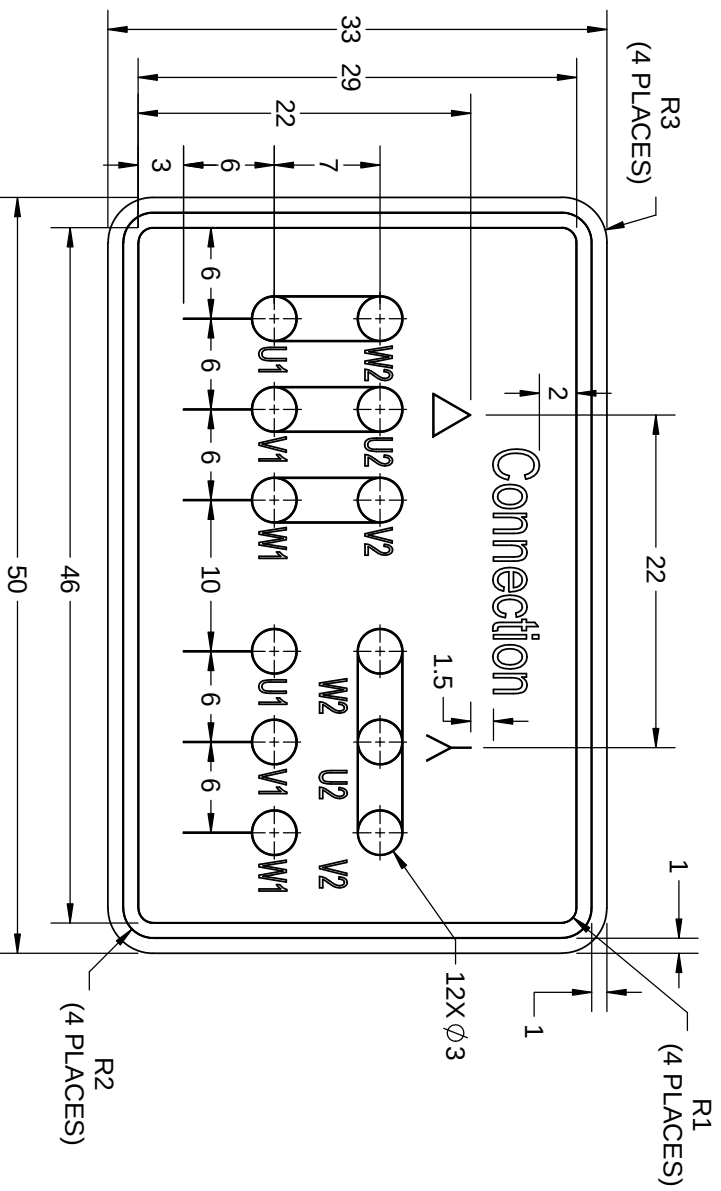
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GEOMETRIC TOLERANCE		
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



- 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			
		DESCRIPTION		Regal Beloit America, Inc.	
		CONN DIAGRAM-NAMEPLATE			
MATERIAL		PROCESS/FINISH			
THIRD ANGLE PROJECTION					
SIZE	DRAWING NUMBER			SHEET	
A	84420000085			1 OF 1	

Model No. TCA2P23A3131GACD01

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	Y	50	2.2	3.0	5.0	958	22.34	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	5.9	2.5	2.8

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B35
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	112M	Motor weight - approx.	49 kg
Duty	S1	Gross weight - approx.	52 kg
Voltage variation *	± 10%	Motor inertia	0.0158 kgm ²
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	1.6 mm/s
Design	N	Noise level (1meter distance from motor)	58 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	6306-2Z / 6206-2Z	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 16mm ² /2 x M25 x 1.5
Type of grease	NA	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	-	-	-



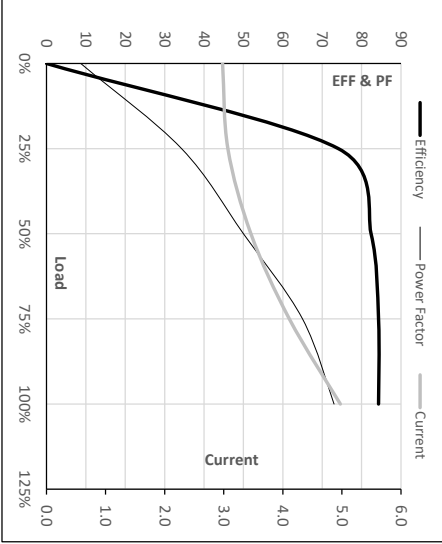
Model No. TCA2P23A3131GACD01

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]	S0	S1	[m]	[kg·m ²]	[kg]
TFC	415	Y	50	2.2	3.0	5.0	958	2.28	22.34	IE3	50	S1	1000	0.0158	49

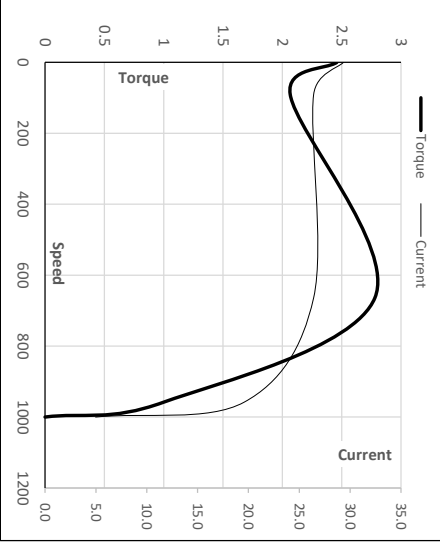
Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	3.0	3.1	3.5	4.1	5.0
Torque	Nm	0.0	5.4	10.9	16.6	22.3
Speed	r/min	1000	990	981	970	958
Efficiency	%	0.0	74.1	82.4	84.3	84.3
Power Factor	%	8.7	34.3	50.0	65.0	73.0

Performance vs Load Chart



Starting Characteristics Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	91	664	958	1000
Current	A	29.3	26.4	19.6	5.0	3.0
Torque	pu	2.5	2.1	2.8	1	0

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

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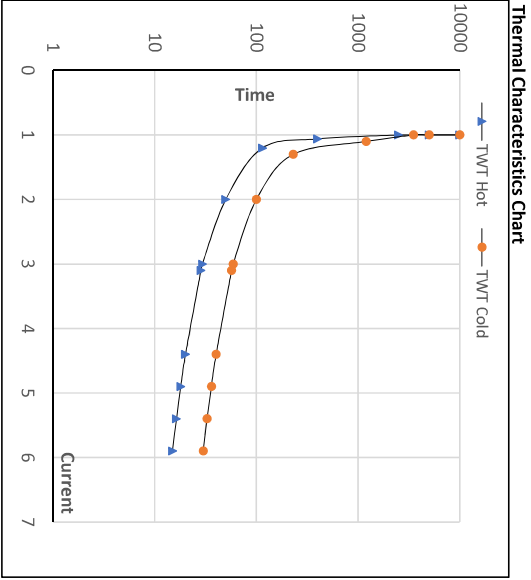


Model No. TCA2P23A313IGACD01

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	Y	50	2.2	3.0	5.0	958	2.28	22.34	IE3	50	S1	1000	0.0158	49

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	50	30	25	18	16	15
TWT Cold	s	10000	100	59	50	35	31	30
Current	pu	1	2	3	4	5	5.5	5.9



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

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