

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA1P52A3181GACD01

Catalog No: TCA1P52A3181GACD01

1.5 kW General Purpose Low Voltage IEC Motor, 3 phase, 1500 RPM, 415 V, 90L Frame, TEFC
Cast Iron IE3 Efficiency Motors



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REGAL

Nameplate Specifications

Output HP	2 Hp	Output KW	1.5 kW
Frequency	50 Hz	Voltage	415 V
Current	3.0 A	Speed	1442 rpm
Service Factor	1	Phase	3
Efficiency	85.3 %	Power Factor	0.83
Duty	S1	Insulation Class	F
Frame	90L	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6205
Opp Drive End Bearing Size	6205	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	B14B	Motor Orientation	Shaftdown
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	332 mm	Frame Length	153 mm
Shaft Diameter	24 mm	Shaft Extension	50 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0209000399

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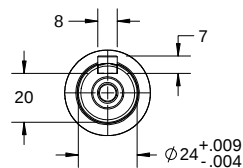
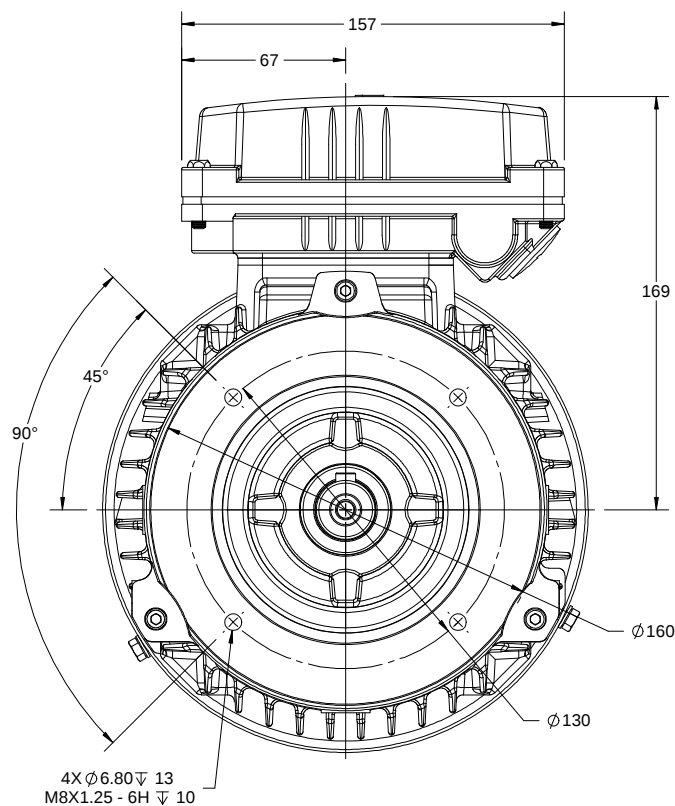
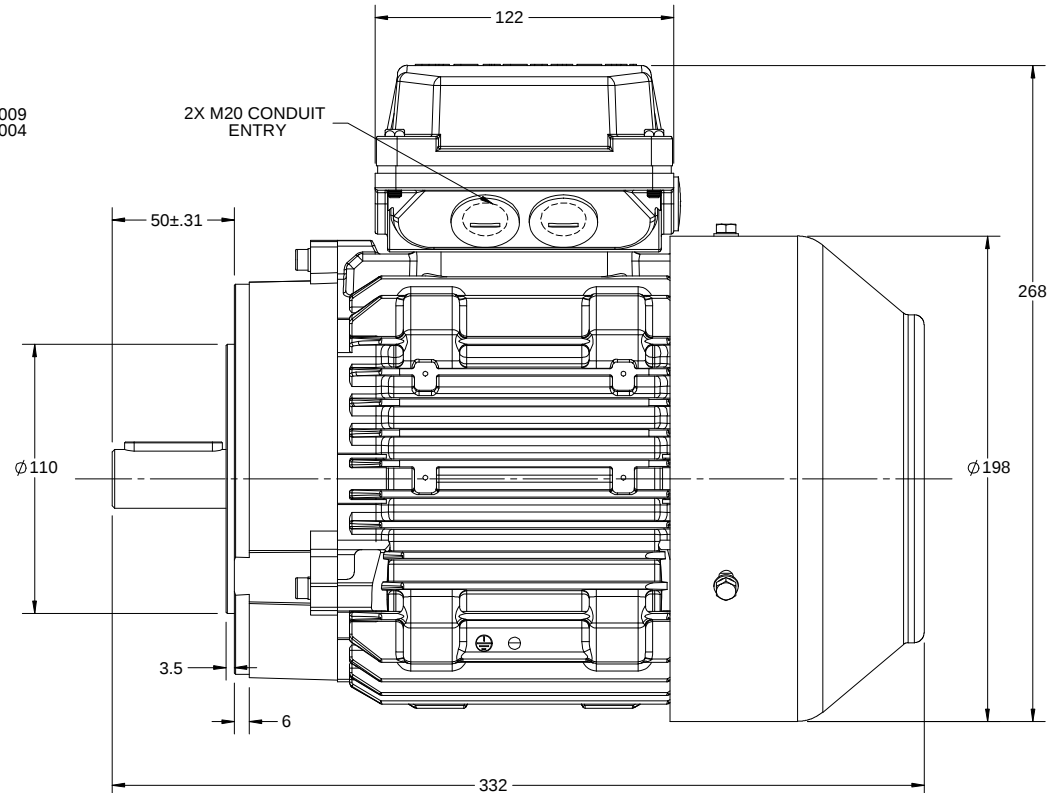
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B

B

2X M20 CONDUIT
ENTRY

A

A

DRAWING REVISION C	REVISION BY I. RAMDAS	DATE 26/06/2018
ECO ECO-0147359	APPROVED BY JAY	DATE 26/06/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER 3D STRUCTURING		
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DRAWN BY SMAR		
DATE 01/09/13		
APPROVED BY JAY	DESCRIPTION OUTLINE 90 FR.- B14B MTG. MOTOR TYPE: TCA	
DATE 01/09/13		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0209000399
		SHEET 1 OF 1

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

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.
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.

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

8WD.442.2017

Model No. TCA1P52A3181GACD01

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	1.5	2.0	2.9	1442	9.88	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	6.5	2.6	3.0

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B14B
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	90L	Motor weight - approx.	28.2 kg
Duty	S1	Gross weight - approx.	29.2 kg
Voltage variation *	± 10%	Motor inertia	0.0057 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)	54 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)	12/25 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	6205-2Z / 6205-2Z	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 10mm ² /2 x M20 x 1.5
Type of grease	NA	Auxiliary terminal box	NA

 I_a/I_N - Locked Rotor Current / Rated Current

 T_b/T_N - Breakdown Torque / Rated Torque

 T_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	-	-	-



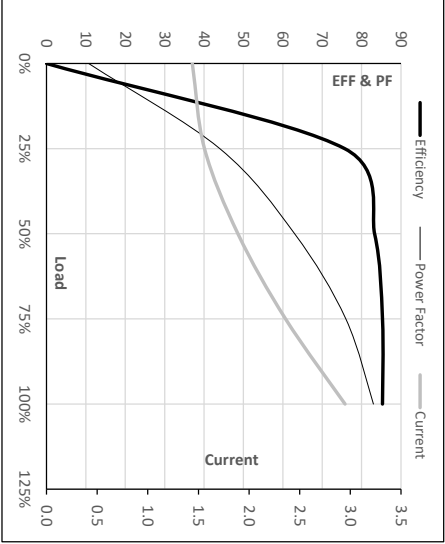
Model No. TCA1P52A3181GACD01

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]
TFC	415	Y	50	1.5	2.0	2.9	1442	1.01	9.88	IE3	50	S1	1000	0.0057	28.2

Motor Speed Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	1.4	1.6	1.9	2.4	2.9
Torque	Nm	0.0	2.4	4.8	7.3	9.9
Speed	r/min	1500	1486	1473	1458	1442
Efficiency	%	0.0	75.7	83.3	85.3	85.3
Power Factor	%	10.7	44.0	63.0	76.0	83.0

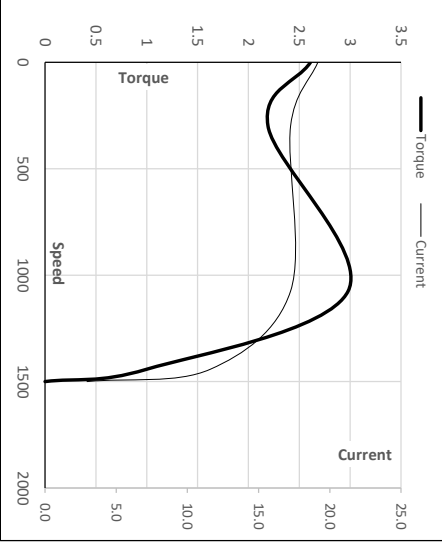
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	300	1075	1442	1500
Current	A	19.2	17.2	11.6	2.9	1.4
Torque	pu	2.6	2.2	3.0	1	0

Starting Characteristics Chart



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

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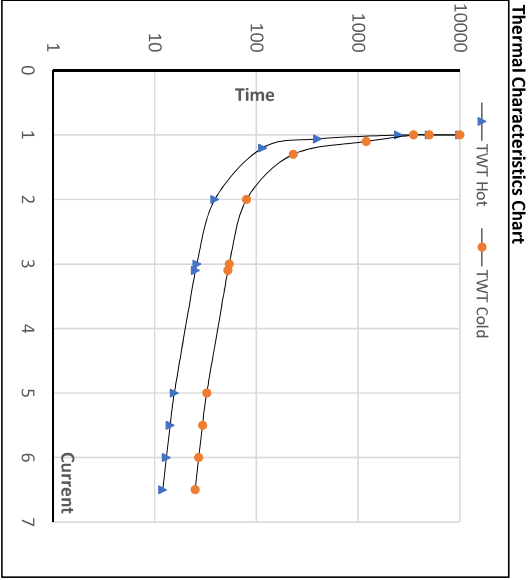


Model No. TCA1P52A3181GACD01

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	1.5	2.0	2.9	1442	1.01	9.88	IE3	50	S1	1000	0.0057	28.2

Motor Speed Torque Data

Load	FL	I_1	I_2	I_3	I_4	I_5	LR	
TWT Hot	s	10000	39	26	25	16	14	12
TWT Cold	s	10000	80	54	50	33	30	25
Current	pu	1	2	3	4	5	5.5	6.5



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

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