

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: QCA1P51AF181GAA001

Catalog No: QCA1P51AF181GAA001

TerraMAX® Cast Iron Motor, 2 HP, 3 Ph, 50 Hz, 380 V, 3000 RPM, 90S Frame, TEFC



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RegalRexnord

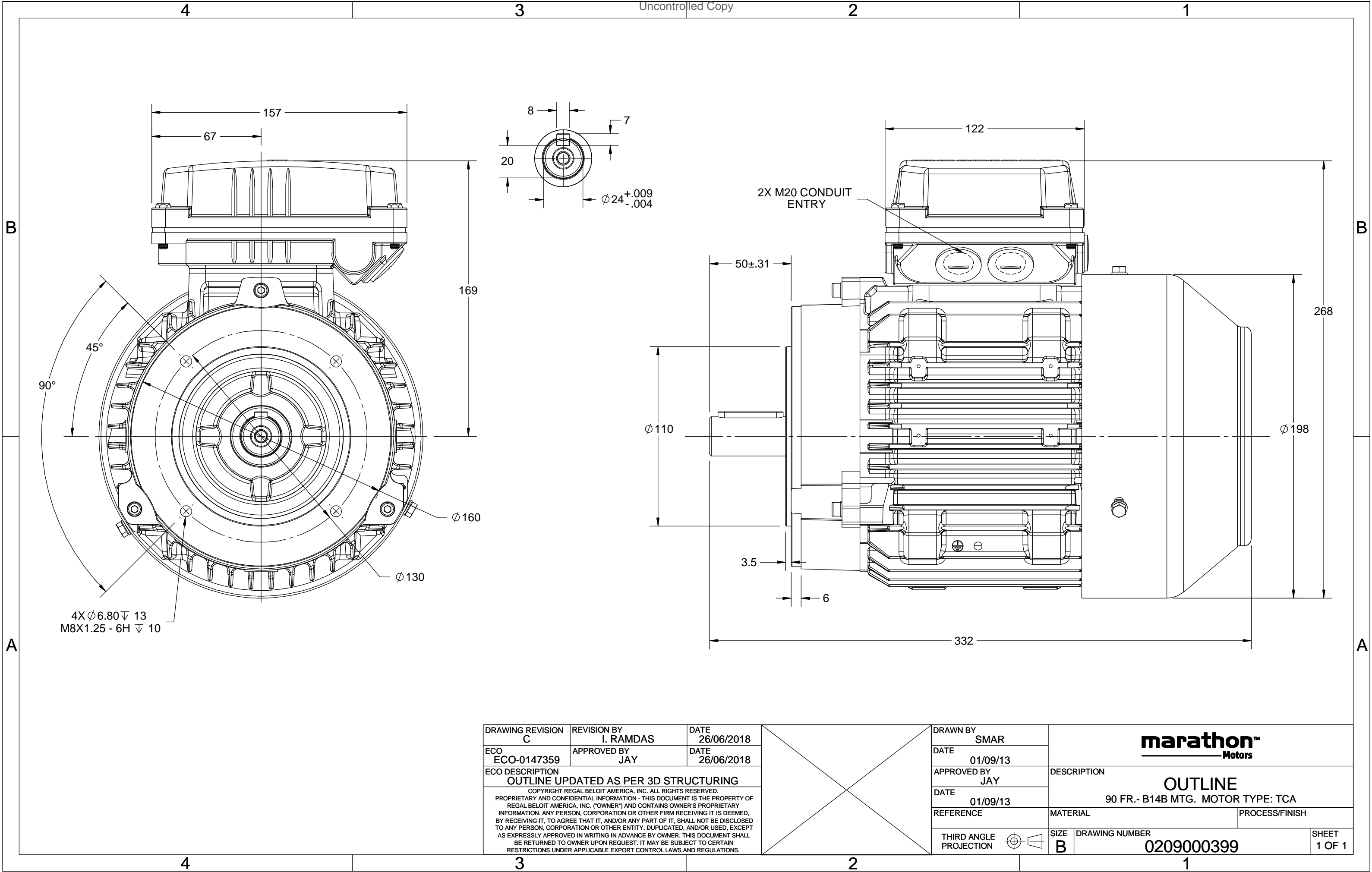
Nameplate Specifications

Output HP	2 Hp	Output KW	1.5 kW
Frequency	50 Hz	Voltage	380 V
Current	3.2 A	Speed	2907 rpm
Service Factor	1	Phase	3
Efficiency	86.5 %	Power Factor	0.83
Duty	S1	Insulation Class	F
Frame	90S	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	6205	Opp Drive End Bearing Size	6205
UL	No	CSA	No
CE	YES	IP Code	55
Number of Speeds	1	Efficiency Class	IE4

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B14B	Motor Orientation	Horizontal
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		
Outline Drawing	0209000399	Connection Drawing	8442000085

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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	marathon™ Motors		
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
A

REVISION BY
SN

DATE
13/01/2017

ECO
ECO-0116390

APPROVED BY
SBD

DATE
13/01/2017

ECO DESCRIPTION

NEW DRAWING RELEASE

GEOMETRIC TOLERANCE

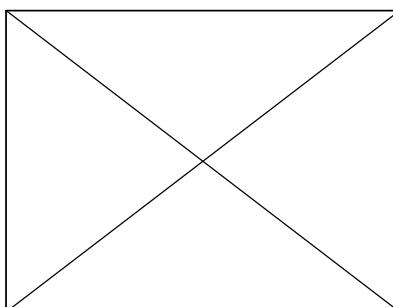
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



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.

8WD.442.2017



DRAWN BY
SN
DATE
16/12/2016
APPROVED BY
SBD
DATE
16/12/2016
REFERENCE
THIRD ANGLE
PROJECTION

REGALTM Regal Beloit America, Inc.
DESCRIPTION
CONN DIAGRAM-NAMEPLATE
MATERIAL
PROCESS/FINISH
SIZE
A
DRAWING NUMBER
8442000085
SHEET
1 OF 1

Model No. QCA1P51AF181GAA001

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 _K /T _N [pu]
									5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
380	Y	50	1.5	2.0	3.2	2907	4.89	IE4	-	86.5	86.5	83.5	0.83	0.75	0.61	8.7	4.3	4.4

Motor type	QCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B14B
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	90S	Motor weight - approx.	26.7 kg
Duty	S1	Gross weight - approx.	27.7 kg
Voltage variation *	± 10%	Motor inertia	0.0024 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)	63 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 +40 °C	Type of coupling	Direct
Temperature rise (by resistance)	80 [Class B] K	LR withstand time (hot/cold)	7/15 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	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_K/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.

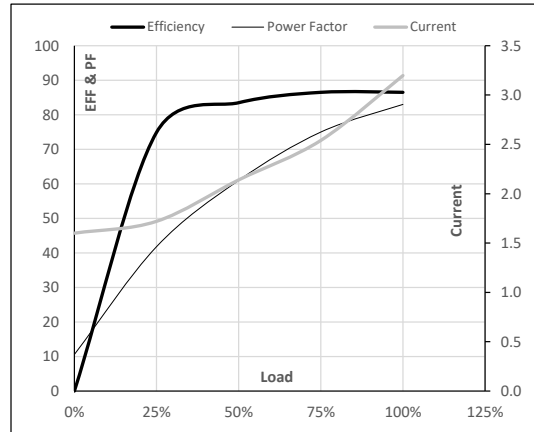
Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	GB 18613-2012 Grade 2	-	-	-	IEC: 60034-30

Model No. QCA1P51AF181GAA001

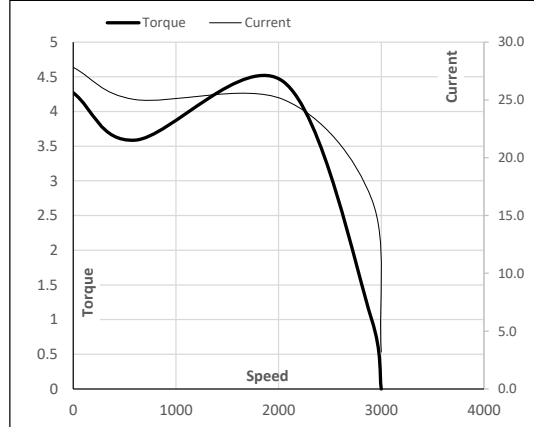
Enclosure	U (V)	Δ / Y Conn	f (Hz)	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m ²]	Weight [kg]
TEFC	380	Y	50	1.5	2.0	3.2	2907	0.50	4.89	IE4	40	S1	1000	0.0024	26.7

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	1.6	1.7	2.1	2.5	3.2	
Torque	Nm	0.0	1.2	2.4	3.6	4.9	
Speed	r/min	3000	2976	2955	2932	2907	
Efficiency	%	0.0	74.9	83.5	86.5	86.5	
Power Factor	%	10.6	41.8	61.0	75.0	83.0	

Performance vs Load Chart

Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2047	2907	3000
Current	A	27.8	25.0	16.4	3.2	1.6
Torque	pu	4.3	3.6	4.4	1	0

Starting Characteristics Chart

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

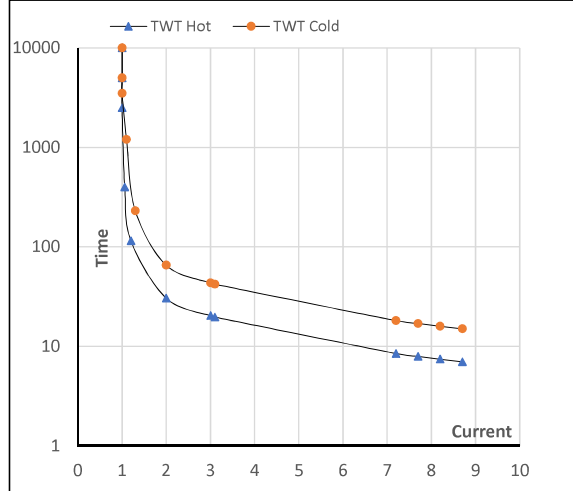
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Issued Date

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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	380	Y	50	1.5	2.0	3.2	2907	0.50	4.89	IE4	40	S1	1000	0.0024	26.7

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s 10000	31	20	18	15	11	7	
TWT Cold	s 10000	65	44	40	35	30	15	
Current	pu	1	2	3	4	5	5.5	8.7

Thermal Characteristics Chart

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

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