

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCA0044A3181GACD01

Catalog No: TCA0044A3181GACD01

Cast Iron Motor, 5.50 HP, 3 Ph, 50 Hz, 415 V, 750 RPM, 160M Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

Output HP	5.50 Hp	Output KW	4.0 kW
Frequency	50 Hz	Voltage	415 V
Current	9.5 A	Speed	730 rpm
Service Factor	1	Phase	3
Efficiency	84.8 %	Power Factor	0.69
Duty	S1	Insulation Class	F
Frame	160M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	50 °C
Drive End Bearing Size	6309	Opp Drive End Bearing Size	6209
UL	No	CSA	No
CE	Yes	IP Code	55
Number of Speeds	1	Efficiency Class	IE3

### Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	8	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	622 mm	Frame Length	254 mm
Shaft Diameter	42 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0216001035

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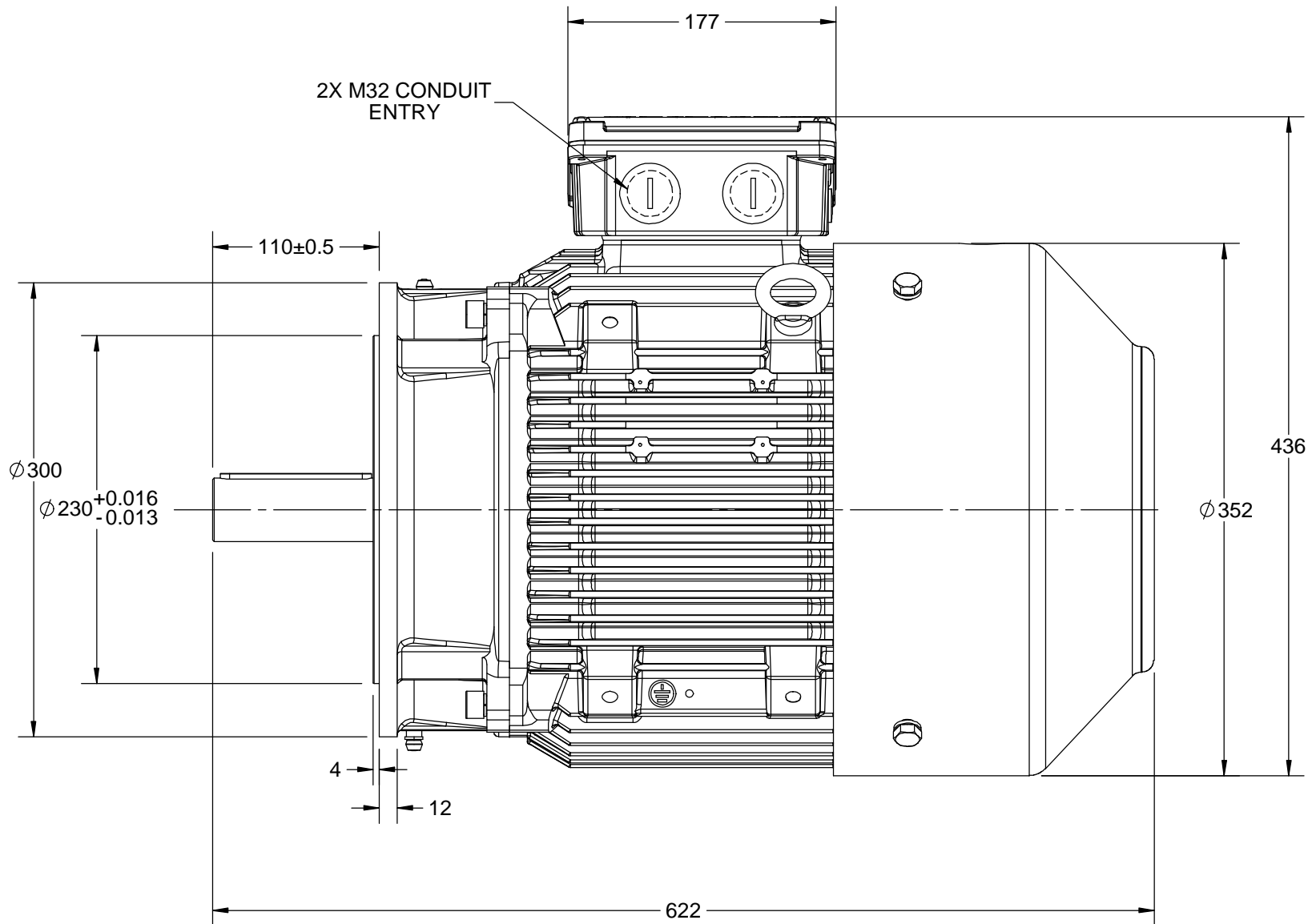
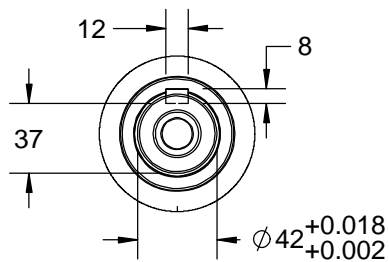
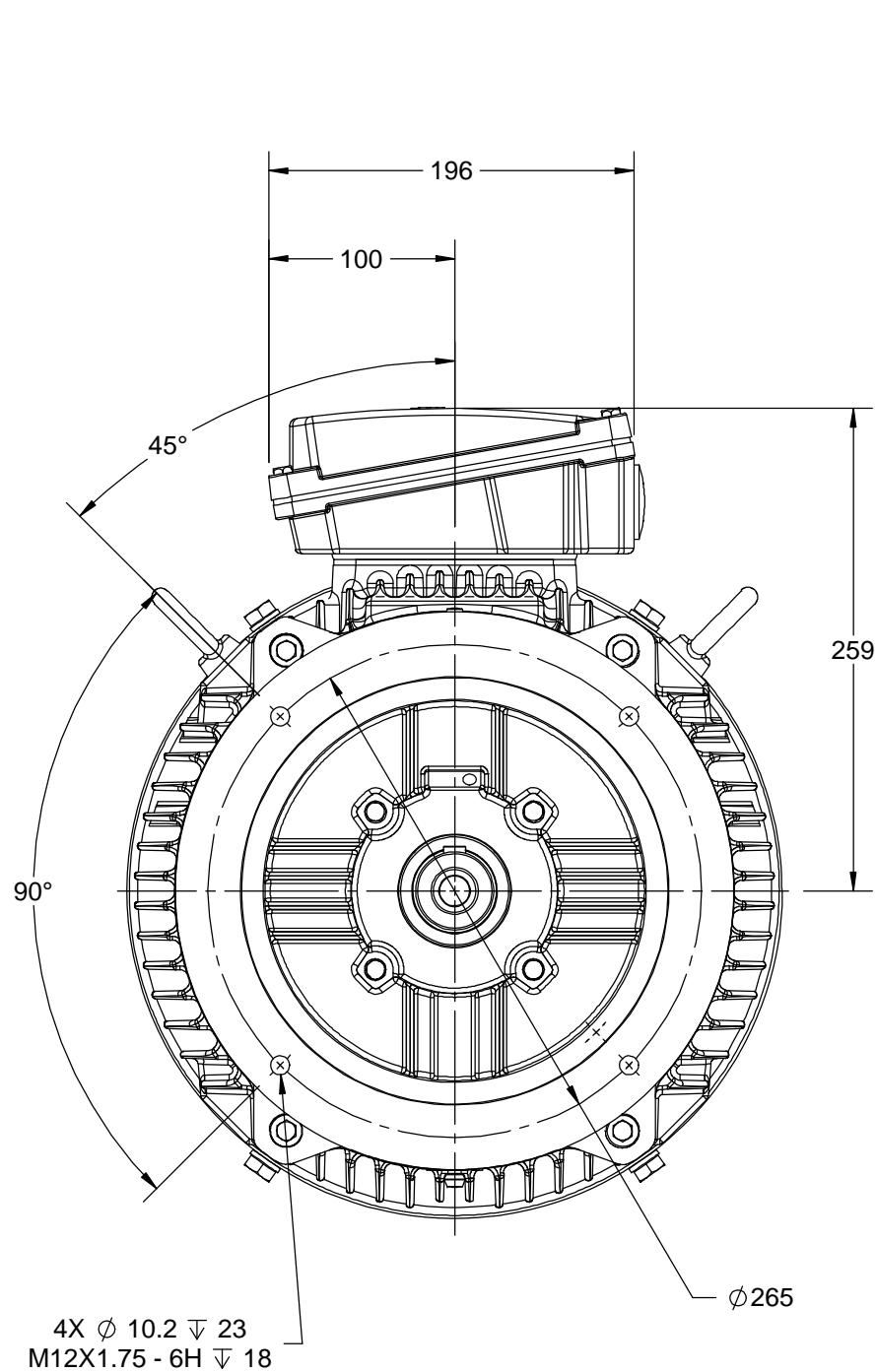
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
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DRAWING REVISION A	REVISION BY NIV	DATE 17/12/2018
ECO ECO-0158679	APPROVED BY SBD	DATE 17/12/2018
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DRAWN BY NIV	 Regal Beloit America, Inc.		
DATE 17/12/2018			
APPROVED BY SBD	DESCRIPTION OUTLINE 160M FR-B14B MTG. MOTOR TYPE TCA		
DATE 17/12/2018			
REFERENCE	MATERIAL	PROCESS/FINISH	
THIRD ANGLE PROJECTION 	SIZE B	DRAWING NUMBER 0216001035	SHEET 1 OF 1

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

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

Model No. TCA0044A3181GACD01

U	Δ / Y	f	P	P	I	n	T	IE	% EFF at __ load				PF at __ load			I <sub>A</sub> /I <sub>N</sub>	T <sub>A</sub> /T <sub>N</sub>	T <sub>K</sub> /T <sub>N</sub>
(V)	Conn	[Hz]	[kW]	[hp]	[A]	[RPM]	[Nm]	Class	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	[pu]	[pu]	[pu]
415	Δ	50	4	5.5	9.5	730	53.76	IE3	-	84.8	84.8	85.5	0.69	0.6	0.47	5.4	1.8	2.4

Motor type	TCA
Enclosure	TEFC
Frame Material	Cast Iron
Frame size	160M
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	6309-2Z / 6209-2Z
Lubrication method	Greased for life
Type of grease	NA

Degree of protection	IP 55
Mounting type	IM B14B
Cooling method	IC 411
Motor weight - approx.	137 kg
Gross weight - approx.	157 kg
Motor inertia	0.1312 kgm <sup>2</sup>
Load inertia	Customer to Provide
Vibration level	2.2 mm/s
Noise level ( 1meter distance from motor)	59 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 35mm <sup>2</sup> /2 X M32 x 1.5
Auxiliary terminal box	NA

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated CurrentT<sub>K</sub>/T<sub>N</sub> - Breakdown Torque / Rated TorqueT<sub>A</sub>/T<sub>N</sub> - 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.

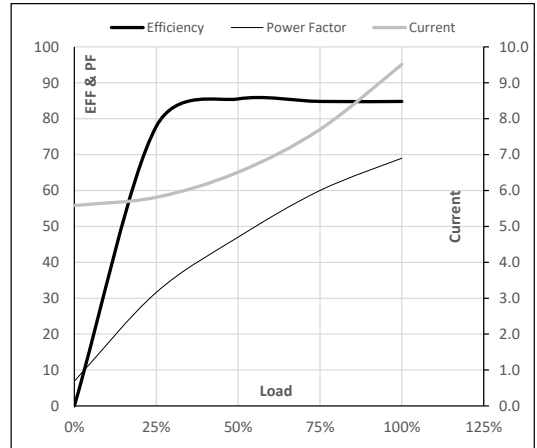
Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	-	IS 12615 : 2018	-	-	-

**Model No.** TCA0044A3181GACD01

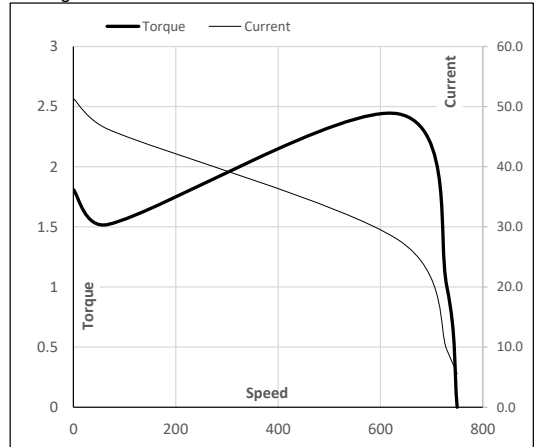
Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	4	6	9.5	730	5.48	53.76	IE3	50	S1	1000	0.1312	137

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	5.6	5.8	6.5	7.7	9.5	
Torque	Nm	0.0	13.2	26.5	40.0	53.8	
Speed	r/min	750	745	741	736	730	
Efficiency	%	0.0	77.8	85.5	84.8	84.8	
Power Factor	%	6.9	31.6	47.0	60.0	69.0	

**Performance vs Load Chart**

**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	68	635	730	750
Current	A	51.4	46.2	27.8	9.5	5.6
Torque	pu	1.8	1.5	2.4	1	0

**Starting Characteristics Chart**

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

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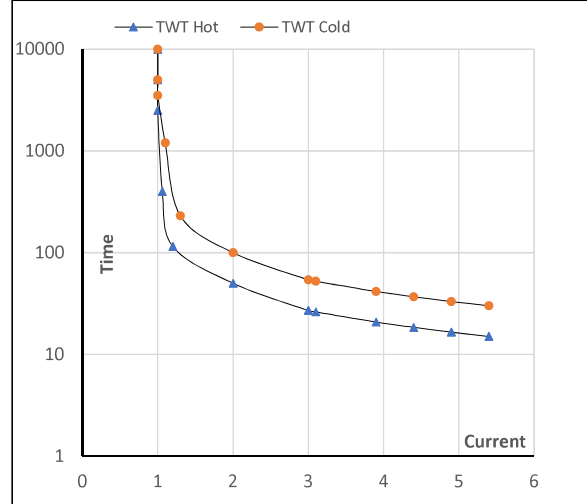
**Model No.** TCA0044A3181GACD01

Enclosure	U (V)	$\Delta$ / 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 <sup>2</sup> ]	Weight [kg]
TEFC	415	$\Delta$	50	4	5.5	9.5	730	5.48	53.76	IE3	50	S1	1000	0.1312	137

#### Motor Speed Torque Data

Load		FL	$I_1$	$I_2$	$I_3$	$I_4$	$I_5$	LR
TWT Hot	s	10000	50	27	20	18	16	15
TWT Cold	s	10000	100	54	40	36	31	30
Current	pu	1	2	3	4	4.5	5	5.4

#### Thermal Characteristics Chart



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

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