

# PRODUCT INFORMATION PACKET

Model No: TCA0033A3181GACD01  
Catalog No: TCA0033A3181GACD01  
Cast Iron Motor, 4 HP, 3 Ph, 50 Hz, 415 V, 1000 RPM, 132S Frame, TEFC



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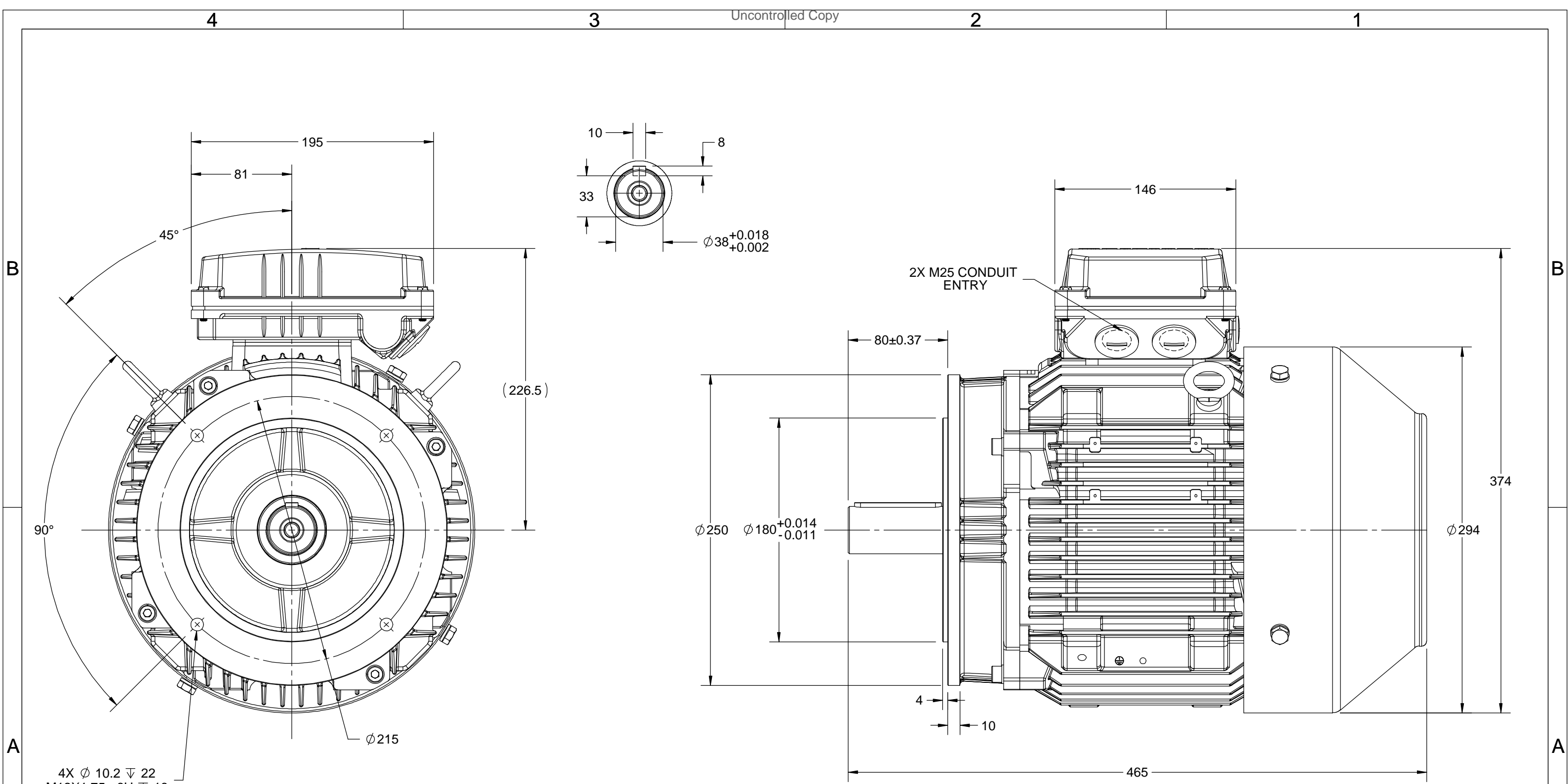
### Nameplate Specifications

Output HP	<b>4 Hp</b>	Output KW	<b>3.0 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>415 V</b>
Current	<b>6.8 A</b>	Speed	<b>973 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>85.6 %</b>	Power Factor	<b>0.72</b>
Duty	<b>S1</b>	Insulation Class	<b>F</b>
Frame	<b>132S</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>50 °C</b>
Drive End Bearing Size	<b>6308</b>	Opp Drive End Bearing Size	<b>6208</b>
UL	<b>No</b>	CSA	<b>No</b>
CE	<b>Yes</b>	IP Code	<b>55</b>
Number of Speeds	<b>1</b>	Efficiency Class	<b>IE3</b>


### Technical Specifications

Electrical Type	<b>Squirrel Cage</b>	Starting Method	<b>Direct On Line</b>
Poles	<b>6</b>	Rotation	<b>Bi-Directional</b>
Mounting	<b>B14B</b>	Motor Orientation	<b>Shaftdown</b>
Drive End Bearing	<b>2z-C3</b>	Opp Drive End Bearing	<b>2z-C3</b>
Frame Material	<b>Cast Iron</b>	Shaft Type	<b>Keyed</b>
Overall Length	<b>465 mm</b>	Frame Length	<b>202 mm</b>
Shaft Diameter	<b>38 mm</b>	Shaft Extension	<b>80 mm</b>
Assembly/Box Mounting	<b>Top</b>		
Outline Drawing	<b>0213201187</b>	Connection Drawing	<b>8442000085</b>

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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		<b>marathon™</b> Motors
DATE 17/12/2018		
APPROVED BY SBD		
DATE 17/12/2018		
REFERENCE	MATERIAL	DESCRIPTION <b>OUTLINE</b> 132S FR.- B14B MTG. MOTOR TYPE: TCA
THIRD ANGLE PROJECTION	SIZE B	PROCESS/FINISH
	DRAWING NUMBER 0213201187	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>	 Regal Beloit America, Inc.		
			DATE <b>16/12/2016</b>
	APPROVED BY <b>SBD</b>	DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>	
	DATE <b>16/12/2016</b>		
	REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION 	SIZE <b>A</b>	DRAWING NUMBER <b>8442000085</b>	SHEET <b>1 OF 1</b>

Model No. TCA0033A3181GACD01

U (V)	$\Delta / Y$ Conn	f (Hz)	P		I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			$I_A/I_N$ [pu]	$T_A/T_N$ [pu]	$T_R/T_N$ [pu]
			[kW]	[hp]					5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Y	50	3	4.0	6.8	973	29.35	IE3	-	85.6	85.6	84	0.72	0.63	0.48	5.4	2.0	2.5

Motor type	TCA
Enclosure	TEFC
Frame Material	Cast Iron
Frame size	132S
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	6308-2Z / 6208-2Z
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.	68 kg
Gross weight - approx.	71 kg
Motor inertia	0.0390 kgm <sup>2</sup>
Load inertia	Customer to Provide
Vibration level	1.6 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 16mm <sup>2</sup> /2 x M25 x 1.5
Auxiliary terminal box	NA

$I_A/I_N$  - Locked Rotor Current / Rated Current

$T_R/T_N$  - 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	-	-	-



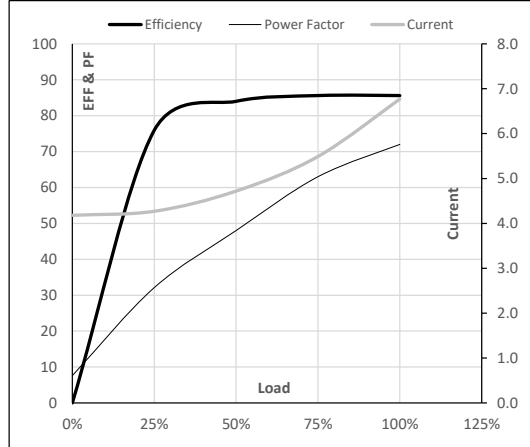
Model No. TCA0033A3181GACD01

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	Y	50	3	4	6.8	973	2.99	29.35	IE3	50	S1	1000	0.039	68

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	4.2	4.3	4.7	5.5	6.8	
Torque	Nm	0.0	7.2	14.5	21.8	29.4	
Speed	r/min	1000	993	987	980	973	
Efficiency	%	0.0	75.9	84.0	85.6	85.6	
Power Factor	%	7.6	32.1	48.0	63.0	72.0	

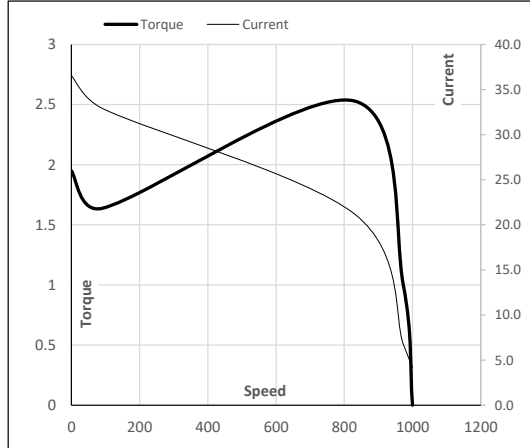
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	91	830	973	1000
Current	A	36.6	32.9	21.2	6.8	4.2
Torque	pu	2.0	1.6	2.5	1	0

**Starting Characteristics Chart**



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

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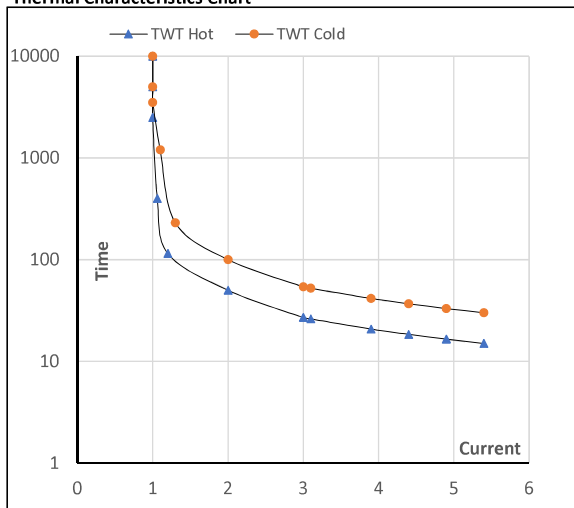
**Model No.** TCA0033A3181GACD01

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	Y	50	3	4.0	6.8	973	2.99	29.35	IE3	50	S1	1000	0.0390	68

**Motor Speed Torque Data**

Load	FL	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>	LR	
TWT Hot	s 10000	50	27	20	18	16	15	
TWT Cold	s 10000	100	54	41	36	33	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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