

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA18P1A3181GACD01

Catalog No: TCA18P1A3181GACD01

18.5 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 160L Frame, TEFC
Cast Iron IE3 Efficiency Motors



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REGAL

Nameplate Specifications

Output HP	25 Hp	Output KW	18.5 kW
Frequency	50 Hz	Voltage	415 V
Current	30.3 A	Speed	2948 rpm
Service Factor	1	Phase	3
Efficiency	92.4 %	Power Factor	0.92
Duty	S1	Insulation Class	F
Frame	160L	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6309
Opp Drive End Bearing Size	6209	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	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	666 mm	Frame Length	298 mm
Shaft Diameter	42 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Outline Drawing	0216001036	Connection Drawing	8442000085

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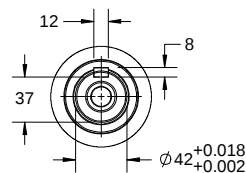
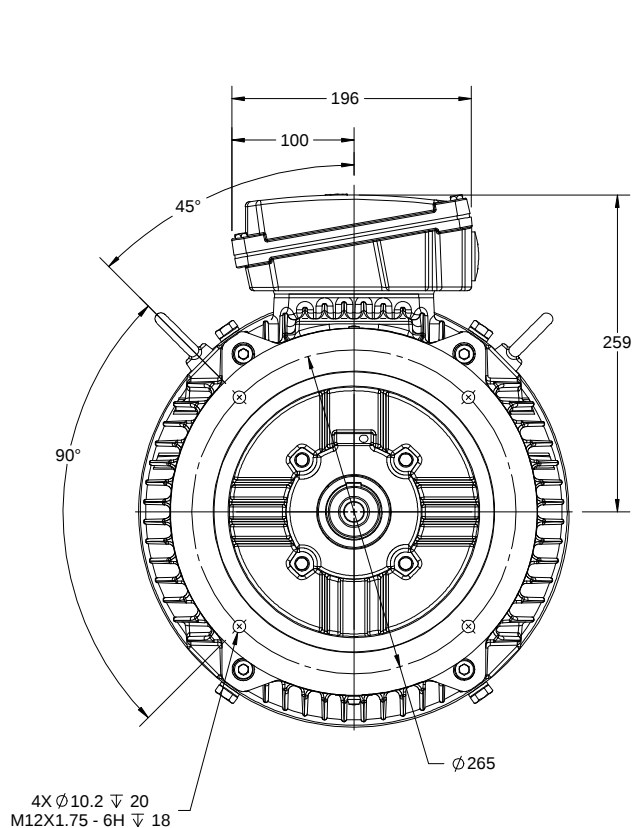
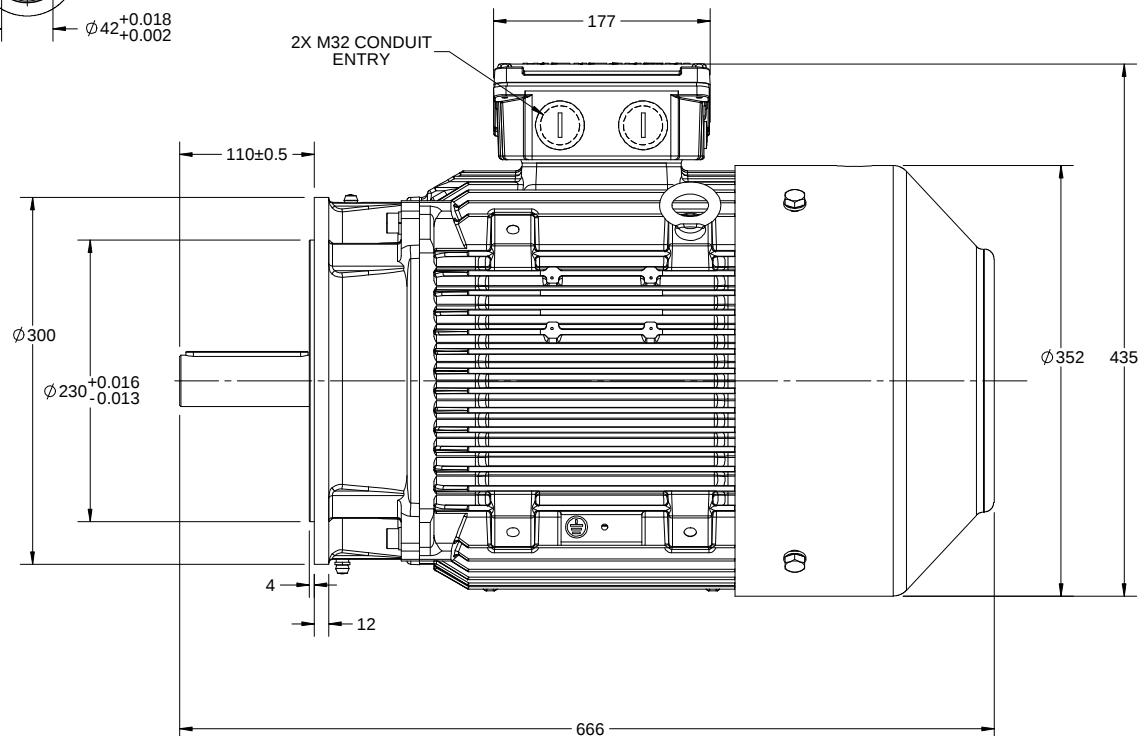
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2X M32 CONDUIT
ENTRY

A

A

DRAWING REVISION A	REVISION BY NIV	DATE 14/12/2018
ECO ECO-0158679	APPROVED BY JAY	DATE 14/12/2018
ECO DESCRIPTION NEW DRAWING RELEASE		
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DRAWN BY NIV		
DATE 14/12/2018		
APPROVED BY SBD	DESCRIPTION OUTLINE 160FR-B14B MTG. MOTOR TYPE TCA	
DATE 14/12/2018		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0216001036
		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.

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

Model No. TCA18P1A3181GACD01

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	Δ	50	18.5	25	30.3	2948	60.39	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7.4	2.4	3.3

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B14B
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	160L	Motor weight - approx.	187 kg
Duty	S1	Gross weight - approx.	207 kg
Voltage variation *	± 10%	Motor inertia	0.1055 kgm ²
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.2 mm/s
Design	N	Noise level (1meter distance from motor)	71 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)	10/20 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	6309-2Z / 6209-2Z	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 35mm ² /2 X M32 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	-	-	-

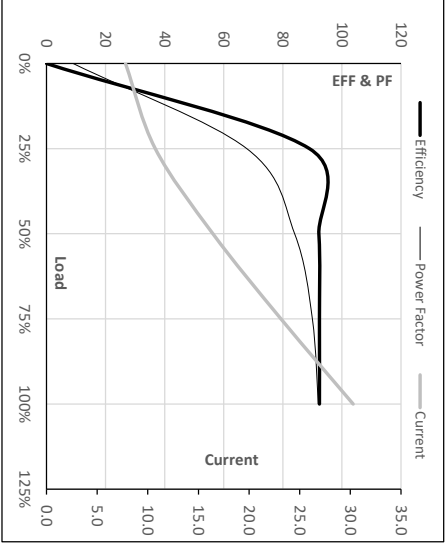
Model No. TCA18P1A3181GACD01

Enclosure	U [V]	Δ / Y Com	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	Δ	50	18.5	25	30.3	2948	6.16	60.39	IE3	50	S1	1000	0.1055	187

Motor Speed Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	7.8	10.7	16.4	23.2	30.3
Torque	Nm	0.0	14.9	29.9	45.1	60.4
Speed	r/min	3000	2987	2975	2962	2948
Efficiency	%	0.0	89.0	92.2	92.4	92.4
Power Factor	%	9.0	67.8	84.0	90.0	92.0

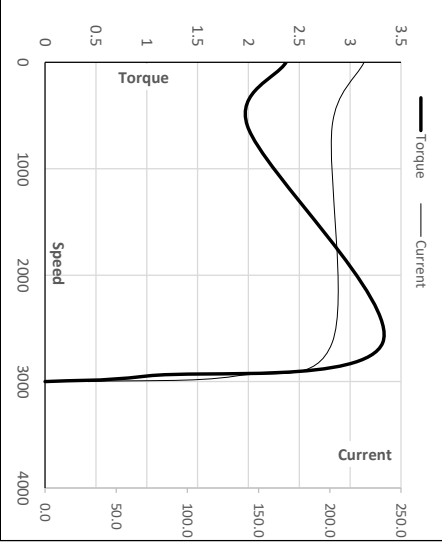
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	2635	2948	3000
Current	A	224.1	201.6	133.9	30.3	7.8
Torque	pu	2.4	2.0	3.3	1	0

Starting Characteristics Chart



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

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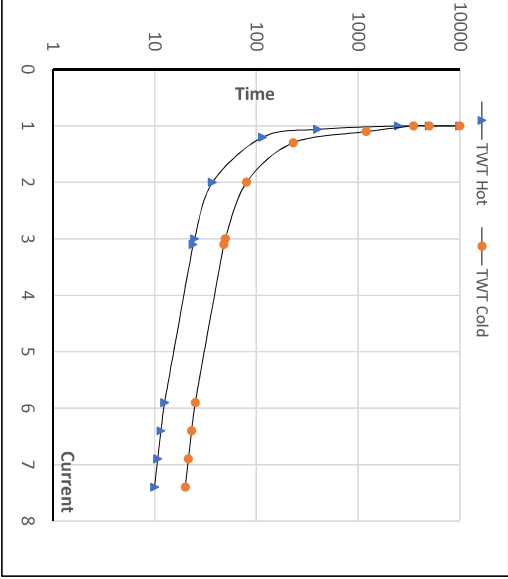
Model No. TCA18P1A3181GACD01

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	Δ	50	18.5	25	30.3	2948	6.15	60.39	IE3	50	S1	1000	0.1055	187

Motor Speed Torque Data

Load	FL	I_1	I_2	I_3	I_4	I_5	LR	
TWT Hot	s	10000	37	25	21	17	14	10
TWT Cold	s	10000	80	50	45	30	28	20
Current	pu	1	2	3	4	5	5.5	7.4

Thermal Characteristics Chart



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

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