

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA7P51A3181GACD01

Catalog No: TCA7P51A3181GACD01

7.5 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 132S Frame, TEFC
Cast Iron IE3 Efficiency Motors



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REGAL

Nameplate Specifications

Output HP	10 Hp	Output KW	7.5 kW
Frequency	50 Hz	Voltage	415 V
Current	12.7 A	Speed	2931 rpm
Service Factor	1	Phase	3
Efficiency	90.1 %	Power Factor	0.91
Duty	S1	Insulation Class	F
Frame	132S	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6308
Opp Drive End Bearing Size	6208	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	465 mm	Frame Length	202 mm
Shaft Diameter	38 mm	Shaft Extension	80 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0213201187

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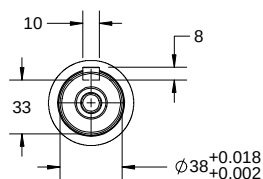
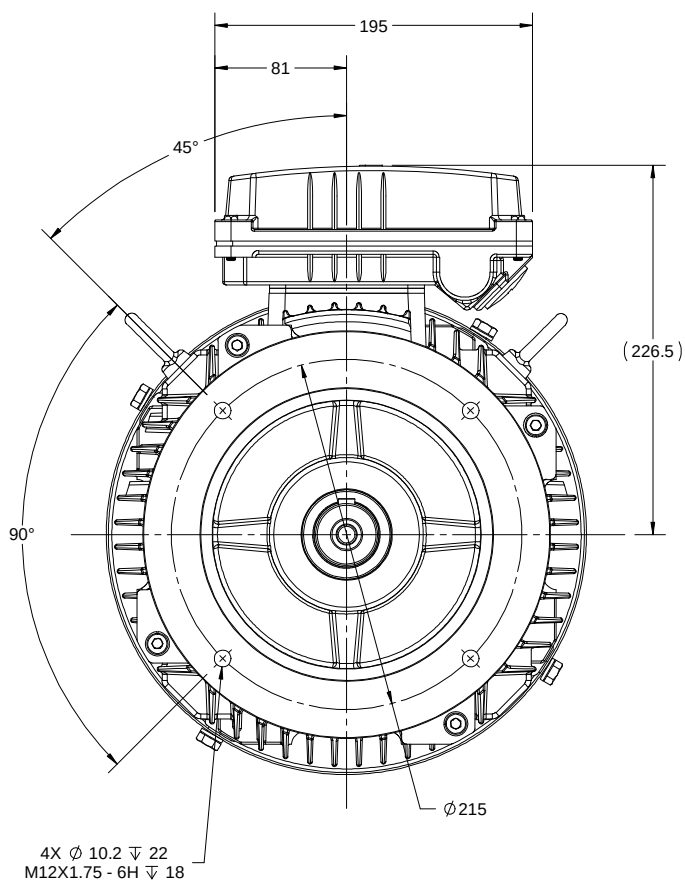
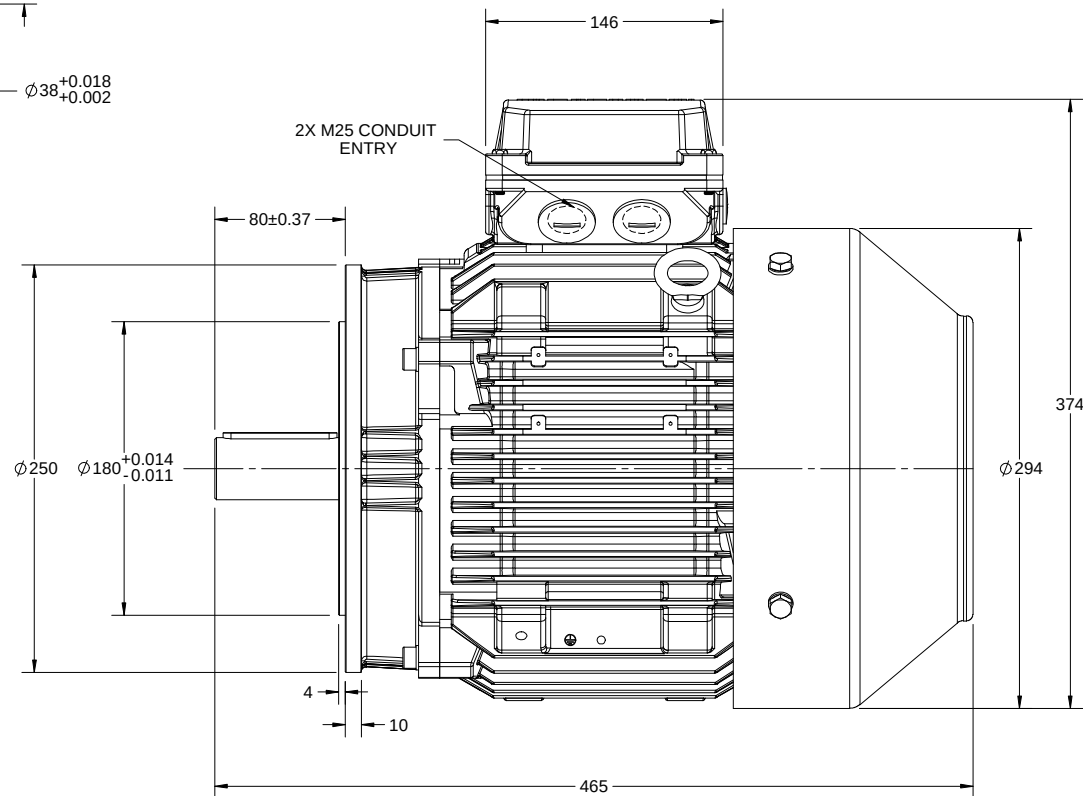
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2X M25 CONDUIT
ENTRY

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DRAWING REVISION A	REVISION BY NIV	DATE 17/12/2018
ECO ECO-0158679	APPROVED BY SBD	DATE 17/12/2018
ECO DESCRIPTION NEW DRAWING RELEASE		
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DATE 17/12/2018
APPROVED BY SBD
DATE 17/12/2018
REFERENCE

THIRD ANGLE
PROJECTION
marathon
Motors

 DESCRIPTION
OUTLINE
 132S FR.- B14B MTG. MOTOR TYPE: TCA

 MATERIAL
 PROCESS/FINISH

 SIZE
B

 DRAWING NUMBER
0213201187

 SHEET
1 OF 1

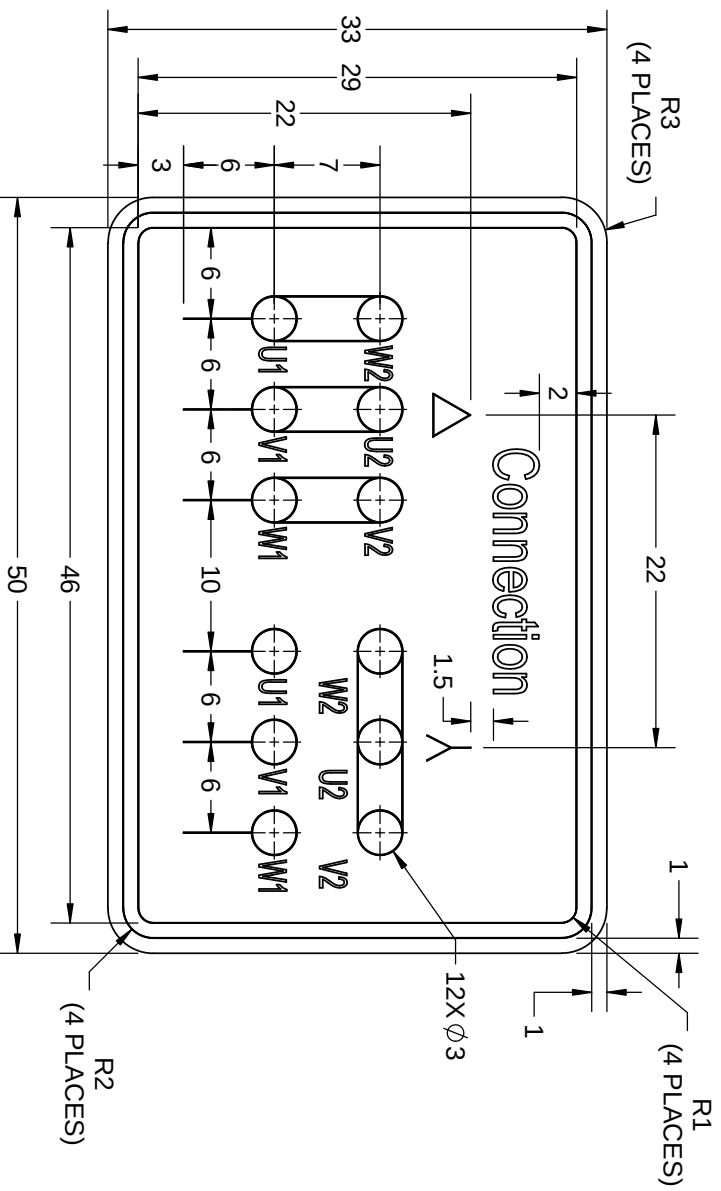
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GEOMETRIC TOLERANCE		
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



- NOTES:
1. PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
 2. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.
 - 3.

		DRAWN BY		SN	
		DATE		16/12/2016	
		APPROVED BY		SBD	
		DATE		16/12/2016	
		REFERENCE			
		DESCRIPTION		REGAL™ Regal Beloit America, Inc.	
		CONN DIAGRAM-NAMEPLATE			
MATERIAL		PROCESS/FINISH			
THIRD ANGLE PROJECTION					
SIZE	DRAWING NUMBER			SHEET	
A	84420000085			1 OF 1	

Model No. TCA7P51A3181GACD01

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	7.5	10	12.7	2931	24.30	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7.5	2.5	3.4

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B14B
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	132S	Motor weight - approx.	86 kg
Duty	S1	Gross weight - approx.	89 kg
Voltage variation *	± 10%	Motor inertia	0.0230 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)	64 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	6308-2Z / 6208-2Z	Terminal box position	TOP
Lubrication method	Greased for life	Maximum cable size/conduit size	1R x 3C x 16mm ² /2 x M25 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	-	-	-



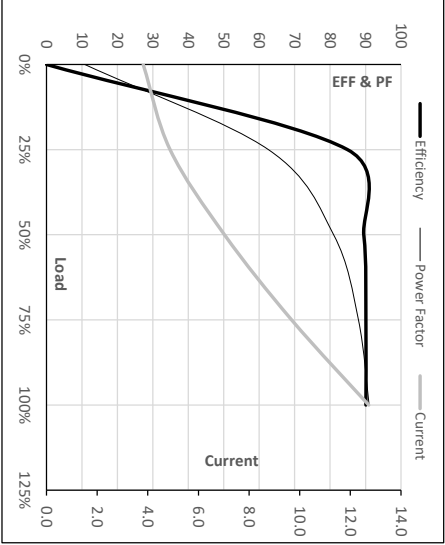
Model No. TCA7P51A3181GACD01

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]	50	S1	1000	[kg·m ²]	[kg]
TFC	415	Δ	50	7.5	10	12.7	2931	2.48	24.30	IE3	50	S1	1000	0.023	86

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	3.8	4.9	7.0	9.7	12.7
Torque	Nm	0.0	6.0	12.0	18.1	24.3
Speed	r/min	3000	2983	2967	2950	2931
Efficiency	%	0.0	84.9	89.5	90.1	90.1
Power Factor	%	10.8	62.6	81.0	88.0	91.0

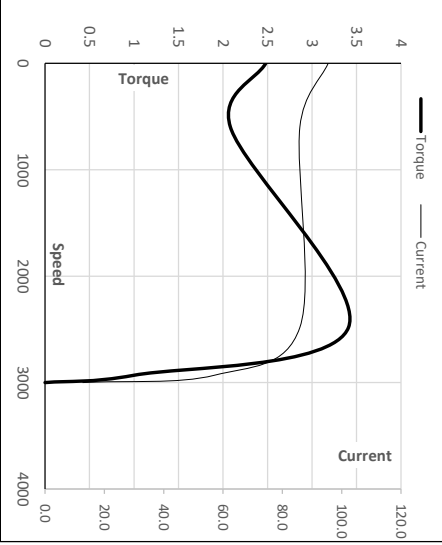
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	2482	2931	3000
Current	A	95.4	85.9	57.1	12.7	3.8
Torque	pu	2.5	2.1	3.4	1	0

Starting Characteristics Chart



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

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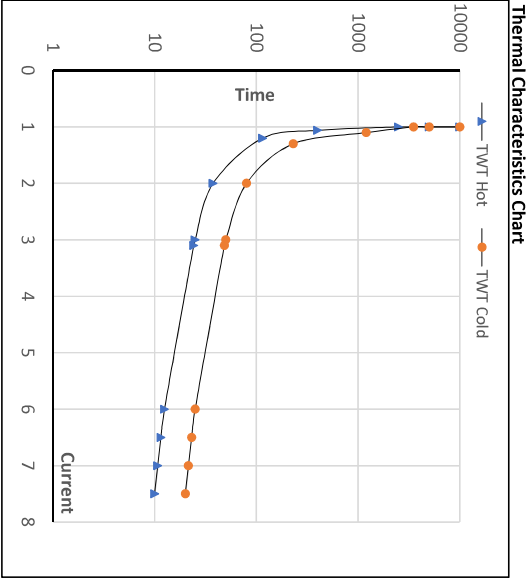


Model No. TCA7P51A3181GACD01

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	7.5	10	12.7	2931	2.48	24.30	IE3	50	S1	1000	0.0230	86

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	37	25	20	16	13	10
TWT Cold	s	10000	80	50	44	36	29	20
Current	pu	1	2	3	4	5	5.5	7.5



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

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