

PRODUCT INFORMATION PACKET

Model No: TCA0031A3181GACD01

Catalog No: TCA0031A3181GACD01

3.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 100L Frame, TEFC
Cast Iron IE3 Efficiency Motors





Nameplate Specifications

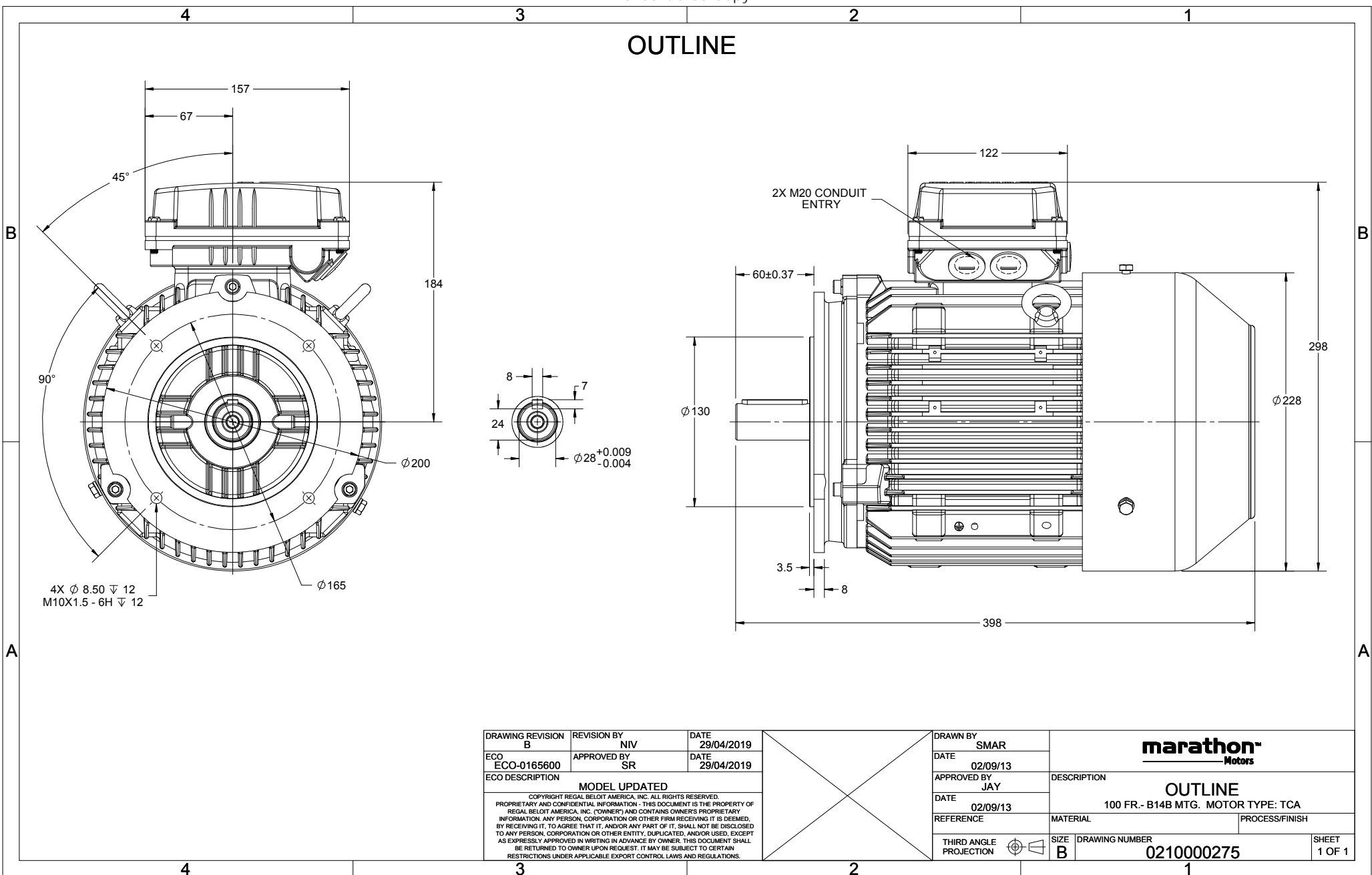
Output HP	4 Hp	Output KW	3.0 kW
Frequency	50 Hz	Voltage	415 V
Current	5.3 A	Speed	2884 rpm
Service Factor	1	Phase	3
Efficiency	87.1 %	Power Factor	0.91
Duty	S1	Insulation Class	F
Frame	100L	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6206
Opp Drive End Bearing Size	6206	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

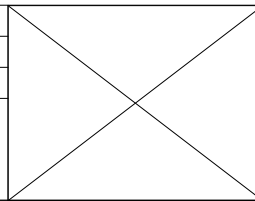
Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	2	Rotation	Bi-Directional
Mounting	B14B	Motor Orientation	Shaftdown
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	398 mm	Frame Length	200 mm
Shaft Diameter	28 mm	Shaft Extension	60 mm
Assembly/Box Mounting	Top		
Outline Drawing	0210000275	Connection Drawing	8442000085

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OUTLINE



DRAWING REVISION B	REVISION BY NIV	DATE 29/04/2019
ECO ECO-0165600	APPROVED BY SR	DATE 29/04/2019
ECO DESCRIPTION MODEL UPDATED		
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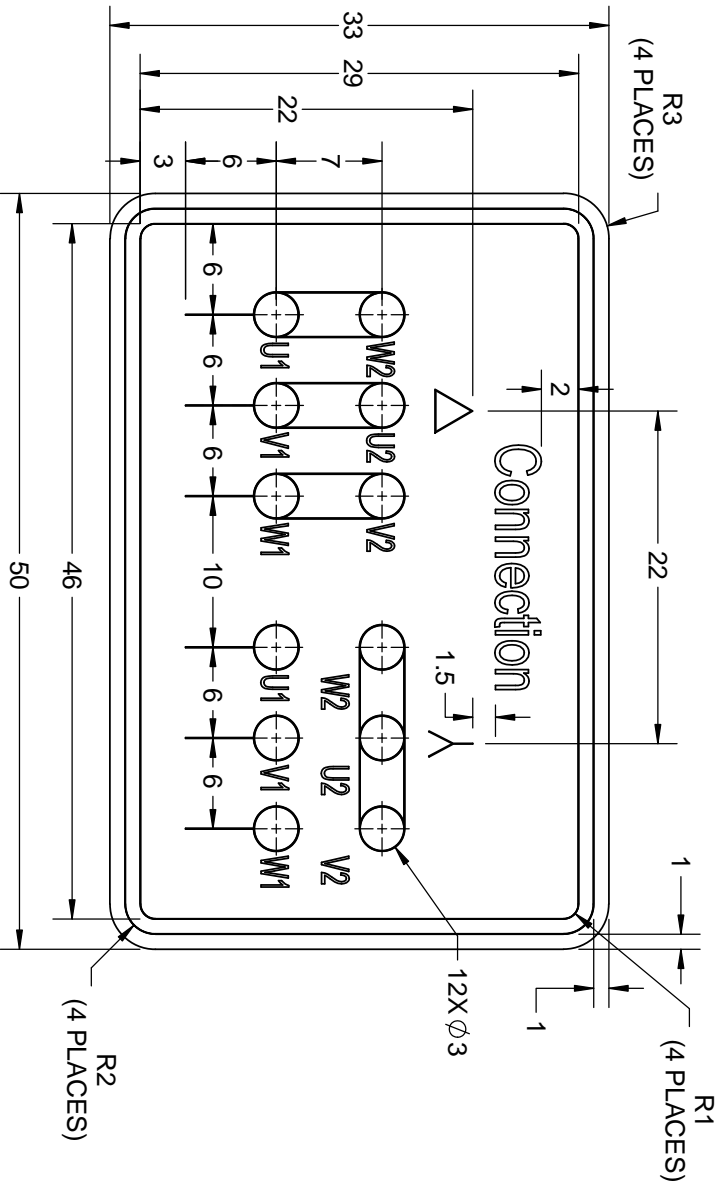
DRAWN BY SMAR
DATE 02/09/13
APPROVED BY JAY
DATE 02/09/13
REFERENCE
THIRD ANGLE PROJECTION

marathon Motors	
DESCRIPTION OUTLINE 100 FR.- B14B MTG. MOTOR TYPE: TCA	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER 0210000275
	SHEET 1 OF 1

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DRAWING REVISION	REVISION BY	DATE
A	SN	13/01/2017
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		Regal Beloit America, Inc.	
DATE 16/12/2016			
APPROVED BY SBD		DESCRIPTION CONN DIAGRAM-NAMEPLATE	
DATE 16/12/2016			
REFERENCE			
THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	PROCESS/FINISH
		SHEET 1 OF 1	

Model No. TCA0031A3181GACD01

U (V)	Δ / Y Conn	f (Hz)	P		I		n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I _L /I _N [pu]	T _M /T _N [pu]	T _L /T _N [pu]
			[kW]	[hp]	[A]	[A]				5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Y	50	3	4.0	5.3	2884	9.88		IE3	-	87.1	87.1	87	0.91	0.87	0.77	7.7	3.2	3.5

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B14B
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	100L	Motor weight - approx.	40 kg
Duty	S1	Gross weight - approx.	43 kg
Voltage variation *	± 10%	Motor inertia	0.0044 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 +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	6206-2Z / 6206-2Z	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_L/I_N - Locked Rotor Current / Rated Current

T_M/T_N - Breakdown Torque / Rated Torque

T_L/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	-	-	-

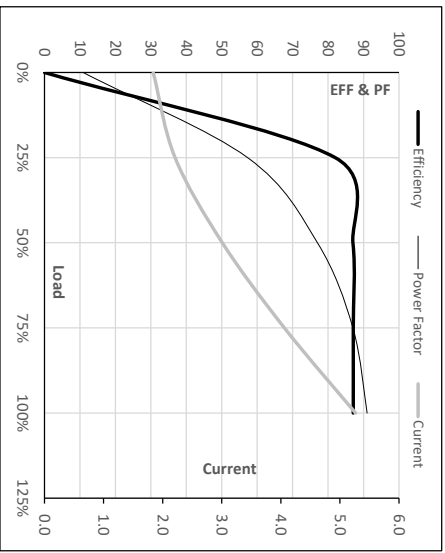
Model No. TCA0031A3181GACD01

Enclosure	U [V]	Δ /Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb Temp [°C]	Duty	Elevation [m]	Inertia [kg·m ²]	Weight [kg]
TFC	415	Y	50	3	4.0	5.3	2884	1.01	9.88	IE3	50	S1	1000	0.0044	40

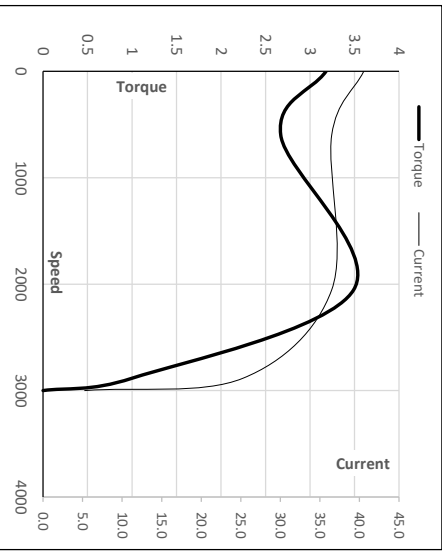
Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	1.8	2.2	3.0	4.1	5.3
Torque	Nm	0.0	2.4	4.8	7.3	9.9
Speed	r/min	3000	2972	2945	2916	2884
Efficiency	%	0.0	82.0	87.0	87.1	87.1
Power Factor	%	10.9	57.3	77.0	87.0	91.0

Performance vs Load Chart



Starting Characteristics Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	2054	2884	3000
Current	A	40.5	36.5	25.3	5.3	1.8
Torque	pu	3.2	2.7	3.5	1	0

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

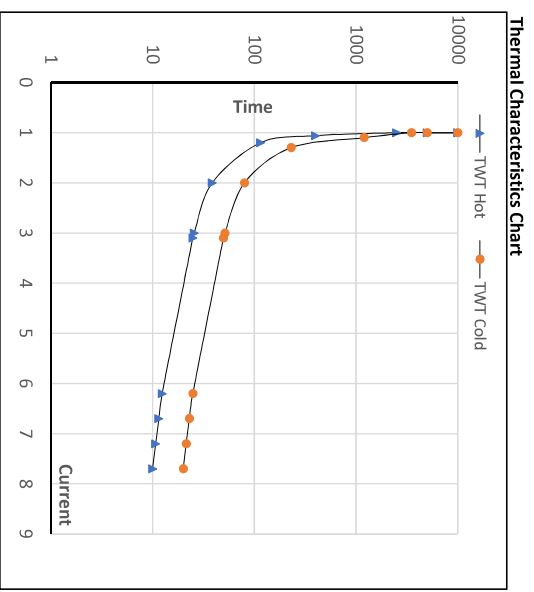
Issued By
Issued Date

Model No. TCA0031A3181GACD01

Enclosure	U	Δ/Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	415	Y	50	[kW]	[hp]	[A]	[rpm]	[kgm]	[Nm]	Class	[°C]	S1	[m]	[kg·m ²]	[kg]
TEFC				3	4.0	5.3	2884	1.01	9.88	IE3	50	S1	1000	0.00044	40

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	39	26	24	20	15	10
TWT Cold	s	10000	80	51	46	32	26	20
Current	pu	1	2	3	4	5	5.5	7.7



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

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