

PRODUCT INFORMATION PACKET

marathon®
Motors

Model No: TCA0221A3131GACD01

Catalog No: TCA0221A3131GACD01

22.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 3000 RPM, 415 V, 180M Frame, TEFC
Cast Iron IE3 Efficiency Motors



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REGAL

Nameplate Specifications

Output HP	30 Hp	Output KW	22.0 kW
Frequency	50 Hz	Voltage	415 V
Current	37.5 A	Speed	2961 rpm
Service Factor	1	Phase	3
Efficiency	92.7 %	Power Factor	0.88
Duty	S1	Insulation Class	F
Frame	180M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6311
Opp Drive End Bearing Size	6211	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	B35	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	712 mm	Frame Length	328 mm
Shaft Diameter	48 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0218000513

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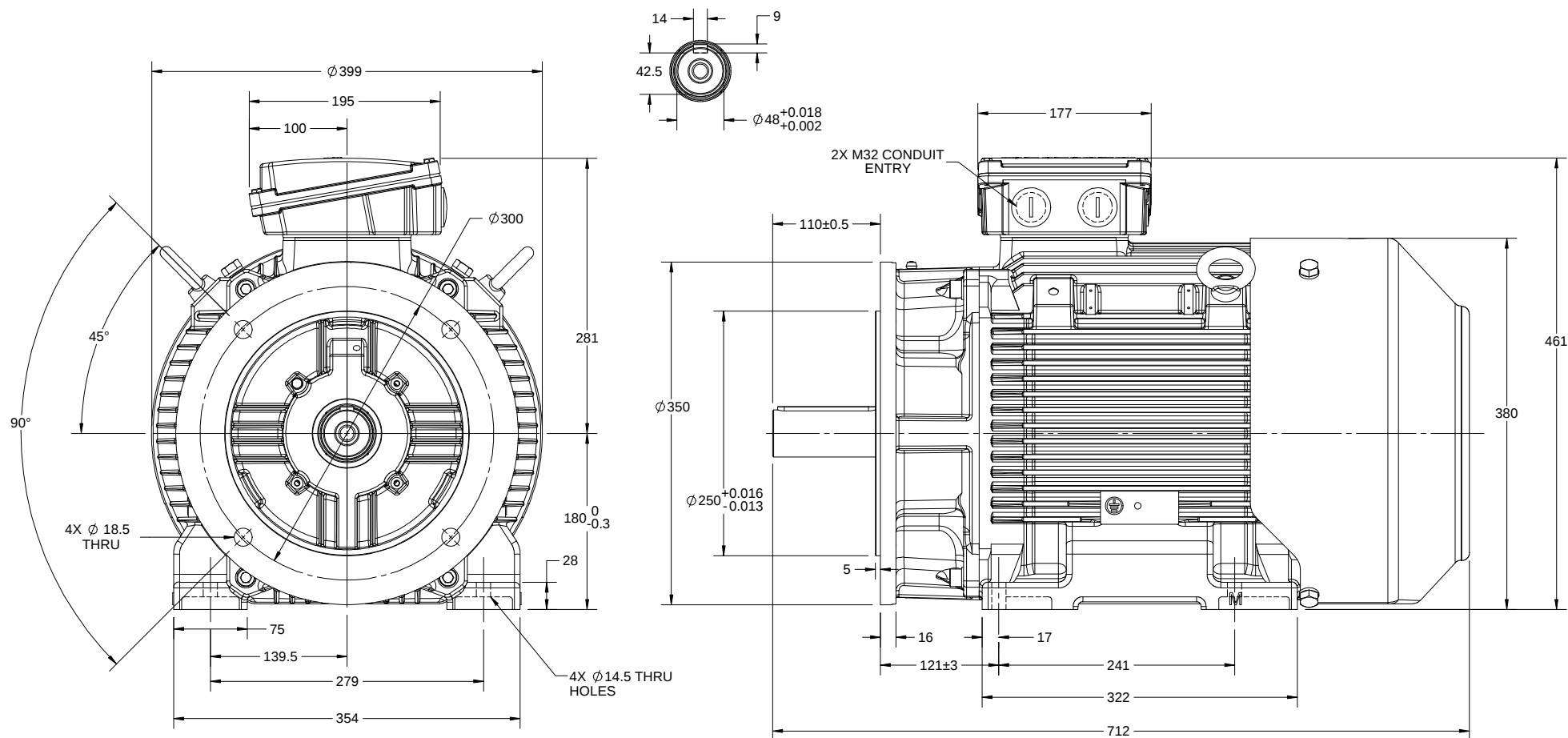
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B

B

A

A



DRAWING REVISION B	REVISION BY S.MUDDA	DATE 16/11/2018
ECO ECO-0156513	APPROVED BY JAY	DATE 16/11/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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DRAWN BY ESK		
DATE 10/11/2014		
APPROVED BY KRK	DESCRIPTION OUTLINE 180M FR-B35 MTG. MOTOR TYPE: TCA	
DATE 10/11/2014		
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0218000513
		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			
THIRD ANGLE PROJECTION						
SIZE		DRAWING NUMBER		SHEET		
A		84420000085		1 OF 1		
MATERIAL			PROCESS/FINISH			
DESCRIPTION						
CONN DIAGRAM-NAMEPLATE						

Model No. TCA0221A3131GACD01

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	22	30	37.5	2961	72.14	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	7.5	2.2	3.6

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B35
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	180M	Motor weight - approx.	225 kg
Duty	S1	Gross weight - approx.	245 kg
Voltage variation *	± 10%	Motor inertia	0.1507 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)	72 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)	12/25 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	6311-22 / 6211-22	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	-	-	-

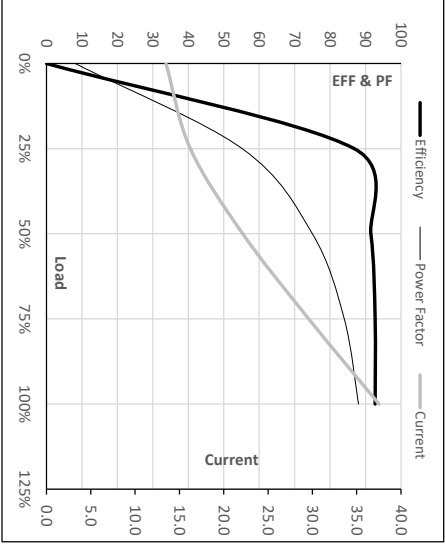
Model No. TCA0221A3131GACD01

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]	[m]		[m]	[kg·m ²]	[kg]
TEFC	415	Δ	50	22	30	37.5	2961	7.36	72.14	IE3	50	S1	1000	0.1507	225

Motor Speed Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	13.5	16.2	22.1	29.6	37.5
Torque	Nm	0.0	17.9	35.8	53.9	72.1
Speed	r/min	3000	2990	2981	2972	2961
Efficiency	%	0.0	86.8	91.5	92.7	92.7
Power Factor	%	8.1	55.2	75.0	84.0	88.0

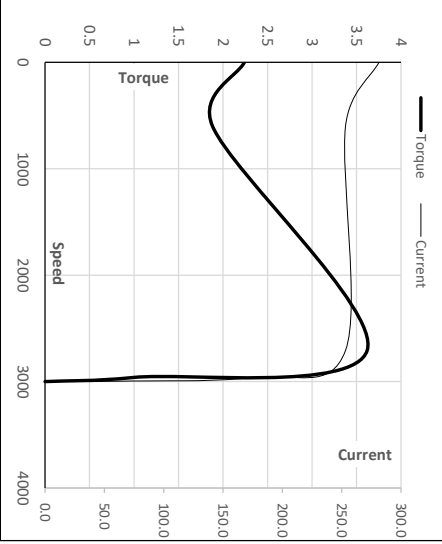
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	2707	2961	3000
Current	A	281.4	253.3	175.6	37.5	13.5
Torque	pu	2.2	1.9	3.6	1	0

Starting Characteristics Chart



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

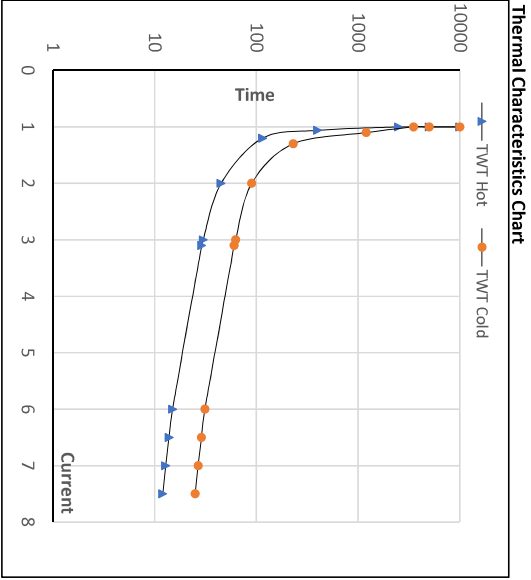
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Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [rpm]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg·m ²]	Weight [kg]
TEFC	415	Δ	50	22	30	37.5	2961	7.35	72.14	IE3	50	S1	1000	0.1507	225

Motor Speed Torque Data

Load	FL	I_1	I_2	I_3	I_4	I_5	LR	
TWT Hot	s	10000	45	30	26	20	16	12
TWT Cold	s	10000	90	63	55	40	35	25
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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