

PRODUCT INFORMATION PACKET

Model No: TCA0151A3111GACD01

Catalog No: TCA0151A3111GACD01

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





Nameplate Specifications

Output HP	20 Hp	Output KW	15.0 kW
Frequency	50 Hz	Voltage	415 V
Current	25.0 A	Speed	2950 rpm
Service Factor	1	Phase	3
Efficiency	91.9 %	Power Factor	0.91
Duty	S1	Insulation Class	F
Frame	160M	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	B3	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	622 mm	Frame Length	254 mm
Shaft Diameter	42 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Outline Drawing	0216000479	Connection Drawing	8442000085

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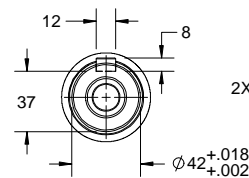
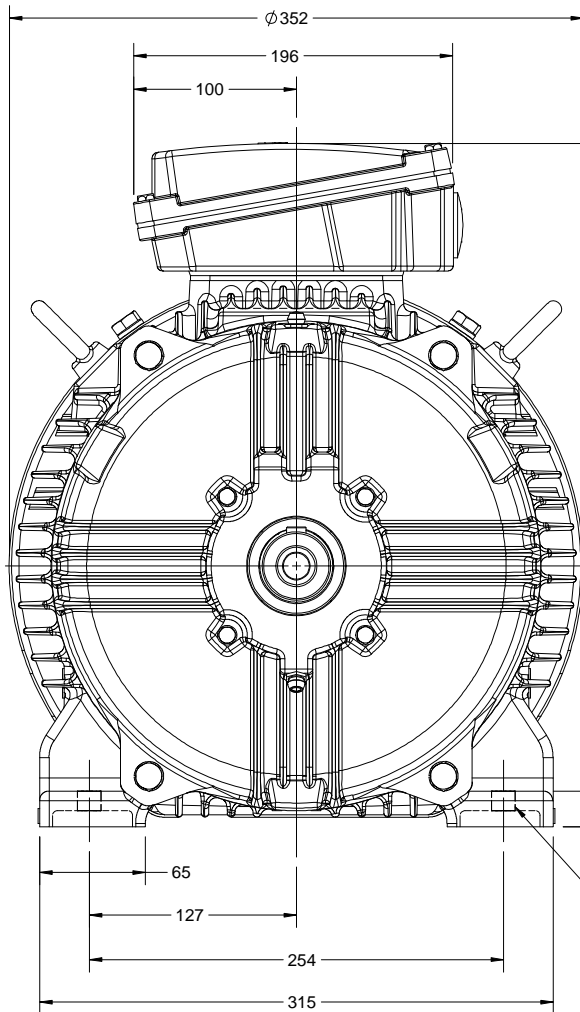
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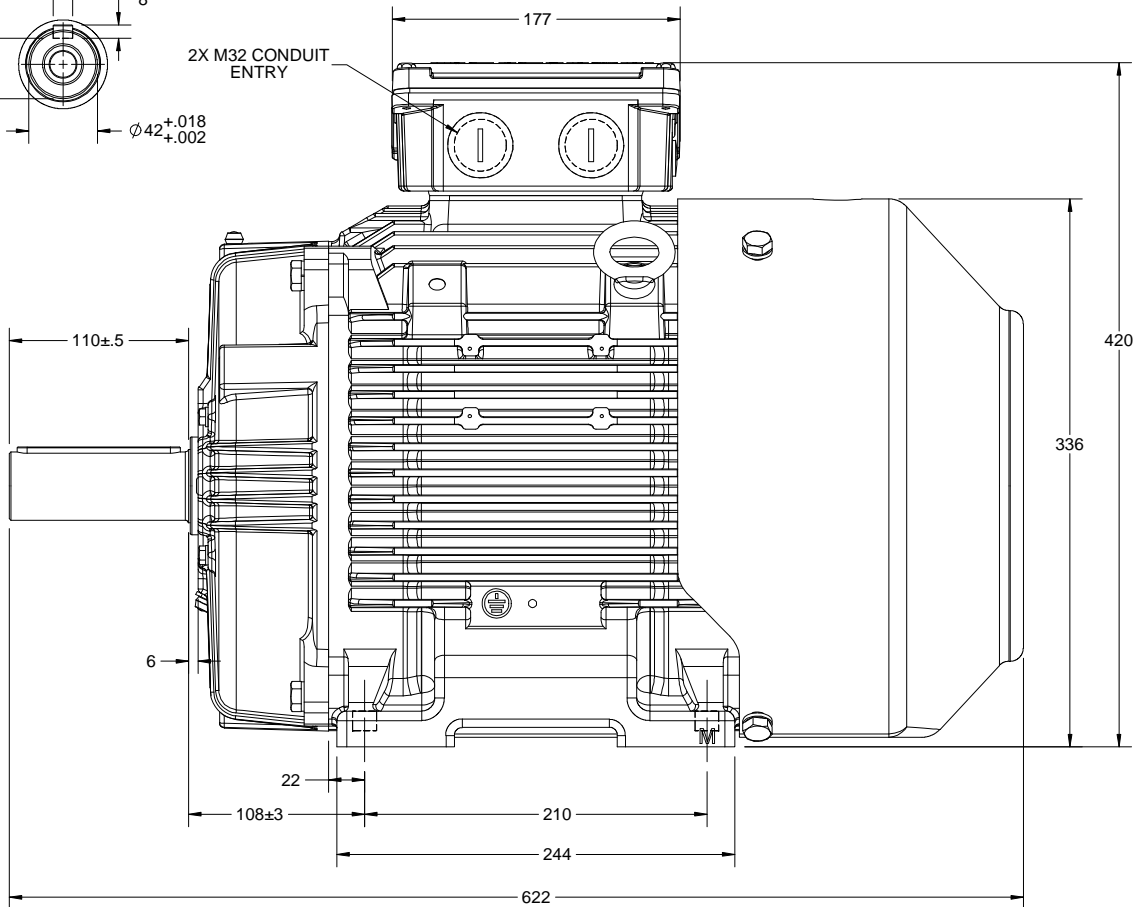
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2X M32 CONDUIT ENTRY



DRAWING REVISION C	REVISION BY I. RAMDAS	DATE 05/07/2018
ECO ECO-0147359	APPROVED BY JAY	DATE 05/07/2018
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DATE 07/11/2014
APPROVED BY SBD
DATE 07/11/2014
REFERENCE

marathon
Motors

DESCRIPTION
OUTLINE
160M FR B3-MTG MOTOR TYPE TCA/QCA

MATERIAL PROCESS/FINISH

THIRD ANGLE
PROJECTION

SIZE
B DRAWING NUMBER
0216000479

SHEET
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Model No. TCA0151A3111GACD01

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 _L /T _N [pu]	T ₀ /T _N [pu]
			[kW]	[hp]	[A]	[RPM]				[Nm]	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL			
415	Δ	50	15	20	25.0	2950	48.28		IE3	-	91.9	91.9	91.2	0.91	0.88	0.81	7.5	2.3	3.4

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	160M	Motor weight - approx.	152 kg
Duty	S1	Gross weight - approx.	172 kg
Voltage variation *	± 10%	Motor inertia	0.0796 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)	7/15 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_L/I_N - Locked Rotor Current / Rated Current

T_L/T_N - Breakdown Torque / Rated Torque

T₀/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	-	-	-

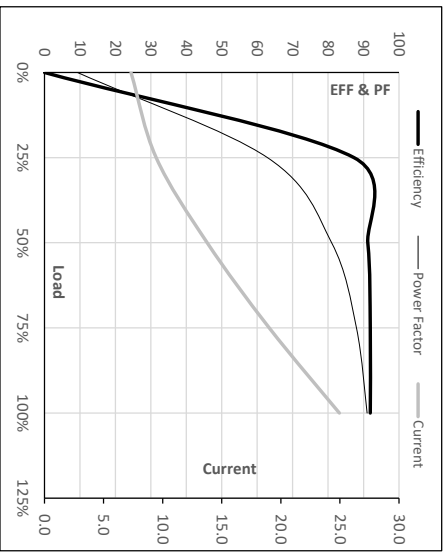
Model No. TCA0151A3111GACD01

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	Δ	50	15	20	25.0	2950	4.92	48.28	IE3	50	S1	1000	0.0796	152

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	7.3	9.5	13.8	19.0	25.0
Torque	Nm	0.0	11.9	23.9	36.0	48.3
Speed	r/min	3000	2988	2976	2964	2950
Efficiency	%	0.0	87.3	91.2	91.9	91.9
Power Factor	%	9.3	62.9	81.0	88.0	91.0

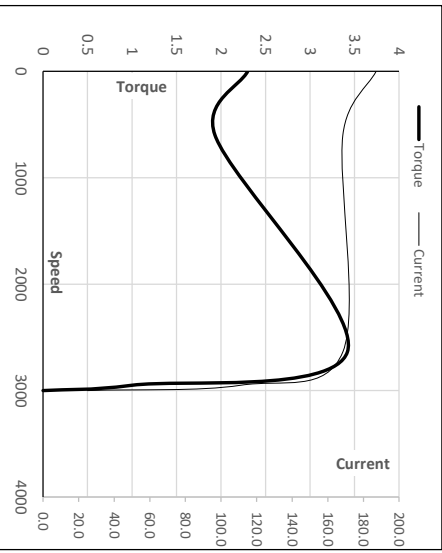
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	600	2637	2950	3000
Current	A	187.2	168.4	111.0	25.0	7.3
Torque	pu	2.3	1.9	3.4	1	0

Starting Characteristics Chart



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

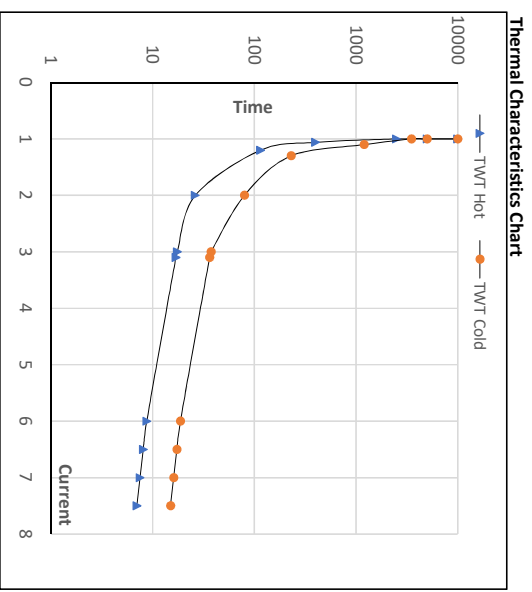
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Enclosure	U	Δ/Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	415	Δ	50	[kW]	[hp]	[A]	[rpm]	[kgm]	[Nm]	Class	[°C]	S1	[m]	[kg·m ²]	[kg]
TEFC				15	20	25.0	2950	4.92	48.28	IE3	50	S1	1000	0.0796	152

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR
TWT Hot	s	10000	26	18	15	10	8
TWT Cold	s	10000	80	38	35	30	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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