

# PRODUCT INFORMATION PACKET

Model No: TCA18P1A3111GACD01  
Catalog No: TCA18P1A3111GACD01

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





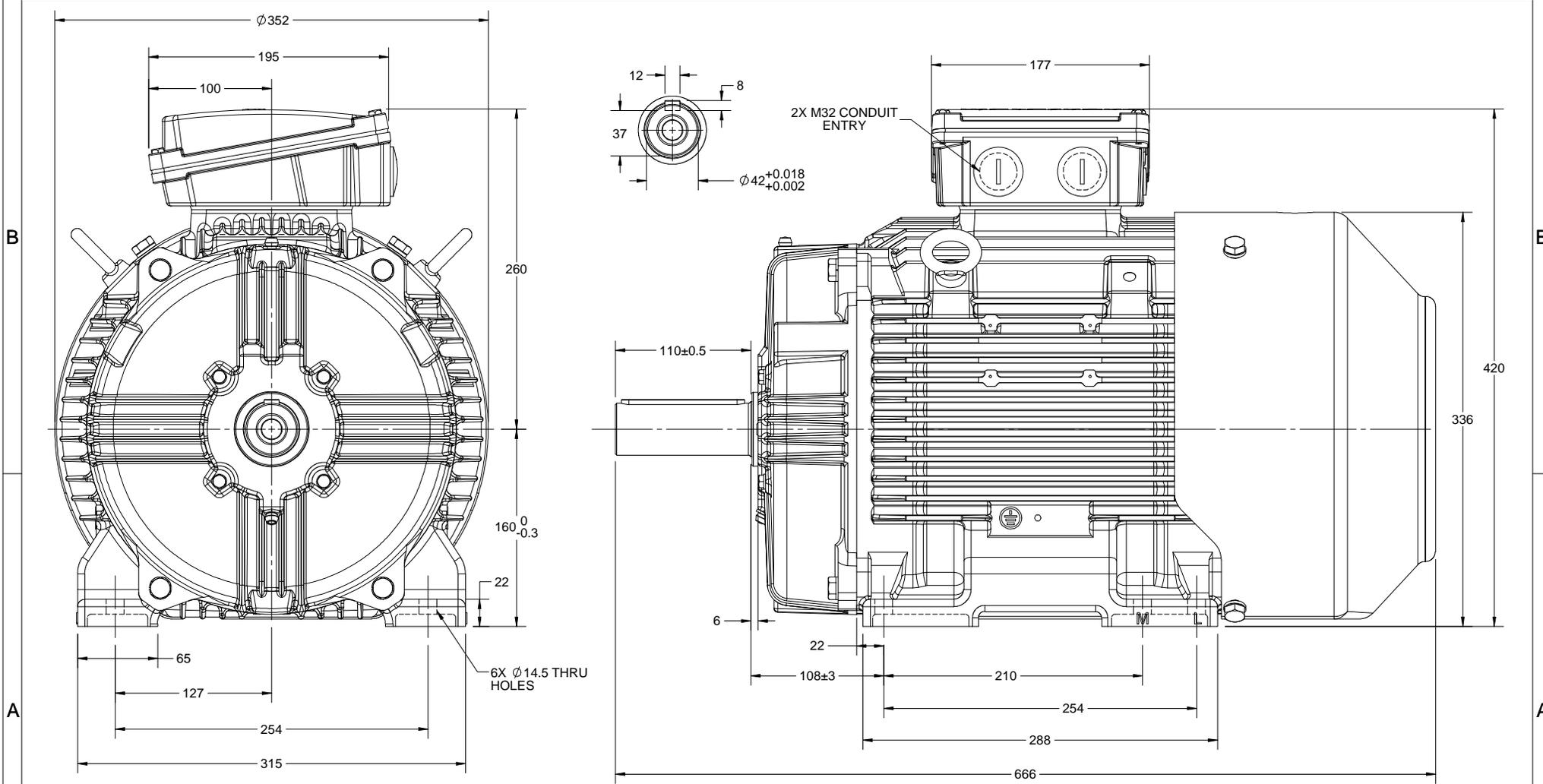
### Nameplate Specifications

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	B3	Motor Orientation	Horizontal
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		
Connection Drawing	8442000085	Outline Drawing	0216000441

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DRAWING REVISION C	REVISION BY A. KEETHA	DATE 09/07/2018
ECO ECO-0147359	APPROVED BY JAY	DATE 09/07/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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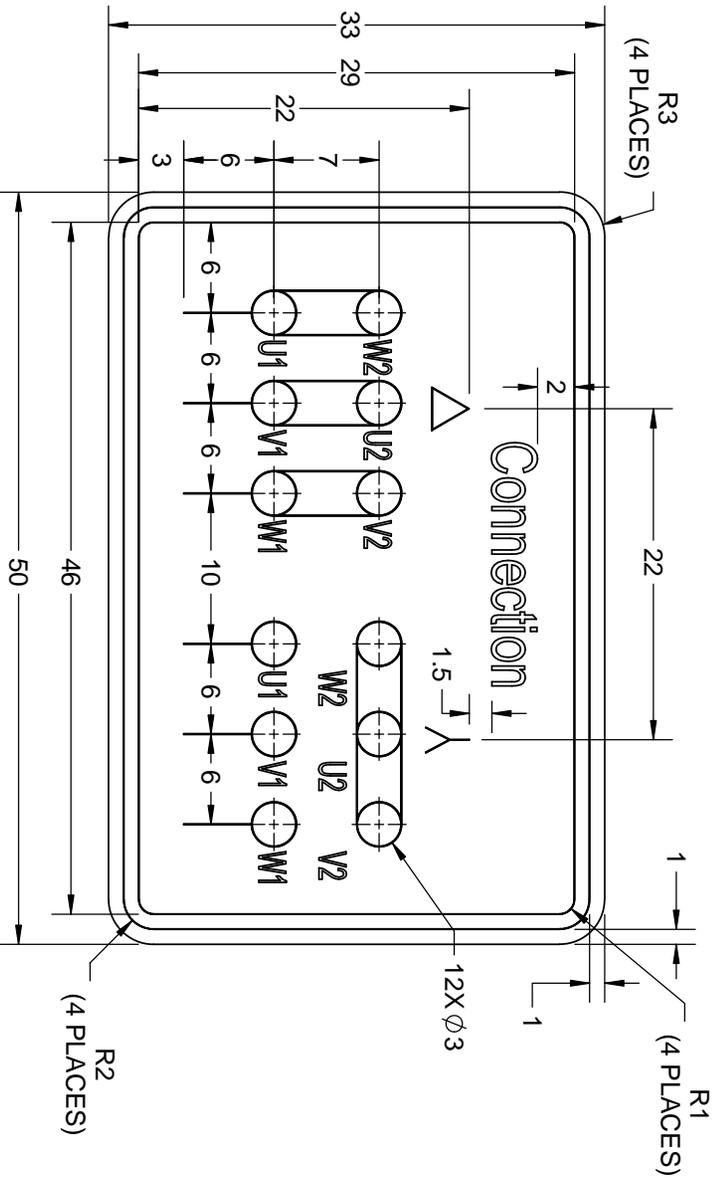
DRAWN BY SDV
DATE 11/04/2014
APPROVED BY SBD
DATE 11/04/2014
REFERENCE

<b>marathon</b> Motors	
DESCRIPTION <b>OUTLINE</b> 160FR B3-MTG MOTOR TYPE TCA/QCA	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER <b>0216000441</b>
THIRD ANGLE PROJECTION	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		DESCRIPTION <b>REGAL</b> <sup>TM</sup> Regal Beloit America, Inc. CONN DIAGRAM-NAMEPLATE	
DATE 16/12/2016		DATE 16/12/2016	
APPROVED BY SBD		MATERIAL	
DATE 16/12/2016		PROCESS/FINISH	
REFERENCE		SIZE A	
THIRD ANGLE PROJECTION		DRAWING NUMBER 8442000085	
		SHEET 1 OF 1	

Model No. TCA18P1A3111GACD01

U (V)	Δ / Y Conn	f (Hz)	P		I		n (RPM)	T (Nm)	IE Class	% EFF at __ load				PF at __ load			I <sub>L</sub> /I <sub>N</sub> [pu]	T <sub>M</sub> /T <sub>N</sub> [pu]	T <sub>L</sub> /T <sub>N</sub> [pu]
			[kW]	[hp]	[A]	[RPM]				5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Δ	50	18.5	25	30.3	2948	60.39		IE3	-	92.4	92.4	92.2	0.92	0.9	0.84	7.4	2.4	3.3

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	160L	Motor weight - approx.	185 kg
Duty	S1	Gross weight - approx.	205 kg
Voltage variation *	± 10%	Motor inertia	0.1055 kgm <sup>2</sup>
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 <sup>2</sup> /2 X M32 x 1.5
Type of grease	NA	Auxiliary terminal box	NA

I<sub>L</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

T<sub>M</sub>/T<sub>N</sub> - Breakdown Torque / Rated Torque

T<sub>L</sub>/T<sub>N</sub> - 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	-	-	-

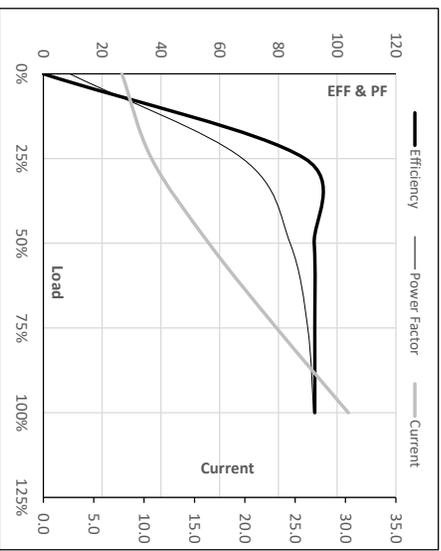
Model No. TCA18P1A3111GACD01

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 <sup>2</sup> ]	Weight [kg]
TFC	415	Δ	50	18.5	25	30.3	2948	6.16	60.39	IE3	50	S1	1000	0.1055	185

**Motor Load 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

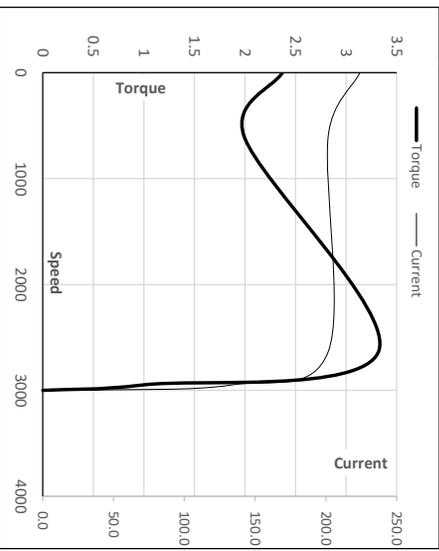
**Performance vs Load Chart**



**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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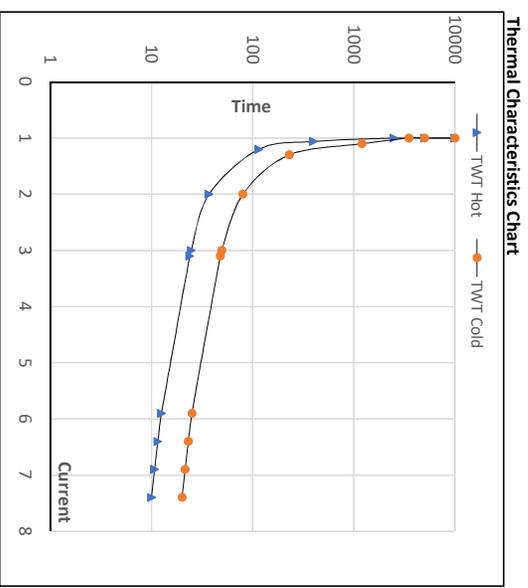


Model No. TCA18P1A3111GACD01

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 <sup>2</sup> ]	[kg]
TEFC				18.5	25	30.3	2948	6.15	60.39	IE3	50	S1	1000	0.1055	185

**Motor Speed Torque Data**

Load	FL	I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	I <sub>5</sub>	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



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

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