

PRODUCT INFORMATION PACKET

Model No: TCA0303A3121GACD01

Catalog No: TCA0303A3121GACD01

30.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1000 RPM, 415 V, 225M Frame, TEFC
Cast Iron IE3 Efficiency Motors





Nameplate Specifications

Output HP	40 Hp	Output KW	30.0 kW
Frequency	50 Hz	Voltage	415 V
Current	54.8 A	Speed	988 rpm
Service Factor	1	Phase	3
Efficiency	92.9 %	Power Factor	0.82
Duty	S1	Insulation Class	F
Frame	225M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6313
Opp Drive End Bearing Size	6213	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	6	Rotation	Bi-Directional
Mounting	B5	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	862 mm	Frame Length	425 mm
Shaft Diameter	60 mm	Shaft Extension	140 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0222500464

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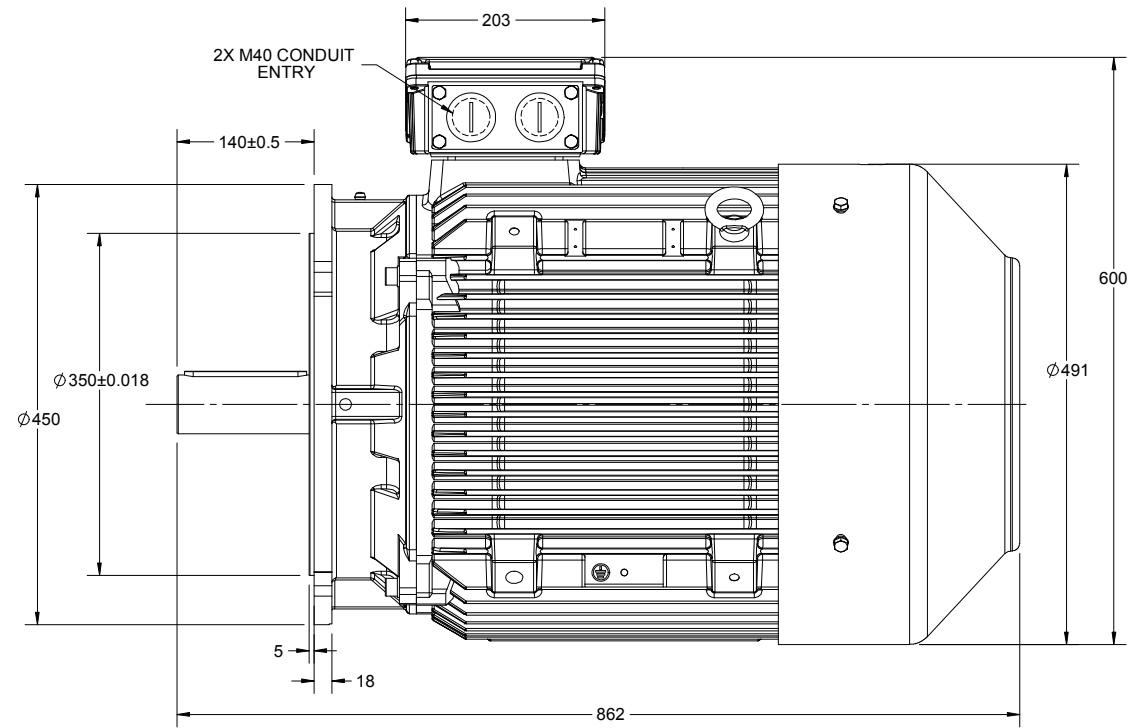
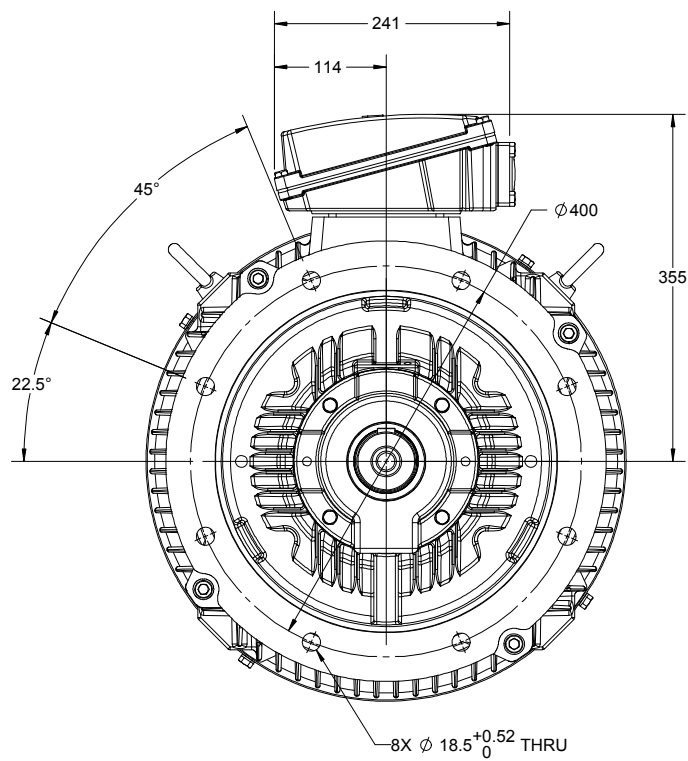
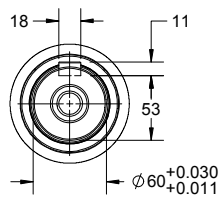
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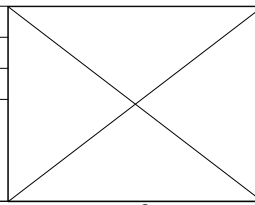
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OUTLINE



DRAWING REVISION B	REVISION BY NIV	DATE 22/04/2019
ECO ECO-0165600	APPROVED BY SR	DATE 22/04/2019
ECO DESCRIPTION MODEL UPDATED		
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DRAWN BY SDV
DATE 18/07/2014
APPROVED BY SBD
DATE 18/07/2014
REFERENCE
THIRD ANGLE PROJECTION

marathon Motors	
DESCRIPTION OUTLINE 225M FR-B5 MTG 4P-8P MOTOR TYPE: TCA	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER 0222500464
	SHEET 1 OF 1

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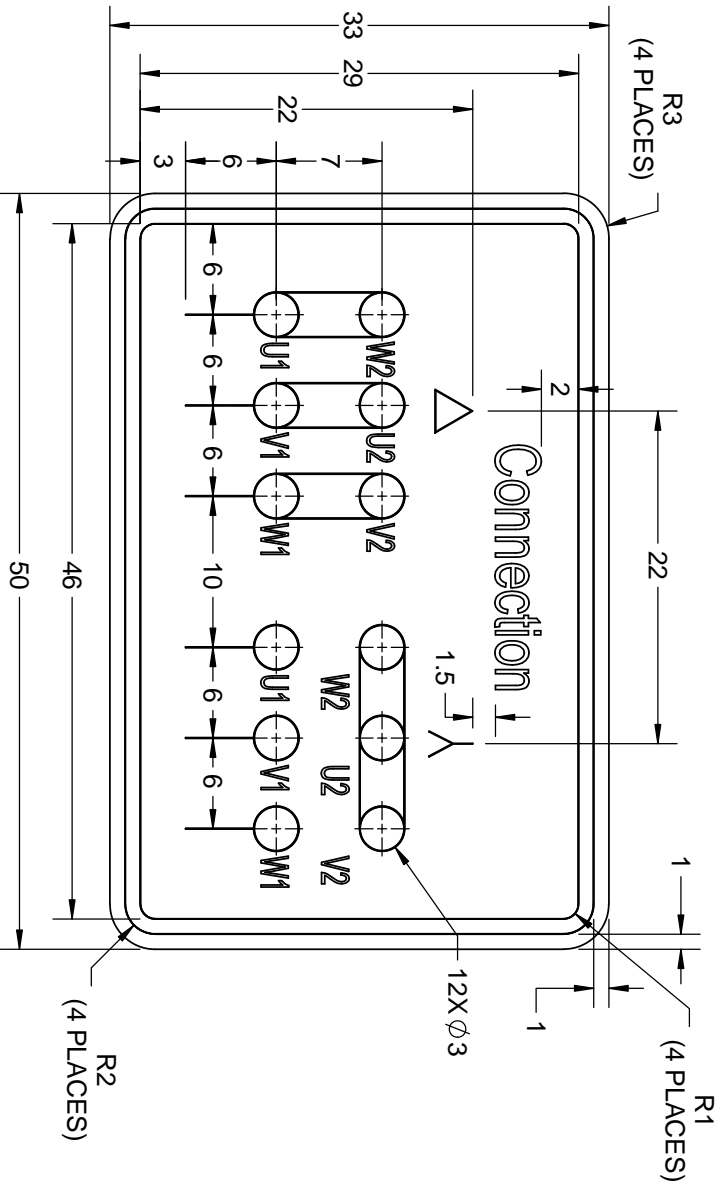
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DRAWING REVISION		REVISION BY	DATE
A		SN	13/01/2017
ECO-0116390	APPROVED BY	SBD	DATE
ECO DESCRIPTION			13/01/2017
NEW DRAWING RELEASE			

GEOMETRIC TOLERANCE	
LINEAR DIM	±0.1
>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™ Regal Beloit America, Inc.	
DATE		16/12/2016	DESCRIPTION	
APPROVED BY		SBD	CONN DIAGRAM-NAMEPLATE	
DATE		16/12/2016	MATERIAL	
REFERENCE			PROCESS/FINISH	
THIRD ANGLE PROJECTION			SIZE	DRAWING NUMBER
			A	8442000085
				SHEET
				1 OF 1

Model No. TCA0303A3121GACD01

U (V)	Δ / Y Conn	f (Hz)	P		I			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]	[RPM]	5/4FL			FL	3/4FL	1/2FL	FL	3/4FL	1/2FL				
415	Δ	50	30	40	54.8	988	288.40		IE3	-	92.9	92.9	92	0.82	0.76	0.64	7.3	2.4	3.1

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225M	Motor weight - approx.	413 kg
Duty	S1	Gross weight - approx.	443 kg
Voltage variation *	± 10%	Motor inertia	1.0246 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)	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)	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	6313 C3 / 6213 C3	Terminal box position	TOP
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 50mm ² /2 x M40 x 1.5
Type of grease	Shell Gadus S5 V100 or Equivalent	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	-	-	-

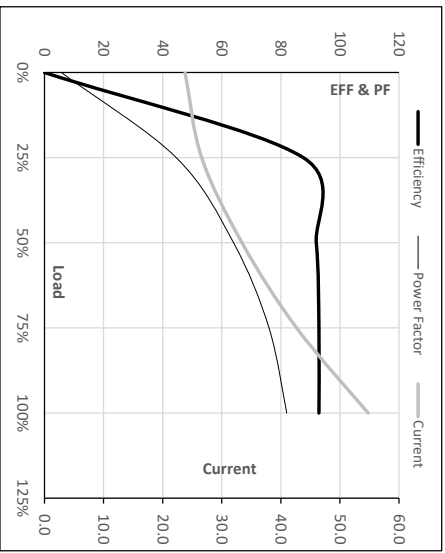
Model No. TCA0303A3121GACD01

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	30	40	54.8	988	29.41	288.40	IE3	50	S1	1000	1.0246	413

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	23.8	26.6	33.4	42.7	54.8
Torque	Nm	0.0	71.4	143.3	215.6	288.4
Speed	r/min	1000	997	994	991	988
Efficiency	%	0.0	87.6	92.0	92.9	92.9
Power Factor	%	5.7	44.6	64.0	76.0	82.0

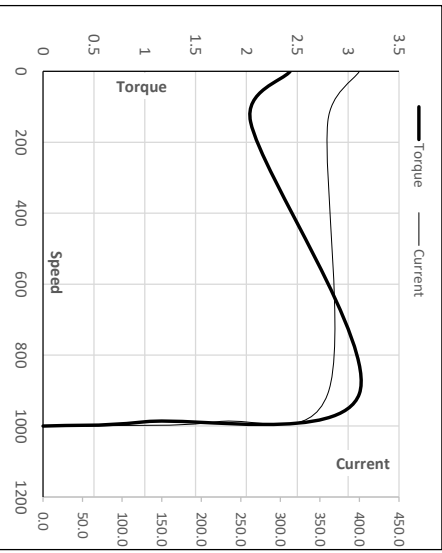
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	143	909	988	1000
Current	A	400.0	360.0	219.9	54.8	23.8
Torque	pu	2.4	2.0	3.1	1	0

Starting Characteristics Chart



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

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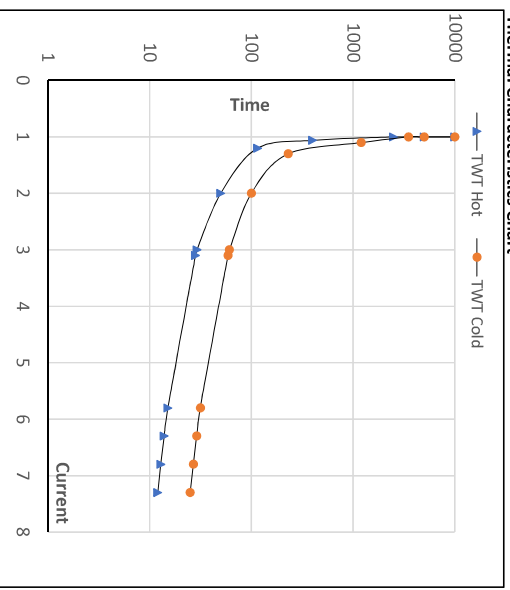
Model No. TCA0303A3121GACD01

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	30	40	54.8	988	29.39	288.40	IE3	50	S1	1000	1.0246	413

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	50	29	25	20	17	12
TWT Cold	s	10000	100	61	55	40	35	25
Current	pu	1	2	3	4	5	5.5	7.3

Thermal Characteristics Chart



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

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