

# PRODUCT INFORMATION PACKET

Model No: SCA0221A3121GAAD01

Catalog No: SCA0221A3121GAAD01

22kW, General Purpose Low Voltage IEC Motor, 3 phase, 2 Pole, 415V, B5, 50Hz, 91.3%, 180M Frame, TEFC  
Cast Iron IE2 Efficiency Motors





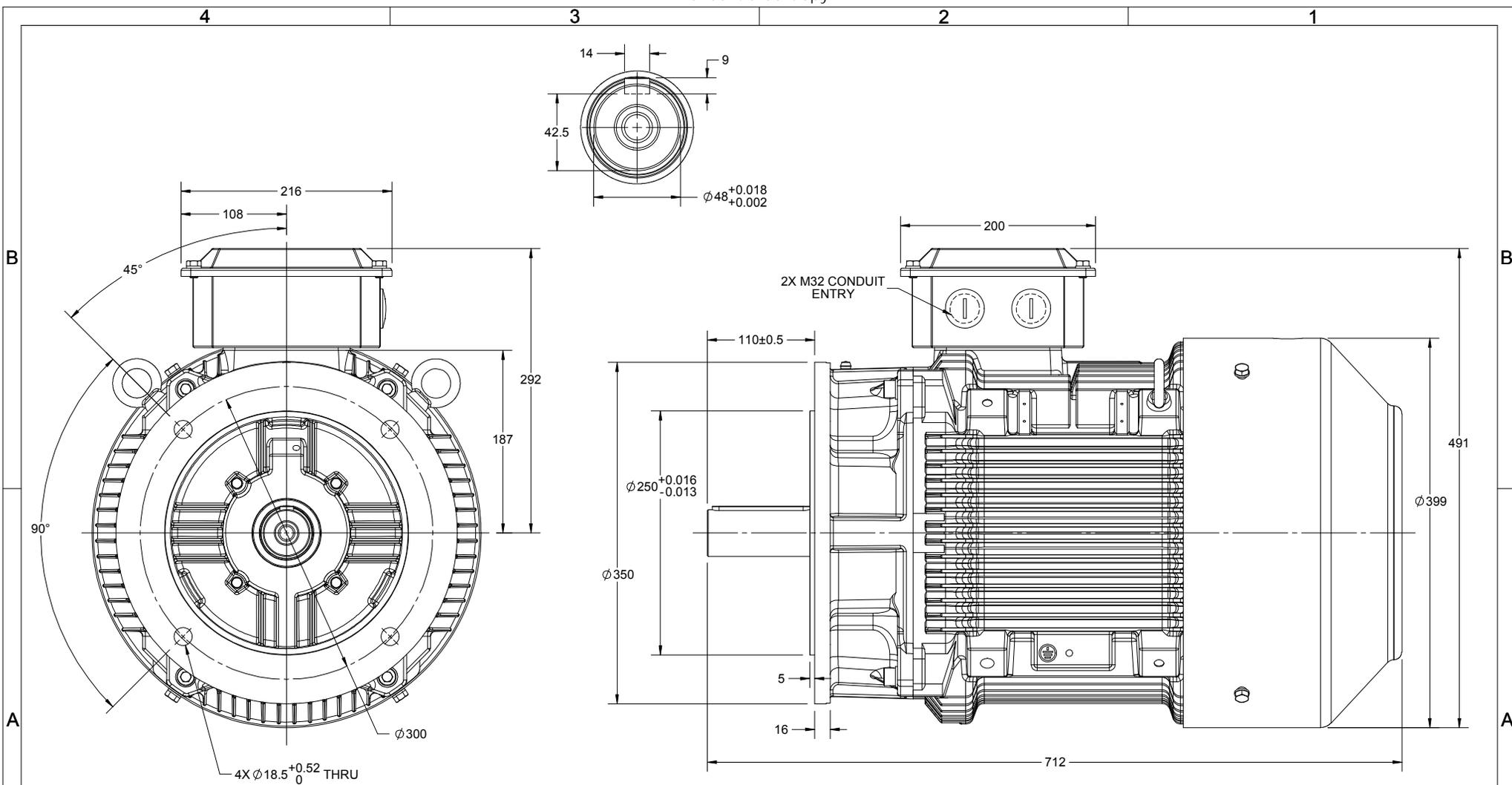
### Nameplate Specifications

Output HP	30 Hp	Output KW	22.0 kW
Frequency	50 Hz	Voltage	415 V
Current	36.2 A	Speed	2943 rpm
Service Factor	1	Phase	3
Efficiency	91.3 %	Power Factor	0.93
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	B5	Motor Orientation	Horizontal
Drive End Bearing	2z-C3	Opp Drive End Bearing	2z-C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	750 mm	Frame Length	328 mm
Shaft Diameter	48 mm	Shaft Extension	110 mm
Assembly/Box Mounting	TOP		
Outline Drawing	0218000834	Connection Drawing	8442000085

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DRAWING REVISION B	REVISION BY LK	DATE 27/06/2019
ECO ECO-0169536	APPROVED BY SR	DATE 27/06/2019
ECO DESCRIPTION MODEL UPDATED AS PER NEW 3D STRUCTURE <small>COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED.                  PROPRIETARY AND CONFIDENTIAL INFORMATION - THIS DOCUMENT IS THE PROPERTY OF                  REGAL BELOIT AMERICA, INC. (OWNER) AND CONTAINS OWNER'S PROPRIETARY                  INFORMATION. ANY PERSON, CORPORATION OR OTHER FIRM RECEIVING IT IS DEEMED,                  BY RECEIVING IT, TO AGREE THAT IT, AND/OR ANY PART OF IT, SHALL NOT BE DISCLOSED                  TO ANY PERSON, CORPORATION OR OTHER ENTITY, DUPLICATED, AND/OR USED, EXCEPT                  AS EXPRESSLY APPROVED IN WRITING IN ADVANCE BY OWNER. THIS DOCUMENT SHALL                  BE RETURNED TO OWNER UPON REQUEST. IT MAY BE SUBJECT TO CERTAIN                  RESTRICTIONS UNDER APPLICABLE EXPORT CONTROL LAWS AND REGULATIONS.</small>		

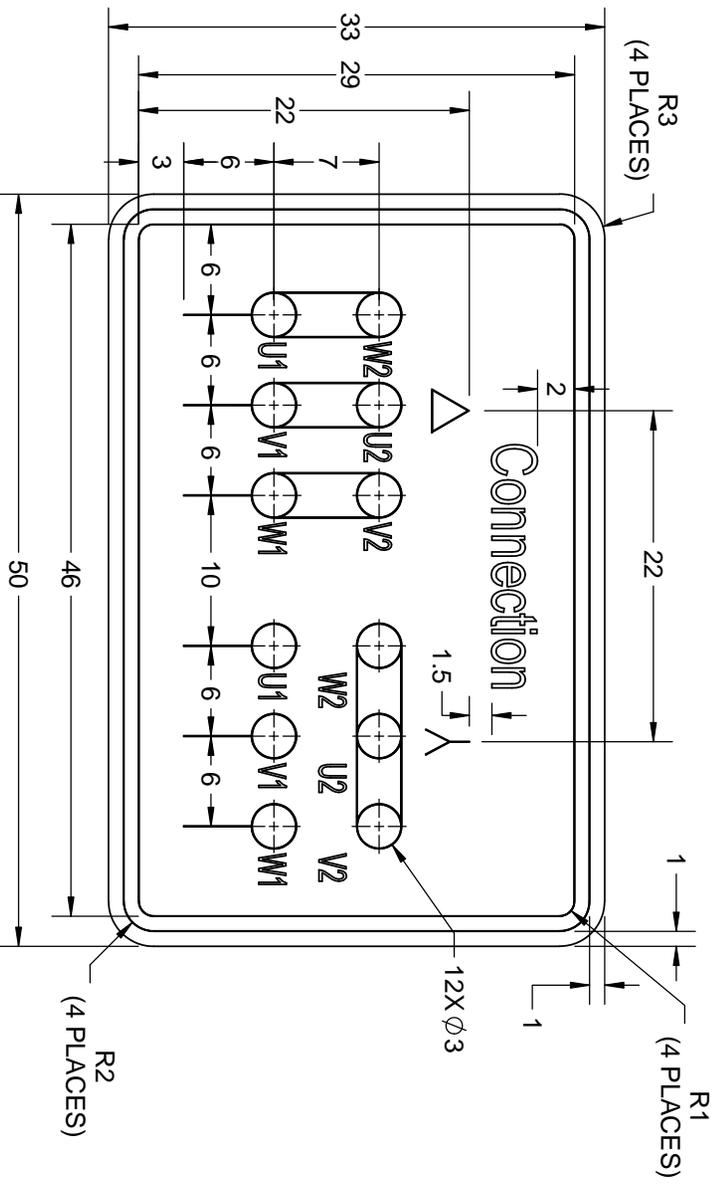
DRAWN BY PRIYA
DATE 03/04/2018
APPROVED BY JAY
DATE 03/04/2018
REFERENCE

<b>marathon</b> Motors	
DESCRIPTION <b>OUTLINE</b> 180M FR-B5 MTG. MOTOR TYPE: SCA	
MATERIAL	PROCESS/FINISH
SIZE B	DRAWING NUMBER <b>0218000834</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		 Regal Beloit America, Inc.	
DATE 16/12/2016			
APPROVED BY SBD		DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>	
DATE 16/12/2016			
REFERENCE			
THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	PROCESS/FINISH
		SHEET 1 OF 1	



Model No. SCA0221A3121GAAD01

U (V)	Δ / Y Conn	f (Hz)	P		I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I <sub>w</sub> /I <sub>N</sub> [pu]	T <sub>k</sub> /T <sub>N</sub> [pu]	T <sub>k</sub> /T <sub>N</sub> [pu]
			[kW]	[hp]					S/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Δ	50	22	30	36.2	2943	72.58	IE2	-	91.3	91.3	91.9	0.93	0.91	0.85	6.3	2.2	3.1

Motor type	SCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	180M	Motor weight - approx.	219 kg
Duty	S1	Gross weight - approx.	239 kg
Voltage variation *	± 10%	Motor inertia	0.1051 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)	80 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	Accessory - 3	-
DE / NDE bearing	6311-2Z / 6211-2Z	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>w</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

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

T<sub>k</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	-	-	-



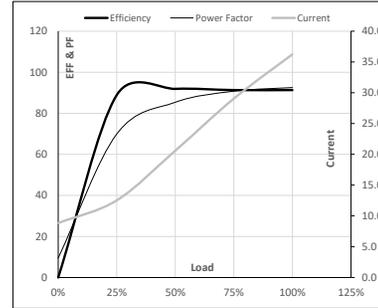
Model No. SCA0221A3121GAAD01

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 <sup>2</sup> ]	Weight [kg]
TEFC	415	Δ	50	22	30	36.2	2943	7.40	72.58	IE2	50	S1	1000	0.1051	219

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	8.8	12.5	20.6	29.1	36.2	
Torque	Nm	0.0	17.9	35.9	54.2	72.6	
Speed	r/min	3000	2987	2973	2959	2943	
Efficiency	%	0.0	88.9	91.9	91.3	91.3	
Power Factor	%	9.5	69.9	85.4	90.8	92.5	

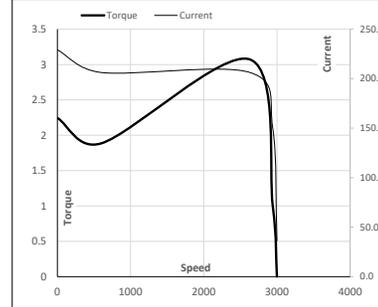
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	600	2633	2943	3000
Current	A	229.2	206.3	150.1	36.2	8.8
Torque	pu	2.2	1.9	3.1	1	0

**Starting Characteristics Chart**



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

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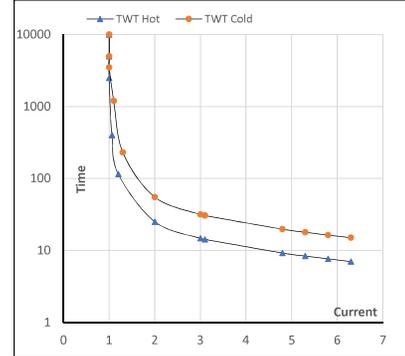
Model No. SCA0221A3121GAAD01

Enclosure	U (V)	$\Delta / Y$ 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 <sup>2</sup> ]	Weight [kg]
TEFC	415	$\Delta$	50	22	30	36.2	2943	7.40	72.58	IE2	50	S1	1000	0.1051	219

**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	25	15	13	9	8	7	
TWT Cold	s 10000	55	32	25	19	17	15	
Current	pu	1	2	3	4	5	5.5	6.3

**Thermal Characteristics Chart**



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

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