

# PRODUCT INFORMATION PACKET

Model No: TCA7P54A3121GACD01  
Catalog No: TCA7P54A3121GACD01

7.5 kW General Purpose Low Voltage IEC Motor, 3 phase, 750 RPM, 415 V, 160L Frame, TEFC  
Cast Iron IE3 Efficiency Motors





### Nameplate Specifications

Output HP	10 Hp	Output KW	7.5 kW
Frequency	50 Hz	Voltage	415 V
Current	16.6 A	Speed	728 rpm
Service Factor	1	Phase	3
Efficiency	87.3 %	Power Factor	0.72
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	8	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	666 mm	Frame Length	298 mm
Shaft Diameter	42 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0216000443

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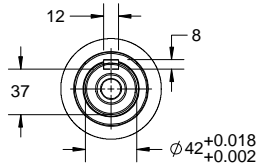
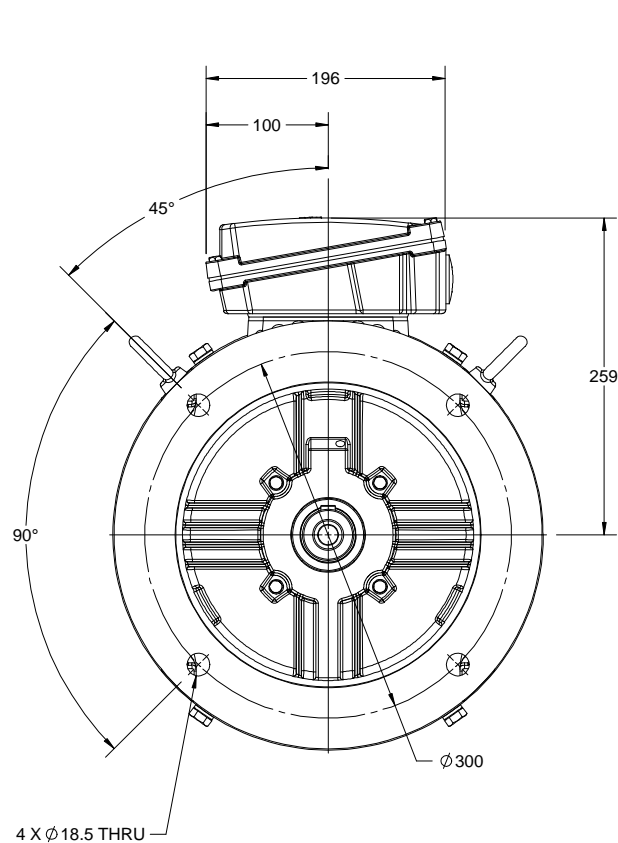
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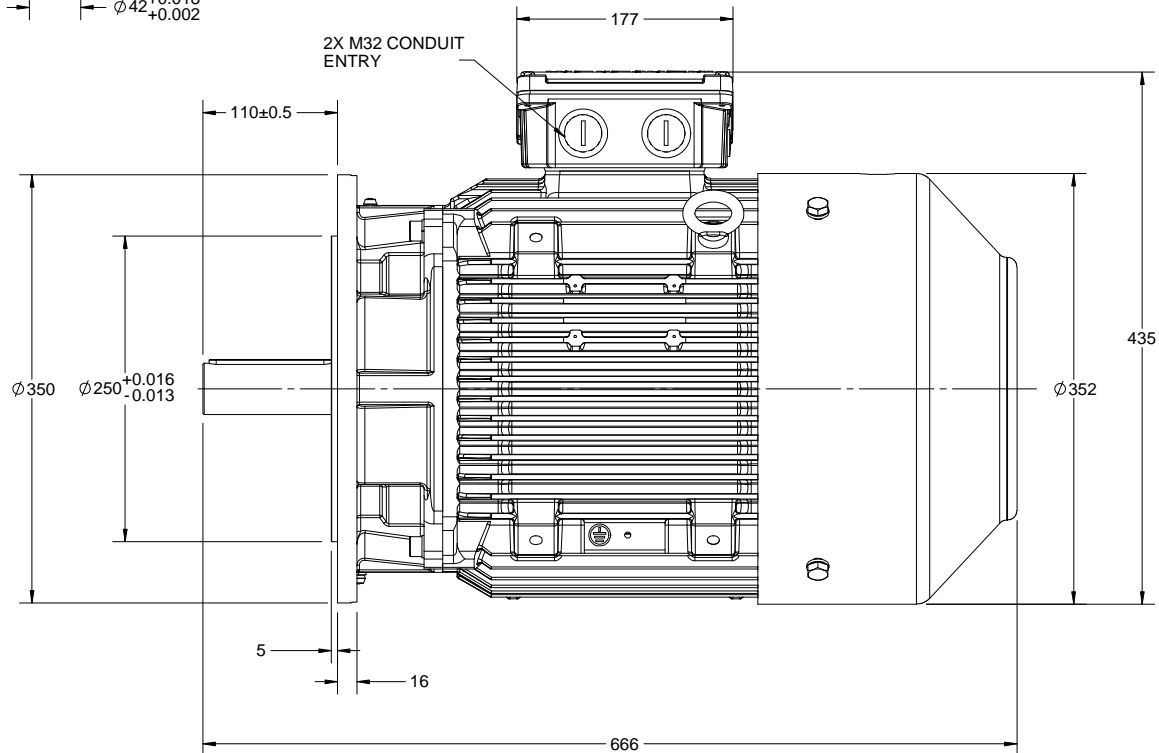
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2X M32 CONDUIT ENTRY



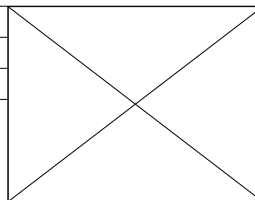
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A

A

DRAWING REVISION B	REVISION BY I. RAMDAS	DATE 03/07/2018
ECO ECO-0147359	APPROVED BY JAY	DATE 03/07/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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DRAWN BY SDV
DATE 15/04/2014
APPROVED BY SBD
DATE 15/04/2014
REFERENCE

Regal Beloit America, Inc.	
DESCRIPTION <b>OUTLINE</b> 160FR-B5 MTG. MOTOR TYPE TCA	
MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B
DRAWING NUMBER <b>0216000443</b>	SHEET 1 OF 1

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Model No. TCA7P54A3121GACD01

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]	[A]				5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Δ	50	7.5	10	16.6	728	97.96		IE3	-	87.3	87.3	87.5	0.72	0.65	0.52	5.4	1.8	2.3

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	160L	Motor weight - approx.	177 kg
Duty	S1	Gross weight - approx.	197 kg
Voltage variation *	± 10%	Motor inertia	0.2040 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)	59 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)	15/30 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	-	-	-

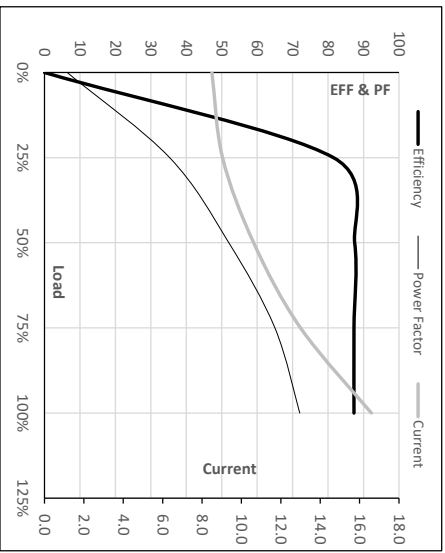
Model No. TCA7P54A3121GACD01

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	7.5	10	16.6	728	9.99	97.96	IE3	50	S1	1000	0.204	177

**Motor Load Data**

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A 8.5	9.0	10.6	13.0	16.6	
Torque	Nm 0.0	24.0	48.2	72.8	98.0	
Speed	r/min 750	745	740	734	728	
Efficiency	% 0.0	81.5	87.5	87.3	87.3	
Power Factor	% 6.4	35.3	52.0	65.0	72.0	

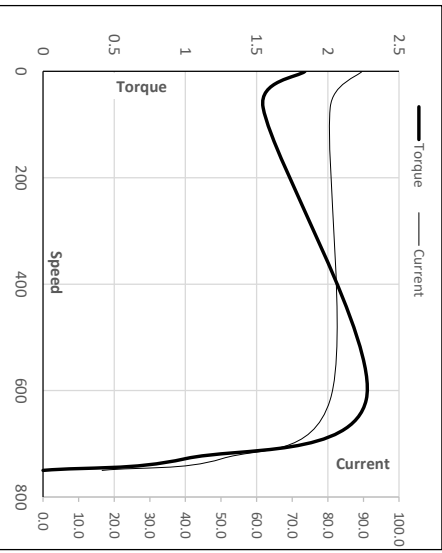
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point	LR	P-Up	BD	Rated	NL
Speed	r/min 0	68	617	728	750
Current	A 89.6	80.7	50.3	16.6	8.5
Torque	pu 1.8	1.5	2.3	1	0

**Starting Characteristics Chart**



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

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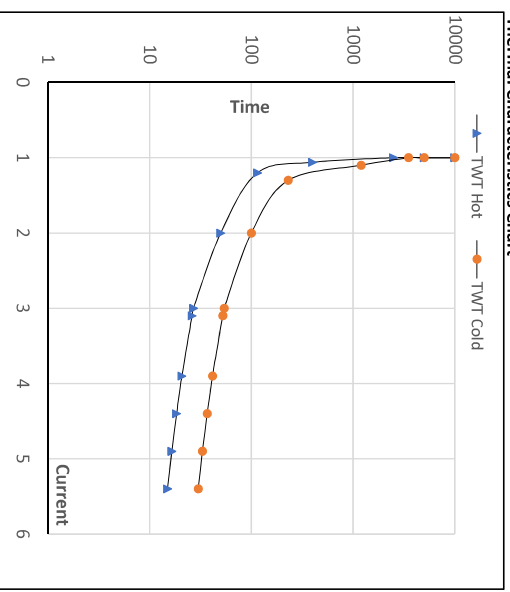
Model No. TCA7P54A3121GACD01

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	7.5	10	16.6	728	9.98	97.96	IE3	50	S1	1000	0.2040	177

**Motor Speed Torque Data**

Load	FL	$I_1$	$I_2$	$I_3$	$I_4$	$I_5$	LR	
TWT Hot	s	10000	50	27	20	18	16	15
TWT Cold	s	10000	100	54	40	36	31	30
Current	pu	1	2	3	4	4.5	5	5.4

**Thermal Characteristics Chart**



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

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