

PRODUCT INFORMATION PACKET

Model No: TCA0153A3121GACD01

Catalog No: TCA0153A3121GACD01

15.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1000 RPM, 415 V, 180L 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	28.6 A	Speed	980 rpm
Service Factor	1	Phase	3
Efficiency	91.2 %	Power Factor	0.8
Duty	S1	Insulation Class	F
Frame	180L	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	6	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	366 mm
Shaft Diameter	48 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Connection Drawing	8442000085	Outline Drawing	0218000504

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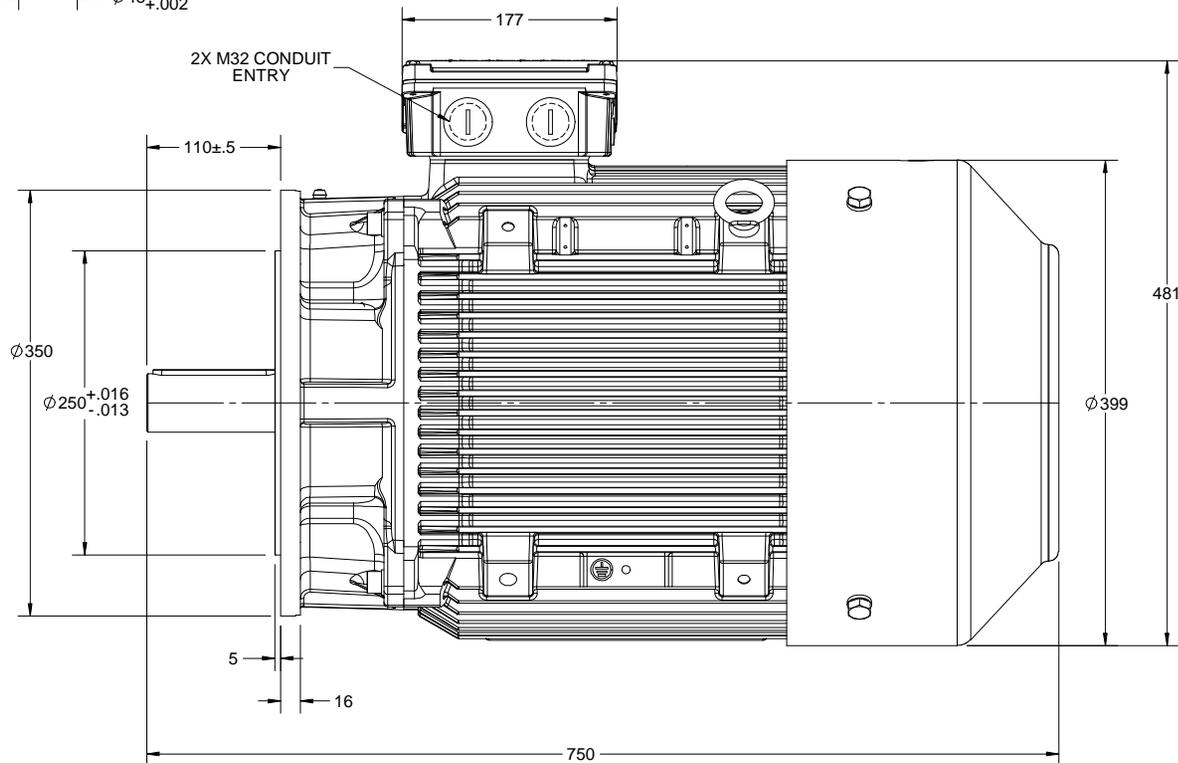
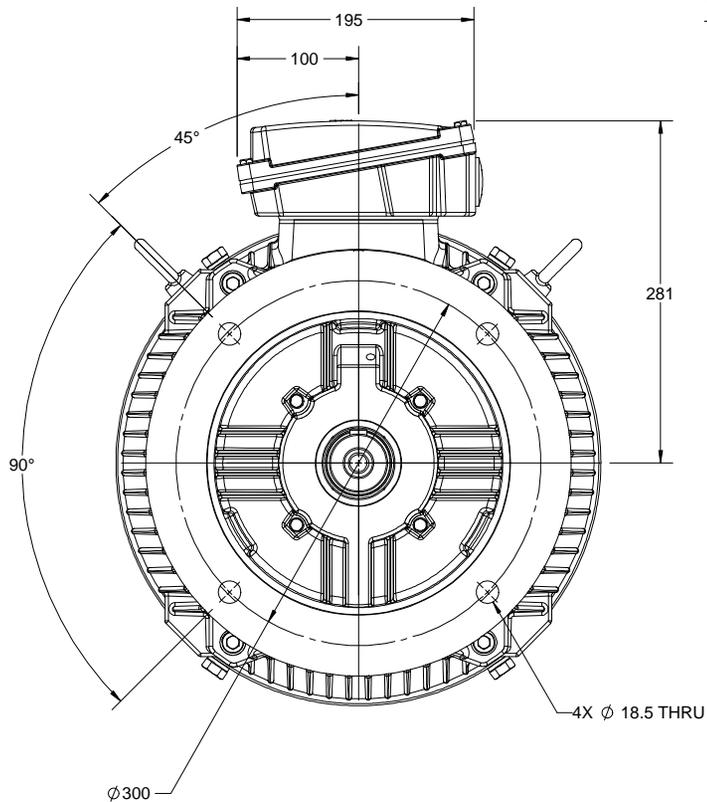
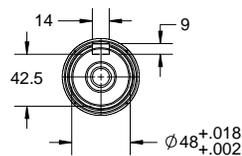
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DRAWING REVISION B	REVISION BY S.MUDDA	DATE 15/11/2018
ECO ECO-0156513	APPROVED BY JAY	DATE 15/11/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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DRAWN BY SDV	 Regal Beloit America, Inc.
DATE 7-05-2014	
APPROVED BY SBD	DESCRIPTION OUTLINE 180FR-B5 MTG. MOTOR TYPE: TCA
DATE 7-05-2014	MATERIAL
REFERENCE	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B
	DRAWING NUMBER 0218000504
	SHEET 1 OF 1

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Model No. TCA0153A3121GACD01

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 _M /T _N [pu]	T _L /T _N [pu]
			[kW]	[hp]	[A]	[A]				5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
415	Δ	50	15	20	28.6	980	145.32		IE3	-	91.2	91.2	91.2	0.8	0.74	0.62	5.8	2.0	2.5

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	180L	Motor weight - approx.	232 kg
Duty	S1	Gross weight - approx.	252 kg
Voltage variation *	± 10%	Motor inertia	0.3035 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)	62 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	6311-2Z / 6211-2Z	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_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	-	-	-

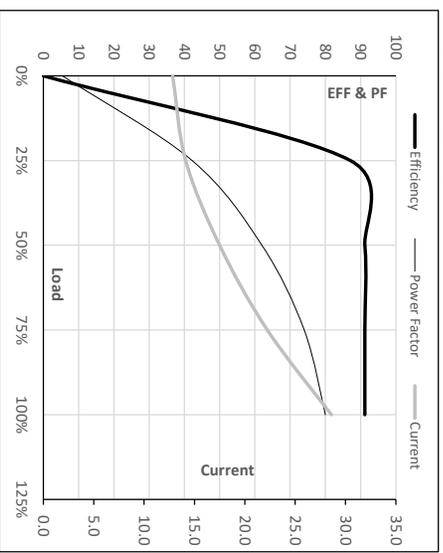
Model No. TCA0153A3121GACD01

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	28.6	980	14.82	145.32	IE3	50	S1	1000	0.3035	232

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A 12.8	14.1	17.5	22.2	28.6	
Torque	Nm 0.0	35.8	71.9	108.4	145.3	
Speed	r/min 1000	995	991	986	980	
Efficiency	% 0.0	87.1	91.2	91.2	91.2	
Power Factor	% 5.4	42.2	62.0	74.0	80.0	

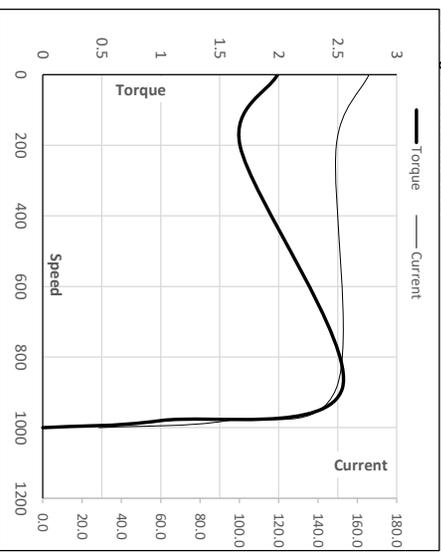
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL
Speed	r/min 0	200	888	980	1000
Current	A 165.9	149.3	93.9	28.6	12.8
Torque	pu 2.0	1.7	2.5	1	0

Starting Characteristics Chart



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

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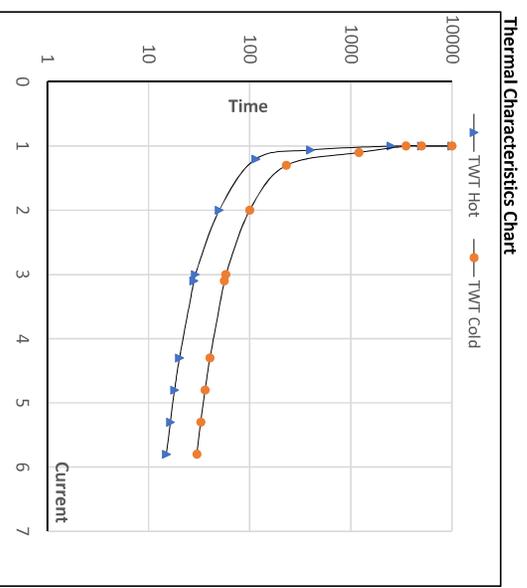


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Enclosure	U	Δ /Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	415	Conn	[Hz]	[kW]	[hp]	[A]	[rpm]	[kgm]	[Nm]	Class	[°C]		[m]	[kg·m ²]	[kg]
TEFC		Δ	50	15	20	28.6	980	14.81	145.32	IE3	50	S1	1000	0.3035	232

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	50	29	25	17	16	15
TWT Cold	s	10000	100	58	50	35	31	30
Current	pu	1	2	3	4	5	5.5	5.8



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

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