

PRODUCT INFORMATION PACKET

Model No: TCA0222A3111GACD01

Catalog No: TCA0222A3111GACD01

22.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 1500 RPM, 415 V, 180L Frame, TEFC
Cast Iron IE3 Efficiency Motors





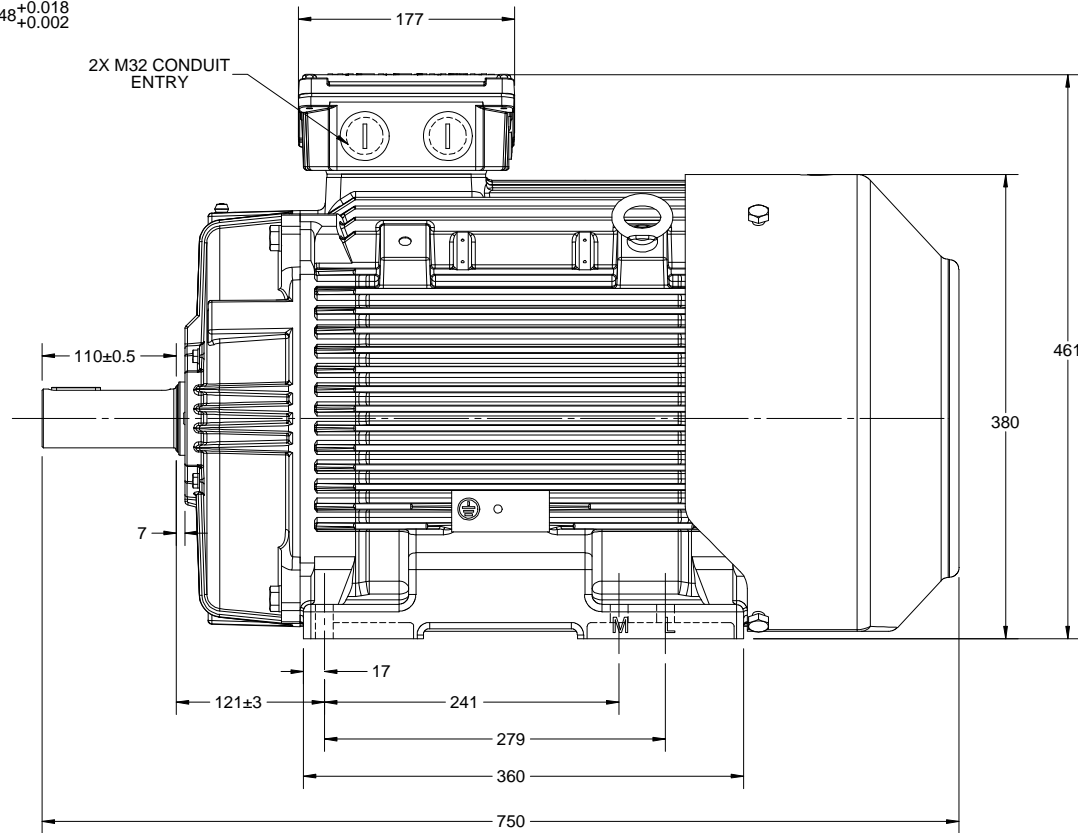
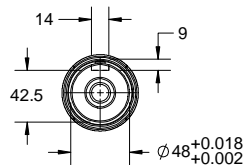
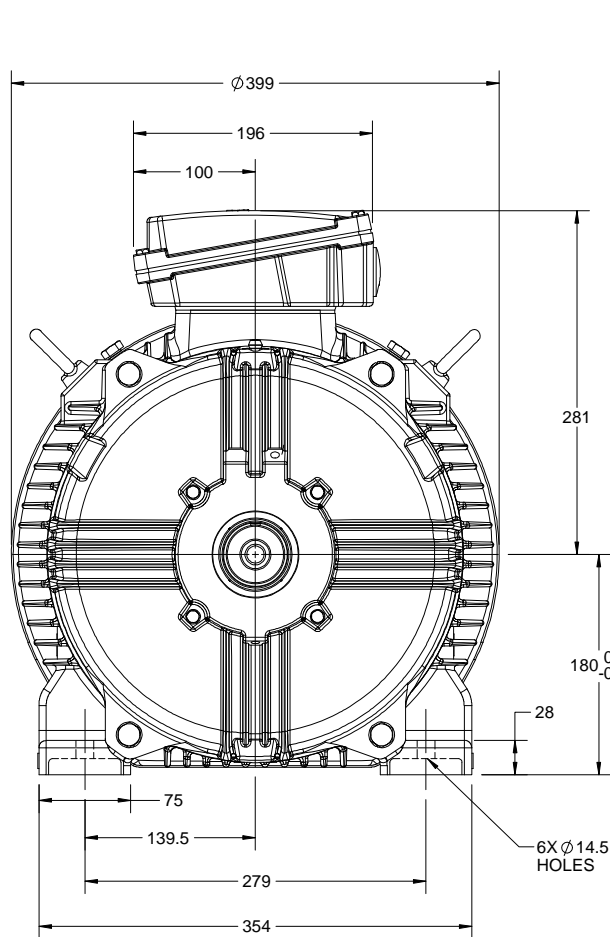
Nameplate Specifications

Output HP	30 Hp	Output KW	22.0 kW
Frequency	50 Hz	Voltage	415 V
Current	38.7 A	Speed	1478 rpm
Service Factor	1	Phase	3
Efficiency	93 %	Power Factor	0.85
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	4	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	750 mm	Frame Length	366 mm
Shaft Diameter	48 mm	Shaft Extension	110 mm
Assembly/Box Mounting	Top		
Outline Drawing	0218000502	Connection Drawing	8442000085

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DRAWING REVISION D	REVISION BY S.MUDDA	DATE 13/11/2018
ECO ECO-0156513	APPROVED BY JAY	DATE 13/11/2018
ECO DESCRIPTION OUTLINE UPDATED AS PER NEW 3D STRUCTURING		
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DRAWN BY SDV
DATE 16/04/2014
APPROVED BY SBD
DATE 16/04/2014
REFERENCE



DESCRIPTION
OUTLINE
180FR-B3 MTG. MOTOR TYPE: TCA/QCA

MATERIAL PROCESS/FINISH

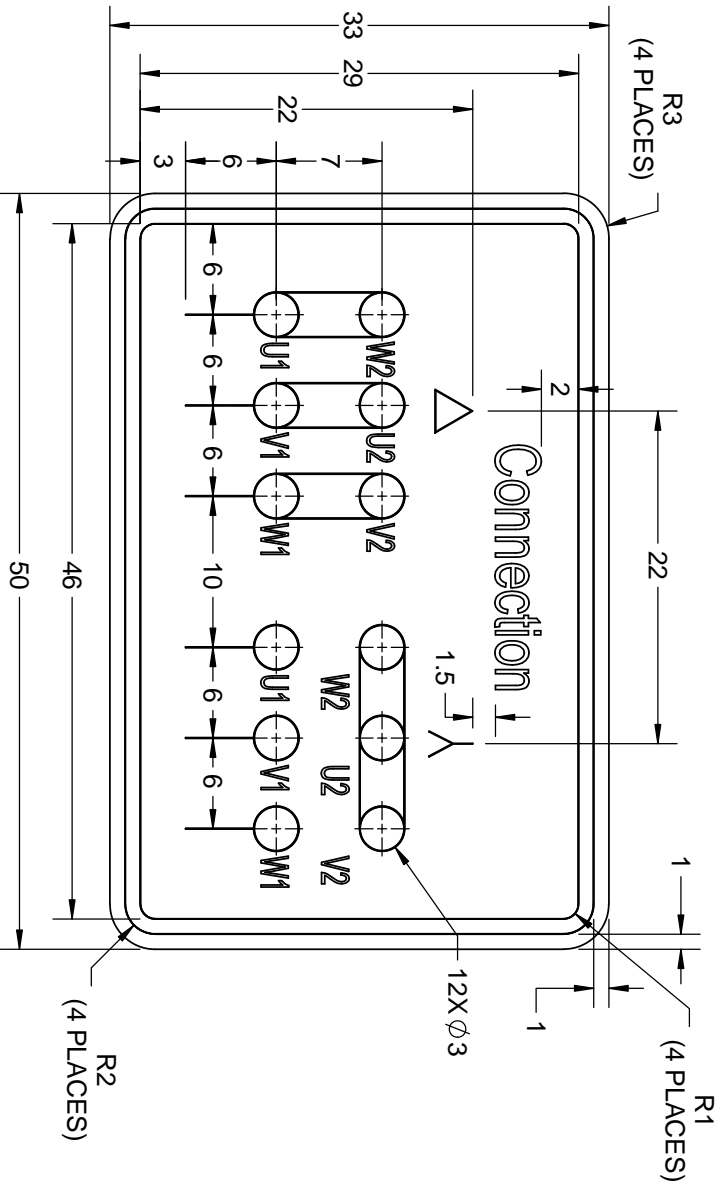
THIRD ANGLE PROJECTION

SIZE **B** DRAWING NUMBER **0218000502** 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 CONN DIAGRAM-NAMEPLATE	
DATE 16/12/2016			
REFERENCE	MATERIAL	PROCESS/FINISH	
THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	SHEET 1 OF 1

Model No. TCA0222A3111GACD01

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	22	30	38.7	1478	144.67		IE3	-	93	93	92.2	0.85	0.77	0.64	7.3	2.5	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	180L	Motor weight - approx.	248 kg
Duty	S1	Gross weight - approx.	268 kg
Voltage variation *	± 10%	Motor inertia	0.2616 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)	64 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	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	-	-	-

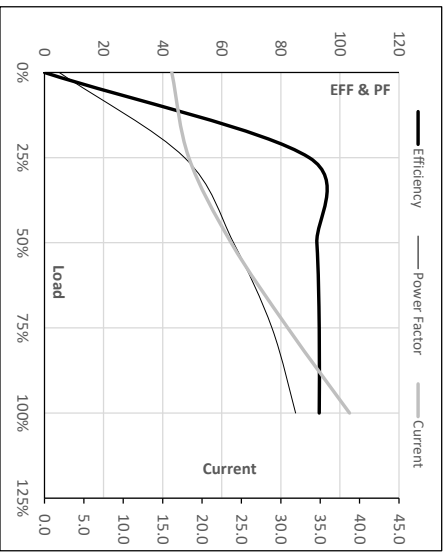
Model No. TCA0222A3111GACD01

Enclosure	U	Δ/Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	Com	[Hz]	[kW]	[hp]	[A]	[RPM]	[kgm]	[Nm]	Class	[°C]	[m]	[m]	[kg·m ²]	[kg]	
TFC	415	Δ	50	22	30	38.7	1478	14.75	144.67	IE3	S0	S1	1000	0.2616	248

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	16.2	18.3	23.7	30.9	38.7
Torque	Nm	0.0	35.7	71.7	108.0	144.7
Speed	r/min	1500	1494	1489	1483	1478
Efficiency	%	0.0	89.6	92.2	93.0	93.0
Power Factor	%	5.0	47.4	64.0	77.0	85.0

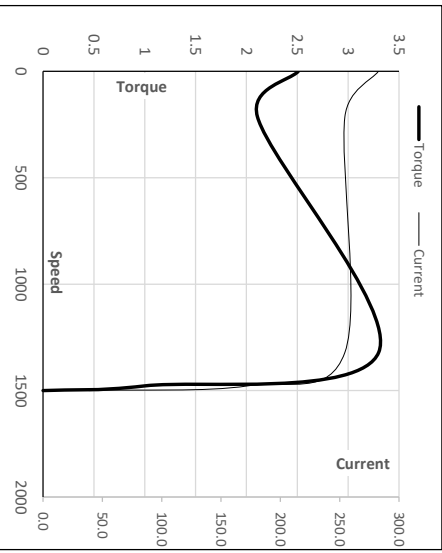
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL	
Speed	r/min	0	214	1321	1478	1500
Current	A	282.6	254.4	172.4	38.7	16.2
Torque	pu	2.5	2.1	3.3	1	0

Starting Characteristics Chart



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

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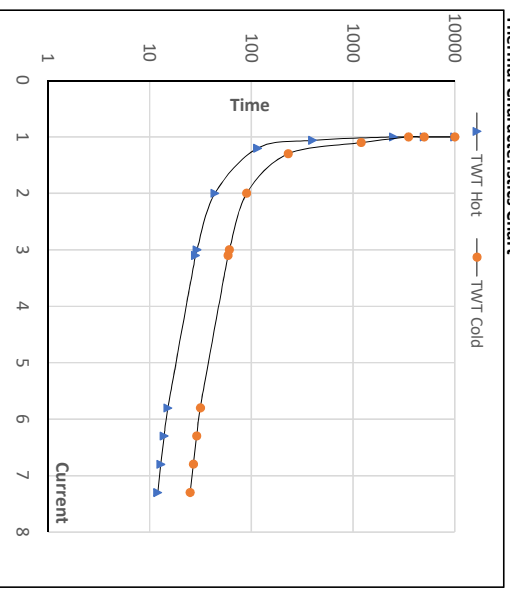
Model No. TCA0222A3111GACD01

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 ²]	[kg]
TEFC				22	30	38.7	1478	14.74	144.67	IE3	50	S1	1000	0.2616	248

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR
TWT Hot	s	10000	44	29	25	20	16
TWT Cold	s	10000	90	61	50	40	33
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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