

# PRODUCT INFORMATION PACKET

**marathon®**  
Motors

Model No: TCN1322A1121GAC010

Catalog No: TCN1322A1121GAC010

TerraMAX® Cast Iron Motor, 175 HP, 3 Ph, 50 Hz, 400 V, 1500 RPM, 315M Frame, TEFC



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**RegalRexnord**

### Nameplate Specifications

Output HP	175 Hp	Output KW	132.0 kW
Frequency	50 Hz	Voltage	400 V
Current	226.5 A	Speed	1488 rpm
Service Factor	1	Phase	3
Efficiency	95.6 %	Power Factor	0.88
Duty	S1	Insulation Class	F
Frame	315M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	6319	Opp Drive End Bearing Size	6319
UL	No	CSA	No
CE	Yes	IP Code	55
Number of Speeds	1	Efficiency Class	IE3

### Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	4	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	1206 mm	Frame Length	729 mm
Shaft Diameter	80 mm	Shaft Extension	170 mm
Assembly/Box Mounting	Top		
Outline Drawing	0231500892	Connection Drawing	8442000085

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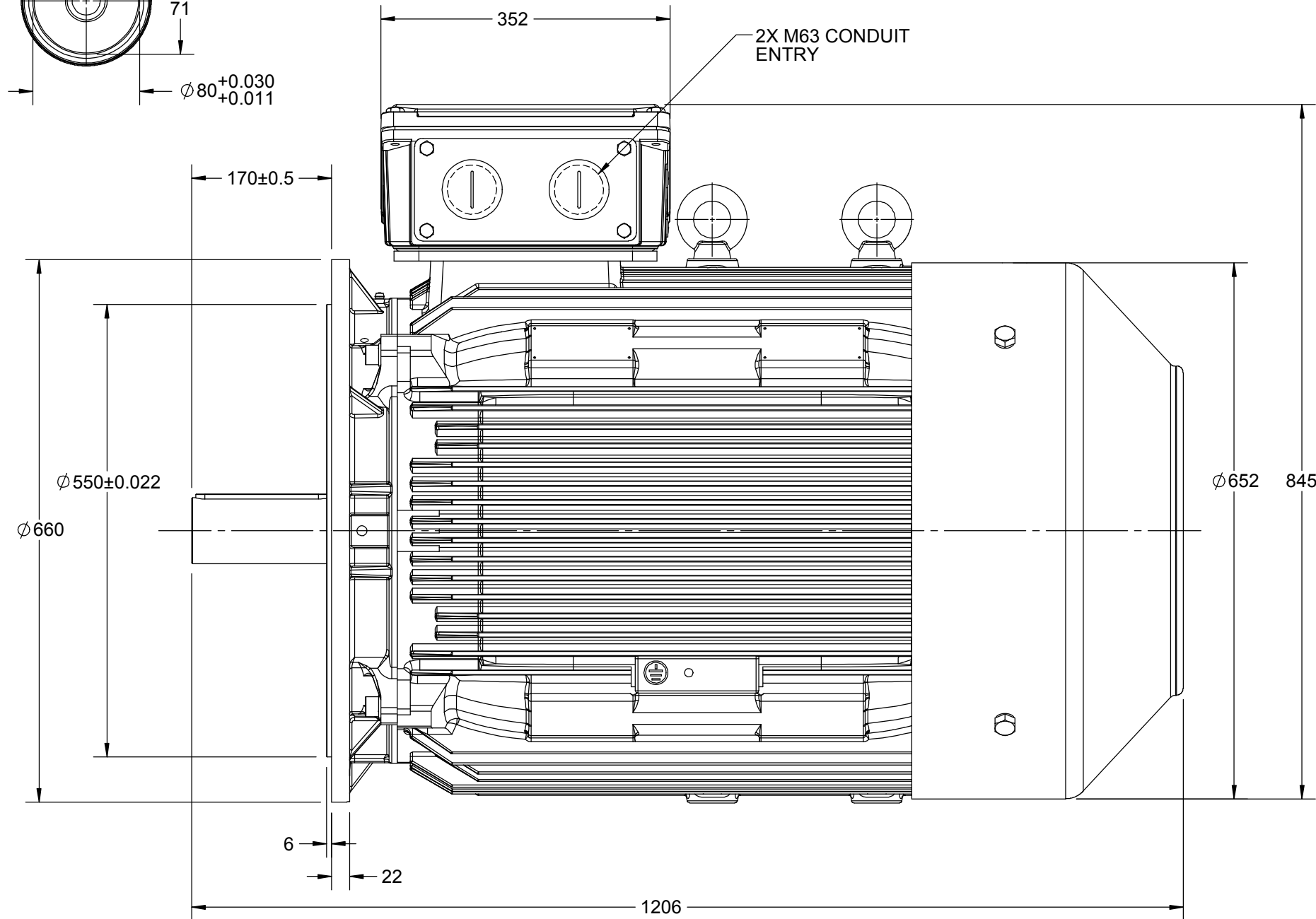
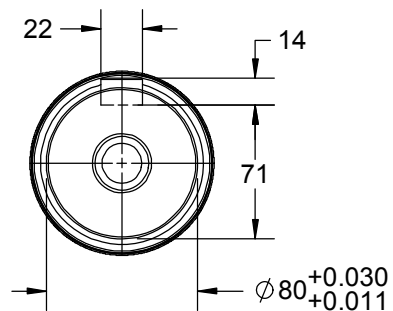
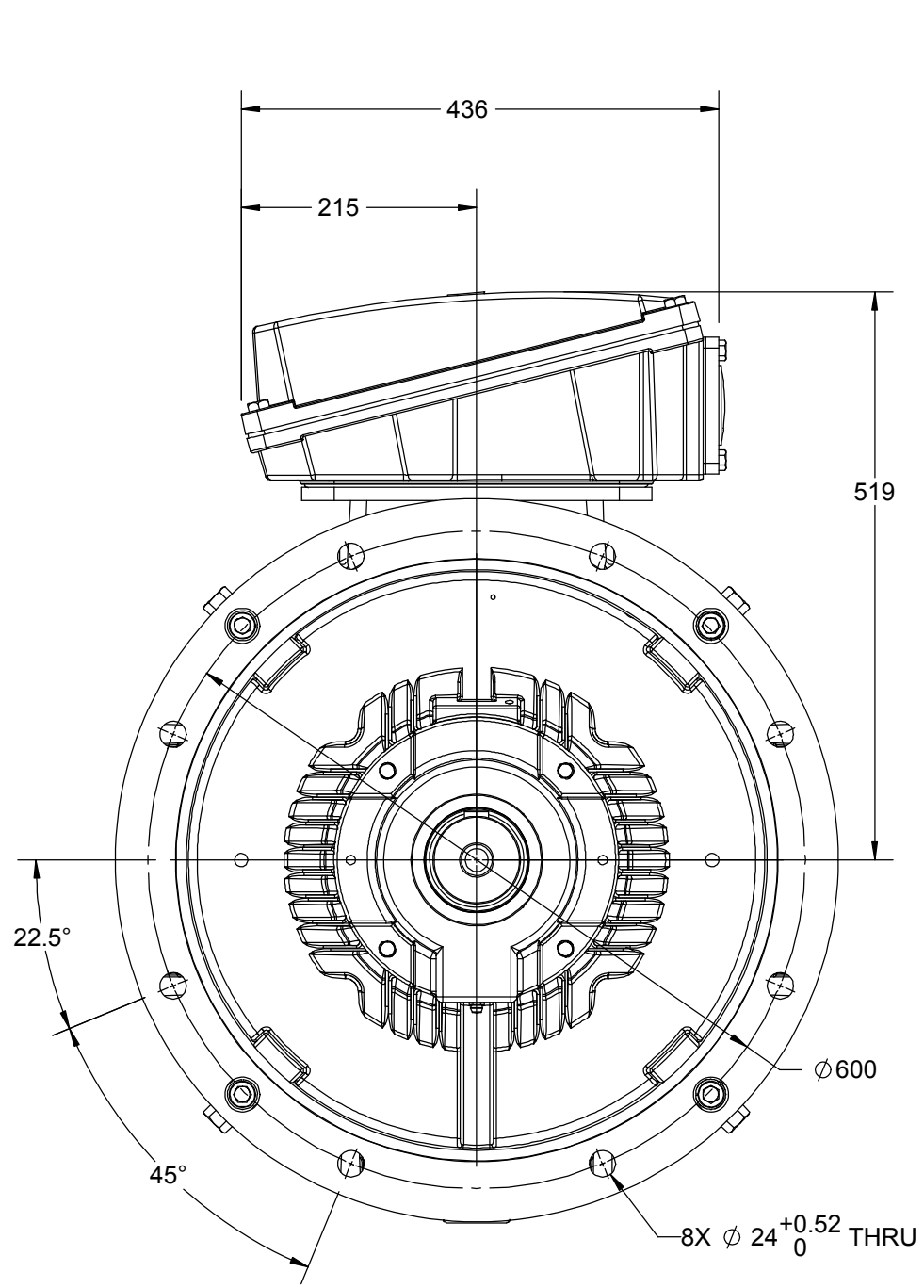
OUTLINE

B

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DRAWING REVISION B	REVISION BY NIV	DATE 14/05/2019		DRAWN BY JOY			
ECO ECO-0165600	APPROVED BY SR	DATE 14/05/2019		DATE 18/07/2014			
ECO DESCRIPTION MODEL UPDATED				APPROVED BY SBD	DESCRIPTION OUTLINE		
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				REFERENCE	MATERIAL	PROCESS/FINISH	
				THIRD ANGLE PROJECTION		SIZE B	DRAWING NUMBER 0231500892

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DRAWING REVISION  
A

REVISION BY  
SN

DATE  
13/01/2017

ECO  
ECO-0116390

APPROVED BY  
SBD

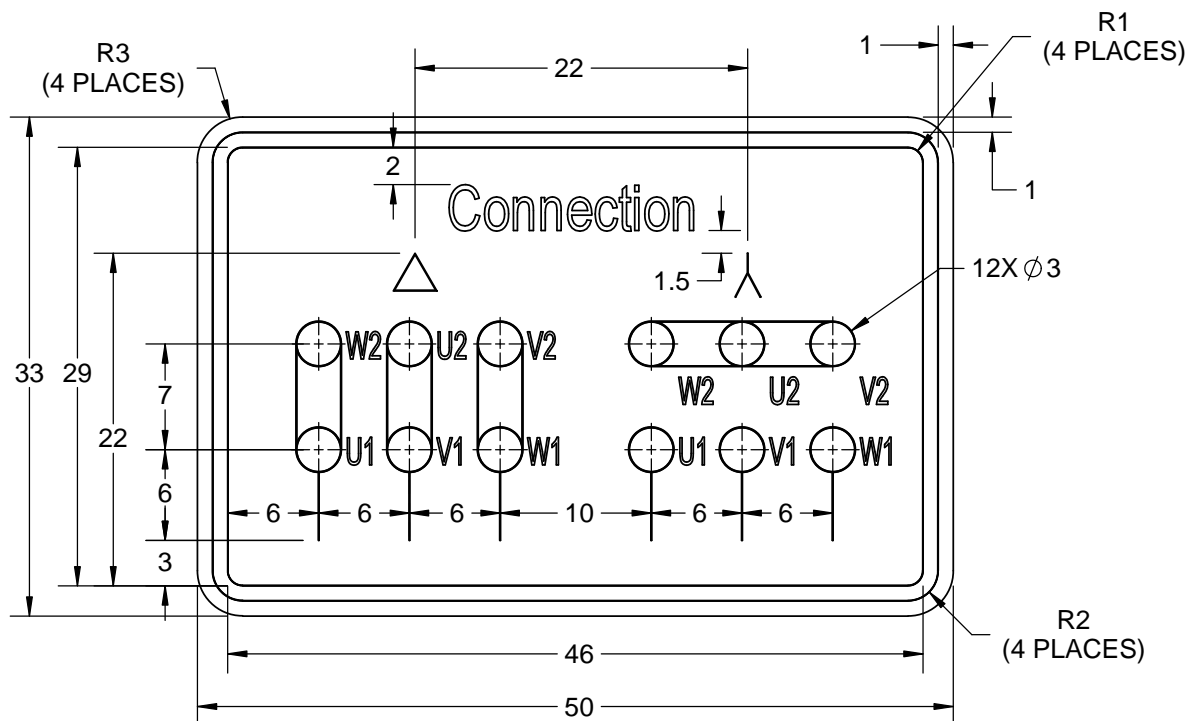
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ECO DESCRIPTION

NEW DRAWING RELEASE

# GEOMETRIC TOLERANCE

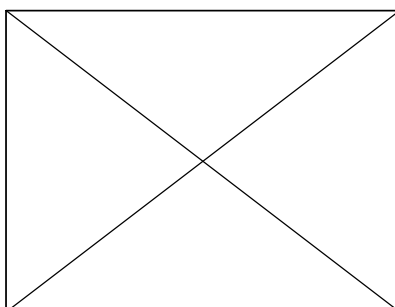
LINEAR DIM	>0~6	±0.1
	>6~30	±0.2
	>30~120	±0.3



## 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  
DATE  
16/12/2016  
APPROVED BY  
SBD  
DATE  
16/12/2016  
REFERENCE  
THIRD ANGLE PROJECTION

REGAL<sup>TM</sup> Regal Beloit America, Inc.  
 DESCRIPTION  
**CONN DIAGRAM-NAMEPLATE**  
 MATERIAL  
 PROCESS/FINISH  
 SIZE  
 A  
 DRAWING NUMBER  
**8442000085**  
 SHEET  
 1 OF 1

**Model No.** TCN1322A1121GAC010

U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I <sub>A</sub> /I <sub>N</sub> [pu]	T <sub>A</sub> /T <sub>N</sub> [pu]	T <sub>K</sub> /T <sub>N</sub> [pu]
400	Δ	50	132	175	226.5	1488	837.64	IE3	5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL	6.8	2.1	3.0

Motor type	TCN	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	315M	Motor weight - approx.	1018 kg
Duty	S1	Gross weight - approx.	1063 kg
Voltage variation *	± 10%	Motor inertia	3.7582 kgm <sup>2</sup>
Frequency variation *	± 5%	Load inertia	Customer to Provide
Combined variation *	10%	Vibration level	2.8 mm/s
Design	N	Noise level ( 1meter distance from motor)	69 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 +40 °C	Type of coupling	Direct
Temperature rise (by resistance)	80 [ 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	Ex nA	Standard rotation	Clockwise form DE
Zone classification	Zone 2	Paint shade	RAL 5014
Gas group	IIC	Accessories	
Temperature class	T3	Accessory - 1	PTC 150°C
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6319 C3 / 6319 C3	Terminal box position	TOP
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 240mm <sup>2</sup> /2 x M63 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	Auxiliary terminal box	NA

 $I_A/I_N$  - Locked Rotor Current / Rated Current

 $T_K/T_N$  - Breakdown Torque / Rated Torque

 $T_A/T_N$  - Locked Rotor Torque / Rated Torque

**NOTE**

ATEX/IEC Ex certified as per IEC/EN 60079-0; IEC/EN 60079-15

All performance values at rated voltage and frequency.

All performance parameters are subjected to standard tolerance as per IEC 60034-1

\* Voltage, Frequency and combined variation are as per IEC60034-1

Technical data are subject to change. There may be slight variations between calculated values in this datasheet and the motor nameplate figures.

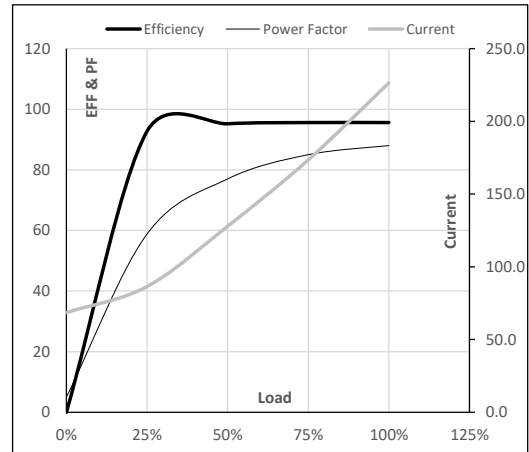
Efficiency Standards	Europe IEC:60034-30-1	China -	India -	Aus/Nz GEMS 2019	Brazil -	Global IEC IEC:60034-30-1
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**Model No.** TCN1322A1121GAC010

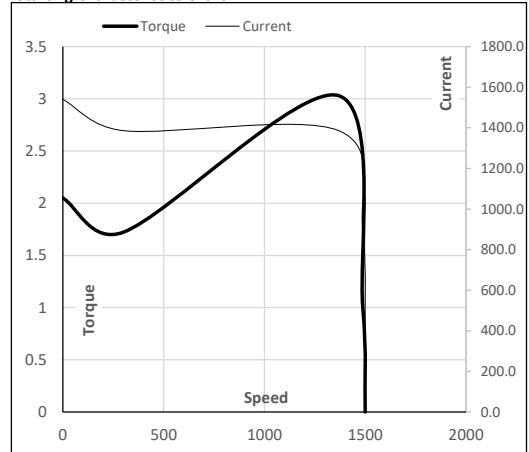
Enclosure	U (V)	$\Delta$ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	400	$\Delta$	50	132	175	226.5	1488	85.42	837.64	IE3	40	S1	1000	3.7582	1018

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	68.5	86.4	127.9	173.5	226.5	
Torque	Nm	0.0	208.1	417.0	626.9	837.6	
Speed	r/min	1500	1497	1494	1491	1488	
Efficiency	%	0.0	92.7	95.2	95.6	95.6	
Power Factor	%	5.0	58.8	77.0	85.0	88.0	

**Performance vs Load Chart**

**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	300	1369	1488	1500
Current	A	1540.0	1386.0	893.1	226.5	68.5
Torque	pu	2.1	1.7	3.0	1	0

**Starting Characteristics Chart**

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

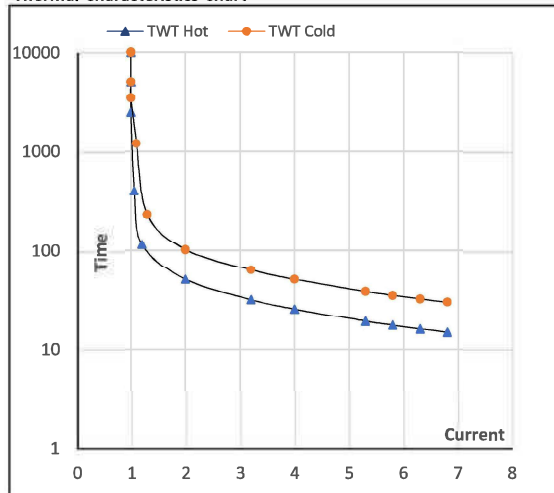
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**TerraMAX®**
**Model No. TCN1322A1121GAC010**

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	400	Δ	50	132	175.0	226.5	1488	85.42	837.64	IE3	40	S1	1000	3.7582	1018

**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	51	33	26	22	18	15	
TWT Cold	s 10000	102	70	51	41	36	30	
Current	pu	1	2	3	4	5	5.5	6.8

**Thermal Characteristics Chart**

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

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