

# PRODUCT INFORMATION PACKET

Model No: TCM0452A2121GAC011

Catalog No: TCM0452A2121GAC011

TerraMAX® IE3, Mining Duty Motors, 45 kW, 3Ph, 4 Pole, 400/690V, B5, 50Hz, 225M Frame, TEFC



Regal and Marathon are trademarks of Regal Rexnord Corporation or one of its affiliated companies.

©2022 Regal Rexnord Corporation, All Rights Reserved. MC017097E



### Nameplate Specifications

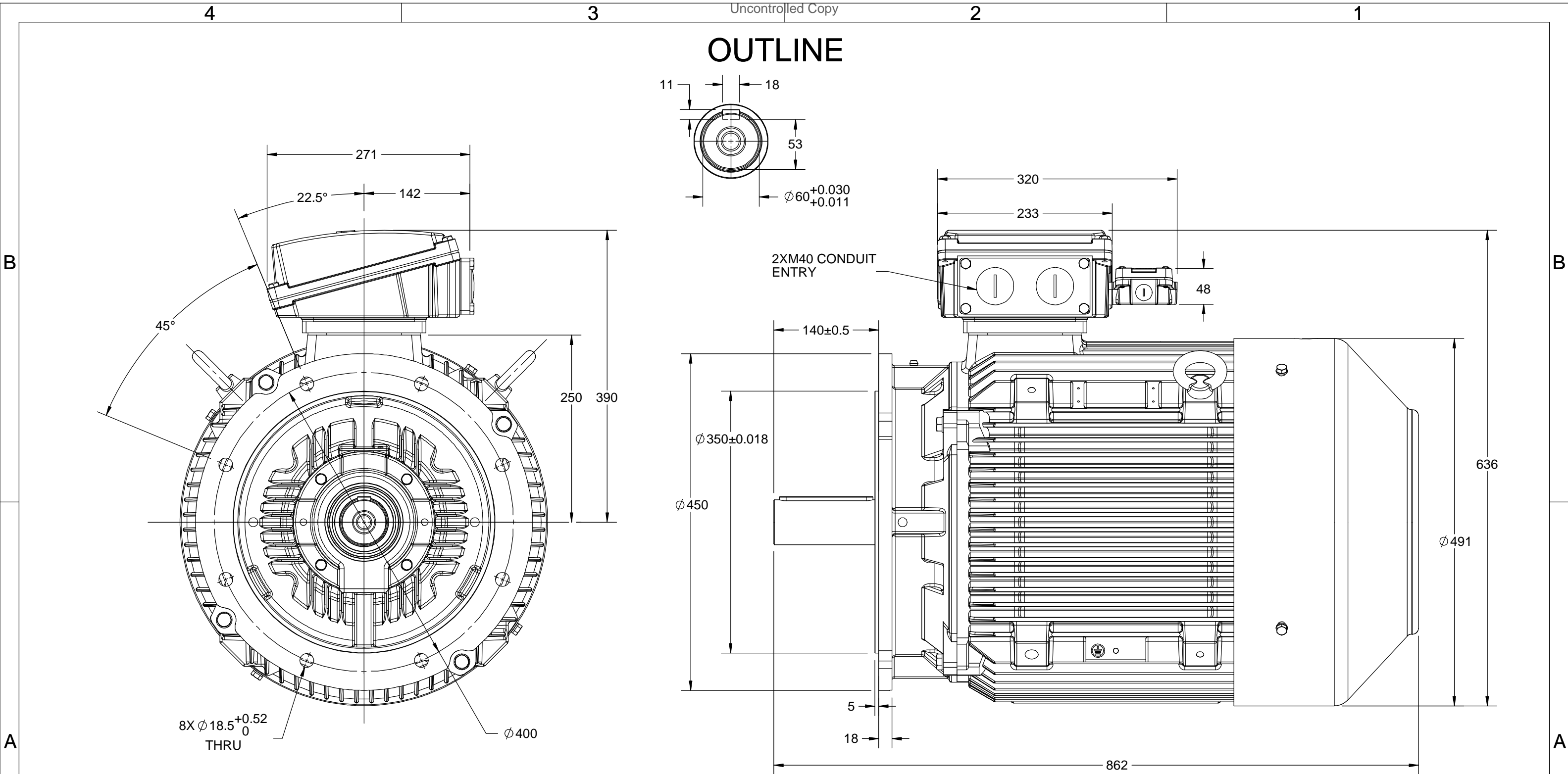
Output HP	<b>60 Hp</b>	Output KW	<b>45.0 kW</b>
Frequency	<b>50 Hz</b>	Voltage	<b>400/690 V</b>
Current	<b>81.1 A</b>	Speed	<b>1483 rpm</b>
Service Factor	<b>1</b>	Phase	<b>3</b>
Efficiency	<b>94.2 %</b>	Power Factor	<b>0.85</b>
Duty	<b>S1</b>	Insulation Class	<b>H</b>
Frame	<b>225M</b>	Enclosure	<b>Totally Enclosed Fan Cooled</b>
Thermal Protection	<b>No Protection</b>	Ambient Temperature	<b>40 °C</b>
Drive End Bearing Size	<b>6313</b>	Opp Drive End Bearing Size	<b>6213</b>
UL	<b>NO</b>	CSA	<b>NO</b>
CE	<b>YES</b>	IP Code	<b>66</b>
Number of Speeds	<b>1</b>	Efficiency Class	<b>IE3</b>

### Technical Specifications

Electrical Type	<b>Squirrel Cage</b>	Starting Method	<b>Direct On Line</b>
Poles	<b>4</b>	Rotation	<b>Bi-Directional</b>
Mounting	<b>B5</b>	Motor Orientation	<b>Horizontal</b>
Drive End Bearing	<b>C3</b>	Opp Drive End Bearing	<b>C3</b>
Frame Material	<b>Cast Iron</b>	Shaft Type	<b>Keyed</b>
Overall Length	<b>862 mm</b>	Frame Length	<b>425 mm</b>
Shaft Diameter	<b>60 mm</b>	Shaft Extension	<b>140 mm</b>
Assembly/Box Mounting	<b>TOP</b>		
Connection Drawing	<b>8442000086</b>	Outline Drawing	<b>0222500887</b>

This is an uncontrolled document once printed or downloaded and is subject to change without notice. Date Created:12/02/2022

# OUTLINE



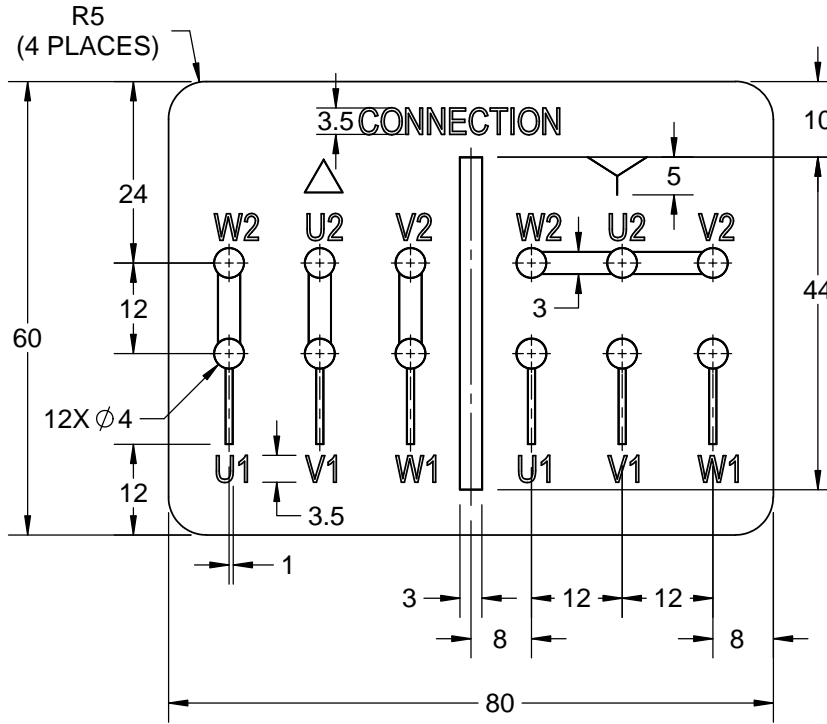
DRAWING REVISION A	REVISION BY BISWA	DATE 16/08/2018
ECO ECO-0150057	APPROVED BY SBD	DATE 16/08/2018
ECO DESCRIPTION <b>NEW DRAWING RELEASE</b> COPYRIGHT REGAL BELOIT AMERICA, INC. ALL RIGHTS RESERVED. PROPRIETARY AND CONFIDENTIAL INFORMATION - THIS DOCUMENT IS THE PROPERTY OF REGAL BELOIT AMERICA, INC. ("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.		

DRAWN BY BISWA	<b>marathon™ Motors</b>	
DATE 16/08/2018		
APPROVED BY SBD	DESCRIPTION <b>OUTLINE</b> 225M-B5 MTG 4-8P MOTOR TYPE: TCM	
DATE 16/08/2018	MATERIAL	PROCESS/FINISH
REFERENCE	SIZE <b>B</b>	DRAWING NUMBER <b>0222500887</b>
THIRD ANGLE PROJECTION	SHEET 1 OF 1	

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.

DRAWING REVISION <b>A</b>	REVISION BY <b>SN</b>	DATE <b>13/01/2016</b>
ECO <b>ECO-0116390</b>	APPROVED BY <b>SBD</b>	DATE <b>13/01/2016</b>
ECO DESCRIPTION <b>NEW DRAWING RELEASE</b>		

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



**NOTES:**

1. PRESSURE-SENSITIVE ADHESIVE TAPE COATED WITH ANTI-ADHESIVE.
2. AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK.
3. THE TOLERANCE OF THE LINEAR SIZE OF THE TOLERANCE WITHOUT THE TOLERANCE BY THE TABLE.

8WD.864.1008

	DRAWN BY <b>SN</b>		<b>Regal Beloit America, Inc.</b>	
	DATE <b>16/12/2016</b>			
	APPROVED BY <b>SBD</b>			
	DATE <b>16/12/2016</b>			
	REFERENCE			
THIRD ANGLE PROJECTION		DESCRIPTION <b>CONN DIAGRAM-NAMEPLATE</b>	MATERIAL	PROCESS/FINISH
SIZE <b>A</b>	DRAWING NUMBER <b>8442000086</b>		SHEET <b>1 OF 1</b>	

Model No. TCM0452A2121GAC011

U (V)	Δ / Y Conn	f [Hz]	P		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]
			[kW]	[hp]					5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
400	Δ	50	45	60	81.1	1483	288.1	IE3	-	94.2	94.2	94.2	0.85	0.81	0.72	7.2	2.4	3

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B5
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225M	Motor weight - approx.	414 kg
Duty	S1	Gross weight - approx.	444 kg
Voltage variation *	± 10%	Motor inertia	0.7130 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)	65 dB(A)
Service factor	1.15	No. of starts hot/cold/Equally spread	2/3/4
Insulation class	H	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	NA	Standard rotation	Clockwise form DE
Zone classification	NA	Paint shade	RAL 2008
Gas group	NA	Accessories	
Temperature class	NA	Accessory - 1	PTC 150°C
Rotor type	Aluminum Die cast	Accessory - 2	-
Bearing type	Anti-friction ball	Accessory - 3	-
DE / NDE bearing	6313-C3 / 6213-C3	Terminal box position	TOP
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 95mm <sup>2</sup> /2 x M50 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	Auxiliary terminal box	YES

I<sub>A</sub>/I<sub>N</sub> - Locked Rotor Current / Rated Current

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

T<sub>A</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 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 AS/NZ 1359:5:2004	Brazil -	Global IEC IEC:60034-30-1



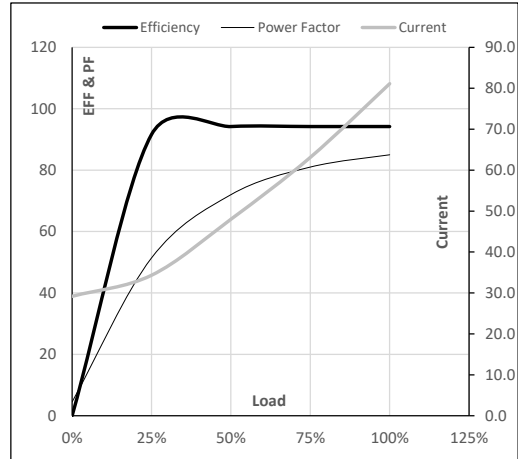
**Model No.** TCM0452A2121GAC011

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	45	60	81.1	1483	29.38	288.10	IE3	40	S1	1000	0.713	414

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	29.2	34.3	48.0	63.1	81.1	
Torque	Nm	0.0	71.4	143.2	215.4	288.1	
Speed	r/min	1500	1496	1492	1488	1483	
Efficiency	%	0.0	91.6	94.2	94.2	94.2	
Power Factor	%	4.5	51.4	72.0	81.0	85.0	

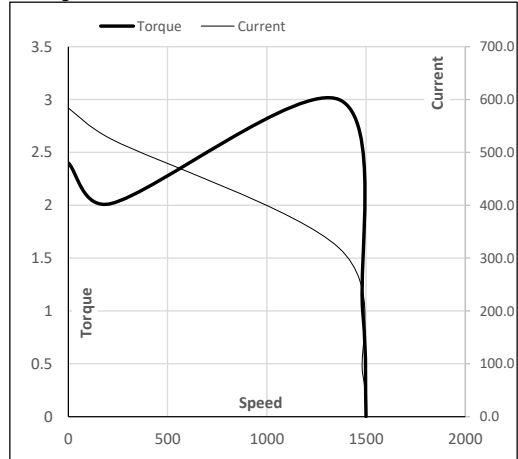
**Performance vs Load Chart**



**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	214	1364	1483	1500
Current	A	584.1	525.7	319.1	81.1	29.2
Torque	pu	2.4	2.0	3.0	1	0

**Starting Characteristics Chart**



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

Issued By  
Issued Date



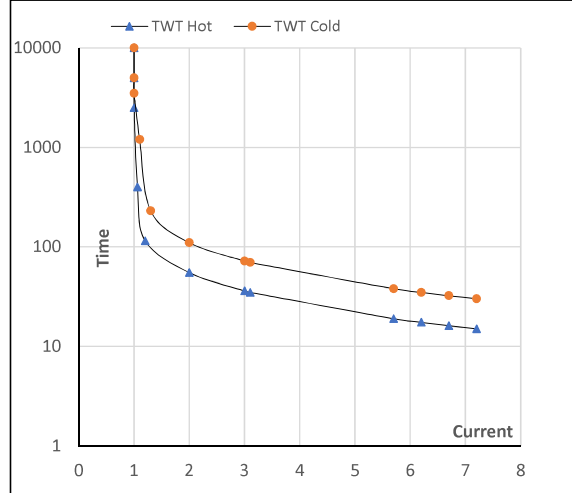
Model No. TCM0452A2121GAC011

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	45	60	81.1	1483	29.38	288.10	IE3	40	S1	1000	0.7130	414

**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	55	36	30	25	20	15	
TWT Cold	s 10000	110	72	60	45	40	30	
Current	pu	1	2	3	4	5	5.5	7.2

**Thermal Characteristics Chart**



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

Issued By  
Issued Date

