

PRODUCT INFORMATION PACKET

Model No: TCM1603A2113GAC011

Catalog No: TCM1603A2113GAC011

TerraMAX® IE3, Mining Duty Motors, 160 kW, 3Ph, 6 Pole, 400/690V, B3, 50Hz, 355M Frame, TEFC



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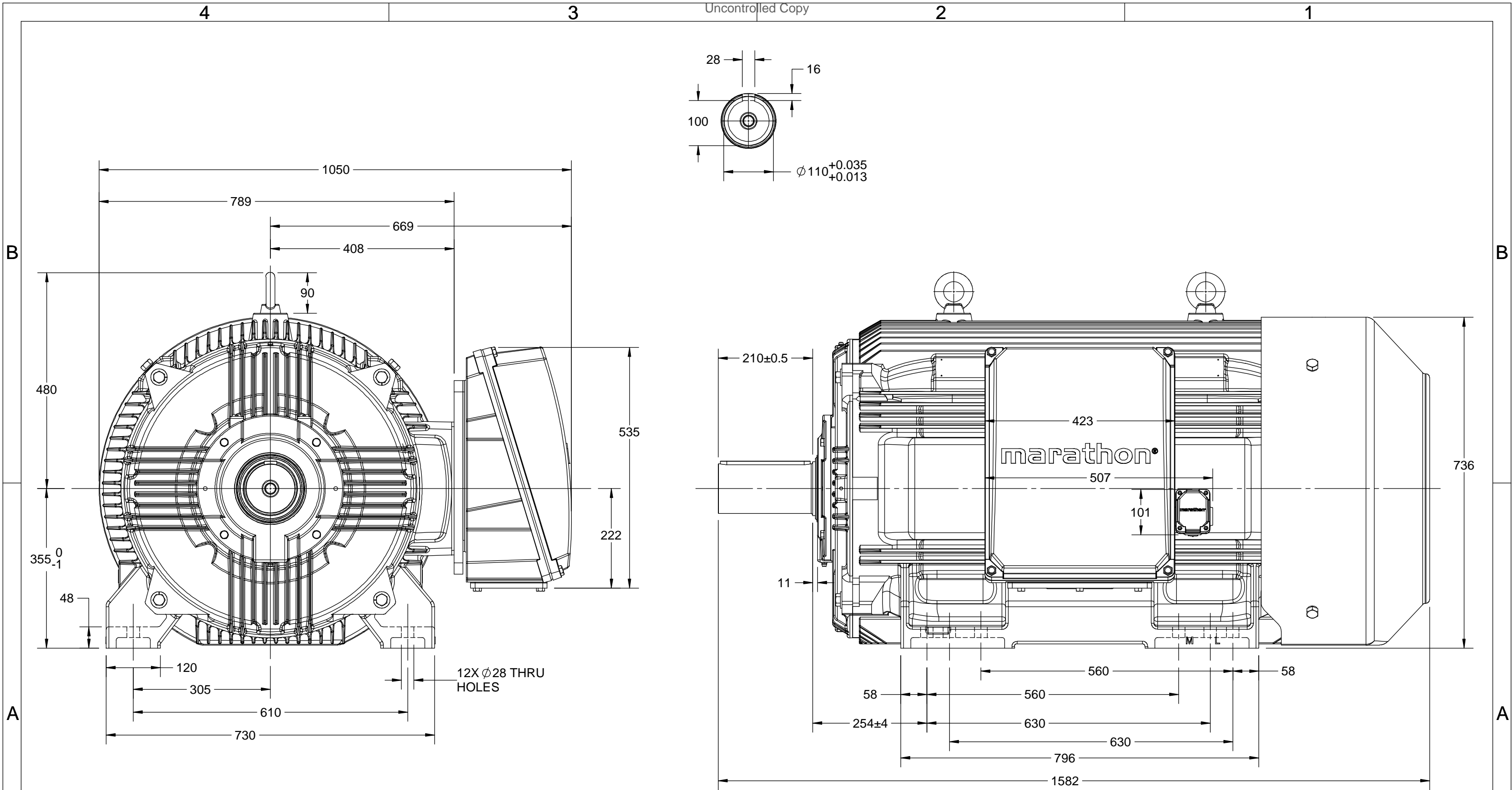
Nameplate Specifications

Output HP	215 Hp	Output KW	160.0 kW
Frequency	50 Hz	Voltage	400/690 V
Current	288.0 A	Speed	991 rpm
Service Factor	1	Phase	3
Efficiency	95.6 %	Power Factor	0.84
Duty	S1	Insulation Class	H
Frame	355M	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Ambient Temperature	40 °C
Drive End Bearing Size	NU324	Opp Drive End Bearing Size	6322
UL	NO	CSA	NO
CE	YES	IP Code	66
Number of Speeds	1	Efficiency Class	IE3

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	6	Rotation	Bi-Directional
Mounting	B3	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	1317 mm	Frame Length	1010 mm
Shaft Diameter	110 mm	Shaft Extension	210 mm
Assembly/Box Mounting	RHS		
Outline Drawing	0235502347	Connection Drawing	8442180001

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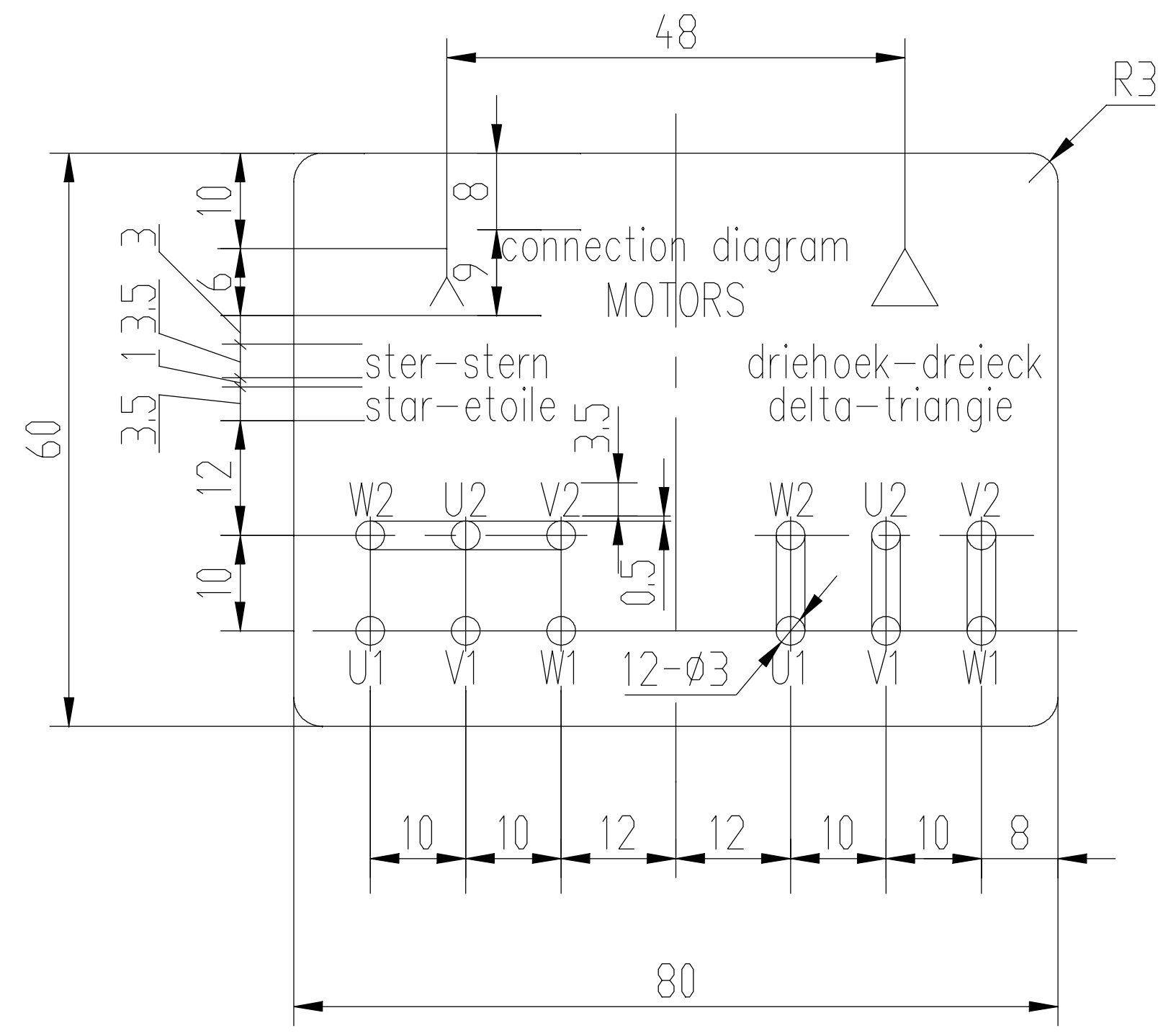


DRAWING REVISION B	REVISION BY LK	DATE 01/08/2018
ECO ECO-0158551	APPROVED BY SBD	DATE 01/08/2018
ECO DESCRIPTION MODEL UPDATED WITH NEW STRUCTURE		
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DRAWN BY LK		
DATE 24/01/2018		
APPROVED BY SBD	DESCRIPTION OUTLINE	
DATE 24/01/2018	355FR-B3 MTG. 4-8P MOTOR TYPE: TCM	
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0235502347
		SHEET 1 OF 1

8442180001



技术要求

- 1、字母小号3.5，大号5，字母应整齐清晰，Δ、Y下面的字母分别关于Δ、Y对称；
- 2、底为黄色，文字线条为黑色；
- 3、压敏胶纸反面涂不干胶。

修改	
校对	
审核	
工艺	
标准	

修改	
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标准	

修改	
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审核	
工艺	
标准	
设计	

						8442180001				
						压敏胶纸				
标记	处数	分区	更改文件号	签名	年月日	阶段标记		重量	比例	接线指示 DM1-180
设计									1:1	
审核						共 页		第 页		无锡华达电机有限公司
工艺										

Model No. TCM1603A2113GAC011

U (V)	Δ / Y Conn	f [Hz]	P		I [A]	n [RPM]	T [Nm]	IE Class	% EFF at __ load				PF at __ load			I _A /I _N [pu]	T _A /T _N [pu]	T _K /T _N [pu]
			[kW]	[hp]					5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
400	Δ	50	160	215	288.0	991	1545.26	IE3	-	95.6	95.6	95.6	0.84	0.81	0.71	6.1	1.9	2.5

Motor type	TCM	Degree of protection	IP 66
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	355M	Motor weight - approx.	1637 kg
Duty	S1	Gross weight - approx.	1682 kg
Voltage variation *	± 10%	Motor inertia	8.5699 kgm ²
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)	70 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)	25/50 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	NU324 / 6322-C3	Terminal box position	RHS
Lubrication method	Regreasable	Maximum cable size/conduit size	1R x 3C x 300mm ² /4 X M63 x 1.5
Type of grease	CHEVRON SRI-2 or Equivalent	Auxiliary terminal box	YES

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

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 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

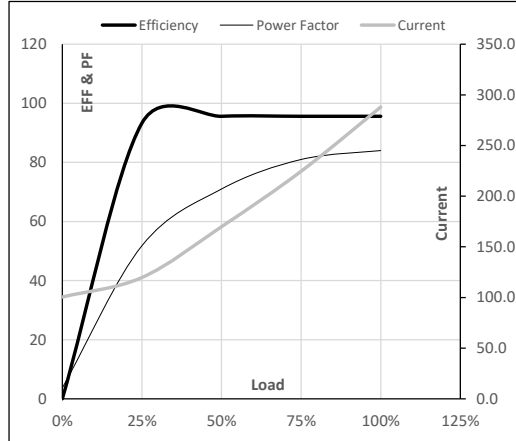
Model No. TCM1603A2113GAC011

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 ²]	Weight [kg]
TEFC	400	Δ	50	160	215.0	288.0	991	157.57	1545.26	IE3	40	S1	1000	8.5699	1637

Motor Load Data

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	100.5	119.7	169.9	224.6	288.0	
Torque	Nm	0.0	383.7	769.0	1156.1	1545.3	
Speed	r/min	1000	998	996	993	991	
Efficiency	%	0.0	93.3	95.6	95.6	95.6	
Power Factor	%	3.7	51.8	71.0	81.0	84.0	

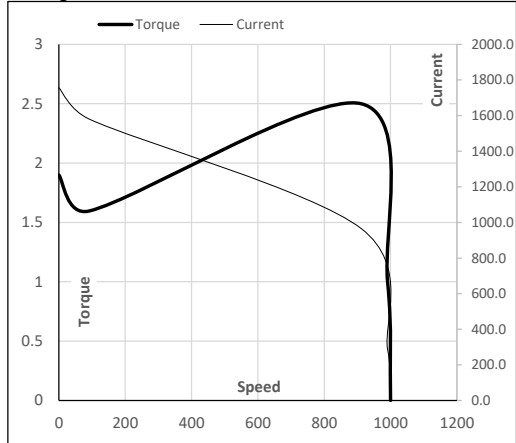
Performance vs Load Chart



Motor Speed Torque Data

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	91	912	991	1000
Current	A	1756.8	1581.1	965.4	288.0	100.5
Torque	pu	1.9	1.6	2.5	1	0

Starting Characteristics Chart



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

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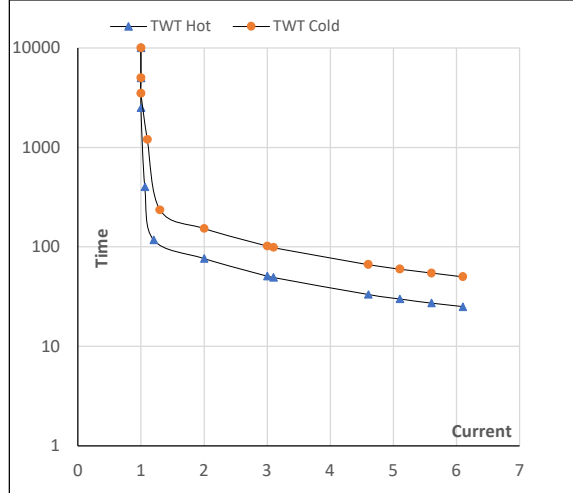
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Enclosure	U (V)	Δ / Y Conn	f (Hz)	P [kW]	P [hp]	I [A]	n [rpm]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m ²]	Weight [kg]
TEFC	400	Δ	50	160	215	288.0	991	157.57	1545.26	IE3	40	S1	1000	8.5699	1637

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR
TWT Hot	s 10000	76	51	40	30	26	25
TWT Cold	s 10000	153	102	82	60	52	50
Current	pu	1	2	3	4	5	6

Thermal Characteristics Chart



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

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