

# PRODUCT INFORMATION PACKET



Model No: TCA0453A1113GAC010

Catalog No: TCA0453A1113GAC010

TerraMAX® Cast Iron Motor, 60 HP, 3 Ph, 50 Hz, 400 V, 1000 RPM, 280S Frame, TEFC





## Nameplate Specifications

Phase	3	Output HP	60 Hp
Output KW	45.0 kW	Voltage	400 V
Speed	989 r/min	Service Factor	1
Frame	280S	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No Protection	Efficiency	93.7 %
Ambient Temperature	40 °C	Frequency	50 Hz
Current	85.6 A	Power Factor	0.81
Duty	S1	Insulation Class	F
Drive End Bearing Size	6317	Opp Drive End Bearing Size	6317
UL	No	CSA	No
CE	Yes	IP Code	55
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	1060 mm	Frame Length	549 mm
Shaft Diameter	75 mm	Shaft Extension	140 mm
Assembly/Box Mounting	R Side		
Outline Drawing	0228001135	Connection Drawing	8442000085

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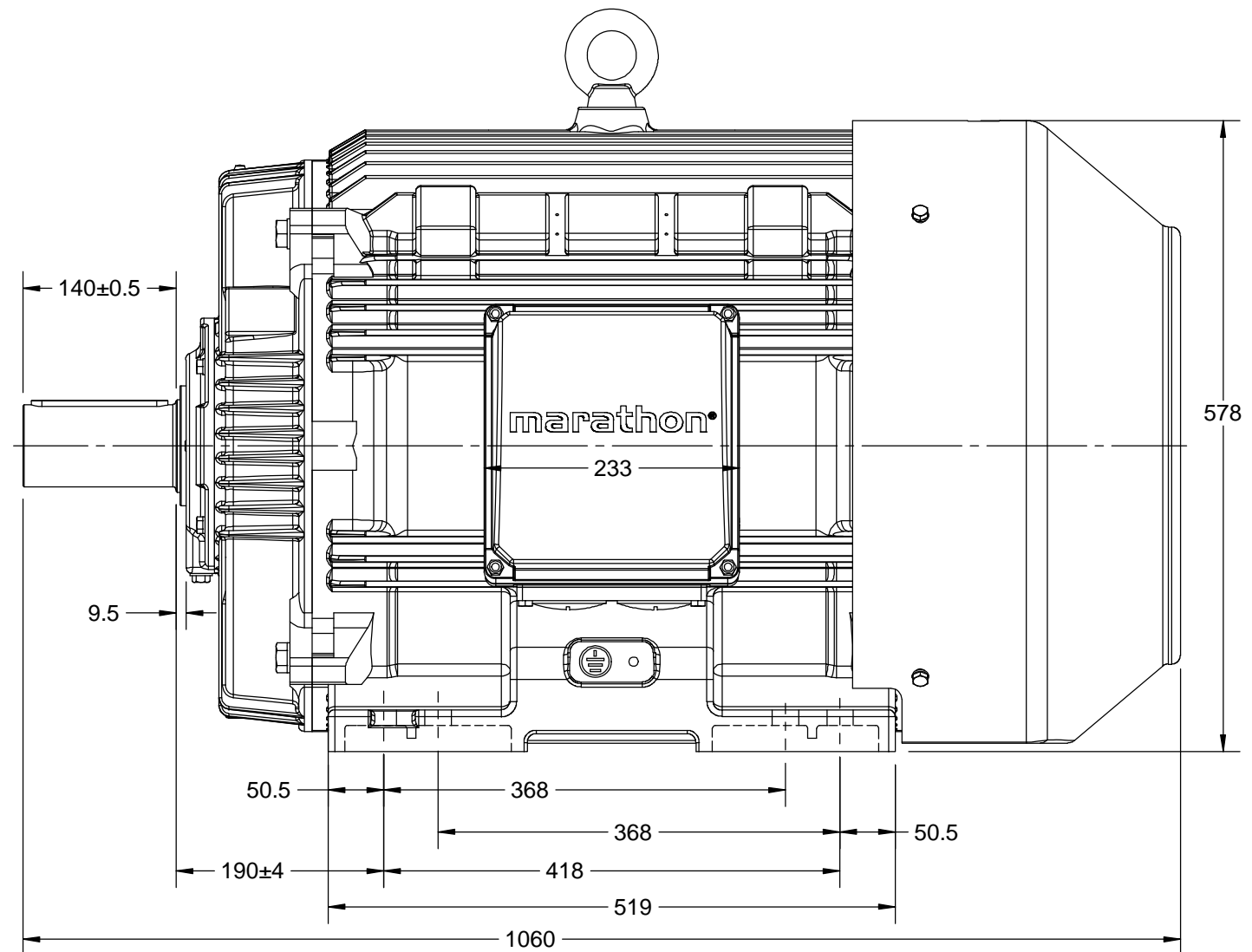
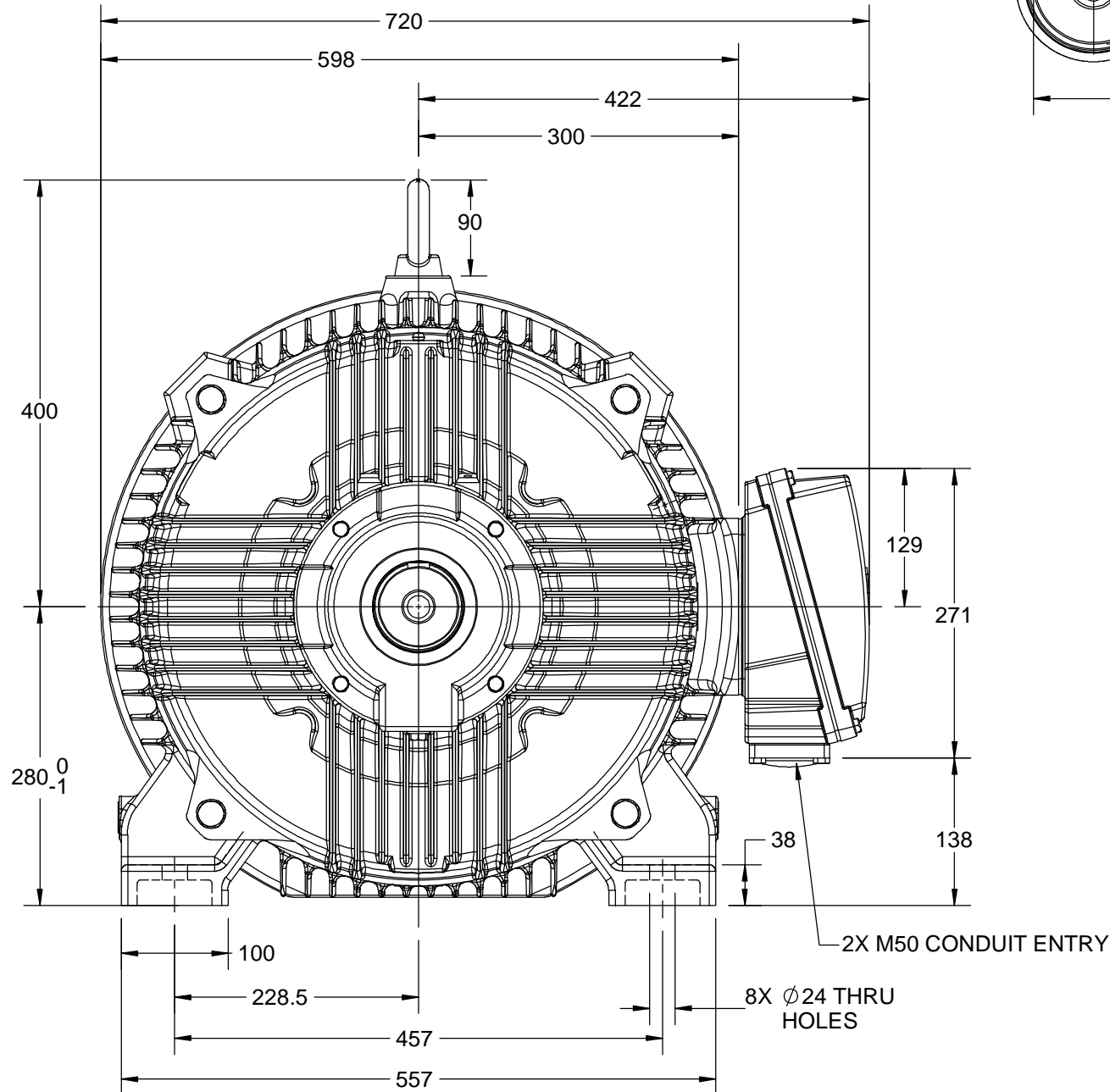
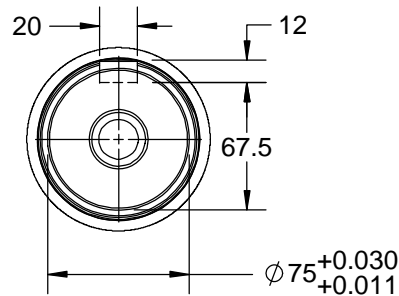
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
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DRAWING REVISION C	REVISION BY LK	DATE 04/08/2020
ECO ECO-0189872	APPROVED BY JAY	DATE 04/08/2020
ECO DESCRIPTION MODEL UPDATED		
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<div></div>	DRAWN BY GSR		<div>marathon™ Motors</div>		
	DATE 09/01/2018				
	APPROVED BY JAY		DESCRIPTION  OUTLINE TCA-280S-4~8P-B3-RHS TB		
	DATE 09/01/2018				
	REFERENCE		MATERIAL		PROCESS/FINISH
	THIRD ANGLE PROJECTION		SIZE B	DRAWING NUMBER 0228001135	

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DRAWING REVISION A	REVISION BY SN	DATE 13/01/2017
ECO 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 <b>CONN DIAGRAM-NAMEPLATE</b>		
	DATE 16/12/2016			
	REFERENCE	MATERIAL	PROCESS/FINISH	
	THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	SHEET 1 OF 1

**Model No.** TCA0453A1113GAC010

U (V)	$\Delta$ / Y Conn	f [Hz]	P [kW]	P [hp]	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]
									5/4FL	FL	3/4FL	1/2FL	FL	3/4FL	1/2FL			
400	$\Delta$	50	45	60	85.6	989	432.13	IE3	-	93.7	93.7	92.9	0.81	0.75	0.63	6.1	1.9	2.6

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM B3
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	280S	Motor weight - approx.	592 kg
Duty	S1	Gross weight - approx.	628 kg
Voltage variation *	± 10%	Motor inertia	2.2380 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)	66 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	NA	Standard rotation	Clockwise form DE
Zone classification	NA	Paint shade	RAL 5014
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	6317 C3 / 6317 C3	Terminal box position	RHS
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	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**

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.

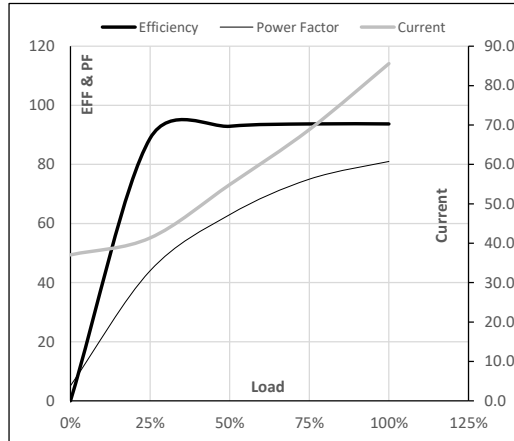
Efficiency	Europe	China	India	Aus/Nz	Brazil	Global IEC
Standards	-	GB 18613-2012 Grade 2	-	-	-	IEC: 60034-30

**Model No.** TCA0453A1113GAC010

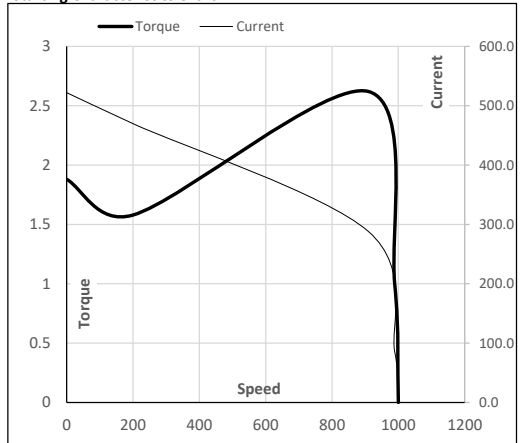
Enclosure	U (V)	Δ / Y Conn	f [Hz]	P [kW]	P [hp]	I [A]	n [RPM]	T [kgm]	T [Nm]	IE Class	Amb [°C]	Duty	Elevation [m]	Inertia [kg-m <sup>2</sup> ]	Weight [kg]
TEFC	400	Δ	50	45	60.0	85.6	989	44.06	432.13	IE3	40	S1	1000	2.238	592

**Motor Load Data**

Load Point		NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A	37.0	41.3	54.9	68.8	85.6	
Torque	Nm	0.0	107.1	214.8	323.1	432.1	
Speed	r/min	1000	997	995	992	989	
Efficiency	%	0.0	88.8	92.9	93.7	93.7	
Power Factor	%	5.1	44.0	63.0	75.0	81.0	

**Performance vs Load Chart**

**Motor Speed Torque Data**

Load Point		LR	P-Up	BD	Rated	NL
Speed	r/min	0	200	910	989	1000
Current	A	522.0	469.8	288.1	85.6	37.0
Torque	pu	1.9	1.6	2.6	1	0

**Starting Characteristics Chart**

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

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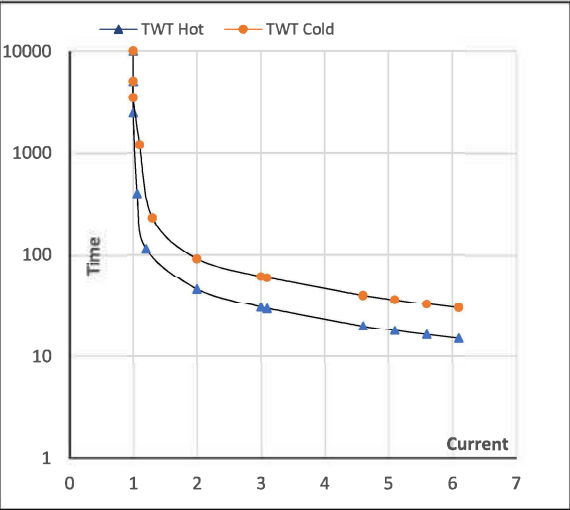
Model No. TCA0453A1113GAC010

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	60.0	85.6	989	44.06	432.13	IE3	40	S1	1000	2.238	592

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	46	31	23	18	17	15
TWT Cold	s 10000	92	59	44	37	34	30
Current	pu 1	2	3	4	5	5.5	6.1

Thermal Characteristics Chart



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

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