

PRODUCT INFORMATION PACKET

Model No: TCA0224A3141GACD01

Catalog No: TCA0224A3141GACD01

22.0 kW General Purpose Low Voltage IEC Motor, 3 phase, 750 RPM, 415 V, 225M Frame, TEFC
Cast Iron IE3 Efficiency Motors





Nameplate Specifications

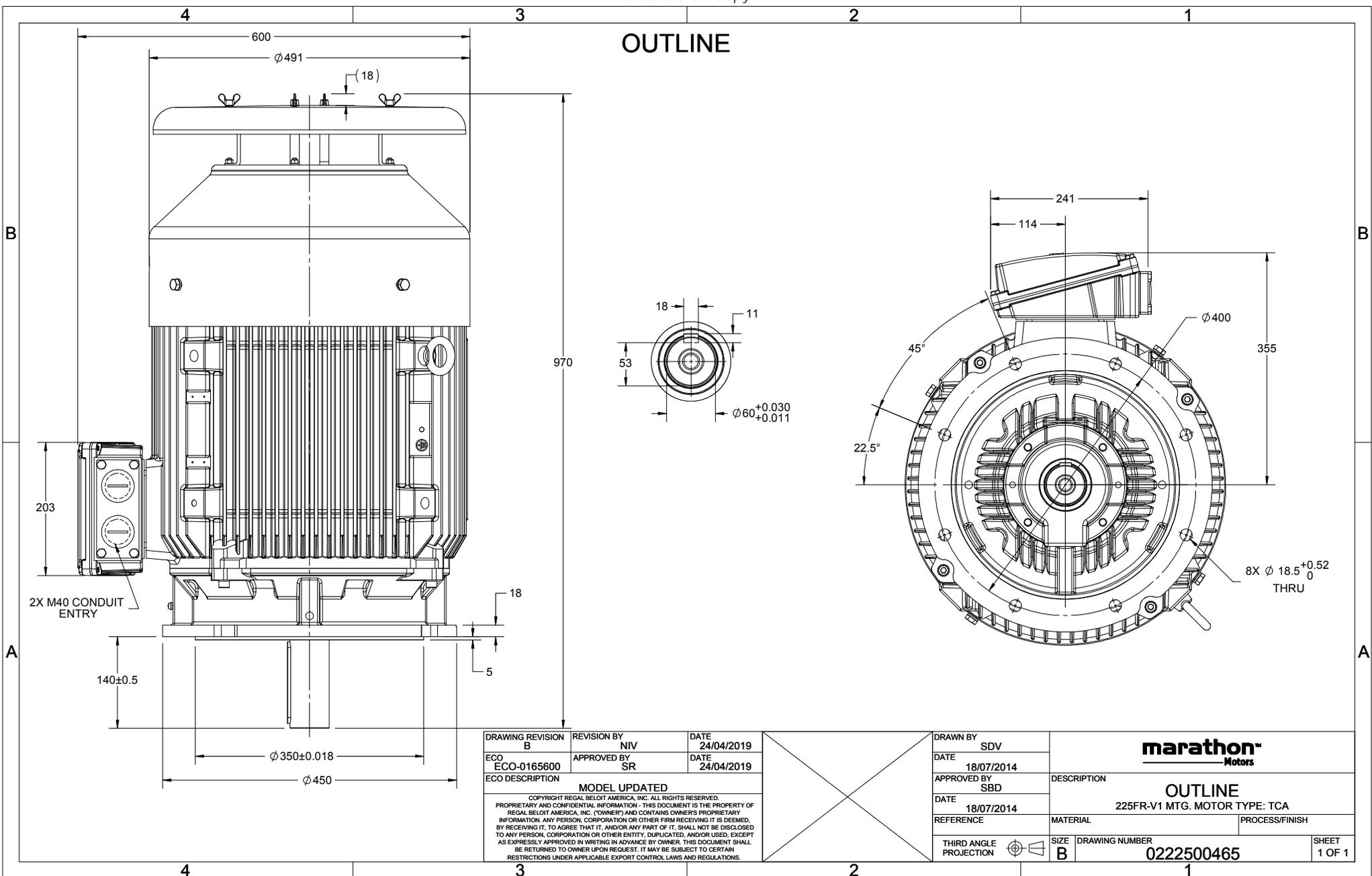
Output HP	30 Hp	Output KW	22.0 kW
Frequency	50 Hz	Voltage	415 V
Current	43.3 A	Speed	738 rpm
Service Factor	1	Phase	3
Efficiency	90.6 %	Power Factor	0.78
Duty	S1	Insulation Class	F
Frame	225M	Enclosure	Totally Enclosed Fan Cooled
Ambient Temperature	50 °C	Drive End Bearing Size	6313
Opp Drive End Bearing Size	6213	UL	No
CSA	No	CE	Yes
IP Code	55		

Technical Specifications

Electrical Type	Squirrel Cage	Starting Method	Direct On Line
Poles	8	Rotation	Bi-Directional
Mounting	V1	Motor Orientation	Horizontal
Drive End Bearing	C3	Opp Drive End Bearing	C3
Frame Material	Cast Iron	Shaft Type	Keyed
Overall Length	968 mm	Frame Length	425 mm
Shaft Diameter	60 mm	Shaft Extension	140 mm
Assembly/Box Mounting	Top		
Outline Drawing	0222500465	Connection Drawing	8442000085

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OUTLINE



DRAWING REVISION B	REVISION BY NIV	DATE 24/04/2019
ECO ECO-0165600	APPROVED BY SR	DATE 24/04/2019
ECO DESCRIPTION MODEL UPDATED		
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DRAWN BY SDV		
DATE 18/07/2014		
APPROVED BY SBD	DESCRIPTION OUTLINE	
DATE 18/07/2014	225FR-V1 MTG. MOTOR TYPE: TCA	
REFERENCE	MATERIAL	PROCESS/FINISH
THIRD ANGLE PROJECTION	SIZE B	DRAWING NUMBER 0222500465
		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:
- PRESSURE-SENSITIVE ADHESIVE COATED PAPER ON THE BACK OF SELF-ADHESIVE.
 - AT THE END OF YELLOW, WORDS, SYMBOLS, LETTERS ARE BLACK, BORDER IS BLACK.
 - 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				
THIRD ANGLE PROJECTION	SIZE A	DRAWING NUMBER 8442000085	PROCESS/FINISH	SHEET 1 OF 1

Model No. TCA0224A3141GACD01

U (V)	Δ / Y Conn	f (Hz)	P		I			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]	[RPM]	5/4FL			FL	3/4FL	1/2FL	FL	3/4FL	1/2FL				
415	Δ	50	22	30	43.3	738	289.41		IE3	-	90.6	90.6	91	0.78	0.72	0.6	5.3	1.8	2.3

Motor type	TCA	Degree of protection	IP 55
Enclosure	TEFC	Mounting type	IM V1
Frame Material	Cast Iron	Cooling method	IC 411
Frame size	225M	Motor weight - approx.	397 kg
Duty	S1	Gross weight - approx.	427 kg
Voltage variation *	± 10%	Motor inertia	1.0453 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)	61 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)	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	-
Rotor type	Aluminum die cast	Accessory - 2	-
Bearing type	Anti-friction ball bearing	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 50mm ² /2 x M40 x 1.5
Type of grease	Shell Gadus S5 V100 or Equivalent	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	-	-	-

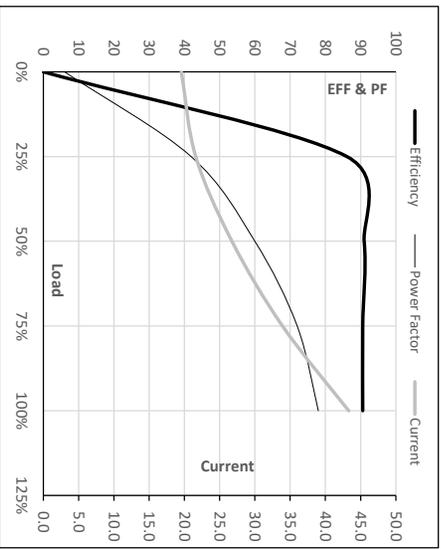
Model No. TCA0224A3141GACD01

Enclosure	U (V)	Δ /Y Conn	f (Hz)	P (kW)	P (hp)	I (A)	n (RPM)	T (kgm)	T (Nm)	IE Class	Amb Temp (°C)	Duty	Elevation (m)	Inertia (kg·m ²)	Weight (kg)
TFC	415	Δ	50	22	30	43.3	738	29.51	289.41	IE3	50	S1	1000	1.0453	397

Motor Load Data

Load Point	NL	1/4FL	1/2FL	3/4FL	FL	5/4FL
Current	A 19.6	21.6	26.8	33.9	43.3	
Torque	Nm 0.0	71.5	143.5	216.1	289.4	
Speed	r/min 750	747	745	742	738	
Efficiency	% 0.0	86.1	91.0	90.6	90.6	
Power Factor	% 6.0	41.9	60.0	72.0	78.0	

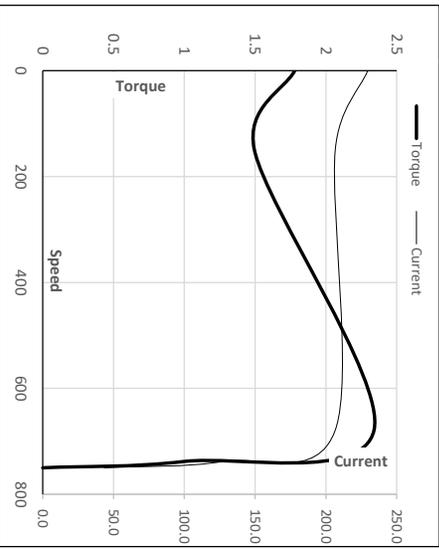
Performance vs Load Chart



Motor Speed Torque Data

Load Point	LR	P-Up	BD	Rated	NL
Speed	r/min 0	150	679	738	750
Current	A 229.6	206.6	127.3	43.3	19.6
Torque	pu 1.8	1.5	2.3	1	0

Starting Characteristics Chart



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

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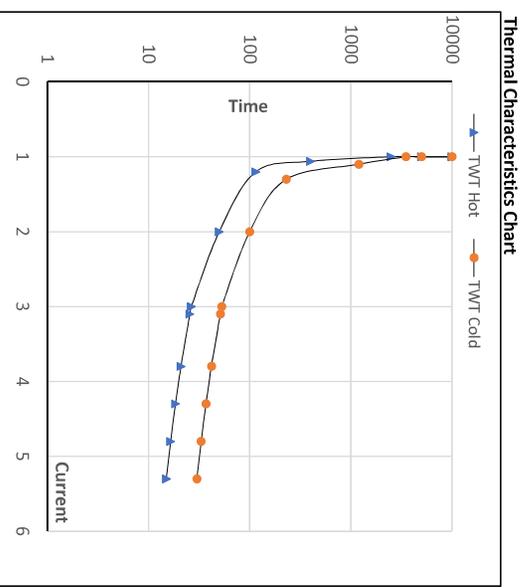


Model No. TCA0224A3141GACD01

Enclosure	U	Δ /Y	f	P	P	I	n	T	T	IE	Amb	Duty	Elevation	Inertia	Weight
(V)	415	Conn	[Hz]	[kW]	[hp]	[A]	[rpm]	[kgm]	[Nm]	Class	[°C]		[m]	[kg·m ²]	[kg]
TEFC		Δ	50	22	30	43.3	738	29.49	289.41	IE3	50	S1	1000	1.0453	397

Motor Speed Torque Data

Load	FL	I ₁	I ₂	I ₃	I ₄	I ₅	LR	
TWT Hot	s	10000	50	27	20	18	16	15
TWT Cold	s	10000	100	53	40	36	31	30
Current	pu	1	2	3	4	4.5	5	5.3



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

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