TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION

LOW VOLTAGE MOTORS

EQP Global® XP

EXPLOSION PROOF

BUILT FOR SEVERE DUTY APPLICATIONS

Efficiency, Quality, & Performance Toshiba's EQP Global® XP Explosion Proof motor is a totally enclosed fan cooled motor designed for excellent performance in applications in potentially hazardous environments. Motors in this series are UL listed and CSA certified and meet the National Electrical Code (NEC) Class I, Division 1 Group D and Class II, Division 1 Groups E, F & G. The rugged construction of these motors meets or exceeds the competitive demands of various applications in different industries while maintaining the reliability and quality customers have come to expect from Toshiba.

Application Specific Design	Ingress protection and corrosion-resistant paint system offer protection in potentially hazardous environments.
Ingress Protection	Non-sparking brass v-ring shaft slingers used on the drive end (DE) and opposite drive end(ODE) of the shaft provide IP56 protection against 100% humidity.
Bearings	Oversized 300 series bearings (re-greasable bearings on frames 284T and larger) help prevent premature failure of the motor in various modes of operation, helping to increase the service life of the motor. Roller bearings are available on frames 444T and larger.
Low Vibration	A typical vibration level of 0.08 inches/second, which exceeds NEMA MG1 requirements, provides motor stability and durability by helping to prolong motor life and to reduce downtime.
Drain and Breathers	Stainless steel drain and breathers are used at the lowest points of the motor frame to prevent corrosion.
Inverter Duty Rated	Motor is suitable for use with an adjustable speed drive, which can lead to energy savings when the motor is run at optimum fan speed. The insulation system of frames up to 449T meets NEMA MG1 Part 31 standard.
Insulation System	Class F rated insulation system with Class H varnish and magnet wire provides large thermal margins for extended life and reliability.
Construction	Rugged cast iron frame, end brackets, conduit box, and fan cover contribute to the strength and durability of the motor.

NEC EXPLOSION PROOF CLASSIFICATIONS

HAZARDOUS LOCATIONS

- **Class I Group D** — locations containing flammable gas, flammable liquid-produced vapor, or combustible liquid-produced vapor mixed with air that may burn or explode, having either a maximum experimental safe gap (MESG) value greater than 0.75 mm or a minimum igniting current ratio (MIC ratio) greater than 0.80. (Please consult NFPA 497 for substances and additional information related to this group).
- **Class II Group E** — locations with atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness, and conductivity present similar hazards in the use of electrical equipment. (Please consult NFPA 499 for substances and additional information related to this group).
- **Class II Group F** — locations with atmospheres containing combustible carbonaceous dusts that have more than 8% total entrapped volatiles or that have been sensitized by other materials so that they present an explosion hazard. (Please consult NFPA 499 for other substances and additional information related to this group).
- **Class II Group G** — locations with atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic, and chemicals. (Please consult NFPA 499 for substances and additional information related to this group).

SURFACE TEMPERATURES

Division 1 addresses external surface temperatures that includes overloads and locked rotor conditions. External surface temperatures of Toshiba's EQP Global XP Explosion Proof motors shall not exceed NEC maximums (see Table 1) under fault conditions. (The applicable temperature code identifies the maximum motor surface temperature that may develop under any operating conditions.) All Toshiba explosion-proof motors are equipped with an internally-mounted, normally-closed winding thermostats as required to meet the temperature code of applicable certifications (e.g. UL®, CSA®) Inverter-duty explosion proof motors are available as well; please contact Toshiba International Corporation for more information.

TEMPERATURE CODE VALUES

US (NEC 500) CA (CEC Annex J)	US (NEC 505) CA (CEC Section 18)	Maximum Motor Surface Temperature
		°C
T1	T1	450°C
T2	T2	300°C
T2A	-	280°C
T2B	-	260°C
T2C	-	230°C
T2D	-	215°C
T3	T3	200°C
T3A	-	180°C
T3B	-	165°C
T3C	-	160°C
T4	T4	135°C
T4A	-	120°C
T5	T5	100°C
T6	T6	85°C

CLASS II TEMPERATURE CODES

The temperature marking of a motor as described by the applicable temperature code shall be less than the ignition temperature of the specific dust to be encountered. Toshiba's EQP Global® XP Explosion Proof motor contains over-temperature protection required to meet the temperature code of applicable certifications (e.g. UL®, CSA®).

INDUSTRIES SERVED

- Petrochemical
- Mining & Minerals
- Pharmaceutical
- Agriculture

APPLICATIONS

- Petrochemical & Gas
- Grain & Feed Mills
- Pumps
- Fans
- Compressors
- Conveyors
- Material Handling
- UL & CSA Listed Hazardous Locations

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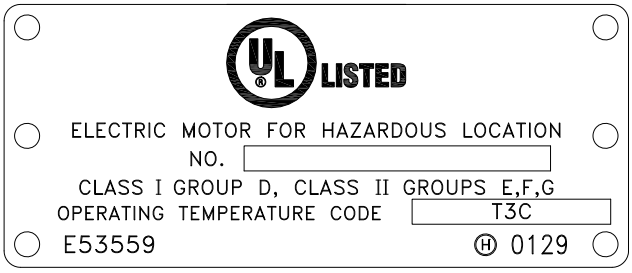
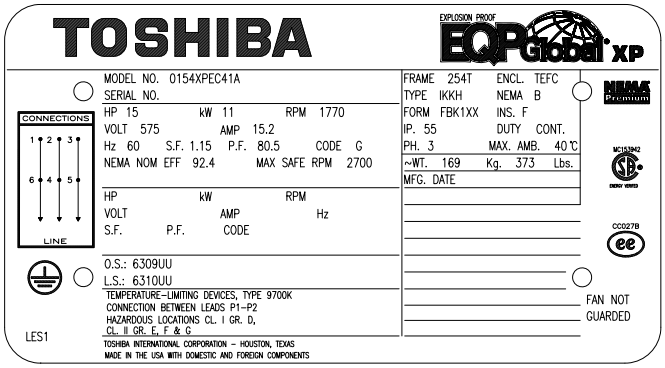
EQP
XP

3 THREE YEAR WARRANTY

GENERAL	
Horsepower	1 to 1000 HP
Speed (60 Hz)	3600, 1800, 1200, or 900 RPM
Voltage (60 Hz)	230/460, 460 or 575 V
Service Factor	1.15 SF on 60 Hz
Enclosure	Totally Enclosed Fan Cooled
Frame Size	143T through 6811
Ingress Protection	IP56
Insulation	Class F
Vibration	Typically 0.08 Inches/Second or Less (Unfiltered)
Environment	Class I, Division 1, Group D and Class II, Division 1, Groups E, F, & G
Efficiency	NEMA Premium®
Hardware	Zinc Dichromate Plated
ASD Characteristics	ASD-Turndown Capabilities: Frames 143T through 326T 20:1CT, 60:1VT, 1:1.5CHP, Frames 364T through N449T 10:1CT, 60:1VT, 1:1.5CHP
CONSTRUCTION	
Frame	Cast Iron
Paint	Severe Duty, Corrosion Resistant Resin Primer Paint, with an Acrylic Enamel Finish (RAL 6012). Surpasses 96 Hour Salt Spray Test
Shaft	1045 Carbon Steel Shaft (Up to 400 Frames); 4142 Carbon Steel Shaft (444T & Larger)
Shaft Seals	Non-Sparking Brass V-Ring Shaft Slinger
Lifting	Forged Shouldered Eyebolt (182 Frame & Larger)
Mounting	Double Drilled Feet for Multi-Mount Capabilities on Most Frames, C-Flange Footed and Footless Available
Drains	UL Listed Stainless Steel Breather Drains at Lowest Point of Motor
BEARINGS	
Type	Oversized 300 Bearing Series. Re-greasable Bearings on 284 Frame & Larger; Non-Regreasable on 143 - 256 Frames
Life	150,000 Hours Direct Coupled; 40,000 Hours Belted per NEMA MG-1
CONDUIT BOX	
Material	Cast Iron with Threaded NPT Opening
Mounting	Rotatable 90° Increments
Grounding	UL Ground Lug
INSULATION SYSTEM	
Temperature Rise	Class B Temperature Rise by Resistance Method @ 1.15 SF
Material	Low-Loss Electrical Grade Silicon Core Steel with C5 Interlamination Insulation; Phase Paper & Coil Bracing on DE & ODE; Magnet Wire High Voltage Withstand Capability of 2000 V in 0.1 µs. Meets NEMA MG1 part 31
Class	Class F with Class H Components
Leads	Permanently Identified Leads; Single Ring Compression Type Lead Lugs (284 Frame & Larger)





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