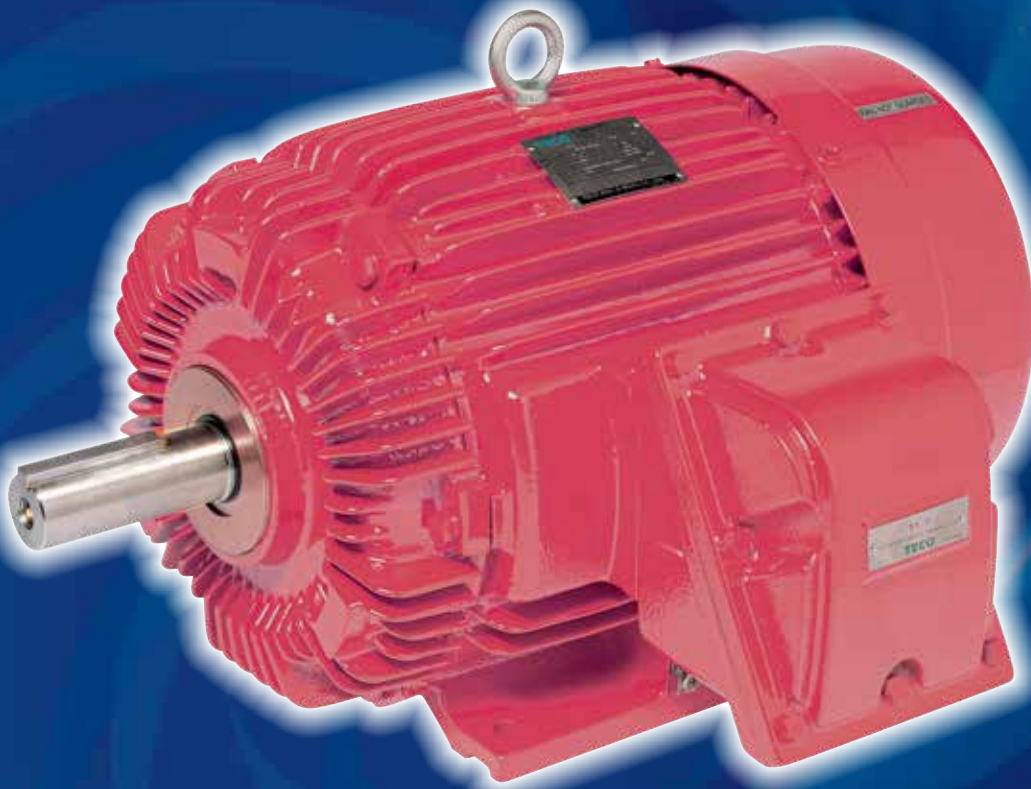


TECO

MAX - Ex



HAZARDOUS AREA MOTORS

Low Voltage 3-Phase | Range
Induction Motors | 0.18kW to 560kW

TOTALLY ENCLOSED FAN-COOLED CAST IRON FRAME SERIES



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Welcome to Teco!



**TECO Australia
- Electric Motor Division**

Established in 1983 as a wholly owned subsidiary of TECO Electric & Machinery Co., TECO Australia has earned a reputation as a reliable supplier of superior quality Electric Motors, Variable Speed Drive systems and Motor Controls. These products are all designed, manufactured and tested to meet stringent Australian and International Standards.

TECO Electric Motors are regarded as one of the leading brands available on the market and are regularly specified and preferred amongst equipment manufacturers, constructors, engineering companies and major end-users alike.

TECO Electric & Machinery Co.

From modest beginnings in 1956, TECO Electric & Machinery Co. has grown to be one of the worlds largest manufacturers of an extensive range of electric motors. In addition to the core manufacturing facilities in Taiwan, the continual growth of TECO on a global front has seen the formation in 1995 of the TECO Westinghouse Motor Company in the USA, borne out of the 100% ownership of the Westinghouse Motor Company

along with the establishment of additional major manufacturing facilities around the world to service new markets and meet global demand.

TECO  Westinghouse

Today TECO designs and manufactures a complete range of low, medium and high voltage motors, Variable Speed Drives and Control Gear with sales and support being offered on a global basis.

Quality Assurance

All TECO manufacturing plants and TECO Australia have been assessed to meet the requirements of ISO9001:2015 documented quality systems.



Environmental and RoHS

TECO major manufacturing plants in Taiwan have ISO14001 Environmental Management System accreditation.

Low Voltage motors manufactured by TECO do not contain (or contain within the maximum allowable limits) any restricted hazardous substances as per European Directive 2002/95/EC(RoHS).



Driving & Connecting Globally



General Information - Hazardous Area Motors

The motors described in this catalogue designed and manufactured by TECO Electric & Machinery Co. are Squirrel Cage Induction Motors intended for use in hazardous areas and comply with all relevant sections of the Australian, New Zealand and International Standards detailed herein.

Before any electrical and wiring can be selected the hazardous area needs to be classified. The nature and probability of the flammable substance existing is used to classify the hazardous area.

The responsibility for Classifying the Hazardous Area rests with the occupier.

Reference Standards: AS3000:2008 Wiring Rules, Area Classification AS/NZS60079.10.1:2009 (Gases) AS/NZS61241:2004 Part 10 (Dusts).

The main areas are addressed as below -

Type of Protection	Hazardous Zone	Gas / Dust Groups	Temperature Class	Equipment Protection Level (EPL)	Marking	Ambient and Altitude
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7

Type of Protection – Note 1

Specific measures applied to electrical equipment to avoid ignition of surrounding explosive atmosphere.

Common examples of Type of Protection for Low Voltage motors are :

Ex d – Flameproof (gases).

Ex de – Flameproof Motor with Increased Safety Terminal Box (gases).

Ex e - Increased Safety (gases).

Ex nA – Non Sparking (gases).

Ex tD – Dust Ignition Proof (protection by enclosure) (dusts).

Hazardous Zones – Note 2

Hazardous areas are classified into Zones based on the frequency of the occurrence and duration of the explosive atmosphere. Zoning does not take into account the potential consequences of an explosion, please refer to EPL on page 4-5.

Zone 0, 1, 2 – Gases

Zones 0, 1 and 2 refer to Gases only, refer Hazardous Area Zone classification. Note Electric Motors cannot be used in Zone 0.

Zones 20, 21, 22 – Dusts

Zones 20, 21 and 22 refer to Dusts only, refer Hazardous Area Zone classification. Note Electric Motors cannot be used in Zone 20.

IEC61241.1:2004 also specifies two practices for Dust Zones

1) Practice A (i.e. Zone 21A)

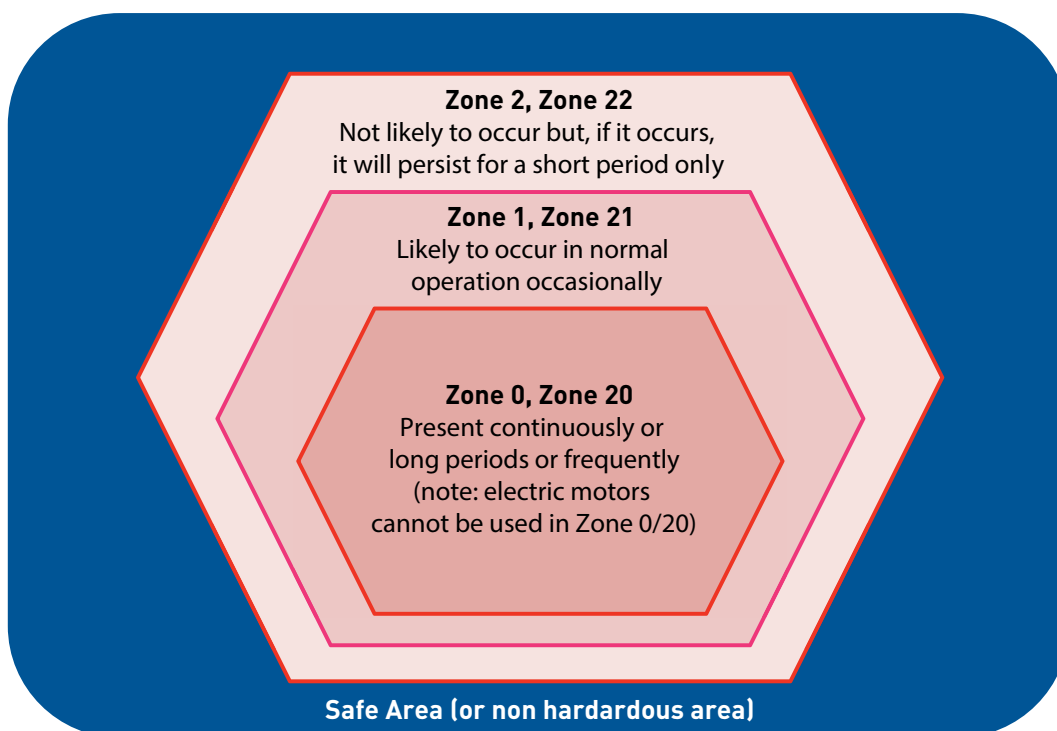
Performance based requirements, maximum surface temperature determined with 5 mm layer of dust and 75k safety margin.

Practice A is the most common referred to in Australia.

2) Practice B (i.e. Zone 21B)

Prescriptive based requirements, maximum surface temperature determined with 25 mm layer of dust and 25k safety margin.

Hazardous Area - Zone classification by hazardous substance



Safe Area (or non hazardous area)

Equipment – Zone certification acceptability

Gases		Dusts	
Zone	Satisfies Zone(s)	Zone	Satisfies Zone(s)
0	0, 1, 2	20	20, 21, 22
1	1, 2	21	21, 22
2	2	22	22

Traditional relationship of Zones (no additional risk assessment), refer to EPL on page 4-5.

Gas and Dust Groups to AS/NZS60079.0:2008 – Note 3

Gas Group I – Coal Mines, intended for use in mines susceptible to firedamp and coal dust along with enhanced physical protection for use underground.

Gas Group II (all other places apart from Group 1 Coal Mines – note a)			Dust Group III (note b)		
Subdivisions	Satisfies	Typical Gas	Subdivisions	Satisfies	Description
IIA	IIA	propane	IIIA	IIIA	combustible flyings
IIB	IIA & IIB	ethylene	IIIB	IIIA + IIIB	non-conductive dust
IIC	IIA & IIB & IIC	hydrogen	IIIC	IIIA + IIIB + IIIC	conductive dust

- Note: a) Equipment certified for use in Group I does not satisfy Group II, unless certified and marked as such.
 Equipment certified for use in Group II does not satisfy Group I, unless certified and marked as such.
 b) Dust Groups (IIIA, IIIB & IIIC) not covered in IEC61241.0:2004

Temperature Class – Note 4

Classification of maximum surface temperatures, this is the highest temperature that an equipment surface is allowed to reach in service to avoid ignition.

Dust Groups

Maximum surface temperature shall be specified or restricted to the specific combustible dust which it was intended to be used with.

Marking example: T135°C

Temperature Class	Maximum surface temperature °C
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

Equipment Protection Levels (EPL) for Ex equipment – Note 5

These EPLs were introduced to enable an alternative approach to selecting Ex equipment.

The equipment selection standard provides a solid link between the type of protection for the equipment and the zone in which the equipment can be used. Nowhere in the IEC Ex standards was there any account taken of the potential consequences of an explosion, should it occur.

Plant operators often make decisions on extending (or restricting) their zones in order to

compensate for this omission. A typical example is the installation of “zone 1 type” equipment in zone 2 areas in critical area of personal or equipment concern. In the other direction, it is reasonable for the owner of a remote, well secured, small pumping station to drive the pump with a “zone 2 type” motor, even in zone 1, if the total amount of gas available to explode is small and the risk of life and property from such an explosion can be discounted.

Gases (Group II)

EPL Ga

Equipment with a “very high” level of protection, which is not a source of ignition in normal operations, during expected or rare malfunctions.

EPL Gb

Equipment with a “high” level of protection, which is not a source of ignition in normal operations during expected malfunctions

EPL Gc

Equipment with an “enhanced” level of protection, which is not a source of ignition in normal operation.

Dusts (Group III)

EPL Da

Equipment with a “very high” level of protection, which is not a source of ignition in normal operations, during expected or rare malfunctions.

EPL Db

Equipment with a “high” level of protection, which is not a source of ignition in normal operations during expected malfunctions.

EPL Dc

Equipment with an “enhanced” level of protection, which is not a source of ignition in normal operation.

Traditional relationship of EPLs to Zones (no additional risk assessment)

Equipment Protection Level Zone	Zone Gases	Equipment Protection Level	Zone Dusts
Ga	0	Da	20
Gb	1	Db	21
Gc	2	Dc	22

Marking – Note 6

“Ex” followed by the type of protection and details in the specific standards. Please refer samples for TECO motors page 7, 11 & 12.

Ambient and Altitude – Note 7

Unless otherwise specified in Ex certification documents and marking the design ambient is -20°C to + 40°C with an altitude not exceeding 1000 meters above sea level.



Typical Ex e/nA/tD motor, frame D280-315M
Performance and mandatory dimensions Frames D80-315M refer to TECO MAXe3 catalogue. Frames D71 and D315A-355 please refer to TECO.

The range of TECO MAX-Ex Hazardous Area Motors

TECO MAX-Ex d / MAX-Ex de, Flameproof Design (Gases)

Overview

Flameproof is an enclosure that will withstand, without damage, an internal explosion and prevent the transmission of flame so as not to ignite external explosive gases.

It has limitations on external temperatures whilst running only.

- Flameproof theory

Flamepaths are designed in motors in order to prevent the passage of the flame heat in the event of an internal explosion to reach the external atmosphere. This is typically achieved in metal to metal joints (i.e. endshields - frame, terminal box etc.) by long metal spigot fitting into a long metal recess secured by bolts. This gap is sized for the intended Gas Group (IIA, IIB or IIC)

There are two designs available from TECO

- TECO MAX-Ex d, Flameproof Motor and Terminal Box (d)
- TECO MAX-Ex de, Flameproof Motor (d) with Increased Safety (e) Terminal box

The Ex de terminal box has / is Increase Safety and is not dependant on containing an explosion. The main benefits are –

- All Group II gases are covered (IIC, IIB & IIA).
- Surface corrosion on terminal box is not a threat to safety, where Ex d flamepaths on terminal boxes are prone to damage and corrosion making them unusable.
- Increased Safety terminals are easier to connect.
- A Flameproof gland is not required.
- The terminal box lid employs a gasket which creates a better weatherproof seal.

Type of Protection	Hazardous Zone	Gas Group	Temperature Class	Permissible ambient	IECEx Marking ATEX Marking
Ex d	1 or 2	IIA, IIB	T4 (T3*)	-20°C to +50°C	Ex d IIB T4/T3 (Sine Power/ PWM Inverter) II 2 G Ex d IIB T4/T3(Sine Power/PWM Inverter)
Ex de	1 or 2	IIA, IIB, IIC	T4 (T3*)	-20°C to +50°C	Ex de IIC T4/T3 (Sine Power/ PWM Inverter) II 2 G Ex de IIC T4/T3(Sine Power/PWM Inverter)

*T3 for converter supply (PWM Inverter), condition of safe use is mandatory connection of thermistors

TECO		FLAMEPROOF IE2	
3-PHASE INDUCTION MOTOR			
NONEFF.		RATING	IP
TYPE			CONT.
OUTPUT	kW	Hz	
POLES		R.P.M.	
FRAME		VOLTS	
INS.		AMPS	
ABB.	typical	DATE	
WEIGHT	kg	TEMP.	°C
SER.ND.			
MEPS COMPLIANT			
II 2 G Ex de IIC T4 / T3 (SINE POWER / PWM INVERTER)			
Boseef008ATEX0299X BS EN 60079-1:2007			
IECEx BAS08.0096X IEC 60079-1:2007			
TECO Elec. & Mach. Co., Ltd.			
MADE IN TAIWAN - Post code:320			

General

The Squirrel Cage Induction Motor Frames D80 to D315M* are totally enclosed fan cooled (TEFC) motors with integral cast cooling fins on frame and end shields (IC411). They are designed for continuous operation, Duty type S1.

Motors can be wound for any supply system ranging from 200 Volts to 690 Volts, 50 Hz or 60 Hz and incorporate windings with double enamelled class 'F' and / or class 'H' insulation, which are impregnated with an insulating varnish.

Stock motors are wound 380~415 Volts 3 Phase 50 Hz and are also suitable for a 440~480 Volt 3 Phase 60 Hz supply.

Motors 4 kW and below are 380~415 Volt 50 Hz STAR connected, motors 5.5 kW and larger are 380~415 Volt 50 Hz DELTA connected.

The enclosures are made of high grade cast iron with foot and/or (C Face D80 only) D Flange mounting for horizontal or vertical shaft axis up or down.

External Fans

The external fan is of non-sparking construction and are bi-directional axial flow type.

For vertical shaft down mounted motors a canopy is fitted over the fan cover air inlet.

Terminal Box

The terminal box is manufactured from high grade Cast Iron and is mounted on the right hand side viewed from drive end with option of left hand side if required.

IP Rating and Sealing

Motor shaft extensions have non-contact non sparking seals, with endshields frame and other mating surfaces are metal to metal surfaces to exacting tolerances to provide the needed flamepaths and support the tested IP55 rating.

*For D315 frame details refer to TECO.

All Ex de terminal box lids are sealed with one-piece neoprene gasket for an improved weather seal at this vulnerable joint.

Thermistor Protection

All stock motors are fitted with PTC thermistor protection within the windings with the leads terminated in the main terminal box with an auxiliary entry provided for connection within the primary terminal box (M20 x 1.5 on F#80 ~ 200 (less than 37kW), 2 x M20 x 1.5 F#225 (37kW and larger).

Anti-condensation heaters

All stock motors 37kW and larger are fitted with anti-condensation heaters for a 220~240 Volt supply when the motor is de energised. Heater leads are terminated in the main terminal box with an auxiliary entry provided for connection within the primary terminal box (M20 x 1.5).

Finish

All external components are shot blast near white blast clean. A durable coat of Alkyd Resin primer giving excellent corrosion protection follows this preparation. The complete motor is then finished with Alkyd Resin Gloss Enamel with a finish colour of Red (Munsell 6.9R 4.4/13.6) or AS2700 R13 Signal Red.

Other paint systems and colours are available upon request including chemical /marine duty two pack epoxy / polyurethane paint systems.

Permissible variations

Please refer to TECO.



Typical Ex de motor, frame D200
Performance and dimensions, please refer to pages 14 ~21

TECO MAX-Ex e, Ex nA, Ex tD

General

The Squirrel Cage Induction Motors are totally enclosed fan cooled (TEFC) motors with integral cast cooling fins on frame and end shields (IC411). They are designed for continuous operation, Duty type S1.

Motors can be wound for any supply system ranging from 200 Volts to 690 Volts, 50 Hz or 60 Hz and incorporate windings with double enamelled class 'F' and / or class 'H' insulation, which are impregnated with an insulating varnish.

Stock motors are designed for 380-415 Volt 3 phase 50 Hz and are also suitable for a 440-480 Volt 3 Phase 60 Hz supply.

Motors 4 kW and below are 380-415 Volt 50 Hz STAR connected, motors 5.5 kW and larger are 380-415 Volt 50 Hz DELTA connected as per **MAXe3** series motors.

TECO **MAXe3** TECO Australia stock motor ranges are able to be modified to IECEx requirements. Both TECO Taiwan and TECO Australia are dual manufacturers on the Ex certificates and both are subject to periodic QAR audits.

The enclosures are made of high grade cast iron with mounting for horizontal or vertical shaft axis up or down.

Mounting available -

- Foot
- Foot and / or C Face (C Face D80 only)
- Foot and / or D Flange

External Fans

Frame sizes D71-315M

The external fan is of non-sparking construction and is made of polypropylene, bronze, aluminium or cast iron and are of the bi-directional axial flow type.

For vertical shaft down mounted motors are fitted with canopy over fan cover inlet.

Frames sizes D315A-D355

The external fan is of non-sparking construction and made of aluminium / cast iron / steel plate or antistatic glass reinforced polyamide. These are bi-directional axial flow types with option for uni-directional on 2 Pole motors.

For vertical shaft down mounted motors a canopy is fitted over the fan cover air inlet.

Terminal Box

On all motors up to and including D315M, the terminal box is generally Cast Iron and mounted on the right hand side viewed from drive end with option of left hand side. Options are available for oversize Fabricated Steel on D280-D315 (standard on some D315 motors).

Motor Frame sizes D315A-355 have a fabricated steel terminal box mounted at the 2 o'clock position viewed from drive end on the right hand side with option for mounting on the left during manufacture.

All terminal boxes are sealed with one-piece neoprene gasket between frame, box and gland plate, glued to one surface.

Options available for most sizes include non standard conduit entries / gland plates, oversized terminal boxes etc., please contact TECO for information.

IP Rating and Sealing

Variations to sealing arrangements are made to meet the client-specified IP Code requirements such as V-ring, gamma seal or oil seal for bearing sealing arrangement.

The Ex tD version of the motors have gaskets glued and additional component machining as per certified drawings. Lifting eyebolt holes are also sealed and alternative grease seals are used at the shaft/bearing areas.

These features can also be utilised to achieve optional IP56/IP66 ratings on Ex nA and Ex e motors on frames to D250 with D280-355 being IP66 as standard.

Please note: All motors supplied from TECO Australia's stock range are IP66 as standard, unless otherwise ordered.

Thermistor Protection

Motors frame size D160 and larger are fitted with PTC thermistor protection within the windings during the manufacturing process with the leads terminated within the main terminal box.

Finish

All external components are shot blast near white blast clean. A durable coat of Alkyd Resin primer giving excellent corrosion protection follows this preparation. The complete motor is then finished with Alkyd Resin Gloss Enamel with a finish colour

- **MAXe3 Mining** : TECO Orange (Munsell 2.5YR/6/14)
- **MAXe3 PSD** : TECO Blue (Munsell 5PB3/8)

Other paint systems and colours are available upon request including chemical / marine duty two pack epoxy / polyurethane paint systems.

Some permissible variations Ex e Ex nA Ex tD (subject to motor size).

- a) Auxiliary Terminal Boxes mounted on the sides of the Main Terminal Box to facilitate connection to:
 - i) Anti-condensation heaters rated for operation up to 240 Volts
 - ii) PTC Thermistors
 - iii) Resistance Temperature Devices (RTD's)
 - iv) Thermocouples
 - v) Auxiliary circuits connected via auxiliary terminal block as detailed in certified drawing lists.
- b) Drain plugs of porous material fitted to the NDE and DE end-shields or motor frame, according to the motor mounting position. Provision is also made for fitting plugs to the end shields at the lowest point when the motor is mounted vertically.
- c) Mechanical attachments for the fitting of bearing condition monitoring devices.
- d) Alternative ball, roller or angular contact bearings to suit the drive application.
- e) Weather cover.
- f) Double shaft extension.
- g) Non-standard shaft dimensions.
- h) The retrofitting of Auxiliaries after the stator has been varnished.
- i) Alternative sealing arrangements to provide for various IP classifications
- j) Alternative supply from a variable voltage variable frequency (VSD) drive with alternative windings suitable for use in conjunction with a VSD for Ex nA and Ex tD motors only.
- k) Alternative cable entries with option for blank gland plate.

Performance and mandatory dimensions Frames D80-315M refer to TECO MAXe3 catalogue. Frames D71 and D315A-355 please refer to TECO.

TECO MAX-Ex e Increased Safety Design (Gases)

Overview

A type of protection applied to equipment that does not produce arcs and sparks in normal service with added protection against excessive temperature and occurrence of arcs and sparks.

Major inclusions -

- a) Limitations on rotor and stator temperature while in locked rotor and running conditions.

- b) Components are subject to impact tests
- c) Special attention to air gap concentricity and clearance on all rotating parts
- d) Compliance with tE characteristic
- e) Special terminal block to surpass minimum creepage and clearances with non twist terminals

Type of Protection	Hazardous Zone	Gas Group	Temperature Class	Permissible ambient	Marking
Ex e	1 or 2	IIA, IIB, IIC	T3	-20°C to +40°C	Ex e IIC T3 Gb IP**

Marking - typical nameplate

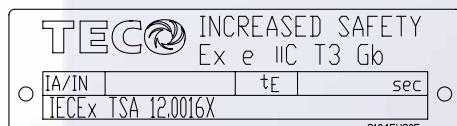
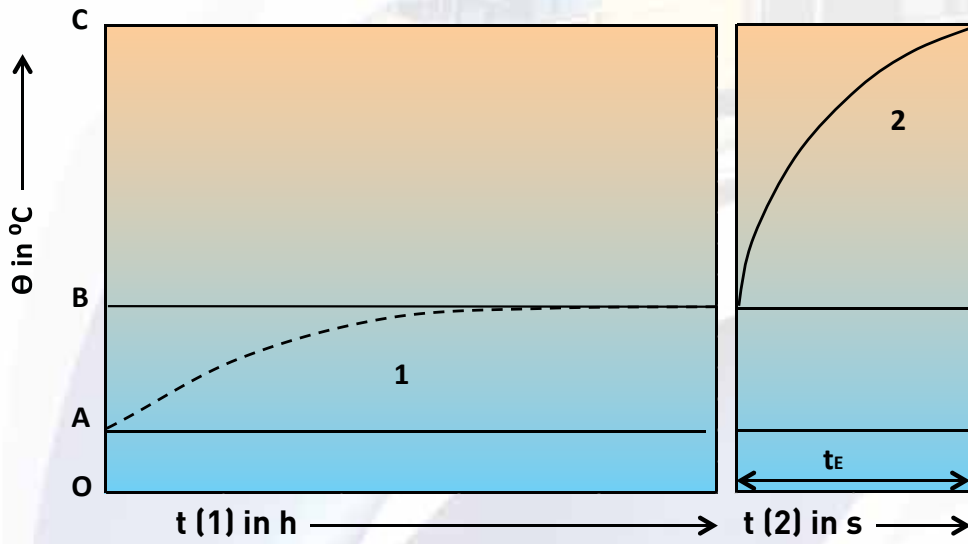


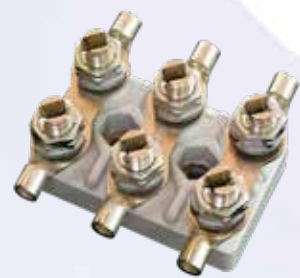
Diagram illustrating the determination of time t_{ϵ}



- Key
- A highest permissible ambient temperature
 - B temperature in rated service
 - C limiting temperature
 - 1 temperature rise in rated service
 - 2 temperature rise during stalled rotor test
 - θ temperature
 - t in h time in hours
 - t in s time in seconds



Typical Ex e/nA/tD motor, frame D315A-D355
 Performance and dimensions Frames D315A-355 please refer to TECO.



Typical Ex e terminal block

TECO MAX-Ex nA , Non Sparking Design (Gases)

Overview

Ex nA is a type of protection constructed to minimize the risk of occurrence of arc or sparks in normal operation it is not capable of igniting surrounding explosive gases.

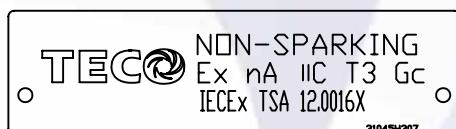
Major inclusions :

- Limitations on internal and external temperature whilst running only.
- Components are subject to impact tests.
- Special attention to air gap and clearance on rotating parts.
- Terminal block materials comply with anti- tracking requirements.

Type of Protection	Hazardous Zone	Gas Group	Temperature Class	Permissible ambient	Marking
Ex nA	2*	IIA, IIB, IIC	T3	-20°C to +55°C	Ex nA IIC T3 Gc IP**

*no additional risk assessment

Marking - typical nameplate



TECO MAX-Ex tD , Dust Ignition Proof (Dusts) to IEC61241.0:2004

Overview

Ex tD is a type of protection such that in normal operation it is not capable of igniting surrounding explosive dust (cloud or layer). It is a Dust Tight, protection by enclosure.

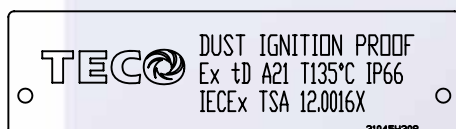
Major inclusions

- Limitations on external temperature whilst running only
- Components are subject to impact tests
- Terminal block materials comply with anti-tracking requirements

Type of Protection	Hazardous Zone	Dust Group	Temperature Class	Permissible ambient	Marking
Ex tD	21 & 22	*	T135°C	-20°C to +55°C	Ex tD A21 T135°C @55°C (Tamb.) IP66

*Dust Groups (IIIA, IIIB & IIIC) not covered in IEC 61241.0:2004

Marking - typical nameplate



TECO MAX-Ex Standards and Certification

TECO MAX-Ex motors within this catalogue, being IECEx Certified Equipment provide - An International IECEx Certificate of Conformity that TECO has successfully completed, including:-

- Testing and Assessment of sample Motors for compliance with Standards
- Initial assessment and auditing of manufacturing premises listed
- On-going surveillance audits of manufacturing premises listed

This certification therefore is without an expiry date, providing there is ongoing compliance.

Frame Size	Type of Protection	IECEX	ATEX	Standards
80 90	Ex d	IECEXBAS08.0101X	Baseefa 08ATEX-0298X	EN 60079-0:2006 EN 60079-1:2007 EN 60079-7:2007
	Ex de	IECEXBAS08.0096X	Baseefa 08ATEX-0299X	
100 112	Ex d	IECEXBAS08.0100X	Baseefa 08ATEX-0300X	
	Ex de	IECEXBAS08.0097X	Baseefa 08ATEX-0301X	
132	Ex d	IECEXBAS09.0066X	Baseefa 07ATEX-0295X	
	Ex de	IECEXBAS09.0067X	Baseefa 07ATEX-0296X	
160 180	Ex d	IECEXBAS08.0099X	Baseefa 08ATEX-0302X	IEC 60079-0:2004 IEC 60079-1:2007 IEC 60079-7:2006
	Ex de	IECEXBAS08.0098X	Baseefa 08ATEX-0303X	
200 225	Ex d	IECEXBAS09.0044X	Baseefa 09ATEX-0113X	
	Ex de	IECEXBAS09.0045X	Baseefa 09ATEX-0114X	
250 280	Ex d	IECEXBAS09.0046X	Baseefa 09ATEX-0115X	
	Ex de	IECEXBAS09.0047X	Baseefa 09ATEX-0116X	

Note: "X" symbol when used as a suffix to a certificate references special conditions of safe use, please refer to IECEx certificates www.iecex.com or contact TECO.

Frame Size	Type of Protection	IECEX	Standards
71 to 250	Ex e	IECEX TSA 12.0018X	IEC 60079-0:2007-10 IEC 60079-15:2010
	Ex nA		
	Ex tD		
280 to 315M	Ex e	IECEX TSA 12.0016X	IEC 60079-7:2006-07 IEC 61241-0:2004 IEC 61241-1:2004
	Ex nA		
	Ex tD		
315A to 355	Ex e	IECEX TSA 12.0017X	
	Ex nA		
	Ex tD		



Note: "X" symbol when used as a suffix to a certificate references special conditions of safe use, please refer to IECEx certificates www.iecex.com or contact TECO.

TECO MAX-Ex Range and IP Ratings available

Type of Protection	Frame sizes	Poles	kW	IP Rating
Ex d / Ex de**	80 - 280	2	0.75 - 110	55, 56**
		4	0.55 - 110	
		6	0.37 - 75	
		8	0.18 - 55	
Ex e* / Ex nA*	71 - 355	2	0.37 - 450	55, 56, 66*
		4	0.37 - 560	
		6	0.18 - 450	
		8	0.18 - 355	
Ex tD	71 - 355	2	0.37 - 450	66
		4	0.37 - 560	
		6	0.18 - 450	
		8	0.18 - 355	

*All Ex e / Ex nA motors supplied from TECO Australia's stock range are IP66 as standard, unless otherwise ordered. **Optional IP56 rating available on Ex de only.

**TECO Efficiency Levels available (0.75kW - <185kW)
to AS/NZS1359.5:2004**

MAX-Ex	MOTOR TYPE - HORIZONTAL FOOT HORIZONTAL FOOT / FLANGE				MOTOR TYPE VERTICAL FLANGE / HORIZONTAL FLANGE			
	71 ~ 315M	80 ~ 315M	80 ~ 315M	315A ~ 355	71 ~ 315M	80 ~ 315M	80 ~ 315M	315A ~ 355
Type of Protection - Efficiency Level	Standard Efficiency <i>See note 1</i>	MEPS Efficiency <i>See note 2</i>	HIGH Efficiency <i>See note 3</i>	HIGH Efficiency <i>See note 3</i>	Standard Efficiency <i>See note 1</i>	MEPS Efficiency <i>See note 2</i>	HIGH Efficiency <i>See note 3</i>	HIGH Efficiency <i>See note 3</i>
	B1	B2	B3	B3	B1	B2	B3	B3
Ex d/de <i>See note 4</i>	AEEBXZ	AEHBXZ	N/A	N/A	AEVBXZ	AEUBXZ	N/A	N/A
Ex e	AEEBXE	N/A	AEMBXE	AEJEXE AFJEXE	AEVBXE	N/A	AEMVXE	AEJEXE AFJEXE
Ex nA	AEEBXJ	N/A	AEMBXJ	AEJEXJ AFJEXJ	AEVBXJ	N/A	AEMVXJ	AEJUXJ AFJEXJ
Ex tD	AEEBXD	N/A	AEMBXD	AEJEXD AFJEXD	AEVBXD	N/A	AEMVXD	AEJUXD AFJUXD

Notes: N/A = Not available

1. Table B1 = For motors <= 0.75kW.

Motors 0.75kW and larger are non 2004 MEPS compliant (MEPS 2000), for export orders only where accepted.

2. **MEPS Efficiency to Table B2** = MEPS compliant to Table B2. Some motors meet **High Efficiency** standard, please refer to page 14.

3. **MEPS High Efficiency to Table B3** = MEPS High Efficiency compliant to Table B3, **MAXe3**.

4. Ex d / de = Frame sizes D80 to D280M only.

5. Ex d / de Performance and dimensions please refer to pages 14 ~21

6. Ex e / nA / tD, performance and mandatory dimensions Frames D80-315M refer to TECO **MAXe3** catalogue. Frames D71 and D315A-355 please refer to TECO.

Variable Speed Drive (VVVF) Duty / Anti-condensation heaters detail

Protection	Condition of Safe Use	Temperature Classification
Ex d / de	VVVF Permitted, PTC thermistor protection (one per phase), mandatory connection	T3
Ex e	VVVF NOT permitted unless each motor and it's specified controller is tested as a combination unit in accordance with IEC60079-0, IEC60079-7, TECO Test procedure and the duty cycle for each application to ensure that the limited temperature and temperature class in not exceeded.	N/A
Ex nA	VVVF Permitted, either each motor is type-tested for this duty in association with the specified converter and the protective devices provided or the motor temperature rise shall be calculated in accordance with IEC60079-0, IEC60079-15, for the duty required/specified to ensure that the limiting temperature and temperature class is not exceeded (refer to TECO).	T3
Ex tD	VVVF Permitted, PTC thermistor protection (one per phase), mandatory connection	T135°C
All	Where anti-condensation heaters are fitted, the supply to the heater shall only be switched on after the mains supply to each motor has been disconnected.	N/A

TYPICAL PERFORMANCE Ex d / Ex de - TYPE AEHB-XZ (415v 50Hz)



Output kW	Full Load Speed RPM	Frame Size	EFFICIENCY			POWER FACTOR			CURRENT		TORQUE				INERTIA ROTOR J=GD2/4 kg-m ²
			FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (%)	3/4 LOAD (%)	1/2 LOAD (%)	FULL LOAD (A)	LOCKED ROTOR (%)	FULL LOAD Nm	LOCKED ROTOR %FLT	PULL UP %FLT	BREAK DOWN %FLT	
0.75	2860	80	82.0	82.0	79.0	85.0	78.5	65.5	1.49	810	2.49	340	340	380	0.0015
	1420	80	82.5	82.5	80.5	71.0	61.0	47.0	1.77	680	5.01	330	320	330	0.0028
	940	90S	78.0	78.0	75.0	67.5	58.0	46.0	1.97	610	7.57	200	200	250	0.0048
1.1	2820	80 **	83.0	84.5	83.0	84.0	77.5	63.5	2.23	720	3.78	305	275	330	0.0015
	1415	90S	84.0	85.0	84.0	80.0	72.5	60.0	2.32	690	7.54	250	215	270	0.0043
	930	90L	79.9	80.0	78.5	69.5	60.5	47.0	2.80	570	11.5	210	210	255	0.0063
1.5	2855	90S	85.0	85.5	83.0	85.5	80.5	68.0	2.86	800	4.98	330	300	330	0.0028
	1430	90L	85.0	85.0	83.0	75.0	66.5	53.0	3.26	710	9.95	300	240	310	0.0058
	935	100L	81.5	81.5	80.0	71.0	63.0	49.5	3.59	560	15.2	220	190	230	0.0113
2.2	2855	90L	86.0	86.5	85.5	88.0	83.0	72.0	4.11	800	7.47	320	290	330	0.0038
	1440	100L	86.5	86.5	85.0	82.5	76.0	63.5	4.36	760	14.8	290	250	300	0.0103
	955	112M **	85.0	85.5	85.0	70.0	62.5	50.0	5.23	570	22.3	175	170	235	0.0178
3	2855	100L	86.7	87.0	86.0	88.5	85.0	75.5	5.41	890	9.97	360	310	340	0.0058
	1440	100L	87.4	88.0	87.0	82.5	74.5	60.0	5.76	780	19.8	250	180	300	0.0113
	965	132S **	88.5	87.5	86.0	81.0	75.0	63.0	5.79	740	29.5	210	170	300	0.0385
4	2895	112M	87.6	89.0	89.0	90.5	87.5	79.5	7.20	830	13.5	250	245	320	0.0110
	1455	112M	88.3	88.0	87.0	79.5	72.0	59.0	8.13	800	26.9	230	200	345	0.0178
	970	132M **	89.5	89.0	87.0	79.0	72.5	60.0	8.07	740	40.3	210	180	310	0.0513
5.5	2915	132S **	91.5	91.5	90.5	88.0	85.0	78.5	9.67	780	18.3	220	190	280	0.0190
	1460	132S	90.5	90.5	89.0	82.5	76.0	63.5	10.4	820	36.5	270	220	320	0.0333
	960	132M	89.0	89.0	89.0	79.5	73.5	61.5	11.0	640	55.6	185	170	270	0.0513
7.5	2895	132S **	91.0	91.0	90.0	87.0	85.0	78.5	13.1	690	24.6	210	180	260	0.0190
	1455	132M	91.0	91.0	90.0	85.0	80.0	68.5	13.4	820	48.9	270	220	320	0.0433
	970	160M	91.0	91.0	90.0	81.0	75.0	64.0	14.1	670	73.3	240	200	260	0.121
11	2935	160M **	92.5	92.5	92.0	91.5	89.0	84.5	18.4	760	36.4	230	200	280	0.0458
	1460	160M **	92.5	92.5	92.0	87.0	83.5	75.0	19.3	720	73.1	230	180	270	0.0918
	975	160L	91.0	90.5	89.0	79.0	72.5	60.0	21.7	740	109	280	230	280	0.158
15	2935	160M **	92.5	92.0	91.5	91.0	88.0	81.0	24.7	790	48.5	240	210	290	0.0458
	1460	160L **	93.0	93.0	92.5	88.0	84.5	76.5	25.4	730	97.4	230	180	270	0.116
	970	180LC **	91.5	92.0	92.0	84.0	79.5	71.5	27.0	610	147	230	190	250	0.336
18.5	2925	160L **	93.0	93.0	93.0	91.5	89.5	84.0	30.5	800	60.8	260	210	300	0.0593
	1470	180MC **	94.0	94.0	93.5	85.0	81.0	72.5	32.5	750	121	240	180	270	0.187
	975	200LC **	93.0	93.5	93.0	81.0	77.5	68.5	34.4	640	182	230	200	250	0.459
22	2935	180MA **	93.5	93.5	92.5	87.5	84.5	76.0	38.1	790	72.7	250	210	300	0.0755
	1465	180LC **	94.0	94.0	93.5	86.0	82.5	74.0	38.5	700	146	230	180	270	0.213
	975	200LC **	93.0	93.5	93.5	83.0	80.5	72.5	40.3	650	219	215	180	230	0.520
30	2955	200LA **	94.0	94.0	93.0	89.0	87.5	83.5	49.6	690	96.3	175	150	260	0.151
	1470	200LC **	94.5	94.5	94.5	87.0	85.5	78.0	50.5	770	194	230	190	270	0.364
	980	225MC **	94.0	94.0	93.5	85.5	82.0	75.0	51.7	590	290	210	190	230	0.756
37	2950	200LA **	94.5	94.5	93.5	90.0	88.0	84.5	61.0	660	121	155	135	260	0.189
	1475	225SC **	95.0	95.0	94.5	85.0	81.0	73.0	64.3	670	241	200	180	240	0.474
	985	250SC **	94.0	94.5	94.0	87.0	83.5	76.0	63.5	640	361	210	200	250	1.049
45	2955	225MA	94.5	94.5	93.5	92.0	91.0	88.0	71.6	670	144	140	130	230	0.31
	1475	225MC **	95.0	95.0	94.5	85.0	81.0	72.5	77.1	640	289	200	175	250	0.495
	985	250MC **	94.5	95.0	94.5	87.5	85.0	77.5	75.3	700	433	230	200	250	1.28
55	2960	250SA **	95.0	94.5	94.0	89.5	88.0	87.0	91.5	700	180.2	150	130	250	0.387
	1480	250SC **	95.5	95.0	94.5	87.0	84.0	77.0	93.7	700	360.5	230	200	260	0.978
	977	280SC	94.5	94.0	91.8	84.1	80.2	74	97.9	630	546.1	146	121	221	1.85
75	2960	250MA **	95.5	95.5	95.0	91.0	88.0	85.0	119	690	240.3	140	130	250	0.454
	1480	250MC **	95.5	95.5	95.0	87.0	84.0	77.0	125	650	480.6	220	180	240	1.12
	978	280MC	95.0	94.2	92.1	85.7	81.5	74.4	127	670	727.3	141	119	220	2.38
90	2970	280SA	95.2	95.0	92.7	89.8	87.6	85.5	152	670	299.4	133	112	222	0.685
	1480	280SC	95.4	95.1	93.1	87.7	84.2	80.4	155	660	600.8	145	123	223	1.85
110	2970	280MA	95.3	95.1	92.9	90.0	87.8	85.8	182	655	359.3	122	105	216	0.795
	1483	280MC	95.5	95.4	93.2	88.0	85.9	81.0	185	640	719.5	128	108	214	2.08

- Notes:
1. All figures are based on tests carried out on 415 Volt 3-Phase Motors
 2. Test Method: AS/NZS1359.5 Method B.
 3. Tolerances : AS60034-1
 4. ** Motors comply to MEPS 2006 High Efficiency requirements
 5. dB(A): Mean Sound Pressure Level on no load at one meter.
 6. Eight Pole motor data on request.
 7. Data subject to change without notice.

Outline Dimension Sheet



TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 80 - 112 Foot Mount

Totally Enclosed Fan Cooled

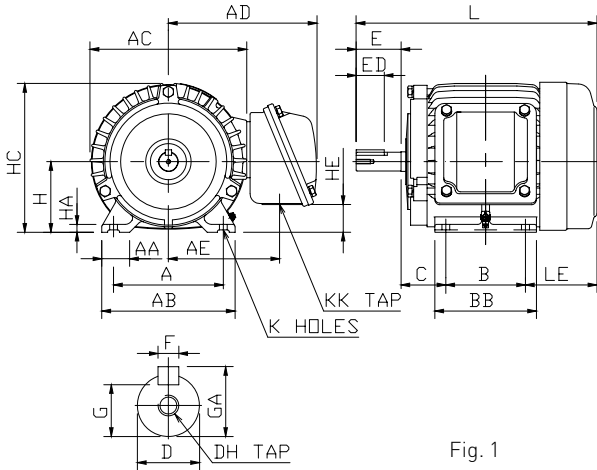


Fig. 1

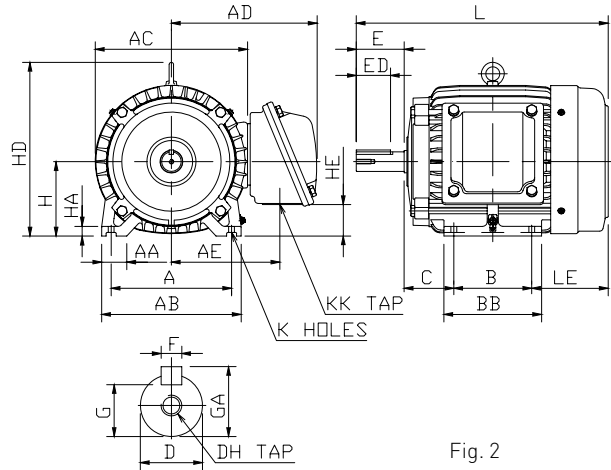


Fig. 2

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)												
2P	4P	6P	8P			A	AA	AB	AC	AD	AE	B	BB	C	H	HA	HC	HD
0.75	0.55	0.37	0.18	80	1	125	35.5	155	177	214	152.0	100	130	50	80	9.0	169	-
1.1	0.75	0.55	0.18	90S		140	35.5	170	200	223	161.0	100	130	56	90	10.0	190	-
1.5	1.1	0.75	0.37	90L		140	35.5	170	200	223	161.0	125	150	56	90	10.0	190	-
2.2	1.5	1.1	0.55	100L	2	160	45.0	195	219	232	170.5	140	175	63	100	12.5	-	243
3	2.2 3	1.5	0.75 1.1	112M		190	45.0	224	238	240	178.0	140	175	70	112	14.0	-	265
4	4	2.2	1.5															

FRAME SIZE	HE	K	KK #	L	LE	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
						D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
80	26.5	10	M20X1.5	282.0	92.0	19	40	25	6	15.5	21.5	M6x12	6204Z2C3	6204Z2C3	23
90S	36.5	10	M20X1.5	309.0	103.0	24	50	32	8	20.0	27.0	M8x16	6205Z2C3	6205Z2C3	33
90L	36.5	10	M20X1.5	337.5	106.5	24	50	32	8	20.0	27.0	M8x16	6205Z2C3	6205Z2C3	35
100L	46.5	12	M20X1.5	374.5	111.5	28	60	40	8	24.0	31.0	M10x20	6206Z2C3	6305Z2C3	45
112M	58.5	12	M20X1.5	391.0	121.0	28	60	40	8	24.0	31.0	M10x20	6306Z2C3	6306Z2C3	56

- Notes:
1. Tolerance of shaft end diameter D: $\pm 0.19 - \pm 0.28$ j6.
 2. Tolerance of shaft center height H: +0, -0.5.
 3. Lifting lugs not provided on frames D90 and smaller.
 4. # Auxiliary entries refer page 7.
 5. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 132 - 180 Foot Mount

Totally Enclosed Fan Cooled

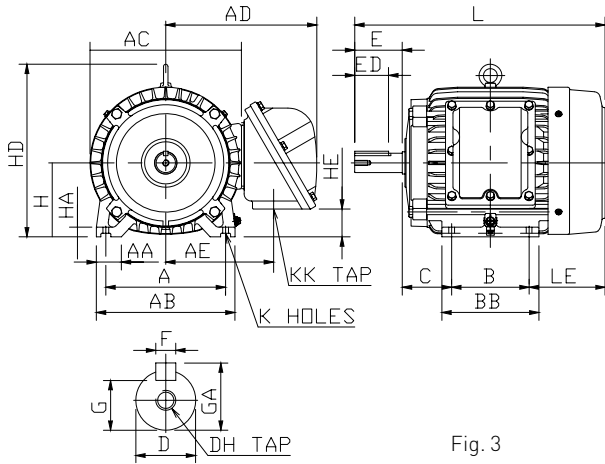


Fig. 3

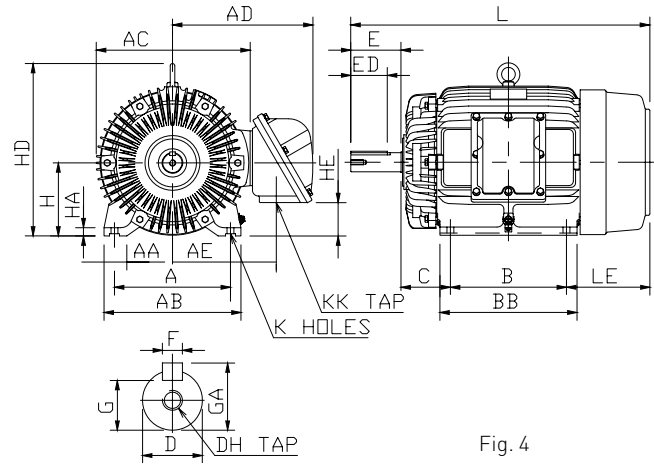


Fig. 4

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)												
2P	4P	6P	8P			A	AA	AB	AC	AD	AE	B	BB	C	H	HA	HD	HE
5.5	5.5	3	2.2	132S	3	216	45	250	274	288	198.5	140	175	89	132	16	310	48
7.5	7.5	4	3	132M		216	45	250	274	288	198.5	178	212	89	132	16	310	48
11	11	7.5	4	160M	4	254	50	300	334	329	237	210	250	108	160	18	378	73
15	11	5.5	5.5	160L		254	50	300	334	329	237	254	300	108	160	18	378	73
18.5	15	11	7.5	180MA	4	279	75	355	382	354	262	241	297	121	180	20	431	93
22	-	-	-	180MC		279	75	355	382	354	262	241	297	121	180	20	431	93
-	18.5	-	-	180LC		279	75	355	382	354	262	279	335	121	180	20	431	93
-	22	15	11	180LC		279	75	355	382	354	262	279	335	121	180	20	431	93

FRAME SIZE	K	KK #	L	LE	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
					D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
132S	12.0	M32X1.5	454	145	38	80	64	10	33.0	41.0	M12X24	6308ZZC3	6306ZZC3	99
132M	12.0	M32X1.5	492	145	38	80	64	10	33.0	41.0	M12X24	6308ZZC3	6306ZZC3	104
160M	14.5	M32X1.5	608	180	42	110	80	12	37.0	45.0	M16X32	6309ZZC3	6307ZZC3	160
160L	14.5	M32X1.5	652	180	42	110	80	12	37.0	45.0	M16X32	6309ZZC3	6307ZZC3	182
180MA	14.5	M32X1.5	672	200	48	110	80	14	42.5	51.5	M16X32	6311ZZC3	6310ZZC3	193
180MC	14.5	M32X1.5	672	200	48	110	80	14	42.5	51.5	M16X32	6311ZZC3	6310ZZC3	194
180LC	14.5	M32X1.5	710	200	48	110	80	14	42.5	51.5	M16X32	6311ZZC3	6310ZZC3	208

- Notes:
1. Tolerance of shaft end diameter D: $\pm 0.19 - \pm 0.28j6$.
 2. Tolerance of shaft center height H: $+0, -0.5$.
 3. # Auxiliary entries refer page 7.
 4. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 200 - 280 Foot Mount

Totally Enclosed Fan Cooled

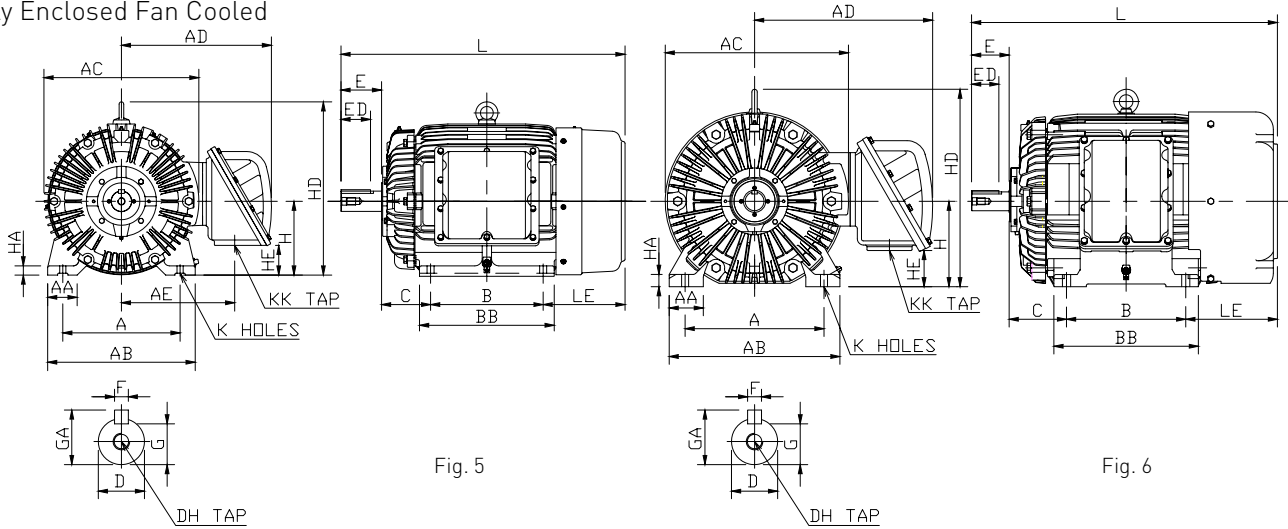


Fig. 5

Fig. 6

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)												
2P	4P	6P	8P			A	AA	AB	AC	AD	AE	B	BB	C	H	HA	HD	HE
30	-	-	-	200LA	5	318	80	400	420	424	324	305	365	133	200	25	470	81
37	-	-	-	200LC		318	80	400	420	424	324	305	365	133	200	25	470	81
-	30	18.5	15	225SC		356	90	450	458	455	350	286	375	149	225	30	525	116
-	37	22	18.5	225MA		356	90	450	458	455	350	311	375	149	225	30	525	116
-	45	30	22	225MC		356	90	450	458	455	350	311	375	149	225	30	525	116
55	-	-	-	250SA	6	406	100	500	530	540	408	311	385	168	250	36	598	106
-	55	37	30	250SC		406	100	500	530	540	408	311	385	168	250	36	598	106
-	75	-	-	250MA		406	100	500	530	540	408	349	425	168	250	36	598	106
-	75	45	37	250MC		406	100	500	530	540	408	349	425	168	250	36	598	106
90	-	-	-	280SA		457	110	560	592	567	436	368	445	190	280	40	655	131
-	90	55	45	280SC	457	110	560	592	567	436	368	445	190	280	40	655	131	
110	-	-	-	280MA	457	110	560	592	567	436	419	495	190	280	40	655	131	
-	110	75	55	280MC	457	110	560	592	567	436	419	495	190	280	40	655	131	

FRAME SIZE	K	KK #	L	LE	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
					D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
200LA	18.5	M50X1.5	770.0	222.0	55	110	80	16	49.0	59.0	M20x40	6312C3	6212C3	347
200LC	18.5	M50X1.5	770.0	222.0	55	110	80	16	49.0	59.0	M20x40	6312C3	6212C3	347
225SC	18.5	M50X1.5	841.0	266.0	60	140	110	18	53.0	64.0	M20x40	6313C3	6213C3	419
225MA	18.5	M50X1.5	811.0	241.0	55	110	80	16	49.0	59.0	M20x40	6312C3	6212C3	439
225MC	18.5	M50X1.5	841.0	241.0	60	140	110	18	53.0	64.0	M20x40	6313C3	6213C3	445
250SA	24.0	M50X1.5	887.5	268.5	60	140	110	18	53.0	64.0	M20x40	6313C3	6313C3	541
250SC	24.0	M50X1.5	887.5	268.5	70	140	110	20	62.5	74.5	M20x40	6317C3	6313C3	571
250MA	24.0	M50X1.5	925.5	268.5	60	140	110	18	53.0	64.0	M20x40	6313C3	6313C3	601
250MC	24.0	M50X1.5	925.5	268.5	70	140	110	20	62.5	74.5	M20x40	6317C3	6313C3	631
280SA	24.0	M50X1.5	992.0	294.0	65	140	110	18	58.0	69.0	M20x40	6313C3	6313C3	722
280SC	24.0	M50X1.5	1022.0	294.0	80	170	140	22	71.0	85.0	M20x40	NU318C3	6318C3	822
280MA	24.0	M50X1.5	1042.0	293.0	65	140	110	18	58.0	69.0	M20x40	6313C3	6313C3	812
280MC	24.0	M50X1.5	1072.0	293.0	80	170	140	22	71.0	85.0	M20x40	NU318C3	6318C3	837

- Notes:
1. Tolerance of shaft end diameter D: $\varnothing55 - \varnothing85: m6$.
 2. Tolerance of shaft center height H: 200-250: +0, -0.5; 280: +0, -1.
 3. # Auxiliary entries refer page 7.
 4. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors
 Frame 80 - 112 Flange Mount
 Totally Enclosed Fan Cooled

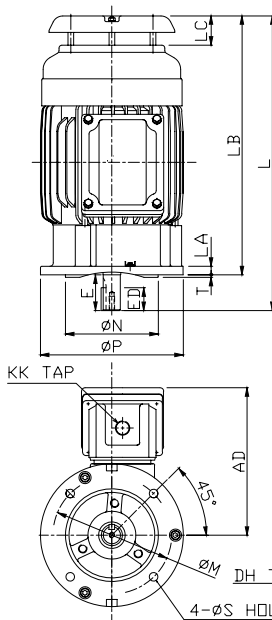


Fig. 1

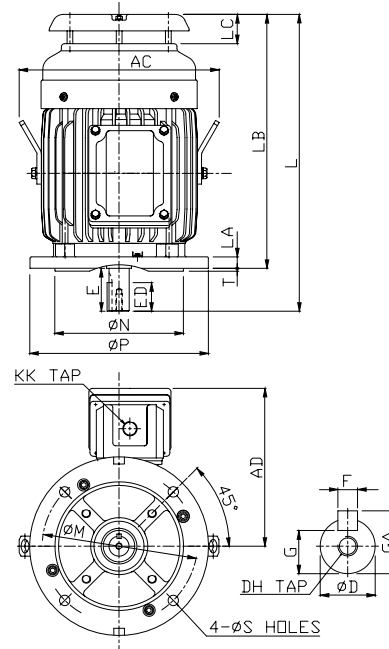


Fig. 2

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)									
2P	4P	6P	8P			AC	AD	L	LA	LB	LC	M	N	P	S
0.75 1.1	0.55 0.75	0.37 0.55	0.18	80	1	-	204	335.5	12	295.5	41	165	130	200	12
1.5	1.1	0.75	0.37	90S		-	217	387.5	12	337.5	41	165	130	200	12
2.2	1.5	1.1	0.55	90L		-	217	412.5	12	362.5	41	165	130	200	12
3	2.2 3	1.5	0.75 1.1	100L	2	280	226	415.5	16	355.5	41	215	180	250	14.5
4	4	2.2	1.5	112M		300	236	479.0	16	419.0	48	215	180	250	14.5

FRAME SIZE	T	KK #	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
			D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
80	3.5	M20X1.5	19	40	25	6	15.5	21.5	M6×12	6204ZZC3	6204ZZC3	24
90S	3.5	M20X1.5	24	50	32	8	20.0	27.0	M8×16	6205ZZC3	6205ZZC3	35
90L	3.5	M20X1.5	24	50	32	8	20.0	27.0	M8×16	6205ZZC3	6205ZZC3	38
100L	4.0	M20X1.5	28	60	40	8	24.0	31.0	M10×20	6206ZZC3	6305ZZC3	49
112M	4.0	M20X1.5	28	60	40	8	24.0	31.0	M10×20	6306ZZC3	6306ZZC3	60

- Notes:
1. Tolerance of Shaft End Diameter D: $\varnothing 19 - \varnothing 28: j6$.
 2. Tolerance of N : h7.
 3. Lifting lugs not provided on frames D90 and smaller.
 4. # Auxiliary entries refer page 7.
 5. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 132 - 180 Flange Mount

Totally Enclosed Fan Cooled

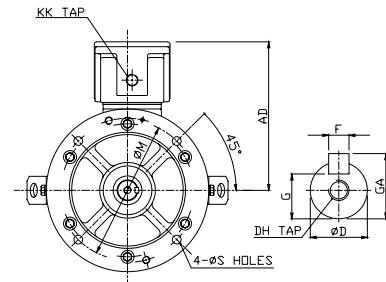
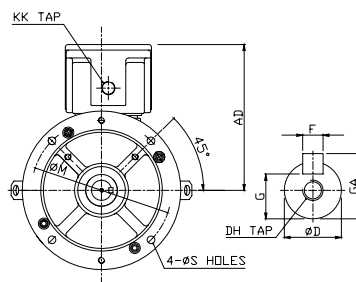
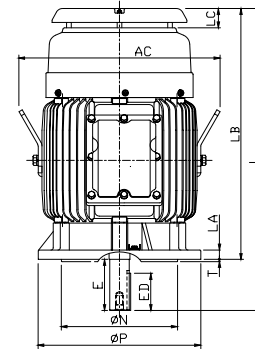
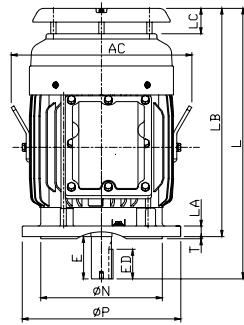


Fig. 3

Fig. 4

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)									
2P	4P	6P	8P			AC	AD	L	LA	LB	LC	M	N	P	S
5.5 7.5	5.5	3	2.2	132S	3	342	287	512	20	432	48	265	230	300	14.5
-	7.5	4 5.5	3	132M		342	287	550	20	470	48	265	230	300	14.5
11 15	11	7.5	4 5.5	160M	4	432	322	650	20	540	42	300	250	350	18.5
18.5	15	11	7.5	160L		432	322	694	20	584	42	300	250	350	18.5
22	-	-	-	180MA		482	347	722	20	612	50	300	250	350	18.5
-	18.5	-	-	180MC		482	347	722	20	612	50	300	250	350	18.5
-	22	15	11	180LC		482	347	760	20	650	50	300	250	350	18.5

FRAME SIZE	T	KK#	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
			D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
132S	4	M32X1.5	38	80	64	10	33.0	41.0	M12X24	6308ZZC3	6306ZZC3	99
132M	4	M32X1.5	38	80	64	10	33.0	41.0	M12X24	6308ZZC3	6306ZZC3	112
160M	5	M32X1.5	42	110	80	12	37.0	45.0	M16×32	6309ZZC3	6307ZZC3	170
160L	5	M32X1.5	42	110	80	12	37.0	45.0	M16×32	6309ZZC3	6307ZZC3	195
180MA	5	M32X1.5	48	110	80	14	42.5	51.5	M16×32	6311ZZC3	6310ZZC3	200
180MC	5	M32X1.5	48	110	80	14	42.5	51.5	M16×32	6311ZZC3	6310ZZC3	253
180LC	5	M32X1.5	48	110	80	14	42.5	51.5	M16×32	6311ZZC3	6310ZZC3	281

- Notes:
1. Tolerance of Shaft End Diameter D: $\pm 0.038 - \pm 0.048:k6$.
 2. Tolerance of N : h7.
 3. # Auxiliary entries refer page 7.
 4. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 200 - 225 Flange Mount

Totally Enclosed Fan Cooled

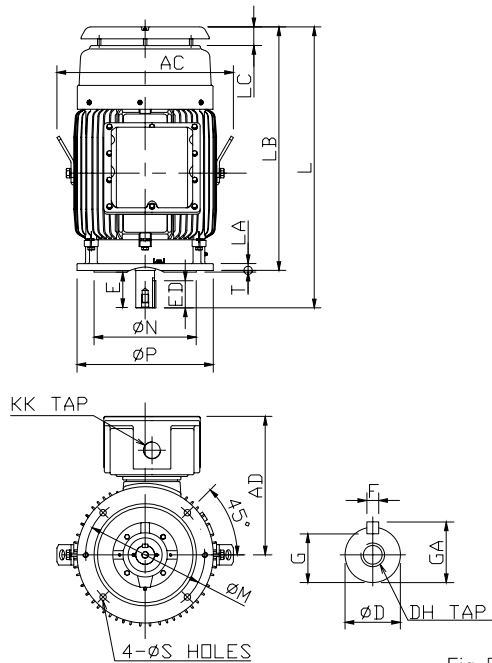


Fig. 5

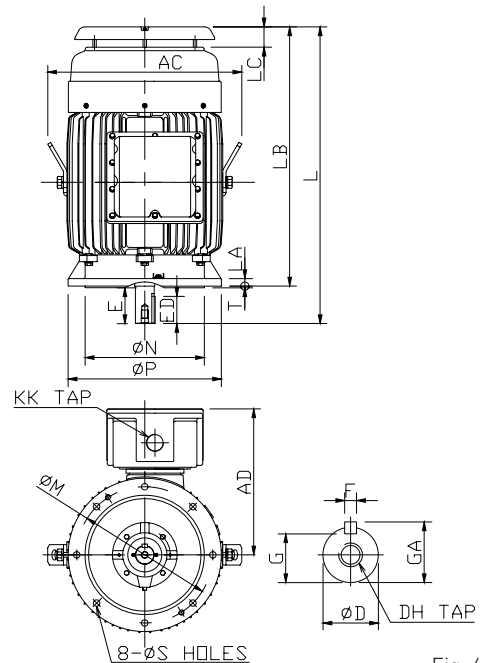


Fig. 6

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)									
2P	4P	6P	8P			AC	AD	L	LA	LB	LC	M	N	P	S
30 37	-	-	-	200LA	5	518	407	825	20	715.0	55	350	300	400	18.5
-	30	18.5 22	15	200LC		518	407	825	20	715.0	55	350	300	400	18.5
-	37	-	18.5	225SC	6	570	427	876	22	736.0	60	400	350	450	18.5
45	-	-	-	225MA		570	427	871	22	761.0	60	400	350	450	18.5
-	45	30	22	225MC		570	427	901	22	761.0	60	400	350	450	18.5

FRAME SIZE	T	KK #	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
			D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
200LA	5	M50X1.5	55	110	80	16	49	59	M20x40	6312C3	6212C3	377
200LC	5	M50X1.5	55	110	80	16	49	59	M20x40	6312C3	6212C3	383
225SC	5	M50X1.5	60	140	110	18	53	64	M20x40	6313C3	6213C3	436
225MA	5	M50X1.5	55	110	80	16	49	59	M20x40	6312C3	6212C3	457
225MC	5	M50X1.5	60	140	110	18	53	64	M20x40	6313C3	6213C3	467

- Notes:
1. Tolerance of Shaft End Diameter D: $\pm 0.055 - \pm 0.060$ m6.
 2. Tolerance of N : h7.
 3. # Auxiliary entries refer page 7.
 4. Data subject to change without notice and should not be used for installation purposes.

TECO Exd - Exde Cast Iron TEFC 3-Phase Squirrel Cage Induction Motors

Frame 250 - 280 Flange Mount

Totally Enclosed Fan Cooled

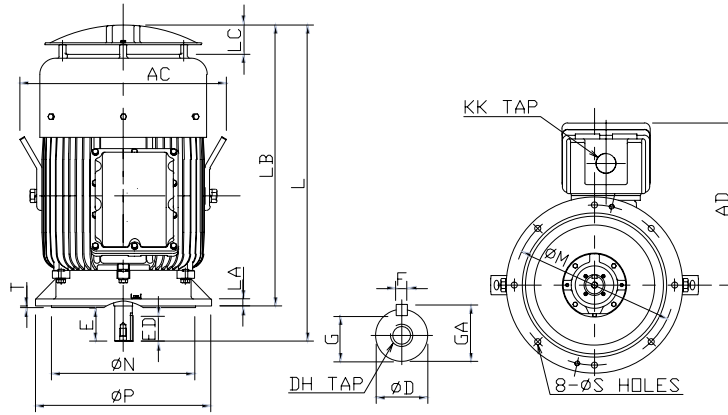
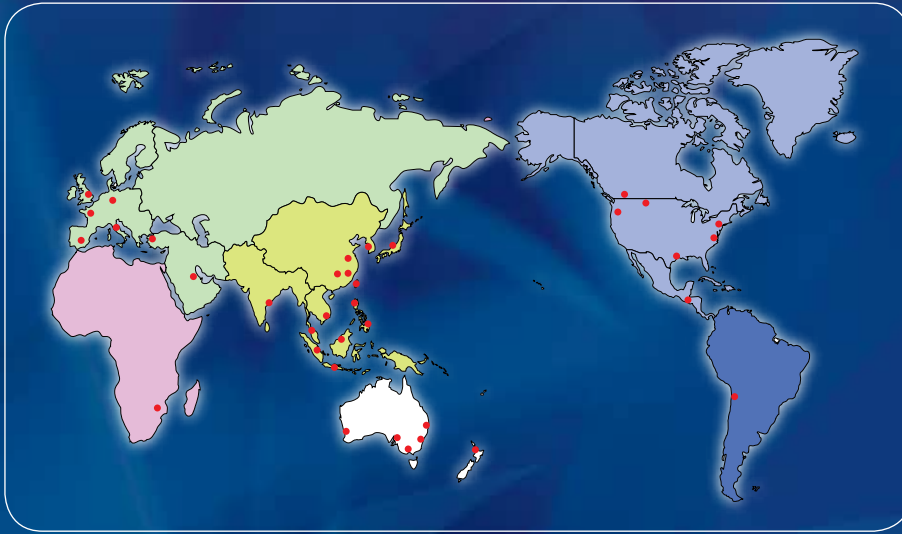


Fig. 7

Output (kW)				Frame Size	Fig. No.	Dimensions (mm)									
2P	4P	6P	8P			AC	AD	L	LA	LB	LC	M	N	P	S
55	-	-	-	250SA	7	626	507	949.0	22	839.0	91.5	500	450	550	18.5
-	55	37	30	250SC		626	507	979.0	22	839.0	91.5	500	450	550	18.5
75	-	-	-	250MA		626	507	987.0	22	877.0	91.5	500	450	550	18.5
-	75	45	37	250MC		626	507	1017.0	22	877.0	91.5	500	450	550	18.5
90	-	-	-	280SA		655	539	1083.5	22	943.5	91.5	500	450	550	18.5
-	90	55	45	280SC		655	539	1113.5	22	943.5	91.5	500	450	550	18.5
110	-	-	-	280MA		655	539	1133.5	22	993.5	91.5	500	450	550	18.5
-	110	75	55	280MC		655	539	1163.5	22	993.5	91.5	500	450	550	18.5

FRAME SIZE	T	KK #	SHAFT EXTENSION							BEARING		APPROX. WEIGHT KGS
			D	E	ED	F	G	GA	DH	DRIVE END	OPPOSITE DRIVE END	
250SA	5	M50X1.5	60	140	110	18	53.0	64.0	M20×40	6313C3	6313C3	595
250SC	5	M50X1.5	70	140	110	20	62.5	74.5	M20×40	6317C3	6313C3	609
250MA	5	M50X1.5	60	140	110	18	53.0	64.0	M20×40	6313C3	6313C3	662
250MC	5	M50X1.5	70	140	110	20	62.5	74.5	M20×40	6317C3	6313C3	704
280SA	5	M50X1.5	65	140	110	18	58.0	69.0	M20×40	6313C3	6313C3	748
280SC	5	M50X1.5	80	170	140	22	71.0	85.0	M20×40	NU318C3	6318C3	849
280MA	5	M50X1.5	65	140	110	18	58.0	69.0	M20×40	6313C3	6313C3	821
280MC	5	M50X1.5	80	170	140	22	71.0	85.0	M20×40	NU318C3	6318C3	951

- Notes:
1. Tolerance of Shaft End Diameter D: $\pm 0.055 - \pm 0.085$ m6.
 2. Tolerance of N : h7.
 3. # Auxiliary entries refer page 7.
 4. Data subject to change without notice and should not be used for installation purposes.



AUSTRALIA & NEW ZEALAND



Head Office, Sydney

TECO Australia Pty Ltd
335-337 Woodpark Road,
Smithfield NSW 2164
Tel: 02 9765 8118
Fax: 02 9604 9330



Melbourne

TECO Australia Pty Ltd
16 Longstaff Road,
Bayswater VIC 3153
Tel: 03 9720 4411
Fax: 03 9720 5355



Brisbane

TECO Australia Pty Ltd
50 Murdoch Circuit,
Acacia Ridge QLD 4110
Tel: 07 3373 9600
Fax: 07 3373 9699



Perth

TECO Australia Pty Ltd
18 Hazelhurst Street,
Kewdale WA 6105
Tel: 08 9479 4879
Fax: 08 9478 3876



New Zealand

TECO New Zealand Ltd
Unit 3, 477 Great South Road,
Penrose, Auckland
Tel: 64 9-526 8480
Fax: 64 9-526 8484
sales@teco.co.nz



Africa

TECO Sub-Saharan
Africa, Johannesburg,
South Africa
Tel: +27 76 447 3549
sales.africa@teco.com.au

Distributed by:

www.teco.com.au emd@teco.com.au