

**cemp**<sup>®</sup>

Flameproof  
Motors



# ATEX - IECEx

MOTORS FOR HAZARDOUS LOCATIONS

**REGAL**<sup>®</sup>



# A COMPREHENSIVE RANGE OF M

## T Y P E O F M O T O R



### FLAMEPROOF ELECTRIC MOTORS

#### E3.../E4A... SERIES - IE3/IE4 GAS & DUST VERSION

- According to standards:
  - IEC/EN 600079-0, 1, 7, 31
  - IEC 60034-1, 2, 5, 6, 7, 8, 9, 12, 14, 30
  - IEC 60072
- Ex db, Ex db eb, Ex tb, Ex tc
  - \* Terminal box Ex db or Ex eb available
  - \* Continuous duty or intermittment duty
- Atex category I M2, II2G, II2D, II2GD
- Gas group I, IIB, IIC
- Dust group IIIB, IIIC
- Temperature classes T3, T4, T5, T6
- Surface temperature classes (Dust) T150°C - T135°C - T125°C - T100°C - T85°C
- Protection IP55, IP56, IP65, IP66
- Frame size from 80 to 355 (IEC)
- Power 0,75 - 375 kW
- 400V, 50Hz (multi voltage 380-400-415V/50Hz and 460V/60Hz)
- Pole 2, 4, 6, 8
- Self-cooling (IC411); Forced cooling (IC416); Not ventilated (IC410); Totally enclosed air over (IC418)
- Premium efficiency IE3; Super-premium efficiency IE4 Available IE1/IE2 (A Series)
- Certified ATEX and IECEx
- Certified GMEE



### FLAMEPROOF ELECTRIC MOTORS WITH BRAKE

#### E3.../E4D SERIES - IE3/IE4 GAS & DUST VERSION

- According to standards:
  - IEC/EN 600079-0, 1, 7, 31
  - IEC 60034-1, 2, 5, 6, 7, 8, 9, 12, 14, 30
  - IEC 60072
- Motor enclosure Ex db (flameproof) and brake in separate Ex db enclosure
- Terminal box Ex db or Ex eb available
- Multiple choice for brake torque available
- Continuous duty or intermittment duty
- Ex db, Ex db eb, Ex tb, Ex tc
- Atex category II2G, II2D, II2GD
- Gas group IIB, IIC
- Dust group IIIB, IIIC
- Temperature classes T3, T4, T5, T6
- Surface temperature classes (Dust) T150°C - T135°C - T125°C - T100°C - T85°C
- Protection IP55, IP56, IP65, IP66
- Frame size from 80 to 315 (IEC)
- Power 0,75 - 200 kW
- 400V, 50Hz (multi voltage 380-400-420V/50Hz and 460V/60Hz)
- Pole 2, 4, 6, 8 and dual speed motor (separate windings or Dahlander)
- Self-cooling (IC411); Forced cooling (IC416); Not ventilated (IC410); Totally enclosed air over (IC418)
- Premium efficiency IE3; Super-premium efficiency IE4 Available IE1/IE2
- Certified ATEX and IECEx
- Certified GMEE



### NON-SPARKING ELECTRIC MOTORS

#### TCN SERIES - IE3/IE4 GAS & DUST VERSION

- According to standards:
  - IEC/EN 600079-0, 15, 31
  - IEC 60034-1, 2, 5, 6, 7, 8, 9, 12, 14, 30
  - IEC 60072
- Ex -nA, Ex-tb, Ex-tc
- Atex category II3G, II3G/II2D, II3GD
- Gas group IIB, IIC
- Dust group IIIB, IIIC
- Temperature classes T3
- Max surface temperature (Dust) T200°C
- Protection IP55, IP56, IP65, IP66
- Frame size from 80 to 355 (IEC)
- Power 0,75 - 375 kW
- 400V, 50Hz and 460V/60Hz
- Pole 2, 4, 6, 8
- Self-cooling (IC411); Forced cooling (IC416); Not ventilated (IC410); Totally enclosed air over (IC418)
- Premium efficiency IE3; Super-premium efficiency IE4 Available IE1/IE2
- Certified ATEX and IECEx
- Certified GMEE





# MOTORS FOR HAZARDOUS AREAS

## M A I N O P T I O N S



Ex-e increased safety stainless steel terminal box



Brake enclosure



Oversized terminal box



Totally enclosed fan ventilated

### MECHANICAL

- Special flanges and shafts
- Without terminal box with plate (cables gland, or seal joints and conduit)
- Locked bearings, roller bearings or special bearings
- Terminal box on side
- SPM probe (vibrations measurement)
- Double ended shafts
- Cable gland fitted to terminal box
- Condensation drain valve
- Grade A or B vibration
- Rain cap or sun shield water shredding disk
- Low noise
- Auxiliary terminal box
- Low (-60°C) temperature motors

### ELETRICAL

- Special voltage and frequency
- Three phase 2 speeds
- Single phase with permanent capacitor
- Motors for tropical climates
- Electrical special designs
- Class H insulation
- Suitable for frequency converter drives

### ACCESSORIES

- Forced ventilation (IC416)
- Encoders (100 – 10000 ppr)
- Bearing sensors
- Bimetallic thermal protection (NC, NO), thermistors (PTC), platinum resistor(PT100)
- Anti-condensation heaters

### BRAKES

- AC disc brakes
- DC disc brakes
- Brake hand release
- Braking when not energized

### ENGINEERING SERVICES

- Start-up behavior analysis
- Superimposed curve (motor + driven machine)
- Load test and thermal test as per IEC 60034-2-1
- Torque speed curve measurement (Dynamic method)
- Insulation test
- ATEX, IEC Ex and UL approved for thermal test
- Bureau Veritas and Korean Register approved



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#### HEAD OFFICE - AUSTRALIA

Regal Beloit Australia Pty Ltd ABN 61 122 303 084  
19 Corporate Ave (PO Box 2340)  
Rowville VIC 3178, Australia  
Customer Service: 1300 888 853  
Fax: +61 3 9237 4050  
www.regalaustralia.com.au

#### STATE OFFICES

##### VICTORIA

19 Corporate Avenue  
Rowville VIC 3178  
T: 1300 888 853  
F: +61 3 9237 4050

##### NEW SOUTH WALES

8 Bushells Place  
Wetherill Park NSW 2164  
T: 1300 888 853  
F: +61 2 8781 3131

##### QUEENSLAND

7 Mahogany Court  
Willawong QLD 4110  
T: 1300 888 853  
F: +61 7 3246 3210  
CAIRNS (Service • Repairs • Sales)  
2/159-161 Newell Street  
Bungalow QLD 4870  
T: 1300 888 853  
F: +61 7 4033 5553

##### PRESENT IN

MACKAY

SOUTH AUSTRALIA

WESTERN AUSTRALIA

T: 1300 888 853

##### NEW ZEALAND

Regal Beloit New Zealand Limited  
18 Jomac Place Avondale  
Auckland, New Zealand  
T: 0800 676 722

F: +64 9 820 8504

##### PRESENT IN

CHRISTCHURCH

ROTORUA

T: 0800 676 722

##### MALAYSIA

Regal Beloit Malaysia Sdn. Bhd.  
Formerly Torin Industries (Malaysia) Sdn. Bhd  
No. 6536A Jalan Bukit Kemuning  
Batu 6 Seksyen 34  
40470 Shah Alam Selangor, Malaysia  
T: +60 3 5124 6157  
F: +60 3 5121 1467

##### SINGAPORE

Regal-Beloit Asia Pte. Ltd.  
12 Tuas Loop 637346, Singapore  
T: +65 6863 3473  
F: +65 6863 3476

##### THAILAND

FASCO Motors (Thailand) Limited  
29/7-8 Bangkruay-Sainoi Road Bangkrang  
Muang Nonthaburi District  
Nonthaburi 11000, Thailand  
T: +66 2447 3300  
F: +66 2447 3500

#### APPLICATION CONSIDERATIONS

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components and the customer should carefully review its requirements. Any technical advice or review furnished by Regal Beloit America, Inc. and/or its affiliates ("Regal") with respect to the use of products and components is given in good faith and without charge, and Regal assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

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