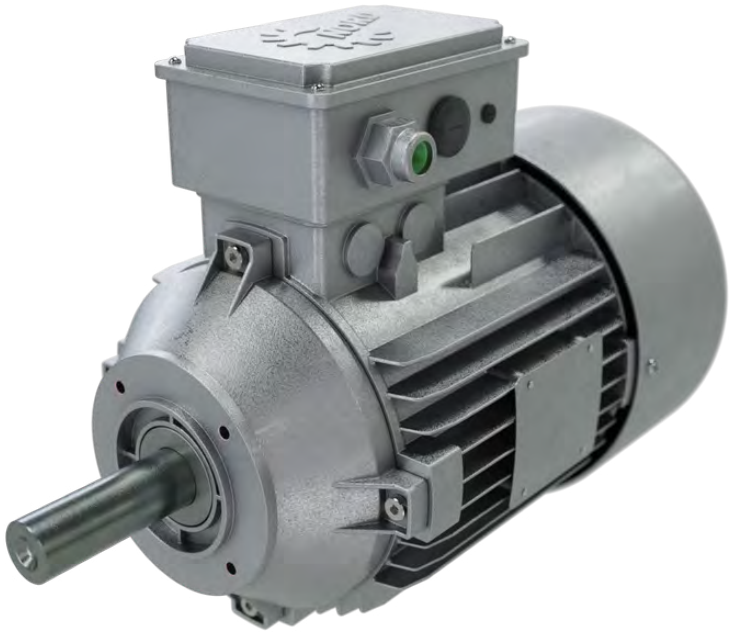
REPLACEMENT & AFTERMARKET

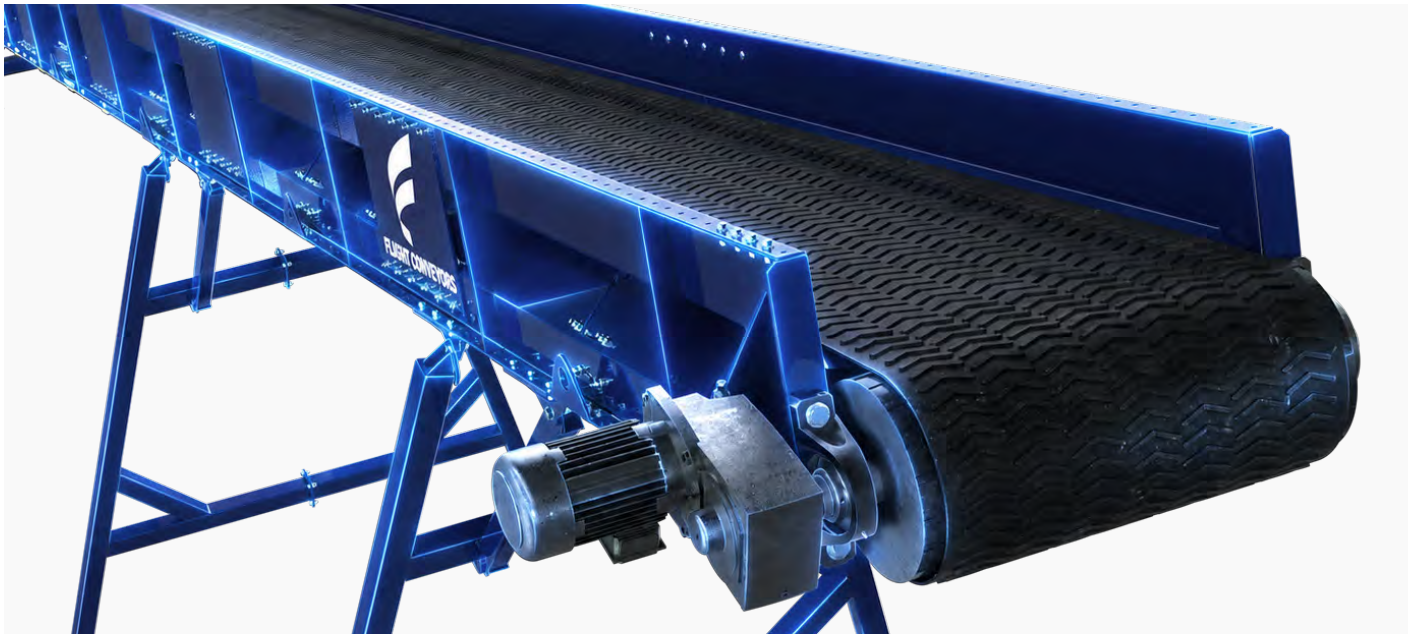
EXPLOSION PROOF MOTORS



Collaborate / Create / Convey

TABLE OF CONTENTS

EXPLOSION PROOF MOTORS



Explosion Proof Motors

Hazardous locations present severe ignition risks when flammable gases, vapors, or combustible dusts enter the operating environment. Uncertified drive units introduce spark and thermal hazards, potentially triggering atmospheric ignitions. Equipment failure or improper specification in these classifications disrupts facility operations and violates OSHA safety mandates.

Explosion-proof motors are constructed with robust enclosures that contain internal ignitions and isolate external atmospheres from mechanical heat sources. Available in TEFC designs with dust-ignitionproof ratings, these units utilize flameproof, non-sparking, or increased safety construction methods. Integrated directly with helical, parallel shaft, or worm drive gearboxes, they function safely across belt and roller chain conveyor lines. Tested matched assemblies ensure verifiable compliance with UL, CSA, ATEX, and IECEx requirements.

APPLICATIONS

Recycling Operations

Material recovery facilities handling combustible materials generate dense Class II, Zone 21 or 22 particulate atmospheres. Protection by enclosure (Ex t) construction seals the drive unit against fine dust ingress while limiting external surface temperatures during heavy-tonnage processing.

Chemical Processing And Refineries

Volatile gas and vapor environments require strict operation within Class I, Zone 1 or 2 electrical classifications. Drive systems utilize flameproof (Ex d) or increased safety (Ex e) structural designs to physically prevent explosive atmospheric propagation.

Grain Handling And Elevator Systems

Combustible dust accumulation creates continuous Class II, Zone 21 or 22 atmospheric hazards. Protection by enclosure (Ex t) construction blocks particle ingress while strictly limiting maximum external surface temperatures.

Coating And Painting Operations

Solvent recovery and atomized paint applications introduce persistent flammable vapors into the operational space. Motors are configured with designated T-codes to operate safely below specific chemical ignition temperatures.

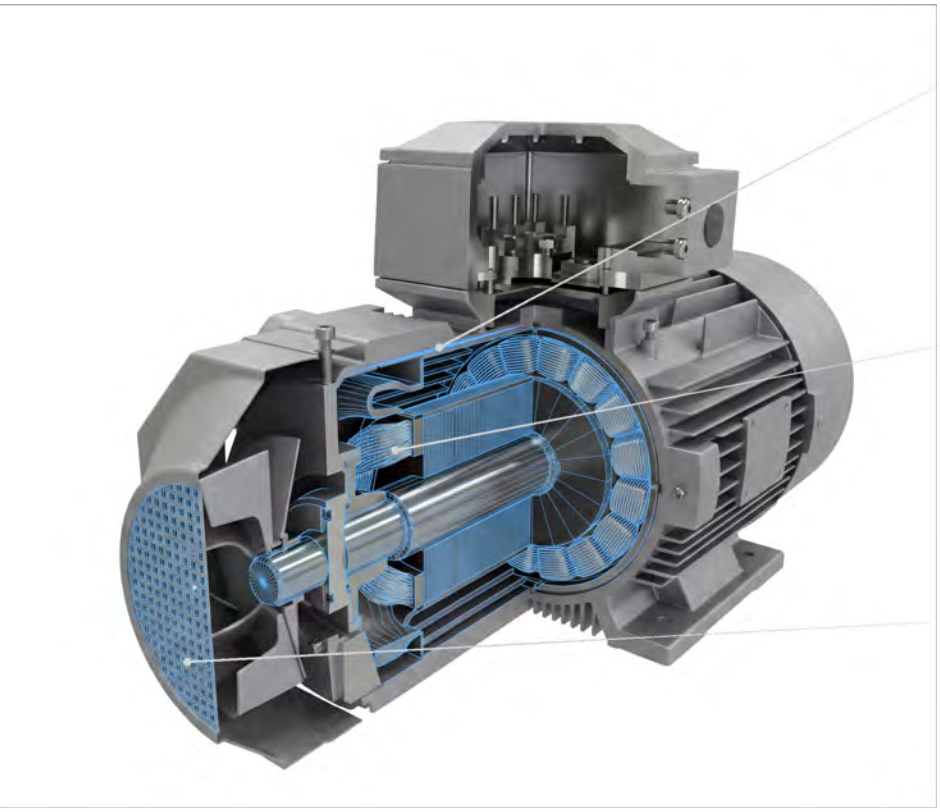
Wood Processing And Sawmills

Heavy sawdust generation poses severe combustion risks when exposed to standard operating motor heat or electrical arcing. IP66-rated enclosures seal out pervasive dust while enduring high-pressure washdowns required for facility maintenance.

Pharmaceutical Manufacturing

Fine powder processing necessitates immaculate environmental sealing against combustible particulates and external contaminants. IP55 or IP66 dust-ignitionproof ratings guarantee internal mechanical isolation from the surrounding facility atmosphere.

KEY FEATURES



01

Flameproof (Ex d) Housing:

Heavy-duty motor housing contains internal combustible incidents to physically block flame propagation into the surrounding facility space.

02

Factory-Installed Motor Brakes:

Integrated directly onto gearmotors for inclined conveyors and mechanically matched to drive unit torque capacities.

03

TEFC Enclosure Construction:

Engineered to isolate internal electrical components from external flammable atmospheres while utilizing external fans for mechanical heat dissipation.

06

T-Code Compliant Surface Architecture:

Calibrated to cap maximum surface temperatures ranging from 85°C (185°F) for T6 to 450°C (842°F) for T1 depending on the selected rating.

05

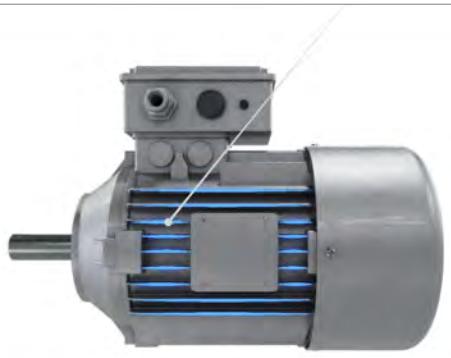
Increased Safety (Ex e) Design:

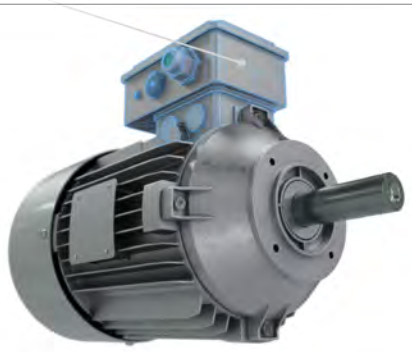
Constructed with enhanced mechanical clearances and specialized materials to prevent arc generation and abnormal thermal spikes during routine operation.

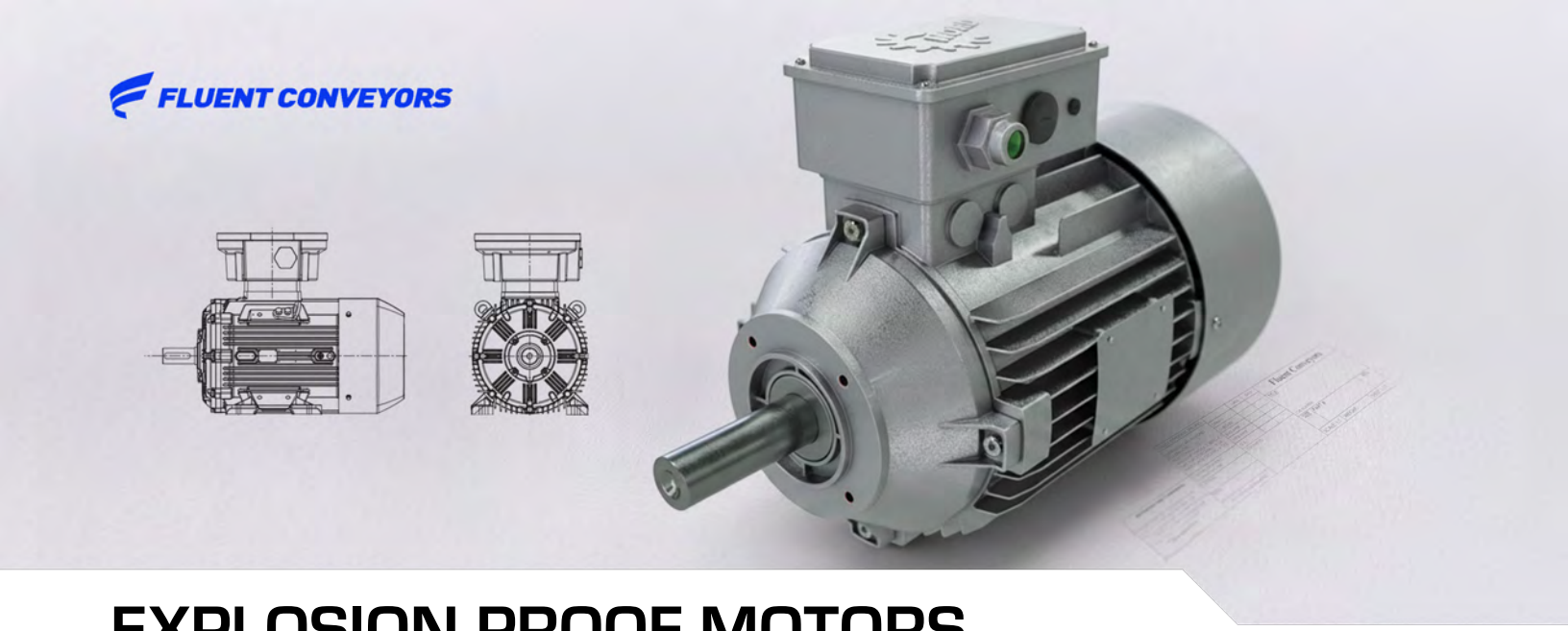
04

IP66 Washdown Sealing:

Utilizes complete dust sealing and high-pressure water jet protection for outdoor installations or heavy accumulation environments.







EXPLOSION PROOF MOTORS SPECIFICATIONS

Parameter	Standard Specification
Motor configuration	Three-phase asynchronous (induction) or synchronous
Certification standards	UL, CSA (North America); ATEX, IECEx (international)
Class/Division classification	Class I Division 2 (gas/vapor), Class II Division 2 (combustible dust)
Zone classification	Zone 1/2 (gas), Zone 21/22 (dust)
Protection methodologies	Increased safety (Ex e), flameproof enclosure (Ex d), non-sparking (Ex n), protection by enclosure (Ex t)
Power capacity	0.16–73.7 HP (0.12–22 kW)
Operating voltage	230/460V, 575V (alternative voltages available)
Operating frequency	50/60 Hz
Enclosure design	TEFC with explosion-proof or dust-ignitionproof rating
Ingress protection (IP)	IP55 standard, IP66 available
Mounting configuration	NEMA footed (B3), IEC footed, NEMA C-flange, flange (B5/B14)
T-Code classification	Configured to match ignition temperature requirements

Ignition Protection

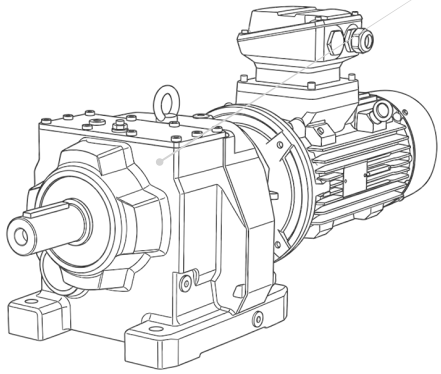
Protection Method	Application Hazard	Mechanical Mechanism
Flameproof enclosure (Ex d)	Class I Division 1 gas/vapor	Motor housing contains internal explosions and prevents flame propagation to external atmospheres.
Increased safety (Ex e)	Class I Division 2 and some Division 1	Enhanced design prevents spark generation and excessive temperatures during normal operation.
Non-sparking (Ex n)	Zone 2 gas	Construction restricts ignition-capable sparks and hot surfaces during normal operation.
Protection by enclosure (Ex t)	Class II, Zones 21/22 (combustible dust)	Dust-tight enclosure blocks dust ingress and limits maximum surface temperature.

THE ENGINEERING ADVANTAGE

This section outlines the core assembly methodologies behind explosion-proof conveyor motors, covering certification alignment and integration protocols to ensure verified hazardous location compliance.

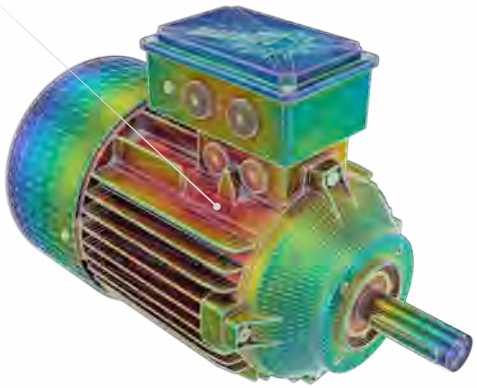
Tested Assembly Certification:

Complete gearmotor configurations undergo compliance testing as unified drive packages rather than separate components to guarantee NEC and ATEX compliance.



Thermal Capacity Verification:

Mechanical ratings, load limitations, and starting torque parameters are calculated against specific conveyor belt speeds and material friction prior to build.

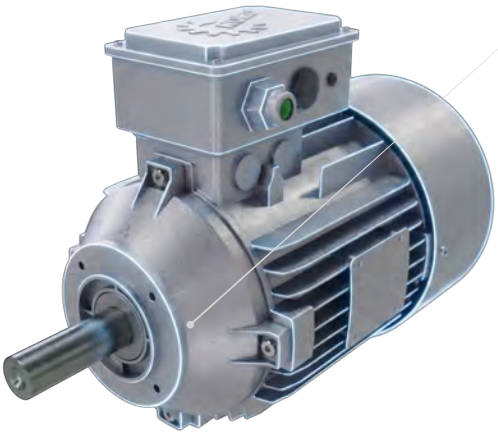


Factory-Sealed Integration:

Integrated gearmotors are matched and aligned at the factory to eliminate field assembly requirements and maintain environmental protection integrity.

Non-Sparking Construction Tolerance:

Fabricated with restricted internal clearances and controlled material combinations to ensure zero ignition-capable sparks occur under standard operating parameters.



CONTACT INFORMATION

OUR ENGINEERS WILL SPEC THE EXACT PART FOR YOUR SYSTEM

For product specifications, engineering support, or order inquiries, please contact our team using the information provided below. Our specialists are available to ensure accurate recommendations and efficient service for your application requirements.

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