

W22Xec

Increased Safety Motors / Dust Ignition Proof

Commercial Catalogue
European Market



Motors | Automation | Energy | Transmission & Distribution | Coatings

W22Xec

Increased safety “Ex ec” motors are designed to prevent the occurrence during normal operating and certain specific abnormal conditions of arcs, sparks & excessive overheating of all inner and outer surfaces of the machine which could reach the self ignition temperature of the surrounding potentially explosive atmosphere.

In the case of “Ex tc” machines, the maximum surface temperature of the enclosure is defined either:

- through measurement, under normal operating conditions, of the external surfaces of the machine with no dust layer, or
- determined for a given depth layer, “ T_L ”, of dust surrounding all sides of the equipment (a maximum depth may be specified by the manufacturer).

Protection

W22Xec motors are certified “Ex ec” Increased Safety and “Ex ec / Ex tc” Dust Ignition Proof, for installation in hazardous areas classified as Zone 2 (Gas Groups IIA, IIB, IIC) and Zone 22 (Dust Groups IIIA and IIIB).



Features

Standard

- Rated Output: 0,12 to 450 kW
- Number of Poles: 2 to 8
- Frame Sizes: IEC 63 to 355A/B
- Voltage: up to 690 V
- Frequency: 50 / 60 Hz
- Efficiency Level: IE3 Premium Efficiency
- Hazardous Area: Zone 2 – Gas Groups IIA, IIB, IIC
Zone 22 – Dust Groups IIIA, IIIB
- Ambient Temperature Range: -20 °C to +40 °C
- Degree of Protection: IP55
- Winding Thermal Protection:
PTC 140 °C (Dust) & PTC 155 °C (Gas)
- Painting plan: 205P (C4 according to ISO 12944)
- Insulation class: F (ΔT 80K)

Optional

- Efficiency Level: IE1, IE2 and IE4
- Single use marking Ex ec - Gas (W22Xec) or Ex tc - Dust (W22Xtc)
- Degree of Protection up to IP66
- Ambient Temperature Range: -55 °C to +60 °C
- Pt-100, thermostats, anti-condensation heaters
- Painting plans C5M / C5I acc. ISO 12944, NORSOK M-501 etc.
- VIK Compliant Execution
- Suitable for frequency inverter application
- Brass cable gland

VFD Application

W22Xec motors are also certified for operation with Variable Frequency Drives

- Thermal protection embedded in motor windings
- Separate rating plate indicating permissible operating parameters under variable speed conditions.
- Must respect WEG derating curves / conditions defined in ATEX & IECEx certificates





IEC		Operating Conditions		
Hazardous Areas	Gas	Zone	0	Explosive atmosphere is continuously or frequently present
			1	Explosive atmosphere is likely to occur in normal operation condition
			2	Explosive atmosphere is not likely to occur in normal operation condition
		Group	I	Methane
			IIA	Propane
			IIB	Ethylene
	Dust	Zone	20	Explosive atmosphere is continuously or frequently present
			21	Explosive atmosphere is likely to occur in normal operation condition
			22	Explosive atmosphere is not likely to occur in normal operation condition
		Group	IIIA	Solid particles, larger than 500 µm suspended-combustible fibers
IIIB	Non-conductive dust, equal or smaller than 500 µm, with electrical resistivity greater than to 10 ³ Ω.m - grime.			
		IIIC	Conductive dust, equal or smaller than 500 µm, with electrical resistivity less than or equal to 10 ³ Ω.m - metallic dust.	

Ex ec Design - Key Requirements

- Terminal boxes must have a minimum degree of protection IP54;
- Minimum creepage and clearance distances between conductive parts;
- Screw connections must have a specified torque value (indicated in the O&M manual);
- External earth terminals and equipotential earth connection between the frame and terminal box;
- Conductive plastic cooling fan (2-pole motors up to 355M/L and 4-pole up to 315S/M);
- Aluminium cooling fan (2-pole motors frame 355A/B and 4p 315L and above).

Certification

SGS BASEEFA

- ATEX & IECEx certifications
- Zone 2 / Zone 22
- Gas groups IIA, IIB, IIC / Dust groups IIIA, IIIB
- Standards IEC 60079-0, 60079-15 & 60079-31

Marking

- Ex ec IIC T3 Gc / Ex tc IIIB T125 °C Dc



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The values shown are subject to change without prior notice.

The information contained is reference values.