

[1] **EU - TYPE EXAMINATION CERTIFICATE**
[2] **Equipment or Protective System Intended for use in Potentially Explosive Atmospheres**
Directive 2014/34/EU Annex III, Module B

[3] EU – Type Examination Certificate Number ACE25ATEX043X Rev00
[4] Product Explosion Proof Permanent Magnet Synchronous
Frequency Conversion Machine for Monorail
Model: TYBVFT-6(336)D
[5] Manufacturer Shandong Xinsha Monorail Transport Machinery
Co., Ltd
[6] Address Hushan Road West Section, Economic
Development Zone, Xintai City, Tai'an City,
Shandong, 271200, P.R.China

[7] This equipment or protective system and any acceptable variation there to are specified in the schedule to this certificate and the documents therein referred to.

[8] Advanced Consulting and Engineering Iberia SL (A.C.&E. Iberia S.L.), Notified body Accreditation nº: NB3024 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive
The examination and test results are recorded in confidential Report nº. EX_EXD024_25_25-1528

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018 : Explosive atmospheres — Part 0: Equipment — General requirements
EN 60079-1:2014: Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures 'd'

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Special Conditions for Use specified in the point 17 of This certificate.

[11] This EU – Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:



I M2 Ex db I Mb

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Date: 04/11/2025



**Advanced Consulting and Engineering
Iberia SL**
Notified Body No NB3024

Matteo Marconi, CEO

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[13]

SCHEDULE

[14]

EU-Type Examination Certificate No: ACE25ATEX043X Rev00

[15] Description of equipment

1. Construction Overview

TYBVFT-6(336)D Explosion Proof Permanent Magnet Synchronous Frequency Conversion Machine for Monorail has two "d" chambers, it includes a main chamber and a wiring chamber. The material of the enclosure is Q355D steel, and the two chambers are connected by two terminal posts and one feedthrough terminal. The main chamber includes the motor front cover, motor rear cover, main control cover, and the motor body. The wiring chamber includes the wiring chamber cover and wiring chamber body. There are sealing rings between all covers and bodies, and the material of the sealing rings is nitrile rubber. There is an M25×1.5 hole on the main chamber, which is sealed with a certified breather/drain plug. There are 2-M20×1.5 cable entries and 2-M25×1.5 cable entries on the wire chamber for the installation of explosion-proof cable glands.

Both external and internal earthings are provided. The degree of protection of the enclosure is IP54, according to IEC 60079-0 and IEC 60529.

And the suitable application location for it as below: This Explosion Proof Permanent Magnet Synchronous Frequency Conversion Machine for Monorail is Group I equipment; for Group I protection, it is Mb;

2. Model designation:

TY B VF T - 6 (336) D

"TY": Permanent Magnet Synchronous;

"B": Flameproof;

"VF": Frequency Conversion;

"T": Machine;

"6": Rated power;

"336": Rated voltage;

"D": For Monorail;

3. Electrical parameters:

Rated voltage: DC336V;

Rated power: 6kW;

Rated speed: 1140r/min;

Output frequency range: 0~320Hz;

Number of motor poles: 8;

Motor insulation class: H(180°C);

4. Ambient temperature: -20°C ~ +40°C;

5. Cooling method: water cooling;

6. Ingress Protection class: IP54.

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[13] **SCHEDULE**

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[16] Test documents are listed in the test report nº
EX_EXD024_25_25-1528

- [17] Special conditions for safe use
1. End user shall use certified cable gland or plug suitable type of protection for final installation purpose;
 2. End user shall use certified breather/drain plug suitable type of protection for final installation purpose
 3. Use screws with yield strength $\geq 640\text{MPa}$;
 4. WARNING–DO NOT OPEN WHEN ENERGIZED;
 5. WARNING–AFTER DE-ENERGIZING, DELAY 30 MINUTES BEFORE OPENING;
 6. The cooling method of this product is water cooling, and the cooling water temperature must not exceed 30°C;
 7. The flameproof joint surface is not allowed to be repaired.
 8. Minimum flow rate of cooling water is 15L/min.

[18] Essential Health and Safety Requirements
Are fulfilled by the harmonized standard

[19] Documents and technical datasheets:

| Title | Object | Revision | Date |
|--|---------------|----------|-----------|
| TYBVFT-6 (336) D Explosion Proof Permanent Magnet Synchronous Frequency Conversion Machine for Monorail User Manual | / | V1.0 | 2025. 8 |
| General Assembly | TYBVFT | V1.0 | 2025.3.10 |
| Main Compartment Cover Plate | TYBVFT GB-01 | V1.0 | 2025.3.31 |
| Main Compartment Plate 1 | TYBVFT KT-02 | V1.0 | 2025.3.31 |
| Wiring Compartment Cover Plate | TYBVFT GB-02 | V1.0 | 2025.3.31 |
| Wiring Compartment Plate 2 | TYBVFT KT-04 | V1.0 | 2025.3.31 |
| Main Compartment Plate 2 | TYBVFT KT-05 | V1.0 | 2025.3.31 |
| Cooling Plate | TYBVFT SLB-01 | V1.0 | 2025.3.31 |
| Motor Bottom Flange | TYBVFT KT-06 | V1.0 | 2025.3.31 |
| Motor Shroud Plate | TYBVFT KT-07 | V1.0 | 2025.3.31 |

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|---------------------------------------|-----------------|------|-----------|
| Motor Flange | TYBVFT KT-08 | V1.0 | 2025.3.31 |
| Stator Housing | TYBVFT KT-09 | V1.0 | 2025.3.31 |
| Motor Front Cover | TYBVFT KT-10 | V1.0 | 2025.3.31 |
| Motor Shaft | TYBVFT KT-11 | V1.0 | 2025.3.31 |
| Motor Rear Cover | TYBVFT KT-13 | V1.0 | 2025.3.31 |
| Terminal Post M8 | TYBVFT JXZ-01 | V1.0 | 2025.3.31 |
| Steel Washer | GD-10-G | V1.0 | 2025.3.31 |
| Copper Crescent | GD-10-T | V1.0 | 2025.3.31 |
| Insulating Gasket | JF10-660 | V1.0 | 2025.3.31 |
| Terminal Block | JXZ-JF10-660 | V1.0 | 2025.3.31 |
| Feedthrough Terminal | TYBVFT CQDZ-04 | V1.0 | 2025.3.31 |
| End Cable | FT-10F | V1.0 | 2025.3.31 |
| Baffle Plate | FT-10G | V1.0 | 2025.3.31 |
| Lock Nut | SJ-M22×1.5 (JZ) | V1.0 | 2025.3.31 |
| Copper Sheath | T1-M22X1.5(JZ) | V1.0 | 2025.3.01 |
| Sealing Ring L | TYBVFT OXQ-01 | V1.0 | 2025.3.31 |
| Grounding sign | TYBVFT KT-14 | V1.0 | 2025.3.31 |
| Cylindrical Nut | TYBVFT KT-15 | V1.0 | 2025.3.31 |
| Main Compartment Plate 3 | TYBVFT KT-16 | V1.0 | 2025.3.31 |
| Main Compartment Plate 4 | TYBVFT KT-17 | V1.0 | 2025.3.31 |
| Outlet Plate | TYBVFT KT-18 | V1.0 | 2025.3.31 |
| Wiring Compartment Plate 3 | TYBVFT KT-19 | V1.0 | 2025.3.31 |
| Wiring Compartment Plate 4 | TYBVFT KT-20 | V1.0 | 2025.3.31 |
| Wiring Compartment Sealing Ring | TYBVFT OXQ-02 | V1.0 | 2025.3.31 |
| Cooling Plate Sealing Ring | TYBVFT OXQ-03 | V1.0 | 2025.3.31 |
| Main Compartment Cover Plate Flange | TYBVFT KT-21 | V1.0 | 2025.3.31 |
| Wiring Compartment Cover Plate Flange | TYBVFT KT-22 | V1.0 | 2025.3.31 |
| Main Housing Plate | TYBVFT KT-23 | V1.0 | 2025.3.31 |
| Motor Connection Flange | TYBVFT KT-24 | V1.0 | 2025.3.31 |
| Breather Drain Plug Base | TYBVFT KT-29 | V1.0 | 2025.3.31 |
| Nameplate | TYBVFT NP-01 | V1.0 | 2025.3.31 |
| Wiring Compartment Housing | TYBVFT JXQ-01 | V1.0 | 2025.3.31 |
| Control Unit Housing | TYBVFT KZQ-01 | V1.0 | 2025.3.31 |
| Bearing | SKF30207 | V1.0 | 2025.3.31 |

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|--------------------------------------|---|-------|------------|
| Motor shaft seal | TYBVFT OXQ-04 | V1.0 | 2025.3.31 |
| Technical Document of Epoxy Resin | CZ-01 | V1.0 | 2024.7.05 |
| Technical Document of DMC-801 | CZ-02 | Rev.A | 2024.8.10 |
| Technical Document of Nitrile Rubber | CZ-03 | Rev.A | 2024.9.15 |
| Technical Document of Q355D Steel | XS-02 | Rev.A | 2024.10.16 |
| IECEX test report | IECEX Test report number: CN/CMExC/ExTR25.0032 Testing Laboratory: China National Quality Supervision & Test Center for Explosion-proof and Safety Products for Coal Mine (CMExC) | 00 | 2025.9.30 |

The above-mentioned documents are strictly confidential and they are of only use of authorities. A copy of the documents is saved by A.C.&E. Iberia S.L.

[20]

Certificate History

| Certificate Number | Rev. | Comments | Date |
|--------------------|------|----------------|------------|
| ACE25ATEX043X | 00 | First emission | 04/11/2025 |

Date: 04/11/2025



Advanced Consulting and Engineering Iberia SL

Notified Body No NB3024

Matteo Marconi, CEO

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