

EU-TYPE EXAMINATION CERTIFICATE

- [2] EQUIPMENT OR PROTECTIVE SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 2014/34/EU
- [3] EU-Type Examination Certificate Number: **Presafe 19 ATEX 14799X** **Issue 0**
- [4] Product: **EMT... Series Multi-turn Electric Actuator**
- [5] Manufacturer: **Flowinn (Shanghai) Industrial Co., Ltd.**
- [6] Address: **Building II, No. 598 Kesheng Road,
Nanxiang Town, Jiading District, Shanghai,
201802, P. R. China**
- [7] This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- [8] DNV GL Presafe AS, notified body number 2460, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the 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 reports listed in section 16.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN IEC 60079-0:2018, EN 60079-1:2014 and EN 60079-31:2014.
- [10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to 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 product shall include the following:

 **Ex code, see schedule**

Date of issue:
2020-08-26



Asle Kaastad
For DNV GL Presafe AS
The Certificate has been digitally signed.
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[13] **Schedule**

[14] **EU-Type Examination Certificate No:** Presafe 19 ATEX 14799X Issue 0

[15] **Description of Product**

The EMT... series electric actuator is composed of the mechanical transmission compartment and three flameproof enclosures including an electric control compartment, a motor compartment and a wiring compartment. The whole product meets the requirements of Ex tb also, and the mechanical transmission compartment is relevant to Ex tb only.

There are four basic sizes of the products, the mechanical transmission compartments and the motor compartments are different according to the sizes, and the electric control compartment is different in the type EMT4... compared to other types.

Each motor winding is equipped with two thermal protectors.

Type designation

EMT	□	-	□	-	□	-	□	□	-	□	-	□	-	□
Flange interface: F10A, F10B, F14A, F14B, F16A, F16B, F25A, F25B, F30A, F30B														
Signal code: T3WCG3, K2.2, K9.4, K10.2, K10.2F														
Control unit: S, I, Y, B														
Type of protection: E02														
Color of enclosure: A2, B, G														
Voltage code: d: 220 V a.c. 50 Hz single phase e: 380 V a.c. 50 Hz three phases e1: 380 V a.c. 60 Hz three phases N: 460 V a.c. 60 Hz three phases J2: 220 V a.c. 60 Hz three phases														
Switch type: O, I														
Output speed: 50Hz: 18, 24, 36, 48, 72, 96, 144, 192 60Hz: 21, 29, 43, 57, 86, 115, 173, 230														
Series code: 11, 12, 13, 21, 22, 23, 31, 41, 42, 43 EMT: Product code														

Electrical Data

Rated Voltage:

220 V a.c. 60 Hz, 380 V a.c. 50 Hz/60Hz, 460 V a.c. 60 Hz (three phases, for product types EMT1..., EMT2..., EMT3..., EMT4...) or

220 V a.c. 50 Hz single phase (for product types EMT1..., EMT2..., EMT3...)

Operation Duty:

S2 15 min (for all product types except EMT4... 50Hz T6 version)

S2 10 min (only for T6 temperature class of product type EMT4... 50Hz)

Rated output torque:

220 V a.c. 60 Hz, 380 V a.c. 50 Hz/60Hz, 460 V a.c. 60 Hz, three phases

Product type	Output speed (rpm, for 50Hz/60Hz)							
	18/21	24/29	36/43	48/57	72/86	96/115	144/173	192/230
EMT11...	35 Nm	35 Nm	35 Nm	35 Nm	35 Nm	35 Nm	30 Nm	25 Nm
EMT12...	80 Nm	80 Nm	80 Nm	70 Nm	50 Nm	40 Nm	35 Nm	30 Nm
EMT13...	105 Nm	105 Nm	100 Nm	90 Nm	60 Nm	50 Nm	40 Nm	35 Nm
EMT21...	200 Nm	200 Nm	200 Nm	200 Nm	170 Nm	150 Nm	100 Nm	60 Nm
EMT22...	300 Nm	300 Nm	250 Nm	220 Nm	200 Nm	170 Nm	120 Nm	80 Nm
EMT23...	400 Nm	400 Nm	300 Nm	250 Nm	250 Nm	230 Nm	150 Nm	90 Nm
EMT31...	620 Nm	620 Nm	550 Nm	480 Nm	480 Nm	370 Nm	250 Nm	200 Nm
EMT41...	1050 Nm	1050 Nm	850 Nm	700 Nm	700 Nm	550 Nm	420 Nm	250 Nm
EMT42...	1500 Nm	1500 Nm	1300 Nm	1050 Nm	1050 Nm	750 Nm	650 Nm	550 Nm
EMT43...	2050 Nm	2050 Nm	1750 Nm	1400 Nm	1400 Nm	1050 Nm	880 Nm	750 Nm

220 V a.c. 50 Hz, single phase

Product type	Output speed (rpm)					
	18	24	36	48	72	96
EMT11...	60 Nm	60 Nm	50 Nm	50 Nm	35 Nm	35 Nm
EMT12...	-	120 Nm	100 Nm	80 Nm	50 Nm	50 Nm
EMT21...	150 Nm	150 Nm	130 Nm	100 Nm	50 Nm	50 Nm
EMT22...	-	220 Nm	180 Nm	150 Nm	110 Nm	80 Nm
EMT31...	250 Nm	250 Nm	200 Nm	170 Nm	130 Nm	100 Nm

Ex code

220 V a.c. 60 Hz, 380 V a.c. 50 Hz/60Hz, 460 V a.c. 60 Hz, three phases

Product type	Operation Duty	Ex marking	Ambient temperature	Motor
EMT1... EMT2... EMT3...	S2 15 min	Ⓜ II 2 G Ex db IIC T4 Gb Ⓜ II 2 D Ex tb IIIC T130°C Db	-40°C to +60°C	T4 version
	S2 15 min	Ⓜ II 2 G Ex db IIC T6 Gb Ⓜ II 2 D Ex tb IIIC T80°C Db	-40°C to +60°C	T6 version
EMT4... (50 Hz)	S2 15 min	Ⓜ II 2 G Ex db IIC T4 Gb Ⓜ II 2 D Ex tb IIIC T130°C Db	-40°C to +55°C	T4 version
EMT4... (60 Hz)	S2 15 min	Ⓜ II 2 G Ex db IIC T4 Gb Ⓜ II 2 D Ex tb IIIC T130°C Db	-40°C to +60°C	T4 version
EMT4... (50 Hz)	S2 10 min	Ⓜ II 2 G Ex db IIC T6 Gb Ⓜ II 2 D Ex tb IIIC T80°C Db	-40°C to +50°C	T6 version

220 V a.c. 50 Hz, single phase

Product type	Operation Duty	Ex marking	Ambient temperature	Motor
EMT1... EMT2... EMT3...	S2 15 min	⊕ II 2 G Ex db IIC T4 Gb ⊕ II 2 D Ex tb IIIC T130°C Db	-40°C to +60°C	T4 version

Degrees of protection (IP Code)

IP67 (1 m, 30 min)

IP68 (7 m, 72 h) (The equipment of types EMT1..., EMT2..., EMT3... have been separately tested against the requirements of IEC 60529)

Ambient temperature:

See table of Ex code

Routine tests

- Each unit must be subjected to routine overpressure test of the value as below for at least 10 s according to clause 16 of EN 60079-1.

No.	Unit	Static Overpressure
1	Wiring compartments of all product types	1.2 MPa
2	Electric control compartment of product type EMT4...	2.2 MPa
3	Electric control compartments of product types EMT1..., EMT2..., EMT3...	1.6 MPa
4	Motor compartment of product types EMT1..., EMT2..., EMT3...	1.6 MPa
5	Motor compartment of product type EMT4...	2 MPa

[16] **Report No.:** 2019-9582, Rev. 00
Project No.: PRJC-599851-2019-PRC-CHN

[17] **Specific Conditions of Use**

- Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 3 and 4 of EN 60079-1.
- The mechanical property class of the fasteners which are relevant to the flameproof joint should be at least A2-70 with min. yield stress 450 MPa.
- Before application, separate ATEX certified Ex db IIC Gb or/and Ex tb IIIC Db IP67 cable gland or plug should be incorporated.
- For group III application of fixed installation, the end user shall follow the guidance in the instruction manual to minimize the risk of electrostatic discharge.
- The products must be operated according to class A duty performance as defined in EN 15714-2.
- Do not replace the battery when an explosive atmosphere is present.

[18] **Essential Health and Safety Requirements**

Essential Health and Safety Requirements (EHSRs) are covered by the standards listed at item 9.

[19] **Drawings and documents**

Number	Title	Rev.	Date
ExEMT1-001-1	Explosion-proof Electric Actuator Assembly drawing (5 sheets)	-	2019-10-29
ExEMT11-0108002-1	Motor seat	-	2019-10-29
ExEMT11-0108001-1	Motor housing	-	2019-10-29
ExEMT11-0701001-1	Input copper sleeve	-	2019-10-29
ExEMT10-000-1	EMT1 Series Motor (T4)	-	2019-10-29
ExEMT10-001-1	EMT1 Series Motor (T6)	-	2019-10-29
ExEMT11-0101001-1	Body (4 sheets)	-	2019-10-29
ExEMT11-0401001-1	Staggered gear shaft	-	2019-10-29
ExEMT11-0504001-1	Torque sensing shaft	-	2019-10-29
ExEMT2-001-1	Explosion-proof Electric Actuator Assembly drawing (5 sheets)	-	2019-05-14
ExEMT21-0108002-1	Motor seat	-	2019-05-14
ExEMT21-0108001-1	Motor housing	-	2019-05-14
ExEMT21-0705003-1	Input copper sleeve	-	2019-05-14
ExEMT20-000-1	EMT2 Series Motor (T4)	-	2019-05-14
ExEMT20-001-1	EMT2 Series Motor (T6)	-	2019-05-14
ExEMT11-0101001-1	Body (2 sheets)	-	2019-05-14
ExEMT21-0509002-1	Staggered gear shaft	-	2019-05-14
ExEMT21-0705007-1	Threaded sleeve	-	2019-05-14
ExEMT3-001-1	Explosion-proof Electric Actuator Assembly drawing (5 sheets)	-	2019-10-29
ExEMT31-0903001-2	Motor seat	-	2019-10-29
ExEMT31-1501008-1	Motor housing	-	2019-10-29
ExEMT31-0707001-1	Input bearing sleeve	-	2019-10-29
ExEMT30-000-1	EMT31 Series Motor (T4)	-	2019-10-29
ExEMT30-001-1	EMT31 Series Motor (T6)	-	2019-10-29
ExEMT31-0101001-1	Body (2 sheets)	-	2019-10-29
ExEMT31-0702001-1	Feedback copper sleeve	-	2019-10-29
ExEMT31-0509002-1	Staggered gear shaft	-	2019-10-29
ExEMT31-0102001-4	Control end cover	-	2019-10-29
ExEMT31-0102003-1	Mechanical display end cap	-	2019-10-29
ExEMT31-01020031-1	Display stuffy cover	-	2019-10-29
ExEMT31-0701001-1	Torque shaft sleeve	-	2019-10-29
ExEMT31-0506001-1	Torque sensing shaft	-	2019-10-29
ExEMT31-0714002-2	Sunflower patching panel 2	-	2019-10-29
ExEMT31-0105001-3	Terminal cover	-	2019-10-29
ExEMT31-07130041-1	Battery cover	-	2019-10-29
ExEMT31-0705007-1	Pass line threaded sleeve	-	2019-10-29
ExEMT31-0803001-2	Window glass	-	2019-10-29
ExEMT31-0803002-1	Window glass 2	-	2019-10-29
ExEMT4-001-1	Explosion-proof Electric Actuator Assembly drawing (5 sheets)	-	2019-05-14
ExEMT41-0903001-1	Motor seat	-	2019-05-14
ExEMT41-1501009-1	Large motor housing	-	2019-05-14
ExEMT41-0707001-1	Input copper sleeve	-	2019-05-14
ExEMT41-1304002-1	EMT41 Large Motor (T4)	-	2019-05-14
ExEMT41-13040021-1	EMT41 Large Motor (T6)	-	2019-05-14

ExEMT41-0101001-1	Body (2 sheets)	-	2019-05-14
ExEMT41-0509002-1	Staggered gear shaft	-	2019-05-14
ExEMT41-0102001-3	Control end cover	-	2019-05-14
ExEMT41-0102003-1	Mechanical display end cap	-	2019-05-14
ExEMT41-01020031-1	Display stuffy cover	-	2019-05-14
ExEMT-0809001-1	Nameplate	-	2019-10-29
ExEMT-0809002-1	Warning signs	-	2019-10-29
ExEMT31-0809001-1	Battery Cover Warning Board	-	2019-10-29
ExEMT31-0810001-1	Battery Circuit	-	2019-10-29
EMT31-0811001-1	Fuse holder label	-	2019-10-29

[20] **Certificate History**

Issue	Description	Issue date	Report no.
0	Original issue	2020-08-26	2019-9582, Rev. 00

END OF CERTIFICATE

