

EU-Type Examination Certificate (1)

Equipment or Protective Systems Intended for Use in (2) Potentially Explosive Atmospheres - Directive 2014/34/EU

Type Examination Certificate Number: (3)



TPS 23 ATEX 117594 0012 U Rev. 00

LED driver - Type: MU025HyAQ MB/z and MU035HyAQ MB/z (4) Component:

Manufacturer: Moons' Electric (Taicang) Co., Ltd. (5)

(6)Address: No. 18 Yingang Rd., Taicang Port Economic and Technological

Development Zone, 215400 Taicang, Jiangsu Province,

P.R. China

- This component and any acceptable variation thereto are specified in the schedule to this (7) certificate and the documents therein referred to.
- (8) TÜV SÜD Product Service GmbH certifies that this component 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 the confidential reports with no. 70.520.23.101.03

Compliance with the Essential Health and Safety Requirements has been assured by (9)compliance with:

> EN IEC 60079-0:2018 EN 60079-18:2015 + A1:2017

- (10)The sign "U" placed after the certificate number indicates that the certificate must not be mistaken with a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of equipment or protective system.
- This Type Examination Certificate relates only to the design and construction of the (11)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:



Certification Body,

München, 16.08.2023

Ing. Kristof De Gersem, MSc.

Certificates without signature shall not be valid. The Certificates may only be circulated in full including its schedule(s). Extracts or alterations are subject to approval by TÜV SÜD Product Service GmbH. In case of dispute, the German text shall prevail. The document is administrated under the following number: EX5A 23 117594 0012 Rev. 00







EU-Type Examination Certificate no. (14)

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Certificate History

Revision:	Description:	Report no.:	Issue Date:	
Rev. 00	First issue.	70.520.23.101.03	16.08.2023	

(15)Description of component:

The LED drivers type MU025HyAQ MB/z and MU035HyAQ MB/z are a range of switchmode power supplies with constant current outputs. They are designed as Ex components according to encapsulation "mb" type of protection and intended to be used in zone 1 IIC explosive gas atmosphere. They are applied to be used with LED based luminaries.

See the user instructions for further details.

Model designation:

 $M U \times H y A Q = MB/z$ 1234567 8 9

- Represented as a metal enclosure:
- 2 U: Represented as a wide voltage range; (100-277 Vac or 125-300Vdc)
- 3 x: Can be 025 and 035 to represented rated power. (025 = 25W, 035 = 35W);
- 4 H: Represented Product family code;
- 5 y: Represented output current. (eg.105 means 1.05A);
- Represented as a single output; 6 - A:
- 7 Q: Represented as constant current output mode;
- 8 MB: Represented Explosion proof type;
- 9 z: Can be CP,DALI,AUX, F and CV to represent different functional extension CP = Constant output power

DALI = DALI dimming

AUX = Auxiliary supply

F = Constant output current

CV= Constant output voltage

Warning label:

No warning.

Model difference:

The difference between MU025HyAQ_MB/z and MU035HyAQ_MB/z is the output electric rating.

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Schedule



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Technical data:

For LED Driver Model MU025HyAQ_MB/z:

- AC Ratings: 100 to 277 Vac, 0.4A max, 50/60Hz;
- DC Ratings: 125 to 300 Vdc, 0.4A max;
- Output Ratings: 18 to 48 Vdc, 1050mA max;
- Output power: 25W max;
- Dimming Range: 0-100%;
- Auxiliary Output:12Vdc,300mA or 24Vdc,150mA

For LED Driver Model MU035HyAQ_MB/z:

- AC Ratings: 100 to 277 Vac, 0.6A max, 50/60Hz;
- DC Ratings: 125 to 300 Vdc, 0.6A max;
- Output Ratings: 20 to 100 Vdc, 1050mA max;
- Output power: 35W max;
- Dimming Range: 0-100%;
- Auxiliary Output:12Vdc,300mA or 24Vdc,150mA

Installation instruction:

See installation instructions provided by the manufacturer and part of this certification.

See also (17) Schedule of limitations.

(16)Test report(s): 70.520.23.101.03

Routine tests:

Routine tests on each piece (100%) are required by the manufacturer:

1/ Visual inspections are required according to Clause 9.1 of EN 60079-18:2015. No damage to the compound that could impair the type of protection shall be evident.

2/ A dielectric strength test is required according to Clause 9.2 of EN 60079-18:2015. A dielectric strength test between the driver input and the enclosure/earth, between the driver output and the enclosure/earth, between the driver input and output shall be carried out at (2U_N+1000)V r.m.s, at least min.1500V r.m.s. for at least 1 s without breakdown or arcing occurs during testing. Alternatively, 1.2 times the test voltage may be applied and maintained for at least 100 ms without breakdown or arcing occurs during testing.

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Document List:

File No.	Description	Rev	Date
MSSC-A7768_00A6	Main board SCH	A6	2023.04.19
MSCD-A7768_00.01A5	Main board PCB	A5	2021.04.06
MSCD-A8040_00.02A0	DALI dimming board SCH	A0	2023.04.19
MSCD-A8040_00.01A0	DALI dimming board PCB	A0	2021.04.06
MSCD-A7991_00-09A0	CP control board SCH	A0	2023.04.19
MSCD-A7991_00-01A0	CP control board PCB	A0	2021.04.06
MSCD-A7990_00-05A0	AUX power board SCH	A2	2023.04.19
MSCD-A7990_00-01A2	AUX power board PCB	A2	2021.04.06
MSCD-A7986_00-02A1		A1	
MSCD-A7986_00-03A1	Assembly Drawing	A1	2021.04.07
MSCD-A7986_00-06A1		A1	
MSBD-A7986_00-01A1	Bom list (main test model)	A1	2021.04.07
MSCD-A7986_00-07A0	Bom difference list	A0	2021.04.16
MSCD-A7986_00-01A0	Installation instructions for driver use in explosive atmospheres	A1	2021.07.12
MSCD-A7986_00-01A2	Name Plate	A2	2021.04.07
MSOD-A7986_00-03A1	Outline drawing A	A1	2023.04.19
MSOD-A7986_00-04A1	Outline drawing B	A1	2023.04.19
MSOD-A7986_00-05A1	Outline drawing C	A1	2023.04.19
MSOD-A7986_00-06A1	Outline drawing D	A1	2023.04.19
MSCD-A7768_00-01A1	Enclosure cover drawing A	A1	2023.04.19
MSCD-A7768_00-02A1	Enclosure body drawing A	A1	2023.04.19
MSCD-A7768_00-03A1	Enclosure cover drawing B	A1	2023.04.19
MSCD-A7768_00-04A3	Enclosure body drawing B	А3	2023.04.19
MSCD-A7768_00-05A2	Enclosure cover drawing C	A2 ^	2023.04.19
MSCD-A7768_00-06A1	Enclosure cover drawing D	A1	2023.04.19
MSCD-A7768_00-07A1	Enclosure cover drawing E	A1	2023.04.19
MSCD-A7768_00-08A1	Mylar sheet drawing A	A1	2023.04.19
MSCD-A7768_00-09A2	Mylar sheet drawing B	A2	2021.04.07
MSCD-A7986_00-04A0	Components fault analysist sheet	A0	/
MSCD-A7986_00-09A0	Potting compound process	A0	2021.04.22
MSCD-A7990_00-02A1	Written Attestation of Conformity	A1	2023-4-15

A copy of the full documentation is kept confidentially at TÜV SÜD.

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(14)

Schedule

EU-Type Examination Certificate no.

Product Service

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(17)Schedule of limitations:

- 1. The sign "U" placed after the certificate number indicates that the certificate must not be mistaken with a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.
- 2. LED driver shall be installed in an enclosure that provides a degree of protection not less than IP54, tested in accordance with the requirements of EN IEC 60079-0:2018.
- 3. The LED driver has to be connected to an electrical power supply with a maximum prospective short-circuit current of 1500A.
- 4. The service temperature range (Ts) of the LED driver is -50°C ≤Ts≤+90°C. The "Ts" has to be seen a "tc" as defined in EN 61347-2-13, when the LED driver is built into the end-product this service temperature range shall be within the limits.
- 5. The maximum surface temperature rise of the LED driver casing, tested according to EN IEC 60079-0:2018 and EN 60079-18:2015/A1:2017 is 34.75 K under fault condition. Alternatively, the LED driver may be re-tested by the end-manufacturer in real application, adding a temperature rise ($\triangle T$) to the LED driver temperature casing "tc", between different load conditions and fault condition shown as in below table. The endmanufacturer can choose one of the 2 options.

	30%of	40%of	50%of	60%of	70%of	80%of	90%of	100%of
Load	rated							
conditions	output							
	load							
△T(K)	19.38	16.67	15.24	13.23	11.04	8.35	5.58	2.20

(18)Essential health and safety requirements:

Assured by compliance with standards set out in (9).