IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx TPS 21.0011U**

Certificate history:
Issue 0 (2021-06-17)

Status: **Current**

Issue No: 1

Date of Issue: 2023-08-16

Applicant: **MOONS' Electric (Taicang) Co., Ltd.**
No.18, Yingang Road,
Taicang Port Economic and Technological Development Zone,
Taicang, JiangSu province
China

Ex Component: LED Driver, Types: MU060HyAQ_MB/z and MU100HyAQ_MB/z

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

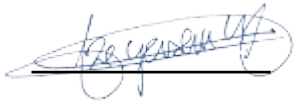
Type of Protection: **Equipment protection by encapsulation"m"**

Marking: Ex mb IIC Gb

Approved for issue on behalf of the IECEx Certification Body: **Ing. Kristof De Gersem, MSc.**

Position: **Technical Certifier**

Signature:
(for printed version)



Date:
(for printed version) **16.08.2023**

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

TÜV SÜD Product Service GmbH
Ridlerstr. 65
D-80339 Munich
Germany

Product Service

IECEx Certificate of Conformity

Certificate No.: **IECEx TPS 21.0011U**

Date of issue: 2023-08-16 Issue No: 1

Manufacturer: **MOONS' Electric (Taicang) Co., Ltd.**
No.18, Yingang Road,
Taicang Port Economic and Technological Development Zone,
Taicang, JiangSu province
China

Manufacturing locations: **MOONS' Electric (Taicang) Co., Ltd.**
No.18, Yingang Road,
Taicang Port Economic and
Technological Development Zone,
Taicang, JiangSu province
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The component and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-18:2017 Explosive atmospheres - Part 18: Protection by encapsulation "m"
Edition:4.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the component listed has successfully met the examination and test requirements as recorded in:

Test Report:

DE/TPS/ExTR21.0014/01

Quality Assessment Report:

US/UL/QAR22.0014/01

IECEx Certificate of Conformity

Ex Component(s) covered by this certificate is described below:

Description of component:

The LED drivers type MU060HyAQ_MB/z and MU100HyAQ_MB/z are a range of switch-mode power supplies with constant current outputs. They are designed as Ex components according encapsulation “mb” type of protection. They are applied to be used with LED based luminaries.

See the user instructions for further details.

Model designation:

M U x H y A Q _ MB/z
1 2 3 4 5 6 7 8 9

1 - M: Represented as a metal enclosure;
2 - U: Represented as a wide voltage range;(100-277 Vac or 125-300Vdc)
3 - x: Can be 060 and 100 to represented rated power. (060 = 60W, 100 = 100W);
4 - H: Represented Product family code;
5 - y: Represented output current. (eg.105 means 1.05A);
6 - A: Represented as a single output;
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

Model difference:

The difference between MU060HyAQ_MB/z and MU100HyAQ_MB/z is the output electric rating.

Technical data:

For LED Driver Model MU060HyAQ_MB/z:

- AC Ratings: 100 to 277 Vac, 0.8A max, 50/60Hz;
- DC Ratings: 125 to 300 Vdc, 0.8A max;
- Output Ratings: 20 to 170 Vdc, 1700mA max;
- Output power: 60W max;
- Dimming Range: 0-100%;
- Auxiliary Output:12Vdc,300mA or 24Vdc,150mA

For LED Driver Model MU100HyAQ_MB/z:

- AC Ratings: 100 to 277 Vac, 1.3A max, 50/60Hz;
- DC Ratings: 125 to 300 Vdc, 1.3A max;
- Output Ratings: 20 to 190 Vdc, 2800mA max;
- Output power: 100W max;
- Dimming Range: 0-100%;
- Auxiliary Output:12Vdc,300mA or 24Vdc,150mA

IECEx Certificate of Conformity

Routine tests:

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

1/ Visual inspections are required according to Clause 9.1 of IEC 60079-18:2017. 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 IEC 60079-18:2017. 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 (2UN+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.

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. This partial certification may be used as a basis for certification of an equipment.

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 IEC 60079-0:latest version.

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" which as defined in IEC 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 IEC 60079-0:2017 and IEC 60079-18:2017 is 46.02 K under fault condition. Alternatively, the LED driver may be re-tested by the end-manufacturer in real application, adding a temperature rise (△T) to the LED driver temperature casing “tc”, between different load conditions and fault condition shown as in below table. The end-manufacturer can choose one of the 2 options.

Load conditions	30% of rated output load	40% of rated output load	50% of rated output load	60% of rated output load	70% of rated output load	80% of rated output load	90% of rated output load	100% of rated output load
△T(K)	21.02	17.59	15.37	13.60	12.80	11.16	8.72	5.30

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1

1. The manufacturer name and manufacturing location were changed.
2. Optional materials were added and permitted after evaluation.
3. Components' layout was adjusted near transformer T1.
4. Components for auxiliary function were deleted.