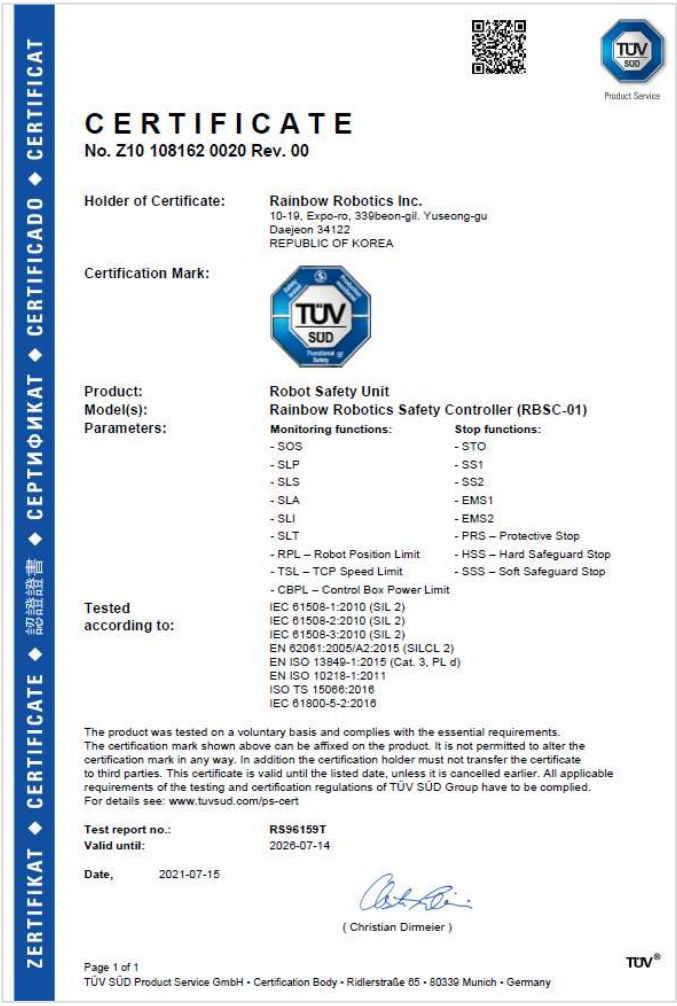
Functional Safety TUV SUD 인증서 (7/15/2021)



ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

CERTIFICATE

No. Z10 108162 0020 Rev. 00

Holder of Certificate: **Rainbow Robotics Inc.**
10-19, Expo-ro, 339beon-gil, Yuseong-gu
Daejeon 34122
REPUBLIC OF KOREA

Certification Mark:

Product: **Robot Safety Unit**
Model(s): **Rainbow Robotics Safety Controller (RBSC-01)**
Parameters:

Monitoring functions:	Stop functions:
- SOS	- STO
- SLP	- SS1
- SLS	- SS2
- SLA	- EMS1
- SLI	- EMS2
- SLT	- PRS – Protective Stop
- RPL – Robot Position Limit	- HSS – Hard Safeguard Stop
- TSL – TCP Speed Limit	- SSS – Soft Safeguard Stop
- CBPL – Control Box Power Limit	

Tested according to:
IEC 61508-1:2010 (SIL 2)
IEC 61508-2:2010 (SIL 2)
IEC 61508-3:2010 (SIL 2)
EN 62061:2005/A2:2015 (SILCL 2)
EN ISO 13849-1:2015 (Cat. 3, PL d)
EN ISO 10218-1:2011
ISO TS 15066:2016
IEC 61800-5-2:2016

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the testing and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: **RS96159T**
Valid until: 2026-07-14

Date, 2021-07-15

(Christian Dirmeier)

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- IEC 61508-1: Functional safety of electrical/electronic/programmable electronic safety related systems Part 1: General requirements.
- IEC 61508-2: Functional safety of electrical/electronic/programmable electronic safety related systems Part 2: Requirements for electrical /electronic/programmable electronic safety-related systems.
- IEC 61508-3: Functional safety of electrical/electronic/programmable electronic safety related systems Part 3: Software requirements.
- IEC 62061: Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems.
- ISO 13849-1: Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design.
- ISO 10218-1: Robots and robotic devices — Safety requirements for industrial robots — Part 1: Robots.
- ISO TS 15066: Robots and robotic devices — Collaborative robots.
- IEC 61800-5-2: Adjustable speed electrical power drive systems – Part 5-2: Safety requirements – Functional.

RAINBOW ROBOTICS

Motor Module System RBe-14-30, RBe-17-30, RBe-25-30, RBe-32-20 CE AOC(06/01/2021)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CE

TÜV SÜD Product Service

Attestation of Conformity

No. N8A 108162 0017 Rev. 00

Holder of Certificate: **Rainbow Robotics Inc.**
10-19, Expo-ro, 339beon-gil. Yuseong-gu
Daejeon 34122
REPUBLIC OF KOREA

Product: **Motor, drive-**
(Motor Module System)

Model(s): **RBe-32-20, RBe-25-30, RBe-17-30, RBe-14-30**

Parameters:

Rated input voltage:	48 Vd.c.
Rated input current:	6.47A (RBe-32-20), 5.20A (RBe-25-30), 1.86A (RBe-17-30), 1.38A (RBe-14-30)
Rated output voltage:	29.0V d.c. (RBe-32-20), 29.7V d.c. (RBe-25-30), 21.6V d.c. (RBe-17-30), 27.5V d.c. (RBe-14-30)
Rated output power:	250 W (RBe-32-20), 200 W (RBe-25-30), 60 W (RBe-17-30), 50 W (RBe-14-30)
Protection class:	III
Thermal classification:	Class 130(B)

Tested according to: EN 61800-5-1:2007/A1:2017

This Attestation of Conformity is issued on a voluntary basis according to the Low Voltage Directive 2014/35/EU relating to electrical equipment designed for use within certain voltage limits. It confirms that the listed equipment complies with the principal protection requirements of the directive and is based on the technical specifications applicable at the time of issuance. It refers only to the particular sample submitted for testing and certification. For details see: www.tuvsud.com/ps-cert

Test report no.: MAEB01162821

Date, 2021-06-01

(Harry Kwon)

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After preparation of the necessary technical documentation as well as the EU declaration of conformity the required CE marking can be affixed on the product. The declaration of conformity is issued under the sole responsibility of the manufacturer. Other relevant EU-directives have to be observed.

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TÜV®

- EN 61800-5-1: Adjustable speed electrical power drive systems – Part 5-1: Safety requirements - Electrical, thermal and energy.
- LVD : Low Voltage Directive(2006/95/EC), 대상품목은 AC 50~1000V, DC 75~1500V 범위의 전압을 사용하는 모든 전기, 전자기기류.

RAINBOW ROBOTICS

Motor Module System RBe-14-30, RBe-17-30, RBe-25-30, RBe-32-20 NRTL(06/24/2021)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

CERTIFICATE

No. U8U 108162 0018 Rev. 00

Holder of Certificate: **Rainbow Robotics Inc.**
10-19, Expo-ro, 339beon-gil, Yuseong-gu
Daejeon 34122
REPUBLIC OF KOREA

Certification Mark:

Product: **Motor, drive-**
(Motor Module System)

Model(s): **RBe-32-20, RBe-25-30, RBe-17-30, RBe-14-30**

Parameters:

Rated input voltage:	48 Vd.c.
Rated input current:	6.47A (RBe-32-20), 5.20A (RBe-25-30), 1.86A (RBe-17-30), 1.38A (RBe-14-30)
Rated output voltage:	29.0V d.c. (RBe-32-20), 29.7V d.c. (RBe-25-30), 21.6V d.c. (RBe-17-30), 27.5V d.c. (RBe-14-30)
Rated output power:	250 W (RBe-32-20), 200 W (RBe-25-30), 60 W (RBe-17-30), 50 W (RBe-14-30)
Protection class:	III
Thermal classification:	Class 130(B)

Tested according to: UL 61800-5-1:2021

This product was voluntarily tested to the relevant safety requirements referenced on this certificate. It can be marked with the certification mark above. The mark must not be altered in any way. This product certification system operated by TÜV SÜD America Inc. most closely resembles system 3 as defined in ISO/IEC 17067. Certification is based on the TÜV SÜD "Testing and Certification Regulations". TÜV SÜD America Inc. is an OSHA recognized NRTL and a Standards Council of Canada accredited Certification body.

Test report no.: MAEA07163021

Date, 2021-06-24

(Harry Kwon)

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RAINBOW ROBOTICS