CERTIFICATE OF COMPLIANCE

Certificate Number	4786952862_20181119
Report Reference	4786952862_20181119_FSCER
Issue Date	2018-11-19
Issued to:	ROWAN ELETTRONICA S.r.l. Via Ugo Foscolo 20 Caldogno (VI), Italy - 36030
This is to certify that representative samples of	Power Drive Systems Safety Related: Complete Drive Modules of C350 and C400 / C700 Series with separate STO board (BROWAN_STO.A)

Have been investigated by UL in accordance with the Standards indicated on this Certificate.

Standard(s) for Safety:

IEC 61800-5-2: 2007, "Adjustable Speed Electrical Power Drive Systems - Part 5-2: Safety Requirements - Functional", 1st Edition

IEC 61508: 2010, "Functional safety of electrical/electronic/programmable electronic safety-related systems", 2nd Edition

ISO 13849-1&2: 2006/2009, "Safety of machinery - Safety-related parts of control systems", 2nd Edition

IEC 62061:2015, "Safety of machinery – Functional safety of safety-related electrical, electronic and programmable electronic control systems" – 1.2 Edition

Bruce A. Mahrenholz, CPO Director, North American Certification Programs

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

CERTIFICATE OF COMPLIANCE

Certificate Number	4786952862_20181119
Report Reference	4786952862_20181119_FSCER
Issue Date	2018-11-19

Additional Information:

This design is based on put at disposition of the machine builder the IGBTs control energy the removing of which assures PWM cannot be anymore generated in inverter output stage so the integrity level of the system depends by the integrity level of the opening interface.

In this sense: “Safe Torque Off (STO)” as defined by IEC 61800-5-2 complies with the requirements for the following functional safety ratings:

- Up to SIL 3, as defined by IEC 61508, 2nd Edition, isssued 2010

- Up to SIL 3 Capability, as defined by IEC 61800-5-2, 1st Edition, issued 2007

- Up to PL e, category 4 as defined by ISO 13849-1, 2nd Edition, issued 2006

- Up to SIL Claim Limit 3 as defined by IEC 62061, 1.2 Edition, issued 2015

The product must be installed, operated, and maintained, in accordance with the instructions for use.

Bruce A. Mahrenholz, CPO Director, North American Certification Programs

UL LLC

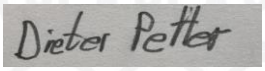
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

CERTIFICATE OF COMPLIANCE

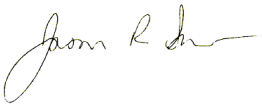
Certificate Number	4786952862_20181119
Report Reference	4786952862_20181119_FSCER
Issue Date	2018-11-19

Please note that the Functional Safety Certificate (in accordance with UL's product category FSCO) will not imply that UL has Listed, Classified or Recognized the product nor will the attached Report authorize the use of Listing, Classification, or Recognition Marks or other references to UL, on these products.

Reviewed by:



Dieter Petter
Project Engineer



Jason R. Smith
Principal Engineer

Bruce A. Mahrenholz, CPO Director, North American Certification Programs

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus