CERTIFICATE OF COMPLIANCE

Certificate Number	4788489829_20181115
Report Reference	4788489829-20181115-DescriptionFS
Issue Date	2018-11-15
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 Driver Board B402S.E (PWB Code CS402S.G16.)

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

Standard(s) for Safety:

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

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

ISO 13849-1 Safety of machinery - Safety related parts of control systems Part 1: General principles for design - Edition 3 - Issue Date 2015/12/15

ISO 13849-2 Safety of machinery – Safety related parts of control systems Part 2: Validation - Edition 2 - Issue Date 2012/10/15

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

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	4788489829_20181115
Report Reference	4788489829-20181115-DescriptionFS
Issue Date	2018-11-15

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, 3rd Edition, issued 2015

- 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

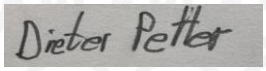
Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

CERTIFICATE OF COMPLIANCE

Certificate Number	4788489829_20181115
Report Reference	4788489829-20181115-DescriptionFS
Issue Date	2018-11-15

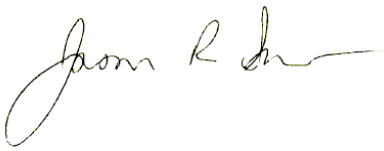
Please note that the Functional Safety Certificate (in accordance with UL's product category FSCO) will not imply that UL has Listed, Classified or Recognized the product nor will the attached Report authorize the use of Listing, Classification, or Recognition Marks or other references to UL, on these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

Reviewed by:



Dieter Petter
Project Engineer

Peter Loelkes
Engineering Leader



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