

CERTIFICATE OF CONFORMITY



- HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
- Certificate No:** FM16US0055X
- Equipment:** MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX, MC-EX-Barrier2 and MC-EX-RX-CD-TRX series
(Type Reference and Name)
- Name of Listing Company:** Cavotec USA Inc
- Address of Listing Company:** 333 Oates Rd
Mooresville NC 28117
United States
- The examination and test results are recorded in confidential report number:
3055083 dated 17th April 2017
- FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:
FM Class 3600:2011, FM Class 3610:2015, ANSI/ISA 60079-0:2013 (12.00.01),
ANSI/ISA 60079-11:2014 (12.02.01)
- If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
- This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

Certificate issued by:

J. E. Marquedant
Manager, Electrical Systems

17 April 2017

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

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SCHEDULE



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10. Equipment Ratings:

MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX

Intrinsically Safe Portable Apparatus for use in Class I, Division 1, Groups C & D; Intrinsically Safe Portable Apparatus Ex ib for use in Class I, Zone 1, Group IIB hazardous locations with an ambient temperature rating of -20 °C to 60 °C.

MC-EX-Barrier2

Associated Apparatus for connection to Class I, Division 1, Groups C & D and Class I, Zone 0, Group IIB hazardous locations with an ambient temperature rating of -30 °C to 40 °C.

MC-EX-RX-CD-TRX. EX Radio Module

Associated Apparatus for connection to Class I, Division 1, Groups C & D and Class I, Zone 0, Group IIB hazardous locations with an ambient temperature rating of -30 °C to 60 °C

11. The marking of the equipment shall include:

MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX

Class I Division 1, Groups C, D; T3 Ta = -20 °C to 60 °C, T4 Ta = -20 °C to 45 °C
Class I, Zone 1, AEx ib T3 Ta = -20 °C to 60 °C, T4 Ta = -20 °C to 45 °C

MC-EX-Barrier2

Associated Apparatus Class I Division 1, Groups C, D; Ta = -30 °C to 40 °C
Class I, Zone 0, AEx [ia] Ta = -30 °C to 40 °C

MC-EX-RX-CD-TRX. EX Radio Module

Associated Apparatus Class I Division 1, Groups C, D; Ta = -30 °C to 60 °C
Class I, Zone 0, AEx [ia] Ta = -30 °C to 60 °C

12. **Description of Equipment:**

General - The MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX, MC-EX-Barrier2 and MC-EX-RX-CD-TRX are radio control system components designed for industrial crane applications requiring intrinsic safety.

Construction - The MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX, MC-EX-Barrier2 and MC-EX-RX-CD-TRX are radio control system components designed for industrial crane applications requiring intrinsic safety. All communications to a remote crane, hoist, or trolley is via RF signals or via cable when the MC-EX-Barrier2 is used. The MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX, MC-EX-Barrier2 and MC-EX-RX-CD-TRX series Transmitter electronic enclosure is made of plastic. The MC-3-5 EX, MC-3-6 EX, MC-3200 EX, and MC-3300 EX has a two-cell rechargeable Lithium-Ion battery. The MC-EX-Barrier2 is a DIN mounted barrier designed to transmit to the cabled version of the MC-3-5 EX, MC-3-6 EX, MC-3200 EX, and MC-3300 EX that do not have an internal battery.

Ratings - Radios are rated for use in an ambient temperature range of -20°C to +60°C.

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MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX. Handheld Radio Control Transmitter.

Model Ta.b-c3*-d-e.f.g.h.i.j

Where:

- a = Enclosure; 02, 04, 06, 08, 22, 24, 26, 28
- b = EX/non-EX; 1
- c = Approval; Any
- d = Application; All except 02
- e = Safety; 99
- f = Main electronics; 04
- g = Radio; 527, 557
- h = Power supply; 50, 52, 54
- i = Market; 01, 02, ah
- j = Extension modules; 01, 02, 03, 04, 05, 06

MC-EX-Barrier2. Barrier.

MC-EX-RX-CD-TRX. EX Radio Module

13. **Specific Conditions of Use:**

MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX

- 1 Shall only be used with Lithium Ion rechargeable battery pack identified as Cavotec USA Inc part number MC-EX-BATTERY3 UL Z0 Battery.
- 2 The specific accessories and options that may be used with the above radios are listed within the Cavotec USA Inc's manual MAN-11-004.
- 3 Do not replace battery pack when an explosive gas atmosphere is present.
- 4 Recharging of the Lithium Ion rechargeable battery pack shall only be performed in an ordinary location with a maximum ambient temperature of +40 °C.
- 5 The cable version of the MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX shall only be used with barrier identified as Cavotec USA Inc part number MC-EX-Barrier2.
- 6 The cable version of the MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX shall not use used with the Lithium Ion rechargeable battery pack identified as Cavotec USA Inc part number MC-EX-BATTERY3 UL Z0 Battery. Battery and cable shall not be used simultaneously.

MC-EX-Barrier2. Barrier.

- 1 The installation the MC-EX-Barrier must be in accordance with the National Electrical Code, NFPA 70, Articles 504 and 505, ANSI/ISA-RP12.06.01
- 2 MC-EX-Barrier2 shall be mounted within a tool secured enclosure.
- 3 The specific accessories and options that may be used with the above barrier are listed within the Cavotec USA Inc's manual MAN-11-004.
- 4 The MC-EX-Barrier2 maximum unclassified location voltage, U_m , is 125 V.
- 5 The MC-EX-Barrier2 maximum resistance form IS ground to grounding electrode shall be less than 1 ohm.
- 6 The cable version of the MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX shall only be used with barrier identified as Cavotec USA Inc part number MC-EX-Barrier2.
- 7 The cable version of the MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX shall not use used with the Lithium Ion rechargeable battery pack identified as Cavotec USA Inc part number MC-EX-

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BATTERY3 UL Z0 Battery. Battery and cable shall not be used simultaneously.

MC-EX-RX-CD-TRX. EX Radio Module.

- 1 The installation the MC-EX-RX-CD-TRX must be in accordance with the National Electrical Code, NFPA 70, Articles 504 and 505, ANSI/ISA-RP12.06.01
- 2 MC-EX-RX-CD-TRX shall be mounted within a tool secured enclosure.
- 3. The specific accessories and options that may be used with the above barrier are listed within the Cavotec USA Inc's manual MAN-11-004.
- 4 The MC-EX-RX-CD-TRX maximum unclassified location voltage, U_m , is 60 V.

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
17 th April 2017	Original Issue.

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