

# Certification of

# EXPLOSION PROTECTED ELECTRICAL EQUIPMENT

ANZEx Scheme

## Certificate of Conformity

Certificate No: **ANZEx 12.2000** Issue: **0** **20 January 2012** **Original Issue**  
Issue: **1** **16 July 2013** **Modifications**

Applicant: **CAVOTEC MICRO-CONTROL AS**  
**Gevinglia 112**  
**7517 Hell**  
**Norway**

Electrical Equipment: **Radio Remote Control unit**

Type of Protection and Marking Code: **Terminal unit: Ex ia I Ma Ta: -30°C to +60°C**  
**Barrier: [Ex ia Ma] I -30°C to +70°C**  
**ANZEx 12.2000**

Manufactured by: **CAVOTEC MICRO-CONTROL AS**  
**Gevinglia 112**  
**7517 Hell**  
**Norway**

The certification database located at <http://www.anzex.com.au> shows the currency of this certificate.

Issued by:



**Safety in Mines, Testing and Research Station**  
2 Smith Street, REDBANK QLD 4301, Australia  
Postal Address: PO Box 467, GOODNA QLD 4300, Australia  
Phone: + 61 7 3810 6381 Fax: + 61 7 3810 6366



[www.jas-anz.org/register](http://www.jas-anz.org/register)

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This certificate is granted subject to the conditions as set out in Standards Australia/Standards New Zealand P-008 Ex Mark Management Committee Publication MP87.1.

The electrical apparatus 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:

<b>IEC 60079-0: 2007</b>	<b>Explosive atmospheres Part 0: Equipment – General requirements</b>
<b>IEC 60079-11: 2006</b>	<b>Explosive atmospheres Part 11: Equipment protection by intrinsic safety “i”</b>

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

The equipment listed has successfully met the examination and test requirements as recorded in

Test Report No. and Issuing Body: **NO/NEM/ExTR10.0018/01, NO/NEM/ExTR10.0018/02, NO/NEM/ExTR11.0009/00, NO/NEM/ExTR11.0009/01, NO/NEM/ExTR11.0002/00, NO/NEM/ExTR11.0002/01, NO/NEM/ExTR11.0002/02; Nemko  
GB/BAS/ExTR10.0211/00; Baseefa**

Quality Assessment Report No. and Issuing Body: **NO/NEM/QAR08.0002; Nemko**

File Reference: **13/0073**



Signed for and on behalf of issuing authority

**A/Director  
Engineering, Testing and Certification Centre**

Position

**16 July 2013**

Date of issue

This certificate is not transferable, remains the property of the issuing body and must be returned in the event of its being revoked or not renewed.

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## Schedule

Equipment:

The Radio Remote Control Unit comprises Terminal Unit Types MC-3-5 EX, MC-3-6 EX, MC-3200 EX, MC-3300 EX and Zener Barrier Type MC-EX-BARRIER2. The Terminal unit is located in the hazardous area and the zener barrier in the safe area. The apparatus is designed to communicate by radio or cable. The terminal unit is powered by battery when the communication is by radio. When the system communicates by cable, the zener barrier, MC-EX-BARRIER2 is used in the base unit. The barrier is only for use with the Cavotec Radio Remote Control unit. The battery pack may be replaced in a hazardous area, however, the battery can only be charged in a non-hazardous locations with defined Cavotec MC-3-6 charger. The MC-3-6 EX and the MC-3300 EX have 2 battery compartments but only one can be used. Dual battery operation is only an option for the non-Ex terminals.

This supplementary certificate covers the following:

- Change of battery and protection circuit.
- Type name of plastic material of Terminal Unit changed.
- Inclusion/replacement of types of encapsulation used.
- Change of Barrier pcb copper thickness.
- Ambient temperature range of Barrier expanded.
- Change of parameters for Barrier.
- Antenna description added to the additional information.
- Marking change.

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Page 3 of 7

This certificate and schedule is not to be reproduced except in full

COC-038 Rev.2

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Certificate No.: **ANZEx 12.2000**  
Issue: **1**  
Date of Issue: **16 July 2013**

Drawings:

**Drawings associated with this issue:**

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
BOM-97-006 (4 sheets)	Bill of materials for MC-EX-PM	8	2012-06-11
SCH-97-009 (2 sheets)	Schematic for MC-LCD	3	2009-05-29
SCH-05-008 (3 sheets)	Schematic MC-EX-BATTERY3	4	2012-12-07
M5/M9-2003-3691	Terminal top MC-3-6	E	2012-07-19
M5/M9-2003-3692	Terminal bottom MC-3-6	F	2012-07-19
M5/M9-2003-3202 (3 sheets)	Chassis bottom MC-3200 with inserts and gasket	D	2012-08-22
M5/M9-2003-3392 (3 sheets)	MC-3300 Chassis bottom with inserts and gasket	E	2012-08-22
M5/M9-2003-3201 & M5-2003-3211 (3 sheets)	Chassis top MC-3200	C	2012-08-22
M5/M9-2003-3301 & M5-2003-3311 (3 sheets)	MC-3300 Chassis top with inserts	C	2012-08-22
SP-03-021 (3 sheets)	Procedure for encapsulation of EX components	7	2012-09-26
TP-10-001 (12 sheets)	Test Procedure for MC-EX-BARRIER2	5	2012-07-23

(Drawings continued next page)

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
SP-10-013 (6 sheets)	Module specification MC-EX-BARRIER2	9	2013-05-28
LAY-09-003 (16 sheets)	Layout MC-EX-BARRIER2	4	2012-06-15
MAN-11-004 (17 Sheets)	MC-3 Series EX Instruction Manual	2	2012-10-18

## Drawings associated with Issue 0:

Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
TN-11-021 (2 sheets)	Safety control drawing	1	2011.09.19
BOM-97-006 (4 sheets)	Bill of materials for MC-EX-PM	7	2009-09-22
LAY-97-006 (15 sheets)	Layout for MC-EX-PM	5	2009-05-20
SCH-97-006 (3 sheets)	Schematic for MC-EX-PM	6	2009-05-26
LAY-96-004 (18 sheets)	Layout for MC-TX-KB-2	6	2009-05-28
LAY-07-003 (18 sheets)	Layout MC-TX-KB4	4	2009-06-24
SCH-96-004 (7 Sheets)	Schematic MC-TX-KB-2	6	2009-05-28
SCH-07-007 (7 Sheets)	Schematic MC-TX-KB4	3	2009-06-24
BOM-97-009 (2 sheets)	Bill of materials for MC-LCD	4	2009-05-28

(Drawings continued next page)

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
LAY-97-009 (7 sheets)	Layout for MC-LCD	3	2009-05-29
LAY-02-003 (9 sheets)	Layout for MC-LCD2	2	2009-05-29
SCH-02-009 (3 sheets)	Schematic for MC-LCD2	2	2009-05-29
LAY-06-001 (8 sheets)	Layout MC-EX-BATTERY3	2	2009-05-29
SCH-05-008 (3 sheets)	Schematic MC-EX-BATTERY3	3	2009-09-22
LAY-07-004 (13 sheets)	Layout MC-CD-PLL	6	2009-06-09
SCH-07-003 (4 sheets)	Schematic MC-CD-PLL	11	2010-10-11
M5/M9-2003-3691	Terminal top MC-3-6	D	2010-06-08
M5/M9-2003-3692	MC36 Bottom	D	2010-06-08
TD-11-001	MC-3-6-EX	02	2012.01.12
mc 3-6 nemko (8 sheets)	MC 3-6 NEMKO	A	2011-01-07
LAY-07-005 (17 sheets)	Layout MC-CD-TRX	5	2011-05-25
SCH-07-004 (4 sheets)	Schematic MC-CD-TRX	12	2011-05-26
SCH-09-007 (4 sheets)	Schematic MC-EX-BARRIER2	9	2010-11-08

(Drawings continued next page)

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Drawing No.	Drawing Title	Revision No.	Drawn/ Revision Date
LAY-09-003 (15 sheets)	Layout MC-EX-BARRIER2	3	2010-04-28
TD-07-039	M9-2003-3536 MC 3-5 EX Bottom Housing	1	19.09.2007
TD-07-040	M9-2003-3502 MC 3-5 EX Top Housing	1	19.09.2007
M5/M9-2003-3202 (3 sheets)	MC-3200 Chassis bottom with inserts and gasket	B	2010-06-10
M5/M9-2003-3392 (3 sheets)	MC-3300 Chassis bottom with inserts	C	2011-05-31
M5/M9-2003-3201 & M5-2003-3211 (3 sheets)	MC-3200 Chassis top with inserts	B	2010-06-10
M5/M9-2003-3301 & M5-2003-3311 (3 sheets)	MC-3300 Chassis top with inserts	B	2010-06-08
SP-10-013 (5 sheets)	Module specification MC-EX-BARRIER2	6	2012-01-12
TN-11-027 (5 sheets)	Connection of the MC-EX-Barrier2	1	2011-11-03
MAN-11-004 (17 Sheets)	MC-3 Series EX Instruction Manual	1	2012-01-12

## Additional Information:

The following parameter is associated with the MC-EX-BARRIER2:

$U_m = 125 \text{ V}$

The base unit has an intrinsically safe output circuit for connection of an antenna cable of 5-10m length. An antenna placed directly at the base unit or connected via an antenna cable is not part of the certified apparatus but may be used under the concept of IEC 60079-11 clause 5.7 "Simple apparatus".

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