



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx PRE 17.0038

Issue No: 0

Certificate history:

[Issue No. 0 \(2017-11-14\)](#)

Status: **Current**

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Date of Issue: **2017-11-14**

Applicant: **Cavotec Micro-control AS**  
Gevinglia 112  
7517 Hell  
**Norway**

Equipment: **Radio remote control terminal unit**

*Optional accessory:*

Type of Protection: **ia**

Marking:

Terminals	Ex ia I Ma
Terminals	Ex ia IIB T4/T3 Gb
Radio module	[Ex ia Ma] I
Radio module	[Ex ia Ga] IIB

See "ambient temperature" below for details.

*Approved for issue on behalf of the IECEx  
Certification Body:*

Asle Kaastad

*Position:*

Certification Manager

*Signature:  
(for printed version)*

*Date:*

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](#).

Certificate issued by:

**DNV GL Nemko Presafe AS**  
Veritasveien 3  
1363 Høvik  
Norway





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Manufacturer: **Cavotec Micro-control AS**  
Gevinglia 112  
7517 Hell  
**Norway**

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

## STANDARDS:

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:

**IEC 60079-0 : 2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-11 : 2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

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

## TEST & ASSESSMENT REPORTS:

*A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in*

Test Report:

[NO/PRE/ExTR17.0033/00](#)

Quality Assessment Report:

[NO/NEM/QAR08.0002/08](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The Radio Remote Control comprises a portable terminal unit for use in the hazardous location. The system is designed to communicate by radio or cable. When the system communicates by radio, a battery is placed in the terminal unit and supplies it with power. When the system communicates by cable, a zener barrier is used (IECEX NEM 10.0017X or IECEX PRE 15.0067X). Charging of battery must take place in non-classified location. The Base unit is connected to a machine/PLS (for use in non-classified locations). The radio module MC-EX-RX-CD-TRX in the base unit has an intrinsically safe output for connection of an antenna cable and antenna. 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 5.4 "Simple Apparatus".

The Radio module, MC-EX-RX-CD-TRX, shall be installed in an enclosure of minimum IP20.

The terminals don't satisfy the Ga requirements for avoiding electrostatic charging of some parts of the non-metallic surface of the enclosure. Therefore EPL Gb. The electronics satisfies "ia" requirements.

Type designation:

Terminals: MC-3200 EX and MC-3300 EX

Radio module: MC-EX-RX-CD-TRX

Electrical safety parameters:

Base unit with MC-EX-BARRIER2: Um: 125V

Base unit with MC-EX-BARRIER3: Um: 250V

MC-EX-RX-CD-TRX (LMD-400)		
Um: 60V		
	Group I	Group IIB
Uo:	5,88V	
Io:	2,13A	
Po:	3,13W	
Co:	565,1µF	565,1µF
Lo:	99µH	27µH
Lo/Ro	45,6µH/Ω	

  

MC-EX-RX-CD-TRX (STD-302S)		
Um: 60V		
	Group I	Group IIB
Uo:	5,88V	
Io:	2,13A	



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Po:	3,13W	
Co:	833,5μF	833,5μF
Lo:	100μH	28,8μH
Lo/Ro:	45,6μH/Ω	

MC-3200 EX and MC-3300 EX			
Power input (Terminal J8-3)		Signal RS485 input (Terminal J8-1 and J8-2)	
Ui:	9,3V	Ui:	9,1V
Ii:	2,95A	Ii:	111mA
Pi:	4,77W	Pi:	214mW
Ci:	7,037μF	Ci:	7,037μF
Li:	Negligible	Li:	Negligible

The terminals shall either be powered from the base unit (barriers MC-EX-BARRIER2 or MC-EX-BARRIER3), MC-EX-BATTERY3 or MC-EX-BATTERY3 UL. The electrical safety parameters above are only for IS calculations including cable.

Degrees of protection (IP Code):

IP55 (Terminal unit)

IP4X (Battery pins)

Ambient temperature:

Terminal:

-20°C ≤ Ta ≤ +60°C → T4 (powered by MC-EX-BATTERY3)

-20°C ≤ Ta ≤ +60°C → T3 (powered by MC-EX-BATTERY3 UL)

-20°C ≤ Ta ≤ +45°C → T4 (powered by MC-EX-BATTERY3 UL)

-30°C ≤ Ta ≤ +60°C → T4 (powered by cable)

Base unit and MC-EX-RX-CD-TRX (antenna output): -30°C ≤ Ta ≤ +60°C

**SPECIFIC CONDITIONS OF USE: NO**