



Instruction Manual

Ex-Time 35



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1. Application

The Ex-Time 35 is a radio-controlled clock for use in explosion endangered areas (excluding firedamp endangered underground mining) of zones 1 and 2 in accordance with IEC/CENELEC,

2. Safety references

This operating manual contains information and safety recommendations which must be complied with in order to guarantee safe functioning of the unit under the conditions described.

Please read these instructions very carefully before using the unit.

In case of doubt (for example due to mistakes in the translation), the German operating instructions are valid.

3. Damage and inadmissible operation

Should one suspect that the safety of the equipment is endangered, it must be taken out of service and immediately removed from the explosion endangered area. Precautions must be taken to prevent its unintentional reuse.

We recommend that the unit be returned to the manufacturer for checking.

For example, the safe use could be endangered by:

- visible damage to the outside of the housing
- the unit being subjected to improper strain
- the unit being improperly stored
- the unit being damaged in transit.
- lettering on the unit being unreadable
- occurrence of malfunctioning
- the permissible limiting values being exceeded

4. Safety regulations

In order to exclude false operation of the unit, its use assumes that the user is aware of and complies with the usual safety regulations.

The following safety regulations must be complied with:

- the unit must not be opened within the explosion endangered area.
- the batteries may only be changed outside the explosion endangered area.
- only type approved batteries may be used.

5. Ex data



EG Test approval: TÜV 01 ATEX 1712
EG designation: II 2 G EEx ia IIC T4

Approved for Zone 1, equipment group II, gas group C explosion endangered gases, vapour or fog, temperature class T4

6. Technical details

Environmental temperature Ta: -20 ... +40°C
Storage temperature: -20 ... +50°C

Batteries: LR14 as per IEC
VARTA Alkaline
Electric Power
No. 8014

Current consumption: 160 µA
Battery life: approx. 5 years
Receiver frequency: 77.5 kHz
(long waves)

Transmitter range:	approx. 1500 km from Frankfurt a. Main.
Time comparison with transmitter:	12 times per day
Dimensions:	350 x 70 mm
Weight:	approx. 1500 g
CE designation:	CE 0102

7. Operating instructions

7.1 Introduction

The Ex-Time 35 explosion-protected radio-controlled clock receives time telegrams from the DCF 77 official German 77.5 kHz long wave transmitter located in Mainflingen (near Frankfurt am Main) which in turn receives the exact time from the caesium time standard at the Physikalisch-Technisch Bundesanstalt (PTB) in Braunschweig. This time standard is so precise that a deviation of 1 second can be expected in 1 million years. The Ex-Time 35 automatically receives this time as well

as the change from summer to winter time and vice-versa. This ensures that it is always correct.

Should the DCF 77 transmissions be interrupted, an integrated quartz time-base ensures that the Ex-Time continues with the accuracy of a quartz clock.

7.2 Battery change

To replace the battery, first remove the cover at the back of the radio-controlled clock. This is done by removing the six screws. After changing the battery, the cover is to be replaced and the screws tightened.

7.3 Commissioning

Insert a battery (Type LR14 – see technical details) ensuring that the polarity is correct. The clockwork automatically goes to either 4, 8 or 12 o'clock and then starts receiving. After receiving a time signal from DCF 77 and processing it (max. 2 minutes), the correct time will be automatically set.

The location of the clock should not be changed during the reception procedure. Should the clock not receive a sufficiently strong signal, it will stay still and make another attempt after 2 hours. In this case a new position for the clock should be found. Before doing

this, remove the battery for about 1 minute and then replace it in the battery compartment.

7.4 Installation instruction

The Ex-Time 35 should be securely attached to a wall. It should be ensured that it cannot fall down unintentionally in zone 0.

7.5 Possible sources of interference

- equipment without radio suppression.
- machines with stray HF fields.
- at distance of more than 1500 km from the transmitter, it is possible, that because of the special propagation characteristic of long waves, topographical and meteorological conditions could affect reception.

8. Repairs

Should repairs be necessary, then the conditions of ELEX V. must be complied with. We recommend that repairs be carried out in the manufacturer's factory as it is necessary for the unit to be checked for technical safety reasons.

9. Cleaning and maintenance

The unit should only be cleaned with a moist cloth or sponge. Detergents or abrasive materials should not be used.

We recommend that the function and sensitivity of unit be checked every two years by the manufacturer.

10. Guarantee and liability

For this product, the *ecom instruments GmbH* guarantees the function and workmanship of the equipment under normal operating and maintenance conditions for a period of one year commencing from the date of delivery .

This guarantee does not apply to products which are improperly used, modified, neglected, damaged in accidents or exposed to abnormal operating conditions or improper handling.

Claims under the guarantee can be made by returning the defective equipment to the factory. We reserve the right to repair, renew the settings or exchange the device.

The above-mentioned guarantee conditions are the sole and only right of the purchaser to compensation, are exclusively valid and replace all other contract or legal warranty obligations. The *ecom instruments GmbH* accepts no responsibility for special, direct, indirect, accompanying or consequential damage as well as losses including the loss of data which may arise through the use or acquisition of the equipment. *ecom instruments GmbH* will not be responsible for any special or consequential damage which may occur independent of whether it was caused by violation of the warranty obligation, lawful or unlawful action, action in good faith or any other action.

If in certain countries, the limitation of a legal guarantee as well as the exclusion or limitation of accompanying or consequential damage is not permissible, it may be that the above-mentioned limitations and exclusions are not valid for every purchaser. Should such clauses of these guarantee terms be declared to be void or not realisable by a competent court, the effectiveness or enforceability of any one of the other conditions of these guarantee terms will be unaffected by the court decision.

11. Declaration of EC-Conformity

We ***ecom instruments GmbH - Industriestrasse 2 D-97959 Assamstadt*** hereby declare in sole responsibility, that our product Ex-Time 35 which is the subject of this declaration, complies with the conditions of the following EG guidelines (including all relevant changes):

94/9/EG	Equipment and protective systems in explosion-endangered areas
89/336/EWG	Electromagnetic compatibility

and with the following standards:

EN 50014:1997	Electrical apparatus for potentially explosive atmospheres General requirements
EN 50020:1994	Electrical apparatus for potentially explosive atmospheres Intrinsic safety „i“

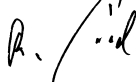
EN 50081-1:1993 Electromagnetic compatibility (EMC) Generic emission standard

EN 50082-1:1997 Electromagnetic compatibility (EMC) Generic immunity standard

EN 55022:2001 Information technology equipment, Radio disturbance characteristics, Limits end methods of measurement


ecom instruments GmbH
Assamstadt, 13.11.2001

Rolf Nied
Managing Director



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12. EG type approval



Translation
EC TYPE-EXAMINATION CERTIFICATE


(1) **EC TYPE-EXAMINATION CERTIFICATE**

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 94/9/EC


(3) EC-Type Examination Certificate Number 

TÜV 01 ATEX 1712

(4) Equipment: Explosion-proof radio wall clock type Ex-Time 35
 (5) Manufacturer: ECOM Rolf Nied GmbH
 (6) Address: D-97060 Assamstadt, Industriestra. 2
 (7) This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
 (8) The TÜV IngenieurService-Anstalt e.V., TÜV CERT-Certification Body, notified body number N° 0031 in accordance with Article 9 of the Council Directive of the EC of March 23, 1986 (94/9/EC), certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
 The examination and test results are recorded in the confidential report N° 01 FX 10410.
 (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
 EN 50 014: 1997 EN 50 025: 1994
 (10) If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.
 (11) This EC-type examination certificate relates only to the design and construction of the specified equipment or protective systems according to Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and placing on the market of this equipment or protective system.
 (12) The marking of the equipment or protective system must include the following:



2 G EEx ia IIC T4



Hanover, 2001-09-05

TÜV IngenieurService-Anstalt e.V.
TÜV CERT-Certification Body
Am TÜV
D-30559 Hannover
R. Nied
Head of the
Certification Body

This certificate may only be reproduced without any change, schedule included.
Expiry on change and its placed to the TÜV IngenieurService-Anstalt e.V.

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(13) **SCHEDULE**

(14) **EC-TYPE EXAMINATION CERTIFICATE N° TÜV 01 ATEX 1712**

(15) **Description of equipment**

The Explosion-proof radio wall clock type ExTime 35 is intended for the use in hazardous explosive areas, that require category 2 resp. 3 equipment.

Electrical data

Supply (internal battery) U = 1.5 V, battery cell according to IEC LR14

Only batteries successfully type-examined according to Section 10.9 of the EN 50090:1994 are permissible. The manufacturers and the types have to be indicated in the operating instructions. It is only allowed to replace the battery outside of the hazardous area (information plate).

(16) Test documents are listed in the test report No.-01 OPIX 10410.

(17) Special conditions for safe use

none

(18) Essential Health and Safety Requirements

no additional ones



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027B0101 01/02 Änderungen vorbehalten



Instruction manual

Ex-Time 60 A



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Ex-Time 60 A

1. Safety information

This instruction manual contains information and warnings that must be observed for safe operation under the conditions described.

2. Faults and damage

If there are any grounds for believing the unit is no longer safe to use, it must be taken out of service. The safety of the Ex-Time 60 A may be impaired if, for example:

- external damage to the housing is visible, e.g. the glass is cracked
- the unit has not been stored correctly
- the unit has suffered transport damage

3. Safety regulations

When using the intrinsically safe radio-clock Ex-Time 60 A, the appropriate regulations must be observed to avoid incorrect operation of the unit.

Attention:

Unit must not be opened in hazardous areas. Batteries must be changed outside of the hazardous area.

4. Batteries

If you change the battery, make sure that only approved ones are used. Only batteries from ECOM may be used.

Any other batteries are strictly forbidden.

Attention:

The battery must not be removed in the hazardous area.

5. Ex-data

Certificate of conformance: PTB Nr. Ex-96.D.2027
Certification: EEx ia IIC T4

6. Description

The intrinsically safe radio-clock Ex-Time 60 A receives a time signal from the official German time signal transmitter DCF 77, that is in Mainflingen (near Frankfurt), using the frequency of 77,5 kHz. The transmitter gets the exact time from the Cesium time origin of the Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig. This is so accurate, that only after 1 million years a difference of 1 second can be expected. The intrinsically safe radio-clock Ex-Time 60 A tracks this time automatically, as well as the changeover from summer to winter time and vice-versa. Therefore it always shows the true time.

When the DCF 77 station fails an integrated quartz clock ensures that the Ex-Time 60 A works to the accuracy expected of a quartz clock.

separate case with protection class IP 54.

This unit is connected with the radio-clock by using the cable fitted on the unit. Therefore the cable is fed through the gland on the housing of the clock.

The plug is put into the socket on the movement and secured by the help of the nut.

If the cable is longer than needed, it can be wound on the mounting (rear of the clock's face).

8.2 Detect the DCF-reception

In order to find a suitable position with sufficient reception of the DCF-signal the button on the back of the movement beside the LED is pressed. As soon as the receiving unit is taken to a position where the DCF-signal is received, the LED flashes once per second as long as the button is pressed.

7. Specifications

reception: receiver unit with integrated ferrite aerial and radio receiver DCF 77 in a separate housing (protection type IP 54)

frequency: 77,5 kHz (long wave)

broadcasting range: about 1500 km off Frankfurt

self-monitoring: once per hour

average power consumption: < 1 mA

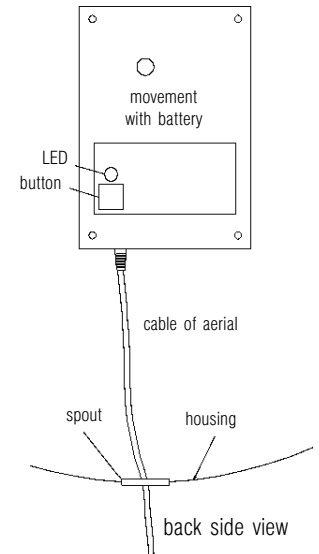
typical battery life: about ten years

operating temperature: -30...+50°C

8. Installation manual

8.1 Assembly of receiving unit and clock

The aerial with integrated DCF-receiver is fitted in a

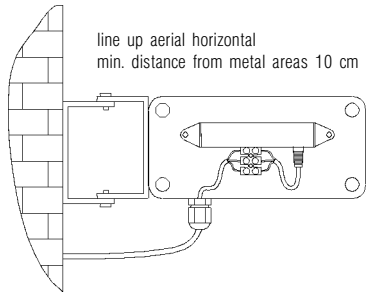


8.3 Wall installation of clock and receiving unit

After detecting a suitable position the receiving unit is mounted with the holder fastened on the housing.

Therefore the writing on the top of the housing has to be observed.

Probably the unit has to be lined up once more before the screws which connect the holder with the housing can be fastened.



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If the LED does not flash or it flashes irregularly, the reception of the DCF-signal is weak and it may cause a non correct function of the unit. In this case the pointers are set to a defined position (5, 9, 11 or 12 o'clock) automatically.

The reception should now be checked again, described in 8.2, and the receiving unit should be mounted at a better place.

10. Repairs

The general terms and conditions of ELEX V apply to repair work. We recommend the repair is carried out by the manufacturer, since the protective circuits must be checked after repair for safety reasons.

11. Guarantee

The material and functionality of the instrument is guaranteed by us for a period of one year from the date of delivery. Claims can be made under guarantee by sending the defective unit to us. We

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In order to mount the radio-clock the enclosed holder has to be fitted clamp down on the wall first. After that the clock can be hanged up with the slit on the top of the housing.

9. Changing the battery

The changing of the battery is necessary when the pointers rest on 12 o'clock. In order to change the battery the cover on the back of the radio-clock has to be removed. Therefore the four screws on the cover have to be unfastened.

After changing the battery the cover has to be refitted again and securely fastened by the help of the screws.

After the changing and the installing of the receiving unit is finished the LED on the back of the movement flashes once per second for a period of approx. 3 minutes if the reception of the DCF-signal is still good enough. At the same time the pointers will be set to the actual time position. This process takes 24 minutes maximum.

reserve the right to repair, recalibrate or replace the unit.

12. Liability

ECOM accepts liability for the provisions of the guarantee. No responsibility is accepted for damage, costs or losses arising from the use or purchase of any special damages that occur or for consequential damages.

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13. Certificate of Conformance

Translation
Physikalisch-Technische Bundesanstalt
(Federal Institute of Physics and Metrology)
Braunschweig and Berlin

CERTIFICATE OF CONFORMITY
PTD No. Ex-96-D-2027

(1) This document has been awarded to the electrical apparatus
Radio Wall Clock Type Ex-Time 60

(2) of the company
ECOM Roll Ned GmbH
D-97959 Assamstadt

(3) The design of this electrical apparatus as well as its different permissible variations are stipulated in the appendix to this certificate of conformity.

(4) The Physikalisch-Technische Bundesanstalt (Federal Institute of Physics and Metrology) declares as a qualified authority according to article 14 of the directive of the European Council dated 18th December 1975 (76/176/EEC) that this electrical apparatus meets the harmonized European standards

Electrical equipment for potentially explosive atmospheres
EN 50 014:1977 + A1, A5, (VDE 0170:1971 Section 11.87) General Terms
EN 50 020:1977 + A1, A2, (VDE 0170:1971 Section 74.92) Inherent Safety "Y"

after the apparatus has successfully passed inspections and tests. The results of the tests are described in the confidential test records.

(7) The apparatus must be equipped with the following marking:
Ex ib IIC T4

(8) The manufacturing company is responsible for the fact that the design of each apparatus specified as per above complies with test records mentioned in the appendix to this certificate and that the prescribed routine check tests have successfully been executed.

(9) The electrical apparatus may bear the common distinctive mark (stated in this certificate) according to appendix 1 of the directive of the European Council dated 08th February 1976 (73/15/EEC).

By Order (Signature) Braunschweig, 21st May 1996
Dr.-Ing. Johannesmeyer
Oberprüfungsrat

(Stamp)

Let customers check a possible official stamp on fields.
Certificates must be received in full.
Exemptions or alterations must finally be approved by the Physikalisch-Technische Bundesanstalt.

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Physikalisch-Technische Bundesanstalt
(Federal Institute of Physics and Metrology)

APPENDIX
to the Certificate of Conformity PTD No. Ex-96-D-2027

The radio wall clock type Ex-Time 60 is designated for application in potentially explosive atmospheres.
The maximum ambient temperature ranges from -30°C up to +50°C.

Electrical data
Supply: 2 primary batteries (IEC LR 30 or 1 Li battery 3x700, U_n 3.6 V)
Batteries are to be replaced only outside potentially explosive atmospheres (information sign).

Test records
signed on
1. Description (4 pages) 08 February 1996
2. Drawing no. G123 5000 0000 0802 0300 08 February 1996
088 60-100 08 February 1996
4603 0200 08 February 1996
W322 000 0000 08 February 1996
B489 3 05 0000 08 February 1996
ESV 104 13 08 February 1996
09060400 13th March 1996

By Order (Signature) Braunschweig 21st May 1996
Dr.-Ing. Johannesmeyer (Stamp)
Oberprüfungsrat

Page 1/1

Confidential Translation
The translation of the official document issued in German language is TRUE, CORRECT and COMPLETE to the best of my knowledge.
Braunschweig, 10th March 1996
Claudia Salomon, Translator (SDU),
Altenstraße 170, 34123 Sarstedt, FRG,
Tel: 07042/32464 - Fax: 07042/34663

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14. EC Declaration of Conformity

Erklärung der EG-Konformität / Declaration of EC-Conformity / Attestation de conformité CE

Wir/We/Nous

ECOM Roll Ned GmbH - Industriestraße 2 - D-97959 Assamstadt

erklären in alleiniger Verantwortung / declare under our sole responsibility / attestons sous notre responsabilité / daß unser Produkt / that the product / qui le produit

Ex-Time 60 A

auf welches sich die Erklärung bezieht / to which this declaration relates / se référant à cette attestation den Bestimmungen der folgenden Richtlinien entspricht / is in accordance with the provision of the following directives / correspond aux dispositions des directives suivantes

89/336/EWG EG-EMV-Richtlinie geändert durch 92/31/EWG und 93/68/EWG

und mit folgenden Normen oder Dokumenten übereinstimmt / and is in conformity with the following standards or other normative documents / est conforme aux normes ou documents normatifs ci dessous

EN 55011 (Funkstörspannung) - Grenzwertkurve B
EN 53022 (Funkstörstrahlung) - Grenzwertkurve B
IEC 801 (Störfestigkeitsprüfung)

ECOM Roll Ned GmbH Assamstadt, 25.05.98

Roll Ned
Managing Director

[Signature]

Physikalisch-Technische Bundesanstalt
(Federal Institute of Physics and Metrology)

IEC APPENDIX
to the Certificate of Conformity PTD No. Ex-96-D-2027

of the company ECOM Roll Ned GmbH
D-97959 Assamstadt

The radio clock is equipped with an external active antenna which can be placed within 25 m from the central unit. There is a plug to type connecting with the central unit.

The type code for this modification will be
Ex-Time 60 A

All other data remain unchanged.

Test records
signed on
1. Supplement to descriptions (3 pages) 20th April 1997
2. Drawing no. 06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997
06660301 20th April 1997

By Order (Signature) Braunschweig, 24th September 1997
Dr.-Ing. Wilhelm
(Stamp)
Rolf Ned Managing Director

Confidential Translation
The translation of the official document issued in German language is TRUE, CORRECT and COMPLETE to the best of my knowledge.
Braunschweig, 10th March 1996
Claudia Salomon, Translator (SDU),
Altenstraße 170, 34123 Sarstedt, FRG,
Tel: 07042/32464 - Fax: 07042/34663

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