999808502 - 11/2024
en-GB

Formwork & Scaffolding.
We make it work.

Concremote calibration box

Original Operating Instructions

Please retain for future reference

Product description

Product presentation

Technical data

Range of use	-20 to +60°C / -4 to +140°F
Accuracy	± 1°C / ± 1.8°F
Battery type	Lithium ion (integral)
Charging time	Up to 24 hours (depending on residual charge, actively controlled). Prior to use, charge fully with the AC adapter supplied (12 V / 1A DC output) in a dry environment.
Battery runtime	up to 4 weeks *)
Measuring interval	10 minutes (default)
Data transmission interval	60 minutes (default)

*) Battery runtime depends on network reception and on measuring and data transmission intervals. Battery status can be monitored on the Concremote web portal.

Concremote calibration-box cube 2.0

98084-816

Shown here without insulating lid

A Cube mould 15x15x15 cm (3)
B Measuring device and battery (1 sensor; installed)
C Insulation (lids, middle parts and bottom covers, 3 each)

Easy calibration of concrete

- Contains measuring device and 3 cube moulds
- Use of standard 15x15x15 cm cube moulds
- For multiple use, with no 'lost' parts
- The Concremote calibration-box cube can be used for concrete mixtures with a maximum aggregate size of 32 mm.

Concremote calibration-box cylinder 2.0

98084-817

Shown here without insulating lid

A Cylinder mould 4x8" (10x20 cm) (6; lost parts)
B Measuring device and battery (1 sensor; installed)
C Insulation (insulating lid, middle part, bottom cover)

Easy calibration of concrete

- Contains measuring device and 6 cylinder moulds for initial calibration.
- Use of standard 4x8" (10x20 cm) cylinder moulds
- With integral drilling template for cylinder moulds
- The Concremote calibration-box cylinder can be used for concrete mixtures with a maximum aggregate size of 25.4 mm (1").

Intended use

Concremote measures concrete & ambient temperatures on site using Concremote sensors. These upload readings by wireless link to a data centre which computes in real-time the concrete strength development against a previously calculated calibration curve.

Suitability of operators

- Filling the calibration box (producing the test specimens) should be carried out by trained persons.
- Only the trained staff of a concrete laboratory may perform the calibration tests.
- The current Operating Instructions are the basis for operating the product. Users are obliged to comply with all instructions and directions specified therein.

Manufacturer

- Concrefy B.V.
- Subject to change without notice in the course of technological development.

Manufacturer's liability

The manufacturer will be liable only for personal and material damage caused by specially trained staff using the product in accordance with its intended purpose, with these Operating Instructions and the relevant safety instructions, and provided that all safety devices have been fully operational!

Support

Landline:	+31 77 850 7220
E-mail:	support@concremote.com

Maintenance / inspection / storage

- Repairs may only be carried out by the manufacturer!
- Doka accepts no liability for products that have been altered!

Shipment

- The rechargeable battery in the the calibration box is a lithium polymer battery <100 Wh. Consequently, comply with the applicable national and/or international regulations (hazardous goods transport) when shipping.

Before every use

➤ Check for any signs of damage or visible deformation.

Concremote articles that do not meet the following criteria must be withdrawn from use immediately:

- No deformation.
- No cracks or notches.
- No damage due to the influence of heat.

Storage

- Store Concremote articles at a constant temperature between 0 and 30°C.
- Store Concremote articles in a dry, well ventilated and frost-proof place, protected from climatic influences and aggressive substances.
- The state of charge (SoC) of the lithium battery should be kept between 30 % and 50 % and be regularly monitored (at least every 3 months) to avoid exhaustive discharge.

Disposal

For more information on the disposal of articles, consult your Doka contact partner.

Using the Concremote calibration box

Each different concrete mixture needs to be calibrated with the Concremote calibration box so that its strength development in the structure can be calculated, based on the temperature data measured by the Concremote sensors.

- The strength values calculated by Concremote are based on calibration curves that are generated either before or while using the system for the first time.
- It is advisable to have calibration done before using the Concremote sensors for the first time. This will ensure that the measured results can be read and used from the very beginning.
- Each concrete mixture, or grade of concrete, to be measured using the Concremote sensors, must be calibrated first.
- If Concremote is used for measuring several different concrete mixtures, each of these mixtures requires calibration.
- Calibration boxes can be used repeatedly
- Calibration of a concrete mixture by the 'De Vree maturity method' requires either two calibration boxes cube (= 6 test cubes) or 1 calibration box cylinder (= 6 test cylinders).

If you have any questions, please ask your Doka contact person!

Follow the directions in the 'Concremote' Operating Instructions!

WARNING

Risk of injury to persons and damage to property.

➤ If the composition of the concrete mixture is changed after calibration is performed, another calibration is necessary for the mixture!

Preparation

Before using the calibration box, specify the number of calibrations and the test laboratory with your Doka contact person.

Some basic concrete data and the target value - i.e. the required strength - need to be known for working out a calibration test procedure.

The necessary concrete data are the following:

- Concrete ID number
- Concrete manufacturer
- Supplier's plant (address, phone number etc.)
- Quantities (in kg/m³)
- Concrete strength class (e.g. C20/25)
- Strength development (fast, medium etc.)
- Exposure class (e.g. XC0)
- Cement type(s) and cement quantity (e.g. CEM I)
- w/b ratio, w/c ratio (e.g. 0.5)
- Maximum particle size (e.g. max. particle size 32mm / grading curve 22)
- Consistency class (e.g. F3, F45)
- Admixtures (nature, type, quantity)

WARNING

➤ In case of danger, switch off the charger by unplugging the power supply unit from the socket.

Note:

- The construction firm has to determine the target value in consultation with the structural engineer. For assistance, please refer to the 'Concremote' Operating Instructions.
- Fully charge the battery of the calibration box in preparation for calibration. The charging cycle takes a maximum of 24 hours.

  When charging completes, disconnect the AC adapter and stow it safely inside the calibration box.
- Disconnect the AC adapter before using the calibration box. Otherwise, the calibration box will not transmit data.
- Each time before starting a calibration measurement, check the battery level of the calibration box(es). Otherwise data transmission cannot be guaranteed.
- Notify Concremote support in advance of an upcoming calibration by sending an email to support@concremote.com. Be sure to include the concrete data and the target value (required strength) in an attachment to this email.
- The calibration box requires a mobile-phone network for transmitting data. The strength of the signal can be checked via the Concremote web portal.

Filling the calibration box

Note:
As an alternative, and after consultation with Concremote support, calibration can also be performed in a water bath. In this case, cable sensors are needed, and also measuring cables for each individual calibration measurement.

NOTICE

When filling calibration boxes on the construction site and transporting them to the concrete lab:

- Use only properly mixed concrete and never initial quantities from the concrete mixer!
- Transport the boxes within the processing time of the concrete or when the concrete has hardened sufficiently.
- Avoid segregation and sedimentation.
- Due to their heavy weight, filled calibration boxes must be transported by two persons.

NOTICE

After each calibration, clean the test-specimen moulds and the calibration box dry.

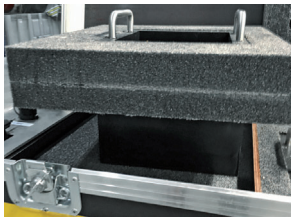
- Do not use a water hose or high-pressure cleaner to clean the calibration box!

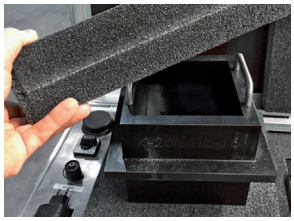
➤ Position the calibration box safely and level, close to its filling location. Filling can be done either on the construction site or in the concrete batching plant, depending on the project.

➤ Switch on the calibration box (switch to I).

Concremote calibration-box cube

➤ In preparation for filling, take the plastic cube moulds out of the calibration box and remove the insulation.





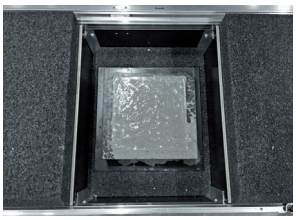
➤ Apply a small amount of release agent to the cube moulds.

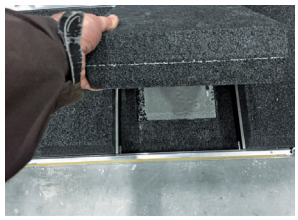
➤ Lay one sheet of 'ATTENTION' paper in the bottom of each cube mould (text side down) to protect the blowing-out openings of the mould.

➤ Fill each cube mould in compliance with the standards and compact the concrete with a vibrating table, in the way standard test cubes are made.

➤ Clean the outside surfaces of the cube moulds.

➤ Immediately after compacting, place the cube moulds back into the calibration box, properly insert the insulation and close the calibration box.





➤ Transport the filled calibration box to the concrete lab, in order not to influence the hardening of the concrete.

Concremote calibration-box cylinder

- In preparation for filling, take the plastic cylinder moulds out of the calibration box and remove the lids.
- Position each cylinder mould on the drilling equipment and turn the cylinder mould to drill a hole for the temperature measuring point.

- Apply a small amount of release agent to the cylinder moulds.
- Lay one sheet of 'ATTENTION' paper in the bottom of each cylinder mould to protect the blowing-out openings of the mould.

- Fill each cylinder mould in compliance with the standards and compact the concrete with a vibrating table, in the way standard test cylinders are made.

- Clean the outside surfaces of the cylinder moulds.
- Transport the filled calibration box to the concrete lab, in order not to influence the hardening of the concrete.

Performing calibration

- Test the specimens with the concurrence of Concremote support. Remove the specimens from the calibration box according to the test protocol. Test cubes: Blow each test cube out of its mould with compressed air. Test cylinders: Remove the plastic cylinder mould from each test cylinder and prepare the concrete cylinders for testing in accordance with the standard. Perform a compressive-strength test of the specimens with a certified and calibrated press.
- Log the date, the exact time and the result of each compression test (N/mm² or psi).
- Email the test results to support@concremote.com.

Troubleshooting

- If the calibration box is used where there is no signal from a mobile-phone network, no data transmission will be possible.
- The calibration box is equipped with a rechargeable battery. If the battery discharges because it was left disconnected from the power supply for too long, no data will be recorded.
- If other faults occur, contact Concremote support or your Doka contact person.

Declaration of conformity

fresh thinking for construction

concrefy

Hoofdstuk: Certificates

Document: 02-10 Concremote Calibration box 2.0 DoC

EU Declaration of Conformity (DoC)

Hereby we,

Company name of Manufacturer	Concrefy
Address	Olivier van Noortweg 10
Zip code & city	5928 LX Venlo
Country	The Netherlands
Telephone number	+31 77 850 7222

declare that this DoC is issued under our sole responsibility and that these products:

Article description	Article number
Concremote calibration-box cube 2.0 E	583070000
Concremote calibration-box cylinder 2.0 E	583073000

are in conformity with the relevant Union harmonization legislation: Radio Equipment directive: 2014 / 53 / EU

Concremote calibration-box cube 2.0 E

Concremote calibration-box cylinder 2.0 E

Device	Frequency
GSM850/GSM900	33dBm±2dB
DCS1800/PCS1900	30dBm±2dB
GSM850/GSM900 (8-PSK)	27dBm±3dB
DCS1800/PCS1900 (8-PSK)	26dBm±3dB
WCDMA-bands B1,B2,B4,B5,B8	24dBm+1/-3dB
LTE-FDD bands B1,B2,B3,B4,B5,B7,B8,B12,B13,B18,B19,B20,B26,B28	23dBm±2dB
LTE-TDD-band B40	23dBm±2dB
BLE 2,4GHz	+4dBm

Afdrukdatum: 14-12-2018 Revisiedatum: 30-11-2018 Revisienummer: 001 pagina 1 van 2

Dit document is een leesexemplaar van het intranet document en alleen geldig op de afdrukdatum zoals hierboven vermeld

fresh thinking for construction

concrefy

Hoofdstuk: Certificates

Document: 02-10 Concremote Calibration box 2.0 DoC

With reference to the following standarts applied:

Draft EN 301 489-1 V2.2.0	
Draft EN 301 489-3 V2.1.1	
Draft EN 301 489-17 V3.2.0	
Draft EN 301 489-52 V1.1.0	
EN 301 511 v12.5.1	
EN 301 908-1 v11.1.1	
EN 300 328 v2.2.0	
EN 303 413 v1.1.1	
EN 301 908-2	
EN 301 908-13	
EN 300 330	Radio standard
EN 62368-1	Safety standard
EN 62311	RF exposure standard
EN 55011/A1	EMC standard (WPT)

The Notified Body Telefication B.V., with Notified Body number 0560 performed:
Module: B

Where applicable:
The issued EU-type examination certificate: 182140242/AA/00

Description of accessories and components, including software, which allow the radio equipment to operate as intended and covered by the DoC:
Wall adapter: GE12I12-P1J
Software version: 2.3.12

Signed for and on behalf of:

Venlo, 1th October 2018

(Place, date)

Ir. A.J.E.J. van Casteren Managing Director
Concrefy
(autorised signature)

	[kg]	Article N°
Concremote calibration-box cube 2.0 E	**26.4**	**583070000**
Concremote calibration-box cube 2.0 AU	**25.6**	**583071000**
Concremote-Kalibrierbox Würfel 2.0		
		
Length: 104 cm Width: 36.5 cm Height: 37.5 cm Follow the directions in the "Operating Instructions"!		CE
Concremote calibration-box cylinder 2.0 E	**21.0**	**583073000**
Concremote calibration-box cylinder 2.0 AU	**20.0**	**583074000**
Concremote calibration-box cylinder 2.0 A	**20.0**	**583072000**
Concremote-Kalibrierbox Zylinder 2.0		
		
Length: 84 cm Width: 43 cm Height: 40 cm Follow the directions in the "Operating Instructions"!		CE

Formwork & Scaffolding.
We make it work.

www.doka.com/concremote