

CorroWatch multiprobe - installation instructions

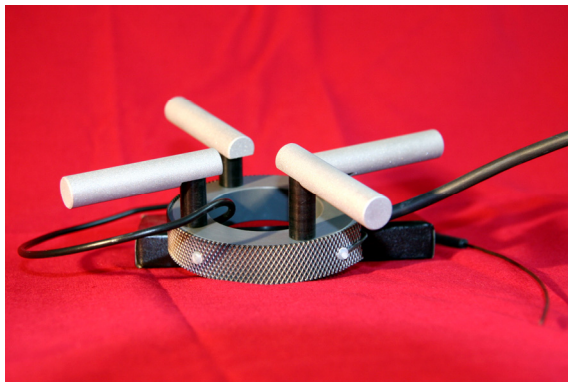


Figure 1. The CorroWatch probe

Position

It is recommended to install the CorroWatch probe (Figure 1) in the concrete cover between the concrete surface and the outer reinforcement layer. To ensure correct function it is extremely important that great care is taken when mounting the CorroWatch probe. It is important that the position of the probe does not change during casting. This is ensured in the best way by e.g. mounting the probe on at least two reinforcement bars (Figure 3).

Structure

The CorroWatch multiprobe is composed of: 4 anodes, 1 cathode, 1 reinforcement connection and an internal temperature sensor. The 4 anodes are placed in a joint ring in varying but well known distance to the ring's bottom. The cathode is placed in the ring's periphery.

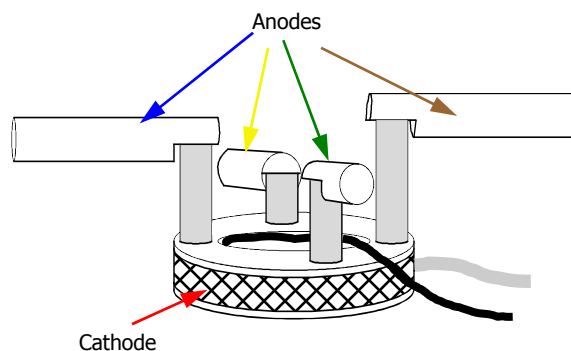


Figure 2. CorroWatch probe structure. The black cable is the reinforcement connection cable.

Installation

To obtain optimum evaluation possibilities, we recommend the CorroWatch probe be mounted in combination with an ERE-20 reference-electrode.

The cables from the CorroWatch probe and the ERE-20 reference-electrode are joined and conducted to the concrete surface. To protect against casting damage, it might be advantageous to conduct the cables in conduits.



Figure 3. Recommended installation mounted on the reinforcement net. The CorroWatch probe is mounted in combination with an ERE-20 reference-electrode (blue cable).

Colour codes in cable

In the standard edition the following colour codes are used in the black CorroWatch probe cable (see Figure 2):

Red	Cathode (net)
Brown	Highest anode
Blue	Second highest anode
Green	Second lowest anode
Yellow	Lowest anode
White	Reinforcement connection
Pink	Temperature sensor
Grey	

Mounting - step by step

1. Control on receipt

Check that the CorroWatch probe has not been damaged during shipment. The 4 anodes shall be placed as shown in Figure 1 and they must not be loose or corroded. The cable must show no signs of damage e.g. from squeezing.

2. Mounting

To avoid rust formation on the anodes, the mounting of the CorroWatch probe should be performed as close to the casting time as possible. By use of plastic strips, the CorroWatch probe is mounted on a stable base, e.g. the reinforcement net. The anodes must face the future concrete surface and they must be placed parallel to this. It is important that the sensor is firmly mounted, so that displacement does not happen during casting. The anodes and the cathode must not be in any metal contact with the reinforcement. To achieve a satisfactory recasting we recommend suitable distance be kept to other embedded parts.

For direct connection to reinforcement use the black single wire from the body of the probe.

Close to the CorroWatch probe an ERE-20 reference-electrode is mounted.

3. Measuring

The placing of the CorroWatch probe should be illustrated in a draft with measurements that are detectable after casting. Furthermore, the distance (perpendicular to reinforcement and anode) from the outermost reinforcement to the outermost anode should be measured and noted (Figure 2).

4. Marking

When several CorroWatch probes are mounted it is important to mark the individual cables in a way that leaves no doubt as to where each cable pertains.

5. Cabling

The best way to protect the cables against damages during casting is by conducting them to the concrete surface through a conduit.

6. Degreasing

All electrodes should be degreased with ethanol or acetone before casting is initiated.

7. Casting

Great care should be taken when using immersion vibrator etc. close to the CorroWatch probe during casting. Marking should be done on the concrete forms.

8. Remounting

After casting and form removal the finishing cabling and mounting are carried out in the terminal board in a multiplexer or data logger. When choosing materials for this work it is important to consider risks of moisture problems or vandalism. Cable identification is done by marking and sketching drawings. Before closing the multiplexer we recommend a bag of dehydrating agent to be placed inside it.

Specifications

The standard CorroWatch probe is supplied with specifications as follows:

Dimension:	Body Ø85 mm Height 55 mm Width 165 mm
Cable:	Screened 8-conductor Length 5 m (standard) Colour Black
Anodes:	Length 60 mm Diameter Ø12 mm
Weight:	Approx. 0,5 kg
Cathode:	Red cable
Rebar's:	White cable, if connected
Anode 1	Brown cable (about 55 mm high)
Anode 2	Blue cable (about 50 mm high)
Anode 3	Green cable (about 45 mm high)
Anode 4	Yellow cable (about 40 mm high)

Temperature sensor: Pink and Grey.



Further information:

Oskar Klinghoffer, tel. (direct) +45 43 26 72 55, osk@force.dk

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FORCE Technology USA Inc.
Tel. +1 713 975 8300
FORCE Technology Rusland LLC
Tel. +7(812) 326 80 92

FORCE Technology Norway AS
Claude Monets allé 5
1338 Sandvika, Norway
Tel. +47 64 00 35 00
Fax +47 64 00 35 01
info@forcetechnology.no

FORCE Technology Sweden AB
Tallmätargatan 7
721 34 Västerås, Sweden
Tel. +46 (0)21 490 3000
Fax +46 (0)21 490 3001
info@forcetechnology.se

FORCE Technology, Headquarters
Park Allé 345
2605 Brøndby, Denmark
Tel. +45 43 26 70 00
Fax +45 43 26 70 11
info@forcetechnology.com
www.forcetechnology.com