FAQ

DDRC 3 (DCVG Technique)

Question:
What is the function of the integrated GPS system?

First, you have to know that the SRDDRC doesn't generate potential and doesn't communicate with the DDRC. Indeed, its job is only to cut the CP at a regular and precise time interval (it is a timer switch with GPS signal synchronization). In order to obtain reliable accuracy, we decided to synchronize the SRDDRC to the GPS signal clock.
In the same way, the DDRC has a GPS chip that allows it to synchronize exactly to the same GPS clock as the SRDDRC.
For this reason only the GPS signal is used. Under no circumstances can we retrieve the GPS coordinates of the defect.
The DDRC is completely independent of a GPS device. Generally, technicians use the Trimble to retrieve GPS coordinates and indicate in the "comments area" on the Trimble the gradient value measured by the DDRC.

Question:
Can we place the SRDDRC unit at the structure side without harming the system?

You have the possibility to place the SRDDRC side the structure by reversing the connections.

Question:
Should we wait to read "C" on the receiver (about 2-3 seconds) before moving forward?

You don't need to wait 3 seconds for each measurement. Indeed, you must wait for the "C" confirmation mainly when you measure the gradient of the defect and not necessarily when locating.
For information, the "C" displayed by the DDRC indicates three measurements identical to +/- 10%. The "C" thus Confirms that the measured gradient surely comes from a real defect.

Therefore, your level of requirement will depend directly on the context:
- If the area is strongly disrupted by stray currents, we recommend waiting for the "C" before moving forward.
- If the zone is quiet, you can move forward without waiting for the confirmation "C".

We draw your attention to the main advantage of our device:
The DDRC filters stray currents and auto-adjusts its range without making calibration selections manually. So it's works in areas with strong stray currents.

Question:
What is the difference between "Intégré" and "Pulse" signal?

The kind of signal doesn't change the measure. Normally, you have to use the "Pulse" signal to locate the defect and the "Intégré" signal to make the measure of gradient. But some customers prefer to keep "Intégré" signal because it is more comfortable for them. The "Intégré" signal allows instantaneous display of the values without blinking of the arrows and bar graph.

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ADCA
20 rue des Meuniers - 91520 EGLY- FRANCE
Phone : +33 (0)1 60 83 37 37 - Fax : +33 (0)1 60 83 31 30
info@adca.fr - www.adca.fr

Question:
How to interpret the value read on the DDRC unit?

First, the DDRC displays is an absolute value.
On the other hand, the final objective of the DDRC is to allow you to determine the size of the holiday and not a percentage that remains difficult to interpret.

Using the methodology presented below, you will be able to determine precisely the size of the estimated holiday by a simple rule of three by comparing the gradient measured at the level of the holiday with the gradient measured on a reference coupon whose surface is known.

METHODOLOGY

1. Connect and switch on the SRDDRC in a connection (Rectifier cabinet or Test point).

2. Ensure that cathodic protection is active.

3. Check that the potential gap between E^{on} and E^{off} is at least 500mV at the level of the rectifier cabinet.
To make this measurement, you must connect a coupon peg to the pipeline and then connect a voltmeter: (+) to the pipeline and (COM) to a reference electrode.

4. Verify that the potential gap between E^{on} and E^{off} is at least 500mV at the other end of the rectifier cabinet (depending on the range of the rectifier and the detection zone).
To make this measurement, you must connect a coupon peg to the pipeline and then connect a voltmeter: (+) to the pipeline and (COM) to a reference electrode.

5. If the potential gap between E^{on} and E^{off} is not sufficient on the two measured points, you must increase the rectifier voltage.
BE CAREFUL: The sensitivity of the DDRC depends directly on the PC level. The higher the potential gap between E^{on} and E^{off} is, the more small holiday you can detect (up to 1 cm² for a gap of 1V)

6. Make a measurement on a reference coupon (eg: 100cm² coupon peg).
This measurement will give you a reference gradient allowing you to determine later the size of the holiday that you will measure during your inspection.

7. Make your inspection.
BE CAREFUL: Exactly the same measurement methodology on the reference coupon (step 6) and the identified defect (step 7) must be respected.
This will allow you to determine with great reliability the estimated size of the defect *(See slide 19 on the training document).*

8. At each new test point, check that the potential gap between E^{on} and E^{off} is always greater than 500mV and then resume in step 6.

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