

# Supplement to Operating Manual R&S NRP

## 1144.1400.12-04-

**Dear Customer,**

Your power meter is equipped with firmware version  $\geq 03.00$ . A number of functions have been modified since the printing of the manual, and the modifications are described in the following.

### Battery operation

System → Bat...

The R&S NRP-B3 option allows the R&S NRP to be operated independently of the AC supply.

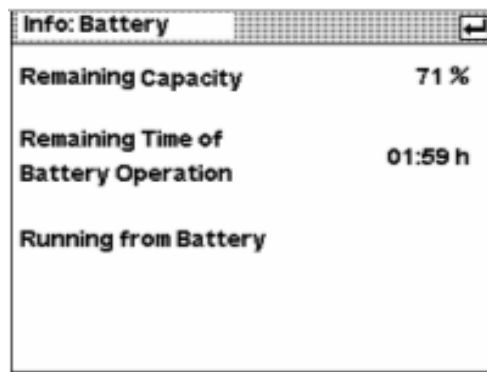
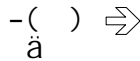
The battery is automatically charged as soon as its residual capacity has dropped below 96% full charge and the R&S NRP is connected to the AC supply.

A warning is displayed shortly before the battery is completely discharged. If the battery is fully discharged, the R&S NRP automatically switches off to prevent any damage to the battery by over-discharging. In this case, the battery should be recharged as soon as possible.

The charge status of the battery is displayed in the Battery dialog window and symbolically in every expanded window. The Battery dialog window also provides information about the battery's remaining operating time.

System menu:

Bat...



Battery – Dialog

**Remaining Capacity**

This line indicates the battery's remaining charge in percent.

**Remaining Time of Battery Operation**

This line indicates the remaining operating time.

*Note*

*After the operating status has been changed, it may take the display up to one minute to be updated.*

**Running from Battery**

This line indicates the battery's current operating status.

or

**Charging**

or

**Idle**

The data sheet specifies how long the R&S NRP can be operated from the battery. The battery operating time depends on the number and type of the connected sensors and especially on the brightness of the display backlighting.

The battery can be charged at temperatures between 5°C and 30°C and discharged at temperatures ranging from 0°C to 40°C. To prolong the life of the battery, however, the instrument should not be operated too frequently at the upper limit temperatures. If the battery is charged at temperatures above 30°C, the charging process is repeatedly interrupted to allow cooling, which considerably extends the charging time. If the temperature exceeds a value of about 35°C, charging is practically discontinued.

It is normal that battery charging continues after the battery has been charged 100%. To prolong the life of the battery, this process should not be aborted.

Since NiMH batteries are subject to considerable self-discharging, an R&S NRP that is equipped with the R&S NRP-B3 option should not be stored for more than three months without being connected to the AC supply.



### Caution

*The performance of a "Smart Battery" may be manufacturer-specific. Only the original battery will ensure correct functioning and a charging functionality that prolongs the life of the option.*

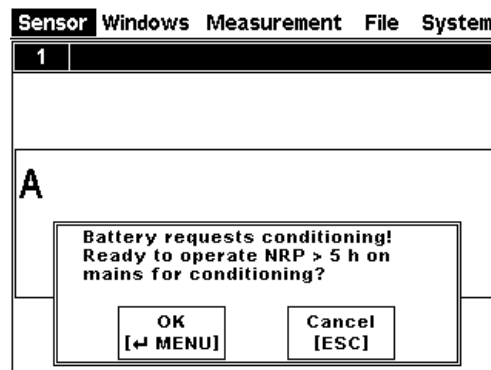
*The safety test marks lose their validity if batteries from other manufacturers are used.*

## Calibrating the charge counter

From time to time, the battery must be calibrated so that the remaining operating time is not displayed incorrectly as a result of the battery's decreasing capacity over time. A calibration cycle can automatically take place in normal operation, if the R&S NRP is fully discharged after being fully charged, without intermittently connecting the instrument to the AC supply. In this case, no further action on the part of the user is required.

However, if calibration is not performed in normal operation, after some time the battery will request a calibration cycle. This request will be displayed after the R&S NRP has been switched on.

Switch on the R&S NRP:



Request for a calibration cycle from the battery

(**⇧** MENU)  
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The calibration cycle is performed. First of all, the battery is fully charged, then fully discharged and finally fully charged again. This process may take between 11 and 20 hours depending on the charge status of the battery at the beginning of the calibration cycle. The higher the charge of the battery at the beginning, the faster the calibration cycle is performed. Calibration itself takes place at the end of the discharging process.

During the calibration cycle, or at least until the end of the discharging phase, the R&S NRP should remain connected to the AC supply and should always be on. Otherwise the calibration counter is not calibrated, which means that the warning will be displayed again when the R&S NRP is switched on the next time.

(ESC/LOCAL)  
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The calibration cycle is not performed. The warning will be displayed again when the R&S NRP is switched on the next time.