

CURTIS[®]

MODEL 900R Battery "Fuel" Gage



Read Instructions Carefully !



Safety Instructions

This instrument was manufactured and tested according to the applicable technical standards. It complies with all the safety regulations as shipped from the factory.

Installation and startup must be performed by skilled personnel.

Failure to install and operate the unit in accordance with these instructions may result in damage or injury.

If safe operation of the instrument can no longer be ensured, stop and secure it against accidental operation.

If instrument failure or malfunction may cause personal injury or material damage, use additional safety measures such as limit switches, guards, etc.

Read the Operating Instructions carefully before startup.



Note the safety instructions marked with this warning symbol in this manual!

Guarantee - Curtis Instruments' products and/or components are guaranteed against defects in workmanship and material for a period of one year, or as defined in the individual product literature, from date of shipment from our factory, when applied in a proper application within specified ratings. This guarantee is limited to repair or replacement F.O.B. our factory. There is no further warranty or implied representation, guarantee, promise or agreement as to any Curtis Instruments product and/or component. Curtis Instruments, Inc., cannot assume responsibility or accept invoices for unauthorized repairs to its products and/or components, even though defective. In no case will Curtis Instruments' responsibility extend to products, components or equipment not of its manufacture. Under no circumstances shall Curtis Instruments, Inc., be liable for any special or consequential damages or loss of profits or other damages. Returned goods will not be accepted unless identified by a Curtis Return Material Authorization (RMA).

***All specifications are subject to change
without notice.***

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1. MODEL ENCODEMENT

(for packaged 900R series)

900RB uu v w x y z

900RB

uu

Voltage (volts)

12

24

36

48

72

80

v

Reset Level/Type

B = 2.09VPC ⁽¹⁾OCR ⁽²⁾

w/memory*

H = 2.35VPC (HVR) ⁽³⁾

* The “memory” will save the previous state-of-charge if Model 900R is reconnected to a battery that is not fully charged.

FOOTNOTES:

(1) VPC = Volts per Cell

(2) OCR = Open Circuit Reset (battery swapped)

(3) HVR = High Voltage Reset (instrument remains attached to battery during charging)

**w***Discharge Profile*

N = 2.04VPC at Full/1.73VPC

at Empty

G = 1.97VPC at Full/1.75VPC

at Empty

A = Adjustable: range

1.56-1.82VPC at Empty

B = Light-duty adjustable:

range 1.71-1.93VPC

at Empty

x y*Empty options*

(x) A = No option

(y) A = No option

(y) B = Audible alarm

z*OEM Code*

O = Curtis



2. TECHNICAL SPECIFICATIONS

2.1 Electrical Operating Voltage

Operating Range: $\pm 25\%$ of nominal voltage

Operating Current

Unit Type	Nominal Current (mA)	Maximum Current (mA)
900RB12 BN	25	27
900RB24 BN	19	20
900RB36 BN	17	18
900RB48BN	16	17
900RB72 BN	15	15
900RB80BN	14	14

2.2 Mechanical

Display

10-digit, tri-color LED

Terminals

Spade 6.4 mm ($1/4$ ") Quick Connect

Hardware Kit

Mounting bracket; Thumbnuts or
M4 Hex nuts (2); Lock washers (2);
Quick Connect terminals (2)



Panel Cutout

52 mm, 2 1/16 in. dia.

2.3 Environmental Temperature

Operating: -40 to +80°C

Storage: -50 to +90°C

Humidity

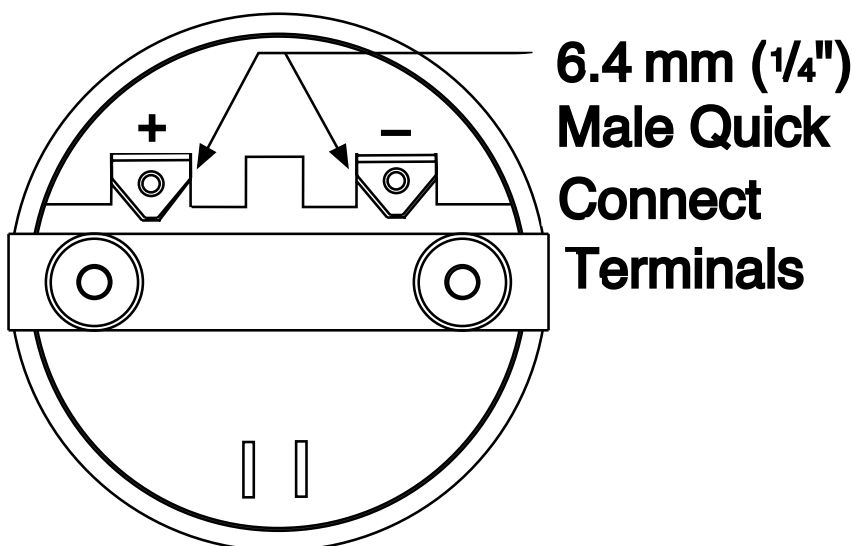
95% RH non-condensing

Shock and Vibration

2.2G, 20-200Hz; 20 minute period;

X, Y, Z, 13 cycles each

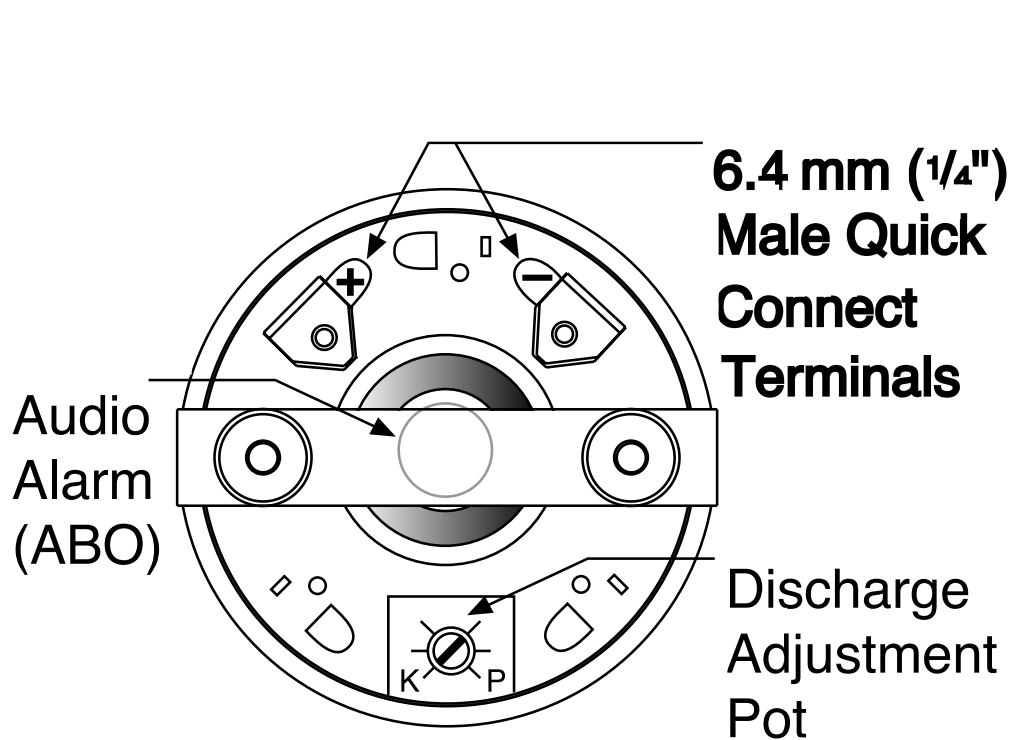
3. INSTALLATION



Model 900R Terminals

Connecting Model 900R

CURTIS Model 900 R fits into a dash-panel cutout measuring $2 \frac{1}{16}$ " (52 mm). The unit's positive (+) terminal connects to the first battery positive (+) terminal closest to the battery. The unit's negative (-) terminal connects to the first battery negative (-) terminal closest to the battery. Wiring must go directly to the battery. Do not route through the key switch or contactors. The LED display will always be "ON."



Model 900R w/Adjustable Discharge & Alarm Option

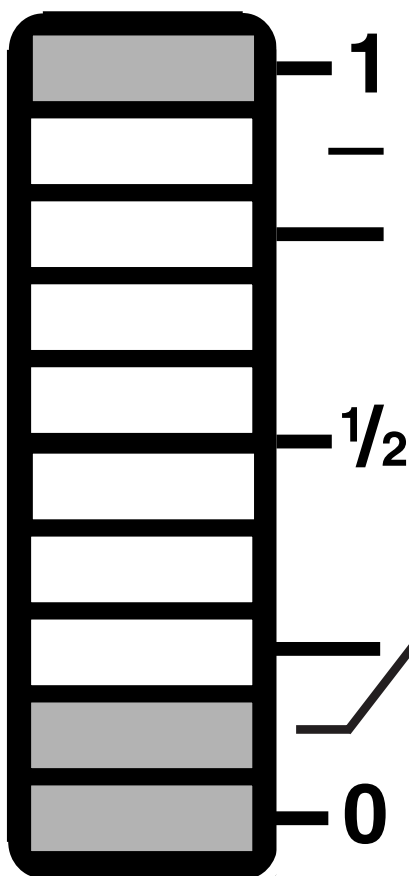
Adjusting the Discharge Profile

Discharge adjustment pot is pre-set at discharge "N" for a final end point of 1.73 volts/cell. To decrease depth of discharge, turn pot clockwise from "N" toward "P." To increase depth of discharge, turn pot counter-clockwise from "N" toward "K."



4. OPERATION

How Model 900R Display Works



Only when the battery is properly charged is the top LED lighted.

As the battery's state-of-charge decreases, successive LEDs light up, only one on at a time.

Here the LED flashes, indicating "energy reserve" (70% depth of discharge).

Both bottom LEDs alternately flash, indicating "empty" (80% depth of discharge).



Reset

OCR

Upon reconnection of battery, Model 900R will reset at or above proper voltage level.

HVR

Model 900R stays connected to battery during charging. Battery must remain at or above proper voltage level for a continuous 6 minutes.

5. TROUBLESHOOTING

The following checklist should help you troubleshoot any problem with Model 900R.

<u>Problem</u>	<u>Possible Cause</u>
No display	Terminals not connected or improper voltage
Stays at Full	Model 900R voltage different than battery voltage
Will not reset	Model 900R voltage different than battery voltage or battery not fully charged
Reset without charging battery	Not connected directly to battery terminals
Empty too soon	Model 900R voltage different than battery voltage or terminals not connected directly to battery



6. MAINTENANCE

Curtis Model 900R series is not field serviceable. Defective units returned to the factory within the warranty period will be replaced without charge.



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