DCV References

- **The First Real Alternatives to the Weston Cell**
- **One or Four Truly Independent 10V Outputs**
- **Stability to Better Than 1ppm/year**
- **Low Voltage Outputs, Buffered 10V Output**
- **Long Life Battery Backup Mode**

The models 4910 and 4911 both offer four 10V "cells" at the 10V level, providing the stability, redundancy and self-checking capabilities required by a laboratory standard. The 4912 offers an economic single 10V output and long battery life, making it ideal for transfer applications.

Versatile Architecture
Both the 4910 and 4911 offer four truly independent 10V output "cells", each possessing its own power supplies and control circuits, allowing direct intercomparison between the output terminals in order to detect and evaluate drift in any cell. Each cell's total independence means that errors arising from circuit elements are uncorrelated and therefore detectable. The output of each cell is adjustable with <0.1 ppm resolution, so that they may be calibrated to nominal to allow intercomparisons with a very high level of accuracy.

The four 10V cells may be selectively averaged in hardware giving a significant benefit in long term stability and short term noise when compared with the output of just one cell. The 10V average output provides the ideal low noise reference against which individual cells may be compared, and in the 4910, is permanently connected to the input of a four wire sensed buffer capable of sourcing 15 mA for driving an accurate voltage into a load without compensations. Cells included within the average group are identified by a front panel LED indicator.

Each cell's independence also allows higher voltages to be obtained by "stacking" cells, to provide up to 40V from one unit.

The 4910 and 4912 also offer adjustable outputs at the 1V and 1.018V levels.

SPECIFICATIONS

4910 & 4911 Stability, ppm (±1°C)

	30 days	90 days	1 year
10V Average	0.3	0.8	1.0
10V Cell	0.3	1.0	1.5
4-wire buffer*	0.3	1.0	1.5
1.018V*, 1V*	0.6	1.5	2.0

4912 Stability, ppm (±1°C)

	30 days	90 days	1 year
10V Cell	0.5	1.0	1.7
4-wire buffer	0.5	1.0	2.2
1.018V, 1V	1.0	2.1	2.9

Temperature Coefficient (0°C - 50°C)

10V Average & Cell	0.05 ppm/°C
4-wire buffer*	0.06 ppm/°C
1.018V*	0.10 ppm/°C
1V*	0.12 ppm/°C

Output Resistance/Protection

4-wire buffer*	<100 μΩ

4-wire buffer* will drive to 15 mA

Other outputs	100Ω

Outputs withstand indefinite shorts, transients to 1100V (to 25 mA).

Setting Resolution

10V Cell	<±0.1 ppm
1.018V*, 1V*	<±0.2 ppm

GENERAL

Environmental
Operating temperature: 0°C to +40°C
Storage temperature: -40°C to +50°C

Dimensions
177 mm (7 in.) high 214 mm (8.5 in.) wide, 591 mm (23.3 in.) depth

Weight: 20kg (44 lb)

Power
Line: 100V, 120V, 220V, 240V ±10%, 47-63 Hz, consumption <40VA.
Low voltage input: 10V - 40 Vdc.
Battery Backup, Transit Mode, 7 days at 25°C, to 4 days at 0°C, ambient.

*(*Not applicable to 4911)*

OPTIONS

10: Calibration and Hot Shipment
20: Drift Rate Characterization. Must be ordered with Option 10.
30: 1.018V Set to Requested Level. Must be ordered with Opt. 10.
40: Ruggedized Transit Case
50: Soft Carrying Case
90: Rack Mount Kit

ORDER INFORMATION
Model 4910
Model 4911
Model 4912
Option 10
Option 20
Option 30
Option 40
Option 50
Option 90
Factory/FOB: Indianapolis, IN & Norwich, England

For full specifications or demonstration contact your nearest Wavetek representative (page 146).