



Card Code	Part No.
BGWA	371430

Note 1: Although the integrator is designed for a -48v input, other sources are also used. When sources other than -48v are used, the line notation W is not used.
 2. The use of two series resistors, such as 1.2K and 1.2K, instead of 2.4K has no electrical significance. It is so used only to simplify packaging problems which result because of the land pattern layout on the card.

Current Mode W-to-N and W-to-P Integrators

The BGWA card has three integrators that accept a W line input. One of these circuits provides an in-phase N line output whereas the other two provide an in-phase P line output. The purpose of this circuit is to develop current-mode output levels that are free of the noise and bounce generally found on CB or relay lines.

Circuit Description

When the input to A is open, the N line output is at +0.8v because of divider current through the 360 ohm, 2.4K coupling network, and the .1μfd capacitor is charged to 0.6v. Closure of the CB puts input A at -48v, and the capacitor starts to charge to its -24v level as shown. Output F falls along with the capacitor charge until in the static state it reaches -1.8v because of approximately 8ma

of current flow from -48v into the coupling network. The capacitor and the 2.7K resistor have a sufficiently long time constant so that relay bounce and line noise are filtered by the network and do not appear at output F. The 3.9K CB load resistor lowers the input impedance from approximately 5.4K to 2.3K. This low impedance draws 21ma of CB current, which is sufficient to break down an oxide film formation.

When the input to B is open, the P line output is at -5.2v because of divider current through the coupling network, and the capacitor is charged to -3.8v. Closure of the CB puts input B at -48v, and the capacitor starts to charge to its -27v level as shown. Output C falls along with the capacitor charge until in the static state it reaches -7.8v because of approximately 8ma of current flow from -48v into the coupling network.