

The configuration depends on the settings of switches D2850 and D2751. These switches are controlled by the signals FILT, CALDC- HD, SQUAR and Si. Table 3.8 lists the various settings and resulting generator output signals.

Table 3.8 Generator control signals for various generator output signals

STIMUL		CONTROL SIGNALS				OUTPUT SIGNAL	
frequency	duty cycle	CALDC- HD	FILT	SQUAR	Si	amplitude	waveform
488 Hz	50%	0	0	1	1	5 V p-p	Square wave voltage
976 Hz	50%	0	0	1	1	5 V p-p	
1.95 kHz	50%	0	0	1	1	5 V p-p	
-	-	1	0	0	1	3 V p-p	DC voltage
976 Hz	50%	0	1	0	1	1 V p-p	Sine wave voltage
20 kHz	0-100%	0	1	0	1	-2...+2 V p-p	Slow ramp voltage
20 kHz	0-100%	0	1	0	0	0...+3 mA	Slow ramp current

In this table "1" means: signal "high" (switch closed) and "0" means signal "low" (switch open).

The slow ramp current signal is made with a current source. A simplified schematic diagram is given in figure 3.17:

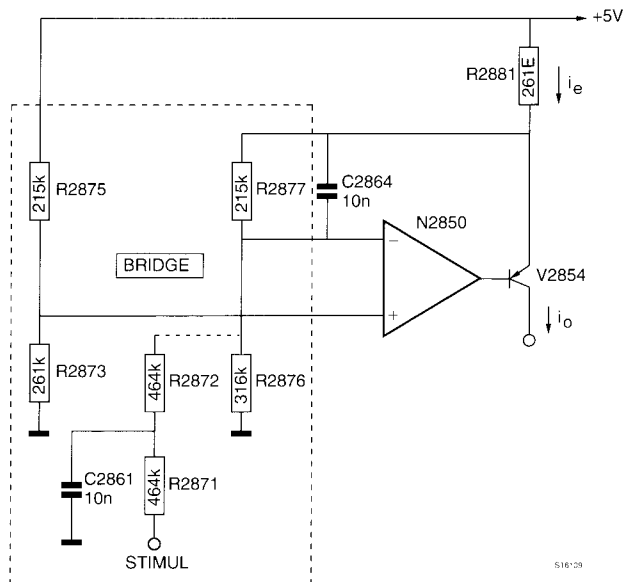


Figure 3.19 Current source section of generator

When the duty cycle of STIMUL is 0%, the bridge will be in balance and current $i_e = 0$. When the duty cycle of STIMUL is increased, a DC component is generated, which has a linear relation to the duty cycle. The operational amplifier tries to keep the voltages on both inputs the same. The operational amplifier will now drive transistor V2854 to increase i_e . Because i_e is almost equal to i_o , the output current will also increase. In this way it is possible to regulate the current i_o by means of the duty cycle of STIMUL.