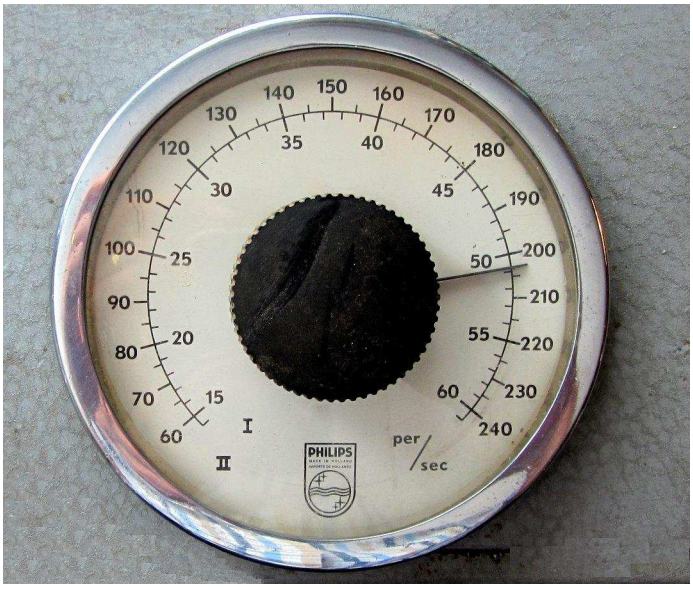
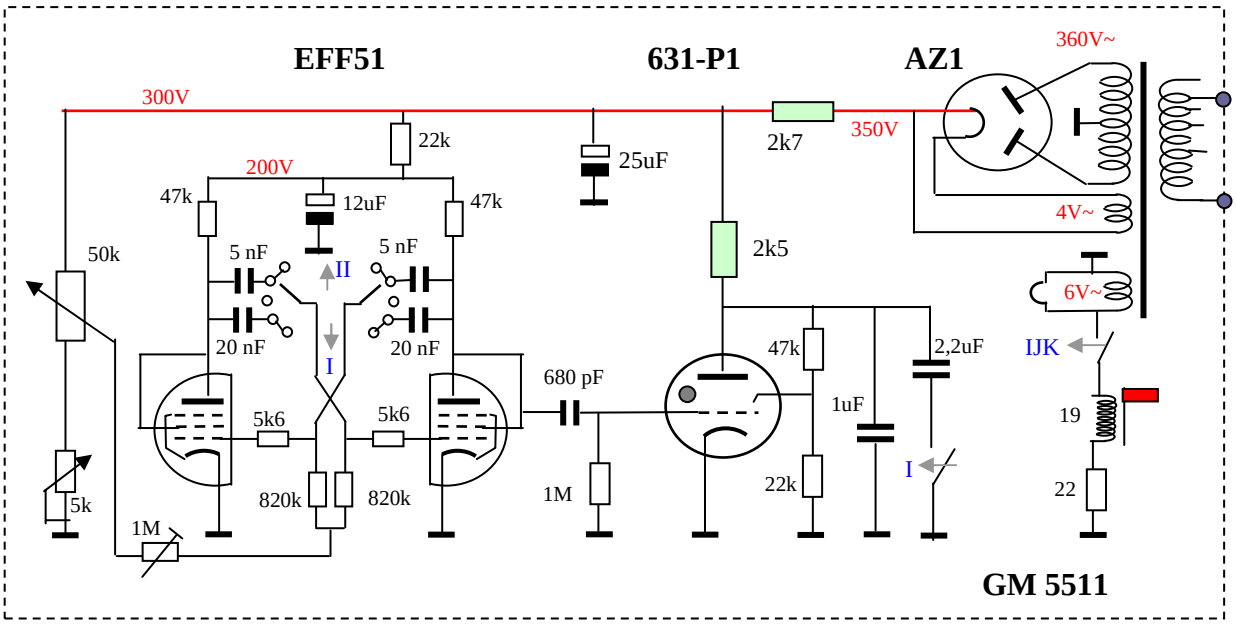
GM5511 Stroboscoop

4 juli 2017 / kb

Deze stroboscoop is door Philips gebouwd omstreeks 1949. Het schema is vrijwel gelijk aan de Strobotac van GeneralRadio met dezelfde (Sylvania) flitsbuis. Philips gebruikte zijn dubbelpentode EFF51 in plaats van de dubbeltriode zoals bij de GenRad stroboscopen uit die tijd.





De flitscondensator in het lage bereik (I) is wat groter om bij minder flitsen per seconde ongeveer dezelfde gemiddelde helderheid te krijgen. De flits is oranje.

Na 65 jaar lijken alle componenten nog goed. Ik heb alleen de kast schoongemaakt, de as van de minimum potmeter rechtgebogen, en de net-entree vervangen door euro versie.

Er is ***geen*** aan/uit schakelaar, "aan"lampje, of net zekering.

Start Nadat de buizen warm zijn even de mode schakelaar naar **uit** en **terug** naar I of II draaien om de oscillator te starten. De timing condensatoren zijn grote mica typen.

IJking Het apparaat heeft een ingebouwd ijk hulpje in de vorm van een trillend stripje binnen de parabolische reflector. Bij precies elk veelvoud van 50Hz lijkt dit stripje stil te staan.

'Strobotron' Neon Discharge Tube 631-P1

'Strobotron' lamps became popular during the 1930's as a light source intended for producing high energy light pulses of extremely short duration. *See also* CV310

In effect they function rather like a thyratron valve. The anode is a cup shaped electrode at the top end of the tube, usually consisting of iron or nickel with a coating of pure caesium over its surface for good electron emission. The cathode is similarly shaped and mounted directly above the glass stem press. This is separated from the so-called 'grid' electrode by a graphite cylinder with a small hole at its centre.

A DC voltage of about 220 to 380 V should be applied across the tube, typically from small capacitors of only about 1 to 10 uF. Then with a relatively low trigger voltage of only around -70 V or so at the grid, the neon gas filling will break down. The resulting discharge takes the form of an intensely bright narrow column running the length of the tube, and with the aid of a small parabolic reflector, a very bright beam of orange light can be projected that is clearly visible in daylight. Although the flash of light only lasts for about 10 microseconds, the current is of the order of several hundred amperes, resulting in a high intensity flash.

The lamps found widespread applications both in traditional stroboscopic type equipment, and in specialised units that were driven from the high tension ignition circuit in an automotive engine, producing synchronised pulses of light to assist in adjusting its timing. They were widely used until the 1960s when the Xenon flash tubes were introduced, offering higher intensity and the advantage of a white coloured flash. *See* LSD3.

The 631-P1 illustrated was a Sylvania Electric Products device. Basic operating details are: Anode Voltage: 220 - 380 VDC, Trigger Voltage: -70 VDC, Typical Anode Current: 100 mA. The base was UX4 and the grid was a graphite ring. Maximum flash rate: 200 Hz. Produced from about 1950.

The connections are: 1: Grid, 2: Anode, 3: inner Grid, 4: Cathode.