polymoog synthesizer

The Polymoog synthesizer. The instrument that re-designed the world of synthesis.

No other instrument offers the variety of sound, and control over sound, present at the Polymoog control panel.

The fully polyphonic, touch responsive keyboard gives the Polymoog instant-play capabilities.

Eight pre-programmed voices and a user-programmable voice give it instant-change capabilities.

At any time, the pre-programmed voices can be altered with the variable controls, allowing limitless creating of new sounds.

The versatility of a Polyphonic synthesizer. The expression of a performing keyboard. Get it all with the Polymoog Synthesizer.

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Specifications

Outputs: Output Levels (5 outputs) 0dBm nominal

Output Impedances (5 outputs) 600 Ω

Output Coupling: Mix output; single ended or balanced (XLR). Direct, VCF MODE, RES; single ended

Keyboard Voltage: Adjustable from 0.9 to 1.2 volts/octave

S-Trig: Single or multiple negative trigger; retrig 20 msec.

Inputs: Filter: 0.64 volts/octave

Pitch: 0.9 volts/octave

Swell (Loudness): 5 volts for 30 dB change

Mod Amount: 0-5 volt range

Ext syn, trig mode, sustain, glide, on/off: Switch closure

VCF, RES, AUX: 0dBm

Power Requirements: 100-130/200-260 VAC; 0.5A/0.25A

Dimensions: 6"H x 45½"W x 22¼"D

Shipping Weight: 82 lbs.

List of Controls and Functions

Part I—Rotary and Slide Pot Controls

1. **Fine Tune**—Tunes entire instrument ±2 semitones.
2. **Beat**—Tunes voltage controlled rectangular oscillator rank ±½ semi-tone.
3. **Ext Kb Glide**—Sets amount of glide of monophonic keyboard circuit.
4. **Master Gain Controls**—
   (a) AUX—Sets output level of external signal applied to AUX input.
   (b) Direct—Sets output level of Direct Poly channel.
   (c) Mode—Sets output level of Poly Mode channel.
   (d) RES—Sets output level of Poly Resonator channel.
   (e) VCF—Sets output level of Poly voltage controlled filter channel.
5. **Octave Bal**—
   (a) 1-2; Sets drive level of audio signal for lowest two octaves for output channels.
   (b) 3-4; Sets drive level for middle two octaves for all output channels.
   (c) 5-6; Sets drive level of upper two octaves for all output channels.
6. **Sawtooth Rank Tune**—Tunes voltage controlled sawtooth rank ± a musical sixth.
7. **Sawtooth FM, Rectangular FM/PM**—
   (a) Rate—Sets rate (Freq) of frequency modulation of sawtooth oscillator.
   (b) Amt—Determines amount of sawtooth frequency modulation.
   (c) Rate—Determines rate (Freq) of rectangular frequency modulation.
   (d) AMT—Determines amount of rectangular rank frequency modulation.
8. **Rectangular Shape/Mod**—
   (a) Shape—Varies rectangular pulse width for lowest two octaves from 5% to 50%.
   (b) Amt—Sets amount of pulse width modulation for the lowest two octaves.
   (c) Shape—Varies rectangular pulse width of upper four octaves from 5% to 50%.
   (d) Amt—Sets amount of pulse width modulation for the upper four octaves.
   (e) Rate—Determines rate (Freq) of pulse width modulation for all octaves.
9. **Sawtooth Rank Mix**—
   (a) Lower—Sets sawtooth level for lower two octaves.
   (b) Upper—Sets sawtooth level for upper four octaves.
10. **Center Selector Panel**—
    (a) Buttons Labeled 1-8—Selects one of the eight basic preset operating modes.
    (b) Nine Button—Forces entire instrument into variable mode.
    (c) Period Button—Defeats cancelling action (return to PRE state) when mode 1 through 8 depressed.
11. **Ribbon Controller**—Varies pitch of entire instrument ± a minor sixth.
12. **Loudness Contour**—
    (a) KB DYN—Determines amount of dynamic keyboard effect.
    (b) Attack—Determines attack rate if sustain level is raised.
    (c) D/R—Determines initial decay and final decay to sustain level.
    (d) Sustain—Determines sustain level while key is depressed.
13. **Resonators**—
    (a) Pass Mode (low, band, high)—Selects low, band, or high pass mode for all three resonators simultaneously.
    (b) CF—Sets cutoff frequency of low resonator.
    (c) EMPH—Sets emphasis (Q) of low resonator.
    (d) Gain—Sets gain of low resonator.
    (e) CF—Determines cutoff frequency of medium resonator between 300 and 1500 Hz.
    (f) EMPH—Determines emphasis (Q) of medium resonator.
    (g) Gain—Sets gain of medium resonator.
    (h) CF—Determines cutoff frequency of high resonator between 1.5 and 7.5 KHz.
    (i) EMPH—Sets emphasis (Q) of high resonator.
    (j) Gain—Sets gain of high resonator.
14. **VCF—Voltage Control Filter**
    (a) Cutoff—Varies cutoff frequency of VCF.
    (b) EMPH—Varies emphasis (Q) of VCF.
    (c) KB—Determines amount of monophonic keyboard buss voltage applied to VCF.
    (d) Rate—Sets rate (freq) of VCF modulation oscillator.
    (e) AMT—Determines amount of repetitive VCF modulation.
    (f) S AND H—Determines the amount of sample and hold modulation of the cutoff frequency.
    (g) Amount—Sets amount of filter contour.
    (h) Attack—Determines attack rate of filter contour.
    (i) Decay—Determines initial and final decay of filter contour.
    (j) Sustain—Determines sustain level while key is held off filter contour.

Part II—Push Button Controls

1. **Keyboard Waveshape**
   (a) Lower, 3 Buttons—Select sawtooth, rectangular or both for lower two octave waveshape.
   (b) Upper, 3 Buttons—Select sawtooth, rectangular or both wave forms for upper four octave waveshape.
2. **Footage**
   (a) Sawtooth Rank, 2 Buttons—8', 4' sawtooth oscillator frequency select.
   (b) Rectangular Rank, 2 Buttons—16', 8' rectangular rank oscillator frequency select.
3. **Sawtooth Rank Tune, VAR/PRE**—
   Selects variable or preset mode for sawtooth rank tuning.
4. **Sawtooth Rank FM, Rectangular FM/PM**
   (a) VAR/PRE—Sets frequency and/or phase modulation to variable or present control.
   (b) PRE/LOCK—Puts both voltage controlled oscillator ranks in either free or lock mode.
5. **Rectangular Shape/Mod, VAR/PRE**—
   Variable or preset mode for rectangular shape and modulation.
6. **Sawtooth Rank Mix, VAR/PRE**—
   Variable or preset selection for sawtooth rank mix levels.
7. **Loudness Contour**—
   (a) VAR/PRE—Variable or preset selector for loudness contour control.
   (b) Final Decay, Lock/Man—Lock turns final decay unconditionally on; Man allows use of foot pedal control of final decay.
8. **Resonators**
   (a) Keyboard, Lower/Upper/All—Determines whether resonators are fed from the lower two octaves, the upper four octaves, or all octaves.
   (b) On/Off—Turns resonator audio channel on and off.
9. **Voltage Controlled Filter**
   (a) On/Off—Turns voltage controlled filter audio channel on and off.
   (b) VAR/PRE—Variable or preset control for voltage controlled filter parameters.
   (c) Keyboard, Lower/Upper—Determines whether monophonic keyboard voltage is derived from lower two octaves or upper four octaves.
   (d) Keyboard, All/Split—Determines whether audio feed to voltage controlled filter is from the entire keyboard, or whether it is determined by the low/high switches immediately to the left.

Polymoog Rear Panel Connections

1. **S-Trig Out**—S-trigger output, either single or multiple trigger, determined by trig mode input control.
2. **KB Out**—Monophonic keyboard control voltage output for controlling external synthesizer.
3. **KB Scale**—Adjusts Kb out voltage range.
4. **S-Trig In**—S-trigger input for filter contour.
5. **Swell**—Controls output level of BAL MIX or MIX output.
6. **Filter**—input to vary voltage control.
7. **MOD AMT**—input to control amount of frequency and pulse width modulation when appropriate front panel controls are in the variable mode.
8. **Pitch**—varies frequency of Polymoog's voltage controlled oscillators, jack tip controls both oscillators simultaneously, stereo ring controls frequency of rectangular rank separately.
9. **EXT SYN**—switch input to control on/off of s-trig out and kb out.
10. **Trig Mode**—switch input to determine single or multiple trigger mode s-trig out.
11. **Sustain**—switch input to control final decay when front panel final decay switch is in MAN position.
12. **Glide**—switch input to control KB OUT GLIDE on or off.
13. **Bal Mix**—XLR balanced line 600 ohm output.
14. **Mix**—single ended mix output derived from BAL MIX connector; insertion of jack automatically unbalances BAL MIX to provide single ended output.
15. **VCF**—voltage controlled filter channel output.
16. **PRE—mode** (internal fixed filter) channel output.
17. **Direct**—direct channel output.
18. **RES**—resonator output channel.
19. **AUX**—input for external audio signal with front panel gain control, output appears in mix.
20. **VCF**—input directly to voltage controlled filter, output appears in VCF output or MIX output.
21. **RES**—Direct input to resonators, output appears in RES or MIX outputs.

22, 23. **ACCESSORIES**—Provides +15, −15, and +5 VDC power for accessories.

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