1. Introduction

Module A-197 serves to display DC or AC voltages by means of an illuminated moving coil meter with mirror scale.

The display range is 0...+10V (resp. -5V...+5V in the offset mode).

The module features 3 different measuring methods that are selected by a toggle switch.

A LED is used as an indicator for negative voltages.
2. Overview

Controls:

1. Meter: Moving coil meter
3. LED: Indicator for negative voltages at input ➀

Inputs / Outputs:

➀ In: Measuring voltage input (3-fold multiple)
3. Controls

1. **Meter**
   The illuminated moving coil meter with mirror scale is used as readout for the voltage applied to socket O.

2. **Measurement Mode**
   This switch is used to select the desired measurement mode:
   - **Full wave rectifier**
     In this mode the incoming signal is *rectified* and *smoothed* with a low pass filter.
     This mode is normally used to display *audio signals* resp. *AC voltages*. But even DC voltages can be measured in this mode. The display shows however the absolute value (i.e. positive voltages remain unchanged, negative voltages - e.g. -3V - are converted into the corresponding positive voltages - e.g. +3V). To distinguish between positive and negative input signals LED ③ is available that lights up in case of a negative signal.
   - **Direct mode**
     In this mode the incoming voltage is lead to the meter without additional electronic modification.
     This mode is intended to display *positive DC voltages*, e.g. ADSR (A-140/141/A142), MIDI-to-CV (A-190/191), positive analog or digital random voltages (A-149-1, A-149-2), foot controller (A-177) or slowly changing Gate/Clock signals.
   - **Offset mode (+5V Offset):**
     In this mode +5V are added to incoming voltage before it reaches the meter. *Zero volt input* correspond to the middle position of the display needle (i.e. +5V read out).
     This mode can be used to display *positive and negative voltages*, e.g. a slowly swinging LFO (A-145/146/147), S&H (A-148), bipolar random voltages (A-118), joy stick (A-174), Theremin (A-178), light controlled CV source (A-179).
3 Neg. Indicator
The LED lights up if a negative voltage appears at the measurement input Ω.

4. Inputs / Outputs

1 In
This socket is the measurement input of the module. It is available as a triple multiple so that the signal to be measured can be used elsewhere in the system simultaneously.