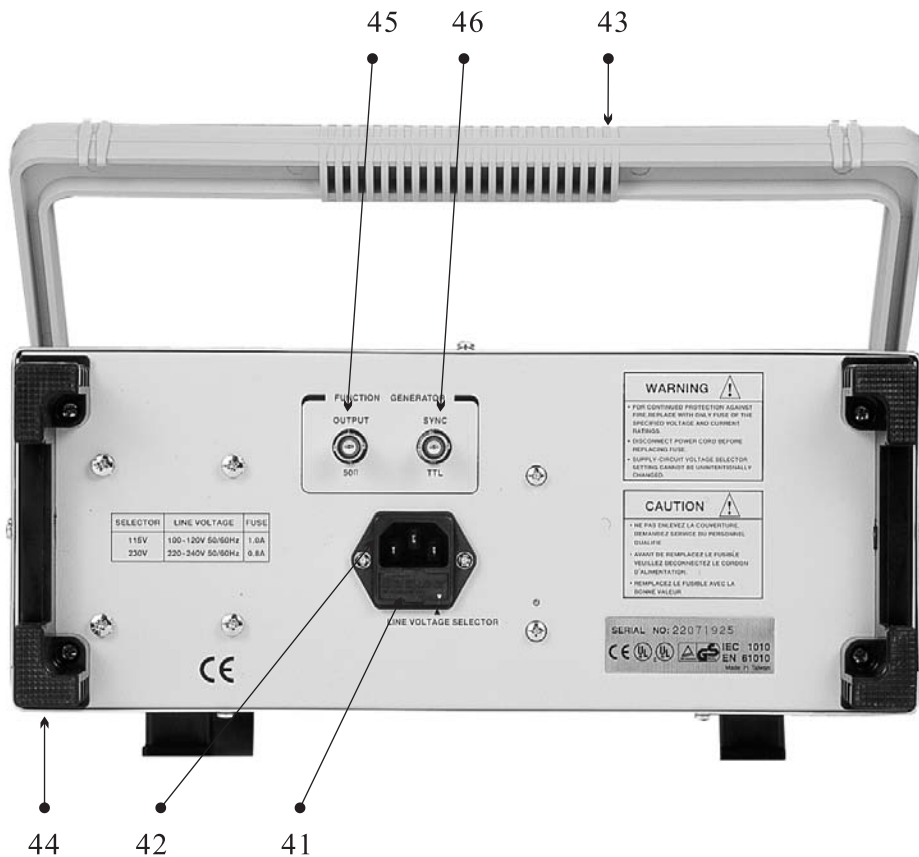
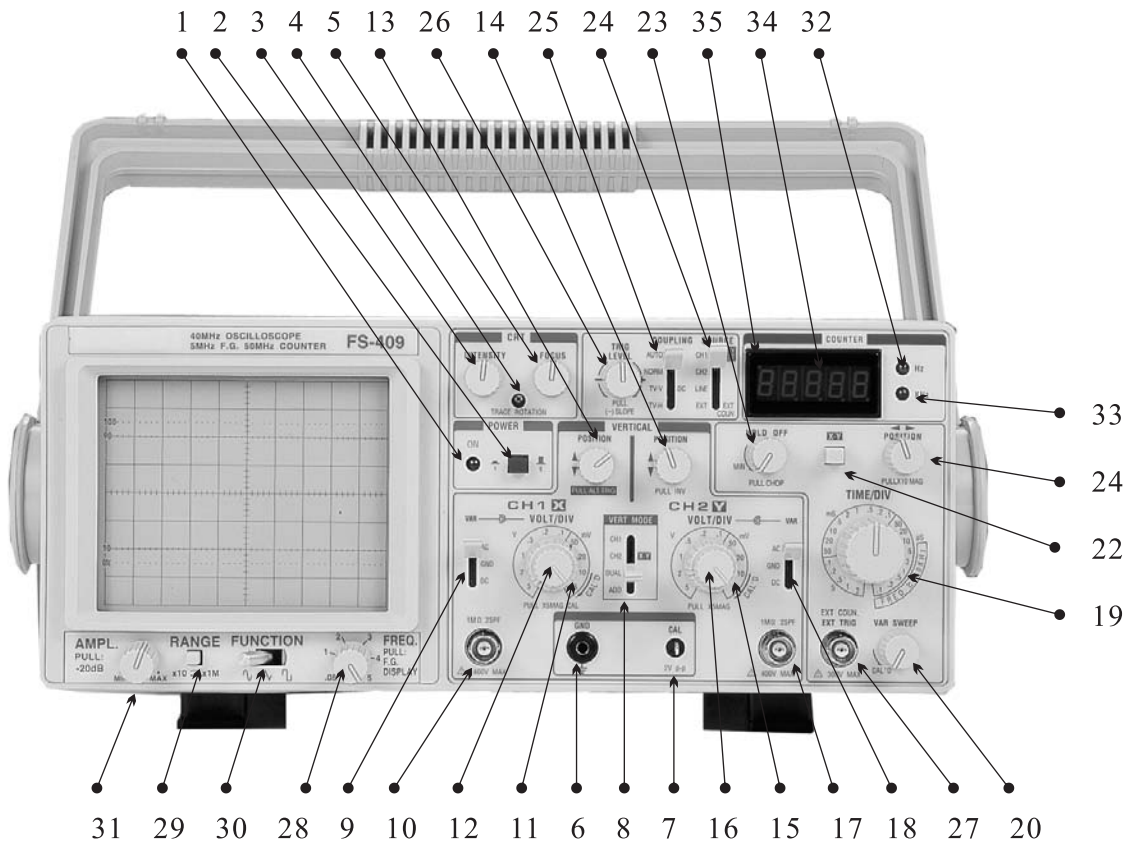


FS-409 CONTROLS AND INDICATORS



FS-409 CONTROLS AND INDICATORS

GENERAL FUNCTION CONTROLS

- 1. ON Indicator.** Lights when oscilloscope is "on".
- 2. POWER Pushbutton.** Turns: oscilloscope "on" and "off".
- 3. INTENSITY Control.** Adjusts brightness of trace.
- 4. TRACE ROTATION Control.** Adjusts to maintain trace at a horizontal position.
- 5. FOCUS Control.** Adjusts trace focus.
- 6. GND \perp Terminal.** Oscilloscope chassis ground jack, and earth ground via three-wire ac power cord.
- 7. CAL Terminal.** Terminal provides 2Vp-p, 1kHz (nominal) square wave signal. This signal is useful for checking probe compensation adjustment, as well as providing a rough check of vertical calibration.

VERTICAL CONTROLS

- 8. VERTICAL MODE Switch.** Selects vertical display mode. Four-position lever switch with the following positions :

CH1:

Displays the channel 1 signal by itself.

CH2/X-Y:

CH2: displays the channel 2 signal by itself.

X-Y: used in conjunction with the X-Y control and **Trigger SOURCE** switch to enable X-Y display mode.

DUAL

Displays the channel 1 and channel 2 signals simultaneously. Dual-trace mode may be either alternate or chopped sweep: see the description under **HOLD OFF/PULL CHOP** control.

ADD:

The inputs from channel 1 and channel 2 are summed and displayed as a single signal. If the Channel 2 **POSITION/PULL INVERT** control is pulled out, the input from channel 2 is subtracted from channel 1 and the difference is displayed as a single signal.

- 9. CH1 AC-GND-DC Switch.** Three-position lever switch with the following positions:

AC:

Channel 1 input signal is capacitively coupled; DC component is blocked.

GND:

Opens signal path and grounds input to vertical amplifier. This provides a zero-volt base line, the position of which can be used as a reference when performing dc measurements.

DC:

Direct coupling of channel 1 input signal; both AC and DC components of signal produce vertical deflection.

- 10. CH1 (X) Input Jack.** Vertical input for channel 1. X-axis input for X-Y operation.
- 11. CH1 (X) VOLTS/DIV Control.** Vertical attenuator for channel 1. Provides step adjustment of vertical sensitivity. When channel 1 **VARIABLE** control is set to **(CAL)**, vertical sensitivity is calibrated in 10 steps from 5 mV/div to 5 V/div in a 1-2-5 sequence. When the X-Y mode of operation is selected, this control provides step adjustment of X-axis sensitivity.

12. CH1 VARIABLE/PULL X5 MAG Control:

VARIABLE:

Rotation provides vernier adjustment of channel 1 vertical sensitivity. In the fully-clockwise (**CAL**) position, the vertical attenuator is calibrated. Counterclockwise rotation decreases gain sensitivity. In X-Y operation, this control becomes the vernier X-axis sensitivity control.

PULL X5 MAG:

When pulled out, increases vertical sensitivity by a factor of five. Effectively provides two extra sensitivity settings: 2 mV/div and 1 mV/div. In X-Y mode, increases X-sensitivity by a factor of five.

13. CH1 POSITION/PULL ALT TRIGGER Control:

POSITION:

Adjusts vertical position of channel 1 trace.

PULL ALT:

Used in conjunction with the **Trigger SOURCE** switch to activate alternate triggering. See the description under the **Trigger SOURCE** switch.

14. CH2 POSITION/PULL INVERT Control:

POSITION:

Adjusts vertical position of channel 2 trace. In X-Y operation, rotation adjusts vertical position of X-Y display.