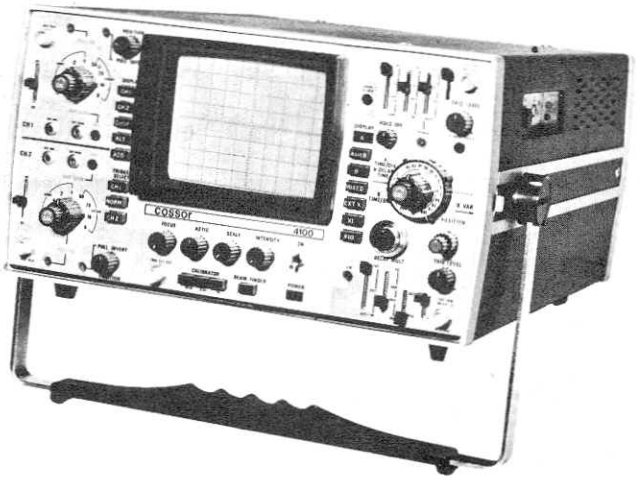
1978

COSSOR INSTRUMENTS

75MHz DUAL TRACE PORTABLE OSCILLOSCOPE Model 4100

The Model 4100 gives continued assurance of the reliability, performance and serviceability embodied in the new range of COSSOR oscilloscopes.
Featuring:



- 75MHz Bandwidth
- 20kV High Brightness Trace
- Sensitivity 5mV/div
- 8 × 10cm Display
- Internal Graticule
- Low Profile—Small Size
- Rack Mount Model available

Included Standard Accessories enclosed in the Storage Cover: Two Model 40221 probe kits, mesh filter, spare fuses and short form operating instructions.

VERTICAL DEFLECTION

Comprises two channels having the following identical specification.

BANDWIDTH AND RISE TIME

On all ranges bandwidth is DC to at least 75MHz, rise time 5ns, from a 25Ω source.

DEFLECTION FACTOR

5mV/div to 2V/div in 9 steps with 1-2-5 sequence. A variable gain control covers between the steps and increases the range to greater than 5V/div.

VERTICAL MAGNIFIER

Magnifies vertical deflection by a factor of 5 increasing the maximum sensitivity to 1mV/div, with bandwidth of 20MHz.

MEASURING ACCURACY

±3% on all ranges.

INPUT IMPEDANCE

1MΩ (±2%) in parallel with approximately 20pF.

INPUT COUPLING

AC, Ground, DC.

MAXIMUM INPUT VOLTAGE

±400V DC, +peak AC, 10kHz or less.

OPERATING MODES

Channel 1
Channel 2
Alternate
Chopped 500kHz (approximately)
Channel 1 and Channel 2 Added

INTERNAL TRIGGER SOURCE

Composite
Channel 1 or Channel 2

SIGNAL DELAY

Sufficient to view leading edge of input waveform.

DYNAMIC RANGE

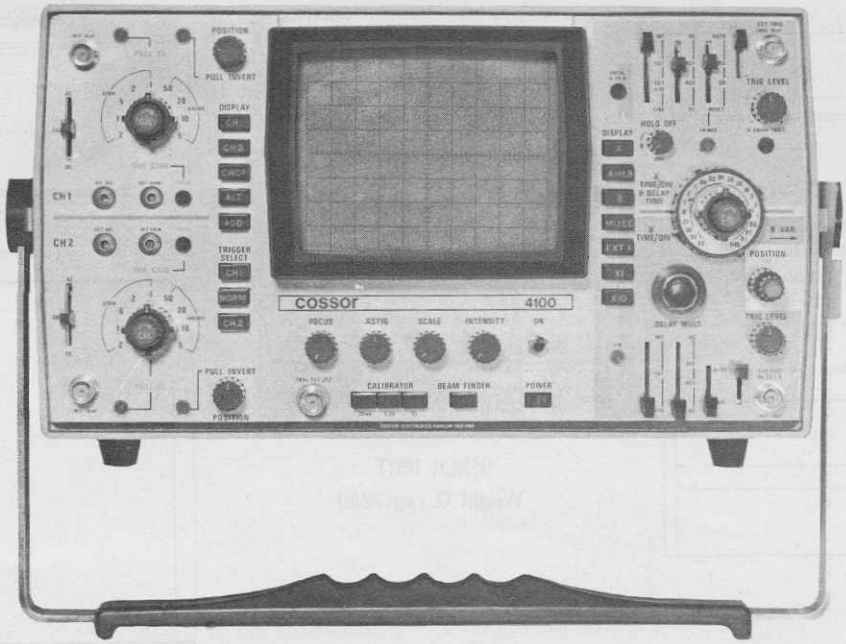
Three screen heights maximum.

COMMON MODE REJECTION

Greater than 40dB at 5mV/div.
Greater than 20dB on all other ranges.
DC to 1MHz with optimum settings at low frequency.
Common mode voltage at 10 times selected alternate range.

DRIFT

Typically 250μV/hour after 30 minute warm up period, at constant ambient temperature.
Typically 200μV/°C throughout operating temperature range.



HORIZONTAL DEFLECTION

A TIMEBASE (Main and Delaying)

0.05μs/div to 0.2s/div in 21 calibrated steps with 1-2-5 sequence. A variable control covers between the steps and extends the range to at least 0.5s/div. Warning lamp indicates uncalibrated setting.

TRIGGER MODES
Normal, Levelable Auto and Single Sweep (with lamp indication and reset facility).

TRIGGER SOURCE
Internal, External, External ÷ 10, Line.

TRIGGER LEVEL
3 screen heights with lamp to indicate triggered timebase.

VARIABLE HOLD OFF
1½ full periods at 20ms/div and faster.

B TIMEBASE (Delayed)

0.05μs/div to 0.1s/div in 20 calibrated steps with 1-2-5 sequence. A variable control covers between the steps and extends the range to at least 0.25s/div. Warning lamp indicates uncalibrated setting.

TRIGGER MODES
Auto (starts immediately after delay time).
Triggered (triggerable after delay time).

TRIGGER SOURCE
Internal, External, External ÷ 10.

TRIGGER LEVEL
3 screen heights.

DELAY TIME
0.05μs to 2s with vernier.

DELAY JITTER
One part in 20,000 of range maximum.

X AMPLIFIER

BANDWIDTH
At least 6MHz.

SENSITIVITY
2V/div when using external ÷ 10.
200mV/div on basic range.
20mV/div when using ×10 magnification.

GENERAL

DISPLAY MODES
A only.
A intensified by B.
B delayed by A.
X-Y.
Mixed sweep.

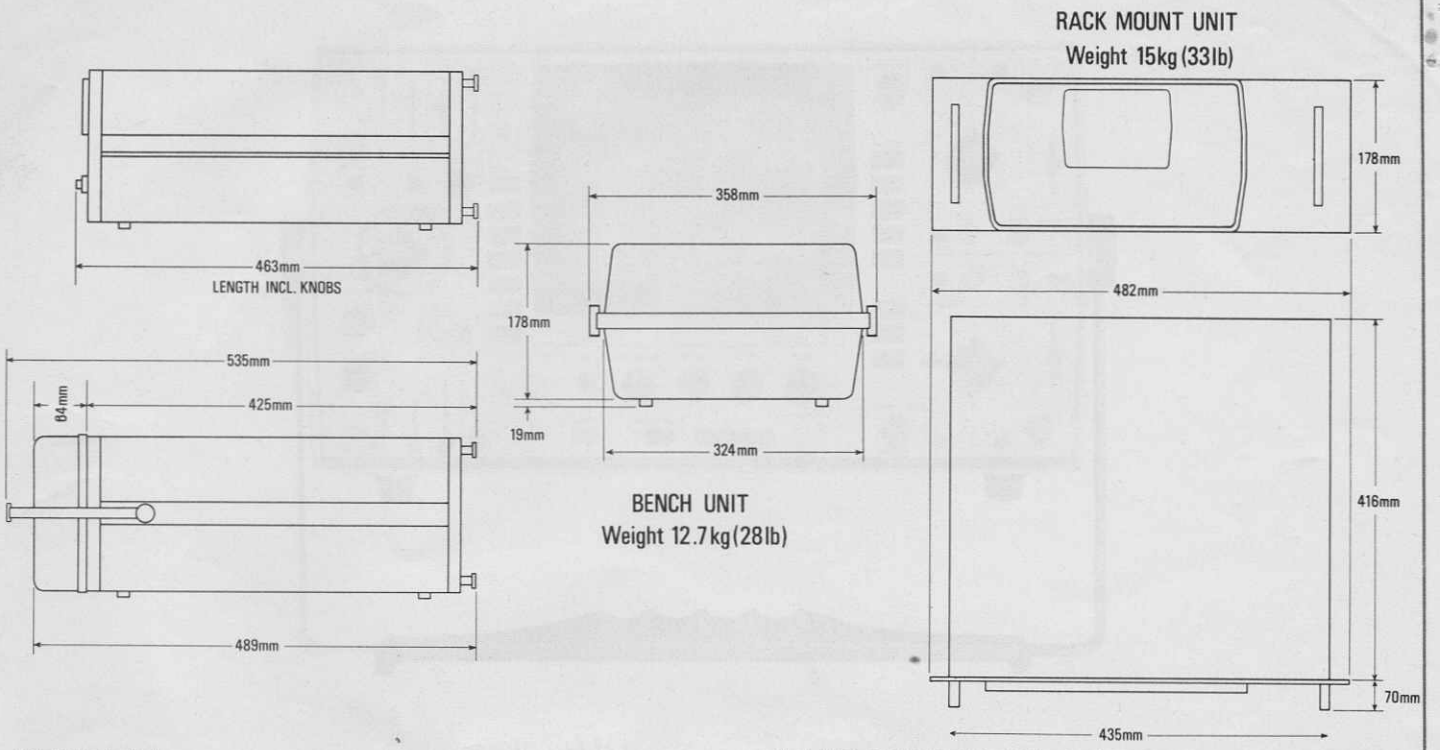
ACCURACY
±3% on all ranges.

HORIZONTAL MAGNIFIER
Magnifies horizontal deflection by a factor of 10, increasing the fastest sweep speed to 5ns/div. Accuracy ±1% in addition to the accuracy of the unmagnified timebase (±2% when using fastest sweep speed).

EXTERNAL INPUT IMPEDANCE
1MΩ in parallel with less than 25pF.

TRIGGER SENSITIVITY		
Coupling	Low Frequency	75MHz
DC Internal External	0.3div 60mV	1div 200mV
AC	As for DC but approximately 3dB down at 10Hz	
ACF (AC fast)	As for DC but approximately 3dB down at 20kHz	
ACS (AC slow)	As for DC but approximately 3dB down at 10Hz and 50kHz	

DIMENSIONS AND WEIGHTS FOR MODELS 4100 AND 4100R



GENERAL

POWER REQUIREMENTS

AC: Quick change line voltage selector covers voltages between 100V to 125V ±6% and 200V to 250V ±6% Frequency 48 to 440Hz. Consumption 80VA at 50Hz.

CALIBRATOR

30mV, 300mV and 3V peak to peak. 1kHz square wave ±1%. Amplitude ±1%.

A SWEEP OUT

1V nominal amplitude sawtooth waveform, frequency selected on A Timebase. Source Impedance 1kΩ nominal.

B SWEEP OUT

1V nominal amplitude sawtooth waveform, frequency selected on B Timebase. Source Impedance 1kΩ nominal.

A GATE OUT

1V nominal amplitude squarewave, frequency selected on A Timebase. Source Impedance 1kΩ nominal.

B GATE OUT

1V nominal amplitude squarewave, frequency selected on B Timebase. Source Impedance 1 kΩ nominal.

ACCESSORIES

A full range of accessories is available to supplement those included as standard items. These include: Trolleys, visors, terminations, etc.

ENVIRONMENTAL DATA

AMBIENT TEMPERATURE

Operating: −15°C to +55°C
0°C to +40°C when unit is operated vertically.
Storage: −55°C to +75°C

ALTITUDE

Operating: 4,500m (15,000 feet)
Storage: 15,000m (50,000 feet)

HUMIDITY

Up to 95% RH at +40°C

CATHODE RAY TUBE AND CONTROLS

8 × 10cm rectangular face having internal graticule and 20kV overall accelerating voltage. P-31 phosphor as standard, alternative phosphors are available upon request.

GRATICULE

Internal with variable edge lighting.

FILTERS

Contrast and mesh filters provided.

BEAM FINDER

Overrides intensity and limits vertical and horizontal deflection to bring trace onto the CRT face.

INTENSITY MODULATION

DC coupled and fully TTL compatible. 5V peak to peak input will fully blank trace up to 5MHz. Visible modulation up to 50MHz. Input impedance 10kΩ (nominal).

MODEL 4100R RACK MOUNT VERSION

The Rack Mount Model 4100R is identical in all electrical aspects to the Model 4100, modified for standard 19" rack mounting. Available as a factory fitted option or as a conversion kit which includes hardware and instructions to modify the Model 4100 portable oscilloscope to Model 4100R.