

1. INTRODUCTION

The PM 3206 is a compact lightweight dual trace oscilloscope, featuring ergonomic design and extensive measurement capabilities. The wide range of use includes educational, research and service applications.

The maximum sensitivity is 5 mV/div and the bandwidth is 15 MHz.

The instrument has several trigger modes including TV triggering.

2 CHARACTERISTICS

This instrument has been designed and tested according to IEC Publication 348 for Class I instruments and has been supplied in safe condition. This data apply at an operating temperature between + 5°C and 40°C and after a warming-up period of 15 min. (Reference temperature 23°C)

CRT

Measuring area 8 x 10 DIV. (1 DIV = 1 cm)

Screen type B31;

Total acceleration voltage 2 kV

Vertical amplifier

Display modes A, A and B, B (chopped in ms – alternated in μ s position)

Input coupling AC/DC

Bandwidth DC : 0Hz ... 15 MHz (-3 dB)
AC : 10Hz ... 15 MHz (-3 dB)

Deflection accuracy $\pm 5\%$

Input impedance $1\text{ M}\Omega // 35\text{ pF}$

Max. Rated input voltage 400 V (dc + ac peak) – (no damage)

Chopper frequency 120 kHz approx.

Time base

Time coefficients 0.2 s/DIV ... 0.5 μ s/DIV in 2x9 calibrated steps (1-2-5 sequence) with 5x magnifier max. 0.1 μ s/DIV
Uncalibrated continuous control $1:\geq 2,5$

Coefficient error $\pm 5\%$

Additional error for x5 magnifier $\pm 2\%$

✓ Trigger Source	Ch. A; Ch. B; EXT
Mode	AC/TV
Sensitivity INT:	0.75 DIV } Trigger freq.
EXT:	0.75 V } at 100 KHz
	1.0 DIV } Trigger freq.
	1.0V } at 15 MHz
✓ Trigger frequency range	10 Hz ... 15 MHz
Input impedance	1 MΩ // 35 pF
△ Max. rated input voltage	400 V (dc + ac peak) - (no damage)
X-deflection	
Source	YA-input; Time base
Accuracy:	± 5%
✓ Frequency range	0 to 1 MHz (-3 dB)
Phase shift	3° at 10 KHz
Z-MOD input	
Trace blanking	TTL High blanks trace. Low or not connected no trace blanking
Power supply	
△ Nominal voltage range	220V or 240V ± 10%
Nominal frequency range	50 Hz Nominal
Power consumption	30 VA Nominal
Mechanical data	
Length	378 mm incl. controls
Width	348 mm incl. handle
Height	142 mm incl. feet
Weight	5 kg. Nominal

3. ACCESSORIES

Delivered with the instrument
– Operating manual

4. SAFETY INSTRUCTIONS

4.1 Earthing

Before any connection is made the instrument shall be connected to a protective earth conductor via the three-core line cable; the line plug shall be inserted only into a socket outlet provided with a protective earth contact. The protective action shall not be negated by the use of an extension cord without protective conductor.

WARNING: Any interruption of the protective conductor inside or outside the instrument is likely to make the instrument dangerous. Intentional interruption is prohibited.

When an instrument is brought from cold into a warm environment, condensation may cause a hazardous condition. Therefore, make sure that the earthing requirements are strictly adhered to.

4.2 Line voltage setting and fuses

– Before inserting the line plug into the line socket, make sure that the instrument is set to the local line voltage.

NOTE: If the line plug has to be adapted to the local situation or if the line voltage has to be set to the local line voltage, such adaptation should be done by a qualified technician only.

5. CONTROLS AND SOCKETS

Cathode-ray tube and power controls

1. OFF/INTENS

Continuously variable control of the trace-brilliance; incorporates mains (line) switch.

POWER ON pilot lamp indicates the ON state.

2. FOCUS

Beam-focussing control; enables focussing of beam for sharp spot size; For correct display FOCUS and INTENS should be optimally adjusted.

3. TRACE ROTATION

Screwdriver control of trace alignment.

Vertical deflection

4. POSITION Control (by turning) for vertical shifting of the trace (spot)
5. AMPL/DIV Control of vertical deflection coefficients, ranging from 5 mV/DIV up to 20V/DIV in 1-2-5 sequence.
6. $\frac{\text{ON}}{\text{OFF}}$ In the "OFF" -position the input is floating and no trace will be displayed. If both switches are in "OFF" position the time base line of channel B is displayed. If both switches are in "ON"-position, both channels are displayed -chopped (ms) or alternated (μs).
7. $\frac{\text{AC}}{\text{DC}}$ Input signal coupled via a blocking capacitor and the DC component is blocked.
Input signal directly coupled.
8. A BNC-socket for channel A input.
9. B BNC-socket for channel B input.
- Time-base and horizontal deflection**
10. X POSITION Control (by turning) for horizontal shifting of the trace (spot).
11. LEVEL Control for adjusting the point (level) on the input signal slope at which the signal is triggered.
12. $\frac{\mu\text{s}}{\text{ms}}$ Slide switch; in combination with the TIME/DIV switch selects the time coefficients.
The display is chopped in position ms and alternated in position μs .
13. MAGN $\times 1$
 $\times 5$ Slide switch; allows magnification of the horizontal deflection by a factor of 5.
14. TIME/DIV In combination with the $\mu\text{s}/\text{ms}$ switch, selects the time coefficients from

15. X VIA A

In the position X via A, horizontal deflection is determined by the channel A input signal (bandwidth 1 MHz).

CAUTION: Extended high intensity may damage CRT especially with a stationary or slow-moving spot.

16. CAL

Continuously variable control of the time coefficients. Must be in CAL-position for the time axis to be calibrated according to the indication of the TIME/DV switch

17. $\frac{A}{B}$

Slide switch; triggering is effected on the signal derived from channel A or B, depending on the switch position.

18. $\frac{+}{-}$

Slide switch; enables triggering on the positive-going (+) or negative-going (-) slope of the input signal.

19. $\frac{INT}{EXT}$

Slide switch; the time base can trigger either on a signal derived from channel A or B, or on a signal applied to BNC connector EXT.

20. $\frac{NORM}{TV}$

Slide switch; normal triggering. DC component of the trigger signal is blocked. TV line or TV frame synchronisation is obtained. (Frame in position ms, and line in position μs).

21. EXT

BNC socket for external trigger input.

Miscellaneous

22. PROBE ADJ

Output socket to be used for probe compensation.

23. Z-MOD

Input socket for external Z-modulation signal.

24. Safety earth terminal

Terminal for safety earth provided on the back.