

Scanned
ENTERED
18521

Wide bandwidth AC millivoltmeter PM 2554

Sensitivity 1mV (fsd) to 300V

Bandwidth 2 Hz...12 MHz

High accuracy up to 1% fsd \pm 1% of reading

140dB CMRR at 50 Hz (1mV range)

DC recorder output or AC output

PM 2554 combines good accuracy with an extremely wide bandwidth (12 MHz) and voltage range (100 μ V-300V). It is therefore ideal for all measurements from audio frequencies to the HF and beyond. All ranges are protected from overloads of up to 300VRMS (400VDC). Mains voltage variations of \pm 10% give no more than 0.1% change in accuracy.

TECHNICAL SPECIFICATION

Measuring ranges

0-300VRMS in 12 ranges from 0-1mV to 0-300V dB scale ranging from -80dB to +52dB (0dB = 1mV into 600 Ω)

Frequency range

2 Hz-12 MHz

Input

Floating

Input impedance 1 M Ω /33pF

Max. voltage low-ground 500Vpeak

Impedance low-ground 1G Ω /1.4nF

For reduction of capacitive loading, PM 2554 can be used with PM 8925 Oscilloscope Probe, input impedance 10 M Ω /11pF

Common mode rejection 140dB at 1kHz in 1mV range

120dB at 100kHz in 1mV range.

Accuracy

1% f.s.d. + 1% of reading

Additional error for frequencies outside flat part of bandwidth - see graph.

Stability

A line voltage variation of \pm 10% will give an additional error of 0.1% max.

Long term stability \pm 0.1% over 90 days

Noise

At short-circuited input < 30 μ V.

Influence of noise on measuring accuracy less than 0.5% at 10% of full scale deflection.



Overload

Protected against overloads up to 300VRMS or 400VDC

Measuring system

Measurement: average value

Reading: RMS value for pure sine wave

Recorder output

DC voltage: 1V at full scale

Output impedance 1k Ω

Accuracy as specified for voltmeter

AC output

Output impedance 600 Ω in serial with 47 μ F

Output voltage 50mV

Short-circuit proof

Supply

Mains: 90V...132V or 180V...265V; 50/60Hz

Temperature range

Reference temp. 23°C \pm 5°C

Rated range of use 0°C...45°C

Temperature coefficient 0.1%/°C

Dimensions and weight

(w x h x d) 236 x 145 x 298 mm

(9.3 x 5.7 x 11.7-in)

3.5kg (7.7lb.)

ACCESSORIES

Supplied with instrument

Mains Connection Cable

Measuring cable

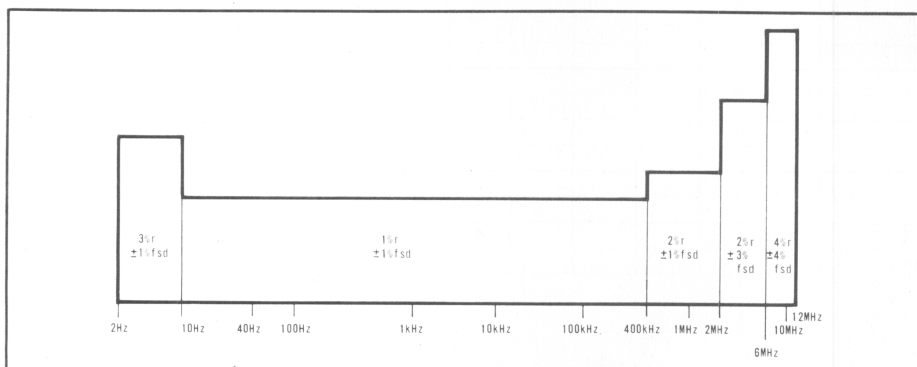
Manual

Optional

PM 9072 Measuring cable Banana, BNC, 135 Ω

PM 8925 Passive probe 10:1

PM 9051 Adapter BNC-Banana



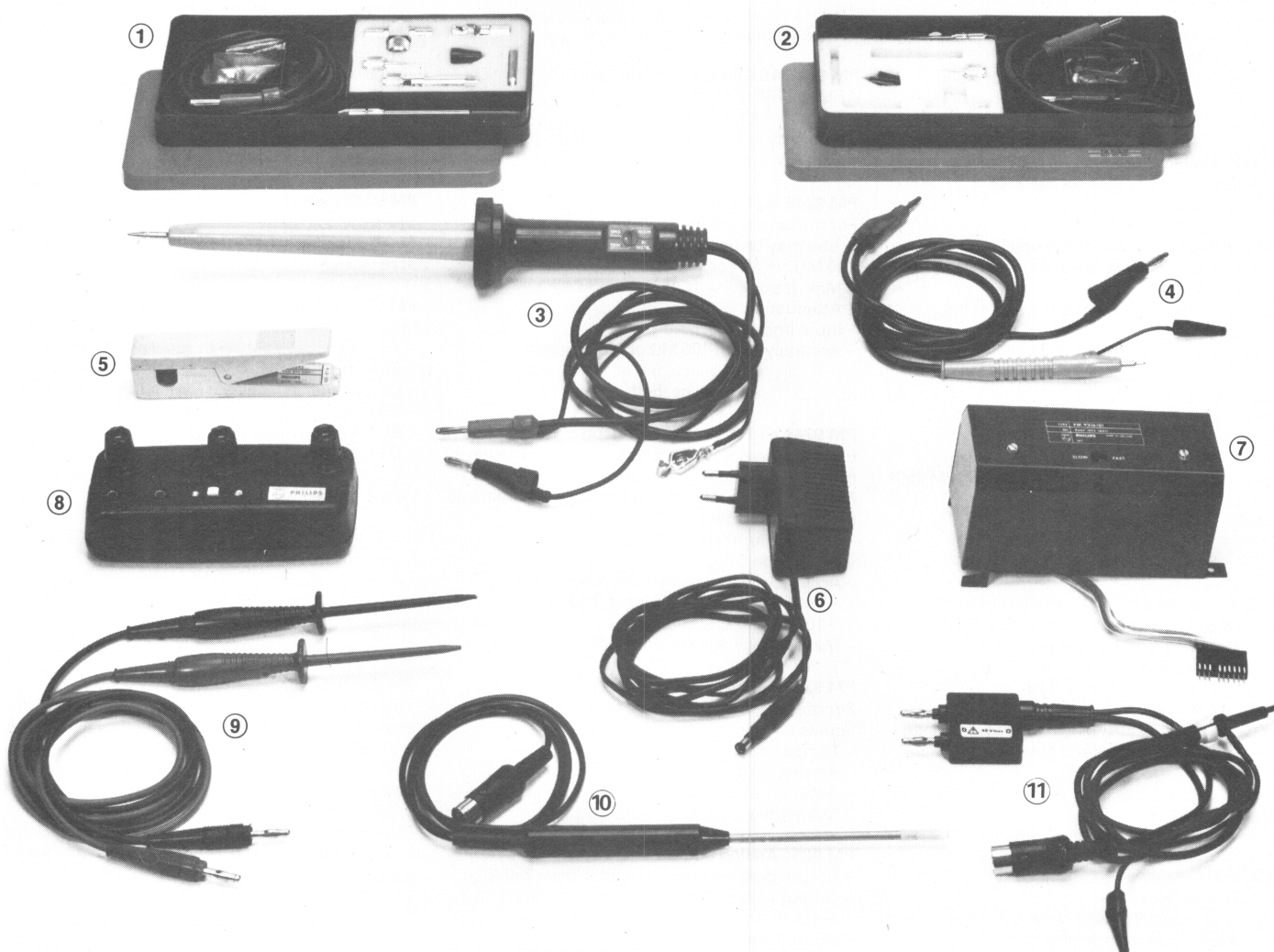
Multimeter Accessories

			PM 2434	PM 2502	PM 2504	PM 2505	PM 2517	PM 2521	PM 2522A	PM 2524	PM 2527	PM 2528	PM 2554	For details see
● Included in delivery 0 optional														
Measurements cables	PM 9071	Banana-Banana 135Ω	0		0	0	0	0	0	0	0	0		p 62
	PM 9072	Banana-BNC 135Ω	0		0	0	0	0	0	0	0	0		p 62
	PM 9074	BNC-BNC 50Ω											0	p 62
	5322 320 14093	BNC-Banana											●	
Adapters	PM 9051	Adapter BNC-Banana											0	p 62
	PM 9053	Adapter Banana-BNC	0		0			0	0	0	0	0	0	p 62
	PM 9061	Adapter BNC-BNC											0	p 62
	PM 9067	T-piece BNC											0	p 62
Test leads	PM 9260	Pair of testleads	●	●	●	●	●	●	●	●	●	●		p 167
	5322 321 20506	4-wire-testleads										●		
	5322 321 24376	measuring cable									●	●		
Probes	PM 8921	1:1 passive probe											0	p 56
	PM 9326	10:1 passive probe											0	p 56
	PM 9263	Hold probe					0	0	0			0		p 168
HF accessories	PM 9258	HF option										0		PM 2528
	PM 9210	HF probe	0		0	0	0	0	0	0				p 167
	PM 9211	HF probe set (linear)									0	0		p 167
	PM 9212	Accessory set for PM 9210	0		0	0	0	0	0	0				p 167
	PM 9213	Low cost HF probe	0		0	0	0	0	0	0				p 167
HT probe	PM 9246	30kV probe	0	0	0	0	0	0	0	0	0	0		p 168
Peak voltage	PM 9259	Peak voltage option										0		PM 2528
Temp. probes	PM 9249	Temp. probe						0				0		p 168
	PM 9248	Temp. probe -60...+200°C					0		0	0	0			p 168
	PM 9257	Temp. option									0			
Current accessories	PM 9244	30A shunt	0	0		0	0	0	0	0	0	0	0	p 168
	PM 9245	100A transformer		0	0	0	0	0	0	0	0	0		p 168
	PM 9101	DC current probe	0	0	0	0	0	0	0	0	0	0		p 168
Supply units	PM 9216	Rechargeable batt. unit							0	0				p 168
Mains supplies	PM 9218	Mains adapter			0		0							p 167
	PM 9111	Mains adapter				0								p 168
Ever-ready cases	PM 9672	Carrying case							0	0				p 168
	PM 9278	Ever-ready case		0		0	0							p 168
Rack mount	PM 9669/01	Rack mount unit							0	0				
	PM 9669/03	Rack mount unit									0	0		
Parallel interfaces	PM 9237	BCD output									0			
	PM 9292	BCD output										0		p 168
	PM 9220	50 pole cable									0	0		p 168
Serial interfaces	PM 9238	Bus-line interface									0			p 168
IEC-625	PM 9280	Bus-line cable									0	0		
	PM 9282	Bus-line cable									0	0		
	PM 9291	Bus-line interface										0		p 168
Analog outputs	PM 9255	Analog output									0			p 168
	PM 9254	Analog output										0		p 168
Mains cables	PM 9011	Mains cable Europe	●					●	●	●	●	●		
	5322 231 14001	Mains cable Europe											●	

Technical specifications for PM 9210, PM 9211, PM 9212 and PM 9213

	PM 9211	PM 9211 + att.	PM 9210	PM 9210 + PM 9212	PM 9213
Frequency range	100kHz-1GHz	100kHz-1GHz	100kHz-1GHz	100kHz-1GHz	10kHz-100 MHz
Straight line within 5%	100kHz-6 MHz	100kHz-6 MHz	100kHz-6 MHz	100kHz-6 MHz	30kHz-30 MHz
Max. deviation	3dB	3.5dB	3dB	3.5dB	3dB
Voltage ranges (f.s.)	2mV-2V	2V-200V	*150mV-15V	15V-200V	10mV-15V
Max. voltage AC	30V	200V	30V	200V	30V
Max. voltage DC	200V	500V	200V	500V	350V
Input capacitance	2pF	2pF	2pF	2pF	40pF
T-piece	Included in delivery		Optional in PM 9212		Not available
Frequency range	100kHz-1.2GHz			100kHz-1.2GHz	
Impedance	50Ω			50Ω	
Standing wave ratio	1.25 at 700 MHz	1.15 at 1GHz		1.25 at 700 MHz With attenuator 1.15 at 1GHz	

* using calibration chart below 150mV



① **HF probe PM 9211.** Provides instruments with an increased frequency range of 100kHz to 700 MHz for measuring voltages between 2mV and 200V.

② **HF probe PM 9210.** Provides instruments with increased frequency range of 100kHz to 700 MHz for measuring voltages between 150mV and 15V.

③ **HT probe PM 9246.** Allows measurement of DC-voltage up to 30kV.

④ **HF probe PM 9213.**

⑤ **Current transformer PM 9245.** Extends the AC current ranges to 100A.

⑥ **Battery eliminator PM 9218.** Provides mains operation for the PM 2504, PM 2517.

⑦ **Rechargeable battery supply PM 9216,** for the PM 2522A and PM 2524. Plugs into a cavity at the rear of the instrument and provides 8h mains-independent operation.

⑧ **Current shunt PM 9244.** Extends the AC/DC current ranges to 31.6A.

⑨ **Test leads and test pins PM 9260.** Highly flexible (512 wires). Silicone rubber insulation for temperatures between -100°C and +300°C. Test voltage 4kV; specified for 1kV.

⑩ **Temperature probe PM 9248** for temperature measurements between -60°C and +200°C.

⑪ **Data hold probe PM 9263.**

Multimeter accessories

PM 9101 DC Current probe

Clip on probe for DC and AC current measurements up to 200A.

- Output voltage 1mV/A
- Recommended load $\geq 3k$
- Accuracy 2% up to 100A
3% 100A...200A
for DC to 1kHz
- Max. voltage to ground 250 V_{RMS} or 350Vp
- Power requirements 4x "AA" batteries or 9V mains adapter e.g. PM 9218

PM 9111 Mains adapter

Provides mains operation for PM 2505

- Mains voltage 220V \pm 10%

PM 9216 Rechargeable battery unit

For mains independent use of multimeters PM 2522A and PM 2524.

The unit plugs into a cavity at the rear of the multimeter.

- Operating time 6h for PM 2522A
4h for PM 2524
- Recharging time 15 hours via power supply of the multimeters

PM 9218 Mains adapters

Provides mains operation for PM 2517 and PM 2504.

- Mains voltage
220V \pm 10% for A version
110V \pm 10% for Q version
240V \pm 10% for G version

PM 9237 and PM 9292 BCD parallel output

- Output isolated from input up to 250V_{RMS}
- System: Word parallel – bit parallel
- Code: positive BCD
0" = 0...+0.4V, "1" = 5 or +15V
- Output data:
measuring result including overload and range indication, parameters and polarity
- "Print command":
500 μ s output pulse
- Start command:
With negative pulse of 15 μ s...100ms

PM 9238 IEC-625 Busline interface

Interface functions:

- T5: Talker capability with serial poll, talk only and automatic unaddress facility
- L4: Listener capability with automatic unaddress facility
- SR1: Service request capability
- DT1: Device trigger capability

Output data: Parameters measured

Measuring range

Polarity and measuring data

Input data: Start command

PM 9244 DC and AC Current shunt

- Ranges: 10A and 31.6A
- Output voltage: 100mV output or 31.6mV at choice
- Accuracy: for DC and AC up to 1kHz
1% for 100mV output; 2% for 31.6mV output
- Max. voltage to ground: 400V_{DC} or AC

PM 9245 AC Current transformer

- Range 10A to 150A
- Transfer factor 1000x
- Accuracy at 50 Hz \pm 0.5% for 40 Hz to 10kHz \pm 2%
- Max. voltage to ground: 400V_{AC} or DC

PM 9246 High tension probe

For measurement of DC Voltage up to 30kV. The probe may be used with instruments having 100 M Ω , 10 M Ω or 1.2 M Ω input resistance.

- Max. input voltage 30kV
- Attenuation 1000x
- Input impedance 600 M Ω
- Accuracy 3% at 100 M Ω or 10 M Ω input impedance; 5% at 1.2 M Ω input impedance, both \pm 6ppm/V

PM 9248 and PM 9248A Temperature probe

PM 9248 is a contact probe suitable for measurements of surface temperatures.

PM 9248A is an identical probe for measurements of liquids.

- Temperature range -60 to $+200^{\circ}\text{C}$
- Resolution 0.1 $^{\circ}\text{C}$
- Accuracy including instrument specification
– 60...+100 $^{\circ}\text{C}$ \pm (1% rdng + 2 $^{\circ}\text{C}$)
+ 100...+200 $^{\circ}\text{C}$ \pm (3% rdng + 2 $^{\circ}\text{C}$)
- Max. voltage on probe tip 60V

PM 9249 Temperature probe

For measurement of surface temperatures and of liquids

- Temperature range -60 to $+200^{\circ}\text{C}$
- Resolution 0.1 $^{\circ}\text{C}$
- Accuracy excluding multimeter specification:
(0.5% rdng + 0.5 $^{\circ}\text{C}$)

PM 9254 Analog output

- Output isolated from input up to max. 250V_{RMS}
- Output voltage 1mV/digit over a maximum of 3 digits that can be selected at choice
- Output resistance 200 Ω
- Accuracy \pm (0.2% rdng + 0.1 rng) excluding voltmeters

PM 9255 Analog output

- Output isolated from input up to max. 250V_{RMS}
- Output voltage 2V at end of range
- Resolution, steps of 1mV
- Output resistance 200 Ω
- Accuracy \pm (0.2% rdng + 0.1 rng) excluding voltmeters

PM 9263 Data hold probe

For use in combination with multimeters having data hold facilities on the DIN probe input. A switch on the probe is pushed forward to hold the data in the display.

- Max. input voltage 30V_{RMS} (test voltage 500V_{AC})
 - Max. input current 200mA
- Several probe tip adapters are supplied with the probe.

PM 9672 Carrying case

For use with the multimeters PM 2522A and PM 2524

PM 9278 Ever-ready case

Sturdy shock resistant case of plastic with paddings on the inside for shock absorption and space for accessories.

PM 9291 IEC-625 Busline interface

Interface functions:

- T5: Talker capability with serial poll, talk only and unaddress if MLA
- L4: Listener capability with unaddress if MTA
- SR1: service request capability
- RL1: Remote-local capability
- DT1: Full device trigger capability

Output data: Parameter measured,

Measuring range

Polarity and measuring data

Input data: Parameter to be measured

Range

Measuring mode

Start command

PM 2521/22 Rechargeable battery version

This battery version has all the features of the standard PM 2521 + the facility of 3 hours mains independent operation on a built-in rechargeable battery. A battery low indication warns user of low battery state (\pm 3h). Recharging is via the instruments own mains supply in 18 hours.

Overcharging is not possible. A trickle-charge circuit keeps batteries on level during use with mains supply.