2 CHARACTERISTICS

A. Performance Characteristics

- Properties expressed in numerical values with tolerances, ranges, or limits stated, are guaranteed by the manufacturer.
- Properties expressed in numerical values without tolerances, ranges, or limits stated, represent the characteristics of an average instrument.
- This specification is valid if the temperature has not changed more than + or - 5 °C since the last AUTO CAL, the probe is of the same type as delivered with the instrument, and if the average factor is 8.
- For definitions of terms, reference is made to IEC Publication 351-1, 359.

B. Safety Characteristics

This instrument has been designed and tested in accordance with IEC Publication 348, Safety Requirements for Electronic Measuring Apparatus, and has been supplied in a safe condition. This manual contains information and warnings which must be followed by the user to ensure safe operation and to keep the instrument in safe condition. The instrument has been designed for indoor use. It may occasionally be subjected to temperatures between +5 °C and 10 °C without degradation of its safety.

C. General Characteristics

- Overall dimensions:
- Height (without feet) : 139 mm (5.5 in)
- Width (without handle) : 341 mm (13.5 in)
- Length (without handle and front cover) : 481 mm (19 in)

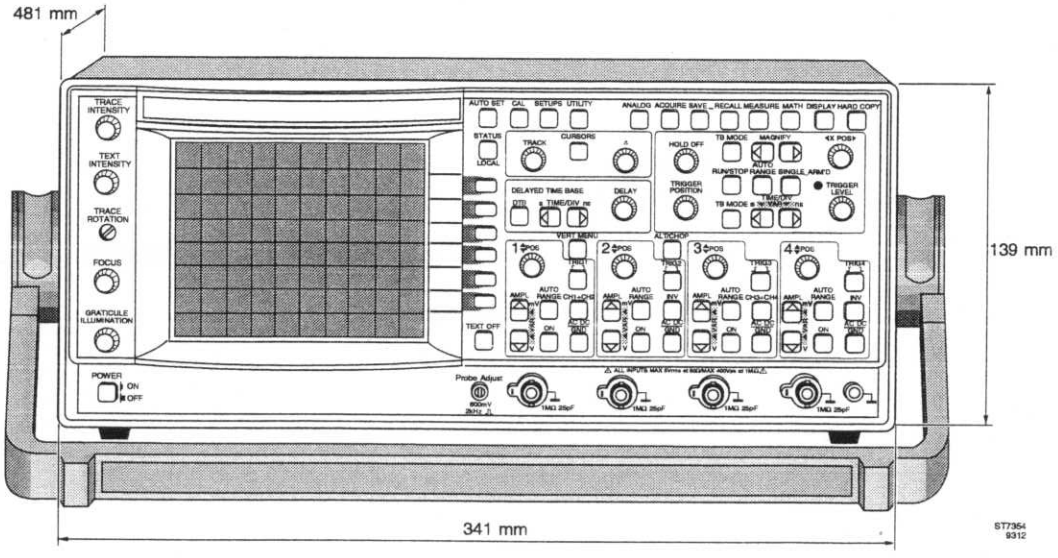

Figure 2.1 Dimensions

Weight 9.5 kg (19.7 lb)

Operating positions:
a) Horizontally on bottom feet
b) Vertically on rear feet
c) On the carrying handle in three sloping positions

Note: All items that refer specifically to only one mode (analog or digital) are identified in the leftmost column with an 'A' or a 'D'.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.1 VERTICAL

2.1.1 Channels

CHANNELS	CH1; CH2; CH3; CH4	Form a channel set Form a channel set See Note 1

Note 1: CH1 and CH2 for PM3370A, PM3380A and PM3390A.

2.1.2 Deflection Modes (Analog Only)

MODES	CH1, CH2, CH3, CH4	See Note 1 CH2 and CH4 can be inverted to allow -CH2 or -CH4
	CH1 + CH2	CH2 can be inverted to allow CH1 - CH2
	CH3 + CH4	CH4 can be inverted to allow CH3 - CH4
Automode:		
Auto attenuator	CH1, CH2 CH3, CH4	All models PM3384A/94A
Windows ON		See Note 2
	CH1, CH2 CH3, CH4	All models PM3384A/94A
	Alternate Chopped	
Chopped mode:		
Chopped freq.	1 MHz	

Note 1: CH1 and CH2 for PM3370A, PM3380A and PM3390A.

Note 2: If more than one channel ON.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.1.3 Bandwidth

FREQUENCY RESPONSE		At BNC
Lower transition point of bandwidth input coupling in AC pos	<10 Hz	
PM3394A/92A/90A		
Upper transition point of bandwidth		
(Ambient 5 to 40 °C)	>200 MHz	See Note 1
(Ambient 0 to 50 °C)	>175 MHz	See Note 1
PM3384A/82A/80A		
Upper transition point of bandwidth		
(Ambient 5 to 40 °C)	>100 MHz	With external 50Ω
(Ambient 0 to 50 °C)	>90 MHz	With external 50Ω
PM3370A		
Upper transition point of bandwidth		
(Ambient 5 to 40 °C)	>60 MHz	With external 50Ω
(Ambient 0 to 50 °C)	>55 MHz	With external 50Ω
BANDWIDTH LIMITER		
Upper transition point of bandwidth	20 MHz	

Note 1: PM3394A CH1 through CH4 in 50Ω position at BNC.
PM3390A/PM3392A CH1 and CH2 in 50Ω position at BNC.
PM3392A CH3 and CH4 at probe tip.

2.1.4 Attenuator

PM3394A/PM3384A		
CH1 to CH4 steps	2 mV/div to 5V/div	In 1-2-5 sequence
PM3392A/PM3382A		
CH1 and CH2 steps	2 mV/div to 5V/div	In 1-2-5 sequence
CH3 and CH4 steps	0.1V/div and 0.5V/div	
PM3390A/PM3380A/PM370A		
CH1 and CH2 steps	2 mV/div to 5V/div	In 1-2-5 sequence
EXT TRIG steps	0.1V/div and 1V/div	
Variable gain mode	2 mV/div to 12.5V/div	Continuously variable
Auto Attenuator	2<div<6.4	1-2-5 steps precision (min. 50 mV/div)
Auto Attenuator (Windows ON)	1<div<3.2	1-2-5 steps precision (min. 50 mV/div)

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.1.5 Input Characteristics

INPUT CONNECTOR	BNC	See Note 1
INPUT IMPEDANCE		Measured at freq.
(in 1 MΩ pos.)		<1MHz
R parallel-value	1 MΩ	
- tolerance	±1 %	
C parallel-value	25 pF	
- tolerance	±2 pF	
INPUT INPEDANCE		PM3392A/90A on CH1 and CH2
(in 50Ω pos.)		PM3394A all channels
R parallel value	50Ω	
- tolerance	±1 %	
VSWR (typical)	1.5:1	See Note 2

Note 1: BNC with Probe Readout pin which causes the instrument to change V/div indication, input impedance, and attenuator setting according to the probe (when equiped with a probe indicator).

Note 2: Measured up to 200 MHz input frequency; in dc and ac coupling of input.

2.1.6 Coupling

COUPLING	dc, ac, ground	See Note 1

Note 1: In GND position: channel disconnected from input, and connected to ground, BNC open (when not in 50Ω position). The GND coupling is available for channel CH1 and CH2 in all models and for CH3 and CH4 in PM3394A and PM3384A.

2.1.7 Dynamic Range

PM3390A/PM3392A/PM3394A		
Up to 50 MHz	±12 div	Symmetrical
Up to 200 MHz	±4 div	Symmetrical
PM3380A/PM3382A/PM3384A		
Up to 25 MHz	±12 div	Symmetrical
Up to 100 MHz	±4 div	Symmetrical
PM3370A		
Up to 15 MHz	±12 div	Symmetrical
Up to 60 MHz	±4 div	Symmetrical

2.1.8 Position Range

POSITION RANGE	+ or - ≥ 8 div	Symmetrical

2.1.9 Trace Separation

TRACE SEPARATION		MTB and DTB
Min. range	+ or - ≥ 4 div	MTB fixed, DTB shifts

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.1.10 Input Voltage Limits

INPUT VOLTAGE LIMITS		See Note 1
In high Z position (dc + ac peak)	± 400V	See Note 2
In 50Ω position		
dc	± 5V	
ac rms	5V	See Note 3
ac peak	± 50V	See Note 3

Note 1: The instrument should be properly grounded through the protective ground conductor of the power cord.

Note 2: Up to 10 KHz; >10 kHz see figure 2.2

Note 3: Maximum of 50 mJ during any 100 ms interval.

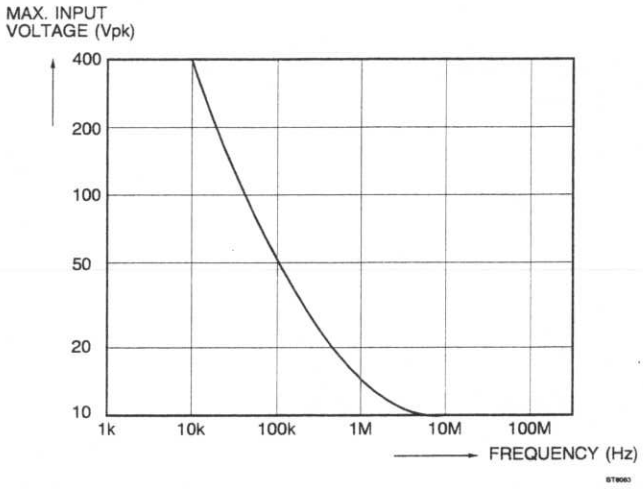

Figure 2.2 Max. input voltage versus frequency

2.1.11 Step Response

5 Divisions Pulse In 50Ω Input Impedance

STEP RESPONSE	See Note 1

Note 1: Calculated from the formula: Rise time = 0.35 / Bandwidth and is measured over the central 5 divisions (vertical)

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.1.12 Signal Delay

A: VISUAL SIGNAL DELAY	15 ns 13 ns	PM339xA PM3370A/8xA
DELAY BETWEEN CHANNELS		
CH1 and CH2	<250 ps	
CH3 and CH4	<250 ps	Not in PM3370A/80A/90A
CH1.... CH4	<250 ps	4 channel instruments
Any two channels	<500 ps	2+2 channel instruments

2.1.13 Vertical Accuracies

ACCURACY deflection factor		
A: Gain error (dc)	±1.3 %	Over central 6 divisions See Note 1
D: Additional gain error (dc)	±0.7%	
Gain error TrigView	±3 %	
A: Nonlinearity	≤2 %	See Note 2
D: Digital non linearity	≤4.5 %	See Note 2
MAX. BASELINE INSTABILITY		
Jump (all between steps, var, and N/I)	0.2 div or 1 mV	Whichever is greater (after autocal)
Drift	0.1 div/h	
Temperature coefficient	0.03 div/K	
CHANNEL ISOLATION		
Of deselected channels at 10 MHz	100:1	See Note 3
Of deselected channels at upper transition point	50:1	See Note 4
Between selected channels	50:1	See Note 5
CMRR		See Note 6
at 2 MHz	100:1	
at 50 MHz	25:1	

Note 1: Add 1.5% for variable gain mode.

Note 2: 2 division center screen signal with a frequency of 50 kHz, shifted within central 6 divisions.

Note 3: At 10 MHz; input to deselected channel equivalent to 8 divisions or less.

Note 4: Channels with equal V/div; input to deselected channels equivalent to 6 divisions.

Note 5: Channels with equal V/division settings; input to either channel 6 div. PM3390A/92A/94A; max. input amplitude 3Vpp

Note 6: Between any two input channels at same attenuator setting; VAR of V/div setting adjusted for best CMRR; measured with max. 8 div.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.2 TIMEBASE

2.2.1 Timebase (modes)

TIMEBASE MODES	MTB only MTB and DTB DTB only Variable TB Auto TB	MTB= Main Timebase Alternating TB-mode DTB = Delayed Timebase
MTB trigger modes	AUTO TRIGGERED SINGLE SHOT SINGLE SCAN	Free run after 100 ms
DTB trigger modes	DTB starts DTB triggered	Starts after delay time Starts on first trigger after delay time

2.2.2 Timebase Settings (Analog Mode Only)

MTB PM3390A/PM3392A/PM3394A		
Settings	0.5s/div to 20 ns/div	See Note 1
Variable Time/div range	1.25s/div to 20 ns/div	MTB continuously variable
MTB PM3370A/PM3380A/PM3382A/PM3384A		
Settings	0.5s/div to 50 ns/div	See Note 1
Variable Time/div range	1.25s/div to 50 ns/div	MTB continuously variable
DTB PM3390A/PM3392A/PM3394A		
Settings	0.5s/div to 20 ns/div	See Note 1, See Note 3
DTB PM3370A/PM3380A/PM3382A/PM3384A		
Settings	0.5s/div to 50 ns/div	See Note 1, See Note 3
TIMEBASE MAGNIFICATION	10x	See Note 2

Note 1: In a 1-2-5 sequence. By means of the timebase magnifier (x10) the range is extended to 2 ns/div (PM3390A/92A/94A) or 5ns/div (PM3370A/80A/82A/84A).

Note 2: Expands the normal time/div by 10 times (MTB and DTB)

Note 3: The DTB sweep speed is higher or equal to MTB time/div setting.

2.2.3 DTB Delay (Analog Mode Only)

DELAY TIME	2 ns to 4.9s
Position range	0.1 div to 9.9 div
Resolution	1: 40000

2.2.4 Timebase Settings (Digital Mode Only)

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
MTB Settings		
REAL TIME SAMPLING		
PM3382A/84A/92A/94A	200s/div to 250 ns/div	See Note 1 and 4
PM3370A/80A/90A	200s/div to 500 ns/div	See Note 2 and 4
ROLL	200s/div to 200 ms/div	See Note 2
RANDOM SAMPLING		
PM3390A/92A/94A	200 ns/div to 2 ns/div	See Note 2
PM3370A/80A/82A/84A	200 ns/div to 5 ns/div	See Note 2
Variable Timebase	2 nsec ...1 µsec/div 1 µsec ... 500 µsec/div 500 µsec ... 200 sec/div	1-2-5 sequence steps 1 µsec step size equals analog step size
Auto Timebase		
Capture Range	DC up to full bandwidth	
Dynamic Range	2 nsec ... 200 msec/div	
DTB Settings		
(STARTS/TRIGGERED)		See Note 5
REAL TIME SAMPLING		
PM3382A/84A/92A/94A	0.5 ms/div to 250 ns/div or 0.5 ms/div to 0.001x MTB setting	Whichever is greater See Note 1 and 3
PM3370A/80A/90A	0.5 ms/div to 500 ns/div or 0.5 ms/div to 0.001x MTB setting	Whichever is greater See Note 2 and 3
RANDOM SAMPLING only for MTB 200 µs/div to 2 ns/div		
PM3390A/92A/94A	200 ns/div to 20 ns/div or 200 ns/div to 0.001x MTB setting	Whichever is greater See Note 2 and 3
PM3370A/80A/82A/84A	200 ns/div to 50 ns/div or 200 ns/div to 0.001x MTB setting	Whichever is greater See Note 2 and 3

Note 1: In a 1-2-5 sequence and 250 ns.

Note 2: In a 1-2-5 sequence.

Note 3: The DTB sweep speed is higher or equal to MTB time/div. setting.

Note 4: When DTBis on: 500 ms/div to ....

Note 5: DTB is only possible with normal acquisition length. Triggered DTB is not possible in combination with tv, logic or event delay trigger mode.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.2.5 Timebase Delay (Digital Mode Only)

TIME DELAY		
TRIGGER POSITION		
Acquisition length normal	-10 to 0 div	pretrigger
Acquisition length max.	-160 to 0 div	pretrigger
DELAY	0 to 1000 div	posttrigger
Resolution	steps of 0.02 div	sample distance
EVENTS DELAY		
Range	1 to 16384	See event counter

2.2.6 DTB Delay (Digital Mode Only)

TRIGGERED	
DELAY TIME	2 ns to 4.9 s
Position range	0.1 div to 9.9 div
Resolution	1 : 40000
STARTS	
DELAY TIME	0 to 10 div of MTB setting
Position range	0 div to 10 div
Resolution	1 : 40000

2.2.7 Analog Timebase Accuracies

Unmagnified:	± (1.3% of reading +0.5% of central 8 div)	See Note 1
Magnified:		See Note 2
Up to 10 ns div	± (1.3% of reading +1.0% of central 8 div)	See Note 1
In 5ns/div and 2ns/div	± (1.8% of reading +1.5% of central 8 div)	See Note 1

Note 1: Add 1% of reading in variable mode.

Note 2: Valid over central unmagnified 8 divisions.

2.2.8 Delaytime Accuracy (Analog Mode)

MTB in 20 µs/div DTB in 2 µs/div	± (0.8% of reading +0.3% of central 8 div + Tf)	See Note 1
PM3390A/92A/94A	Tf = 4 ns	
PM3370A/80A/82A/84A	Tf = 5 ns	

Note 1: add 1% of reading in variable mode.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.2.9 DTB Jitter In Starts (Analog Mode)

Jitter	1 part of 25000	

2.2.10 Timebase Accuraries (Digital Mode)

MTB, DTB Real Time Mode	±0.010%	
Equivalent Time Mode	±0.5%	

2.2.11 DTB Jitter In Starts (Digital Mode)

Jitter	120 ps	

2.2.12 External Horizontal Deflection

This paragraph is valid only for the analog mode. In the digital mode X versus Y is defined as a display mode.

DEFLECTION SOURCES		
PM3382A/84A/92A/94A	Line and CH1 to CH4	
PM3370A/80A/90A	Line, CH1, CH2, EXT TRIG	
LINE DEFLECTION		
Deflection amplitude	6 ±1.7 div	Between 49 and 61 Hz at 220 volts
CHANNEL DEFLECTION		Refer to VERTICAL
Error limit	±5%	Over central 6 divisions
Linearity error limit	±2%	See Note 1
Dynamic range up		
to 100 kHz	20 div	
up to 2 MHz	10 div	
POSITION RANGE	±5 div	
FREQUENCY RESPONSE		
Upper transition point	2 MHz	
MAX. PHASE DIFFERENCE Between horizontal and vertical	3°	Up to 100 kHz

Note 1: 2 div/50kHz center screen signal shifted within central 8 divisions.

2.2.13 Horizontal Display Accuracy

Display Accuracy	±(0.8% of reading + 0.5% of central 8 divisions)	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.3 TRIGGERING

2.3.1 Source

MTB trigger sources		
PM3382A/84A/92A/94A	CH1 to CH4, Line	
PM3370A/80A/90A	CH1, CH2, Line, EXT TRIG	
DTB trigger sources		
PM3382A/84A/92A/94A	CH1 to CH4	
PM3370A/80A/90A	CH1, CH2	

2.3.2 Modes

MODES MTB triggering		
PM3382A/84A/92A/94A	EDGE, TV, D:PATTERN, D:STATE, D:GLITCH	Enter/exit pattern plus timed pattern.
PM3370A/80A/90A	EDGE, TV, D:GLITCH	
MODES DTB triggering	EDGE	

2.3.3 TV Systems

TV systems	TV	See Note 1
	HDTV	See Note 1
TV Line	1 to n	See Note 1 and 2

Note 1: Line selection possible in field1and field2. In digital mode, triggered DTB not possible in combination with TV line.

Note 2: n is equal to maximum lines of TV system.

2.3.4 Coupling

BANDWIDTH EDGE TRIGGER MTB		Vertical coupling in DC
Lower transition point of Bandwidth Trigger coupling:		
DC	dc	
AC	10 Hz	
LF-reject	30 kHz	
HF-reject	dc	
Upper transition point of Bandwidth Trigger coupling:		
DC	)	
AC	) See sensitivity	
LF-reject	)	
HF-reject	30 kHz	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
BANDWIDTH EDGE TRIGGER DTB		Vertical coupling in DC
Lower transition point of Bandwidth		
Trigger coupling:		
DC	dc	
AC	10 Hz	
LF-reject	30 kHz	
HF-reject	dc	
Upper transition point of Bandwidth		
Trigger coupling:		
DC	)	
AC	) See sensitivity	
LF-reject	)	
HF-reject	30 kHz	

2.3.5 Sensitivity

EDGE TRIGGER SENSITIVITY MTB and DTB of:		See Notes 1, 3, 4
PM3390A/92A/94A		
dc to 100 MHz	0.6 div	
dc to 200 MHz	1.2 div	
dc to 300 MHz	2.0 div	See Note 2
PM3380A/82A/84A		
dc to 50 MHz	0.6 div	
dc to 100 MHz	1.2 div	
dc to 200 MHz	2.0 div	See Note 2
PM3370A		
dc to 30 MHz	0.6 div	
dc to 60 MHz	1.2 div	
dc to 150 MHz	2.0 div	See Note 2
TV TRIGGER SENSITIVITY		
(ampl. of sync. pulse)	0.7 div	See Note 1
TRIGGER SENSITIVITY		
D: PATTERN/STATE		
PM3392A/94A		
Rectangle pulses		
$t \geq 10$ ns	1.0 div	See Note 5
$t \geq 2$ ns	2.0 div	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
PM3382A/84A Rectangle pulses t ≥ 20 ns t ≥ 4 ns	 1.0 div 2.0 div	 See Note 5

Note 1: All figures are valid for an ambient temperature range of 5 to 40 °C, add 20% for ambient 0 to 50 °C.

Note 2: Measured with a 2 divisions center screen signal.

Note 3: In noise trigger multiply stated value by 2.

Note 4: In 2 ... 5 mV/div multiply stated value by 2.

Note 5: Duty cycle 50%.

2.3.6 Slope

Slope selection edge	+ or -	MTB and DTB See Note 1
D:Dual slope	Up to full vertical bandwith	See note 2

Note 1: In TV-triggering positive/negative video.

Note 2: Only in single shot, real time mode.

2.3.7 Level

LEVEL CONTROL RANGE MTB EDGE Unless: In level p(eak)p(eak) TV	 ≥±8 div Fixed	 See Note 1
D: PATTERN, STATE and GLITCH	±5 div	PM3370A/80A/90A: glitch mode only
LEVEL CONTROL RANGE DTB EDGE	 ≥±8 div	

Note 1: The control range of the trigger level is related to the peak-peak value and duty cycle of the trigger signal.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.3.8 Logic Triggering Timing (Digital Mode Only)

PATTERN/GLITCH DETECTION		PM3370A/80A90A: glitch detection only
Max. pattern rate	150 MHz	
Min. present time		
PM3390A/94A/92A	2 ns	Pulse amplitude >2 div
PM3380A/82A/84A	4 ns	Pulse amplitude >2 div
PM3370A	6 ns	Pulse amplitude >2 div
range t_1	20 ns, 30 ns, 40 ns, 50 ns to 0.16s	See note 1
range t_2	20 ns, 40 ns, 50 ns, 60 ns to 0.16s	See note 1
accuracy t_1 t_2	±5 ns	
STATE DETECTION		Not in PM3370A/80A/90A
Max. state rate	150 MHz	
Min. setup time	2.5 ns	Pattern to clock
Min. hold time	2.5 ns	Pattern to clock

Note 1: Timing behavior around t_1 and t_2.

Pattern valid time:

------|********|TTTTTTTTTTTTTTTTTTT|********|-------

t_1 t_1+10 ns t_2-10 ns t_2

- : not triggered
* : undefined
T: triggered

2.3.9 Trigger Accuracies

TRIGGER LEVEL		
Accuracy edge	≤0.2 div	At 1 MHz input signal
D: Accuracy logic	≤0.4 div	At 1 MHz input signal
Trigger gap edge	0.4 div	At 1 MHz input signal in noise trigger multiply by 2
FALSE TRIGGERS	1:100 000	See Note 1

Note 1: These values are not tested in production and are based on theoretical estimates and laboratory tests.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.4 EVENT COUNTER

EVENT delay		
PM3382A/84A/92A/94A		In trigger modes EDGE and LOGIC.
PM3370A/80A/90A		In trigger modes EDGE and GLITCH
Event count	1 to 16384	See Note 1
Event source		
PM3382A/84A/92A/94A	CH1 to CH4	
PM3370A/80A/90A	CH1, CH2, EXT TRIG	
Event slope selection	+ or -	
Event clock sensitivity		
DC to 50 MHz	0.5 div	
Event level	8 div	
Max. count frequency	50 MHz	typical value

Note 1: In digital mode, triggered DTB in combination with Event is not possible

2.5 HOLD-OFF

HOLD OFF SETTING		
A: Minimum	2 µs or 3 divisions of MTB setting	Whichever is greater
A: Maximum	2s or 20 divisions of MTB setting	Whichever is smaller
D: Minimum	4 ms	See Note 1
D: Maximum	20 divisions of MTB setting	

Note 1: For total hold off time, the process time must be included. See also ACQUISITION TIME.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.6 PROCESSING

2.6.1 Preprocessing

PREPROCESSING FUNCTIONS		See Note 1
	Invert	CH2; CH4
	Add	CH1+CH2; CH3+CH4; See Note 2
	Subtract	CH1-CH2; CH3-CH4; See Note 2
D:	Peak detection	Real time only
D:	Average	See Note 3
D:	Envelope	

Note 1: These functions are performed before the acquisition data is stored in the acquisition registers. PM3370A/80A/90A; offer two channels, CH1 and CH2.

Note 2: Dynamic range in digital mode ±5 div.

Note 3: Average factor 2 to 4096 in power of 2 sequence.

2.6.2 Register Processing (Digital Mode)

REGISTER PROCESSING FUNCTION		See Note 1
	Add	See Note 2
	Sub	See Note 2
	Mul	See Note 2
	Filter	LF filter with adjustable -3dB point

Note 1: There may be run two processes simultaneously. The acquisition registers can also be used as source registers. The result from process one will be stored in memory one. The result from process two will be stored in memory two.

Note 2: The source can be any trace from any register except the result register. The result can be scaled.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.7 TRACE MEASUREMENTS (DIGITAL MODE)

TRACE MEASUREMENTS FUNCTIONS		See Note 1
Horizontal	Frequency Period Pulse width Rise / fall	PM3370A/80A/90A: CH1, CH2
Vertical (with or without offset)	Mean RMS Maximum Minimum Peak/peak Low High Overshoot Preshoot Duty cycle	PM3370A/80A/90A: CH1, CH2
	Delay	See Note 2

Note 1: These measurements can be performed on traces stored in the acquisition and memory registers.

Note 2: In PM3370A/80A/90A also available for EXT trigger source and external trigger memory.

2.8 CURSORS

2.8.1 Cursor Control

NUMBER OF CURSORS	4	
CURSOR RELATION D:	Screen Trace	Free Follows the trace
CURSOR MODES	Time Amplitude Both	 Only screen cursor
Amplitude cursor modes	Absolute Ratio	 See Note 1
Time cursor modes	Absolute Ratio	 See Note 1
Phase cursor Modes	Absolute Ratio	See Note 1

Note 1: The ratio range is 0% to 999% where 100% corresponds to the value in the cursor read out at the moment that the "ΔT=100%" button is pressed.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.8.2 Cursor Readouts

CURSOR READOUTS	dV	
	dT	See Note 1
	V to GND	
	1/dT	See Note 1
	dQ(Q1, Q2)	See Note 2
	T-trig	See Note 3
READOUT RESOLUTION	3 digits	

Note 1: In the "MTB + DTB timebase" and "DTB", all waveform operations and measurements are performed on the DTB traces.

Note 2: Refer to trigger point (Q1, Q2)

Refer to start of trace (Trace in memory, Q1 and Q2).

Note 3: Gives time differences (delta) between the cursor position and the trigger point (for both cursors).

2.8.3 Cursor Accuracies (Analog Mode)

Voltage measurements Manual	±1% of FULL SCALE	Note 1
Time measurements Unmagnified timebase	±1% of FULL SCALE	Note 2
Magnified timebase up to 10 ns/div	±1.4% of FULL SCALE	
Magnified timebase in 5 ns/div and 2 ns/div	±2.2% of FULL SCALE	

Note 1: Measured with 1 kHz square wave within central 6 div.

Note 2: within central 8 div.

2.8.4 Cursor Accuracies (Digital Mode)

ERROR LIMIT VERTICAL	See vertical accuracy
ERROR LIMIT HORIZONTAL	See horizontal accuracy

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.9 DIGITAL ACQUISITION

2.9.1 Modes

MODES		
Select one:	Recurrent	
	Single shot/scan	
	Roll	Stop on trigger or continuous

2.9.2 Sample Rate

Real time		
PM3382A/84A/92A/94A:	Max. Sample rate 200MS/s	250 ns/div to 200s/div See Note 1
PM3370A/80A/90A:	Max. Sample rate 100 MS/s	500 ns/div to 200 s/div See Note 1
Equivalent time:	Random sampling	2 ns/div to 0.2 µs/div

Note 1: Sampling rate depends on time/division setting.

2.9.3 Multiplexed Channels

The 4 channel instruments have 4 channels configured as 2 + 2. This implies, that the channels CH1 and CH2 are multiplexed with the channels CH3 and CH4 to share the same dual channel digitizer.

Multiplexed channels		
(CH1 and CH2) or		
(CH3 and CH4)	simultaneously	See Note 1
Any other combination		
for timebase settings		
200s/div to 10 µs/div	CHOPPED	See Note 2
5 µs/div to 2 ns/div	ALTERNATED	
Max. Chop freq.	5 MHz	

Note 1: At 250 ns/div each of the four channels in PM3382A/84A/92A/94A is acquired in alternated mode.

Note 2: When peak detection is activated the multiplexing is in alternating mode.

2.9.4 Trace Memory

This digitizer has a total acquisition memory size of 8K bytes. To apply this memory as efficiently as possible, it is shared by all channels connected to it. The following section summarizes the effects:

PM3382A/84A/92A/94A:		
Record length normal		
1 to 4 channels selected	512 samples/channel	
Record length 'Max'		See Note 1
3 or 4 channels selected	2K samples/channel	
2 of 4 channels selected	4K samples/channel	
1 of 4 channels selected	8K samples	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
Display	501 samples/trace	
PM3370A/80A/90A: Record length normal 1 and 2 channels selected	512 samples/channel	See Note 2
Record length 'Max' 2 channels selected 2 channels selected	 2K samples/channel 4K samples/channel	See Note 1 See Note 2 See Note 3
Display	501 samples/trace	

Note 1: When peak detection or envelope is activated, all "max" record length figures have to be divided by 2 because samples are stored as peak/peak combinations.

Note 2: Trigger view possible.

Note 3: No trigger view possible.

2.9.5 Acquisition Time

The process time between acquisitions depends from the selected settings and the selected processing. Therefore it is not possible to catch the process time between acquisitions in a formula. The next table gives an indication of the performance of the processing capabilities.

Process time between acquisitions 500 ns/div one channel no trigger delay acquisition length = 512	6 ms	See Note 1 Holdoff is min and no processes or measurements are active
500 ns/div two channel no trigger delay acquisition length = 512 average = 8	16 ms	Holdoff is min and no other processes or measurements are active
Equivalent time Timebase: - at 2 ns/div - at 0.2 µs/div	 2s 100 ms	See Note 2

Note 1: Time required to fill the acquisition record at the sampling rate corresponding with the selected timebase setting is not included.

Note 2: After the specified time, there is a 99% probability of all sample positions being updated to the new acquisition. Trigger frequency >2 kHz. These values are not tested in production and are based on theoretical estimates and laboratory tests.

2.9.6 Resolution

ACQUISITION RESOLUTION	8 bits	over 10.24 divisions

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.9.7 Registers

NUMBER OF REGISTERS		Including current acquisition
Acquisition length:		One set contains:
PM3382A/84A/92A/94A:		
- Normal	9 sets	Four traces
- Max: -4x2k	3 sets	Four traces
-2x4k		Two traces
-1x8k		One trace
WORD LENGTH	16 bits	
PM3370A/80A/90A:		
- Normal	9 sets	Two traces } +Trig. View
- Max: -2x2k	3 sets	Two traces } +Trig. View
-2x4k	3 sets	Two traces
WORD LENGTH	16 bits	

2.9.8 Register Manipulations

Clear	The contents of the selected register is set to zero
Save	The contents of the acquisition register is stored in the selected register
Copy	The contents of a selected register is stored in another selected register
Recall	The register can be made visible on the display or can be removed from the display

2.9.9 Digital Acquisition Accuracies

SAMPLING RATE ERROR	±0.01%	X-tal
TIME UNCERTAINTY		
At double sampling rate	±100ps	

2.10 FRONT PANEL MEMORY

Memory size	10 fronts

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.11 BLANKING OR Z-AXIS (ONLY FOR ANALOG TRACE)

Input connector	BNC	
Input impedance	10 kΩ	
Input coupling	dc	
Max input voltage	±10V	
Input voltage unblank	0.5V or less	See Note 1
Input voltage blanked	+ 2.4 V or more	See Note 1
Response time	80 ns	Rise time 2 ns

Note 1: Half tones are possible at input voltages between +0.8V and +2.4 V. Blanking has only effect on the trace in analog mode.

2.12 DISPLAY

2.12.1 CRT

CRT		
Deflection	Electrostatic	Vector
Dimensions (hxw)	80 mm x 100 mm	8 x 10 divisions
Phospor		
Standard	Green GH (P31)	
GRATICULE	Fixed	
Y-AXIS ORTHOGONALITY	90 ° ±0.5 °	
ACCELERATING VOLTAGE	16.5 kV	
Writing speed	>1.8cm/ns	
TRACE ROTATION		Screwdriver adjustment
Min. range	10 °	External field <0.1 mT
Min. overrange	2 °	
TRACE DISTORTION		
At center of screen inside 6 x 8 div	<0.3 mm	Deviation from straight line
Else	<1.0 mm	

2.12.2 Modes

PRESENTATION MODES	Y versus T
	Y versus X

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.12.3 Vertical Display Manipulations (Digital Mode)

Linear		Linear interpolations between measured dots
Sine		Sine like interpolation between measured dots
Vertical magnify	2, 4, 8, 16, 32	
Windows	1, 2, 4	Each trace has his own place on the screen
PM3382A/84A/92A/94A PM3370A/80A/90A		max. 4 traces max. 3 traces
Recall trace		Each trace can be made visible on the screen or can be removed from the screen. Note 1
Vertical position	± 8 div	Each trace can be moved over 8 divisions
Max. displayable traces on screen	8	See Note 1

Note 1: At least one trace is visible.

2.12.4 Horizontal Display Manipulations (Digital Mode)

TIMEBASE MAGNIFICATION	2, 4, 8, 16, 32	See Note 1

Note 1: For acquisition depth greater than 512 byte it is possible to make the magnification factor less than one (compress mode) to display the complete trace on the screen.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.13 EXTERNAL INTERFACES

2.13.1 Calibrator

WAVEFORM		
Shape	square wave	
INTERNAL IMPEDANCE		
Value	1200Ω	
OUTPUT VOLTAGE		
Peak-peak value	600 mV	See Note 1
Tolerance	1%	
OUTPUT CURRENT		
Peak-peak value	0.5 mA	See Note 2
FREQUENCY		
Value	2kHz	
Tolerance	±20%	

Note 1: Positive going with respect to ground; Open voltage (halves when terminated with 1200Ω).

Note 2: When output short circuited (halves when terminated with 1200Ω).

2.13.2 Standard external interface

TYPE OF INTERFACE	RS 232-C	CPL (compact programming language) See operating guide
PINNING		
PIN	I/O	NAME
1	-	-Not connected
2	I	RXDReceived data
3	O	TXDTransmitted data
4	O	DTRData terminal ready
5	-	GNDSignal ground
6	I	DSRData set ready
7	O	RTSRequest to send
8	I	CTSClear to send
9	-	-Not connected
TRANSMISSION MODES	Asynchronous Full duplex	
HANDSHAKE		
Hardware	RTS/CTS and DSR/DTR	Default: not active See Note 1
Software	XON/XOFF	Default: not active See See Note 1
BAUDRATE	75,110,150,300 600,1200,2000, 2400,4800,9600 19200,38400	Receiving and transmitting Default:1200 See Note 1

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
NUMBER OF STOP BITS	1	
PARITY	odd,even,or no	Default: no parity See Note 1
CHARACTER LENGTH	7 or 8	Default:8 See Note 1
ERROR RESPONSE	See CPL, Chapter 6 in Users Manual	
ELECTRICAL TXD and RXD Spacing "0" Marking "1"	 ≥ +3V ≤ -3V	
RTS,CTS,DSR and DTR ON OFF	 ≥ +3V ≤ -3V	
Current output	≤10mA	
Impedance Output Input	 300Ω ±10% ≥3 kΩ ≤7kΩ	
Voltage Output Input	 ≥ -12V ≤ +12V ≥ -25V ≤ +25V	
Connector	Shielded	9 pole RAP male connector according MIL-C-24308

Note 1: Selectabele via UTILITY menu and CPL. When battery installed, same as last power-off value.

2.13.3 Optional external interfaces

IEEE	ANSI/IEEE 488.2	SCPI See section 1.20.5

2.13.4 Printers and plotters support

PRINTERS	HP-thinktjet LQ1500 FX80 HP-LASER
PLOTTERS	HPGL HP7440 HP7550 HP7475A HP7478A PM8277 PM8278

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.13.5 Real Time Clock

(RTC)		
Select:	Time of trigger or Time of pressing hardcopy button	Note 1 Note 2

Note1: These times may be the same when it is not possible to reconstruct the time of trigger.

Note2: - Stamped on any hardcopy via hardcopybutton
- Time is part of delta transfer waveform.

2.14 AUTO SET & CALIBRATION

2.14.1 Auto Set

Vertical deflection	2...5 div	Note 1
Horizontal deflection	Max. 6 periods on CRT at input signal 10 mV...25V 40 Hz...30 MHz	Note 1

Note 1: AUTO SET selects the proper channel, sets vertical deflection, timebase speed, intensity, and triggering for an easy-to-read display of input signals, or the user programble AUTO SET items.

2.14.2 Calibration

CALIBRATION FACILITIES	Auto cal	See Note 1

Note 1: Calibrates vertical offset and gain, horizontal offset and gain and sweep time, trigger offset and gain.

2.15 POWER SUPPLY AND BATTERY BACKUP

2.15.1 Power Supply

LINE VOLTAGE		
ac (rms)		
Operation	100V to 240V	
Tolerance	±10%	
LINE FREQUENCY		
Nominal	50 Hz to 400 Hz	
Limits of operation	45 Hz to 440 Hz	
LINE WAVEFORM		At nominal source voltage
Max. waveform deviation factor	10%	
Crest factor	1.27 to 1.56	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
ALLOWABLE POWER INTERTUPTION	20 ms	See Note 1
POWER CONSUMPTION		
Without options	115W	
Max. power consumption	130W	
POWER CORD		
Length	2.1m (82.7 in)	
Power plug	Nat.version	

Note 1: At the lowest allowable source voltage. After this time the oscilloscope data is saved before the instrument goes down, and an automatic power-on sequence starts after restoration of the power source voltage.

2.15.2 Battery Backup

DATA AND SETTINGS RETENTION		See Note 1
Retention time	2 years	
Batteries:		
Recommended type	LR 6	See Note 2
Quantity	2	
Temperature range	0..+70 °C	See Note 3

Note 1: When instrument is switched off or during power failure.

Note 2: According to IEC 285 (=Alkaline Manganese Penlight Battery).

Note 3: At -40 to 0 °C, settings retention is uncertain. It is advised to remove batteries from instrument when it is stored during longer periods (>24 hours) below -30 °C or above 60 °C. UNDER NO CIRCUMSTANCES SHOULD BATTERIES BE LEFT IN THE INSTRUMENT AT TEMPERATURES BEYOND THE RATED RANGE OF THE BATTERY SPECIFICATION

2.16 MECHANICAL CHARACTERISTICS

PORTABLE VERSION		
Dimensions:		Handles excluded
Length	481 mm (19 in)	Add 5 mm (0.2 in) for cover Add 65 mm (2.5 in) for handle
Width	341 mm (13,5 in)	Add 50 mm (2 in) for handle
Height	139 mm (5,5 in)	Add 8 mm (0.3 in) for feet
Weight:		
Instrument	9.5 kg (19,7 lb)	
COOLING	Regulated Forced air	No air filter

CHARACTERISTICS SPECIFICATIONS ADDITIONAL INFORMATION

2.17 ENVIRONMENTAL CHARACTERISTICS

2.17.1 General

The characteristics are valid only if instrument is checked in accordance with the official checking procedure. Warm up and recovery time are in accordance with MIL-T 28800D par. 3.7.1.1.

The instrument meets the environmental requirements of MIL-T-28800D Type III Class 3, Style D, Color R (unless specified otherwise).

2.17.2 Environmental

TEMPERATURE		See Note 1
Operating:		
min.low temp.	0 °C	
max.high temp.	+50 °C	
Nonoperating (storage):		
min. low temp.	-40 °C	
max. high temp.	+70 °C	
MAX. HUMIDITY		See Note 1
Operating and Non operating (storage)	95%	Relative humidity noncondensing
MAX. ALTITUDE		See Note 2
Operating	4.6 km (15000 ft)	See Note 3
Nonoperating (storage)	12 km (39000 ft)	
VIBRATION (OPERATING)		See Note 4
Freq. ranges:		g level at max. freq.:
	5 Hz to 15 Hz	0.7 at 15 Hz
	16 Hz to 25 Hz	1.3 at 25 Hz
	26 Hz to 55Hz	3 at 55 Hz
At each freq.range:		
Cycling time	15 min	
Resonance search	5 min	
Resonance dwell	10 min	See Note 5

Note 1: In accordance with MIL-T-28800D par. 3.7.2.1.1. (FIGURE 2).

Note 2: In accordance with MIL-T 28800D par. 3.7.3.

Note 3: Maximum operating temperature derated to 3 °C for each km above sea level

Note 4: In accordance with MIL-T-28800D par. 3.7.4.1.

Note 5: At each resonance frequency (or at 33 Hz if no resonance was found).

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
SHOCK (OPERATING)		See Note 6
Amount of shocks		
total	18	
each axis	6	3 in each direction
Shock waveform	half sinewave	
Duration	6-9 ms	
Peak acceleration	400 m/s^2	
BENCH HANDLING		See Note 7
Meets requirements of	MIL-ST-810 method 516 procedure V	
TRANSPORTATION	Drop height 0.76m	See Note 9
SALT ATMOSPHERE		
Structural parts		See Note 8

Note 6: In accordance with MIL-T-28800 par. 3.7.5.1.

Note 7: In accordance with MIL-T-28800 par. 3.7.5.3.

Note 8: In accordance with MIL-T-28800 par. 3.7.8.1.

Note 9: Drop in shipping container on 8 corners, 12 edges, 6 surfaces.

2.17.3 EMI

2.17.3.1 Meets MIL-T 28800D Type III Class 3 (Navy requirement, unless specified otherwise).

Meets MIL-STD-461C as follows:			
- Conducted Emissions	Part 2	CEO1	(Narrow band)
	Part 4	CEO3	
- Conducted Susceptibility	Part 2	CSO1	
	Part 5	CSO6	(Limited to 300V)
- Radiated Emissions	Part 5,6	REO1	
	Part 2	REO2	(1 GHz max)

2.17.3.2 VDE requirements

The instrument meets the requirements of VDE 0871 Grenzwert-klasse B.

2.17.3.3 Additional EMI requirements

The instrument is tested in accordance with IEC 351-1 par. 5.1.3.1. The maximum deflection factor is 7 mm/mT (0.7 mm/gauss). This value measured with the instrument in a homogeneous field (in any direction with respect to the instrument) with a flux intensity (peak to peak value) of 1.42 mT (14.2 gauss) and of symmetrical sine wave form with a frequency of 45 Hz to 66 Hz.

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.18 SAFETY

MEETS REQUIREMENTS OF	IEC 348 Class I	See Note 1
	UL 1244	See Note 2
	CSA C22.2 No231	See Note 2
	VDE 0411	See Note 1
APPROVALS (applied for)	CSAC22.2 No231	
MAX. X-RADIATION	MIL-T-28800D par. 3.9.3.4.a	

Note 1: Except for power cord, unless shipped with universal European power cord.

Note 2: Except for power cord, unless shipped with North American power cord.

2.19 ACCESSORIES

PACKED WITH INSTRUMENT		
Signal input	2x10 MΩ 10:1 probe	With readout (1.5 m)
	Contrast filter	Blue
	Front cover	Can be locked on instr.
Operating guide		
Reference manual		

2.20 OPTIONS & OPTIONAL VERSIONS

2.20.1 Options Line cord

LINE CORD	Universal European	In accordance with VDE
	North American	In accordance with CSA, UL
	United Kingdom	In accordance with BSI
	Australian	In accordance with SAA
	Swiss	In accordance with SAV

2.20.2 Options digital versions

EXTERNAL INTERFACES	IEEE	Factory installed only
INTERNAL EXTENSIONS	EXTENDED MEMORY	Factory installed only
	MATH+	Factory installed only

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

2.20.3 Options analog

EXTERNAL INTERFACES	Y-out, MTB gate, DTB-gate, ExtTrig. IEEE	See Note 1, Factory installed only Factory installed only

Note 1: Ext trig is a standard feature in PM3370A/80A/90A. For characteristics refer to chapter 2.3.

2.20.4 Specification optional outputs

Y SIGNAL OUT	BNC	
Source	CH1	
Coupling	as CH1	
Voltage:		
into 1 MΩ	20mV/div ±10%	
into 50Ω	10mV/div ±10%	
Freq. response:		Terminated with 50Ω
PM3390A/92A/94A	dc to 200 MHz	
PM3380A/82A/84A	dc to 100 MHz	
PM3370A	dc to 60 MHz	
Dynamic range	±10 div	At 50 MHz
MTB GATE OUT		
Connector	BNC	
Output impedance	1 kΩ	
Voltage:Timebase		
not running	0.2 ± 0.2V	
Timebase running	3.7 ± 1.3V	
DTB GATE OUT		
Connector	BNC	
Output impedance	1 kΩ	
Voltage:Timebase		
not running	0.2 ± 0.2V	
Timebase running	3.7 ± 1.3V	

2.20.5 Specification External trigger option

Valid for ext trig option in PM3382A/84A/92A/94A
(External trigger input is a standard feature in PM3370A/80A/90A)

SOURCE

SOURCE(S) MTB-triggering	CH1 ... CH4 External Line	

INPUT CHARACTERISTICS

INPUT CONNECTOR		BNC	At rear of instrument
INPUT IMPEDANCE			Measured at freg. <1MHz
R parallel	- value	1 MΩ	
	- tolerance	±1%	
C parallel	- value	25 pF	
	- tolerance	±5 pF	

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
DYNAMIC RANGE		
Up to 10 MHz	±2.5V	Symmetrical
INPUT VOLTAGE LIMITS	See note 1	
⚠ (d.c. + a.c. peak)	±400V	See note 2

Note 1: Apparaturs should be properly grounded through the protective ground conductor of the power cord.

Note 2: Up to 10 kHz; >10 kHz see figure 2.2.

SENSITIVITY

EDGE TRIGGER SENSITIVITY		See note 3
d.c. to 5 MHz	100 mV	
d.c. to 10 MHz	200 mV	

Note 3: In noise-trigger multiply stated value by 2.

TRIGGER LEVEL

TRIGGERLEVEL		
Range	±1.45V	See note 4
Accuracy	≤0.45V	at 1 kHz input signal
triggercoupling DC		

Note 4: With Level-pp on the range is restricted to the peak-peak value of the trigger signal.

2.20.6 Specification IEEE-OPTION

TYPE OF INTERFACE	ANSI/IEEE 488.2	SCPI (see SCPI programming manual) See Note 1
INTERFACE REPERTORY		
Source handshake	SH1	Complete capability
Acceptor handshake	AH1	Complete capability
Talker	T5	Basic talker: yes Serial poll : yes Talk only : yes Unaddress if MLA: yes
Listener	L3	Basic listerner: yes Listener only : yes Unaddress if MTA: yes
Service request	SR1	Complete capability
Remote local	RL1	Complete capability
Parallel poll	PP0	No capability
Device clear	DC1	Complete capability
Device trigger	DT1	Complete capability
Controller	C0	No capability

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION
ELECTRICAL INTERFACE		
Busdrivers	E2	Three state (true=0 to 0.8V;false=2 to 5V)
Connector	Shielded	Amphenol type 57FE-20240-20SD35
Pin 1 ... 4	DIO1...DIO4	
Pin 13 ... 16	DIO5...DIO8	
Pin 18 ... 23	GND	
Pin 24	Logic GND	
Pin 5	EOI	
Pin 6	DAV	
Pin 7	NRFD	
Pin 8	NDAC	
Pin 9	IFC	
Pin 10	SRQ	
Pin 11	ATN	
Pin 12	Shield	
Pin 17	REN	
FUNCTION SELECTION	Via UTILITY-MENU	Busaddress Default: 8 See Note 2
INTERFACE STATUS INDICATOR	On screen	

Note 1: Talker/listener

Note 2: When battery installed, same as last power-off value.

2.20.7 Extended memory

If extended memory option is installed the paragraphs 2.2.5 (Timebase delay digital mode), 2.9.4 (Trace memory) and 2.9.7 (Registers) must be replace by the next three paragraphs.

(2.2.5) Timebase delay (digital mode)

TIME DELAY		
TRIGGER POSITION		
acquisition length normal	-10 to 0 div.	pretrigger
acquisition length max.	-640 to 0 div	pretrigger
DELAY	0 to 1000 div	posttrigger
Resolution	steps of 0.02 div	sample distance
EVENTS DELAY		
Range	1 to 16384	See event counter

CHARACTERISTICS	SPECIFICATIONS	ADDITIONAL INFORMATION

(2.9.4) Trace memory

This digitizer has a total acquisition memory size of 32 kbyte. To apply this memory as efficient as possible it is shared by all channels connected to it. The following section summarizes the effects:

PM3382A/84A/92A/94A:		
Record length normal		
1 to 4 channels selected	512 samples/channel	
Record length 'Max'		See Note 1
3 or 4 channels selected	8k samples/channel	
2 of 4 channels	4k samples/channel	
1 of 4 channels	32k samples	
Display	501 samples/trace	
PM3370A/80A/90A:		
Record length normal		
1 to 2channels selected	512 samples/channel	See Note 2
Record length 'Max'		See Note 1
2 channels	8k samples/channel	See Note 2
2 channels	16k samples	See Note 3
Display	501 samples/trace	

Note 1: When peak detection or envelope is activated, all "max" record length figures have to be divided 2, because samples are stored as peak/peak combinations.

Note 2: Trigger View possible.

Note 3: No Trigger View possible.

(2.9.7) Registers

NUMBER OF REGISTERS		Including current acq.
one set contains:		
Acquisition length:		
-Normal	51 sets	four traces, See Note 1
-Max: -4 x 8k	3 sets	four traces, See Note 1
-2 x 16k		two traces
-1 x 64k		one trace, not in PM3370A/80A/90A
WORDLENGTH	16 bits	

Note 1: In PM3370A/80A/90A this is valid for three traces.