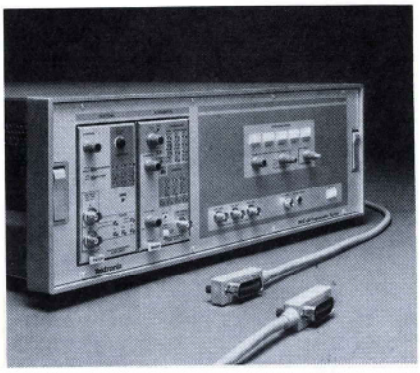
SPS – the Digital Alternative for your Measurement Needs

Signal Processing Systems presents a line of **waveform digitizing instruments** specifically designed to be used as acquisition components in your test and measurement systems.

Digitizers presently available are the **new** 7912AD Programmable Transient Digitizer, the **updated** DPO Digitizing Oscilloscope and the still viable R7912 Transient Digitizer.

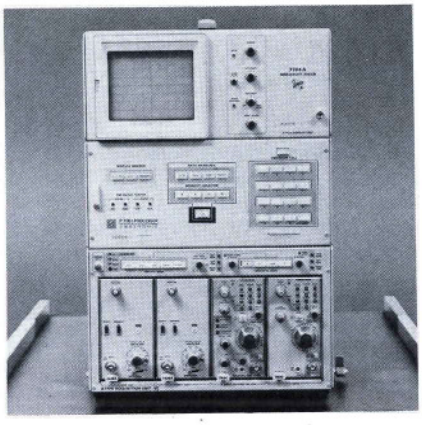
These waveform digitizers each use Tektronix unique 7000 Series packaging system and are fully compatible with 7000-Series Plug-ins, including amplifiers, time bases and spectrum analyzers. In addition, SPS introduces two new **programmable** plug-ins, 7A16P Programmable Amplifier Plug-in and 7B90P Programmable Time Base Plug-in which at present can be used only in the 7912AD.

The SPS waveform digitizers form the basis for the WP series of waveform processing systems presented on the following page.



The 7912AD Programmable Waveform Digitizer

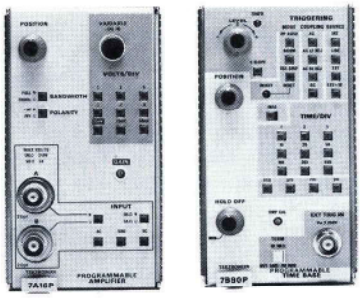
A fully programmable waveform acquisition and digitizing instrument based on the proven scan conversion technique. This model is useful for, recording fast transients (up to 350 ps rise time with direct access plug-in), providing automatic or remote signal aquisition capability (fully programmable to 200 MHz) and for various other high speed waveform digitizing tasks. The instrument uses the ubiquitous GPIB for control and signal interfacing with a variety of instrumentation controllers.



The DPO Digitizing Oscilloscope

The DPO is the combination of a 7704A Oscilloscope and a P7001 Digitizer with a local memory (4 channels) making it the most versatile digitizing oscilloscope available. It is compatible with most 7000-Series Plug-ins including amplifiers to 175 MHz, samplers to 14 GHz, and a wide range of time base and spectrum analyzer plug-ins.

It offers a variety of controller interfaces including the GPIB (IEEE 488). Program control of the A/D section offers significant capabilities for automatic test equipment.



The 7A16P Programmable Amplifier Plug-In

A 225 MHz fully programmable amplifier for use in the 7912AD programmable digitizer. Calibrated sensitivities range from 10mV/div to 5V/div. The input impedance is switchable between 50Ω and 1MΩ, and input coupling may be ac, dc or ground for reference all under program control if required. NOTE: THIS AMPLIFIER WILL NOT FUNCTION IN NON-PROGRAMMABLE 7000-SERIES MAINFRAMES.

The 7B90P Programmable Time Base Plug-In

A programmable time base for use with the 7912AD programmable waveform digitizer. Calibrated sweep rates may be selected in a 1-2-5 sequence from 500ps/div to 500 ms/div. NOTE: THIS TIME BASE WILL NOT FUNCTION IN NON-PROGRAMMABLE 7000-SERIES MAINFRAMES.

In addition to its line of waveform digitizers, TEKTRONIX SPS offers a variety of instrumentation controllers and the powerful waveform processing software, TEK SPS BASIC!

Controllers

CP4165 — A test and measurement controller designed for use with waveform processing systems and compatible with TEK SPS BASIC, a powerful, high-level instrument control and signal processing software. Can be interfaced with either Q bus or GPIB.

4051 — A powerful desktop programmable calculator with complete instrument control capability and graphics, using the GPIB and BASIC software.

The line of waveform digitizers is also compatible with various other instrumentation controllers using the GPIB or other interfaces, including the Digital Equipment Corp PDP 11 series of mini-computers.

TEK SPS BASIC—See following page.

Both the 7912AD and the DPO now come with the GPIB (IEEE 488) systems interface.

WP Systems

A WP system is a waveform processing system using either a DPO, 7912AD, or an R7912 waveform digitizers. Various interfaces, controllers and software options are available. The following is a list of standard WP systems available.

WP1020—DPO controller compatible system.

WP1110—DPO calculator based system.

WP1200—DPO controller based system.

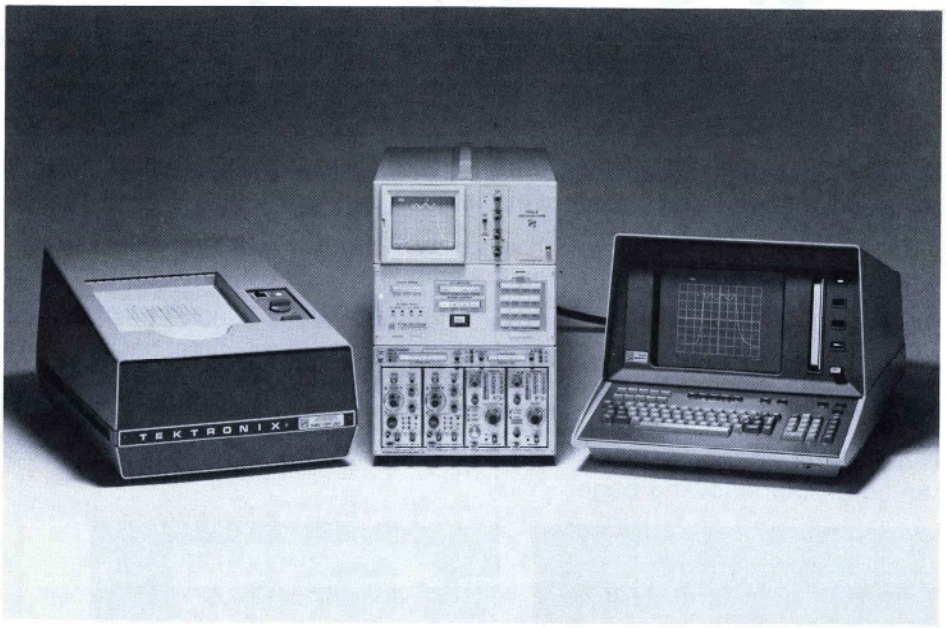
WP2010—R7912 viewing system.

WP2020—R7912 controller compatible system.

WP2200—R7912 controller based system.

WP2050—7912AD controller compatible system.

WP2250—7912AD controller based system.



Applications Of SPS Products

Non-destructive testing of ductile iron components.

The WP1100AC system using a DPO and a programmable calculator makes possible the production line testing of many key automotive components.

Fusion Research

The 7912 Series of transient digitizers have been used extensively to characterize events in pulsed laser fusion energy research.

Avionics ATE

The DPO key is a component in avionics test systems where simplicity and repeatability of a test are at a premium.

Laboratory Research

SPS instruments have found applications in the laboratory for time of flight mass spectrometry, nuclear magnetic resonance, fluorescence decay, power supply design and transfer function analysis.

List Of Application Notes

A library of Application Notes is maintained to disseminate technical information about the use of SPS instrumentation. This library contains notes on specific techniques used in operating SPS instrumentation as well as descriptions of market oriented instrument applications. A sample of notes presently available includes:

DPO Program Library Techniques
(DPO Note 45F1.0)

Mechanical Measurements Using the DPO
(DPO Note 45A1.1)

R7912 Transient Digitizer . . . a Solution to Pulsed Laser Measurement Problems
(WDI Note 47N1.0)

Pulsed Laser Measurements Using the R7912 Transient Digitizer
(WDI Note 47N1.1)

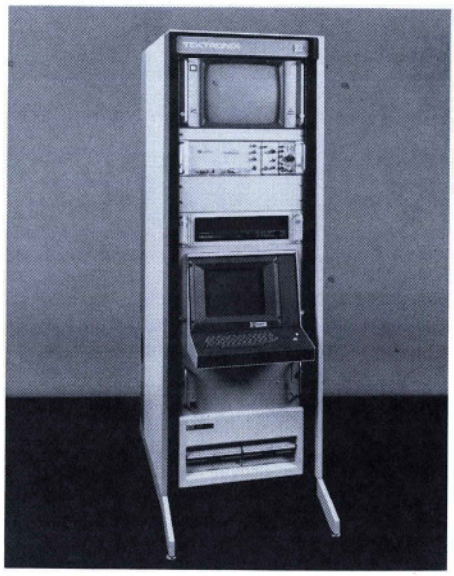
Real-Time Metals Analysis Using the DPO
(DPO Note 45N1.1)

Windowing to Control FFT Leakage
(SPS Note 47L1.0)

"Measuring Transistor Switching Times with the DPO"
(DPO App Note 45K1.1)

"TDR Difference Testing with TEK Signal Processing Systems"
(App Note 47I1.1)

"Automatic Swept RF Measurements"
(DPO App Note 45K2.5)



TEK SPS BASIC Software

A new generation of software for signal processing and instrument control systems. Primary features include array and waveform operations, character string processing, program text editing, and file manipulations. The software is interactive, allowing minimally experienced users to quickly develop programs, and is modular, allowing the user to select only those features necessary for a particular application, thus preserving the maximum amount of controller memory for program data.

Functions of TEK SPS BASIC provide for determination of mean, minimum, maximum, and rms values, and also contain single word commands for integrate, differentiate, and cross (the point at which array values cross a level). Fast Fourier Transform and its inverse are included as single word commands. The sytem also allows the user to write transfer function algorithms for describing the response characteristics of a system, and includes capabilities for averaging and correlation as well as auto correlation.

SPS Specialist

If you wish further information concerning WP Systems contact the SPS Specialist in these Tektronix Field Offices:

Woodland Hills, CA
(213) 999-1171

Santa Clara, CA
(408) 249-5500

Norcross, GA
(404) 449-4770

Albuquerque, NM
(505) 265-5541

Dayton, Ohio
(513) 859-3681

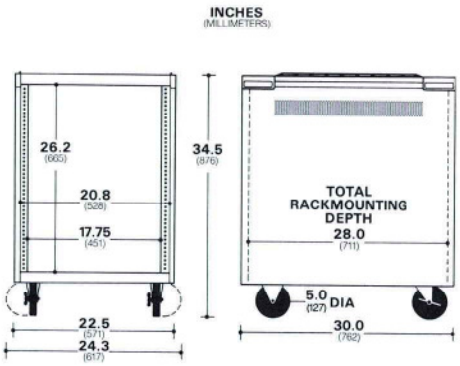
Rockville, MD
(301) 948-7151

Springfield, NJ
(201) 379-1670

Chicago, IL
(312) 259-7580

Boston, MA
(617) 861-6800
or
Beaverton, OR
SPS Marketing
(503) 645-6464
Ext. 1163

SCOPE-MOBILE® Carts



TEK RACK CART MODEL 7

Recommended For:

Rackmounted systems and instruments.

MODEL 7 allows mounting of equipment to front or rear of cart. Adjustable rails for slide mounted equipment are provided. The Model 7 is designed and UL listed for up to 300 lbs mounted in place. It has removable side panels and a light gray vinyl finish. Several rackmount accessories are available such as blank panels, etc. A brochure describing the Model 7 and accessories is available from your local Tektronix Field Office Representative, or Distributor.

Net Weight 60 lbs, shipping weight 77 lbs.

Order Model 7 ..... **$470**

Included Accessories

Extra Hardware Mounting Kit 016-0624-00

Optional Accessories

Stabilizer

Required to meet UL specifications for slide mounted equipment.

Order 015-0318-00 ..... **$85**

Safety Belt

To secure instruments to top surface of cart.

Order 346-0136-01 42 in **$15**

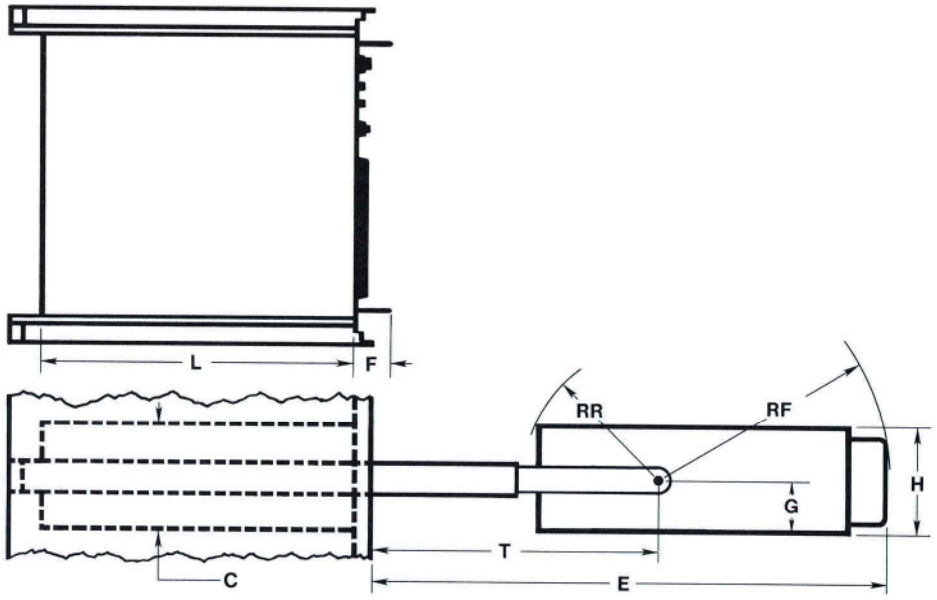
Order 346-0156-01 57 in **$15**

Mounting Brackets

To mount RTM 506 at angle for easy operation.

Order 016-0390-00 ..... **$35**

Rackmount Instrument Dimensions



DIMENSIONS EXCLUSIVE OF PLUG-IN UNITS AND PROBES

Symbol	Description	Definition
H	Height	Height of front panel.
L	Length	Rack front to rearmost permanent fixture excluding cables.
F	Forward Clearance	Back of front panel to foremost protrusion.
G	Vertical Axis	Bottom of front panel to horizontal plane of rotation.
E	Extended Inst	Maximum forward clearance with instrument out and horizontal.
RF	Radius—Front	Front radius of rotation.
RR	Radius—rear	Rear radius of rotation.
T	Track	Rack front to pivot point.
C	Cabinet	Cabinet height.

MOUNTING DIMENSIONS

PRODUCT	H		L		F		G		E		RF		RR		T		C	
	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm	in	cm
R434	5.3	13.5	18.0	45.7	1.6	4.0	—	—	—	—	—	—	—	—	—	—	5.3	13.5
R465*, R475*, R475A*	7.0	17.8	16.3	41.4	1.8	4.6	3.5	8.9	20.4	51.8	11.0	27.9	7.9	20.1	9.6	24.4	6.8	17.3
R485*	7.0	17.8	16.2	41.1	1.8	4.6	3.5	8.9	19.3	49.0	10.9	27.7	7.9	20.1	9.3	23.6	6.8	17.3
R491*	7.0	17.8	17.4	44.2	2.1	5.1	3.5	8.9	21.1	53.6	11.9	30.2	8.5	21.6	9.3	23.6	6.8	17.3
R5100N, R5400*	5.3	13.5	19.0	48.3	1.1	2.8	1.8	4.6	24.6	62.5	—	—	—	—	—	—	5.3	13.5
R7704*	7.0	17.8	22.4	56.9	2.3	5.8	1.8	4.6	33.3	84.6	15.3	38.9	10.7	27.2	18.5	47.0	7.0	17.8
R7313*, R7603*, R7613*, R7623*	5.3	13.5	22.3	56.6	2.0	5.1	—	—	25.2	64.0	—	—	—	—	—	—	5.3	13.5
R7844*	7.0	17.8	24.8	56.6	2.3	5.8	1.75	4.4	—	—	—	—	—	—	—	—	7.0	17.8
R7903*	5.3	13.5	22.5	57.2	2.3	5.8	—	—	25.3	64.3	—	—	—	—	—	—	5.3	17.8
R7912*	5.3	13.5	26.9	68.3	1.8	4.6	—	—	26.9	68.3	—	—	—	—	—	—	5.3	13.5
7912AD	7.0	17.8	26.0	66.0	1.95	5.0	—	—	30.7	78.0	—	—	—	—	—	—	6.9	17.5
RTM506	5.25	13.3	18.9	48.0	1.82	4.7	—	—	—	—	—	—	—	—	—	—	5.25	13.3
T922R	5.2	13.2	17.0	43.2	1.7	4.3	—	—	24.2	61.5	—	—	—	—	—	—	5.2	13.2
016-0115-02	5.3	13.5	16.3	41.4	0.3	0.8	—	—	—	—	—	—	—	—	—	—	5.3	13.5
016-0268-00	5.3	13.5	19.8	50.3	1.8	4.6	—	—	—	—	—	—	—	—	—	—	5.2	13.2
040-0551-00	14.0	35.6	22.4	56.9	0.6	1.5	—	—	30.9	78.5	—	—	—	—	—	—	—	—
040-0554-00	15.8	40.1	21.5	54.6	1.9	4.8	—	—	31.3	79.5	—	—	—	—	—	—	—	—
040-0600-00	5.25	13.3	18.3	46.5	0.7	1.8	—	—	—	—	—	—	—	—	—	—	5.25	13.3
040-0601-00	5.25	13.3	18.3	46.5	0.7	1.8	—	—	—	—	—	—	—	—	—	—	5.3	13.5
040-0616-00	5.3	13.5	16.5	41.9	1.1	2.8	1.8	4.6	24.6	62.5	—	—	—	—	—	—	5.25	13.3
040-0617-00	5.3	13.5	16.5	41.9	1.1	2.8	1.8	4.6	24.6	62.5	—	—	—	—	—	—	5.3	13.5
040-0624-00	5.25	13.3	18.3	46.5	0.7	1.8	—	—	—	—	—	—	—	—	—	—	5.3	13.5
437-0031-00	8.8	22.4	9.5	24.1	0.3	0.8	—	—	—	—	—	—	—	—	—	—	5.25	13.3
437-0071-00	7.0	17.8	13.4	34.0	1.4	3.6	—	—	—	—	—	—	—	—	—	—	7.1	18.0
437-0126-01	5.3	13.5	22.3	56.6	2.0	5.1	—	—	25.2	64.0	—	—	—	—	—	—	6.6	16.8

**These instruments mount with sliding tracks to a standard 19-inch-wide rack. Rear support for sliding tracks is required, such as an enclosed rack.*