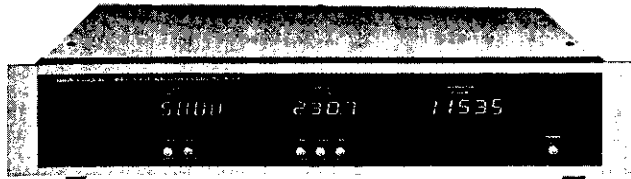


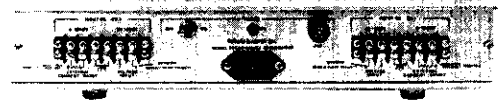


Advanced Test Equipment Rentals

www.atecorp.com 800-404-ATEC (2832)



MODEL 2053 POLYPHASE WATTMETER



MODEL 2053W WATTS TRANSDUCER

WIDEBAND POLYPHASE POWER ANALYZERS

The wide band, dual channel, multiphase wattmeter family is an ideal solution for power measurements in high current, poly-phase, high frequency applications. Five models with current ranges from 200mA to 100 amps are available. Each instrument contains built-in current shunts rated for the higher of the two current ranges specified. Three displays simultaneously indicate the TRMS current, TRMS voltage and True (Elcos θ) watts for the selected θ or channel. Display selections include VAW for 2θ or 3θ individual phases, total multiphase power, and VAW for 1θ or dual channel applications.

The watts computation process centers around a 4 quadrant wide-band analog multiplier. Loads consuming current from the power line at a high frequency rate such as a 20 KHz switching mode regulator may now have their power consumption accurately measured. Conventional wattmeters are limited typically to 800Hz in response. Useful options include an isolated data

output package featuring BCD outputs, 0 to 5 VDC analog outputs and real time waveforms for the functions being displayed.

ENERGY MONITOR- TRUE WATTS-TRMS CURRENT & TRMS VOLTAGE

The ideal transducer/conditioner for data logging or computer energy monitoring applications, the 2053W provides nine channels of analog 0 to 5VDC signals proportional to 3θ , 2θ or dual channel 1θ V-A-W input levels. Only two current shunts need be installed.

This wideband system produces the analog equivalent of the True RMS value for voltage and current and Elcos θ for the true power in each phase. Nine channels of simultaneous data are available for 3θ and 2θ power configurations or the instrument may be used as a six channel system for two separate 1θ inputs. Power rating is a function of the external shunts and voltages. Inputs of up to 600 volts and 1000 amperes may be accommodated. Specifications are similar to those listed for the Model 2053 Digital Wattmeter. Contact Valhalla for a system tailored to your exact requirements.

SPECIFICATIONS WIDEBAND DIGITAL POLYPHASE WATTMETERS

MODEL	TRMS CURRENT RANGES	SHUNT VALUE	RANGES WATTS/ θ	RANGE WATTS/ 3θ	RESOLUTION	
					1θ	3θ
* 2093	100A - 20A	0.001 Ω	60KW - 12KW	120KW - 24KW	10W - 1W	10W
* 2053	50A - 10A	0.002 Ω	30KW - 6KW	60KW - 12 KW	10W - 1W	10W - 1W
2013	10A - 2A	0.01 Ω	6000W - 1200W	12000W - 2400W	1W - .1W	1W
2033	5A - 1A	0.02 Ω	3000W - 600W	6000W - 1200W	1W - .1W	1W - .1W
2023	1A - .2A	0.1 Ω	600W - 120W	1200W - 240W	.1W - .01W	.1W

GENERAL

VOLTAGE (TRMS): 30 to 600VAC
 CURRENT (TRMS): From 5% to 100% of Range
 ACCURACY (VAW): $\pm 0.25\%$ Rdg ± 15 digits 40 Hz 20KHz
 $\pm 1\%$ 10Hz to 50KHz
 DISPLAYS: A to 9999 • V to 9999 • W to 19999 Size .4" LEDs
 POWER: 115/230 VAC $\pm 10\%$ • 50-60Hz • 10 watts
 DATA OUTPUT: Option "IDO" - Isolated - Parallel BCD Positive "1" State
 DC analog 0 to 5VDC - Real Time V-A-W Waveforms

GENERAL
 CREST FACTOR: 3 to 1
 Zin: 600K Ω
 SIZE: 17" x 3 1/2" x 13"
 WT: 10 lbs net - 15 lbs shipping

DIGITAL OHMMETERS CONTINUED

MODEL	DESCRIPTION	PRICE
R1	Rackmount Adaptor.....	\$ 75
TL-488	GPIB (4300 ONLY).....	495
RX3	Rack Adaptor (4300 ONLY).....	30
JB-2	Rear Bendix Terminals (4300 ONLY) ...	50
SP-2	2 Year Spares Kit.....	125
---	Additional Manual.....	35
4014	Digital Ohmmeter.....	995
4165	Contact Resistance Ohmmeter.....	1,995
4165-1344	Contact Resistance Ohmmeter.....	2,145
4314A	Digital Igniter Tester.....	895
4314AN	Digital Igniter Tester.....	995
4314B	Digital Igniter Tester.....	895
4314BN	Digital Igniter Tester.....	995
4020	Digital Ohmmeter.....	449
A	Battery Charger/Eliminator (4020 ONLY) ..	20
BCD	Data Outputs.....	100
BCD-MX	Data Outputs (4314 ONLY).....	200
CC4	Carrying Case (4314/4020 ONLY)	35
HDB	Battery Pack (4314/4020 ONLY).....	65
JAWS	Heavy Duty Kelvin Clip Set.....	50
KCS	Kelvin Clip.....	35
K	Kelvin Clip Cable Set.....	89
KK	Kelvin Cable Set.....	100
MP-1	Kelvin Micro-Probes.....	125
MP-2	Kelvin Mini-Probes.....	125
R1	Rack Mount Adaptor.....	75
R4	Rack Mount Adaptor (4314/4020).....	50
SP-2	2 Year Spares Kit.....	125
SP-2	2 Year Spares Kit (4314/4020).....	50
---	Additional Manual.....	20
---	Additional Manual (4165-1344 ONLY)	35

DIGITAL MULTIMETERS

MODEL	DESCRIPTION	PRICE
4440	Digital Multimeter with Frequency Counter, Rechargeable Batteries and Battery Charger.....	\$ 369
HDB	Heavy Duty Rechargeable Battery.....	65
AC	Internal AC Power.....	35
---	Additional Manual.....	20
4500	High Voltage DMM including B45 Battery Pack and Charger.....	369
HVL	15KV High Voltage Test Leads.....	25
TRMS-AVG	Dual AC Converter.....	85
---	Additional Manual.....	20
	Common Options 4440/4500	
TRMS	True RMS AC Converter.....	50
BCD	Binary Decimal Outputs.....	100
I-150	Clamp-on 150A C/T.....	125
I-100	100A Precision Current Shunt.....	95
I	20A Current Shunt.....	35
CC4	Carrying Case.....	35
C	Shielded Input Cable.....	25
HV-2	40KV High Voltage Probe.....	89
R4	Rackmount Adaptor.....	50

Represented By: _____

DIGITAL POWER ANALYZERS

MODEL	DESCRIPTION	PRICE
2100	Digital Power Analyzer.....	\$ 995
2101	Digital Power Analyzer.....	995
2190S	Single Analog Output.....	495
2190D	Dual Analog Output.....	695
2191S	Single BCD Output.....	395
2191D	Dual BCD Output.....	595
I-150	Clamp-on 150A C.T.....	125
CC4	Carrying Case.....	35
X21	115V AC Load Power Cord.....	35
R4	Rack Mount Adaptor.....	50
DMX	2100 to 2190/91 Interface.....	** 50
SP-2	2 Year Spares Kit (2100/2101).....	85
---	Additional Manual.....	25
	** N/C WHEN 2100/01 IS ORDERED TOGETHER WITH 2190/91	
2300	3 ϕ Digital Power Analyzer.....	4,295
2301	1 ϕ Digital Power Analyzer.....	2,795
2300L	3 ϕ Digital Power Analyzer.....	4,395
2301L	1 ϕ Digital Power Analyzer.....	2,895
TL-4	GPIB Interface.....	495
IOX	11 Channel Analog Output.....	495
IO1	Watts Analog Output.....	100
TL-5	GPIB KWHR Interface.....	695
I-150	Clamp-on 150A C.T.....	125
RX7	Rack Mount Adaptor.....	50
SP-2	2 Year Spares Kit (3 ϕ).....	295
SP-2	2 Year Spares Kit (1 ϕ).....	195
---	Additional Manual.....	45
2013A	3 ϕ Digital Power Analyzer.....	2,395
2023A	3 ϕ Digital Power Analyzer.....	2,395
2033A	3 ϕ Digital Power Analyzer.....	2,395
2053A	3 ϕ Digital Power Analyzer.....	2,395
2093A	3 ϕ Digital Power Analyzer.....	2,395
IDO	Data Output.....	495
RX3	Rack Adaptor.....	30
SP-2	2 Year Spares Kit.....	175
---	Additional Manual.....	35

ORDERING INFORMATION

Prices quoted are F.O.B. Ex Factory (San Diego, CA).

Please issue all orders to Valhalla Scientific, Inc. or Valhalla Scientific Inc. c/o your local representative.
Minimum order: \$35.00.

SPECIFICATIONS & PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.



**VALHALLA
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Building New Standards for Technology

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