

DATRON WAVETEK 4-1 4920 Special Cal ACV

Version 4.2 dated 1 Nov 92

Start at: 11:51 on: 5th Feb 1993 Results in: FILE0472.HES

Page 1

Comment: RE-CAL. VISHAY RESISTORS FITTED TO PRE-RMP

by: RAE

Transfer AVMS: 22439-3 - Due Calibration 9th Feb 93

Instrument under test - FIRMWARE ISSUE: 01.20

SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
1V RANGE, ACV FILTER 100Hz						
1.0000000V	1.00M		Frequency Cal			
1.0000000V	1.00M	0	1000001 Hz	1	+1	+100%
10V RANGE, ACV FILTER 100Hz						
6.000000V	1.00K		Filter Cal			
3.000000V	1.00K		ds Gain Cal			
3.000000V	1.00K	6	3.000002V	3	+1	+28%
10.000000V	1.00K		ds Gain Cal			
10.000000V	1.00K	2	9.999992V	3	-1	-26%
10V RANGE, FILTER FLATNESS CHECK AT 1000Hz						
10.000000V	100	5	10.000000V		+0	
10.000000V	40	4	9.999988V	5	-1	-23%
10.000000V	10	2	9.999997V	5	-0	-5%
10.000000V	1	1	9.999934V	10	-7	-66%
10V RANGE, ACV FILTER 100Hz						
10.000000V	1.00M		ds Linearity Cal			
3.000000V	1.00M		ds Linearity Cal			
1.000000V	1.00M		dT Linearity Cal			
10.000000V	50.0K		ds Flatness Cal			
10.000000V	50.0K	3	10.000003V	10	+0	+3%
10.000000V	200K		Flatness Cal			
10.000000V	200K	3	10.000019V	10	+2	+19%
10.000000V	500K		Flatness Cal			
10.000000V	500K	5	9.999995V	45	-0	-1%
10.000000V	1.00M		Flatness Cal			
10.000000V	1.00M	2	9.999997V	90	-0	-0%
10.000000V	DCRMS	0	9.999962V	102	-4	-4%
10.000000V			DC Cal			
10.000000V	DCRMS	0	10.000000V	3	+0	+0%
3.000000V	DCRMS	0	2.999995V	102	-2	-2%
3.000000V			DC Cal			
3.000000V	DCRMS	0	3.000000V	3	+0	+0%
2.000000V	1.00M	5 dT	1.999699V	1000	-151	-15%
5.000000V	1.00K	5 ds	4.999987V	10	-3	-26%
10V RANGE, TRANSFER						
5.000000V	DCRMS	0	4.999995V		-1	
10V RANGE, ACV FILTER 100Hz						
10.000000V	700K	5 ds	9.997418V	600	-258	-43%

DATRON WAVETEK 4.1
4920 Special Cal ACV

Version 4.2 dated 1 Nov 92

Start at: 12:29 on: 5th Feb 1993 Results in FILE0472.FES

Page 2

Comment: RE-CAL. VISHAY RESISTORS FITTED TO PRE-AMP

by: RAB

Transfer AMIS: 22439-3 - Due Calibration 9th Feb 93

Instrument under test - FIRMWARE ISSUE: 01.20

SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
10.000000V	100K	3	10.000029V	60	+3	+5%
10.000000V	60.0K	5	9.999978V	30	-0	-1%
10.000000V	30.0K	3	9.999953V	15	-5	-32%
10V RANGE, TRANSFER						
10.000000V	DCRMS	0	10.000008V		+1	
10V RANGE, ACV FILTER 10Hz						
10.000000V	10	31 dT	10.000015V	15	+1	+10%
10.000000V	40	5 dT	9.999970V	15	-3	-20%
300mV RANGE, ACV FILTER 100Hz						
100.00000mV	1.00K		ds Gain Cal			
100.00000mV	1.00K	5	99.99980mV	3	-2	-67%
300.00000mV	1.00K		ds Gain Cal			
300.00000mV	1.00K	4	300.00080mV	3	+3	+89%
300.00000mV	50.0K		Flatness Cal			
300.00000mV	50.0K	2	299.99920mV	10	-3	-27%
300.00000mV	200K		Flatness Cal			
300.00000mV	200K	4	300.00107mV	10	+4	+36%
300.00000mV	500K		Flatness Cal			
300.00000mV	500K	7	300.00029mV	45	+1	+2%
300.00000mV	1.00M		Flatness Cal			
300.00000mV	1.00M	4	300.00074mV	90	+2	+3%
300.00000mV	30.0K	4	299.99972mV	15	-1	-6%
300.00000mV	100K	1	300.00099mV	60	+3	+6%
300.00000mV	700K	5	300.09739mV	600	+325	+54%
300mV RANGE, TRANSFER						
300.00000mV	DCRMS	0	299.99730mV		-9	
300mV RANGE, ACV FILTER 100Hz						
100.00000mV	30.0K	5 ds	99.99920mV	15	-8	-54%
100.00000mV	60.0K	1	99.99881mV	30	-12	-40%
100.00000mV	100K	4	99.99957mV	60	-4	-7%
100.00000mV	500K*	13	100.04093mV	450	+409	+91%
100.00000mV	1.00M*	5	100.05587mV	1200	+559	+47% S
300mV RANGE, TRANSFER						
100.00000mV	DCRMS	0	99.94810mV		-519	
300mV RANGE, ACV FILTER 10Hz						
300.00000mV	10	42 ds	300.00276mV	25	+9	+37%
300.00000mV	40	12 dT	299.99955mV	15	-1	-10%

**DATRON WAVETEK 4.1
4920 Special Cal ACV**

Version 4.2 dated 1 May 92

Start at: 17:58 on: 5th Feb 1993 Results in: FILE0472.RES

Page 3

Comments: RE-CAL. VISHAY RESISTORS FITTED TO PRE-AMP

by: RAB

Transfer AIMS: 22439-3 - Due Calibration: 9th Feb 93

Instrument under test - FIRMWARE ISSUE: 01.20

SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
1V RANGE, ACV FILTER 100Hz						
0.3000000V	1.00K		ds Gain Cal			
0.3000000V	1.00K	12	0.2999986V	3	-5	-155% f
0.3000000V	1.00K		Gain Cal			
0.3000000V	1.00K	16	0.3000000V	3	+0	+0%
1.0000000V	1.00K		ds Gain Cal			
1.0000000V	1.00K	5	1.0000028V	3	+3	+92%
1.0000000V	50.0K		Flatness Cal			
1.0000000V	50.0K	2	1.0000022V	10	+2	+22%
1.0000000V	200K		Flatness Cal			
1.0000000V	200K	3	1.0000025V	10	+2	+25%
1.0000000V	500K		Flatness Cal			
1.0000000V	500K	4	0.9999983V	45	-2	-4%
1.0000000V	1.00M		Flatness Cal			
1.0000000V	1.00M	9	0.9999981V	90	-2	-2%
1.0000000V	30.0K	3	0.9999954V	15	-5	-31%
1.0000000V	60.0K	2	0.9999985V	30	-2	-5%
1.0000000V	100K	3	1.0000123V	60	+13	+21%
1.0000000V	700K	4	1.0001675V	600	+168	+28%
1V RANGE, TRANSFER						
1.0000000V	DCRMS	0	0.9999965V		-4	
1V RANGE, ACV FILTER 10Hz						
1.0000000V	10	46 dT	1.0000077V	15	+8	+51%
1.0000000V	40	6 ds	0.9999989V	15	-1	-8%
3V RANGE, ACV FILTER 100Hz						
1.0000000V	1.00K		ds Gain Cal			
1.0000000V	1.00K	14	1.0000059V	3	+6	+196% f
1.0000000V	1.00K		Gain Cal			
1.0000000V	1.00K	6	1.0000016V	3	+2	+54%
3.0000000V	1.00K		ds Gain Cal			
3.0000000V	1.00K	8	2.9999930V	3	-2	-76%
3.0000000V	50.0K		Flatness Cal			
3.0000000V	50.0K	1	3.0000031V	10	+1	+10%
3.0000000V	200K		Flatness Cal			
3.0000000V	200K	6	2.9999891V	10	-4	-36%
3.0000000V	500K		Flatness Cal			
3.0000000V	500K	2	2.9999877V	45	-4	-9%
3.0000000V	1.00M		Flatness Cal			
3.0000000V	1.00M	3	2.9999928V	90	-2	-3%
3.0000000V	30.0K	1	2.9999781V	15	-7	-49%

DATRON WAVETEK 4.1
4920 Special Cal ACV

Version 4.2 dated 1 Mar 92

Start at: 13:74 on: 5th Feb 1993 Results in: FILED0472.RES Page 4
 Comment: RE-CAL. VARYING RESISTORS FITTED TO PRE-AMP by: RAB
 Transfer AMB: 22419-5 - Due Calibration 9th Feb 93
 Instrument under test - FIRMWARE ISSUE: 01.20 SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
3.0000000V	100K	3	3.0000276V	60	+9	+15%
3.0000000V	700K	3	2.9992164V	600	-261	-44%
3V RANGE, TRANSFER						
3.0000000V	DC RMS	0	2.9999840V		-5	
3V RANGE, ACV FILTER 10Hz						
3.0000000V	10	9 dT	2.9999684V	15	-4	-26%
3.0000000V	40	8 ds	2.9999662V	15	-11	-75%
100mV RANGE, mV GAIN						
100.00000mV	1.00K		29.99	26 to 32		
100.00000mV	1.00M		28.95	26 to 32		
mV FLATNESS			3.45%	5	+3%	+70%
30V RANGE, ACV FILTER 100Hz						
10.000000V	1.00K		ds Gain Cal			
10.000000V	1.00K	9	10.000004V	3	+0	+13%
30.000000V	1.00K		ds Gain Cal			
30.000000V	1.00K	6	30.000017V	3	+1	+19%
30.000000V	50.0K		Flatness Cal			
30.000000V	50.0K	3	29.999893V	10	-4	-36%
30.000000V	200K		Flatness Cal			
30.000000V	200K	2	30.000049V	10	+2	+16%
30.000000V	100K	3	29.999957V	60	-1	-2%
30.000000V	30.0K	3	29.999985V	15	-0	-3%
19.900000V	500K		ds Flatness Cal			
19.900000V	500K	7	19.899925V	45	-4	-6%
19.900000V	1.00M		Flatness Cal			
19.900000V	1.00M	2	19.899790V	90	-11	-12%
19.900000V	700K	3	19.901394V	600	+70	+12%
30V RANGE, ACV FILTER 10Hz						
30.000000V	10	14 ds	30.000000V	15	-0	-0%
30.000000V	40	15 ds	29.999959V	15	-1	-9%
30V RANGE, TRANSFER						
10.000000V	DC RMS	0	10.000050V		+5	
100V RANGE, ACV FILTER 100Hz						
30.000000V	1.00K		ds Gain Cal			
30.000000V	1.00K	7	30.00002V	3	+1	+21%
100.000000V	1.00K		ds Gain Cal			
100.000000V	1.00K	4	100.00002V	3	+0	+7%

DATRON WAVETEK 4.1
4920 Special Cal ACV

Version 4.2 dated 1 May 92

Start at: 13:58 on: 5th Feb 1993 Results in: FILE0472.RES Page 5
 Comment: RE-CAL. VISHAY RESISTORS FITTED TO PRE-AMP by: RAB
 Transfer AVMS: 22439-3 - Due Calibration 9th Feb 93
 Instrument under test - FIRMWARE ISSUE: 01.20 SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
100.00000V	50.0K		Flatness Cal			
100.00000V	50.0K	3	100.00018V	10	+2	+18%
100.00000V	200K		Flatness Cal			
100.00000V	200K	3	100.00083V	10	+8	+83%
100.00000V	30.0K	1	100.00029V	15	+3	+19%
100.00000V	60.0K	3	99.99993V	30	-1	-2%
100.00000V	100K	5	100.00017V	60	+2	+3%
19.90000V	500K		dT Flatness Cal			
19.90000V	500K	2	19.90004V	45	+2	+4%
19.90000V	1.00M		Flatness Cal			
19.90000V	1.00M	11	19.89956V	90	-22	-25%
100V RANGE, TRANSFER						
100.00000V	DCRMS	0	100.00027V		+3	
100V RANGE, ACV FILTER 10Hz						
100.00000V	10	10 dT	100.00114V	15	+11	+76%
100.00000V	40	3 dT	99.99940V	15	-6	-40%
300V RANGE, ACV FILTER 100Hz						
100.00000V	1.00K		ds Gain Cal			
100.00000V	1.00K	8	99.99994V	4	-1	-15%
300V RANGE, TRANSFER						
100.00000V	DCRMS	0	100.00280V		+26	
300V RANGE, ACV FILTER 100Hz						
300.00000V	1.00K		ds Gain Cal			
300.00000V	1.00K	5	300.00041V	4	+1	+34%
300.00000V	10.0K		Flatness Cal			
300.00000V	10.0K	6	300.00037V	4	+1	+31%
300.00000V	20.0K		Flatness Cal			
300.00000V	20.0K	4	300.00078V	5	+3	+52%
300.00000V	50.0K		Flatness Cal			
300.00000V	50.0K	1	300.00091V	10	+3	+30%
300.00000V	100K		Flatness Cal			
300.00000V	100K	1	299.99959V	10	-1	-14%
300.00000V	5.00K	5	300.00081V	20	+3	+14%
300.00000V	15.0K	2	299.99940V	20	-2	-10%
300.00000V	33.0K	3	300.00324V	20	+11	+54%
300V RANGE, TRANSFER						
300.00000V	DCRMS	0	300.00770V		+26	
300V RANGE, ACV FILTER 10Hz						
300.00000V	45	10 dT	300.00437V	20	+15	+73%

DATRON WAVETEK 4.1
4920 Special Cal ACV

Version 4.2 dated 1 May 92

Start at: 14:33 on: 5th Feb 1993

Results in: FILE0472.RES

Page 5

Comment: RE-CAL. VISHAY RESISTORS FITTED TO PRE-AMP

by: BAF

Transfer AVMS: Z2439-3 - Due Calibration 9th Feb 93

Instrument under test - FIRMWARE ISSUE: 01.20

SERIAL NUMBER: 25719-6

Test Value	Freq Hz	Pk - Pk ppm	Result	Spec ppm	Error ppm	% Error of Spec
1000V RANGE, ACV FILTER 100Hz						
300.0000V	1.00K		ds Gain Cal			
300.0000V	1.00K	5	299.9995V	4	-2	-46%
1000V RANGE, TRANSFER						
300.0000V	DCRMS	0	300.0065V		+22	
1000V RANGE, ACV FILTER 100Hz						
1000.0000V	1.00K		ds Gain Cal			
1000.0000V	1.00K	5	1000.0021V	4	+2	+52%
1000.0000V	10.0K		Flatness Cal			
1000.0000V	10.0K	5	999.9991V	4	-1	-22%
1000.0000V	20.0K		Flatness Cal			
1000.0000V	20.0K	4	999.9984V	5	-2	-33%
700.0000V	50.0K		ds Flatness Cal			
700.0000V	50.0K	3	699.9990V	10	-1	-15%
500.0000V	100K		ds Flatness Cal			
500.0000V	100K	3	499.9985V	10	-3	-31%
1000.0000V	5.00K	1	ds 1000.0021V	20	+2	+11%
1000.0000V	15.0K	3	999.9987V	20	-1	-6%
1000.0000V	30.0K	3	999.9989V	25	-3	-5%
1000.0000V	33.0K	3	999.9993V	25	-1	-1%
1000V RANGE, ACV FILTER 10Hz						
1000.0000V	45	6	1000.0019V	20	+2	+9%
1000V RANGE, TRANSFER						
1000.0000V	DCRMS	0	999.9993V		-1	

End at: 15:31 on: 5th Feb 1993

Readings without Corrections = 2

Suspect Source Output (S) = 1

Number of Fails (F) = 0