## GSM-20H10

**Precision DC Source Meter** 



CE	RS-232	USB Host	USB Device	LAN
Digit I/O	GPIB			



GW Instek GSM-20H10 is a precision source meter that provides highly stable DC power and instrumentgrade 6½-digit multimeter measurements. While operating, it can be used as a voltage source, current source, voltmeter, ammeter, and ohmmeter, which is uniquely ideal for the evaluation of component characteristics and the test applications of production, including nanomaterials and components, semiconductor architecture, organic materials, high-efficiency illumination, passive components and material characteristics analysis, etc.

GSM-20H10 provides four-quadrant operation of  $\pm 210V/\pm 1.05A/22W$ . The first and third quadrants operate as power supplies to supply power to the load. The second and fourth quadrants function as loads to consume power internally. Voltage value, current value and resistance value can be measured while operating the power supply or load function with an accuracy of 0.012% and a resolution of 1μV/10pA/10μΩ.

With respect to sampling rate, GSM-20H10 supports a sampling rate of up to 50k points/second, which can accurately analyze the characteristics of the DUT. With the large 4.3-inch screen, all measurement settings, parameters and results can be completely displayed on the screen. The SDM (Source Delay Measure) function is provided to delay sampling when the signal changes so as to prevent the unstable signal from being captured and cause misjudgment. There are four built-in sequence output modes (Stair, Log, SRC-MEM, Custom), which can support up to 2500 points of sequence variation output.

Pertaining to protection, GSM-20H10 provides OVP/OTP modes. The design of OVP allows users to self-define the range of OVP. OTP can effectively prevent errors caused by temperature drift during the test process. For interfaces, this product supports standard SCPI commands and provides RS-232, USBTMC, LAN, GPIB (optional) interfaces to meet users' different interface needs

## SPECIFICATIONS NOTE :

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  1. Speed = Normal (1) NPLC). For 0.1 PLC, add 0.005% of range to offset specifications, except 200mV, 1A ranges, add 0.5%.
  2. Required to reach 0.1% of final value after Command is processed. Resistive load. 10µA to 100mA range.
  2. Neershoot into a fully resistive 100k2 load, 10Hz to 1MHz BW, adjacent ranges : 100mV typical, except 20V/200V.
  4. Maximum time required for the output to begin to change following the receipt of : SOURce : VOLTage[CURRent <nrf. Command.</li>
  8. Reading rates applicable for voltage or current measurements, autorange off, filter off, display off, trigger delay = 0, and binary reading forma.
  6. Purely resistive lead. 1µA and 10µA ranges <65ms.</li>
  7. 1000 point sweep was characterized with the source on a fixed rang.
  8. Pass/Fail test performed using one high limit and one low math limit.
  9. Includes time to re-program source to a new level before making measurement.

- 9. Includes time to re-program source to a new level before making measurement. 10. Time from falling edge of START OF TEST signal to falling edge of END OF TEST signal. 11. Command processing time of : SOURce : VOLTage(CURRent : TRICgreed <a href="https://www.command.com">https://www.command.com</a> 11. Command processing time of : SOURce : VOLTage(CURRent : TRICgreed <a href="https://www.command.com">https://www.command.com</a> and not included.



## **FEATURES**

- \* Maximum Output ±210V/±1.05A/22W
- \* Built-in 4 Sequence Output Modes (Stair, Log, SRC-MEM, Custom), up to 2500 Points
- \* OVP /OTP Protection Function
- \* 0.012% Basic Measure Accuracy with 61/2-digit Resolution
- \* Variable Sampling Speed
- \* SDM (Source Delay Measure) Cycle
- \* 2-, 4-, and 6-wire Remote V-source and Measure Sensing
- \* Variable Display Digits
- \* Built-in Limit Function
- \* Built-in 5 Calculation Functions
- \* 4.3" TFT LCD, Digital Number Keyboard
- \* Built-in RTC Clock
- \* Interface: RS-232, USBTMC, LAN, GPIB (Optional)

## **APPLICATIONS**

- \* Semiconductor Component Characteristic Testing
- \* Energy and Efficiency Characteristic Testing
- \* Organic Material Characteristic Testing
- \* Nanomaterial Characteristic Testing

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	Voltage		+210V									
MAXIMUM Current Power RANGE Voltage Resolution			±1.05A 22W									
		1μV										
	Current Resolution Output Voltage		10pA +21V/+1.05A +2	10V / +105 mA								
		Current Limit	±21V / ±1.05A, ±210V / ±105 mA Min. 0.1% of range									
	DC Voltage	Programming Resolution &	Range Resolution	±200.0			V000V		V0000V		00.000V 1mV	
		Accuracy *1	Accuracy	1µ1 ±(0.02%+			)μV 5+600μV)		00μV %+2.4mV)		2%+24mV)	
		Load Regulation	0.01% of range + 100 µV									
		Line Regulation Overshoot	0.01% of range <0.1% typical (full scale step,resistive load, 10mA range)									
		Recovery Time	<250µs (within 0.1% plus load regulation errors, 1A and 100mA compliance.)									
		(1000% Load Change) Ripple and Noise	4mVrms(20Hz~1MHz) / 10mVpp(20Hz~1MHz)									
		Temperature Coefficient	±(0.15 x accuracy specification)/°C (0°-18°C & 28°-50°C) ±1.05A / ±21V, ±105 mA / ±210V									
		Output Current Voltage Limit	Min. 0.1% of range									
OURCE	DC Current	Programmed Source Resolution &	Range Resolution	±1.00000μA 10pA	±10.0000μA 100pA	±100.000 1nA		0000mA ±	10.00000mA 100nA	±100.000mA 1µA	±1.00000A 10μA	
		Accuracy *1	Accuracy	±(0.035%+600pA)	±(0.033%+2n				0.045%+2µA)	±(0.066%+20µA)	±(0.27%+900)	
		Load Regulation	0.01% of range + 100pA									
		Line Regulation Overshoot	0.01% of range <0.1% typical (1mA step, RL = 10kΩ, 20V range)									
-		Temperature Coefficient	±(0.15 × accuracy specification)/*C (0*-18*C & 28*-50*C)									
		Output Settling Time *2 Output Rise Time (±30%)	100µs typical time 300µs, 200V range, 100mA compliance ; 150µs, 20V range, 100mA compliance									
	General	DC Floating Voltage	Output can be floated up to ±250VDC									
		Remote Sense Compliance Accuracy	Up to 1V drop per load lead Add 0.3% of range and ±0.02% of reading to base specification									
		Range Change Overshoot *3	Adjacent range changes between 200mV, 2V and 20V ranges, 100mV typical									
		Minimum Compliance Value Command Processing Time *4	0.1% of range Autorange On:10ms, Autorange Off: 7ms									
		Input Resistance	>10 GΩ			1	20001/	1		1	0.000	
	Voltage	Measurement Resolution &	Range Resolution	±200.0			ν0000 Ομγ		0000V 00μV		1mV	
		Accuracy	Accuracy	±(0.012%	+300μV)		μν 6+300μV)		5%+1.5mV)		5%+10mV)	
-		Temperature Coefficient Voltage Burden (4-wire mode)	±(0.15 × accuracy < 1mV	specification)/°C (0°~1	8°C & 28°~50°C)							
		Programmed Source Resolution &	Range	±1.00000µA	±10.0000μA	±100.000	)μA ±1.0	2000mA ±	10.00000mA	±100.000mA	±1.00000A	
	Current	Accuracy *1	Resolution Accuracy	10pA ±(0.029%+300pA)	100pA ±(0.027%+700	DA) ±(0.025%-		0nA 7%+60nA) ±(0	100nA .035%+600nA)	1µА ±(0.055%+6µА)	10μA ±(0.22%+570)	
		Temperature Coefficient		pecification) / °C (0°~1		JA) ±(0.02370-	-011A) ±(0.02.	(0	.033%+000NAj	±(0.03376+0µA)	±[0.2270+370	
			D. L.C.	<2.00000Ω		Ω000	20.0000Ω	200.000Ω		2.00000kΩ	20.0000kΩ	
EASUREMENT	Resistance		Resolution Test current			μΩ 	100μΩ 100mA	1mΩ 10mA		10mΩ 1mA	100mΩ 100μA	
			Accuracy	Source IACC+Meas.V	ACC Source IACC		1%+0.003Ω), Normal	±(0.08%+0.03Ω),			(0.06%+3Ω), Nor	
		Range	,	200.000kΩ	2.000	±(0.0)	%+0.001Ω), Enhance 20.0000MΩ	d ±(0.05%+0.01 Ω), E 200.000MΩ		+0.1Ω), Enhanced ±( 200.000M Ω	0.04%+1Ω), Enha	
			Resolution	1Ω	1	ΩΩ	100Ω	1kΩ				
			Test current         10μA         5μA         0.5μA         100nA            ±(0.70%+30Ω), Normal         ±(0.11%+30Ω), Normal         ±(0.66%+10kΩ), Normal									
			Accuracy ±(0.05%+100), Enhanced ±(0.05%+100), Enhanced ±(0.05%+5000), Enhanced ±(0.35%+500), Enhanced ±(0.35%+100), Enhanced ±(0.35\%+100), Enhanced \pm(0.35\%+100)									
		Temperature Coefficient Source I mode, Manual OHMS		specification)/°C (0°~1 = I source accuracy + V i		vire remote sense)						
		Source V mode, Manual OHMS		V source accuracy + I					1 .			
		6-wire OHMS Mode Guard Output Impedance	Available using active ohms guard and guard sense. Max. Guard Output Current: S0mA (except 1A range). Accuracy is load dependent <0.1Ω in ohms mode									
	Maximum Range C		75/second									
-	Maximum Measur	e Auto Range Time	40ms (fixed sourc NPLC / Trig	2) ×6 Meas	sure	Source-N	Aeasure *9	Source-Measure	e Pass/Fail test *8, *9	Measur	e Memory *9	
				TO MEMORY	TO GPIB	TO MEMORY	TO GPIB	TO MEMORY	TO GPIB	TO MEMORY	TO GPIB	
		Speed	Origin									
	Sequence Reading Rates *7	Fast	0.01 / internal	2081 (2030)	1198 (1210)	1551 (1515)	1000 (900) 916 (835)	902 (900) 830 (830)	809 (840) 756 (780)	165 (162) 163 (160)	164 (162)	
	Rates *7 (rdg./second) for	Fast 488.2 Medium	0.01 / internal 0.01 / external 0.1 / internal	2081 (2030) 1239 (1200) 510 (433)	1079 (1050) 509 (433)	1551 (1515) 1018 (990) 470 (405)	916 (835) 470 (410)	830 (830) 389 (343)	756 (780) 388 (343)	163 (160) 133 (126)	162 (160) 132 (126)	
	Rates *7	Fast 488.2 Medium 488.2	0.01 / internal 0.01 / external 0.1 / internal 0.1 / external	2081 (2030) 1239 (1200) 510 (433) 438 (380)	1079 (1050) 509 (433) 438 (380)	1551 (1515) 1018 (990) 470 (405) 409 (360)	916 (835) 470 (410) 409 (365)	830 (830) 389 (343) 374 (333)	756 (780) 388 (343) 374 (333)	163 (160) 133 (126) 131 (125)	162 (160) 132 (126) 131 (125)	
	Rates *7 (rdg./second) for	Fast 488.2 Medium	0.01 / internal 0.01 / external 0.1 / internal 0.1 / external 1 / internal 1 / external	2081 (2030) 1239 (1200) 510 (433)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48)	1551 (1515) 1018 (990) 470 (405)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47)	830 (830) 389 (343) 374 (333) 56 (47) 56 (47)	756 (780) 388 (343)	163 (160) 133 (126) 131 (125) 44 (38) 44 (38)	162 (160) 132 (126) 131 (125) 44 (38) 44 (38)	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading	Fast 488.2 Medium 488.2 Normal	0.01 / internal 0.01 / external 0.1 / internal 0.1 / external 1 / internal 1 / external NPLC/ Trig	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source-	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) Measure *9	756 (780) 388 (343) 374 (333) 56 (47)	163 (160) 133 (126) 131 (125) 44 (38) 44 (38) Source-Measure Pass/	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) Fail test *8, *9	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates	Fast         488.2           Medium         488.2           Normal         488.2           Speed         Fast(488.2)	0.01 / internal 0.01 / external 0.1 / internal 1 / internal 1 / external NPLC/ Trig Origin 0.01 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO GPIB 256 (256)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- TO 75	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) Measure *9 GPIB 9 (83)	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           Source-Measure Pass/           TO GPIB           79 (83)	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) Fail test *8, *9	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading	Fast         488.2           Medium         488.2           Normal         488.2           Speed         Fast(488.2)           Medium(488.2)         Medium(488.2)	0.01 / internal 0.01 / external 0.1 / internal 1 / internal 1 / external NPLC/ Trig Origin 0.01 / internal 0.1 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- TC 72 72	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) Measure ≈9 GPIB (83) (70)	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           Source-Measure Pass/           TO GPIB           79 (83)           69 (70)	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) Fail test *8, *9	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz)	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Normal(488.2)	0.01 / internal 0.01 / external 0.1 / external 1 / internal 1 / external NPLC/ Trig Origin 0.01 / internal 0.1 / internal 1 / internal NPLC / Trig	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO GPIB 256 (256) 167 (166) 49 (42) Measure	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) TC 72 72 34 Source P	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 6 (47) 6 (47) 1 (	756 (780) 388 (343) 374 (333) 56 (47)	163 (160) 133 (126) 131 (125) 44 (38) 44 (38) 5ource-Measure Pass// 79 (83) 69 (70) 35 (30) Source-Measure Pass//	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) Fail test *8, *9	
	Rates +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler	Fast         Fast           488.2         Medium           488.2         Normal           488.2         Speed           Fast(488.2)         Medium(488.2)           Normal(488.2)         Speed           Speed         Speed	0.01 / internal 0.01 / external 0.1 / internal 1 / internal 1 / external NPLC/ Trig Origin 0.01 / internal 0.1 / internal 1 / internal NPLC / Trig Origin	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48)	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO GPIB 256 (256) 167 (166) 49 (42) Measure TO GPIB	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- TC 72 344 Source P TC	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) Measure ≈9 CGPIB (83) (70) (31) ass/Fail test CGPIB	756 (780) 388 (343) 374 (333) 56 (47)	163 (160) 133 (126) 131 (125) 44 (38) 5ource-Measure Pass// 70 CPIB 79 (83) 69 (70) 5ource-Measure Pass// TO CPIB	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) Fail test *8, *9	
	Rates +7 (rdg,/second) for 60Hz (50Hz) Single Reading Operation Rates (rdg,/second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Normal(488.2)           Speed           Fast           Medium	0.01 / internal 0.01 / external 0.1 / internal 1 / external 1 / external NPLC/ Trig 0.01 / internal 1 / internal 1 / internal 1 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9	
	Rates +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) +8, +10	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Normal(488.2)           Speed           Fast	0.01 / internal 0.01 / external 0.1 / internal 1 / internal 1 / external 1 / external NPLC/ Trig Origin 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 1 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO GPIB 256 (256) 167 (166) 49 (42) Measure TO GPIB TO GPIB 04 ms (1.08 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 6 (47) 6 (47) 6 (47) 6 (47) 6 (47) 1 (43) 1 (45) 1 (	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           TO CPIB           79 (83)           69 (70)           35 (30)           Source-Measure Pass// TO CPIB           TO CPIB           70 (35 (30))           Source-Measure Pass// TO CPIB           4.82 ms (5.3)	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
	Rates +7 (rdg,/second) for 60Hz (50Hz) Single Reading Operation Rates (rdg,/second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal	0.01 / internal 0.01 / external 0.1 / internal 1 / external 1 / external NPLC/ Trig 0.01 / internal 1 / internal 1 / internal 1 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
	Rates +7 (rdg./second) for 60Hz (S0Hz) Single Reading Operation Rates (rdg./second) for 60Hz (S0Hz) Component Interface Handler Time for 60Hz (S0Hz) +8, +10 Load Impedance Differential Mode <sup>1</sup> Common Mode V(	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal	0.01 / internal 0.01 / external 0.1 / internal 0.1 / internal 1 / external 1 / external 1 / external 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 1 / internal 1 / internal 250VPk 250VPC	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9	
	Raties +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) +8, +10 Load Impedance Differential Mode <sup>1</sup>	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal	0.01 / internal 0.01 / external 0.1 / internal 1 / external 1 / external 1 / external NPLC/ Trig 0.01 / internal 0.01 / internal 1 / internal 1 / internal 0.01 / internal 0.0	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2. pF typical	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8, *10 Load Impedance Differential Mode'I Common Mode Is Over Range Max. Voltage Drop	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal	0.01 / internal 0.01 / external 0.1 / internal 1 / internal 1 / external 1 / external 1 / external 1 / external 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 1 / internal 1 / internal 1 / internal 250VPk 250VPk 250VPc 250VPc	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2. pF typical	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5 ail test *8, *9	
	Rates +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8, *10 Load Impedance Differential Mode V Common Mode Vs Common Mode Vs Common Mode Vs Common Mode Vs	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal	0.01 / internal 0.01 / external 0.1 / internal 1 / external 1 / external 1 / external 1 / external 0.01 / internal 0.01 / internal 1 / internal 1 / internal 1 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 0.01 / internal 250VPK 250VDC >10Gn, c1000PF 105% of range, so	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2. pF typical	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5 ail test *8, *9	
	Rates *7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8, *10 Load Impedance Differential Mode'I Common Mode Is Over Range Max. Voltage Drop Max. Sense lead R Sense Input Impec Sense Input Impec Sense Input Impec	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           plation           sistance           ance           ge	0.01 / internal           0.01 / external           0.11 / internal           0.11 / external           1.1 / external           1.1 / external           1.1 / external           1.1 / external           0.01 / internal           0.1 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. pF typical urce and measure	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9	
EED *5	Rates +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8,*10 Load Impedance Differential Mode! Common Mode VS Common Mode VS Common Mode VS Common Mode VS Common Mode VS Common Mode S Comman Mode S Com	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           plation           esistance           ance           ge           des	0.01 / internal           0.01 / external           0.11 / internal           0.11 / external           1.1 / external           1.1 / external           1.1 / external           1.1 / external           0.01 / internal           0.1 / internal	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2. pF typical	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms)	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) Source- 77 72 34 Source P TO 0.5 ms 0.5 ms	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 66 (47) 67 (47	756 (780) 388 (343) 374 (333) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5 ail test *8, *9	
EED *5	Rates 17 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) 48, 410 Load Impedance Differential Mode' Common Mode Is Over Range Max. Voltage Drop Max. Sense lead R Sense Input Imped Sense Input Imped Sense Input Imped Sense Input Imped Source Output Mo Source Output Mo Source Output Mo	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           plation           esistance           ance           ge           des	0.01 / internal       0.01 / external       0.11 / internal       0.11 / external       10.1 / external       11 / external       11 / external       11 / external       11 / external       0.01 / internal       0.11 / internal       1250VPk       250VPc       2500Pc       2500Pc <td>2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2.      </td> <td>1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (108 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 40 ms</td> <td>log)</td> <td>916 (835) 470 (410) 409 (355) 58 (48) 57 (47) 70 77 34 50urce 77 35 77 34 50urce 70 77 73 34 50urce 70 75 72 73 34 50urce 70 70 75 72 73 34 50urce 70 70 70 70 70 70 70 70 70 70 70 70 70</td> <td>830 (830)           389 (343)           374 (333)           56 (47)           56 (47)           (GP18           (83)           (70)           (31)           ass/Fail test           (GP18           (0.5 ms)           (0.5 ms)</td> <td>756 (780) 388 (343) 374 (333) 56 (47) 56 (47) 56 (47)</td> <td>163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1</td> <td>162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9</td>	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2.      	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (108 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 40 ms	log)	916 (835) 470 (410) 409 (355) 58 (48) 57 (47) 70 77 34 50urce 77 35 77 34 50urce 70 77 73 34 50urce 70 75 72 73 34 50urce 70 70 75 72 73 34 50urce 70 70 70 70 70 70 70 70 70 70 70 70 70	830 (830)           389 (343)           374 (333)           56 (47)           56 (47)           (GP18           (83)           (70)           (31)           ass/Fail test           (GP18           (0.5 ms)           (0.5 ms)	756 (780) 388 (343) 374 (333) 56 (47) 56 (47) 56 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160 132 (126 131 (125 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 44 (38) 5ail test *8, *9	
stem	Rates +7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8, +10 Load Impedance Differential Mode' Common Mode VC Common Mode VC Common Mode Source Output Mo Sense lead R Sense lead R Se	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           plation           esistance           ance           ge           des           st	0.01 / internal           0.01 / internal           0.1 / internal           0.1 / internal           0.1 / external           1 / internal           1 / external           NPLC/Trig           Origin           0.01 / internal           1 / internal           1 / internal           0.1 / internal           0.1 / internal           0.01 / internal           1 / intern	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPI8 256 (256) 167 (166) 49 (42) Measure TO CPI8 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 53 ms (20.9 ms) ion), Stair (linear and thuffers), Includes ss ble power-up states pl	lissi (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48) 57 (48) 	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) 70 77 72 72 73 44 Source P T 0.5 ms 0.5 ms 0.5 ms 0.5 ms	830. (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) 66 (47) 56 (4	756 (780) 388 (343) 374 (337) 56 (47) 56 (47) 56 (47) 56 (47) 57 (47) 58 (47) 59 (47) 50 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
PEED *5	Rates 17 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) 48, 410 Load Impedance Differential Mode' Common Mode Is Over Range Max. Voltage Drop Max. Sense lead R Sense Input Imped Sense Input Imped Sense Input Imped Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Memory Lin Frogrammability Digital I/O Connec	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           plation           esistance           ance           ge           des           st	0.01 / internal       0.01 / external       0.01 / external       0.11 / external       0.11 / external       1 / external       0.01 / internal       0.11 / internal       0.01 / internal       0.01 / internal       1 / internal       250VPC       250	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 1.1. 2. 1.1. 2. pF typical       	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO CPIB 256 (256) 167 (166) 49 (42) Measure TO CPIB 04 ms (108 ms) 55 ms (2.9 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 40 ms) 40 ms (108 ms) 53 ms (20.9 ms) 54 ms (20.9 ms) 55 ms (20.9 ms) 5	log) log) log) log) log) log) log) log/ down a supply.; 1 ti	916 (835) 470 (410) 409 (355) 58 (48) 57 (47) 70 77 34 50urce 77 35 72 34 50urce 70 75 72 34 50urce 70 75 72 34 50urce 70 75 72 72 34 50urce 70 70 75 72 72 72 72 72 72 72 72 72 72 72 72 72	830. (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) 66 (47) 56 (4	756 (780) 388 (343) 374 (337) 56 (47) 56 (47) 56 (47) 56 (47) 57 (47) 58 (47) 59 (47) 50 (47)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
YSTEM PEED *5	Rates 17 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *8, *10 Load Impedance Differential Mode' Common Mode VC Common Mod	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           blation           esistance           ancc           ge           des           st	0.01 / internal         0.01 / external         0.11 / internal         0.11 / internal         0.11 / external         11 / external         11 / external         0.01 / internal         0.11 / internal         0.11 / internal         0.11 / internal         11 / internal         1250VPk         250VPk         250VPk         250VPc         >10GCΩ         <150µC	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Measure TO GPI8 256 (256) 167 (166) 49 (42) Measure TO GPI8 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 53 ms (20.9 ms) 40 ms (20.9 ms) 53 ms (20.9 ms) 54 ms (20.9 ms) 55 ms	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) 70 77 34 Source P TC 0.5 ms 0.5 m	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) (433) (70) (70) (31) (33) (70) (31) (33) (70) (31) (35) (70) (0.5 ms) (0.5 ms)	(3 yr + battery life) @500mA, diode)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
PEED *5	Rates 7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) 45, 410 Load Impedance Differential Mode' Common Mode Is Over Range Max. Voltage Drop Max. Sense lead R Sense Input Imped Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Memory Ling Frogrammability Digital I/O Connee Insulation Operation Environm	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast           Medium(488.2)           Normal(488.2)           Speed           Fast           Medium           Normal           Voltage           olation	0.01 / internal       0.01 / external       0.01 / external       0.11 / external       0.11 / external       11 / external       0.01 / internal       0.11 / internal       0.11 / internal       12 / origin       0.01 / internal       13 / internal       1 / internal       250VPC       250VDC       250VDC       2500C       5V       1005% of range, so       5V       100 points max.       250.000 readings @       IEEE-48.82 (SCPI)       Active low input. Second for the solution of t	2081 (2030) 1239 (1200) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 157 (48) 10. 10. 20. 17. pF typical 10. 17. pF typical 10. 17. 17. 17. 17. 17. 17. 17. 17. 17. 18. 19. 19. 19. 19. 19. 19. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Messure TO GPIB 256 (256) 167 (166) 49 (42) Messure TO GPIB 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 54 ms (20.9 ms) 55 ms	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) 70 77 34 Source P TC 0.5 ms 0.5 m	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) (433) (70) (70) (31) (33) (70) (31) (33) (70) (31) (35) (70) (0.5 ms) (0.5 ms)	(3 yr + battery life) @500mA, diode)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
PEED *5	Rates 17 (rdg./second) for 60Hz (S0Hz) Single Reading Operation Rates (rdg./second) for 60Hz (S0Hz) Component Interface Handler Time for 60Hz (S0Hz) 14, 110 Load Impedance Differential Mode' Common Mode V: Common Mod	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           blation           esistance           ancc           ge           des           st           tor	0.01 / internal       0.01 / external       0.1 / internal       0.1 / internal       1.1 / external       1 / external       1 / external       NPLC/ Trig       Origin       0.01 / internal       1.1 / internal       1.1 / internal       0.1 / internal       0.1 / internal       0.1 / internal       0.1 / internal       0.01 / internal       0.1 / internal       0.1 / internal       1.1 / internal       1.1 / internal       1.2 (Stable into 20,000       250VPk       250VDC       >10GΩ, <1000pf	2081 (2030) 1239 (1200) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 157 (48) 10. 10. 20. 17. pF typical 10. 17. pF typical 10. 17. 17. 17. 17. 17. 17. 17. 17. 17. 18. 19. 19. 19. 19. 19. 19. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	1079 (1050) 509 (433) 438 (380) 59 (49) 57 (48) Messure TO GPIB 256 (256) 167 (166) 49 (42) Messure TO GPIB 04 ms (1.08 ms) 55 ms (2.9 ms) 53 ms (20.9 ms) 54 ms (20.9 ms) 55 ms	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) 70 77 34 Source P TC 0.5 ms 0.5 m	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) (433) (70) (70) (31) (33) (70) (31) (33) (70) (31) (35) (70) (0.5 ms) (0.5 ms)	(3 yr + battery life) @500mA, diode)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
PEED *5	Rates 7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) 45, 410 Load Impedance Differential Mode' Common Mode Is Over Range Max. Voltage Drop Max. Sense lead R Sense Input Imped Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Output Mo Source Memory Ling Frogrammability Digital I/O Connee Insulation Operation Environm	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           ohtage           olation           sistance           anace           ge           ctor           ctor	0.01 / internal           0.01 / external           0.11 / internal           0.1 / internal           1.1 / external           1 / external           0.01 / internal           0.11 / internal           0.11 / internal           1 / internal           1 / internal           250VPK           250VPK           250VPC           >100GΩ, <1000PF	2081 (2030) 1239 (1200) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 157 (48) 10. 10. 20. 17. pF typical 10. 17. pF typical 10. 17. 17. 17. 17. 17. 17. 17. 17. 17. 18. 19. 19. 19. 19. 19. 19. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	1079 (1050) 509 (433) 438 (380) 59 (49) 59 (49) 70 GPI8 70 GPI8 70 GPI8 167 (166) 49 (42) Measure 170 GPI8 170 GPI	1551 (1515) 1018 (990) 470 (405) 409 (360) 58 (48) 57 (48)	916 (835) 470 (410) 409 (365) 58 (48) 57 (47) 70 77 34 Source P TC 0.5 ms 0.5 m	830 (830) 389 (343) 374 (333) 56 (47) 56 (47) 56 (47) (433) (70) (70) (31) (33) (70) (31) (33) (70) (31) (35) (70) (0.5 ms) (0.5 ms)	(3 yr + battery life) @500mA, diode)	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1)	162 (160) 132 (126) 131 (125) 44 (38) 44 (38) 44 (38) Fail test *8, *9 fail test *9, *11 ms) ms)	
EED *5	Rates 7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *4, *10 Unterface Handler Time for 60Hz (50Hz) *4, *10 Unterface Handler Differential Mode' Common Mode VC Common Mode VC Source Memory Lift Memory Buffer Interface Insulation Operation Environ Storage Environme Input Power Power Consumptit	Fast           488.2           Medium           488.2           Normal           488.2           Speed           Fast(488.2)           Medium(488.2)           Medium(488.2)           Speed           Fast           Medium           Normal           Voltage           ohtage           olation           sistance           anace           ge           ctor           ctor	0.01 / internal           0.01 / external           0.11 / internal           0.1 / internal           1.1 / external           1 / external           0.01 / internal           0.11 / internal           0.11 / internal           1 / internal           1 / internal           250VPK           250VPK           250VPC           >100GΩ, <1000PF	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 59 (49) 70 GPI8 70 GPI8 70 GPI8 167 (166) 49 (42) Measure 170 GPI8 170 GPI	1551 (1515)         1018 (990)         470 (405)         409 (360)         58 (48)         57 (48)	916 (835) 470 (410) 409 (355) 58 (48) 57 (47) 70 77 33 Source- 77 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 78 77 72 73 34 Source- 78 77 77 77 77 77 77 77 77 77 77 77 77	830 (830) 389 (343) 374 (333) 56 (47) 66 (47) 66 (47) 6830 (70) (31) ass/Fail test (70) (131) (0.5 ms) (0.5 ms)	756 (780)           388 (343)           374 (333)           56 (47)           56 (47)           56 (47)           9 <td>163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1)</td> <td>162 (160 132 (126 131 (125 44 (38) 44 (38) ail test *8, *9 ail test *9, *11 ms) ms) ms)</td>	163 (160)           133 (126)           131 (125)           44 (38)           44 (38)           5ource-Measure Pass/f           79 (83)           69 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           49 (70)           35 (30)           Source-Measure Pass/f           TO CPIB           4.82 ms (5.3 1           6.27 ms (7.1 1)	162 (160 132 (126 131 (125 44 (38) 44 (38) ail test *8, *9 ail test *9, *11 ms) ms) ms)	
YSTEM ENERAL	Rates 7 (rdg./second) for 60Hz (50Hz) Single Reading Operation Rates (rdg./second) for 60Hz (50Hz) Component Interface Handler Time for 60Hz (50Hz) *4, *10 Unterface Handler Time for 60Hz (50Hz) *4, *10 Unterface Handler Differential Mode' Common Mode VC Common Mode VC Source Memory Lift Memory Buffer Interface Insulation Operation Environ Storage Environme Input Power Power Consumptit	Fast         488.2         Medium         488.2         Normal         488.2         Speed         Fast(488.2)         Medium(488.2)         Speed         Fast         Medium         Normal         Voltage         olation         sistance         ance         ge         des         st         ment         ent         on         ght	0.01 / internal           0.01 / external           0.11 / internal           0.1 / internal           1.1 / external           1 / external           0.01 / internal           0.11 / internal           0.11 / internal           1 / internal           1 / internal           250VPK           250VPK           250VPC           >100GΩ, <1000PF	2081 (2030) 1239 (1200) 510 (433) 438 (380) 59 (49) 57 (48) 	1079 (1050) 509 (433) 438 (380) 59 (49) 59 (49) 70 GPI8 70 GPI8 70 GPI8 167 (166) 49 (42) Measure 170 GPI8 170 GPI	1551 (1515)         1018 (990)         470 (405)         409 (360)         58 (48)         57 (48)	916 (835) 470 (410) 409 (355) 58 (48) 57 (47) 70 77 33 Source- 77 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 77 73 34 Source- 78 77 72 73 34 Source- 78 77 77 77 77 77 77 77 77 77 77 77 77	830 (830) 389 (343) 374 (333) 56 (47) 66 (47) 66 (47) 6830 (70) (31) ass/Fail test (70) (131) (0.5 ms) (0.5 ms)	756 (780)           388 (343)           374 (333)           56 (47)           56 (47)           56 (47)           9 <td>163 (160)           133 (126)           131 (125)           44 (38)           Source-Measure Pass//           70 CPIB           79 (83)           69 (70)           Source-Measure Pass//           TO CPIB           4.82 ms (53.3)           6.27 ms (7.1)           21.31 ms (25.0)</td> <td>16 16 17 17 17 17 17 17 17 17 17 17 17 17 17</td>	163 (160)           133 (126)           131 (125)           44 (38)           Source-Measure Pass//           70 CPIB           79 (83)           69 (70)           Source-Measure Pass//           TO CPIB           4.82 ms (53.3)           6.27 ms (7.1)           21.31 ms (25.0)	16 16 17 17 17 17 17 17 17 17 17 17 17 17 17	

 
 SM-01
 Digital I/O Adapter, Convert DB15 to DB9 + 8-pin micro-DIN
 GTL-258
 GPIB Cable (25 pin Micro-D Connector)

 SM-02
 Digital I/O Adapter, Convert DB15 to DB37 + 8-pin micro-DIN
 Micro-D Connector)
 Micro-D Connector)
 GTL-246 USB Cable (USB 2.0 A-B Type, approx.. 1200mm)

Micro-D Connector)

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