



Document name: PG-1072/1074 Rev.B - Technical Specifications

Date: 24/06/2020

Definitions

*Specification (spec.)*

The warranted performance of a calibrated instrument that has been stored for a minimum of 2 hours within the operating temperature range of 5 °C to 40 °C and after a 45-minute warm up period. Within  $\pm 10$  °C after autocal. Data published in this document are specifications (spec) only where specifically indicated.

*Typical (typ.)*

The characteristic performance, which 80% or more of manufactured instruments will meet. This data is not warranted, does not include measurement uncertainty, and is valid only at room temperature (approximately 23 °C).

REVISION HISTORY	
Date	Comment
17/07/2019	First issue
04/06/2020	Added Initial delay and prescaler for the channels and added the initial delay for the trigger output.
24/06/2020	Changed the Pulse Delay accuracy Changed the Amplitude accuracy

Specifications	PG-1072 Rev.B	PG-1074 Rev.B
<b>Number of Analog Channels</b>	2	4
<b>Timing specifications</b>		
<b>Pulse Period</b> Range (spec.) Resolution (spec.) RMS jitter <sup>1</sup> (Integration Range 100 Hz to 10 MHz, Fout = 200 MHz)	5 ns to 8 sec. 10 ps 4 ps	
<b>Pulse Frequency</b> Range (spec.)  Accuracy	0.125 Hz to 200 MHz (Single pulse mode) 0.25 Hz to 400 MHz (Double pulse mode) 0.375 Hz to 600 MHz (Triple pulse mode) 0.5 Hz to 800 MHz (Quadruple pulse mode)  $\pm 2$ ppm max	
<b>Pulse Width</b> Range (spec.) Resolution (spec.) Accuracy RMS jitter <sup>1</sup>	300 ps to (period – 300 ps) 10 ps $\pm (0.1 \% + 30 \text{ ps})$ < 10 ps	
<b>Pulse Delay</b> (single/double/triple/quadruple) Range (spec.) Resolution (spec.) Accuracy	0 ps to period 10 ps $\pm (0.1 \% + 100 \text{ ps})$	
<b>Output specifications (50 Ohm load)</b>		
<b>Impedance</b>	50 Ohm nominal	
<b>Amplitude</b> Range pk-pk (spec.) Absolute accuracy (spec.)	10 mVpp to 5 Vpp $\pm (1\% \text{ of amplitude pk-pk} + 1\% \text{ of }  \text{DC Offset}  + 20 \text{ mV})$	

<sup>1</sup> All channels at the same frequency in Single Pulse mode and Continuous mode



Resolution (spec.)	4 mV (amplitude 250 mVpp to 5Vpp), 1 mV (amplitude 10 mVpp to 250mVpp)
<b>Baseline DC Offset</b>	
Range (spec.)	± 2.5V adjustable
Resolution (spec.)	2 mV
<b>Rise/Fall Time (20% to 80%)</b>	< 70 ps
<b>Rise/Fall Time (10% to 90%)</b>	< 95 ps (1Vpp amplitude), < 105 ps (5Vpp amplitude)
<b>Overshoot</b>	< 5%
<b>Channel to Channel RMS Jitter <sup>1</sup></b>	< 10 ps
<b>Initial delay</b>	0s to 8s (retriggerable delay off) 0s to 2.5us (retriggerable delay on)

<b>Trigger input specifications</b>	
<b>Impedance</b>	50 Ohm or 1K Ohm programmable
<b>Range (spec.)</b>	± 3.5 V (50 Ohm input impedance) ± 10 V (1K Ohm input impedance)
<b>Minimum detectable amplitude (spec.)</b>	< 50 mVpp
<b>Threshold</b>	
Range (spec.)	± 8V
Resolution (spec.)	10 mV
Accuracy	± 100 mV
<b>Max. input frequency (spec.)</b>	40 MHz
<b>Min. pulse width (spec.)</b>	1 ns
<b>Max. external width mode input frequency (spec.)</b>	1 GHz
<b>Edge selection</b>	Positive, negative, both
<b>Prescaler(for every channel)</b>	0 to 65535
<b>Trigger output specifications</b>	
<b>Impedance</b>	50 Ohm nominal
<b>Amplitude (open load)</b>	
Range (spec.)	1.8V to 3.3V adjustable
Resolution (spec.)	1 mV
Accuracy	± 1%
<b>Delay (trigger in to trigger out)</b>	< 100 ns
<b>RMS jitter (trigger in to trigger out)</b>	< 30 ps (Trigger IN Frequency ≤ 15 MHz)
<b>Width</b>	10 ns (single,burst mode) Period/2 (continuous mode)
<b>Initial delay</b>	0s to 8s (continuous mode) 0s to 2.5us (single,burst,gated mode)
<b>Internal timer</b>	
<b>Time range (Frequency range)</b>	25ns to 42.9 sec (40Mhz to 23.3 mHz)
<b>Time resolution</b>	1 ps
<b>Frequency accuracy</b>	± 2ppm max
<b>External Clock IN</b>	
<b>Connector type</b>	SMA on rear panel
<b>Input Impedance</b>	50 Ω,AC Coupled
<b>Input voltage range</b>	-5 dBm to 4 dBm sine or square wave (rise time T10-90 <1 ns and duty cycle from 40% to 60%)
<b>Damage level</b>	+8 dBm or ±15 VDC Max
<b>Frequency range</b>	10 MHz to 100 MHz
<b>External Clock OUT</b>	
<b>Connector type</b>	SMA on rear panel
<b>Output Impedance</b>	50 Ω,DC Coupled
<b>Frequency</b>	10 MHz or External Clock IN Frequency
<b>Accuracy</b>	± 2ppm max
<b>Aging</b>	± 1.0 ppm/year max
<b>Amplitude</b>	Square wave: 0V to 1.25 V into 50 Ω, 0V to 2.5 V into High Z
<b>Programmability</b>	



<b>Trigger modes</b>	Single, continuous, burst, gated	
<b>Multiple pulse modes</b>	Single, double, triple, quadruple, external width	
<b>Power</b>		
<b>Voltage range</b>	100-240 VAC ±10%	
<b>Frequency range</b>	47-63 Hz	
<b>Max. power consumption</b>	120 W	
<b>Environmental characteristics</b>		
<b>Temperature (operating)</b>	+5 °C to +40 °C (+41°F to 104 °F)	
<b>Temperature (non-operating)</b>	-20 °C to +60 °C (-4 °F to 140 °F)	
<b>Humidity (operating)</b>	5 % to 80 % relative humidity with a maximum wet bulb temperature of 29 °C at or below +40 °C, (upper limit de-rates to 20.6 % relative humidity at +40 °C . Non-condensing.	
<b>Humidity (non-operating)</b>	5 % to 95 % relative humidity with a maximum wet bulb temperature of 40 °C at or below +60 °C, (upper limit de-rates to 29.8 % relative humidity at +60 °C. Non-condensing.	
<b>Altitude (operating)</b>	3,000 meters (9,842 feet) maximum at or below 25°	
<b>Altitude (non-operating)</b>	12,000 meters (39,370 feet) maximum	
<b>EMC and safety</b>		
<b>Safety</b>	EN61010-1	
<b>Main Standards</b>	EN 61326-1:2013 – Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements	
<b>Immunity</b>	EN 61326-1:2013	
<b>General characteristics</b>		
<b>Display</b>	7 inch, 1024x600, capacitive touch LCD	
<b>Operative System</b>	Windows 10	
<b>External Dimensions</b>	W 445 mm – H 135 mm – D 320 mm (3U 19" rackmount)	
<b>Weight</b>	21.4 lbs (9.7 Kg)	
<b>Front panel connectors</b>	OUTPUT1 (SMA) OUTPUT2 (SMA) TRG.IN (SMA) TRG.OUT (SMA) 2 USB 3.0 ports	OUTPUT1 (SMA) OUTPUT2 (SMA) OUTPUT3 (SMA) OUTPUT4 (SMA) TRG.IN (SMA) TRG.OUT (SMA) 2 USB 3.0 ports
<b>Rear panel connectors</b>	External Monitor ports (HDMI, VGA) 2 USB 2.0 ports 2 USB 3.0 ports 3 COM ports 2 Ethernet ports (10/100/1000BaseT Ethernet, RJ45 port) Audio In/Out ports 2 PS/2 keyboard and mouse ports External Clock IN (SMA) External Clock OUT (SMA)	
<b>Hard Disk</b>	128 GB SSD	
<b>Processor</b>	Intel® Celeron J1900, 2 GHz (or better)	
<b>Processor Memory</b>	8 GB	