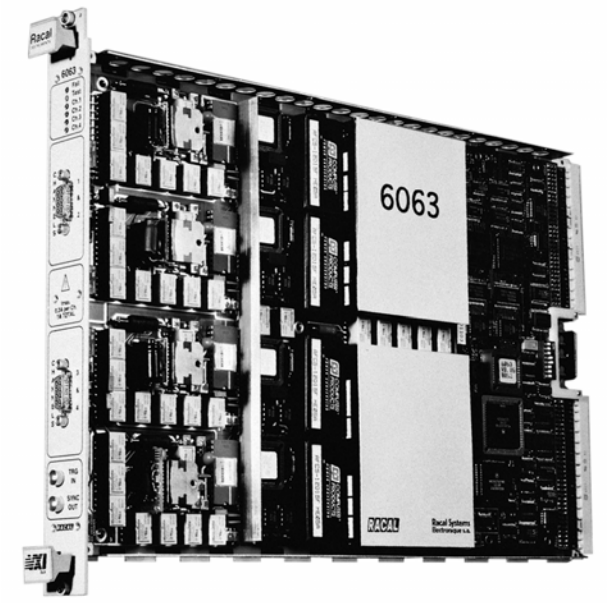
Racal Instruments
http://www.racalinstruments.com

PRODUCT INFORMATION

4-Channel High-Power Precision Source Model 6063



- **4 Isolated Channels**
- **40V/300mA per Channel**
- **High-Precision 16-Bit Resolution per Channel**
- **Constant Voltage or Constant Current Supply**
- **Remote Voltage Sensing**
- **Message-based, SCPI Compatible**

The Model 6063 high-power precision source provides four isolated output channels, capable of delivering 40 Volts at 300mA.

Each channel has 16-bit resolution and may be connected in series or parallel with other channels to achieve a greater voltage or current output. For example, the four channels may be connected in series to create an output voltage up to 160 Volts. If the four channels are connected in parallel, the 6063 will deliver up to 1 Amp to a load.

The 6063 is easily programmed using SCPI compatible commands. Each channel is individually programmable as a constant voltage or constant current output. Three voltage ranges allow for unipolar or bipolar output capability. Arbitrary waveforms may be created by externally triggering the 6063 to change its output to a new value stored in memory (1 value may be stored).

A comprehensive self-test is provided by the 6063 that covers greater than 95% of the circuitry on the module. This self-test gives the user confidence that the module will provide an accurate output signal.

Applications for this module range from system calibration and test to a high-power, high-precision, programmable, power supply.

The 6063 is ideal for many applications where a built-in VXI-based programmable power supply is required.

6063 SPECIFICATIONS

VOLTAGE MODE

Ranges
±4V, 0V to 40V,-40V to 0V

Resolution
16 bits

Output Impedance
< 1Ω (four wire connection)

Settling Time
1ms to within 0.1% of the final value

Slew Rate
± 4V range: 10V/ms
40V range: 100V/ms

Noise (20Hz to 20MHz)
Less than 5mVrms, 30mV peak-peak

Accuracy (23°C ± 2°C)
±4V Range: ±(0.05% of value +2mV ±1 LSB)
40V Ranges: ±(0.05% of value +0.5mV ±1LSB)

Temperature Coefficient (typical)
100ppm FSR/°C

CURRENT MODE

Range
0 to 300mA

Resolution
20μA

Output impedance
>50KΩ

Maximum Load
110Ω

Slew Rate
100mA/ms

Settling time
1ms to within 0.5% of the final value

Noise
< 0.5mA(rms), 3mA peak-peak

Accuracy
±(0.5% value +0.3mA)

Temperature Coefficient (typical)
100ppm FSR/°C

TRIGGERING CHARACTERISTICS

(Input and output triggers are useful to synchronize the execution of a 6063 output change with an external event)

Sources
External: front panel connector
VXI backplane: TTLTrg0-7
Software: *TRG

Modes
IMMediate: Immediate software trigger
COUNt: Repeated up to 2^{32}-1 times
ECOunt: Delayed by up to 2^{32}-1 events

Trigger Output
Front panel connector. One TTL pulse per output value change.

Trigger Input
TTL level >50kΩ impedence

Trigger Pulse Width (min.)
50μs

Protection Level
100V

Trigger Input Delay
400μs

COMMON SPECIFICATIONS

User Connector
9 pin D-Sub

Number of Channels
4

Maximum Current
300mA per channel
1A total for 4 channels

Maximum Power
12W per channel

Isolation
250VDC or Vrms (50/60Hz)

Insulation Resistance
1MΩ

Self Test Coverage
95%

Self Test Accuracy
±3%

Maximum Data Rate
>10 values per second, per channel

Mode Switch Delay
<100ms

VXIbus INTERFACE DATA

(Single-slot, C-sized, VXIbus Rev. 1.4)

Compatibility
SCPI word serial protocol

Drivers
LabVIEW, LabWindows/CVI, VXI*plug&play* (WIN, WIN95, WIN NT Frameworks)

Cooling
Half power: 4l/s, 0.7mm H_20
Full power: 6l/s, 0.7mm H_20

Peak and Dynamic Current

	+24V	+12V	+5V	-12V	-24V
I_{Pm} (A)	1.75	0.5	2.0	0.5	1.75
I_{Dm} (A)	1.5	0.1	0.3	0.1	1.5

Total Power: 106 Watts

MTBF
35,000 hours at 25°C using MIL-HDBK-217E

ENVIRONMENTAL DATA

Temperature
Operating (full current): 0° to 40°C
Operating (half current): 0° to 50°C
Storage: -25° to 70°C

Relative Humidity
95%, non-condensing

Altitude
Operating: 20,000 ft.

EMC (Council Directive 89/336/EEC)
EN55022-B, EN50082-1

Safety (Low Voltage Directive 73/23/EEC)
EN6010-1, IEC1010-1, UL3111-1, CSA33.2#1010

Weight
5.5 lb (2.5 kg)

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