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TECHNOLOGY GROUP

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Expert team | Trust guarantee | 100% satisfaction

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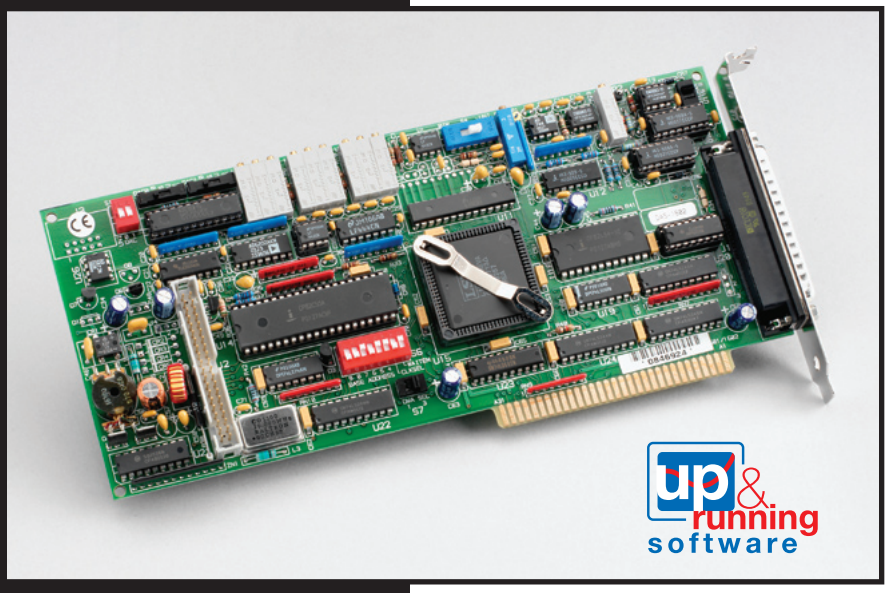
Find the *Keithley DAS-1601* at our website: ***Click HERE***

General purpose capabilities

DATA ACQUISITION PRODUCTS

DAS-1600

50–100kHz, 12-Bit Multifunction Boards



When you need general purpose capabilities, from flexible data transfer to precision triggering, the DAS-1600 Series of high speed analog and digital I/O boards is the answer. This series is ideal for a wide range of product test, process monitoring, and R&D applications.

Specifications

ANALOG INPUTS: 16 single-ended or 8 differential.

MAXIMUM SPEED: Model 01: 100kS/s.
Model 02: 100kS/s

RESOLUTION: 12 bits.

INPUT RANGES: Unipolar: 0 to +10V.
Bipolar: ±10V.

GAIN SELECTION: Programmable.

GAINS: Model 01: 1, 10, 100, 500.
Model 02: 1, 2, 4, 8.

D/A OUTPUTS: 2.

DIGITAL I/O LINES: 32.

- **16 single-ended or eight differential inputs with two analog outputs**
- **Up to 100 kSamples/s maximum input rate**
- **12-bit resolution**
- **High speed DMA transfer capability**
- **Selectable analog input ranges**
- **Burst mode timing emulates simultaneous sample-and-hold**
- **32 digital I/O lines**
- **Two 12-bit D/A channels**
- **Backwards-compatible with DAS-16G Series**
- **16-bit DriverLINX® software drivers for Windows® 95/98—ActiveX and DLL based**

ACCESSORIES AVAILABLE

C1800	DAS-1600 to STA-16, STA-U, or STP-37 Cable
EXP-16	16-Channel Multiplexer Accessory Board
MB-01*	16-Channel Direct-Connection Module Mounting Rack
MB-05*	8-Channel Direct-Connection Module Mounting Rack
S1600	DAS-1600 Series to EXP-16 cable
STA-16	Screw Terminal Accessory for main I/O connector
STA-MB	Screw Terminal Accessory for the MB-Series Modules
STC-37	Screw Terminal Connector
STA-U	Universal Screw Terminal Accessory for auxiliary I/O connector
STP-37	Cost-effective Screw Terminal Panel

*Signal conditioning modules for the MB-01 and MB-05 can be found in the Signal Conditioning and Accessories section.

Ordering Information

DAS-1601 100kS/s Analog and Digital I/O Board with gains of 1, 10, 100, and 500

DAS-1602 100kS/s Analog and Digital I/O Board with gains of 1, 2, 4, and 8

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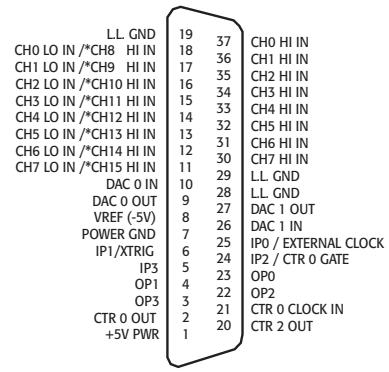
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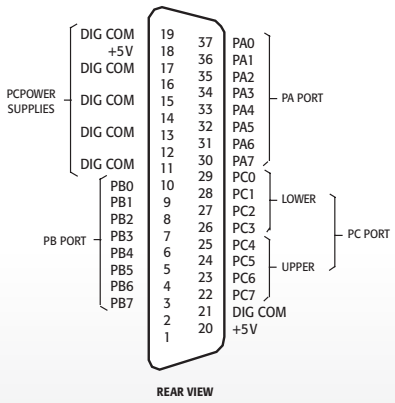
DAS-1600

50–100kHz, 12-Bit Multifunction Boards

Main I/O Connector

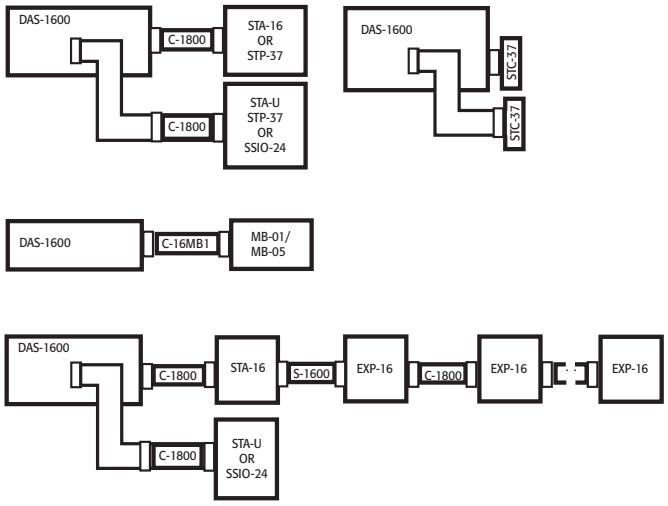


Auxiliary I/O Connector



REAR VIEW

Configuration Guide



Specifications

ANALOG INPUTS

NUMBER OF CHANNELS: 8 differential or16 single-ended; software-selectable.
ACCURACY: 0.01% of reading ±1 bit.
CONVERTER TYPE: Successive approximation.
RESOLUTION: 12 bits.
CONVERSION TIME: 8μs max (7.5μs typ).
ACQUISITION TIME: 1.4μs.
MONOTONICITY: Guaranteed over operating temperature range.
LINEARITY: ±1 bit.
CODING: Offset binary (bipolar), True binary (unipolar).
OVERVOLTAGE: ±35V max powered; ±20V unpowered.
INPUT CURRENT: 250nA max (125nA type) @ 25°C.
INPUT IMPEDANCE: Greater than 25MΩ.

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DAS-1600 50–100kHz, 12-Bit Multifunction Boards

TEMPERATURE COEFFICIENT:

GAIN DRIFT : ±50ppm/°C max of full scale.

ZERO DRIFT : ±10µV/°C ±200µV/gain (bipolar).
±10µV/°C ±50µV/gain (unipolar).

MODEL DAS-1601

Gain	Unipolar Input Range	Bipolar Input Range	Throughput
1	0 to +10 V	±10 V	100 kS/s
10	0 to +1 V	±1 V	100 kS/s
100	0 to +100 mV	±100 mV	70 kS/s
500	0 to +20 mV	±20 mV	30 kS/s

MODEL DAS-1602

Gain	Unipolar Input Range	Bipolar Input Range	Throughput
1	0 to +10 V	±10 V	100 kS/s
2	0 to +5 V	± 5 V	100 kS/s
4	0 to +2.5 V	±2.5 V	100 kS/s
8	0 to +1.25 V	±1.25 V	100 kS/s

	DAS-1601	DAS-1602
Bipolar electrical noise (in counts)		
	Gain=1: p-p=1; rms=0.1	Gain=1: p-p=1; rms=0.1
	Gain=10: p-p=1; rms=0.1	Gain=2: p-p=1; rms=0.1
	Gain=100: p-p=2; rms=0.2	Gain=4: p-p=1; rms=0.1
	Gain=500: p-p=3; rms=0.5	Gain=8: p-p=1; rms=0.1
Unipolar electrical noise (in counts)		
	Gain=1: p-p=1; rms=0.1	Gain=1: p-p=1; rms=0.1
	Gain=10: p-p=1; rms=0.1	Gain=2: p-p=1; rms=0.1
	Gain=100: p-p=2; rms=0.2	Gain=4: p-p=1; rms=0.1
	Gain=500: p-p=3; rms=0.5	Gain=8: p-p=1; rms=0.1

NOISE

Bipolar electrical noise typical (in counts)
Gain = 1 : p-p = 1; rms = 0.1
Gain = 10 : p-p = 1; rms = 0.1
Gain = 100 : p-p = 2; rms = 0.2
Gain = 500 : p-p = 4; rms = 0.5

Bipolar electrical noise (in counts)
Gain = 1 : p-p = 1; rms = 0.1
Gain = 2 : p-p = 1; rms = 0.1
Gain = 4 : p-p = 1; rms = 0.1
Gain = 8 : p-p = 2; rms = 0.2

D/A CONVERTERS

NUMBER OF CHANNELS: 2 independent.

RESOLUTION: 12 bits.

VOLTAGE RANGE: 0 to 5V, 0 to 10V, ±5V, ±10V; switch-selectable (other ranges possible with external reference).

OUTPUT DRIVE CURRENT: ±5mA max.

SETTLING TIME: 20µs to 0.01%.

LINEARITY: ±½ bit.

MONOTONICITY: Guaranteed.

OUTPUT IMPEDANCE: Less than 0.1Ω.

DIGITAL I/O

(8 bits on main 37-pin D connector)

OUTPUTS (STANDARD LSTTL):

OUTPUT BITS: 4.

OUTPUT LOW: V_{OL} = 0.5V max @ I_{OL} = 8.0mA.

OUTPUT HIGH: V_{OH} = 2.4V min @ I_{OH} = –0.4mA.

INPUTS (AND INTERRUPTS) (LSTTL):

INPUT BITS: 4.

INPUT LOW: V_{IL} = 0.8V max; I_{IL} = –0.2mA max.

INPUT HIGH: V_{IH} = 2.0V min; I_{IH} = +10µA max.

DIGITAL I/O

(24 bits on Auxiliary Connector)

TYPE: 82C55A-5.

I/O: 24 bits.

INPUT LOW: V_{IL} = 0.8V max; I_{IL} = –10µA max.

INPUT HIGH: V_{IH} = 2.0V min; I_{IH} = +10µA max.

OUTPUT LOW: V_{OL} = 0.45V max @ I_{OL} = 1.7mA.

OUTPUT HIGH: V_{OH} = 2.4V min @ I_{OH} = –200µA.

GENERAL ENVIRONMENTAL

OPERATING TEMPERATURE: to 70°C.

STORAGE TEMPERATURE: –20 to 70°C.

HUMIDITY: 0 to 95%, non-condensing.

EMC: Conforms to European Union Directive 89/336/EEC.

SAFETY: Meets EN61010-1/IEC 1010.

DIMENSIONS: 9 in L × 4.25 in H × 0.90 in D
(22.9cm × 10.8cm × 2.3cm).

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