
Overview

DESCRIPTION

The DA1855A is a stand-alone high performance 100 MHz differential amplifier. It is intended to act as signal conditioning preamplifier for oscilloscopes, spectrum analyzers and other instruments, providing differential measurement capability to instruments having only a single-ended input. When used with a DA1855A, high quality oscilloscopes can obtain common mode rejection and overdrive recovery performance that was previously unobtainable in any product.

When used with a LeCroy oscilloscope equipped with ProBus interface, the DA1855A can be controlled through the oscilloscope user interface or remote commands.

When used with non ProBus oscilloscopes, the DA1855A settings can be controlled directly through the front panel controls.

Amplifier gain may be set to 1 or 10. A built-in input attenuator may be separately set to attenuate signals by a factor of 10, allowing gains of 10, 1, or 0.1 and common mode dynamic range of $\pm 15.5 \text{ V } (\div 1)$ or $\pm 155 \text{ V } (\div 10)$. Optional probes increase the maximum input signal and common mode ranges in proportion to their attenuation ratio, but not exceeding their maximum input voltage rating. Effective gain of the DA1855A, including probe attenuation, amplifier gain and attenuator settings, is automatically displayed.

The DA1855A has a bandwidth of 100 MHz, but any one of the three 3-pole bandwidth limit filters may be selected to reduce bandwidth to 20 MHz, 1 MHz or 100 kHz to limit noise above the frequency of interest.

The DA1855A output is limited at $\pm 500 \text{ mV}$ so that the oscilloscope is not overdriven by large inputs. This allows an oscilloscope to directly measure the settling of D/A converters with 14 bit (60ppm) precision.

The DA1855A features a built-in Precision Voltage Generator (PVG) that can be set to any voltage between $\pm 15.5 \text{ Volt } (\pm 10 \text{ Volt in Differential Offset mode})$ with 5-1/2 digit resolution. Each digit of the voltage generator output can be individually incremented or decremented. Positive or negative polarity can be selected. The PVG's output can be selected as an input to the

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inverting (–) input of the amplifier for operation as a differential comparator or applied internally as a true differential offset voltage. The voltage is also available to be used externally through a rear panel connector.

To maintain the amplifier's high Common Mode Rejection performance, special differential probes such as the LeCroy model DXC series are recommended and are available as optional accessories.

MODEL DESCRIPTION

The DA1855A series is comprised of 2 models which differ in physical configuration. Both contain the same 100 MHz differential amplifier which provides high common mode rejection, extremely fast overdrive recovery, selectable $\div 1$ or $\div 10$ attenuation, selectable X1 or X10 gain, a 5-1/2 digit Precision Voltage Generator (PVG), selectable upper bandwidth limiting filters, and effective gain display. and ± 500 mV output swing limiting. The PVG provides a calibrated reference for Differential Offset or Comparison modes. The PVG reference voltage is also available through a BNC connector on the rear panel.

DA1855A: The DA1855A is a single channel unit packaged in a convenient desk top housing.

DA1855A-PR2: Two independent model DA1855A amplifiers packaged in one housing with one line power input connection. The housing is intended for desk top use, where it can be placed under an oscilloscope.

RACK MOUNT VERSIONS

Rack mounted versions available for models:

DA1855A-RM: Single channel rack mounted version.

DA1855A-PR2-RM: Dual channel rack mounted version.

POWER CABLE OPTION

(One must be specified at time of order)

Option – P01: 120 V North America / Japan

Option – P02: United Kingdom

Option – P03: Universal Europe

Option – P04: Australia / New Zealand

Option – P05: Switzerland

STANDARD ACCESSORIES

Each DA1855A Differential Amplifier is packaged for shipment with the following items:

- Power cable, as specified by power cable option.
- ProBus interface cable with BNC signal cable. (-PR2 models include 2 ProBus cables)
- Certificate of Calibration traceable to NIST (United States National Institute of Standards and Technology)
- Operator's Manual, which includes a Performance verification Procedure.

OPTIONAL ACCESSORIES

- Service Manual, containing adjustments, repair and replacement part information P/N: DA1855A-SM-E.
- DXC100A, ± 10 / ± 100 Passive Differential Probe.
- DXC200, ± 1 Passive Differential Probe.
- DXC5100, ± 100 2.5 K Passive Differential Probe Pair
- DA101, External ± 10 Attenuator.

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