

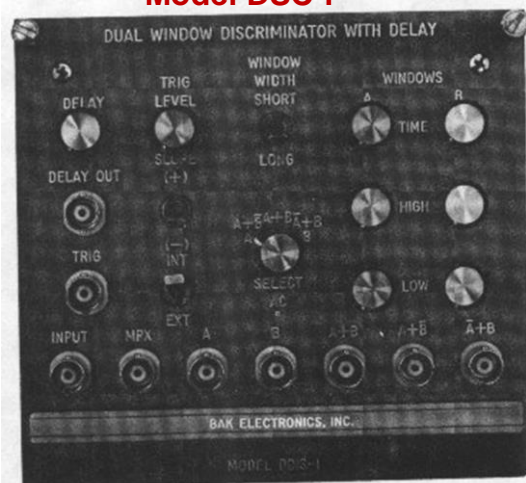


**BAK ELECTRONICS, INC. *Biomedical Instrumentation***

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## *Discrimination System Controller*

### **Model DSC-1**



MICROPROCESSOR CONTROLLED WITH LARGE MEMORY CAPACITY

CONTROLS ALL PARAMETERS OF UP TO 32 CHANNELS OF TIME AND AMPLITUDE WINDOW DISCRIMINATORS

ALLOWS ACCESS AND SINGLE CHANNEL VIEWING OF UP TO 32 SIGNAL CHANNELS WITH MULTIPLEXED DISCRIMINATION PARAMETERS AND OUTPUTS FROM A SINGLE MODULE

BUILT- IN X1 AND X2 ANALOG DELAYS FOR VIEWING ENTIRE WAVEFORM AFTER TRIGGER AND ACCEPTANCE OCCUR

### ***Description:***

The model DSC-1 is not a waveform discriminator in of itself. It is a multichannel Discrimination System Controller intended for applications where four or more spike trains are to be separated either from a single channel recording or from multiple signal channels. It is therefore intended to be used in tandem with up to 32 single channel time and amplitude window discrimination modules.

Each discrimination module has the same I/O and operational characteristics as that of the BAK Model DIS-1, but all of its discriminating parameters are controlled from the BAK Model DSC-1. The DSC-1 has a full complement of the controls and I/O found on a BAK Model DIS-1. Its SIGNAL BNC however is an output rather than an input. It displays whatever data source has been connected to the discrimination module selected by the DSC-1's front panel CHANNEL selector knob. Once a channel is selected then all the DSC-1's controls and outputs are dedicated to that channel. The trigger threshold, either + or - on the waveform, window delay, upper level and lower level are set by the DSC-1's front panel controls. These controls are all soft pots which have no intrinsic values of their own.

They simply drive the parameter values in either a plus or minus direction. The resultant values are all stored in memory for the channel selected. Each of the possible 32 channels of discrimination modules are constantly refreshed by the DSC-1's processor with all their stored parameter values so that they operate and output as though they each had dedicated controls. When a channel selected both the DSC-1 and the associated discrimination module simultaneously output the MPX OUT data, both signal and window levels, TRIG OUT and ACC OUT and this is the only time when that channels stored parameters can be altered. A value change would only occur if one of the control knobs is turned at this time.

Due to the synchronicity of the overall system design, multiple channels of DISCRIMINATION MODULES can be ganged together in such a way that the DSC-1 can control multiple windows on a single waveform source for multipoint discrimination. The DSC-1 MPX OUT then displays the signal waveform and as many time amplitude windows as needed to separate a difficult waveform from a multi spike recording channel. The DSC-1 also has an analog DELAY OUT which delays the analog signal in time for viewing the entire waveform even prior to trigger threshold and acceptance pulse time. In addition, it has a TUNE SPEED push-button switch which selects the sensitivity of the discrimination parameter controls.

The DSC-1 allows the user to control up to 32 channels of spike discrimination with all the power of the BAK Model DIS-1 and more from a single panel and view all channels from a single set of connections to one oscilloscope while allowing independent monitoring of any one channel module from its own set of outputs. The Model DSC-1 is of modular construction and is intended to be mounted and powered by the RP-DS power supply and module cage.

## ***Specifications:***

Maximum Number Of Channels Controlled . . . . .	32
Maximum Number Of Channels In One RP-DS . . .	10
With DSC-1	
Trigger Threshold Range . . . . .	Continuously adjustable plus or minus along signal waveforms
TRIG OUT and ACC OUT . . . . .	CMOS and TTL compatible
Window Delay . . . . .	0.05 msec to 5 msec
Window Height . . . . .	Continuously adjustable
SIGNAL, MPX and DELAY Output Resistance . . .	100 ohms
DELAY Analog Delay . . . . .	0.4 msec to 5 msec
CHANNEL Control . . . . .	Continuous pot with 2 digit display
Power Requirements . . . . .	+/-15 volts and +/-5 volts supplied by Model RP-DS
Size . . . . .	4.8"w x 5.25"h x 7.25"d
Weight . . . . .	1.5 lbs.

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