Preliminary Information

DN7103

User Configurable Digital Audio Delay Line & EQ

The Klark Teknik model DN7103, a single input, three output user configurable digital delay line with 1.4 seconds of total delay time, offers a host of features whilst maintaining the ease of operation for which Klark Teknik products are renowned.

The primary purpose of the DN7103 is for synchronisation of sound paths in multiple signal distribution systems and multiway loudspeaker systems in theatre and public address installations and touring sound reinforcement systems, although it will also prove useful in delaying audio for video in post production suites and synchronisation of audio for satellite transmissions.
In addition to delay, the unit is provided with a high frequency shelf and two bands of fully parametric equalisation on each output. Thus millimetre accurate delay compensation is combined with the precision and clarity of Klark TeknikEQ.
Also featured are peak limiters on each output. These have a 'no overshoot' action and threshold setting in dBu or volts, for easy amplifier matching.
Unit configurations and delay settings can be quickly and easily set up using the front panel controls (2x16 character LCD, 6 function buttons and one rotary encoder) and stored in any of the non-volatile memory positions. Delay time resolution is 21μS allowing accurate time alignment of drivers in multi-way loudspeaker systems.

Delay settings can be displayed in units of time (milliseconds) or distance (metres, centimetres, inches or feet). As well as individual delay times for each output, a master delay time is provided on the input, allowing quick and accurate alignment of delayed speaker stacks. When set in distance mode, a temperature compensation facility is incorporated.

Each output has an independent digitally controlled output level, adjustable from +12dB to -24dB in 1dB steps, plus Mute. These are automatically stored with the delay settings in the user memories.

Full control lock-out is featured, with a user-definable code number for function access.

Fail-safe bypass relays are fitted as standard enabling automatic bypass in the event of power supply interruption.

Other options include transformer input and output balancing.
A MIDI interface is provided as standard.

Features

- 1.4 seconds total delay time.
- 18 Bit linear AD/DA conversion for state-of-the-art noise and distortion performance at 20Hz to 20kHz.
- Analogue output attenuators.
- Input headroom level indicator.
- MIDI interface as standard.
- Two parametric and one shelf EQ on each output.
- Peak limiter on each output.
- 21μS minimum resolution.
- Easily controlled front panel delay and configuration settings with a clear 2x16 character LCD.
- 32 non-volatile memories.
- Built in auto-diagnostic service routines.
- Fail-safe bypass relays.

KLARK TEKNIK
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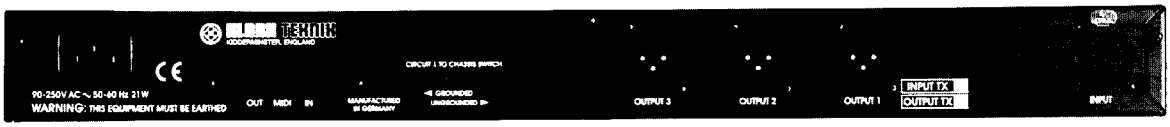
DN7103



ARCHITECT'S AND ENGINEER'S SPECIFICATION

The delay line shall provide for one input and three outputs with a maximum total delay time of 1.4 seconds at a full bandwidth of 20kHz. Delay time shall be displayed in units of time and distance, and shall be adjustable to a resolution of 21 microseconds.
Each output shall also incorporate 2 bands of fully parametric equalisation and a high frequency shelf equaliser for CD horn correction. Also a peak limiter shall be provided on each output.
When displaying distance, a temperature compensation facility will allow the delay time to be recalculated for a specified temperature.
In addition to individual output delay times, the unit shall incorporate a master delay time for the input.

The delay line shall meet or exceed the following specifications:

Distortion	<0.02% (20Hz to 20kHz at +8dBu)
Frequency response	+-0.3dB (20Hz to 20kHz)
Dynamic range	typically > 100dB

Options for the various delay and equalisation parameters shall be presented on a liquid crystal display selectable via six front panel switches and shall be altered via a continuous rotary controller. User memories shall be provided for setup storage. A security lock-out shall be available including a a user defined code number.
An analogue input gain control and output attenuators shall be provided for system matching.
Output levels for the three outputs shall be individually adjustable within software and these settings recalled from memory.

The delay line shall be provided with a MIDI interface as standard.

All audio connections shall be via XLR style connectors. Input and outputs shall be electronically balanced as standard. Optional transformers shall be available for both input and output isolation.

The unit shall have a failsafe facility enabling automatic by-pass in the event of power supply interruption.

The unit shall be capable of operating from a 90 to 250v, 50 to 60Hz AC power source.

The delay line shall be the Klark Teknik model DN7103 and no alternative option is available.

RELIABILITY CONTROL

Even with the advanced electronic engineering incorporated in this product, each unit is given the full backing of Klark-Teknik's "Reliability Control", which proves each product against a specification consistent with highest professional standards. Precision components are used throughout and every unit is bench tested and aligned before a burn-in period and final performance test.

TECHNICAL SPECIFICATION

Input	**One**
Type	Balanced (electronically)
Impedance (ohm)	
Balanced	20k
Unbalanced	10k
Common mode rejection (1KHz)	>70dB
Max. level	+21dBu
Insertion loss	
of optional transformers	1.5dB
Analogue Gain	-∞ to +12dB

Outputs	**Three**
Type	Balanced (electronically)
Min. load impedance	600ohm
Source impedance	50ohm
Max. level	+21dBu into >2kohms
Gain	-∞ to 0dB

Performance	
Frequency response	+/-0.3dB
(20Hz to 20kHz)	with EQ flat
Distortion @ +4dBu	<0.02% (20Hz to 20KHz)
With optional input transformer	
	<0.1% (500Hz to 20KHz)
	<0.5% (20Hz to 500Hz)
Dynamic range	>100dB
(20Hz to 20kHz unweighted)	

Power Requirements	
Voltage	90 to 250v @ 50 to 60Hz AC
Consumption	<25VA

Dimensions	
Width	483mm (19 inches)
Height	44mm (1.75 inches)
Depth	287mm (12 inches)

Weight	
Nett	4kg
Shipping	6kg

Trade Descriptions Act: Due to the company policy of continuing improvement, we secure the right to alter these specifications without prior notice.

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