

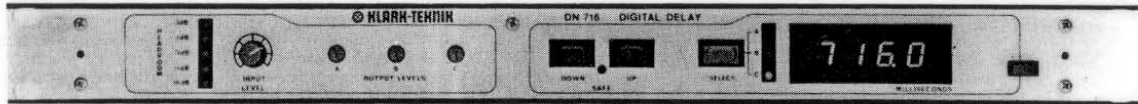
# ***DN 716***

***Digital Delay Line***

***By***

***Klark Teknik***





The Klark-Teknik DN716 is a multiple output digital audio delay line offering over 1.3 seconds of signal delay in each of its three outputs.

In-house research and development by Klark-Teknik Engineers placed special emphasis on the design of very high quality converters and the used 16 bit successive approximation A/D convertor and 16 bit D/A converter ensures optimum performance in the DN716.

The input and output filters are proprietary low-pass hybrid types, specially designed to achieve optimum noise performance, low distortion and high reliability.

A high speed CPU gives the unit an increased versatility and lower component count, resulting in better reliability in a compact package.

The delay time on each output can be changed in 20 micro second steps from zero to 1.311 seconds. The display is auto-ranging giving the following delay time resolutions:-

00.00 msec to 99.98 msec	(counting in 0.02 msec steps)
100.0 msec to 999.9 msec	(counting in 0.1 msec steps)
1000 msec to 1311 msec	(counting in 1 msec steps).

The DN716 is built to the same high electrical and mechanical standards as all Klark-Teknik equipment and is both robust and stylish. It occupies a standard one unit of rack space and has an electronically balanced input and unbalanced outputs. Output balancing transformers are available and retrofittable.

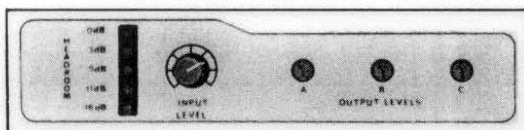
Comprehensive diagnostic test routines for fault diagnosis are included.

## Operating Considerations

### Audio Signal Levels

Due to the inherent limit of digital audio products it is important that special care be placed on setting the operating levels to achieve the best possible performance.

This can be achieved by the following:



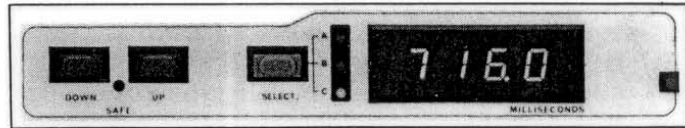
a) Turn down to minimum the three output level controls.

b) Inject normal operating signal and turn up the input level control as high as practical (0db LED = 2dB below internal clipping of the unit.)

c) Adjust the output level controls as required.

Although the display is capable of displaying the delay to an accuracy of 20 microseconds, the display for clarity reasons does not include a fixed delay of approximately 110 microseconds caused by the sampling process and necessary filter networks. Therefore the actual delay is approximately 110 microseconds greater than that displayed. The fixed delay varies slightly with frequency due to the filter networks.

20Hz - 5kHz	110 micro seconds
8kHz	115 micro seconds
13kHz	120 micro seconds
16kHz	125 micro seconds
18kHz	135 micro seconds
20kHz	145 micro seconds



## Furthermore

For safety and interference reasons the supply earth connection should always be used.

The audio signal group (pin 1 XLR's) may be isolated from the chassis ground by means of the 'earth lift' switch located on the rear panel. The shells of the XLR's are always connected to the chassis earth.

Do not rely on the front panel mounting as a means of chassis earthing.

Although the DN716 has been designed for minimum EMF interference it is not advisable to mount the unit near radio sensitive equipment (i.e. radio microphone receivers).

For the best possible performance in sensitive areas it is advisable that the units have transformer balanced inputs and outputs.

Make sure that the unit's voltage setting is in the correct range, incorrect setting can cause intermittent operation or excessive heating of the unit.

If normal operating conditions are adhered to, the DN716 will not require any periodic maintenance other than cosmetic removal of dust from the front panel using a dry soft cloth.

Due to the complexity of the circuitry used in the DN716 it is essential that all servicing is carried out by an authorised Klark-Teknik service technician.

Attempted repairs by non-authorized service personnel will invalidate the warranty.

Diagnostic error codes on Switch-On should be reported to the nearest Klark-Teknik service point (See "Importing Agents" on page 23).

## Typical Error Codes:-

1. EE01	Eprom (T-Bug)
2. EE02	C-Mos Memory Failure
3. Repetitive EE03	Data Corruption

## Reliability Control

Even with the advanced technology incorporated in this product, each instrument is given the full backing of Klark-Teknik's "**reliability control**" which proves each product against a specification consistent with the highest professional standards. Only top quality components are used, and every unit is bench tested and aligned before a burn-in period and final performance test.



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