

(9)

$V_{in} (V)$        $V_{out} = \ln(V_{in}) (V)$

5.02	1.63
5.51	1.75
6.02	1.82
6.5	1.92
7.03	1.95
7.52	2.03
7.99	2.10
8.56	<del>2.18</del> 2.16
9.02	2.21
9.53	2.24
10.06	2.26

(10)

To implement  $\log_{10}()$ , whatever, we have got  $a_1$  for  $\ln$ , new  $a_1$  will be  $\frac{a_1}{2.3}$ . Thus

~~the~~ new scaling factor will be  $(1 + \frac{R_2}{R_3})^{2.3}$

which is achieved by varying  $R_2$  potentiometer  
 & required ratio of  $\frac{R_3}{R_2}$  is 46.90.



Min (V)	$V_{out} = \log_{10} V_{in} (V)$
4.99	0.69
5.63	0.76
6.05	0.79
6.47	0.81
6.98	0.83
7.57	0.88
8.02	0.89
8.53	0.92
9.04	0.94
9.49	0.97
9.99	0.98