Dummy Fuel cell:

Introduction to voltage modes:

1.Normal mode

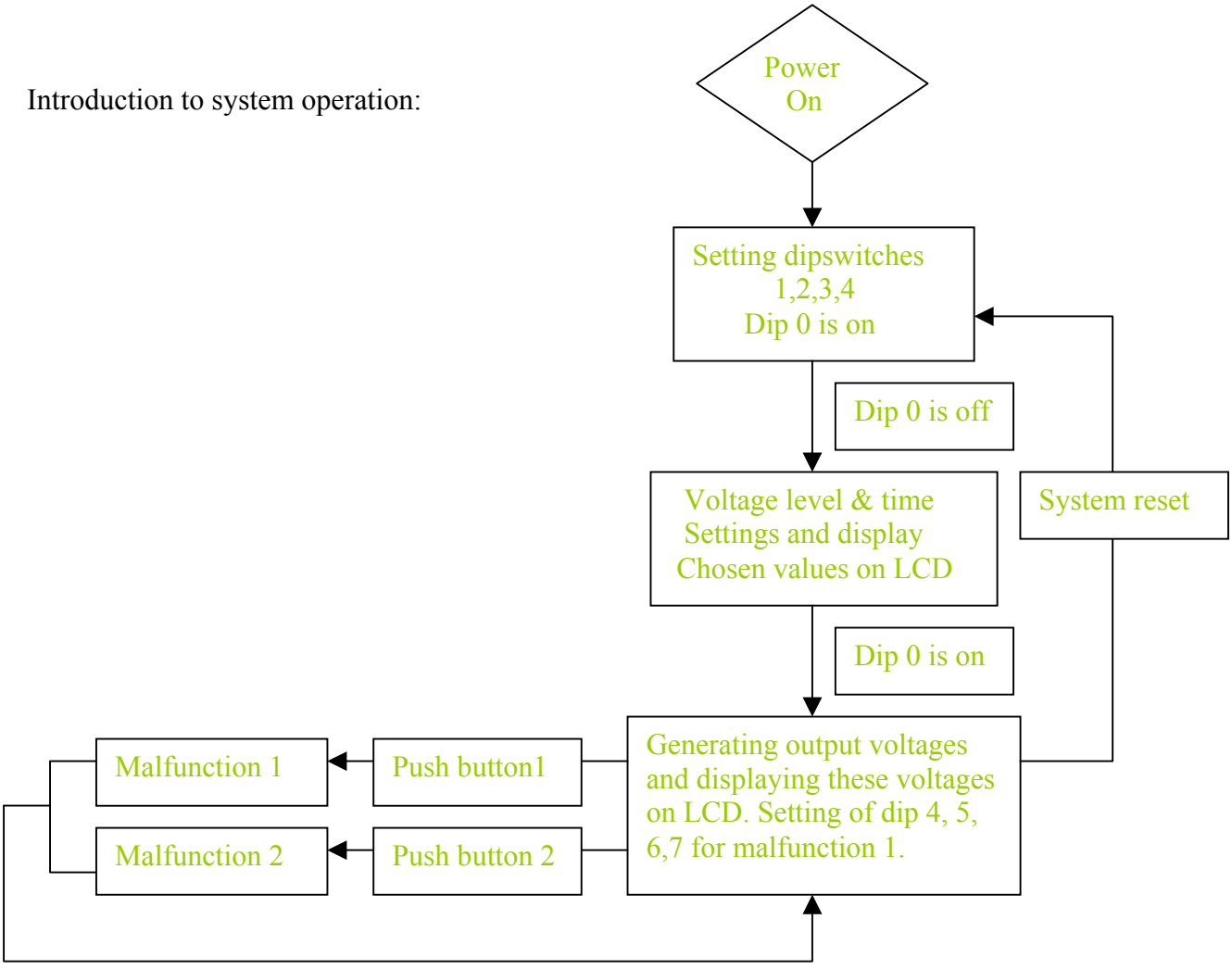
A. All outputs on the same level (this level can be chosen by the user and is shown on LCD) the level ranges from 0.4V to 0.7V.this mode is selected by means of dip switch 1.

B. The 16 outputs form shapes (sin,cos,step,random) ;for example if the voltage level is set to 0.50V and the desired shape is sin, the output voltages is such: 0.50,0.62,0.72,0.79,0.80,0.76,0.68,0.56,0.44,0.32,0.24,0.20,0.22,0.28,0.34,0.5 (this voltages varies in an interval –0.30~+0.30 among voltage level) if it is not suitable it is possible to decrease this interval. If dip 1 is off these shapes are selected by dip switches 2,3. In this two modes the difference between T15 & T0 is less than 0.10V. and all outputs are greater than 0.10V.

2.Malfunction 1: one of the outputs that can be selected by dip switches 4,5,6,7 goes in an adjustable amount of time (1s,2s,…,10s) below 0.10V randomly for example 0.06V. if the chosen channel was ch0 or ch15 then the other channel output also varies so that the difference between these two channels must not be greater than 0.10V. the amount of time that selected for malfunction is shown on LCD.

3.Malfunction 2: the difference between ch0 and ch15 increases over 0.10V in an adjustable amount of time, as malfunction1.
If the amount of time for malfunctions is not suitable it is possible to change them to an other interval.

Introduction to system operation:



Dipswitches

ON	ON	ON	ON	ON	ON	ON	ON
D0	D1	D2	D3	D4	D5	D6	D7

Start Fix, mode — Shape Sel. Sin,Cos, Stp,Rnd. — Terminal Sel. For mal. 1 LSB ……. MSB

System Power On:

ON	Off	Off	Off	ON	ON	ON	ON
D0	D1	D2	D3	D4	D5	D6	D7

4x20 LCD

Dummy-Fuel cell

Voltage level and Time Settings:

Off	Off	Off	Off	ON	ON	ON	ON
D0	D1	D2	D3	D4	D5	D6	D7

V_LEVEL:
0.50 (VOLT)
DELAY:
5 (SECOND)

LED

Fix Sin Cos Step Rnd

Mal.1 Mal.2

System Reset

Generating desired outputs:

ON	Off	Off	Off	Off	Off	ON	Off
D0	D1	D2	D3	D4	D5	D6	D7

0.50 0.62 0.72 0.79
0.80 0.76 0.68 0.56
0.44 0.32 0.24 0.20
0.22 0.28 0.34 0.50

Malfunction 1

Fix Sin Cos Step Rnd

Mal.1 Mal.2

Waite for 5 seconds

0.50 0.62 0.72 0.79
0.07 0.76 0.68 0.56
0.44 0.32 0.24 0.20
0.22 0.28 0.34 0.50

Malfunction 2

Fix Sin Cos Step Rnd

Mal.1 Mal.2

0.58 0.62 0.72 0.79
0.80 0.76 0.68 0.56
0.44 0.32 0.24 0.20
0.22 0.28 0.34 0.41