



**Ethanol for Environment:  
E4E INSTALLATION GUIDE**

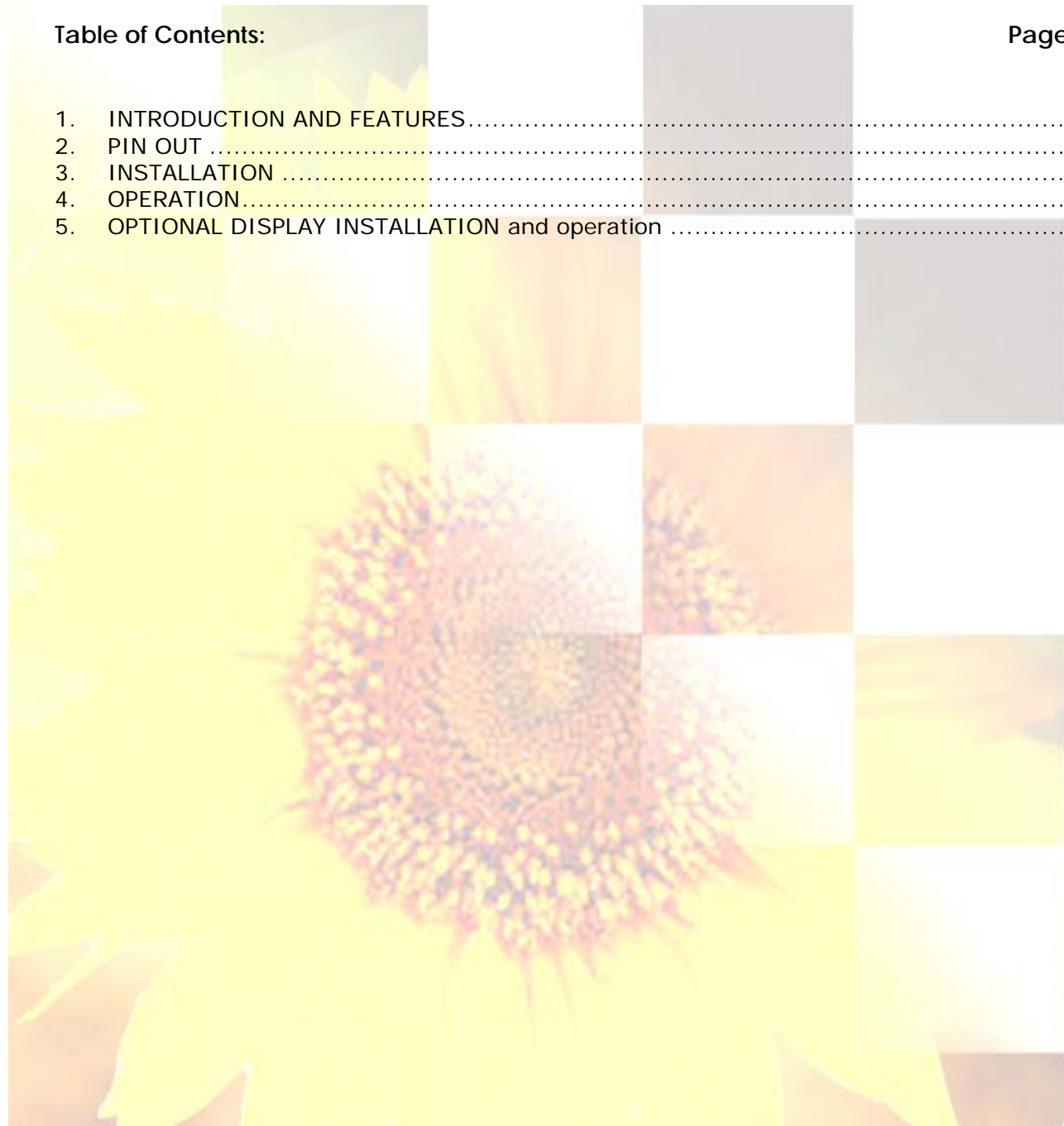
**dds**

E4E Installation Guide:

Table of Contents:

Page no:

1.	INTRODUCTION AND FEATURES.....	1
2.	PIN OUT .....	1
3.	INSTALLATION .....	3
4.	OPERATION.....	3
5.	OPTIONAL DISPLAY INSTALLATION and operation .....	4



## 1. INTRODUCTION AND FEATURES

The E4E\_B controller follows in the economical brother of the SMT8\_EFE. All these Ethanol controllers serve the same purpose: To make your engine compliant to the E85 Ethanol Bio fuel. As you well know, the E85 fuel is an Alcohol, is very good for the engine and the environment, and it is renewable. Unfortunately, your engine needs a little assistance to use it! Ethanol contains 30% less power, so your engine needs 30% more fuel, and you get 30% less distance out of a tank. This sounds all gloomy, but there is good news: It is less expensive, your engine lasts longer, and it has a NEUTRAL CARBON FOOTPRINT. The other good news is that you can save on the fuel consumption by lowering the extra fuel to 15% under certain circumstances.

The controller's job sounds very simple: Add up to 30% more fuel. This is true if you have poor E85 in your tank, but the reality is that you have anything but E85 because you have a residue of old fuel in the tank when you fill up. And you may not find an E85 filling station, and have to use normal fuel instead. You can adjust the fuel while you drive to the optimum car performance

The E4E controller connects to your fuel injectors and requires a few more wires to get the best out of it.

### Main Features:

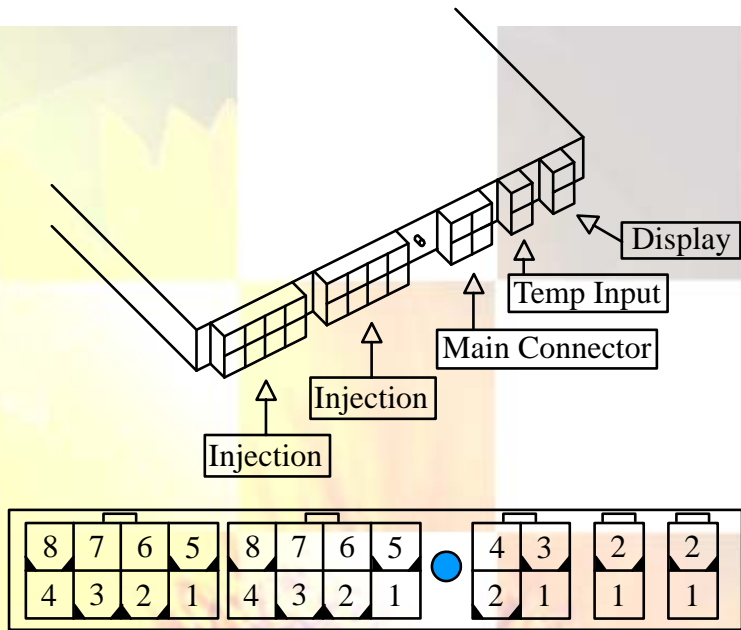
- For engines with 2 to 4 Cylinders
- Manual adjustment to any Ethanol mixture in the tank
- Uses supplied temperature sensor
- Optional display output

## 2. PIN OUT

The unit has (Right to Left):

1 x 2 pin	DISPLAY (Option)
1 x 2 pin	TEMPERATURE SENSOR
1 x 4 pin (Green LED)	Potentiometer
2 x 8 pin	Injector activation, each connector serves two cylinders

The logo for 'dds' is displayed in a bold, green, lowercase font. It is centered horizontally and has a slight shadow effect behind the letters.



#### 2 WAY DISPLAY (OPTION)

Pin	Signal	Direction	Function
1	+S	Output	Power to the display
2	DISPL	Output	Display signal

#### 2 WAY TEMPERATURE

Pin	Signal	Direction	Function
1	GND	Chassis	Ground
2	Tempin	Input	Temperature signal

#### 4 WAY POTENTIOMETER

Pin	Signal	Direction	Function
1	GND	Chassis	Ground
2	NC	Open	Open
3	POTIN	Input	Signal
4	PULLUP	Output	Pull-up to 3.3V for potentiometer

#### 8 WAY CONNECTOR(s)

Pin	Signal	Direction	Function
1	IJb	Output	Injector drive b
2	GND	CHASSIS	Injector current
3	IJa	Output	Injector drive a
4	Com	Output	COMMON to injector a + b
5	Eb	Input	ECU connection b
6	Eb	Input	ECU connection b
7	Ea	Input	ECU connection a
8	Ea	Input	ECU connection a



**NOTE:** Each connector serves TWO cylinders. The cylinders are identified by (a) and (b) notations. Signals between cylinders should not be swapped!

### 3. INSTALLATION

Install the unit in the COOLEST place inside the engine compartment, away or shielded from the exhaust radiation.

If needed, you can extend the injector harness length. Unplug all injectors and plug in the E4E clips.

**NOTE:** Make sure that the male/female connector comes from the same set and end up on ONE cylinder. The sequence of cylinders is not important.

Then connect the GROUND wire (with a lug) to any chassis point, which is free of paint and constitutes a good connection.

**NOTE:** Failure to make a good ground connection will stop the engine dead.

1. Strap the temperature sensor to the top radiator hose.

### 4. OPERATION

Start the car and observe that it runs smoothly.

Observe that the green LED indication flickers.

Turn the potentiometer from one end to the other and observe that the engine tune changes. This indicates that you are adding fuel or not.

If you are in doubt of the exact fuel/E85 mixture in your tank: put the potentiometer midway. This is not a science project. A proximate position is sufficient, because your engine (ECU) will adjust the fuel amount to the exact required level.

Drive the car normal.

If you are towing or racing (Speeds above 120Km/H) then don't read the following.

While driving (light load, cruising) with E85 you can adjust the mixture down until the car 'struggles' and then adjust up a little. This saves you up to 20% fuel.

Note: You are exploiting the other property of Ethanol: Its very high Octane rating. The engine will run a little warmer, which easily absorbed by your radiator at light loads.

After a while you will know how your engine reacts to different settings and you will find a mixture, which serves you well until you fill up, and have an 'unspecified' mixture in the tank.

The logo for 'dds' is displayed in a bold, lowercase, green font. The letters are slightly shadowed, giving it a 3D appearance. It is centered at the bottom of the page.



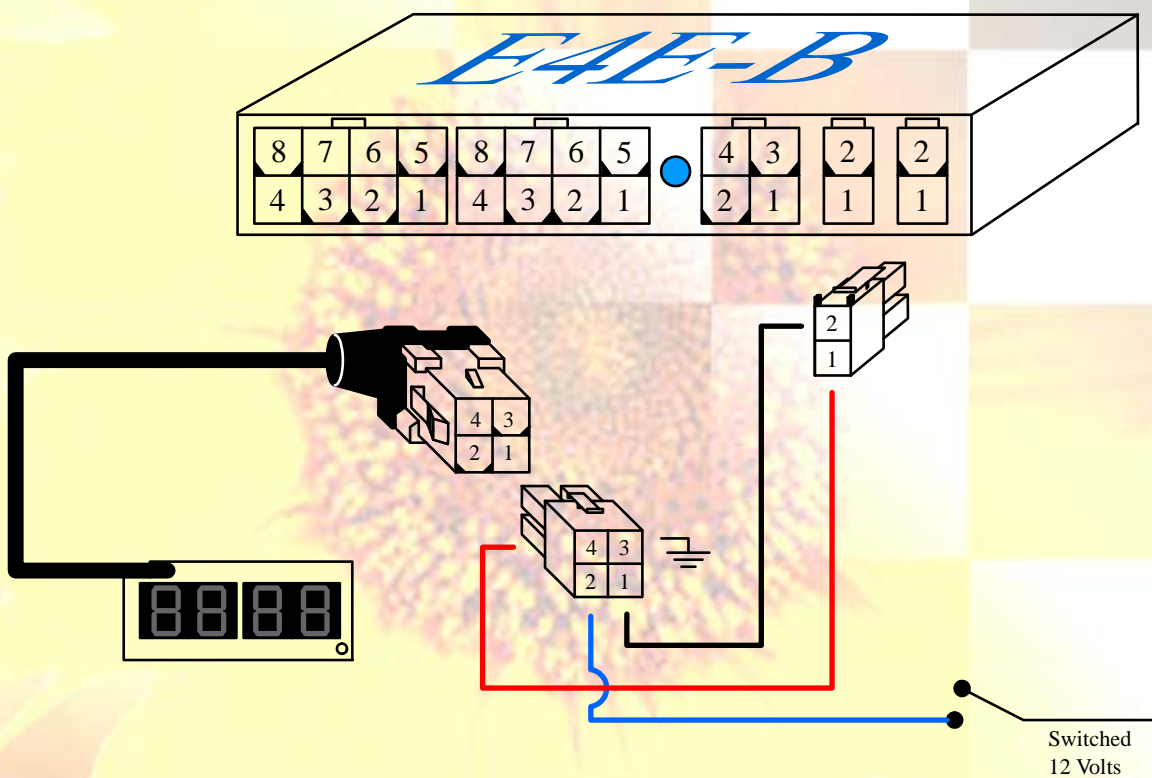
**GUIDELINE:**

These are some guidelines for various tank mixtures:

Undiluted Fuel:	Adjust counter clockwise: ZERO	
Unknown mixture:	Light load, cruising:	Midway
	Heavy load:	Midway to full
Undiluted E85:	Light load, cruising:	Midway to full
	Heavy load:	Full

**5. OPTIONAL DISPLAY INSTALLATION AND OPERATION**

The display wiring and operation is a little crazy.



The unit can display the following item. One can be selected by shorting the 'select wire' to +12 Volt momentarily.

Item	Function
1	Potentiometer setting
2	Injector utilization
3	Engine temperature
4	Fuel addition
5	Cold Start enrichment
6	ECU injection, milliseconds
7	RPM (normal)
8	RPM (Batch injection)

