AEM F/IC WIRING DIAGRAM

07+ SCION tC

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F/IC 22 PIN CONN

F/IC 24 PIN CONN

ECU CONN A, C, D, E

F/IC CONNECTOR PIN NUMBERS

ECU CONNECTOR PIN NUMBERS

Looking at Wiring Side of Connectors
FIC 22 Pin Connector
Inject 1 In/ Dark Blue / Pin #1
Power Ground / Black / Pin #4
Signal Ground / Black / Pin #5
TPS / White / Pin # 6
Crank MAGI - / Green / Pin #8
Inject 2 In / Dark Blue / Pin #12
Log In / White / Pin #13
Power Ground / Black / Pin #15
Ignition Power / Red / Pin #16
Crank MAGI + / Green / Pin #19
Crank MAGO + / Green / Pin #21
Cam1 MAGO + / Yellow / Pin #22

FIC 24 Pin Connector
CAM1 MAGI+ / Yellow / Pin #9
CAM 1 MAGI- / Yellow / Pin #10
Inject 3 In/ Dark Blue / Pin #12
O21 / Pink / Pin #13
MAF In + / Dark Blue / Pin #14
MAF Out + / Black / Pin #15
Inject 4 Out / Dark Blue / Pin #19
Inject 3 Out / Dark Blue / Pin #20
Inject 2 Out / Dark Blue / Pin #21
Inject 1 Out / Dark Blue / Pin #22
Inject 4 In / Dark Blue / Pin #24

Ok, now that we have the FIC harness wires selected, let’s get to select the pins on the factory ECM to splice. There are 4 connectors for the 07up ECM, unlike the 05-06 ECM which has 5 connectors. This is why PnP harnesses aren't interchangeable between 05-06 and 07up. Here are the wires you need to find.
These are the wires you need to find on your ECU harness:

- Pin E8-26 Cam Pos Sensor +
- Pin E8-27 Crank Pos Sensor +
- Pin E7-5 Injector #2
- Pin E8-34 Cam/Crank Sensor -
- Pin E8-20 TPS
- Pin E7-6 Injector #1
- Pin E7-3 Injector #3
- Pin E7-28 MAF
- Pin E4-1 Power
- Pin E7-1 Injector #4

Now, that we have every last wire figured out what we need on the FIC Universal Harness and also the 07up Scion tC wire harness. This is where I say, "I AM NOT RESPONSIBLE FOR YOU SCREWING UP YOUR CARS EXPENSIVE WIRING HARNESS IF YOU NOT SURE WHAT YOU ARE DOING AND MESS UP"...!!!

Let's continue.

Now we have everything planned out and know where to find every single wire. So let's go ahead and pull out the glove box (you should know how to do this) and get to cutting your BRAND NEW/Slightly used cars very expensive wire harness (NOTE: NOW is the point to turn around and get a Plug N Play Harness, if you're scared, there's no turning back after you start cutting wires).

Let's start with the FIC 22 Pin Connector Wires:

1. Locate Injector 1 wire (Pin E7-6) cut it in half completely as you will be connecting both Injector 1 IN and Injector 1 OUT to it. Grab Injector 1 IN wire and connect it to the wire that is still connected to the plastic connector going in to the ECM and connect Injector 1 OUT on the other end of the cut wire. (repeat this Process for Injector 2-4 same exact way). Injector #2 is (E7-5), Injector #3 is (E7-2), and Injector #4 is (E7-1).

2. Locate TPS wire (E8-20) and then splice the FIC TPS wire into each other.
-Locate the Cam/Crank - wire (E8-34) you will splice two wires into this wire 1st is the Crank MAGI- (make sure this is the closet to the ECM connector), then you will splice the Cam MAGI- a inch or so away from the other splice you just made in the same wire.

-Log In Wire on FIC Harness. I believe this is for data logging if you run the AEM UEGO. This wire is not necessary to connect to anything (IMO). Anyone correct me if I'm wrong on this one. My turbo tC ran perfectly fine like this.

- Locate the Crank Positioning Sensor + wire (E8-27) cut it in half connect the Crank MAGO+ to the end of the wire still connected to the ECM connector. Then connect the Crank MAGI+ to the end of the part of the Crank Pos Sensor wire on the car wiring harness.

-Locate the Cam Positioning Sensor + wire (E8-26) cut it in half connect the Cam MAGO+ to the end of the wire still connected to the ECM connector. Then connect the Cam MAGI+ to the end of the part of the Cam Pos Sensor wire on the car wiring harness.

-Locate the O2 sensor wire (E8-21) and splice it and the O21 wire from the FIC harness together.

-Locate the MAF wire (E7-28) cut it in half. Find the MAF OUT wire on the FIC harness connect it to the wire still on the ECU connector. Then find the MAF IN wire connect it to the other end of the cut MAF sensor wire on the factory ECU wiring harness that you cut in half.

-Locate the ECM Power wire (E4-1) and then splice the Ignition power wire from the FIC harness together.

-Power Ground, Signal Ground and the other Power Ground. I ground these all of to the chassis.

Now we are done installing your FIC to you 07up. Mount your FIC where you like (I used half inch self-tapping screws and screwed mine into the glove box). Now get your basemap onto the FIC if you haven’t put it on there already. Close the glove box and start your car. And, get it tuned ASAP...

If you copy and paste this on a different forum or another part of this Scionlife.com forum please give credit where credit is due. I didn’t spend 4.5hour writing this down on paper first and getting it perfect and then typing it all out here for nothing... Hope I helped you out. I wish someone had done this back when I was searching on how to hook it up on my tC.