

# QUICKIE

## Abaco Performance DBX

MASS AIR FOR THE MASSES



Written by Gus Mundth  
Behind the Lens: The Author and the Manufacturer

**F**or years, late-model enthusiasts have used performance mass air meters to increase the horsepower output of their engines. Equipping an engine's EFI system with a larger, higher-flowing meter (coupled with high-flow injectors) is not only one of the easiest upgrades, but also is one of the most effective in producing HP results. For the most part, the design of performance mass air meters have largely gone unchanged, using analog technology and single element to read your engine's air intake. But recently, a company has redeveloped the mass air meter for the digital age that can be used in virtually any application or configuration.

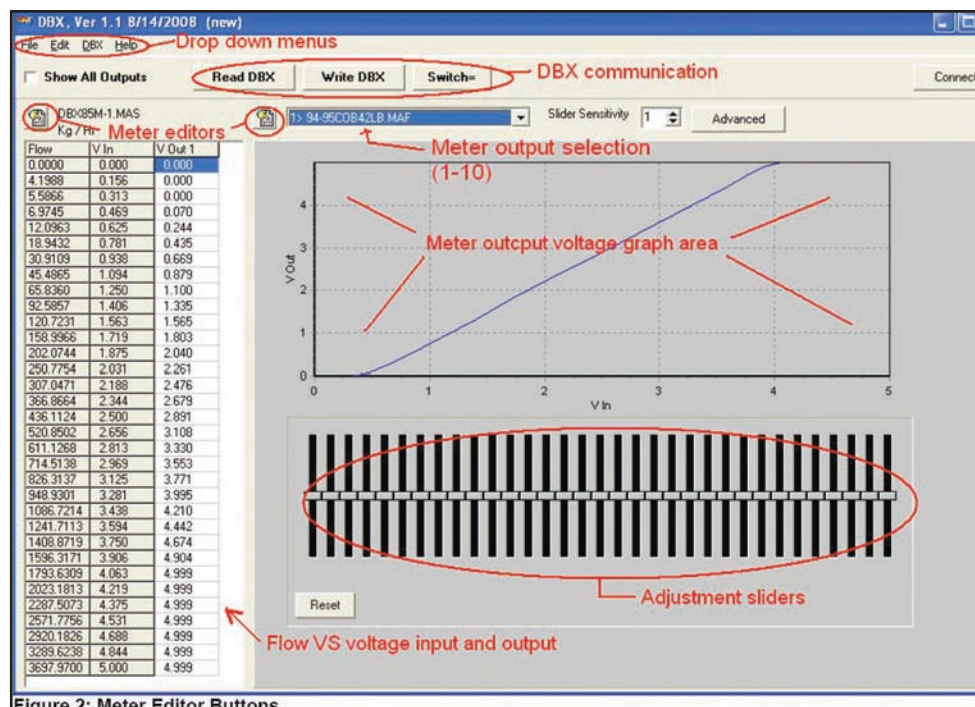
Abaco Performance and its DBX unit uses an extruded aluminum housing that is available in 85mm, 97mm sizes, plus a 97mm with a bell flange opening.

Looking inside the meter tells you that this isn't like anything that you have seen before. There are 2 two plastic circuit boards that form an "X" inside the Meter. Hence the origins of the name: "DB" as in Digital Based and "X" for the look of the inside of the meter.

Looking at the outside of the meter, there are more unique attributes. There is a port that houses a USB Mini connector. This connection is used to connect the meter to a computer while downloading calibration files. There is also a 6-pin

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► This is a shot taken from the DBX software. Throughout the instructions there are detailed graphs and drawings of each process. The adjustable slides can be used to fine tune your tune. You can literally fine tune the fuel calibration without ECU tuning software. The Abaco software is free and can be downloaded from their website.



### Abaco DBX

This is a 97 Millimeter Abaco DBX installed on a GM Performance Parts LS3 Crate engine. We used a 90 Degree 4" Elbow to clear our dyno cooling tower. Also shown is the now NMRA/NMCA outlawed Anderson Motorsports race air filter. We use it to keep the large chunks out of the engine while on the dyno.

This engine has a Lunati 232/238 cam and used Hooker 1 3/4" F Body headers. It made 530 horsepower.



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"It was able to continually offer consistent fuel delivery throughout the powerband."

—Robin Lawrence

square connector that is where the car specific harnesses are connected. Finally, there is a hole that gives access to the rotary switch. This switch is used to select one of the possible 10 calibrations that the DBX meter holds.

The guys at Abaco really thought this deal out. Their goal was to build a mass air meter that was universal enough to meet the needs of 99% of the market.

The first time we saw the meter we had to ask, why two circuit boards? We were informed that one of goals was a meter that could be clocked in any position. As air passes at high speed through most intake air systems, it can favor or have a stronger signal near turns or bends in the system. Abaco wanted to eliminate the need to "Clock" the meter with the element in a certain position.

Another feature of the Abaco DBX is that it reads both directions. That is not to say you should install the meter backwards. The benefit here is that on many performance applications there is reversion in the intake system. This can be from a large cam or from a long cold side system. With that feature you can actually install the meter directly to the throttle body.

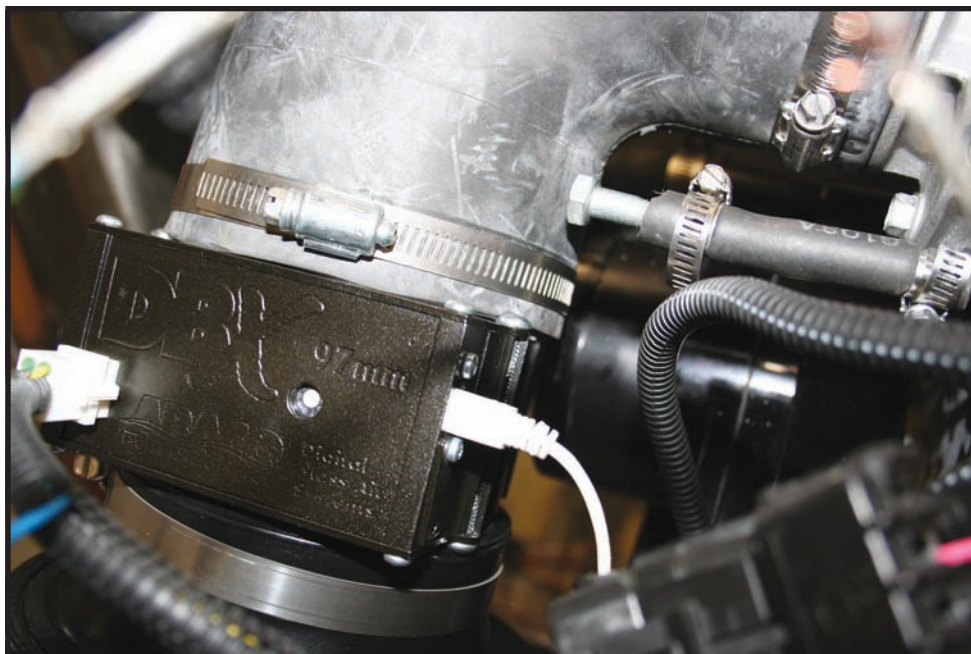
The software to program the unit is pretty straightforward. The instructions, as well as the software, are available free on the [abacoperformance.com](http://abacoperformance.com) website. There are also updates as they find bugs or add more calibrations to the database.

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► This is a typical installation on an LS1 Camaro. In this situation the owner had upgraded the intake manifold, as well as the air box. The stock mass air meter was so restrictive that they picked up 30 horsepower at the wheels after they upgraded to the 97mm DBX mass air meter.



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### Mini Port

The USB cable plugs into the USB mini port on the DBX. You can load up to 10 different calibrations into the meter. The small dial is used to select the program number that you wish to run. Robin Lawrence has six calibrations in his DBX, which he says simplifies being able to use one meter for all his testing. There is also a filter that can be adjusted in the software, which reduces the noise that is present in some applications.

Abaco has the cables available for most popular applications. If need the can supply the components to allow you to make your on custom cable adapter.

You have the ability to choose calibration that matches your car and Abaco is adding new stock calibrations on a regular basis. It likely they have yours already, but if they don't you can create your own calibration. The software allows the user to choose what outputs the meter uses. You can also program or read the calibrations in either metric or imperial. Since some tuning software uses grams per second verses pounds per hour this can be very useful when creating your own custom calibrations.

Famed Mustang racer and recent GM convert, Robin Lawrence, has used the DBX in several dyno sessions and says it's easy to use. "I copied the tables for a Hitachi blade-style meter that is used in the later Corvettes. That unit is used in the GM Performance Parts LS3 Controller kit. This controller kit was developed to install a GMPP Crate engine into an earlier chassis. The parts in the kit are unique and required that I program my own calibration. I used the HP Tuners software to read the transfer table for the mass air meter. I then copied and pasted the tables into the Abaco software. Once I selected the correct frequency and air sensor settings, I saved the cal to the software. I then was able to send the

cal to position number six in the Abaco meter. On the dyno it ran without a hitch."

Lawrence has used the DBX on several GM Performance Parts crate engines. The first was an LS3 with a fairly decent Lunati Hydraulic roller cam. He says the engine picked up about 10 horsepower with the DBX using the same tune he ran with the stock meter. The engine idled very well and gave very repeatable numbers with mass air logs and fuel flow. "I recently finished up an 11-camshaft dyno test using the LS3 crate engine and the Abaco DBX meter. Because of the wide range of cams I was using there was some concern that the idle characteristics might be poor when running the larger cams. I set the commanded idle in the software for 950 RPM. All the cams idled as expected and I didn't have any issues with idle fluctuation. From the stock cam to the biggest cam there was an increase of 80 horsepower. The A/F ratios were within three tenths of a point at peak power. Using the DBX in a tough real time dyno test, it was nice to see that it was able to continually offer consistent fuel delivery throughout the powerband with each cam swap," Lawrence concluded. ■