The DCCconcepts Alpha Meter. *Power delivery and current use at a glance.*

With more electronics around every layout, locomotives with lots of added lighting, the addition of sound significantly increasing the current draw of most locomotives and the complexity of digital use demanding that power quality is properly regulated, understanding the level of power (volts) and the energy behind its delivery (amps) to your layout becomes more and more critical.

So - it's hard to believe that with digital control of model railways more than 30 years old, the only way for the average modeller to take a reasonably accurate look at power use on a layout has been a very expensive and not-so-accurate meter from a small manufacturer in the USA.

Well… not any more… The DCCconcepts Alpha Meter is here at last and we are taking orders right now for delivery within the next few days.

DCCconcepts are delighted to introduce you to the Alpha Meter.

Alpha Meter is an easy-to-use, simple to install meter which will simultaneously give you both voltage and current readings in the area it is monitoring.

Alpha Meters circuitry has been carefully designed to keep it simple, with only two wires in, two wires out. It also tells it as it is, automatically adjusting for AC, DC or DCC power, and compensating for its own operational load leaving only the real world readings relevant to your layout operation.

It is robust too… Able to absorb voltages and current levels that are far above those found on <u>any</u> model railway layout, it is also stable with other bus activity such as RAILCOM as well as the various "almost DCC" digital control signals such as Marklin Motorola, MFX and others.

Finally, despite its far better stability, improved performance, elegant faceplate and sophisticated design, Alpha Meter is also <u>very</u> economical, being about 1/2 the price of its only competitor.

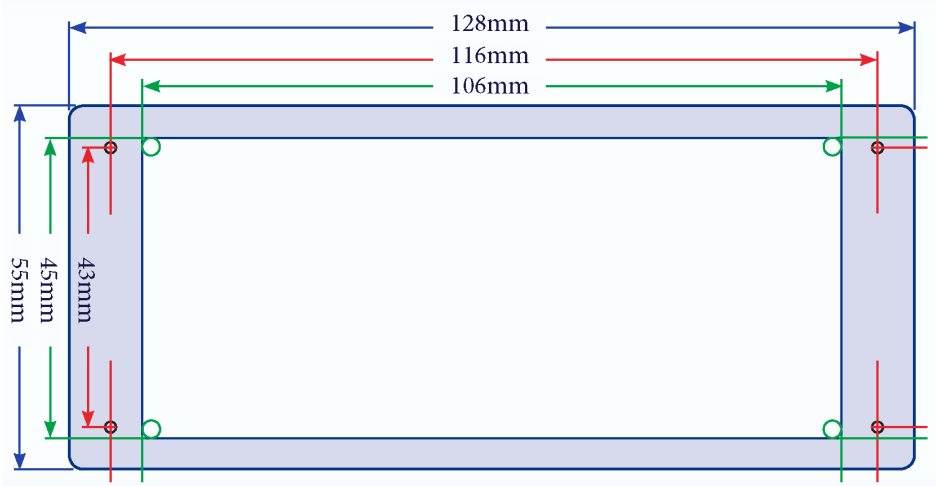
Let's take a look at Alpha Meter

Size and mounting specifications:

- *Size: The faceplate is 128mm wide and 55mm high (this is the same height as the Alpha Panel, so they will look great when placed together on the layout fascia)*
- *Mounting Hole: 106mm wide and 43mm high.*
- *Mounting method: 4 screws. (The screws are included and the instructions include a template to make mounting easier)*
- *Connections: Two, 2 wire "Pluggable screw-type" terminals. These have been vertically mounted to make inserting them easy once the meter is installed.*

Installation position:

- *In general you should place the Alpha Meter into the layout fascia or on a control panel where it can be seen at a glance. This diagram, which is included with every meter as a template, gives you an idea of the panel space needed.*



You can of course also mount it in a small enclosure for occasional use if you wish.

- *On the workbench. Place conveniently in a panel that is clear of tools, liquid and solvents to make sure that workbench clutter does not lead to unhappy accidents.*
- *On the layout. The meter should read what is actually getting to the layout with minimal interference from wire length and other things, so if at all possible, please mount the meter close to the track area it is monitoring.*
- *On the Control panel: It is OK to place it in a control panel of course, however if it is a large layout the readings may be slightly less accurate as the meter will then also see the loads created by induction within the power bus wiring.*
- *Larger layouts should consider having one meter for each power district. This will greatly assist overall management of layout power.*

Electrical specification:

- ***Alpha Meter automatically detects the power type and works well with AC, DC or DCC power.***
- ***There is a small LED within the Logo on the faceplate. This will change colour to confirm the kind of power that the meter is reading. BLUE for DCC, GREEN for DC, RED for AC.***

DCC - Blue ***DC - Green*** ***AC - Red***

- ***Alpha Meter is able to absorb voltages and current levels that are far above those found on <u>any</u> model railway layout. Please observe these limits and do not connect to mains power.***
- ***Alpha Meter is also stable when other bus activity is present (such as RAILCOM as well as the various "almost DCC" digital control signals such as Marklin Motorola, FMZ, MFX and others).***
- ***DCC power ratings: 5~29volts. 10A maximum. (The indicator LED will glow BLUE with DCC)***

  DCC power is delivered to your layout as a very complex wave form called a square wave. A square wave is composed of many frequencies all at once. (Because of this, DCC is in fact not really a form of AC as many think. It is much more complex than any common form of AC).

  Because of this very complex waveform, normal meters just cannot read DCC properly. DCCconcepts Alpha Meter has been designed specifically to read this wave form accurately and it is the most accurate DCC meter available. The DCC connection is <u>not</u> polarity sensitive.

- ***DC power ratings: 5~29volts. 10A maximum. (The indicator LED will glow GREEN with DC)***

  These are the actual voltage and power (Amps) being consumed by your railway. If the DC is pure DC, then the voltage readings you see will be actual DC Volts.

  If your DC controller, like most model railway controllers currently available, does not deliver pure DC, then the meter will show you the average DC voltage automatically.

  Note: We decided to make the DC reading ability polarity sensitive in order to preserve the best possible accuracy and the meter will not turn on unless the DC voltage polarity is correct. (If the connection is correct but the meter does not operate on DC, change the "Direction" switch)

Electrical specification continued:

- ***AC power: 5~20.5volts. 7A max. (The LED will glow RED with AC)***
- ***AC is a simple sine wave & actually has two possible readings.***

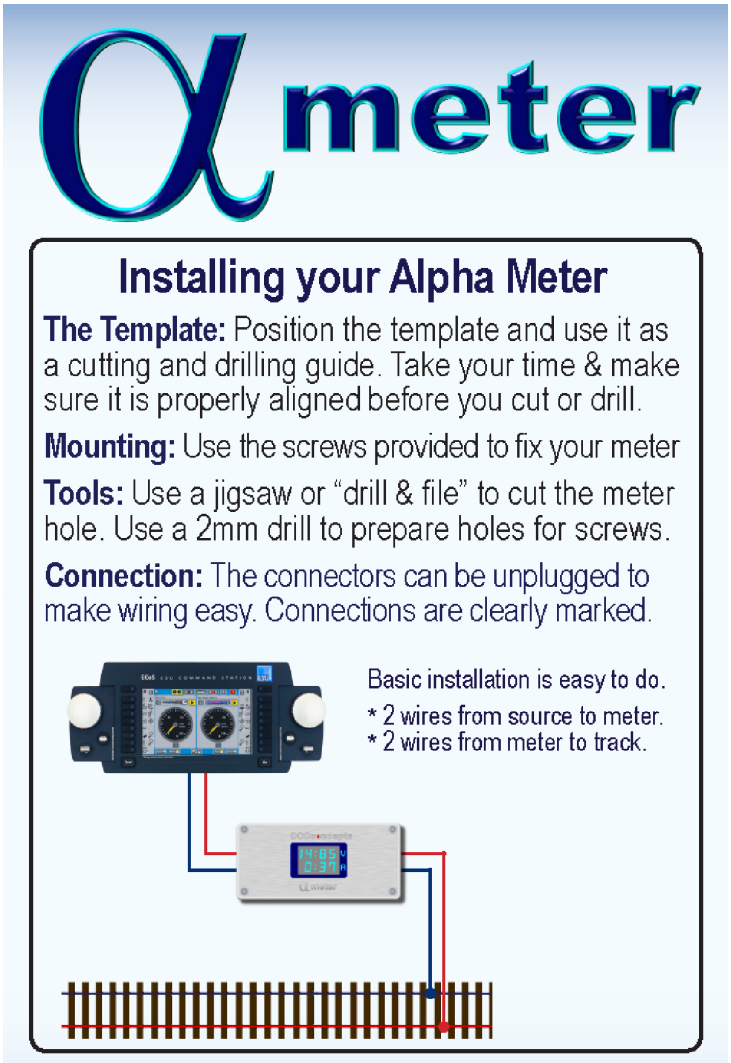
  These are the peak voltage and the usable average or RMS voltage. The RMS voltage is what models will see when they are operated.

  Your Alpha Meter will, therefore, always display only the more useful true RMS AC voltage level.

  (True RMS as usually measured with conventional AC is the sine wave peak voltage multiplied x 0.707. This is about 71% of the peak level)

Please note:

The DCC or AC connections are not polarity sensitive however it is good practice to match the connections as we show in this diagram.



How many Alpha Meters should you own?

With Alpha Meter able to be installed anywhere on the workbench or layout <u>and</u> with the price of Alpha Meter well below previous offerings from any brand, you can at last have a high quality meter installed and ready to go wherever you are servicing or operating your trains.

- *One on the workbench, one on the layout*
- *One monitoring each separate power district*
- *One on the layout control panel.*

Of course… you may just want ONE - but how about your friends or the club? Because Alpha Meter is such a neat new thing for every modeller and every layout, we have created a "limited time special offer" to celebrate its introduction… please see the details below.

Alpha Meter: Part number, price and introductory offer

The "Introductory Offer":

Buy a pack of three and enjoy a very significant saving. Use them all yourself, share with a friend or with your club. It's up to you!

The Pricing:

- *Buy one Alpha Meter for £59.95*
- *Buy a 3-pack of Alpha Meters for 159.95 (A saving of £20.00)*

  Please note that the 3-pack is a limited offer which will end on 01/03/2019.

The Part numbers:

- ***DCC-AVA.1** is the part number for one Alpha Meter*
- ***DCC-AVA.3** is the part number for our introductory 3 pack.*

I hope you are as excited about Alpha Meter as we are… It's a great product and something that is long overdue in the world of railway modelling. It is in stock NOW and ready to ship.

I think we have answered most possible questions, and we have done our best to make you a product that is dead simple to install and even easier to connect, but please... do not hesitate to ask if you do have questions as we are always happy to help.

We are here 7 days a week and will be happy to take your calls any day between 10am and 5PM.

Best wishes from All of us here at DCCconcepts

Richard Johnson

Did you enjoy the contents—please let us know.

Don't be shy: We invite you to email us and discuss any changes you might like to see and welcome ideas for any "style" changes or additions we could consider to make more interesting reading.

Of course, if you have a specific subject that you would like us to cover, we will listen. Please email us at web@dccconcepts.com and we will see what we can do.

Until then, thank you for sharing your valuable hobby time with us.