

Data Acquisition.

I am at the stage in the database preparation where I need some real on site information to test the calculations.

I have a screen shot below of something similar to what I see as the database.

Technician Given Name	Trevor	Surname	Phipps	Email Address	tphipp48@gmail.com
Job Street Address	37 Redford Street	Suburb	Kingston		
Type of job	1 Other	Job description	Back to back		
Unit Manufacturer	Daikin				
Outdoor Unit Model		Outdoor Unit Serial No		Total System Current Draw	
Indoor Unit Model		Indoor Unit Serial No			
Refrigerant		Refrigerant Charge			
Suction Pressure		Head Pressure		Air quantity across outdoor coil l/s	
Outdoor Air on DB		Indoor Air On DB			
Outdoor Air on WB		Indoor Air On WB		Indoor Unit Air Quantity l/s	
Outdoor Air Off DB		Indoor Air Off DB			
Outdoor Air Off WB		Indoor Air Off WB			

To get recognition from any of our political masters, I believe we have to show numbers and reference Efficiency.

I believe that the data above is the minimum required to show an 'in the field' benchmark for efficiency. The database is set up for single systems only at this time until it can be proven and would be suitable for single system refrigeration units and split system air conditioners. I believe the main problem exists in the split system area so it is worded to suit that.

There is no mention on this data acquisition form of efficiency because at this time it has not been tested with real data and is in a very early stage of development.

Should any of you have Microsoft Access available on your computers, I can make the database current version available to you via Dropbox and you will be able to see the entire system.

My need at the moment is a substantial number of machines information so that we are able to show a statistically significant picture of real information and compare it with manufacturers test data, and by the way it would give an insight into our industry.

Although it is a little long winded, please read this sheet fully and then print out a few blank copies also attached to this email for on site use. It would be appropriate to scan the sheets and email them back to me or if you prefer send them via snail mail to the address on the email. I will initially transfer the information to the database until the system goes operational and you will be able to input the info directly yourselves.

At this time there is no real security on the documentation so if you prefer to remain anonymous, for your own reasons, where it asks for your phone number, use a ten digit number starting with 123.

Your email is a problem because it is the only way that I can acknowledge your input or let you know if there are any anomalies. This info will only be available to ARMA authorised personnel and is certainly not public at this time. My view of the finished product is that identifying information will not be visible to the public in general, however your mobile phone and email will be used to make your own data available to you and no other authorised person, and so that you can receive notifications, for example I propose that each dataset you provide will be emailed to you for your own records and can be your commissioning record for the job.

Before I get into each item, I am asking for feedback from you as to anything else needed or if you disagree with my design, I can also use that for the working version.

In the case of a repair to a machine installed by somebody else, If you can get their name and take a set of data at commencement of the job, along with your comments, that could be very helpful too.

If you do not have information for any field, just leave it blank.

- The name field is simply for information. If you choose use an obviously fake name, but keep it consistent. If the name is already in use I can let you know via email, hence the need for a correct and current email address.
- The type of job could be 'new instal', 'service call', 'efficiency check' or something similar. The job description would narrow it down a little further, 'Back to back', 'ducted', or the like. When I have some data for you, I will be able to put in some drop-down boxes to save you writing.
- Manufacturer, Model, and Serial number are pretty self explanatory. It will allow us to acquire air quantities from manufacturer's data and calculate the Refrigeration effect and heat rejection for efficiency calculations.
- Refrigerant type and charge are helpful to you by showing history. It also helps quantify your refrigerant use for ARC audits or investigations.
- Suction and Discharge Pressures should be taken at time of installation anyway so it is simply a matter of recording them. This could also assist if there is ever a disputed warranty claim. The same applies to return and supply air temperatures.
- Air temperatures on and off both condenser and evaporator and both wet and dry bulb readings should be taken to allow enthalpy calculations. A high wall split system presents some problems in getting accurate air off temperatures by the design of the air outlet. Please take them as accurately as possible. It may be necessary to adjust the calculations to account for any discrepancy, but we won't know this until we assemble enough data from you. If you do not have wet bulb information, it would be wise to get a device to measure wet bulb or humidity. Without this enthalpy calculations cannot be calculated and would only be estimated. If you have only dry bulb temperatures, please include them anyway as they will be good information to collect.
- Operating current should be included. This is absolutely necessary to calculate operating efficiency
- If you have some pre-existing information available, especially if it is less than twelve months old, please include this. It will give an idea of purchasing trends, and will help in knowing which manufacturers to assemble air flow data for so calculations can be made.

- If you have an anemometer, and are able to take readings, please include these readings so we can offset manufacturers data to give reasonably accurate calculations. All measurements should be taken with clean filters, coils, and fans.
- Could you also include an estimate of additional time taken to record this data. My guess is that most of the readings would normally be taken anyway, and it is simply a matter of writing them down, so would take less than 5 minutes.
- Finally, if you have any suggestions or criticisms, please let me know so that they can be incorporated in the commissioning app.