

DP-Meter

Power measuring is one of the first things that needs to be done in situations where the availability of power is very important or where the power consumption needs to be monitored. Until now these measurement either took place 'upstream' where the power enters the building or right at the end where the power is consumed. Schleifenbauer Products has build up quite a reputation with the latter: intelligent PDUs for mounting in cabinets. To fill the gap between 'metering at the source' and metering 'near the user' Schleifenbauer has come up with a new meter: the DP-meter, to be placed inside the distribution panel.

In close cooperation with some well established manufacturers of power distribution panels we have created a meter that is easy to install and gives all the required measurements.

One of the advantages of the DP-meter is the 3CTee: a set of 3 CTs (current transformer) that form the sensors of the DP-meter. This allows for very quick installation straight after (or before) the circuit breakers. This saved a lot of time during the installation.

Alternatively you can choose for a split-core CT. This allows for installation in a live-situation without interrupting power feeds.

Read on to get all the information on the DP-meter



Housing

The housing of the DP-meter is adjusted to its environment: the distribution panel. Here are different norms applicable that resulted in a plastic housing with DIN-rail mounts at the rear side. This way the DP-meter can very easily be installed. The meter is equipped with a LCD-display for local read-out. This will help installers to verify the correctness of the wiring to the 3CTees during the installation process. Each 3CTee has a 6-wire lead of 3 mtrs to connect to the DP-meter. The connections are clearly indicated on the terminals. At the top are 2 RJ45 jacks to connect to the data bus by daisy-chaining. Underneath are the terminals for connecting the power feed.

3CTee or Split-Core CT

The actual sensors that measure the electricity going through a conductor are the current transformers, or CTs.

Schleifenbauer offers 2 types of CTs: solid-core and split-core. The 3CTee is based on 3 solid core CTs on a pane. This pane can be attached to a DIN-rail bracket or fixed inside the distribution rack by alternative means. The 3 CTs have a 18mm spacing between the heart of the CTs which is exactly the width of a DIN-rail circuit breaker. It guarantees easy installation.

The split-core CTs are an alternative when there is absolutely no option of disconnecting the phase conductor and leading it through the 3CTee. In these situation a split-core CT can be used. The disadvantages against the advantage of be able to implement it in a live situation are:

- more volume. A split-core CT is much bigger than a closed one
- less accurate. The split-core CT is less accurate (but accurate enough for cost forwarding) than a solid core version
- more expensive. Split-core CT's are about 40% more expensive than its solid counterpart.



Connector

The 3CTee and split-core CTs have a standard lead of 3 mtr. At the end of the lead a connector is attached that can be pushed on the receptacles on the DP-meter. This pre-fab connector reduces the risk of wiring errors. In combination with the on-board LCD display it is very convenient to inspect that each CT is connected to the right input socket. When necessary the lead can be shortened to the required length and the connector can be re-attached to the lead by the installer.



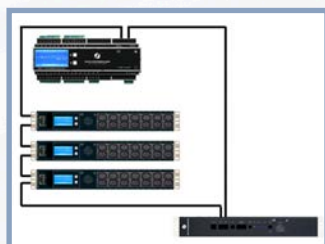
Measurements

The Schleifenbauer DP-meter is actually very much the same as a PDU with 27 metered outlets. The difference is that the DP-meter has external CTs where the PDU has them inside the aluminium profile.

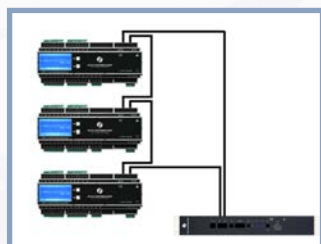
All the measurements that can be done by a DP-meter are the same as with the PDU: current(A), voltage (V), energy (kWh) and power factor (%). The measurements are available through the same databus as is used for the PDUs. In fact, you can combine both meters on the same bus. The accuracy of the DP-meter is depending on the sensors. A 3CTee is made of closed current transformers that have a high accuracy than split-core current transformers.

Data bus and Gateway

The DP-meter is 100% compatible with the Schleifenbauer data bus and Gateway. This means that a DP-meter can be integrated in an existing data bus topology. Just daisy-chain from a PDU to a DP-meter or, in case of a DP-meter-only situation, daisy-chain all DP-meters and connect to the Gateway.



(mixed environment)



(DP-meter only)

The Gateway is an interface between the data bus and an IP-network. It allows applications (like DC Spyder or others) to obtain data from the DP-meters and process them. Alternatively one can configure the Gateway to fill a MySQL database with the data from the DP-meters. Frequency of updates and choices of data-sets can be configured in the Gateway with the use of a web browser. Each Gateway is capable of handling up to 500 PDUs or DP-meters.

Installation



Installing a DP-meter must be done by professional electricians. Therefore we sell these meters only to electrical installers and manufacturers of power distribution cabinets. They can make use of the DIN-rail mounts on the rear side of the DP-meter. This will make it very easy to install the meter. The installation of the 3CTee or split-core CT depends on the configuration of the distribution panel. A range

of mounting options will be supplied to ensure that installation can be done in a quick and safe way. The CTs come in a set of three (3CTee) or per unit (split-core). This ensures that installation can be done at your own convenience. Furthermore it gives you the freedom to buy only the amount of CT's that you require; there is no need to buy 9 3CTees if you only have 18 feeds to measure. Expanding in the future with extra CTs is a matter of adding them to the DP-meter. When a DP-meter is fully occupied (27 feeds) you can easily add an extra DP-meter and just extend the databus with an off-the-shelf patch cable. Detailed instructions for installation are provided with each DP-meter.



Technical Specifications

Technical Specifications	
Dimensions (w x h x d) in mm	212 x 90 x 57
Rating	230/400V 50Hz 3W
Installation category	III
Pollution degree	2
Protection against electrical shock	class II

Pricing June 2011

DC Spyder	list price
DP-meter	€ 1.249
3CTee (3 current transformers on a panel) with 3 meter lead	€ 79
Split Core CT	€ 38

