This Quick Start Guide is designed to familiarize the user with the connection and configuration of the DTS 310 DIN rail mounted single / 3 phase power & energy meter with RS-485 or TCP communications. These instructions are given using the Windows XP OS.

1. Supplied Items

Check that the meter and equipment matches your order specifications and has not been damaged during shipping. The following component(s) are included in the package:

- Quick Start Guide (**DTS 310 Application / Connection Examples** in section 2)
- DTS 310 power monitor. Check input ranges, output configuration and auxiliary power supply (if applicable) on the label of the unit. For a more detailed explanation of the part number please download the latest version of the DTS 310 datasheet from http://www.measurlogic.com/MonitorsMeters/DinRailMount/dts310.html

2. Connecting the DTS 310

Voltage
A B C N
VOLTAGE

Current
A B C
CURRENT

Wiring Voltage and Current Inputs

The DTS 310 accepts voltage inputs directly up to 480V 3 phase L-L or through PTs (potential transformers) for higher voltages. Three phase currents are measured via "safe" voltage input CTs (current transformers). Connection of any other CT than that supplied by Measurlogic with the meter could cause damage to the instrument**. If there are any questions please call Measurlogic before powering up the unit**. Please refer to **Application/Connection Examples** for information on wiring conventions.

Input wiring terminals are clearly indicated and located on the upper side of the DTS 310 label. The Current and Voltage terminal strips are pluggable to allow easy replacement of the DTS 310, if required. Removing the terminal strips should only be done once power has been removed from the DTS 310. Input wiring terminals accept 2.5 mm^2 (12 awg) wire. The wires are connected by means of screw terminals that clamp down onto the input wires. The voltage/PT inputs require fuses, not included, (see diagrams below) and should be rated at 1A 600Vac. Measurlogic can provide an in-line fuse kit as an option if required.

Wiring Optional Auxiliary Power Input (AUX)

+ −
AUX

The DTS 310 operates normally when power is applied to Phase A, Phase B and/or Neutral depending on model number so no additional auxiliary power supply is needed. To provide added flexibility to the DTS 310 meter it can be powered from a DC auxiliary supply (model dependant) in the following ranges. (Fuses not included with meter but are offered as an option). See the rating label of the unit for more information.

- 12 Vdc **OR** 24 Vdc **OR** 48 Vdc

Note: It is important to pay attention to the polarity when using a DC power supply. See label above for a reference to the polarity. Incorrect connection **will** damage the DTS 310.
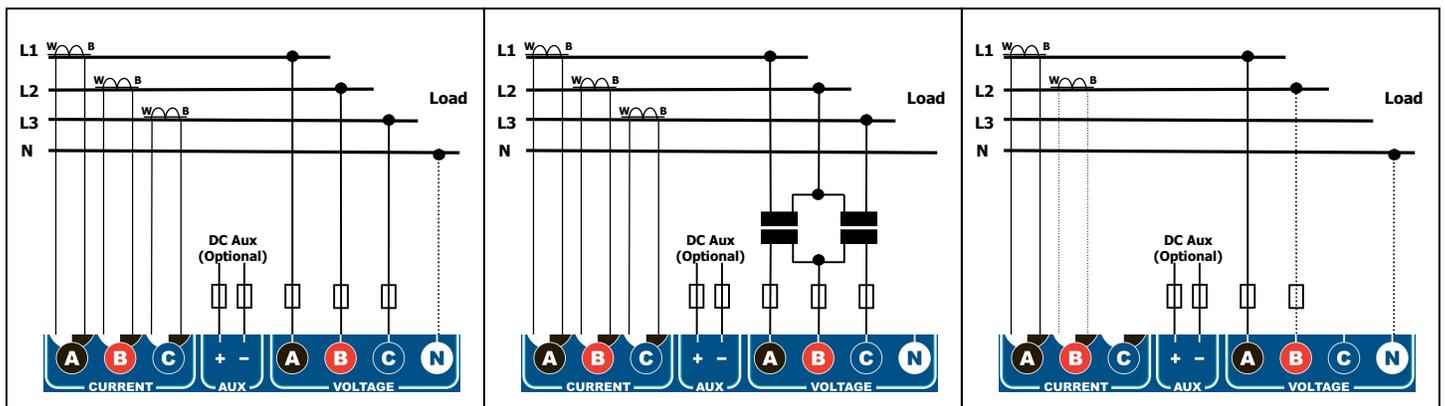
The following connection diagrams depict some examples of typical applications. Other connection configurations are possible. (Consult Measurlogic)

Application/Connection Examples
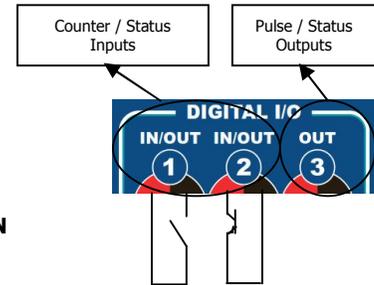
3 Phase, 3 Wire/ 4 Wire (low voltage)　　　3 Phase, 3 Wire(2 Potential Transformers & 3 CTs)　　　1 Phase, 2 or 3 Wire

Wiring Digital Inputs and Outputs

Depending on the model the DTS 310 can support a digital output and 2 digital inputs.
The I/O wiring terminals are located on the bottom side of the DTS 310 and are represented
on the label as seen in this diagram.

Counter / Status Inputs (Marked 1, 2)

- The 2 digital inputs can be configured using the **DTS Config** software tool to be status or counter inputs. They will **accept dry contacts** or **NPN open collector inputs** and must be connected as shown in this diagram:

**Pulse / Status Outputs (Marked 1, 2 or 3)**

- The digital outputs are **potential free N.O. solid state relays,** depending on the model. It can be configured for energy pulses or threshold/status triggers using the **DTS Config** software tool. It also addressable through the Modbus communications interface.

Wiring Communications Interface

The DTS 310 has either a 2 wire RS-485 or Ethernet communications interface depending on Model.

2 Wire RS-485 Communications

The RS-485 port communicates using the Modbus RTU protocol. Connection is by means of a
pluggable 3 way screw terminal that accepts 2.5 mm^2 (12 awg) wire. Suggested communications wire is 18-22 AWG 2 core shielded cable.
To connect multiple DTS 310 meters on the same 2 wire network the meters should be daisy chained together. **DO NOT connect the meters in a STAR topology**.
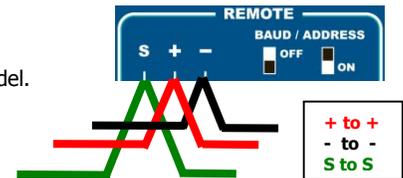
- **Unless otherwise stated through correspondence or specified on the label of the DTS 310 unit, default parameters for RS-485 Modbus 2-wire communications are: Modbus Address: 100, Baud Rate 9600, Parity: None, Data Bits: 8, Stop Bits: 1. This is notated as 9600,N,8,1 100. This is denotes as all switches off and is how each DTS 310 is shipped !!**

Setting of Modbus Address and baud rate

The DTS 310 with RS-485 communications has an 8 way DIP switch, situated next to the pluggable 3 way
terminal, that provides for flexible yet simple user configuration of the unit and is divided into 2 groups:

- Modbus Address (add each switch value when ON) – Example in picture is 9600 Baud & Modbus 105
- Baud Rate

Description	Switch Position							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Modbus Address		64	32	16	8	4	2	1
9600 Baud Rate	Off							
19200 Baud Rate	On							
Modbus addr 100 & 9600 Baud (Default setting)	Off	Off	Off	Off	Off	Off	Off	Off

RJ45 TCP Communications

TCP / Ethernet communication is available through the RJ45 socket mounted on the DTS 310. Modbus TCP or
BACnet/IP are the protocols available, depending on model. Connect to an Ethernet switch by means of a straight
CAT5 cable. Each DTS DC with TCP connectivity has a unique MAC address which is listed on the label.
The default IP address is 192.168.1.150 and the default Modbus address is 100.
The IP address can be changed to any valid IP address using a utility called **DTSsetupTCP.** Download the latest version of **DTSsetupTCP**
from http://www.measurlogic.com/software. Alternatively, an e-mail can be sent to info@measurlogic.com to request the latest version or its
Quick Start Guide.

3. Installation of DTS Config Configuration and Monitoring Software

- **DTS Config** is a program used to easily monitor and configure meters from the DTS family from your local PC or across the LAN.
- Download the latest version of DTS Config from http://www.measurlogic.com/software. Alternatively, an e-mail can be sent to info@measurlogic.com to request the latest version of DTS Config.
- Access the **DTSConfigSetup** file to begin the installation process
- Follow the instructions on the screen.

If there are any questions please contact:
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