DTS 310

Line Powered Three Phase Energy Sub-meter

FEATURES

- Line powered single / three phase energy sub-meter with auto-topology detection
- Class 0.2 Energy Meter** (ANSI C12.20) - "Revenue grade"
- Bi-directional for renewable systems (NET metering)
- Interfaces with “safe” mV and RopeCTs
- Embedded Ethernet connectivity - Modbus/TCP, BACnet/IP, SNMP or DNP 3.00
- RS-485 connectivity - Modbus RTU or BACnet MS/TP
- Communications setting via DIP switches for Modbus RTU
- LonWorks FT-10 communications
- 2 digital status/counter inputs OR digital outputs - optional
- Color coded, pluggable connectivity
- Compact DIN rail design
- User configurable using DTS Config software
- User-definable Modbus register area
- Compatible with PowerStudio Energy Management Software
- SunSpec Alliance certified
- Designed and Manufactured in the USA. Complies with the Buy American Provisions of ARRA Section 1605

MEASUREMENT PARAMETERS*

<table>
<thead>
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<th>DTS 310</th>
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<tbody>
<tr>
<td>** Measurement Topologies**</td>
<td>3 Phase, 3 and 4-wire (120/208 &amp; 120/240V) ✓</td>
</tr>
<tr>
<td>** Measurements**</td>
<td></td>
</tr>
<tr>
<td>AC Volts (phase-phase)</td>
<td>L1, L2, L3 &amp; III ✓</td>
</tr>
<tr>
<td>AC Volts (phase-neutral)</td>
<td>L1, L2, L3 &amp; III ✓</td>
</tr>
<tr>
<td>AC Current</td>
<td>L1, L2, L3 &amp; III ✓</td>
</tr>
<tr>
<td>Neutral Current</td>
<td>✓</td>
</tr>
<tr>
<td>Frequency (Hz)</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>** Power**</td>
<td></td>
</tr>
<tr>
<td>Active Power - kW (consumed/generated)</td>
<td>L1, L2, L3 &amp; III ✓</td>
</tr>
<tr>
<td>Reactive Power - kVAR (inductive/capacitive)</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>Apparent Power - kVA</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>Power Factor</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>Phase Angle</td>
<td>L1, L2, L3 &amp; III ✓</td>
</tr>
<tr>
<td>Bi-directional for renewable systems</td>
<td>✓</td>
</tr>
<tr>
<td>** Demand**</td>
<td></td>
</tr>
<tr>
<td>kW - Sliding Window</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>** Energy**</td>
<td></td>
</tr>
<tr>
<td>Active Energy - kWh (consumed/generated)</td>
<td>L1, L2, L3 &amp; III</td>
</tr>
<tr>
<td>Reactive Energy - kVARh (inductive/capacitive)</td>
<td>L1, L2, L3 &amp; III</td>
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<tr>
<td>** Setpoints, Alarms, Control**</td>
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<tr>
<td>Pulse / Status Outputs</td>
<td>1 – 3</td>
</tr>
<tr>
<td>Counter / Status Inputs</td>
<td>2 maximum</td>
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<tr>
<td>** Communications**</td>
<td></td>
</tr>
<tr>
<td>Modbus RTU</td>
<td>✓</td>
</tr>
<tr>
<td>Modbus TCP</td>
<td>✓</td>
</tr>
<tr>
<td>BACnet MS/TP</td>
<td>✓</td>
</tr>
<tr>
<td>BACnet / IP</td>
<td>✓</td>
</tr>
<tr>
<td>SNMP</td>
<td>✓</td>
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<tr>
<td>DNP 3.00 over IP</td>
<td>✓</td>
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<tr>
<td>LonWorks FT-10</td>
<td>✓</td>
</tr>
</tbody>
</table>

* Model dependent      ** CTs excluded

Call Toll Free: 1-877-PQ-SOLNS (1-877-777-6567) or 303-805-5252   email: info@measurlogic.com

www.measurlogic.com
**SPECIFICATIONS**

**Measuring Circuits:**
- Voltage range: 120-480V ac, L-L, 3 or 4 W
- Rated voltage: 280 V ac L-N / 485 V ac L-L
- Voltage overload: 1.2 x
- Voltage burden: <0.1 VA @ 280 V ac L-N
- Frequency: 45 to 65 Hz
- Rated current: 333 mV or model dependent
- Current overload: 1.2 x
- Power overload: 1.2 x

**Accuracy:**
- Voltage: 0.5%, <0.2% typical (50-120%)
- Current: 0.5%, <0.2% typical (10-120%)
- Power: 0.5%, <0.2% typical (10-120%)
- Power Factor: 0.5% (between 0.5 and 1.0)
- Energy:** Class 0.2 (ANSI C12.20)

**Voltage Supply:**
- Voltage: Powered from Phase A & B or Phase A & Neutral (model dependent)
- Frequency: 50/60 Hz
- Burden: <3VA
- Operating temp: -4º to 131ºF (-20º to 55ºC)
- Tolerance: -10%, + 10%
- Storage temp: -40º to 185ºF (-40º to 85ºC)
- Humidity: 5 to 95% R.H. non-condensing

**Mechanical:**
- Connection: Pluggable screw terminals suitable for 12AWG stranded wire (2.5mm²)
- Case Material: Self-extinguishing, V0 plastic
- Protection: Nema 1 (IP40)
- Dimensions: 4.73"(120mm) H x 4.25"(108mm) D x 1.38"(36mm) W
- Weight: 1lb (0.45 kg)

**Communications:**
- (Serial)
  - Connection: 3 way pluggable, screw terminal
  - Protocols: Modbus RTU or BACnet MS/TP
- (LonWorks)
  - Connection: 2 way pluggable, screw terminal
  - Protocols: LonWorks FT-10
- (Ethernet)
  - Connection: RJ45, 10/100Base-T
  - Protocols: Modbus TCP or BACnet IP or SNMP or DNP 3.0 over IP

**Pulse / Status Outputs:**
- Type: Potential Free, N.O. Solid State Relay
- Pulse Width: 100 mS default
- Min Pulse: 50 mS, User configurable up to 10 Seconds
- Max Pulsing rate: 1 Pulse / 1 kWh default, User configurable
- Max On-Resistance: 30 ohm
- Max switching voltage: 240Vac
- Max switching current: 120mA (350mA for 10mS)
- Connection: Isolated Pin-Pair (Outputs 1 and/or 2)

**Counter / Status Inputs:**
- Type: Dry Contact
- Min Pulse Width: 50mS, Max 10 Puls per Second
- Max Current/Voltage: 15mA / 6V
- Connection: 2 Pin-Pairs (Inputs 1 and/or 2)

**Standards & Safety:**
- ETL listing: 4001073
- Conforms to: UL Std 61010.1
- Certified to: CSA Std C22.2 # 61010.1
- EMC: IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-4, IEC 61000-4-8, IEC 61000-4-11
- FCC: CISPR 22/FCC 15 class A
- Other: IEC60688
- Category III – 260Vac / 485Vac

**DIMENSIONS**

**DTS 310 - a b - c d - e - f - g h**

**Current & Voltage Inputs**
- a: 3 = 333mV CT
- b: 9 = unburdened CT
- d: 4 = 120 - 480 Vac L-L 3 or 4 Wire
- 6 = 690 Vac L-L 4 Wire

**Communications**
- C = S = Serial
- E = Ethernet
- N = None

**I/O***
- e: N = Not fitted
- P = 1 x Digital output (PhotoMos relay)
- A = 2 x Digital Inputs (Potential Free) & 1 x Digital Output (PhotoMos relay)
- 3 = 3 x Digital output (PhotoMos relay)

**Service Type**
- f: N = Neutral
- 2 = No Neutral (3P 3W)
- 4 = No Neutral (3P 3W)
- 6 = Neutral (3P 4W)

**DC Auxiliary Option**
- 1 = 12 Vdc
- 3 = 24 Vdc
- 5 = 48 Vdc

**Current Transformers**
- g: Aperagge of CT’s
- h: CT Aperture Size Blank: if 333mV current input

**Split Core CTs**
- T = 0.4” diameter
- S = 0.72” x 0.62”
- N = 1.00” x 1.40”
- M = 1.3” x 1.7”
- L = 2” x 3.5”
- I = 2” x 5.5”

**Rope CTs**
- R2 = 2” diameter
- R3 = 3” diameter
- R4 = 4” diameter
- R6 = 6” diameter
- R8 = 8” diameter
- R12 = 12” diameter

**Solid Core CTs**
- C1 = 0.28” diameter
- C2 = 0.35” diameter
- C3 = 0.51” diameter
- C4 = 0.75” diameter

**Technical details subject to change**

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