

DTS 310

COMPACT LINE POWERED (SERIAL/ETHERNET) ENERGY SUBMETER

Cost effective
solution!



FEATURES

- Line powered single / three phase energy submeter
- Auto-topology detection
- Compact DIN rail design: 4.73" L x 1.38" W x 4.25" H
- ANSI C12.20 – "Revenue grade"
- ETL Listed, CE
- BTL Listed, SunSpec Alliance certified
- 208-600 Vac (1P 2W, 1P 3W, 3P 4W)
- Ethernet connectivity – Modbus/TCP, BACnet/IP, SNMP or DNP 3.0
- RS-485 connectivity – Modbus RTU or BACnet MS/TP
- LonWorks FT-10 communications
- Communications setting via DIP switches for Modbus RTU
- Interfaces with "safe" 333mV, 5A or RopeCTs
- User-definable Modbus register area
- Bi-directional for renewable systems (NET metering)
- Color coded, pluggable connectivity
- Optional Low Voltage AC/DC Auxiliary (12-24Vdc or 24Vac)
- Optional isolated 48Vdc Auxiliary
- Optional single Pulse Output (kWh)
- Optional 2 digital status/counter inputs OR digital outputs
- User configurable using DTS Config software
- Designed and Manufactured in the USA
- Complies with Buy American Provisions of ARRA Section 1605

MEASUREMENT PARAMETERS*

Measurement Topologies

- 3 Phase, 3 and 4-wire ✓
- Single Phase 2 and 3-wire (120/208 & 120/240V) ✓

Measurements

- AC Volts (phase-phase) L1, L2, L3 & III
- AC Volts (phase-neutral) L1, L2, L3 & III
- AC Current L1, L2, L3 & III
- Neutral Current ✓
- Frequency (Hz) ✓

Power

- Active Power - kW (consumed/generated) L1, L2, L3 & III
- Reactive Power - kVAr (inductive/capacitive) L1, L2, L3 & III
- Apparent Power - kVA L1, L2, L3 & III
- Power Factor L1, L2, L3 & III
- Phase Angle L1, L2, L3 & III
- Bi-directional for renewable systems ✓

Demand

- kW - Sliding Window ✓

Energy

- Active Energy - kWh (Net) L1, L2, L3 & III
- Active Energy - kWh (consumed/generated) III
- Reactive Energy - kVArh (Net) L1, L2, L3 & III
- Reactive Energy - kVArh (inductive/capacitive) III

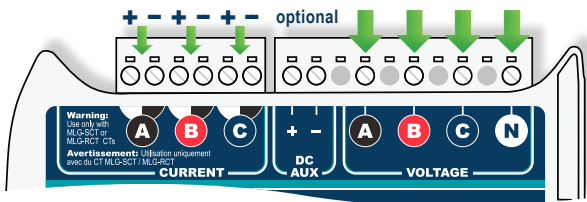
Setpoints, Alarms, Control

- Pulse / Status Output 1 - 3
- Counter / Status Inputs 2 maximum

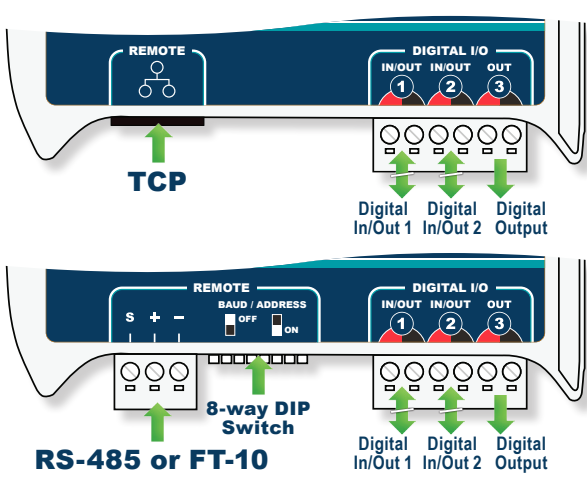
Communications

- Modbus RTU ✓
- Modbus TCP ✓
- BACnet MS/TP ✓
- BACnet / IP ✓
- SNMP ✓
- DNP 3.00 over IP ✓
- LonWorks FT-10 ✓

INPUTS



COMMS & I/O



* Model dependent ** CTs excluded

SPECIFICATIONS*

Measuring Circuits

Voltage range:	208-600Vac, L-L (CAT III) 120-347Vac, L-N (CAT III)
Voltage overload:	1.1 x
Voltage burden:	<0.1 VA @ 277 Vac L-N
Frequency:	45 to 65 Hz
Rated current:	333 mV, 5A or model dependent
Current overload:	1.2 x
Power overload:	1.2 x

Accuracy

Voltage:	0.5%, <0.2% typical (80-120%)
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 (Self-Powered)

Voltage: Powered from Phase A & B or Phase A & Neutral (model dependent)

Frequency:	50/60 Hz
Burden:	<2VA

Low Voltage AC/DC Auxiliary (Option)

Voltage options:	12-24Vdc or 24Vac
Tolerance:	+/- 10%
Burden:	<2VA
Isolation:	Must be powered from a Class 2 IEC 60950 isolated power supply

Isolated DC Auxiliary (Option)

Voltage options:	12 or 24 or 48 Vdc
Tolerance:	-25%, +50%
Burden:	<3VA
Isolation:	1500Vdc

Mechanical

Connection:	Pluggable screw terminals suitable for 12AWG stranded wire (2.5mm ²)
Case Material:	Self-extinguishable, V0 plastic
Protection:	Nema 1 (IP40)
Dimensions:	4.73" (120mm) D x 4.25" (108mm) H x 1.38" (35mm) W
Weight:	1lb (0.45 kg)

Environmental

Operating temp:	-4° to 158°F (-20° to 70°C)
Storage temp:	-40° to 185°F (-40° to 85°C)
Humidity:	5 to 95% R.H. non-condensing

Communications (Serial)

Connection:	3 way pluggable, screw terminal
Protocols:	Modbus RTU (SunSpec Certified) or BACnet MS/TP (BTL Listed)

Communications (Ethernet)

Connection:	RJ45, 10/100Base-T
Protocols:	Modbus TCP (SunSpec Certified), BACnet/IP (BTL Listed), SNMP or DNP 3.0 over IP

Communications (LonWorks)

Connection:	2 way pluggable, screw terminal
Protocols:	LonWorks FT-10

Pulse / Status Outputs (Option)

Type:	Potential Free, N.O. Solid State Relay
Pulse Width:	Max 10 Pulses per Second
Pulse Rate:	1 Pulse / 1 KWh default, user configurable
Max On-Resistance:	30 ohm
Max Switching Voltage:	50Vdc or 30Vac
Max Switching Current:	120mA (350mA for 10mS)
Connection:	Isolated Pin-Pair (Output 3, Outputs 1 and/or 2)

Counter / Status Inputs (Option)

Type:	Dry Contact
Min Pulse Width:	50mS, Max 10 Pulses 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 61000-6-3 Emissions, IEC 61000-6-2 Immunity, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11
Emissions:	CISPR 22 / FCC Part 15 Class A
Other:	Measurement Category III - 300Vac L-N / 520Vac L-L
Communications:	BTL Listed. SunSpec Alliance certified

MODEL NUMBER BUILDER*

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

Current & Voltage Inputs

a:	3 = 333mV CT 5 = 5A CT 9 = Rope CT
b:	2 = 208 - 240 Vac L-L 3 or 4 Wire 4 = 208 - 480 Vac L-L 3 or 4 Wire 6 = 600 Vac L-L 4 Wire

Communications

C:	S = Serial E = Ethernet N = None
d:	M = Modbus B = BACnet L = LonWorks S = SNMP D = DNP 3.0 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)
***Other configurations available	

Service Type

f:	N = Neutral (1P 2W, 1P 3W, 3P 4W) 120 - 480 Vac 2 = No Neutral (3P 3W) 208 - 240 Vac L-L 4 = No Neutral (3P 3W) 480 Vac L-L 6 = Neutral (3P 4W) 600 Vac L-L
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CURRENT TRANSFORMER COMPATIBILITY

Split Core CTs

measurlogic.com/102



Solid Core CTs

measurlogic.com/104

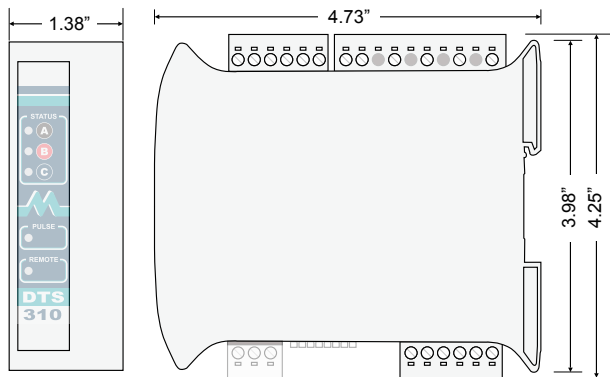


Rope CTs

measurlogic.com/106



DIMENSIONS



- OR -

f

Low Voltage Option

f:	A = 12-24Vdc or 24Vac 1 = 12Vdc (isolated) 3 = 24Vdc (isolated) 5 = 48Vdc (isolated)
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* Model dependent ** CTs Excluded
Technical details subject to change