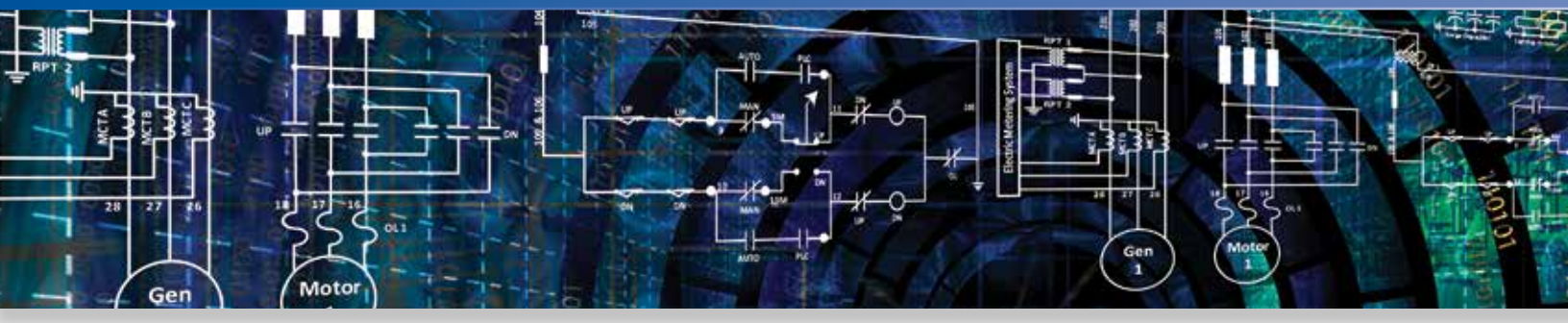


T1-S Data Gateway

Business Value

- Delivers field computing and secure data telemetry to support Remote Intelligent Gateway functionality.
- Provides IO and communications to connect field devices with SCADA system.
- Hosts programmable logic in a field-deployed computer.
- Eliminates need for separate, single purpose devices for data telemetry and data logging.
- Integrates seamlessly with T1-S Aggregated RIGs.

Hardened, Industrial-Strengh Computing

Trimark's T1-S Data Gateway (TDG) is an environmentally-hardened, industrial computer that includes field IO, secure data telemetry, data logging, and programmable logic capabilities.

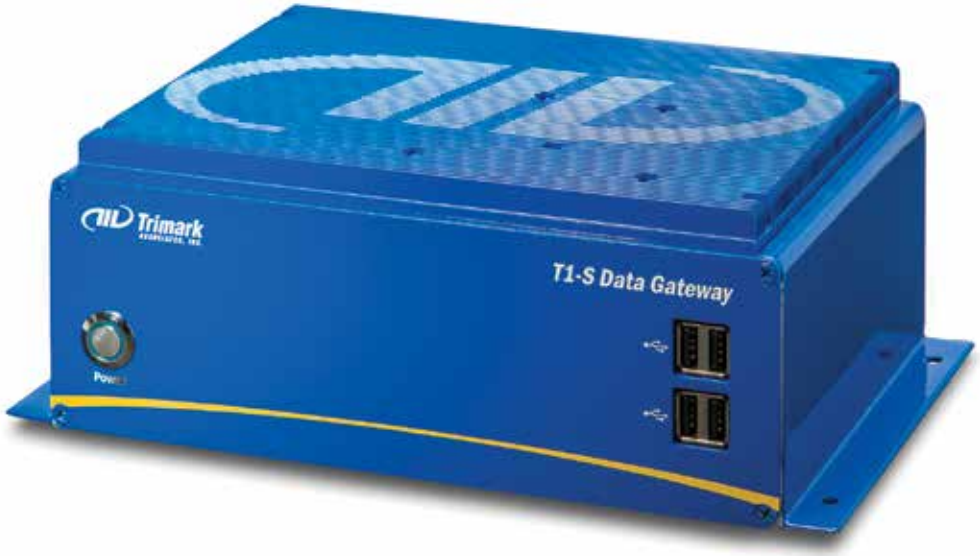
The TDG provides connectivity with intelligent devices including inverters, RTUs, revenue meters and meteorological stations.

T1-S Data Gateway is an essential, component of Trimark's monitoring and control suite. When loaded with T1-S Gateway, the TDG serves as a Remote Intelligent Gateway (RIG), capturing, storing and forwarding data to a utility or balancing authority. The TDG can also host T1-S SCADA and associated logic. The TDG can execute these algorithms independantly or as part of an integrated control system.

The TDG is built from rugged components that ensure reliability in the environmental extremes common to wind and solar power generation sites.

US Manufactured, UL Listed

All components are manufactured in the United States. Trimark assembles systems in our UL listed panel shops.



The T1-S Data Gateway delivers secure data telemetry and connectivity between enterprise controls and intelligent field devices.

Trimark ASSOCIATES, INC.

For all your mission critical solutions — we'll be there!

T1-S Data Gateway (TDG) Specifications

CAISO RIG Functionality

- Hosts T1-S Gateway, a CAISO-validated RIG application.
- SSL Security Certificate.

Computing Specifications

- 1.66 GHz Intel Atom™ N455 processor.
- Windows OS7 operating system.
- 2GB of DDR3 SODIMM system memory.
- 16GB High Speed CF card (OS and storage).
- Eight USB 2.0 ports.
- Four serial ports (two RS-232/422/485 and two RS-232).
- One 10/100/1000 Mbps ENET NIC.
- Optional cellular modem and/or R.F. wireless.

High Efficiency Design

- Fanless: -40°C to +85°C temperature and relative humidity 5% to 95%.
- Input range: 10V to 50VDC.
- TDG size: 6" x 9" x 3"
  3U build (5.25" x 19")
  6U build (10.5" x 19")
- Auxiliary voltage output: +5V @ 1A, +12V @ 500mA outputs with short circuit and overload protection
- Pulsed excitation source reduces self-heating in resistive sensors
- Electronic calibration – no trim-pots to adjust

Connectivity and Communications

- Ethernet and serial.
- MODBUS master and slave RTU and/or TCP.
- DNP3 master and slave.
- OPC client and server.
- 8 Channels of 16-bit A/D resolution.
- SSL Encryption.

Sensors, Inputs & Outputs

- Accepts thermocouples, RTD's, strain gauges, voltage inputs, 4-20 mA current loops, and thermistors – each channel is software programmable for sensor type and gain.
- Integral cold junction sensor for thermocouple and ambient temperature.
- Screw terminals for easy wiring.
- True four-wire circuits for resistive sensors.
- Relay output.

Sensor Resolution and Range

Sensor	Accuracy	Range
Thermocouple	0.1 °C	-270 °C to 1760 °C
Thermistor	0.01 °C	-55 °C to 145 °C
Resistors	0.03%	0 to 600k Ω
RTD's	0.05 °C	-200 °C to 800 °C
Strain/pressure	5uV	+100 mV
DC voltage	10uV	+500 mV/ +10 V
Current loops	0.01%	4 to 20 mA

TDG Build Options for Rack Mounting

The T1-S Data Gateway can be delivered in a 3U form factor (left) or in 6U panel (below).

The 3U is designed to conserve space in an existing rack. The 6U allows easy access for connectivity and service. In both cases, the fully built system includes power supply, fuses, and KVM.

Trimark ASSOCIATES, INC.

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Trimark Associates, Inc. develops reliable, affordable business and operational solutions that support compliance and optimization of power production.

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