

**Temperature and
Humidity Monitoring**
Data Loggers



PSI DATA LOGGERS
MINIATURE DATA LOGGING SYSTEMS



Data Loggers from PSI Technics:
Some of the world's smallest, most rugged, and most reasonably priced temperature and humidity Data Loggers.

PSI
Technics



PSI DATA LOGGERS

UNPARALLELED DATA COLLECTION



PSI Technics presents:

Some of the world's smallest, most rugged, and most reasonably priced temperature and humidity Data Loggers.

What is a PSI Data Logger?

A PSI Data Logger is an encapsulated computer chip with a globally unique address that is factory-lasered at the time of manufacturing and enclosed in an extremely robust 17.53 mm (0.68 inch) stainless-steel case.

PSI Data Loggers are available in a variety of configurations and can include read/write memory, real-time clocks, as well as temperature and/or humidity sensors.

They deliver or record data wherever needed. Their powerful performance and their versatility make PSI Data Loggers ideal for a wide range of applications in all industries.



Original size of a Data Logger button cell
>> 17.35 mm (0.68 inches) in diameter
>> 5.89 mm (0.23 inches) high

Globally Unique Tags with Additional Programmable ID Memory

Each PSI Data Logger has a unique 64 bit address that provides a simple and secure way of identifying a location or an item. Each contains a globally unique electronic serial number that can never be duplicated. In the on-board memory, PSI Data Loggers can store critical information about an item or location, such as container contents, shipping destinations, or owner information.

Rugged Durability That Lasts

PSI Data Loggers bring unparalleled durability to Data Logger applications. Expose them to high or low temperature extremes. Step on them. Drop them in water.

There is no need to worry about destroying them, because PSI Data Loggers can withstand the harshest indoor and outdoor environments in industrial facilities, the food industry, and even in outdoor construction. The durable PSI Data Loggers can be reprogrammed and reused for many years, significantly reducing operating costs and ensuring a fast return on investment.

Areas of application:

- >> Quality monitoring in laboratories, production facilities or warehouses
- >> Monitoring of environmental conditions in production facilities
- >> Measurement monitoring in test assemblies (R&D)
- >> Clean room monitoring
- >> Temperature measurements and hygrometry in galleries and museums
- >> Monitoring of climatic conditions (temperature and humidity) during storage and transport

PSI DATA LOGGERS

OUR PRODUCT LINE



PSI Data Loggers – a Simple and Universal Interface!

PSI Data Loggers are connected to a rugged and compact data reading/writing device. They only require a single conductor for both power and data communications. The two electrical contact points on the enclosure are exposed and separated. To connect the Data Logger to a reading/writing device, a light press with your finger tip is all that is needed.

PSI Data Loggers have extremely durable, dust- and moisture-resistant probes that interface to most surfaces. A PSI Data Logger reader draws virtually no power in standby mode and less than 2 mA during communication – making them ideal for battery-powered devices, such as handheld computers and PDAs.

Temperature Data Collection

PSI Data Loggers let you measure and record the temperature at a specific location together with the unique address for each device.

In addition to being lasered to the enclosure, the unique device address is permanently stored in the Data Logger memory. No additional batteries or power supplies are needed.

Temperature and Humidity Data Collection

Our temperature and humidity Data Loggers add an embedded humidity sensor to the temperature logging capability of our Data Logger family to create a Data Logger that records both temperature and relative humidity as a function of time.

The tiny opening in the lid of the PSI Data Logger family uses a special filter that allows water vapor to pass through and reach the internal humidity sensor, but repels liquid-phase water.

For applications where both temperature and humidity monitoring are vital (foods, chemicals, powders, HVAC systems or goods in transit), the PSI PTHL 23 Data Logger delivers unprecedented performance in an unbelievably compact size.

PSI Data Logger Memory / Temperature Range

Type	Memory	Temperature Range
PTHL 23	8192 bytes*	-40°C to +125°C
PTL 22T	8192 bytes	0°C to +85°C
PTL 22L	8192 bytes	0°C to +85°C
PTL 21G	2048 bytes	0°C to +85°C

-40°C (-40°F) 0°C (+32°F) +40°C (+104°F) +85°C (+185°F) +125°C (+257°F)

Temperature °C (°F)

*0-100% Relative Humidity

**PSI Data Loggers
record temperature and humidity data for
countless applications.**

PSI DATA LOGGERS

TECHNICAL DATA OVERVIEW

Type	Temperature Rang	Resolution	Precision	Memory	Features
PTL 21G	-40°C to +85°C (-40°F to +185°F)	0.5°C (32.9°F)	±1°C (±33.8°F) at -30°C to +70°C (-22°F to +158°F); ±1.3°C (±34.3°F) outside of above rage	NV RAM 2048 bytes	>> Integrated real-time clock >> Automatic recording >> Recording intervals from 1 to 255 min >> Histogram recording >> Configurable hysteresis alarm >> Memory holds 24 alarm logs >> 4 Kbit of writable memory >> 1-Wire® compatible >> Unique 64 bit serial number >> RoHS compliant
PTL22L	-40°C to +85°C (-40°F to +185°F)	0.5°C (32.9°F) 8 bit, 0.0625°C (32.1°F) 16 bit	±0,5°C (±32.9°F) at +10°C to +65°C (+50°F to +149°F)	NV RAM 8192 bytes	>> Integrated real-time clock >> Automatic recording >> Recording intervals from 1 sec to 273 h >> Histogram recording >> Configurable hysteresis alarm >> Memory holds 24 alarm logs >> Password-protected memory >> 512 bytes of writable memory >> 1-Wire® compatible >> Unique 64 bit serial number >> RoHS compliant
PTL 22L	0°C to +125°C (+32°F to +257°F)	0.5°C (32.9°F) 8 bit, 0.0625°C (32.1°F) 16 bit	±0,5°C (±32.9°F) at +20°C to +75°C (+68°F to +167°F)	NV RAM 8192 bytes	>> Integrated real-time clock >> Automatic recording >> Recording intervals from 1 sec to 273 h >> Histogram recording >> Configurable hysteresis alarm >> Memory holds 24 alarm logs >> Password-protected memory >> 512 bytes of writable memory >> 1-Wire® compatible >> Unique 64 bit serial number >> RoHS compliant
PTHL 23	-20°C to +85°C (-4°F to +185°F), 0 to 100% RH	0.5°C (32.9°F) 8 bit, 0.0625°C, (32.1°F) 16 bit; 0.6% RH, 8 bit; 0.6% RH, 8 bit; 0.04% RH, 12 bit	±0,5°C (±32.9°F) at +10°C to +65°C (+50°F to +149°F)	NV RAM 8192 bytes	>> Integrated real-time clock >> Automatic recording >> Recording intervals from 1 sec to 273 h >> Histogram recording >> Configurable humidity hysteresis alarm >> Memory holds 24 alarm logs >> Password-protected memory >> 512 bytes of writable memory >> 1-Wire® compatible >> Unique 64 bit serial number >> RoHS compliant

PSI DATA LOGGERS

TEMPERATURE DATA COLLECTION



The PSI Thermologger tracks the temperature of a specific asset or location. Now you can easily log the thermal exposure of an asset during shipment to see if it stays within a specified temperature range.

PSI Thermologgers make it simple and inexpensive to monitor anything that is temperature sensitive, including industrial and automotive systems or food industry assets.

The PSI Thermologger can also be used for warranty-tracking purposes on equipment that must be kept within a certain temperature range or to log the results of a process that requires monitoring for compliance with a particular temperature profile.

The coin-sized stainless-steel casing makes all PSI Thermologgers rugged, reusable, and portable. They are so small that they fit almost anywhere and can deliver years of reliable, highly accurate temperature readings.



PSI PTL 21G Thermologger Temperature Data Logger (-40°C to +85°C / -40°F to +185°F)

This PSI Thermologger is a rugged, self-sufficient system that measures and records temperature data in a protected, non-volatile memory. The recording takes place at a user-defined rate. The device records both temperature values and a histogram.

Up to 2048 temperature values taken at equidistant intervals ranging from 1 to 255 minutes can be stored. The device also records a histogram that represents the frequency distribution of the registered values. If the temperature exceeds or falls below a user-programmable range, the PSI Thermologger also records those events. It registers the event time and duration and even indicates if the temperature was too high or too low. An additional 512 bytes of non-volatile read/write memory can store information pertaining to the object to which the PSI Logger is attached.

Data is transferred serially via 1-Wire® protocol. The unique electrically readable 64 bit factory-lasered registration number allows for absolute traceability.

The durable stainless steel enclosure is highly resistant to environmental conditions, such as dirt and moisture. Accessories permit the PSI Logger to be attached to almost any object, including containers, pallets, and bags.

PSI DATA LOGGERS

TEMPERATURE DATA COLLECTION



PSI Thermologger PTL 22L / PTL 22T Temperature Data Loggers (-40°C to +85°C / -40°F to +185°F)

This PSI Thermologger is a rugged, self-sufficient system that measures and records temperature data in a protected, non-volatile memory. The recording takes place at a user-defined rate. The device records both temperature values and a histogram.

A total of 8192 8 bit readings or 4096 16 bit readings taken at equidistant intervals ranging from 1 second to 273 hours can be stored. In addition, 512 bytes of SRAM are available for storing application-specific data, and 64 bytes of calibration data.

The Data Logger can be programmed for immediate data collection, or data collection can be configured to start after a custom delay or a temperature alarm. Access to memory and control functions can be password protected. Communication takes place via a serial 1-Wire® protocol.

Every PSI PTL 22T Data Logger is factory-lasered with a unique 64 bit registration number that allows for absolute traceability.

The durable stainless steel enclosure is highly resistant to environmental conditions, such as dirt and moisture. Accessories permit the PSI logger to be attached to almost any object, including containers, pallets, and bags.

PSI PTHL 23 Data Logger Temperature and Humidity Data Logger

This PSI temperature and humidity Data Logger is a rugged, self-sufficient system that measures temperature and/or humidity and saves the data in a protected, non-volatile memory. The recording takes place at a user-defined rate. It records both temperature values and a histogram.

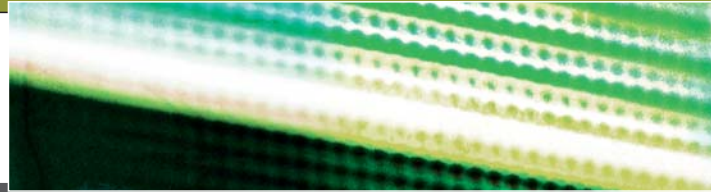
A total of 8192 8 bit readings or 4096 16 bit readings taken at equidistant intervals ranging from 1 second to 273 hours can be stored. In addition, 512 bytes of SRAM are available for storing application-specific data, and 64 bytes of calibration data.

The Data Logger can be programmed for immediate data collection, or data collection can be configured to start after a custom delay or a temperature alarm. Access to memory and control functions can be password protected. Communication takes place via a serial 1-Wire® protocol.

The unique 64 bit factory-lasered registration number allows for absolute traceability.

The durable stainless steel enclosure is highly resistant to environmental conditions, such as dirt and moisture. Accessories permit the PSI logger to be attached to almost any object, including containers, pallets, and bags

PSI PTL + PTHL DATA LOGGERS COMPLIANCE WITH INDUSTRIAL STANDARDS



Component	Standard	Description	Date
PTL 21G PTL 22L PTL 22T PTHL 23	IP56	Certified according to international standard IEC 60529 Certified according to international standard IEC 60529, which classifies the level of protection that electrical appliances provide against the intrusion of solid objects or dust, and or accidental contact and water.	March 2007
PTL 21G PTL 22L PTL 22T PTHL 23	CE	EN 55022: 1998 (CISPR 22) Class B EN 61000-4-2: 1995 Class B EN 61000-4-3: 1996 Class B EN 61000-4-8: 1993 Class B	April 2005
PTL 21G PTL 22L PTL 22T PTHL 23	FCC	In accordance with CFR 47, Part 15, Subpart B for Class B Digital Devices. These tests were conducted using measurement procedures ANSI C63.4-2001.	April 2005
PTL 21G PTL 22L	EN 12830	In accordance with European Standard EN 12830: 1999. Performance and suitability tests were conducted for the transport, storage and distribution of chilled, frozen, deep-frozen/quick-frozen food and ice cream to European standards.	January 2006
PTL 21G PTL 22L PTL 22T PTHL 23	UL 913 OERX2.E235993	Underwriter's Laboratory (UL), Approved For Use in Class 1, Groups A, B, C and D Locations in accordance with the Standard	May 2006

PSI DATA LOGGERS

DATA LOGGER PRODUCT LINE



Product Description	Part No.
Temperature Data Logger PTL 21G Self-sufficient Data Logger, -40°C to +85°C (-40°F to +185°F) Data collection memory: 2048	T-0001-001-0034
Temperature Data Logger PTL 22L Self-sufficient Data Logger, -40°C to +85°C (-40°F to +185°F) Data collection memory: 4096/8292	T-0001-002-0034
Temperature Data Logger PTL 22T Self-sufficient Data Logger, 0°C to +125°C (+32°F to +275°F) Data collection memory: 4096/8292	T-0001-003-0034
Temperature and Humidity Data Logger PTHL 23 Self-sufficient Temperature and Humidity Data Logger, -20°C to +85°C (-4°F to +185°F) / 0% to 100% Relative Humidity	T-0001-004-0034
USB Adapter and Data Logger Reader For use with computer and basic software for analysis of recorded data	T-0001-054-0034
Protective Container for Data Logger For use Data Logger use in areas with increased pressure and high-pressure environments	T-0001-047-0034
PTL Holder, Type B Vibration resistant holder, bolts to item and securely holds Data Logger in place	T-0001-009-0034
PTL Holder, Type C Key ring holder with snap ring for attaching Data Logger	T-0001-052-0034
Data Logger ID Tag Writable (Permanent Marker) or P-Touch labeling system	T-0001-049-0034
Data Logger Starter Kit (Basic) Temperature Data Logger PTL 21G, USB adapter and reader, read out software (CD), square aluminum tin	T-0001-000-0034
PSITRACK Software Data Analysis Software for Data Logger	T-0001-053-0034

Data Logger



USB Adapter+Reader



Protective Container



PTL Holder, Type B



PTL Holder, Type C



Data Logger ID Tag



Starter Kit (Basic)



PSITRACK Software



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