



PENTRONIC PLB 5000



Pentronic PLB 5000 system

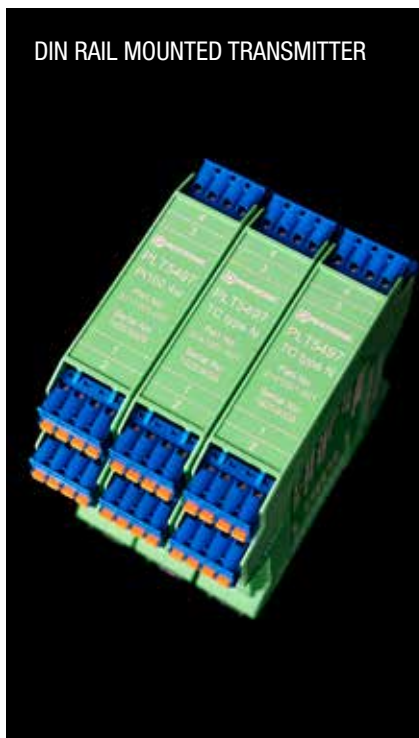
Digital bus system for temperature measurement in harsh environment

- **Cost effective, compact and robust measurement system**
- **Up to 120 high accuracy measurements provided on digital bus**
- **Easy installation with a minimum of cabling**
- **Safety Integrity Level: SIL 2 IEC61508**
- **Intrinsic safe system IECEx and ATEX**
- **Direct mounted transmitter with 1, 2 or 3 attached sensors**
- **DIN rail transmitter with 4 sensor inputs**
- **Gateway connects to PROFIBUS DP/PROFIsafe. PROFINET over APL planned commercial launch 2023 allowing gateway installation in Ex Zone 1**
- **Redundancy supporting excellent availability**

DIRECT MOUNTED TRANSMITTER



DIN RAIL MOUNTED TRANSMITTER



GATEWAY



PLB 5000 GENERAL TECHNICAL DATA

The PLB 5000 system is designed for high accuracy temperature measurement in harsh environment. It provides superior measurement and stability in small and rugged enclosures. The transmitter deliver digital measurement values, has uniquely low power consumption and is easy to install with a minimum of cabling. Designed for applications where a high degree of flexibility, accuracy and safety is required.

Transmitter measuring range

RESISTANCE SENSORS

Pt 100 and Pt 1000, 3 and 4-wire:
-200 ... +850 °C (-328...+1562 °F)

THERMOCOUPLE

Type K: -200...+1370 °C (-328...+2498 °F)

Type N: -100...+1300 °C (-148...+2372 °F)

Type R: 0...+1760 °C (-32...+3200 °F)

Type S: 0...+1760 °C (-32...+3200 °F)

Transmitter accuracy

Resistance sensors, typically down to ± 0.08 °C (± 0.144 °F)

Thermocouples, typically down to ± 0.5 °C (± 0.72 °F)
including cold junction compensation

PLG5465 Gateway features

PROFIBUS DP/PROFIsafe connection to host PLC
System set-up via Ethernet or SD card

Operating conditions

DIRECT MOUNTED TRANSMITTER, PLT5167, PLT5396, PLT5397

Ambient temperature range: -40...+85 °C (-40...+185 °F)

Degree of protection: IP 65

Supply voltage: 8-32 VDC

DIN-RAIL MOUNTED TRANSMITTER, PLT5497

Ambient temperature range: -40...+85 °C (-40...+185 °F)

Degree of protection: IP 20

Supply voltage: 8-32 VDC

GATEWAY, PLG5465

Ambient temperature: -40...+75 °C (-40...+167 °F)

Degree of protection: IP 20

Supply voltage: 15-28 VDC

ISOLATION BARRIER, PLZ5291

Ambient temperature: -40...+85 °C (-40...+176 °F)

Degree of protection: IP 20

Supply voltage: 15-32 VDC

Bus cable and connectors

FEP/Silicon insulation with stainless steel braiding, Ø 9.2 mm

Ambient temperature range: -60...+150 °C (-76...+302 °F)

General

WEEE/RoHS compliant

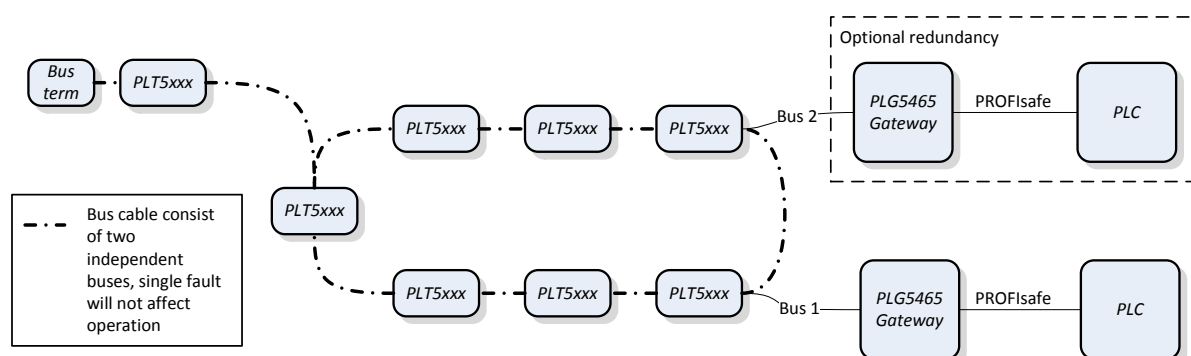
For further technical details see product specific datasheets

The PLB5000 system is IECEx and ATEX certified.

Transmitters have galvanic isolated sensor input for Ex Zone 0

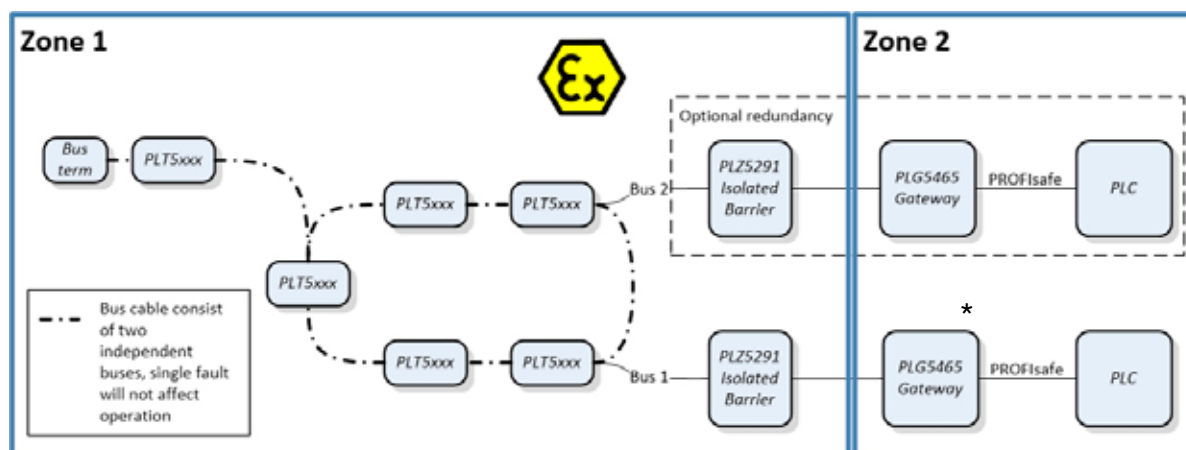


Typical system configuration



Bus system with up to 120 temperature channels, any mix of DIN rail mounted or direct mounted transmitter is allowed. Bus cable length up to 500m. Optional redundancy in gateway and bus cabling increases availability.

Ex application



Transmitters are intrinsically safe equipment for use in Zone 1 when used together with the isolation barrier PLZ5291. Number of temperature channels are dependent on gas group. Optional redundancy in gateway and bus cabling increases availability.

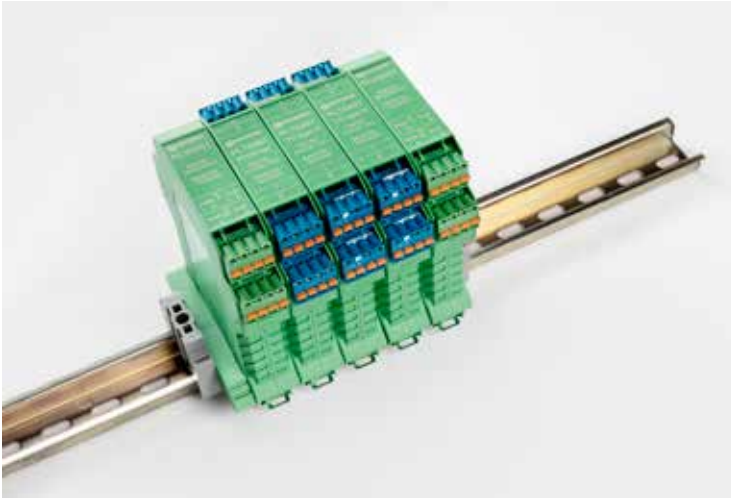
* PROFINET over APL planned commercial launch 2023 allowing gateway installation in Ex Zone 1.

PLZ5291 ISOLATION BARRIER

Intrinsically safe isolation barrier for supply and communication to PLB5000 transmitters

- Ex Zone 1 gas group IIC
- Communication repeater
- Safe supply





PLB5000 DIN-RAIL MOUNTED TEMPERATURE TRANSMITTER

Modular housing with integrated bus connector

- Compact solution
- Robust power and bus distribution via a bus connection module
- Bus, power supply and ground connection in DIN rail connectors
- Terminal blocks with spring-cage connection
- Cold junction compensation integrated in terminal blocks for optimum performance



PLB5000 DIRECT MOUNTED TEMPERATURE TRANSMITTER

Rugged design for use in harsh environment. Temperature sensor of various constructions can be attached to the transmitter.

- Compact design
- Rigid cable and connector, easy to daisy chain
- Acid proof stainless steel housing
- 1, 2 or 3 channel models available

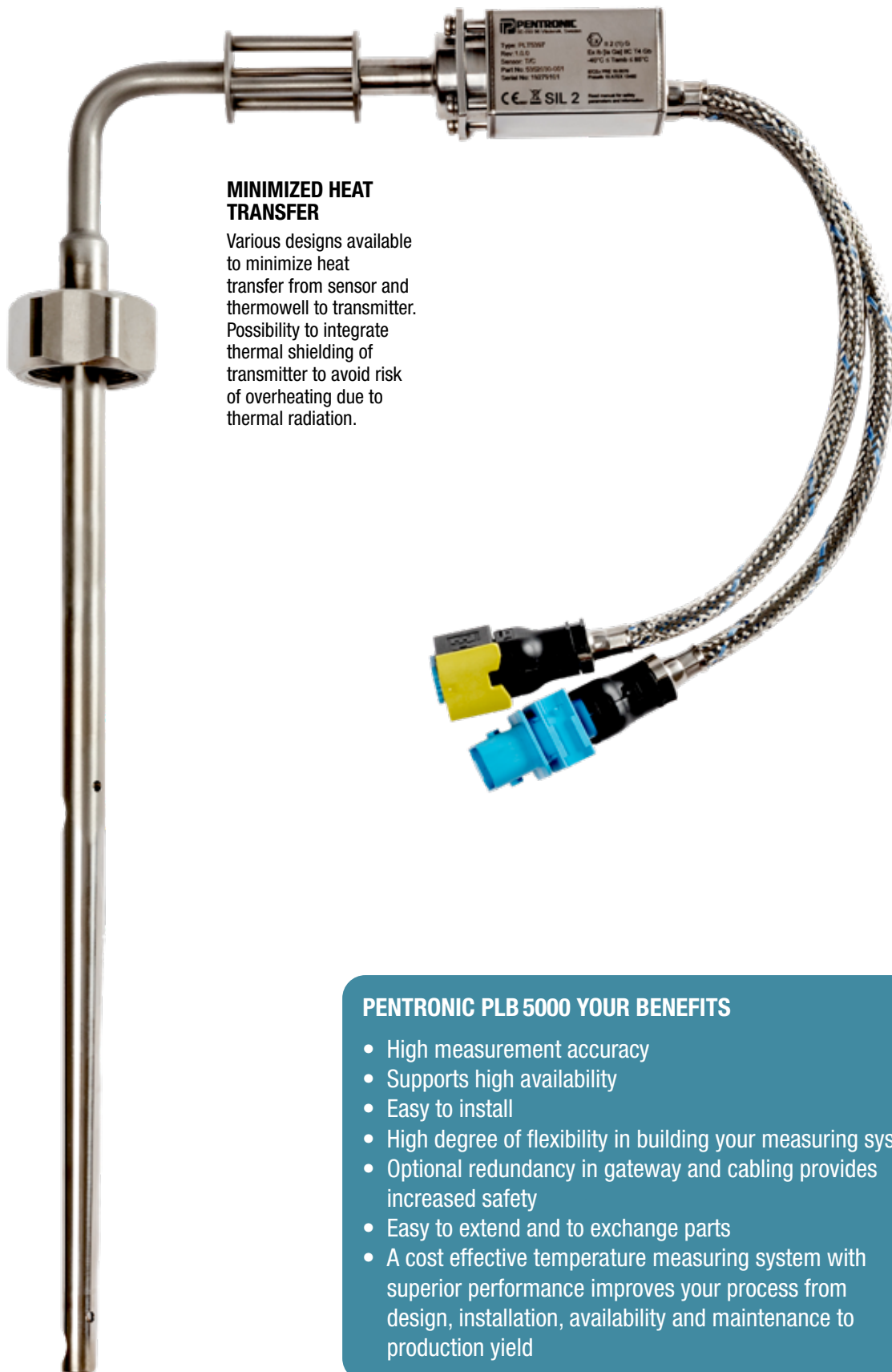


CONNECTOR

Heavy Duty Sealed Connector HDSCS designed to meet the rigorous demands of an environment that requires the highest standards in performance. Designed for applications where vibrations and mechanical stress, in the long term, can affect the quality on the connector system.

- High reliability status supported for long time use
- High vibration supported
- Gold plated 8 way connector
- Dust and water protected, IP 69
- Resistant against liquids such as oil, lubricants and spirits.
- Clear and easy handling, low mating force with a reliable slide locking mechanism

Customized sensor solutions



MINIMIZED HEAT TRANSFER

Various designs available to minimize heat transfer from sensor and thermowell to transmitter. Possibility to integrate thermal shielding of transmitter to avoid risk of overheating due to thermal radiation.

PENTRONIC PLB 5000 YOUR BENEFITS

- High measurement accuracy
- Supports high availability
- Easy to install
- High degree of flexibility in building your measuring system
- Optional redundancy in gateway and cabling provides increased safety
- Easy to extend and to exchange parts
- A cost effective temperature measuring system with superior performance improves your process from design, installation, availability and maintenance to production yield

PLB 5000 PRODUCTS

PRODUCT	DESCRIPTION	
PLT5167	Harsh environment, direct mounted transmitter, single sensor Dimensions steel housing: 90 x 40 x 40 mm	
PLT5396	Harsh environment, direct mounted transmitter, dual sensor Dimensions steel housing: 90 x 40 x 40 mm	
PLT5397	Harsh environment, direct mounted transmitter, triple sensor Dimensions steel housing: 90 x 40 x 40 mm	
PLT5497	DIN rail mounted 4 channel sensors transmitter Dimensions: 111 x 99 x 23 mm	
PCX5451	Bus connection module Dimensions: 111 x 99 x 23 mm	
PLG5465	Gateway between PLB bus and PROFIBUS/PROFIsafe Dimensions: 228 x 124 x 55 mm	
PLZ5291	Ex isolation barrier with isolated data transfer Dimensions: 170 x 128 x 35 mm	
BUS CABLES*	Bus cable with Tyco HDSCS female and male connector Cable length to be specified Bus cable with Tyco HDSCS male connector and flying leads Cable length to be specified Bus cable with Tyco HDSCS male connector and Weidmüller HDC female connector Cable length to be specified	  
BUS TERMINATION	Bus termination Dimensions: 101 x 33 x 27 mm	

**Other bus cable configurations available upon request*



PENTRONIC

Bergsliden 1, SE-593 96 Västervik
Tel. +46 490-25 85 00
www.pentronic.se