PERTRONIC INDUSTRIES LTD

DATASHEET
Modbus Interface for Fibre-Optic Linear Heat Detectors
SPIB-LIOS, SPIB-PWF8000

Connect Fibre-Optic LHD Controller to Pertronic fire panel
Support Modbus ASCII, RTU, or TCP
*PC configurable via USB cable*

Overview

These Pertronic Modbus interface units allow fibre-optic linear heat detection systems (LHD) to be integrated into Pertronic F220 fire systems.

- The Pertronic SPIB-LIOS connects a LIOS DE.TECT system with an F220 fire system
- The Pertronic SPIB-PWF8000 connects a Protectowire Fibre System 8000 with an F220 fire system

Both interface units connect to the fire panel's RS-485 bus and communicate with the LHD via Modbus. They can be mounted inside the fire panel, or at a remote location.

These interfaces utilise the fire panel's loop emulation capability. Each zone on the LHD cable is mapped to a device on an emulated analogue addressable loop.

The Modbus connection is galvanically isolated from the fire panel's RS-485 bus.
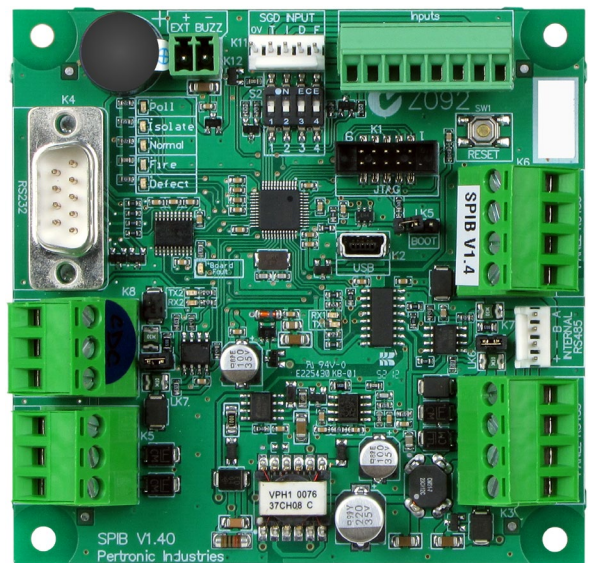
Pertronic Modbus Interface for Fibre-Optic Linear Heat Detectors SPIB-LIOS and SPIB-PWF8000
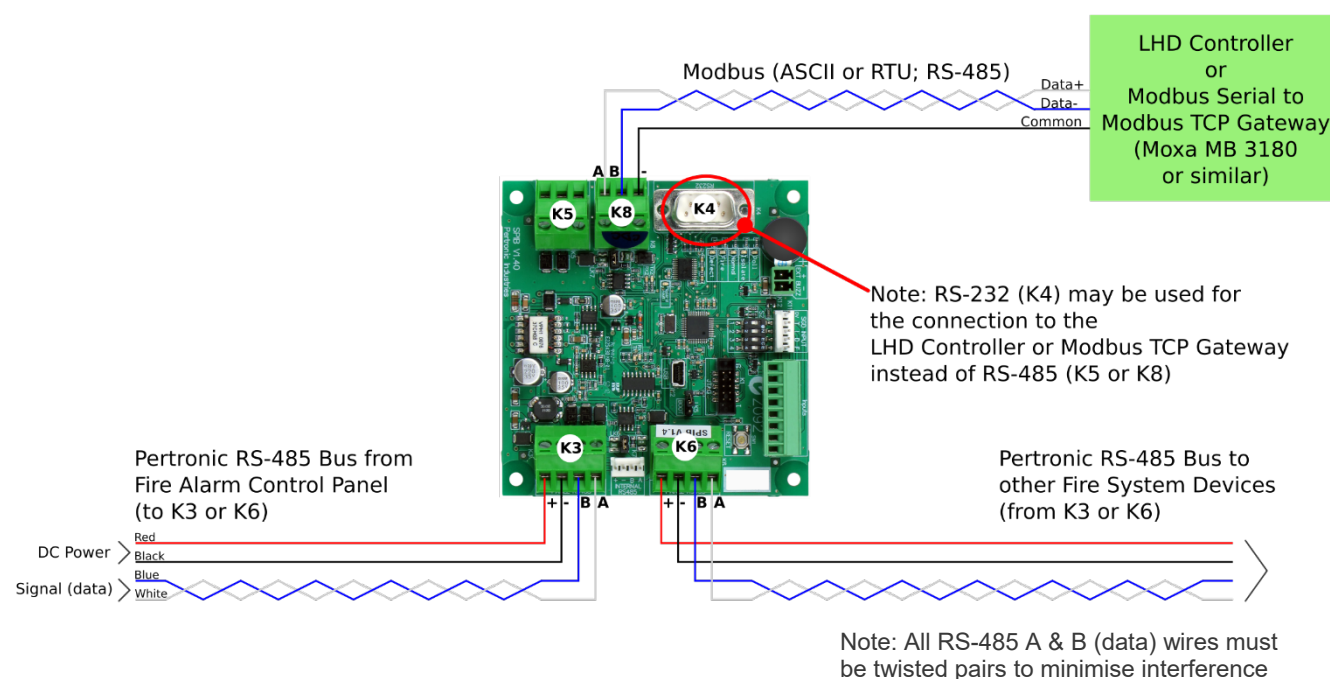
Features

- Compatible with Pertronic F220 fire alarm control panels
- Function as Modbus master devices
- Modbus connection configurable RS-232 or RS-485, 300 bit/s to 115,200 bit/s
- Support Modbus TCP when connected to a Modbus Serial to Modbus TCP Gateway
- Emulate up to four analogue addressable loops. (Note that the total number of actual and emulated loops cannot exceed the panel's maximum loop capacity)
- SPIB-PWF8000 supports up to 100 fibre-optic LHD detection zones per emulated loop (maximum 4 x 100)
- SPIB-LIOS supports
  - Up to 159 fibre-optic LHD detection zones per emulated loop (maximum 4 x 159)
  - Two module addresses representing the LHD controllers global *Alarm* and *Fault* indications on the base loop only
- Each zone on the LHD cable is mapped to a "heat detector" on an emulated analogue addressable loop
- Each emulated heat detector can report *pre-alarm* and *fibre break* as well as *alarm* signals
- Optional fault supervision between the fibre-optic LHD interface and fire panel
- Configurable with a PC running a terminal emulation program via USB mini-B cable
- On-board LEDs provide diagnostic information
- Electrically isolated from the fire panel's RS-485 bus
- Also compatible with F120A fire panels with v5.0 or later firmware

Specification

Compatible Panel	F220 (all) F120A (v5.0 or later)	**Base Hardware**	Pertronic SPIB board
Supply Voltage	9.6 V dc to 30 V dc	**Current**	21 mA @ 24 V dc (typical)
Cable	**to Panel**: 2-Core (twisted pair) Data + 2-Core Power	**Panel RS-485 Bus Connection**	9600 bit/s, isolated
	To LHD: 2-Core (twisted pair) Data + Common	**Modbus Connection**	Configurable RS-485 or RS-232 300 bit/s to 115,200 bit/s
Cable Termination	0.5 mm² to 2.5 mm² stranded cable	**Modbus Mode**	ASCII, RTU, or TCP (with gateway)
PCB Dimensions	94H x 96.5W x 30D mm	**Weight**	86 g
Operating Temperature	-10 °C to +50 °C	**Humidity**	10 to 95% RH non-condensing

Typical Connections

Modbus (ASCII or RTU; RS-485)

Data+
Data-
Common

LHD Controller
or
Modbus Serial to
Modbus TCP Gateway
(Moxa MB 3180
or similar)

Note: RS-232 (K4) may be used for the connection to the
LHD Controller or Modbus TCP Gateway instead of RS-485 (K5 or K8)

Pertronic RS-485 Bus from Fire Alarm Control Panel (to K3 or K6)

Pertronic RS-485 Bus to other Fire System Devices (from K3 or K6)

DC Power — Red / Black
Signal (data) — Blue / White

Note: All RS-485 A & B (data) wires must be twisted pairs to minimise interference

Ordering Information

Product Code	Description
SPIB-LIOS	Modbus Interface for LIOS DE.TECT Linear Heat Detection Controller
SPIB-PWF8000	Modbus Interface for Protectowire Fibre8000 Linear Heat Detection Controller