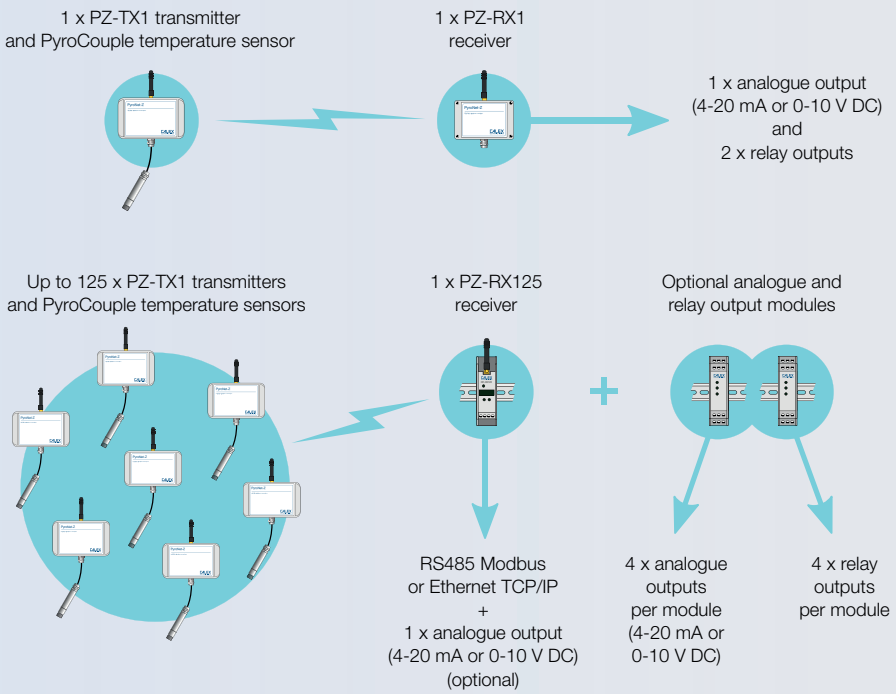
PyroNet Z

Wireless Non-Contact Temperature Measurement System

- Battery-powered wireless transmitter for PyroCouple infrared temperature sensor
- Choice of 1-channel or 125-channel wireless receivers
- Analogue outputs, alarm relays, and digital communications
- Replace expensive cable runs, and install temperature sensors where cabling is impossible

SYSTEM DIAGRAM



Temperature Sensor

The temperature of a surface is measured using a PyroCouple non-contact infrared sensor with a 0-50 mV output. Materials including paper, thick plastics, painted surfaces, food, asphalt and organic materials are measured easily and instantaneously.

Wireless Transmitter

The battery-powered PZ-TX1 transmitter periodically takes a measured temperature reading from the PyroCouple temperature sensor and sends it wirelessly to a PyroNet-Z receiver. It is supplied in a compact wall-mounted enclosure.

Wireless Receivers

A choice of single-channel or multi-channel receivers is available.

- Single Channel

  The wall-mounted PZ-RX1 receives the wireless signal from one PZ-TX1 transmitter. It provides one analogue output and two relay outputs.

- Multi Channel

  The PZ-RX125 is a DIN rail mounted unit with digital communications via RS485 or Ethernet. Its 125 channels may be individually assigned to wireless transmitters or outputs. Optional analogue and relay output modules may be added using the included clip-on bus connector.

- Multi-Channel Output Modules

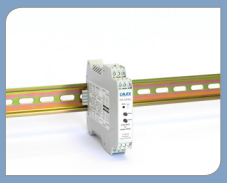
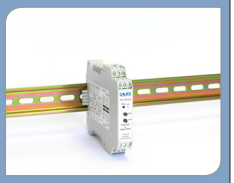
  These optional DIN rail mounted units clip onto the PZ-RX125 via the included bus connector and provide 4 analogue or relay outputs.

CALEX ELECTRONICS LIMITED

SPECIFICATIONS

For sensor specifications, see PyroCouple data sheet.

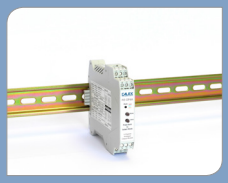
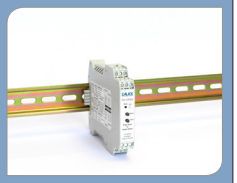
GENERAL

Model	Transmitter	Receivers		Output Modules for PZ-RX125	
	PZ-TX1 1 channel	PZ-RX1 1 channel	PZ-RX125 125 channel	PZ-OP4A Analogue outputs (4 channels)	PZ-OP4R Relay outputs (4 channels)
					
	Models shown include optional 5 dBi antenna				

Inputs	1 x PyroCouple with output option 5 (0 to 50 mV).	Wireless signal from 1 x PZ-TX1	Wireless signal from up to 125 x PZ-TX1	Digital communications with PZ-RX125 via clip-on DIN rail bus connector	
Outputs and Communications	Wireless transmission only	1 analogue output (selectable 4-20 mA or 0-10 V DC), and 2 relay outputs rated 3 A @ 240 V AC	Choice of RS485 Modbus RTU, Ethernet TCP/IP or Ethernet Modbus TCP; Optional 1-channel 4-20 mA (built-in); Optional output modules (see right)	4 outputs, selectable 4-20 mA, 0-10 V DC, or mA sink via switches	4 SPDT relay outputs, rated 3 A @ 240 V AC
Accuracy (total non-linearity)	Better than +/- 0.05%				-
Sample rate	Selectable 10 s, 30 s, 1 min, 1 hour, via switches. Custom sample rates available; contact Calex.	-	-	-	-
Diagnostics	-	-	Via display	-	-
Display	-	-	Built-in 4-character LED display for temperature indication and configuration	-	4 LED indicators for relay on/off status
Configurable Parameters (via switches inside enclosure)	Network code (A-H), channel number, sample period	Network code (A-H), no-signal alarm time, relay operation mode (no-signal alarm or setpoint), analogue output type (voltage/current)	Display scaling, analogue output scaling and type (models with built-in analogue output), Modbus protocol RTU/TCP (Ethernet models), Modbus slave address, baud rate, port settings, timeout	Individually selectable current or voltage output, output scaling	Alarm temperature setpoint, hysteresis, high/low alarm function, error or timeout alarm function
Relay (alarm) set points	-	Selectable 25% or 75% of input range as standard. Alternative setpoints may be factory-set.	See PZ-OP4R	-	Fully configurable via PZ-RX125
Mounting	Wall mounted		DIN Rail TS35. Wall-mount enclosure available (contact Calex)	DIN Rail TS35	DIN Rail TS35

ELECTRICAL

Power supply	3 x 3.6 V lithium batteries (1 for transmitter, 2 for sensor)	24 V DC	16 to 30 V DC	12 to 36 V DC. Powered via clip-on DIN rail mounted bus connector	
Battery life	Typically > 1 year	-	-	-	-
Max current draw	40 mA (during transmission)	180 mA	120 mA	90 mA continuous (260 mA on startup)	
Input connection	Screw terminals	-	-	Clip-on DIN rail mounted bus connector	
Power connection	-	Screw terminals	Screw terminals	Clip-on DIN rail mounted bus connector	
Output connection	-	Screw terminals	Analogue output and RS485 interface: Screw terminals Ethernet interface: RJ45 socket	Screw terminals	
Conductor size (for screw terminals)	0.5 to 4.0 mm				
Tested Surge Voltage	-	2.5 kV for 50 µs			
Tested Transient Voltage	-	10 kV/µs			
Isolation (power supply - output)	-	-	1 kV		

Model	Transmitter	Receivers		Output Modules for PZ-RX125	
	PZ-TX1 1 channel	PZ-RX1 1 channel	PZ-RX125 125 channel	PZ-OP4A Analogue outputs (4 channels)	PZ-OP4R Relay outputs (4 channels)
					
	Models shown include optional 5 dBi antenna				

ENVIRONMENTAL

Environmental rating	IP67	IP67	Designed for mounting in a cabinet with suitable environmental protection. IP67 enclosure available - contact Calex		
Dimensions	160 (w) x 90 (h) x 50 (d) mm	120 (w) x 80 (h) x 55 (d) mm	114.5 (d) x 99 (h) x 22.5 (w) mm	114.5 (d) x 99 (h) x 17.5 (w) mm	114.5 (d) x 99 (h) x 17.5 (w) mm
Operating Temperature	-20°C to 55°C	0°C to 55°C			
Relative Humidity	0% to 90%				

WIRELESS COMMUNICATIONS

Output power	20 dBm	-	-
Antenna	2 dBi antenna with SMA connector fitted as standard. Higher-gain antenna available (see Accessories). Antenna may be mounted remotely via extension cable.	-	-
Approvals & Conformity	CE Marked; conforms to FCC part 15, IC Canada RSS 210e, ETSI EN 300-328, Japan ARIB STD-T66	CE Marked	

CONNECTIONS

Screw terminal number					
1	PWR- (PyroCouple model -5)	Power supply +24 V DC	Power supply 0 V	Output 1: mA/V +	Relay 1 NO
2	Not connected	Power supply 0 V	Power supply 16-32 V DC	Output 1: mA/V - (mA sink +)	Relay 1 NC
3	PWR+ (PyroCouple model -5)	mA sink +		Output 2: mA/V +	Relay 2 NO
4	OP+ (PyroCouple model -5)	mA sink -		Output 2: mA/V - (mA sink +)	Relay 2 NC
5	OP- (PyroCouple model -5)	Output mA/V +		Output 3: mA/V +	Relay 3 NO
6		Output mA/V -		Output 3: mA/V - (mA sink +)	Relay 3 NC
7		Relay 1 Common	RS485 Signal Ground (B models)	Output 4: mA/V +	Relay 4 NO
8		Relay 1 Normally Open	RS485 B - (B models)	Output 4: mA/V - (mA sink +)	Relay 4 NC
9		Relay 1 Normally Closed	RS485 A + (B models)	Output 1: mA sink -	Relay 1 COM
10		Relay 2 Common	mA/V Output - (A models)	Output 2: mA sink -	Relay 2 COM
11		Relay 2 Normally Open		Output 3: mA sink -	Relay 3 COM
12		Relay 2 Normally Closed	mA/V Output + (A models)	Output 4: mA sink -	Relay 4 COM
Other			RJ45 Socket (E models)		

ORDERING

PZ-TX1 Wireless transmitter for 1 x PyroCouple infrared temperature sensor with output option 5, in IP67 wall mount enclosure, fitted with 2 dBi antenna

Sensor not included - see PyroCouple data sheet for ordering information

PZ-RX1 Single channel wireless receiver for 1 x PZ-TX1, with 1 x 4-20 mA output, in IP67 wall mount enclosure, fitted with 2 dBi antenna

Note: Up to PZ-RX1/transmitter pairs may be used on the same site.

If more sensors or outputs are required, use the PZ-RX125.

125 channel receiver, DIN rail mounted, fitted with 2 dBi antenna:

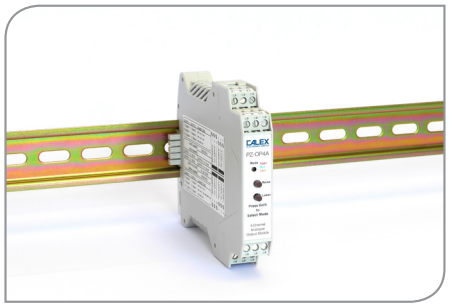
PZ-RX125-B - with RS485 Modbus RTU communications only

PZ-RX125-B-A - with RS485 Modbus RTU communications and 1 x built-in analogue output

PZ-RX125-E - with Ethernet communications only

PZ-RX125-E-A - with Ethernet communications and 1 x built-in analogue output

OPTIONS AND ACCESSORIES



PZ-OP4A DIN rail mounted output module for PZ-RX125, with 4 x individually selectable 4-20 mA or 0-10 V outputs

PZ-OP4R DIN rail mounted output module for PZ-RX125, with 4 x relay outputs

PZ-ANT5 Optional high-gain indoor antenna with SMA connector for PyroNet Z wireless receivers and transmitters, 5 dBi

Outdoor antenna options are also available. Contact Calex for details.

PZ-ANTCE Optional extension cable for antenna (e.g. for mounting the antenna on the outside of a metal cabinet)

PZ-BATT Replacement battery for PZ-TX1 (3 batteries required per transmitter)

Calex Electronics Limited
PO Box 2, Leighton Buzzard, Bedfordshire, England LU7 4AZ
Tel: +44 (0)1525 373178/853800 Fax: +44 (0)1525 851319 Lo-call Tel: 0845 3108053
E-mail: mail@calex.co.uk Online: http://www.calex.co.uk

Issue A - June 15
Specifications subject to change without notice