WATCHDOG TEMPERATURE SCANNING & ALARM SYSTEM

Shown with engraved plastic label (not included).

MODEL PDS178

MODEL PDS178X2

SYSTEM COMPONENTS

Kit Includes
- **PD138-3 Minimux II Scanner**
- **PD765-6R2-00 or PD765-6X2-00 Trident Meter**
- **PDA2821 Plastic NEMA 4X Enclosure**

COMPONENT FEATURES

PD765-6R2-00 & PD765-6X2-00 Trident Temperature & Process Meter
- **4-20 mA, ±10 V, TC & RTD Inputs**
- **4-Digit Display**
- **Two Relays for Alarm Signal to PD138**
- **NEMA 4X, IP65 Front**
- **Sunlight Readable Display**

PD138-3 Minimux® II
Temperature / Process Scanner
- **8 Inputs per Unit**
- **Thermocouples, RTDs, and Process Inputs**
- **Adjustable Dwell Time for Each Channel**
- **Independent Alarm Input for Each Channel**
- **First-Out Alarm Indication**
- **Alarms Indicated by LEDs, Built-in Horn, and Relay**
- **Built-in 85 dB Horn with Silence Pushbutton**
- **Stop-on-Alarmed Channel (Field Select)**
- **Sunlight Readable Indication**
- **NEMA 4X/IP65 Front**

PDA2821 Plastic NEMA 4X Enclosure
- **NEMA 1, 4, 4X, 6, 12, and 13, IP66**
- **Wall Mountable**

SCANS MOST SIGNALS/SENSORS

The Watchdog Temperature Scanning & Alarm System brings together a popular combination of Precision Digital products: the Trident meter, the Minimux II Scanner, and a PDA2821 NEMA 4X enclosure.

The scanner provides low-cost automatic switching for multi-point display and alarms. Signal switching is done via reed relays making the Watchdog (as configured) ideal for switching up to eight thermocouple or RTD inputs. The Watchdog can be used in a variety of temperature monitoring applications. A very common application for this system is to monitor bearing temperatures (as shown above).

Because of the popularity of this combination, we can offer this system at a price significantly below what it would cost to buy these components separately.

ORDERING INFORMATION

Watchdog Temperature Scanning & Alarm System			
Model	**Description**	**Kit Components***	
PDS178	Temperature Scanning & Alarm System	PD765-6R2-00 PD138-3 PDA2821	Temp. Meter, 0.56" Display Minimux II Scanner Plastic NEMA 4X Enclosure
PDS178X2	Temperature Scanning & Alarm System with Large Display	PD765-6X2-00 PD138-3 PDA2821	Temp. Meter, 1.20" Display Minimux II Scanner Plastic NEMA 4X Enclosure

* Packaged separately; assembly required.

Disclaimer

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TYPICAL APPLICATION

Using the PDS178 to Scan Thermocouples

In the following application example, four oven thermocouples are scanned and channeled to a PD765 Temperature Meter where the PV is displayed and checked for low or high alarm conditions. All four ovens share the same low and high alarms, so the alarm inputs are joined together on the PD138.

The PD138 Minimux II is programmed in the following manner to satisfy this application:

- Select alarm Sequence A
- Stop-on-alarm is off
- Program dwell times:
  - Channel 1 for ten seconds
  - Channel 2 for five seconds
  - Channel 3 for fifteen seconds
  - Channel 4 for five seconds
 - Channels 5-8 are disabled

The PD765-6R2-00 Trident is programmed in the following manner to satisfy this temperature application:

- Select T/C
- Select °F
- Program alarm set and reset points:

ALARM	TYPE	SET POINT	RESET POINT
1	Low Alarm	225	230
2	High Alarm	325	320
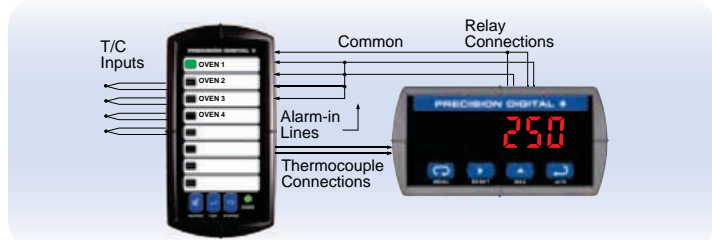
The Minimux II scans each input and reflects the alarm state. The PD138 shown above is scanning channel 1 (Green LED) allowing the Trident to display the current temperature of 250°. No alarm is present since the temperature is within limits. The Minimux II only responds to new alarm conditions detected in the currently active channel. The PD138 also avoids false alarms by detecting alarm conditions only after dwelling on a channel for 2 seconds, or 0.05 seconds before it has been programmed to go onto the next channel if the dwell time had been programmed for less than 2 seconds. This gives the PD765 time to stabilize and accurately display the temperature and to check for alarm conditions.
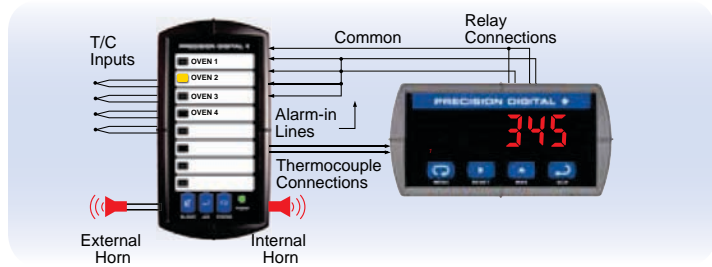

The Minimux II switches to (scans) input 2, channeling it to the PD765-6R2-00 where a temperature of 345° triggers a high alarm condition. The PD138 is programmed for Sequence A, so the channel 2 LED alternately flashes yellow and green, the internal horn sounds, and the PD138's alarm relay transfers causing an external horn to sound. After acknowledging the alarm the channel LED will glow a steady yellow (while selected), or steady red (when not selected) until reset.
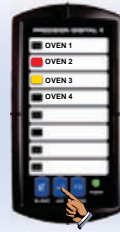
The Minimux II switches to (scans) input 3, channeling it to the PD765-6R2-00 where a temperature of 220° is found to cause a low alarm condition 2 seconds into the dwell time. Channel 3 LED alternately flashes yellow and green (shown yellow), the internal horn sounds and the PD138's alarm relay transfers causing an external horn to sound.

SIGNAL CONNECTIONS

The example shown below has 3 type J thermocouples multiplexed by the PD138 into the PD765. Thermocouple wire must also be used between the PD138 and the PD765. The PD765 also accepts 100 Ω Platinum RTD sensors and process inputs.

PD765 Temperature Meter
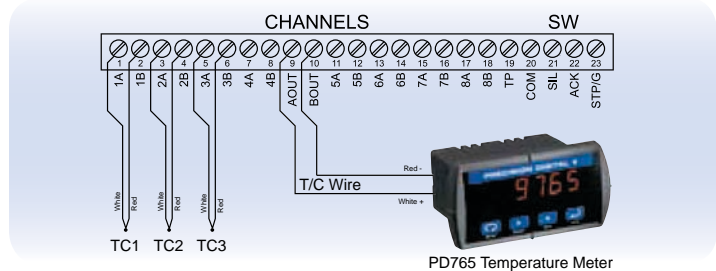
SYSTEM SPECIFICATIONS

Except where noted all specifications apply to operation at +25°C.

The partial list of specifications shown below are key to the PDS178 system. For complete specifications on both the PD138 Minimux II and the PD765 Trident, please visit www.predig.com.

Input Channels: Up to 8 channels
Signal Switching: DPST relays
Contact Resistance: 0.2 Ω maximum
Dwell Time: Each channel adjustable from 0.6 to 30 seconds
Scan Stop: Hold STOP/GO button for 0.5 seconds
Alarm Acknowledge: Front panel ACK button
PD138 Message Labels: Free, custom printed. See PD138 manual for complete details.
Alarm Output: Relay, 1 SPDT rated 2 Amp @ 30 VDC or 250 VAC
Temperature Inputs: J, K, E, T thermocouples, 100 Ω platinum RTD
Digital Display: PDS178: 0.56" (14 mm) high, red LED, 4 digits. PDS178X2: 1.20" (30 mm) high, red LED, 4 digits
Accuracy: Temperature ±1°C/±2°F, Process ±0.05% of span ±1count
Operating Temperature: 0 to 65°C
Storage Temperature: -40 to 85°C
Power: 115 VAC, ±10%, 50/60 Hz, 22 W max
Compliance: NEMA 4X
Enclosure Dimensions: 7.38" x 11.00" x 7.13" (H x W x D)

Your Local Distributor is: