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.

**SCANS MOST SIGNALS/SENSORS**

**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

**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>Watchdog Temperature Scanning &amp; Alarm System</th>
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</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
</tr>
<tr>
<td>PDS178</td>
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<tr>
<td>PDS178X2</td>
</tr>
</tbody>
</table>

* Packaged separately; assembly required.

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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

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:

<table>
<thead>
<tr>
<th>ALARM</th>
<th>TYPE</th>
<th>SET POINT</th>
<th>RESET POINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low Alarm</td>
<td>225</td>
<td>230</td>
</tr>
<tr>
<td>2</td>
<td>High Alarm</td>
<td>325</td>
<td>320</td>
</tr>
</tbody>
</table>

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.

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

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 ±1 count
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: