# PD8-154/PD8-158 Protex-MAX<sup>TM</sup> Explosion-Proof Alarm Annunciators





**DUAL-INPUT** PROCESS

- Modern, Sleek and Practical Enclosure
- Display Mountable at 0°, 90°, 180°, & 270° Degrees
- **Explosion-Proof, IP68, NEMA 4X Enclosure**
- Vigilante® II Functionality
- SafeTouch® Through-Glass Button **Programming**
- **Sunlight Readable Displays**
- 8 Field Selectable Sequences
- All Common ISA Sequences Including First-Out
- Switch, Transistor, and Logic Level Inputs

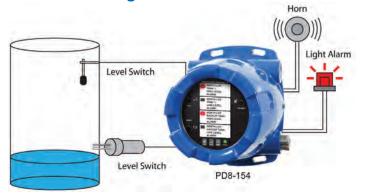
- 4 or 8-Point Monitoring
- **Free Custom Message Labels**
- **Universal Power Supply 85-265 VAC**
- 12-36 VDC/12-24 VAC Power Option
- 2 SPDT Relays for Alarm Activated Devices
- 24 VDC Isolated Power Supply (AC Models)
- **Multiple-Unit First-Out Indication**
- Silence, Acknowledge, and Reset Functions
- **Sunlight Readable Indication**



# PD8-154/PD8-158 ProtEX-MAX™ Explosion-Proof Annunciators

### **APPLICATIONS**

### **Level Monitoring with Level Switches**



The ProtEX-MAX Annunciator is ideal for tank level switch monitoring.

- Up to 8 Individually Labeled Level Switch Inputs
- 24 VDC Level Switch Power Supply
- Relays for External Horns and Light Alarms
- Easy NEMA 4X Mounting Enclosures
- · Sunlight Readable Indication

# **Temp Monitoring with ProtEX-MAX Meters**



Connect PD8-765 and PD8-7000 alarm relays to the PD8-154 or PD8158 for temperature alarm monitoring.

- First-Out Indication for Heating/Cooling Systems
- Multiple Unit First-Out Indication
- Remote Silence, Acknowledge, and Reset
- Fail-Safe Relays for Critical Applications

### **Multiple Unit First-Out Alarm Indication**



**Multiple Unit First-Out Indication** 

If multiple ProtEX-MAX<sup>™</sup> annunciators are connected for multiple unit first-out indication, only one input from all connected devices will display as a first-out alarm.

### **First-Out Alarm Indication**

The ProtEX-MAX<sup>™</sup> Annunciator can be programmed for multiple sequences with first-out alarm indication. This feature indicates the first point of failure of a system when multiple alarms occur.

### **ALARM SEQUENCES**

The ProtEX-MAX™ Alarm Annunciator can be programmed for all common ISA sequences including A, F1A, F2A, F3A, M, F1M. Selectable ISA -1 (Silence Button), -4 (No Lock-In), and horn disable options. Two popular sequences are detailed below.

# ISA Alarm Sequence A

Acknowledgement and Automatic Reset

### **Momentary Alarm**

Condition	LED	Horn			
Normal	Off	Off			
Alert	Flash	On			
Normal	Flash	On			
User Acknowledged					
Acknowledge	Off	Off			

### **Maintained Alarm**

Condition	LED	Horn		
Normal	Off	Off		
Alert	Flash	On		
User Acknowledged				
Acknowledge	Steady	Off		
Normal	Off	Off		

### ISA Alarm Sequence F2A

First-Out Alarm Indication with Acknowledgement and Automatic Reset

### **Momentary Alarm**

Condition	LE	Horn		
	1 <sup>st</sup> Pt	Next Pt		
Normal	Off	Off	Off	
Alert	Flash	Steady	On	
Normal	Flash	Steady	On	
User Acknowledged				
Ack	Off	Off	Off	

### **Maintained Alarm**

Condition	LE	Horn			
	1 <sup>st</sup> Pt	Next Pt			
Normal	Off	Off	Off		
Alert	Flash	Steady	On		
User Acknowledged					
Ack	Steady	Steady	Off		
Normal	Off	Off	Off		

### **FRONT PANEL**

Button	Ø	t	C		
Description	Silence Horn	Acknowlege Alarm	Reset Inputs		
LED	Description				
	Point status indicators				
	Indicates power is on				

**LED Test:** Press and release the SILENCE and ACK pushbuttons to flash the channel indicator LEDs for an LED function test.

**Full Function Test:** Press and hold the SILENCE and ACK pushbuttons for 3 seconds to initiate a full function test.

**External Connections:** All three pushbuttons may be activated remotely via rear terminal connections.

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### **MESSAGE LABELS**

Alarm message labels for the alarm annunciator may be factory printed at no charge, or field printed using a laser printer with clear self-adhesive labels.

Factory printed message labels may be ordered at any time by completing the following form.

Please include label with my order
I have the Annunciator, please send label
Quantity
Name
Title
Company
Mailing Address
City, St., Zip
Phone
-ax
E-Mail
PO#

Area available per message: PD154, 1.25"  $\times$  0.60" (32 mm x 15 mm); PD158, 1.25"  $\times$  0.25" (32 mm x 6 mm); user may specify any size and length that will fit in this area. Lines of 14 characters max at 9 point type will fit.

PD	154							PD′	158
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									П
Me	ssag	e 2				M	essa	ge 3	<u></u>
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### **SPECIFICATIONS**

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

#### General

**Display:** PD8-154: Four red LED channel indicators. PD8-158: Eight red LED channel indicators. One green LED power indicator.

Alarm Messages: Custom printed adhesive clear labels.

**Area:** PD154, 1.25" x .60" (32 mm x 15 mm), 4 messages PD158, 1.25" x .25" (32 mm x 6 mm), 8 messages

User specified size and length, up to 4 lines (PD154) or 2 lines (PD158) of 14 characters of size 9 pt fonts.

**Programming Methods:** Rear 4-position switch for sequence selection and horn operation. Three SafeTouch through-glass buttons for NO/NC input selection, sequence option, and operation when cover is installed. Three internal pushbuttons when cover is removed.

**Audible Alarm:** 85 dB internal horn. The use of an external explosion-proof horn is recommended due to the internal horn's audibility being dampened by the explosion-proof enclosure.

**Noise Filter:** 40 ms debounce on inputs and external push buttons.

**Shared First-Out Systems:** 1 ms unit-to-unit delay. Maximum of 200 units in the shared first-out system.

**Non-Volatile Memory:** All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost.

**Power Options:** 85-265 VAC, 50/60 Hz; 90-265 VDC, 20 W max; or 12-36 VDC, 12-24 VAC, 6 W max.

**Fuse:** Required external fuse: UL Recognized, 5 A max, slow blow. Up to 6 annunciators may share one 5 A fuse

Isolated Power Supply: 24 VDC  $\pm$  10% @ 200 mA max Standard on 85-265 VAC powered units only.

**Isolation:** 4 kV input/output-to-power line.

Overvoltage Category: Installation Overvoltage Category II: Local level with smaller transient overvoltages than Installation Overvoltage Category III.

#### **Environmental:**

T6 Class operating temperature range Ta = -40 to 60°C T5 Class operating temperature range Ta = -40 to 65°C

**Connections:** Removable screw terminal blocks accept 12 to 22 AWG wire.

**Enclosure:** Explosion-proof die cast aluminum with glass window, corrosion resistant epoxy coating, color: blue. NEMA 4X, 7, & 9, IP68. Default conduit connections: Four ¾" NPT threaded conduit openings and two ¾" NPT metal conduit plugs with 12 mm hex key fitting installed. Additional conduit opening configurations may be available; verify quantity and sizes on specific device labeling during installation.

**Mounting:** Four slotted flanges for wall mounting or NPS 1½" to 2½" or DN 40 to 65 mm pipe mounting.

**Dimensions:** 6.42" x 7.97" x 8.47" (W x H x D) (163 mm x 202 mm x 215 mm)

Weight: 16.0 lbs (7.26 kg)
Warranty: 3 years parts & labor

USB Connection: Compatibility: USB 2.0 Standard, Compliant

Connector Type: Micro-B receptacle Cable: USB A Male to Micro-B Cable

Driver: Windows 98/SE, ME, 2000, Server 2003/2008, XP 32/64-Bit, Vista 32/64-Bit, Windows 7 32/64-Bit, Windows 10 32/64-Bit

Power: USB Port

wledged. Relay 2: Alarm state if any channel indicating alarm.

# PD8-154/PD8-158 ProtEX-MAX™ Explosion-Proof Annunciators

### **Inputs**

Input Types: NO or NC switches: No external excitation required. Open collector transistor (NPN): Open circuit voltage approx. 3.3 VDC. Logic Levels: LOW = 0 to 0.9 VDC, HIGH = 2.4 to 28 VDC **Update Rate:** 41 ms following alarm state; 1 ms for alarm state

Sequences: Input follower, ISA Sequences A, F1A, F2A, F3A, M, F1M, and F3M per ISA Standard ISA-18.1-1979 R2004. Sequence Options: A, F1A, F2A, F3A, M, F1M, F2M, and input follower with selectable options -1 (silence pushbutton), -4 (no lockin), and -6 (no horn) per ISA Standard ISA-18.1-1979 R2004.

### Relays

Rating: 2 SPDT (Form C); rated 3 A @ 30 VDC or 3 A @ 250 VAC resistive load; 1/14 HP @ 125/250 VAC for inductive loads. **Electrical Noise Suppression:** A suppressor (snubber)should be connected to each relay contact switching inductive loads to prevent disruption to the microprocessor's operation. Recommended suppressor value: 0.01  $\mu$ F/470  $\Omega$ , 250 VAC (PDX6901). Relay Operation: Relay 1: Alarm state until alarm is acknowledged. Relay 2: Alarm state if any channel indicating alarm condition. Fail-Safe Operation: Programmable independent for each relay. Note: In fail-safe mode, relay coil is energized in non-alarm condition. In case of power failure, relay will go to alarm state.

# **Product Ratings and Approvals**

FM: Type 4X; IP66

Class I, Division 1, Groups B, C, D

Class II, Division 1, Groups E, F, G

Class III, Division 1, T5/T6

Class I, Zone 1, AEx d, IIC Gb T5/T6

Zone 21. AEx tb IIIC T90°C: Ta -40°C to +65°C

T6 Ta =  $-40^{\circ}$ C to  $+60^{\circ}$ C: T5 Ta =  $-40^{\circ}$ C to  $+65^{\circ}$ C

Certificate Number: 3047283

CSA: Class I, Division 1, Groups B, C, D

Class II, Division 1, Groups E, F, G

Class III, Division 1

Class I Zone 1 Ex d IIC

Zone 21 Ex tb IIIC T90°C

-40°C < Tamb. < +60° C; Temperature Code T6

-40°C < Tamb. < +65° C; Temperature Code T5

Enclosure Type 4X & IP66 Certificate Number: 2531731

ATEX: II 2 G D

Ex d IIC T\* Gb

Ex tb IIIC T90°C Db IP68

Ta = -40°C to +\*°C

\*T6 = -40°C to +60°C

\*T5 = -40°C to +65°C

Certificate number: Sira 12ATEX1182

IECEx: Ex d IIC T\* Gb

Ex tb IIIC T90°C Db IP68

Ta = -40°C to +\*°C

 $*T6 = -40^{\circ}C \text{ to } +60^{\circ}C$ 

\*T5 = -40°C to +65°C

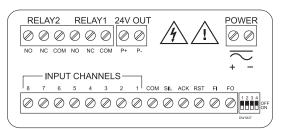
Certificate Number: IECEx SIR 12.0073

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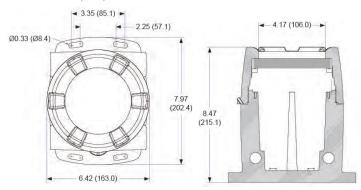
### CONNECTIONS

PD158 connections for 85-265 VAC powered model.



### **DIMENSIONS**

Units: Inches (mm)



### ORDERING INFORMATION

PROTEX-MAX™ PD8-154 and PD8-158 Models				
85-265 VAC Model	12-36 VDC Model	Description		
PD8-154-6R2-1	PD8-154-7R2-0	4-Point Annunciator		
PD8-158-7R2-0	PD8-158-7R2-0	8-Point Annunciator		

WARNING - Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Accessories				
Model	Description			
PDAPLUG75	3/4" NPT 316 Stainless Steel Stopping Plug with Approvals			
PDA7485-I	RS-232 to RS-422/485 Isolated Converter			
PDA8485-I	USB to RS-422/485 Isolated Converter			
PDA6846	Pipe Mounting Kit Zinc Plated (Requires 2)			
PDA6846-SS	Pipe Mounting Kit Stainless Steel (Requires 2)			

# Your Local Distributor is:

LDS8-158\_C 12/18

