PD8-154/PD8-158

ProtEX-MAX™ Explosion-Proof Alarm Annunciators

ProtEX™ MAX

90° Rotatable Display

SAFE TOUCH®

Model PD8-154 / 4-Point

Model PD8-158 / 8-Point

FM APPROVED · CSA · Ex · CE · IECEx

DUAL-INPUT
PROCESS

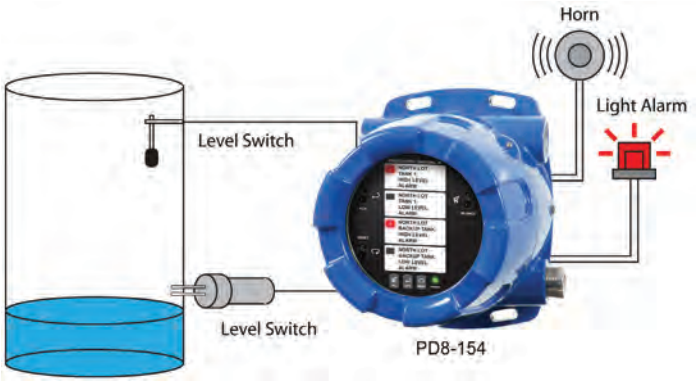
- Modern, Sleek and Practical Enclosure
- Display Mountable at 0°, 90°, 180°, & 270° Degrees
- Explosion-Proof, IP68, NEMA 4X Enclosure
- Vigilante® II Functionality
- SafeTouch® Through-Glass Button Programming
- Sunlight Readable Displays
- 8 Field Selectable Sequences
- All Common ISA Sequences Including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

PRECISION DIGITAL

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™ 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™ 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	LED		Horn
	1st Pt	Next Pt	
Normal	Off	Off	Off
Alert	Flash	Steady	On
Normal	Flash	Steady	On
User Acknowledged			
Ack	Off	Off	Off

Maintained Alarm

Condition	LED		Horn
	1st Pt	Next Pt	
Normal	Off	Off	Off
Alert	Flash	Steady	On
User Acknowledged			
Ack	Steady	Steady	Off
Normal	Off	Off	Off

FRONT PANEL

Button			
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.

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 _____

Fax _____

E-Mail _____

PO# _____

Area available per message: PD154, 1.25" x 0.60" (32 mm x 15 mm); PD158, 1.25" x 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.

PD154 PD158

Message 1 Message 1 & 2

Message 2 Message 3 & 4

Message 3 Message 5 & 6

Message 4 Message 7 & 8

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 ± 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.

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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 clear.
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 lock-in), and -6 (no horn) per ISA Standard ISA-18.1-1979 R2004.

Relays

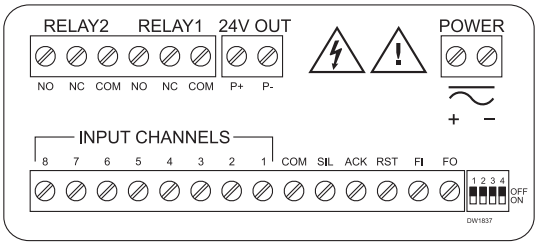
Rating: 2 SPDT (Form C); rated 3 A @ 30 VDC or 3 A @ 250 VAC resistive load; 1/14 HP @ 125/250 VAC for inductive loads.
Electrical Noise Suppression: A suppressor (snubber)should be connected to each relay contact switching inductive loads to prevent disruption to the microprocessor's operation. Recommended suppressor value: 0.01 µF/470 Ω, 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°C to +60°C; T5 Ta = -40°C to +65°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°C to +60°C
*T5 = -40°C to +65°C
Certificate Number: IECEx SIR 12.0073

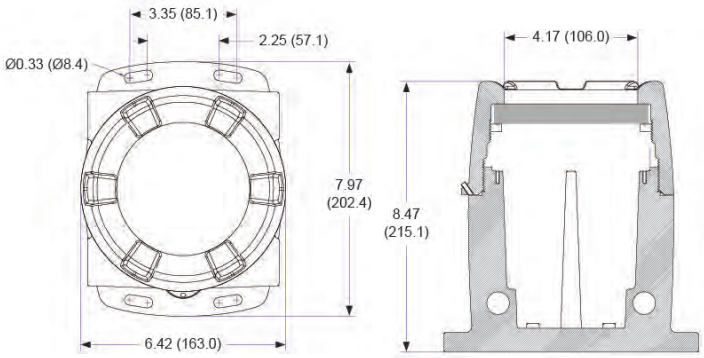
CONNECTIONS

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