

July 1988

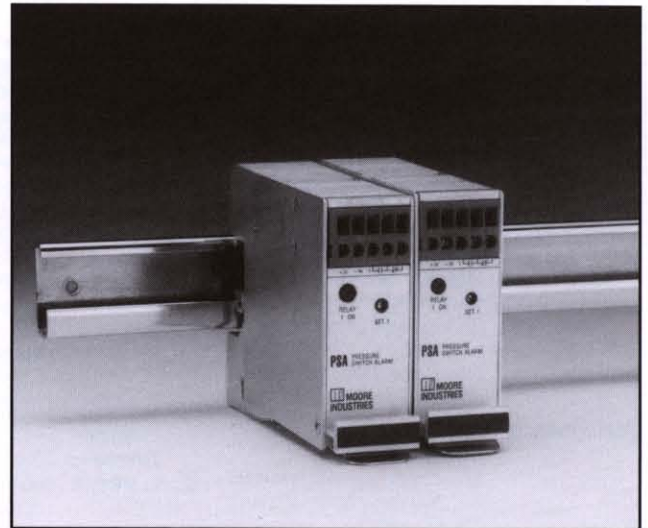
Data Sheet 5.40

## Description

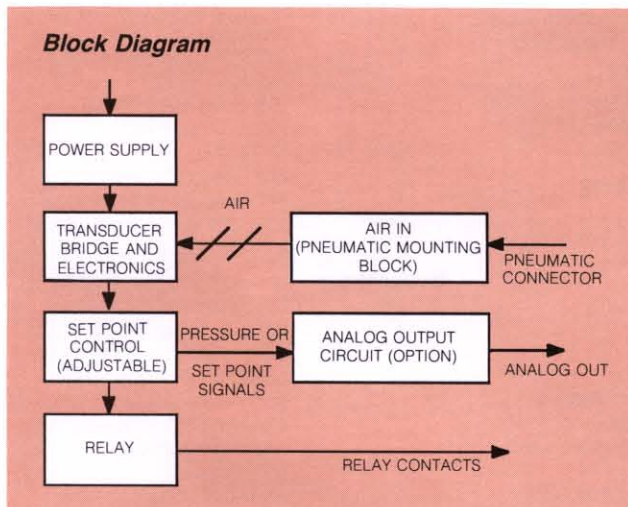
The PSA is a pressure alarm, which provides a contact closure in response to pressure. When the pressure falls outside a preset limit, the PSA activates a relay and an LED on the front panel is illuminated. The unit can be configured to turn a relay on or off if the pressure drops below or exceeds the set point value.

An optional second (dual) relay can be set to the same specifications or be completely independent.

A jumper selectable fail-safe mode de-energizes the relay when the alarm activates or when power is lost to the unit.



The PSA pressure alarm can be easily mounted on a DIN-rail.



## Ordering Information

To construct the correct model number required to order a specific unit, use the appropriate bold face data from the specification table. See model number example.

## Installation

- 1 To install PSA on mounting block or header simply push unit into place until retaining lever snaps up flush beneath handle. To remove, press down on retaining lever and lift by handle.
- 2 Check valve in mounting block prevents the loss of pressure signal during installation or removal of PSAs.

## Features

- **Solid-state.** A solid-state transducer for high accuracy, repeatability and immunity to vibration.
- **Multiple ranges.** The unit can be ordered in various ranges to accommodate various applications.
- **Analog output.** This option provides a 4-20mA or a 1-5Vdc signal proportional to the input pressure or alarm set point(s). Both parameters are field selectable. See table 1.
- **Pneumatic test jack.** The PSA can be equipped with an optional pneumatic test jack to check input pressure.
- **Adjustable deadband.** An optional adjustable deadband prevents unwanted alarms.

# PSA-DIN

Pressure Alarm

## Specifications

<b>Characteristics</b>		<p><b>Line Voltage Effect:</b> Negligible</p> <p><b>Deadband:</b> 1% of span nominal fixed, standard</p> <p><b>Analog Output:</b> <b>Ac Powered Unit</b> Isolated 4-20mA @ 24 volts nominal Maximum loop resistance is 953 ohms.</p> <p><b>Dc Powered Unit</b> 4-20mA (4-45 Volts excitation required)</p> <p><b>Ac or Dc Powered Unit</b> 1-5 Vdc</p> <p><b>Power Supply Requirements</b> Current @ 24Vdc, 50mA nominal. Dc powered units require an external supply voltage for the analog output circuit</p> <p><b>Weight</b> Approximately 10 ounces (283.4 grams)</p>	<p><b>SAL2</b> Turns relay OFF</p> <p><b>Solid State Relays (Dc):</b> <b>SDH1</b> Solid state dc relay, high alarm, turns relay ON <b>SDH2</b> Turns relay OFF <b>SDL1</b> Solid state dc relay, low alarm, turns relay ON <b>SDL2</b> Turns relay OFF</p> <p><b>Power</b> <b>24DC</b> 24Vdc, ±10% <b>117AC</b> 117Vac, ±10% <b>220AC</b> 220Vac, ±10% <b>240AC</b> 240Vac, ±10%</p> <p><b>Options</b> <b>-AD</b> Adjustable deadband, 1-20%* <b>-AO</b> Analog output. See table 1. <b>-P</b> Single-turn knob set-point potentiometer <b>-RTB</b> Removable terminal block <b>-SR</b> Solid state relays, rated 3A @ 60Vdc or 240Vac <b>-TJ</b> Pneumatic test jack <b>-TT</b> Precision 10-turn lockable dial with vernier scale**</p>
<p><b>Front Panel Adjustments</b> <b>Trip Points:</b> Multiturn adjustment over a range of 0-100% of span. <b>Panel Connections:</b> Power supply Relay contacts (NO/NC standard) <b>Internal Selection (Jumpers):</b> Alarm actuates on increase or decrease in pressure. Alarm condition energizes or de-energizes relay.</p> <p><b>Performance</b> <b>Mechanical Relay Contact Rating:</b> 6A, 28Vdc (resistive load) 6A, 300Vac (resistive load) 1/8HP, 120Vac 1/8HP, 240Vac <b>Calibration Capability:</b> 20-turn trim pot ±0.5% of full scale Single-turn potentiometer ±3% of full scale 10-turn vernier potentiometer ±1% of full scale Analog output version ±0.5% of full scale <b>Repeatability:</b> 0.2% of span <b>Ambient Temperature Effects:</b> 0 to 50°C (32-122°F) Span 1.5% of full scale Zero 2.0% of full scale <b>Operating Temperature Range:</b> -18 to 82°C (0-180°F) <b>Proof Pressure:</b> 150% of range <b>Wetted Parts:</b> Aluminum port, chrome steel check ball, Buna-N o-ring and ceramic transducer.</p>	<p><b>Ordering Specifications</b></p> <p><b>Unit Input</b> <b>PSA</b> <b>0-5PSI</b> <b>0-15PSI</b> <b>0-30PSI</b> <b>0-50PSI</b> <b>0-100PSI</b></p> <p><b>Output</b> <b>Mechanical Relays:</b> <b>MH1</b> Mechanical SPDT relay, high alarm, turns relay ON <b>MH2</b> Turns relay OFF <b>ML1</b> Mechanical SPDT relay, low alarm, turns relay ON <b>ML2</b> Turns relay OFF</p> <p><b>Solid State Relays (Ac):</b> <b>SAH1</b> Solid state ac relay, high alarm, turns relay ON <b>SAH2</b> Turns relay OFF <b>SAL1</b> Solid state ac relay, low alarm, turns relay ON</p>		

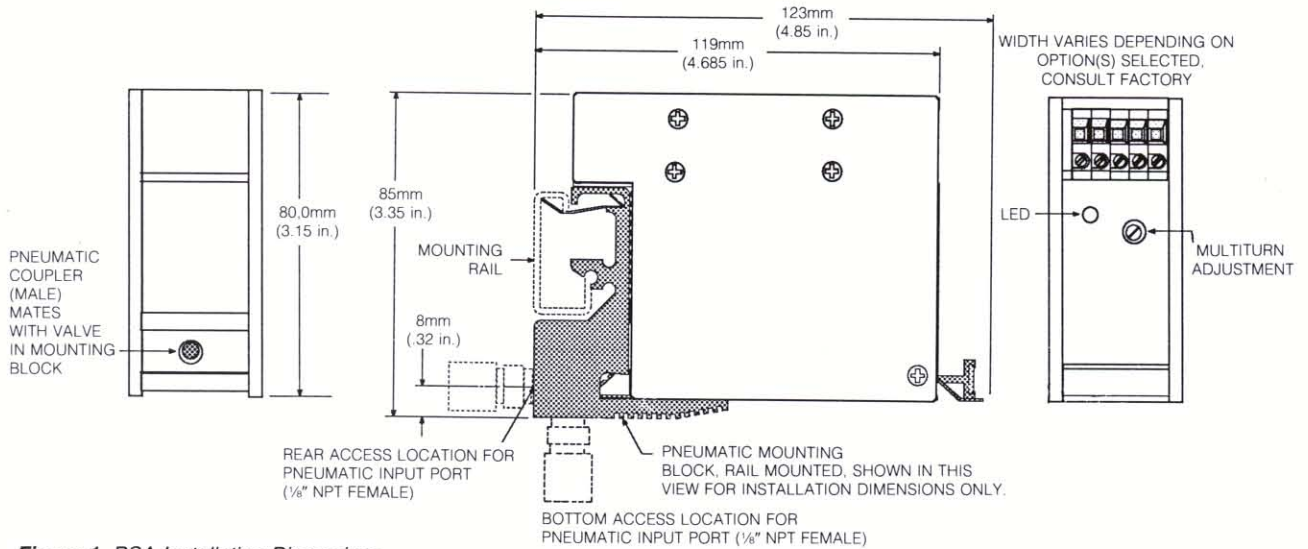
**When ordering, specify:**

Unit Type / Input / Output / Power / Options, Access Designations [Housing]

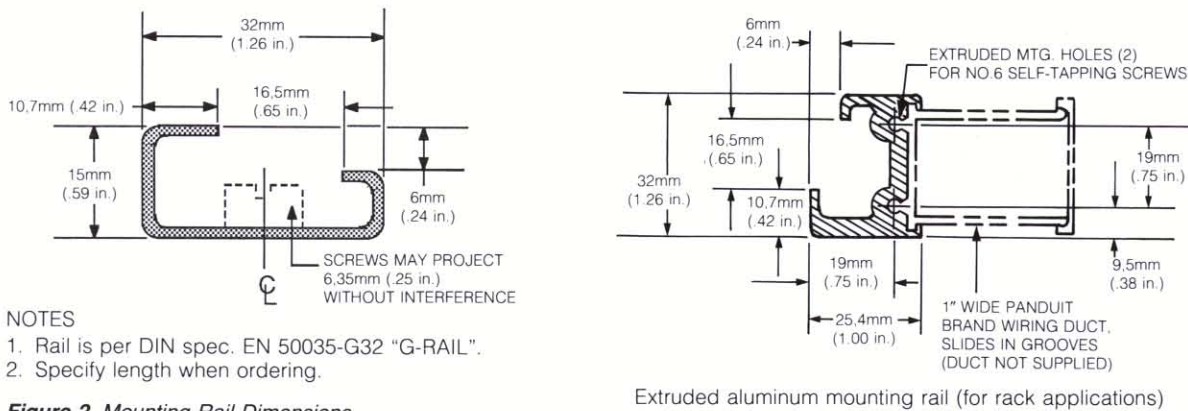
**Model number example:**

PSA / 0-15PSI / ML2,SAH1 / 117AC / -AO1 -FA1 [DIN]

\*Applies to both relays.  
\*\*Not available on ac units.



**Figure 1. PSA Installation Dimensions**



**NOTES**

1. Rail is per DIN spec. EN 50035-G32 "G-RAIL".
2. Specify length when ordering.

**Figure 2. Mounting Rail Dimensions**

**Table 1. Analog Output Options**

CODE	4-20mA	* Jumper Select	* Switch Select	Set Point 1	Set Point 2	Process Variable
A01	X	X		X		
A02	X	X			X	
A03	X	X				X
A04	X		X	X		
A05	X		X		X	
A06	X		X			X
A07		X		X		
A08		X			X	
A09		X				X
A10			X	X		
A11			X		X	
A12			X			X

\* Units may be ordered as jumper selectable (internal) or switch selectable (front panel) for analog output.

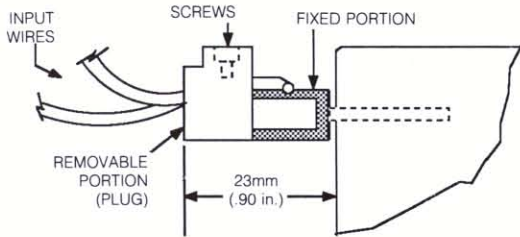
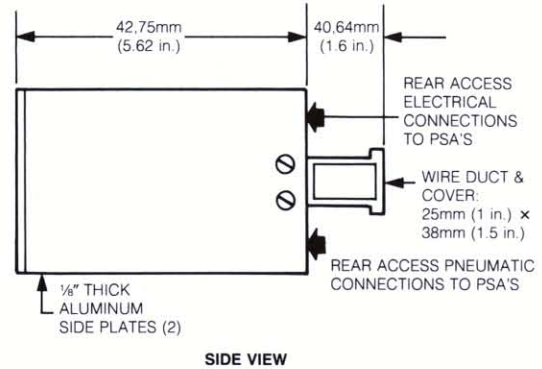
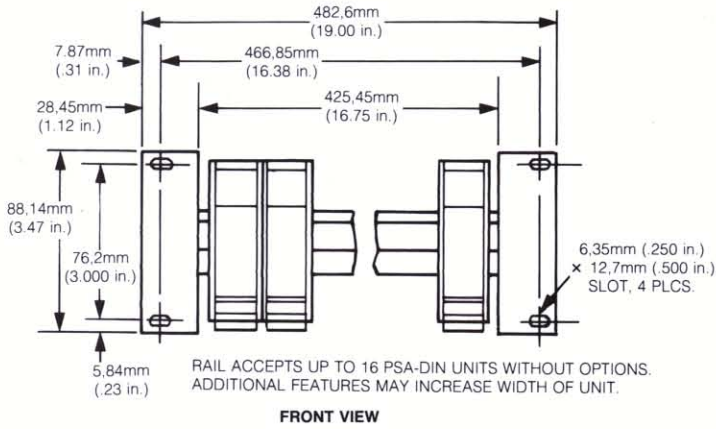
**Table 2. Access Designations**

Power Supply & Relay Contact* Terminal Location	Pneumatic Input Location	
Front	Bottom	-FA1
Front	Rear	-FA2
Front	(no mounting block)	-FA7
Rear	Bottom	-RA1
Rear	Rear	-RA2
Rear	(no mounting block)	-RA7

\*Optional pressure test jack has the same location as terminals.

# PSA-DIN

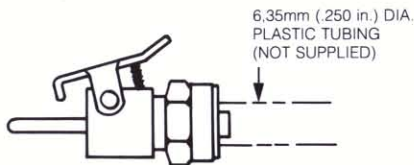
## Pressure Alarm



### NOTES

1. The RTB option adds a 2-piece wire connector to the PSA. This allows the input wiring to be unplugged without the use of tools, while maintaining polarity.
2. Plug has screw-clamp connections and accepts 22-14 AWG wire. Strip wire 12,7mm (.50 in.).

Figure 3. Removable Terminal Block Connections



Pneumatic test coupler  
 (used with pneumatic test jack option)



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