

54S Differential Air Pressure Sensor

INTRODUCTION

Better airflow insight.

Better system performance.

The 54S is a factory-calibrated differential pressure sensor built for HVAC and data center applications. It delivers accurate, reliable pressure data to help you maintain proper airflow, optimize energy use, and reduce maintenance so your systems run efficiently and critical environment stay protected.



**Optimized
Airflow**



**Reduced
Downtime**



**Lower
Energy Costs**



**Reliable Critical
Environments**

TYPICAL APPLICATIONS



Air handling units (AHUs) for airflow and pressure control.



Filter monitoring (HVAC, cleanroom, and data center systems)



Fan and airflow control (fans, blowers, and ventilation systems)



Duct pressure monitoring (supply and exhaust systems)



Room pressure control (cleanrooms and containment environments)



Data center airflow and containment management (hot/cold aisle, underfloor pressure)

KEY FEATURES

- Factory-configured pressure ranges (uni- or bi-directional)
- Multiple output options
- Field zero pushbutton
- LED status indication
- Fail-low output on detected fault (3.6 mA)
- Reverse polarity and miswire survivability
- Designed for industrial indoor environments

ORDERING MATRIX			
Model	Pressure Range	Output Signal	Input Voltage
54S-DP	Uni-directional Ranges	4 - 20 mA	DC - 12 - 36 VDC
	RB10WC - 1.00 inH ₂ O (0.036 psi)	0 - 5 VDC	AC - 24VAC
	RB20WC - 2.00 inH ₂ O (0.072 psi)	0-10 VDC	
	RB40WC - 4.00 inH ₂ O (0.145 psi)		
	RB50WC - 5.00 inH ₂ O (0.181 psi)		
	RB100WC - 10.00 inH ₂ O (0.361 psi)		
	RB200WC - 20.00 inH ₂ O (0.723 psi)		
	RB300WC - 30.00 inH ₂ O (1.084 psi)		
	Bi-directional Ranges		
	RB050WC - ±0.50 inH ₂ O (±0.018 psi)		
	RU10WC - ±1.00 inH ₂ O (±0.036 psi)		
	RU20WC - ±2.00 inH ₂ O (±0.072 psi)		
	RU40WC - ±4.00 inH ₂ O (±0.145 psi)		
	RU50WC - ±5.00 inH ₂ O (±0.181 psi)		
	RU100WC - ±10.00 inH ₂ O (±0.361 psi)		
	RU200WC - ±20.00 inH ₂ O (±0.723 psi)		
	RU300WC - ±30.00 inH ₂ O (±1.084 psi)		

Notes:
 Pressure range is factory configured and calibrated.

Native sensor range is selected to closely match the ordered pressure range.
 Custom ranges available upon request.



MEASUREMENT PERFORMANCE

Accuracy:	±1.0% at room temperature, as a percentage of full-scale span (FSS) and includes non-linearity, hysteresis, and repeatability.
Output update rate:	0.5 seconds
Response time:	≤ 2.0 seconds (T90)
Output behavior:	Linear with pressure

ELECTRICAL SPECIFICATIONS

Supply Voltage	12–36 VDC (24 VDC nominal)
Wiring	3-WIRE (V+, I _{OUT} , GND)
Output Signal	4–20 mA active
Fault Output	3.6 mA (fail-low)
Loop Load	500 Ω @ 24 VDC nominal
Reverse Polarity	Protected
Miswire Tolerance	Survives short to GND or V+

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	0 – 85°C (32°F - 185°F)
Accuracy Specified Temperature	0 – 50°C (32°F - 122°F)
Operating Humidity	10 – 95%RH, non-condensing
Media Compatibility	Clean, dry, non-condensing gases

Notes:
Extended operating temperature and humidity available as optional configurations.

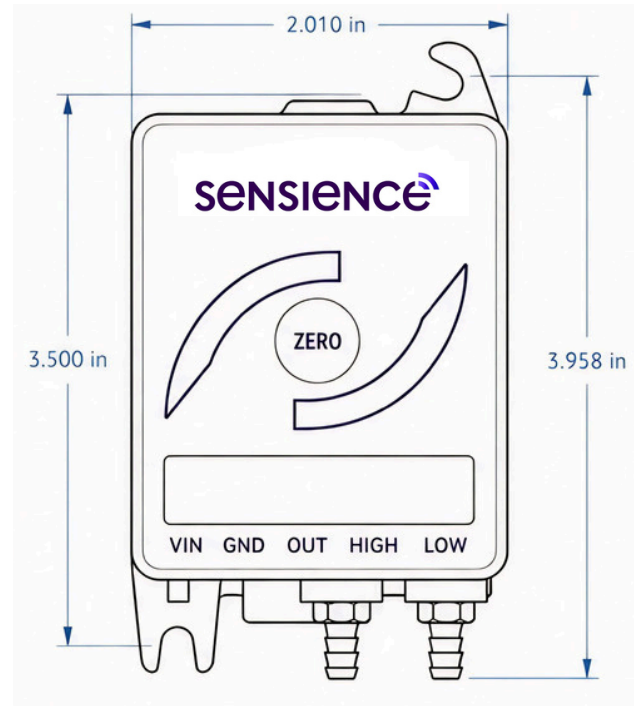


Dual pressure ports (3 mm tubing)

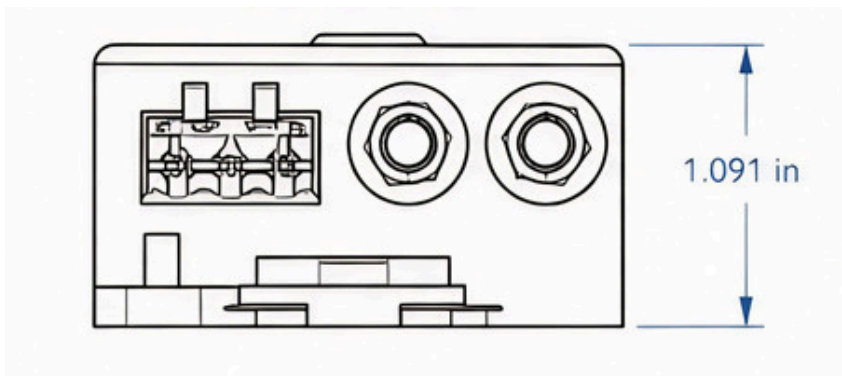
Enclosure-mounted zero pushbutton

Single LED status indicator

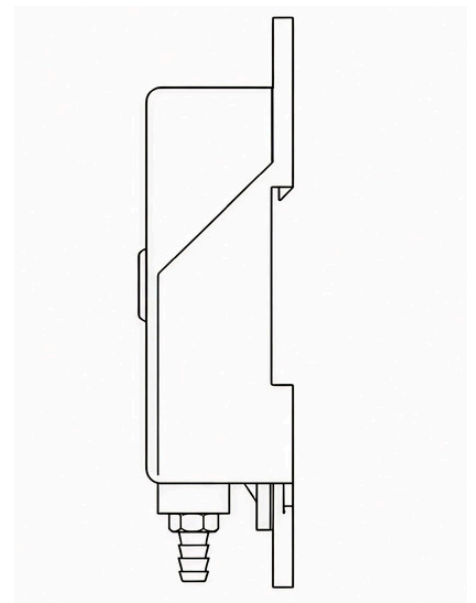
Intended for DIN rail or wall mounting



FRONT VIEW



BOTTOM VIEW



SIDE VIEW

FIELD ZERO

A pushbutton zero function allows the user to compensate for installation offset.

Field zero adjusts offset only and does not modify factory span calibration.

Zero capture is accepted only when conditions are appropriate.

LED STATUS INDICATION

LED Pattern	Meaning
Heartbeat (1 blink / 2 seconds)	Normal Operation
Fast Blink	Fault Condition
Fast Blink + Code	Fault Category
Slow Blink	Zeroing in Progress
Triple Blink	Zero Successful
Long Blink	Zero Rejected

REGULATORY & ENVIRONMENTAL COMPLIANCE

CE / EMC: 2014/30/EU;
EN IEC 61326-1:2021; EN IEC 61326-2-3:2021

RoHS / REACH: 2011/65/EU, as amended; SVHC declaration available upon request

Conflict Minerals: Declaration available

Housing: UL 94 5VA rated

NOTES & DISCLAIMERS

Not intended for safety - critical control applications.

Performance specifications apply to the ordered pressure range.

Specifications subject to change without notice.

ABOUT US

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