



MICROTRANS DIFFERENTIAL PRESSURE AND AIRFLOW SIGNAL PROCESSOR

DESCRIPTION

Paragon Controls Incorporated has just raised the bar in differential pressure and airflow measurement accuracy. The **MicroTrans** signal processor utilizes current state-of-the-art digital microprocessor technology capable of producing overall $\pm 0.1\%$ accuracy with unequaled 20-bit (1,048,576 steps) A/D and 12 bit (4,096 steps) D/A signal conversion resolution. Having an eleven-point linearization capability, the **MicroTrans** can accurately determine true airflow rates even when the primary airflow measurement stations do not meet their minimum installation requirements.

The ultra low 0.04" water column differential pressure, eight hundred feet per minute full scale operating ranges and the auto zeroing function of the **MicroTrans** allows for accurate airflow measurement down to one hundred feet per minute.

Accepts temperature input signal for air temperature indication, temp signal transmission for remote readout and air density compensation for standard or actual airflow calculations.

Password protected user menu provides quick and simple field configuration by authorized personnel. Field configuration of engineering units, process noise filtering, operating span, alarm set points, etc, is performed via user friendly menus and a six button touch pad.

Features

- $\pm 0.25\%$ full scale accuracy (standard)
 $\pm 0.10\%$ full scale accuracy (optional)
- Full scale ranges as low as 0.04 inches of water differential pressure and 800 feet per minute
- Excellent AD/DA resolution:
20 bit (1,048,576 steps) A/D
12 bit (4,096 steps) D/A
- Eleven point linearization capability
- Large back lit LCD for configuration and local indication of the measured process
- Simple field configuration menus
- Controlled access to configuration menus
- Capable of receiving external temperature input for standard air calculations
- Outputs and displays measured value in inches WC DP, SCFM, and ACFM
- Field configurable for either English or SI engineering units
- Auto zeroing function (optional)
- High and low airflow alarms (optional)
- Remote alarm (optional)
- NEMA 12 rated enclosure (standard)
NEMA 4 rated enclosure (optional)

MicroTrans Specifications

Signal Processor

1. Transducer Natural Spans

Unipolar	Bipolar
0 to 0.10"w.c.	±0.05"w.c.
0 to 0.25"w.c.	±0.10"w.c.
0 to 0.50"w.c.	±0.25"w.c.
0 to 1.00"w.c.	±0.50"w.c.
0 to 2.00"w.c.	±1.00"w.c.
0 to 3.00"w.c.	±2.50"w.c.
0 to 5.00"w.c.	±5.00"w.c.
0 to 10.0"w.c.	±10.0"w.c.
0 to 15.0"w.c.	±25.0"w.c.
0 to 25.0"w.c.	
0 to 50.0"w.c.	

2. Accuracy

0.25% of full scale (standard)
0.10% of full scale (optional),
including non-linearity, hysteresis,
deadband and non-repeatability

3. Operating Range

The operating range can be
selected between 40% and 110%
of transducer natural span

4. Transducer Response Time

0.5 seconds to reach 98% of a
step change

5. Temperature Effect

Zero: 0.025% of transducer full span
per °F (with auto zero option there is
no zero effect with temperature)
Span: 0.025% of transducer full
span per °F

6. Temperature Limits

Operating: (32 to 122°F)
Optional: 32 to 158°
Storage: (-20 to 158°F)

7. Overpressure Limits

Proof Pressure: 5 psid
Burst Pressure: 25 psid

8. Humidity Limits

0 to 95% RH, non-condensing

9. Mounting Position Effect

Below 0.5"w.c.: 0.25% full scale
Above 0.5"w.c.: 0.10% full scale

10. Span and Zero Adjustments

Performed by internally mounted
push buttons

11. Auto Zero Option

Accuracy: within 0.10% of operating span
Frequency: every 1 to 24 hours on 1
hour intervals

12. Display Low Pass Filter

Response time to reach 98% of a step
change is adjustable in 10 increments
from 0.50 to 100 seconds

13. Output Low Pass Filter

Response time to reach 98% of a step
change is adjustable in 10 increments
from 0.50 to 100seconds

14. Programmable Constants

When an external temperature signal is
unavailable, temperature and
barometric pressure can be entered
as constants

Indication

15. Display

A backlit, graphical LCD providing
8 lines of data display. Also used
for programming

Inputs/Outputs

16. Analog Inputs

0 to 10 VDC or 4 to 20 mA 2-wire
internally or externally loop powered
temperature signal

17. Analog Outputs

Jumper selectable 0 to 10 VDC, 0 to
5 VDC, or 4-20 mA process signal
(optional jumper selectable 0 to 10
VDC, 0 to 5 VDC, or 4 to 20 mA
temperature signal)

18. Digital Inputs

Digital contact for display and
process output hold during a high
pressure purge cycle

19. Digital Outputs

Remote Alarm: single (1 form C) dry
contacts rated for 2 amps at
30 VAC/DC and 0.6 amps at
120 VAC/110 VDC resistive load
Optional Hi/Lo Alarm: two single
(1 form C) dry contacts rated for 2
amps at 30 VAC/DC and 0.6 amps at
120 VAC/110 VDC resistive load

Power

20. Power Supply

20 to 28 VAC/DC

21. Power Consumption

Standard Unit: 4.6 VA at 24 VAC,
2.7 VA at 24 VDC
Full Options: 10 VA at 24 VAC,
5.5 VA at 28 VDC

22. Circuit Protection

Power input is isolated, reverse
polarity protected and supplied with
a resettable fuse

Enclosure

23. UL & CSA Rating

NEMA 12 (standard)
NEMA 4x (optional)
Material: impact and corrosive
resistant value
Dimensions: 6.65"H x 4.69"W x 2.72"D

Ordering Information

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Options:

AZ = Auto Zero
 TC = Temperature Compensation
 RA = Remote Alarm
 HLA = High/Lo Alarm
 TT = Temperature Transmitter
 N4 = NEMA 4X

Note For multiple options, separate each option code with a dash

Output:

1 = 4-20 mA
 2 = 0-5 VDC
 3 = 0-10 VDC

Full Scale Range:

Low Range		Mid Range		High Range	
<u>Unipolar</u>	<u>Bipolar</u>	<u>Unipolar</u>	<u>Bipolar</u>	<u>Unipolar</u>	<u>Bipolar</u>
L1 = 0.10" wc	L5 = ±0.05" w.c.	M1 = 2.0" wc	M2 = ±1.00" w.c.	H1 = 3.0" wc	H7 = ±2.50" w.c.
L2 = 0.25" wc	L6 = ±0.10" w.c.			H3 = 10.0" wc	H9 = ±10.0" w.c.
L3 = 0.50" wc	L7 = ±0.25" w.c.			H4 = 15.0" wc	H10 = ±25.0" w.c.
L4 = 1.0" wc	L8 = ±0.50" w.c.			H5 = 25.0" wc	
				H6 = 50.0" wc	

Process Type:

1 = Flow
 2 = Velocity
 3 = Pressure

Specification Guide

Electronic Transducers

Airflow Transducers for Operating Velocities Below 1266 feet per minute shall provide the following features:

1. Local electronic indication of the measured airflow rate. The indicating meter shall have a large backlit LCD and shall indicate the measured air volume in engineering units such as W.C., SCFM, ACFM, Etc.
2. Automatic zeroing circuit that shall be capable of maintaining the transducer output to within [0.25%] [0.10%] of operating span, and shall be field configurable for frequency of activation between one and twenty four hours on 1 hour intervals. The transducer output shall be locked and maintained at the last given output value during the automatic zeroing period so as not to interrupt the automatic control process. The meter shall be auto calibrated to an accuracy of ± 1 count.
3. A signal processor utilizes current state-of-the-art digital microprocessor technology producing overall [±0.25%] [±0.10%] accuracy with a minimum of 20-bit (1,048,576 steps) A/D and 12 bit (4,096 steps) D/A signal conversion resolution.
4. Eleven-point linearization capability, and shall accurately determine true airflow rates even when the primary airflow measurement stations do not meet their minimum installation requirements.

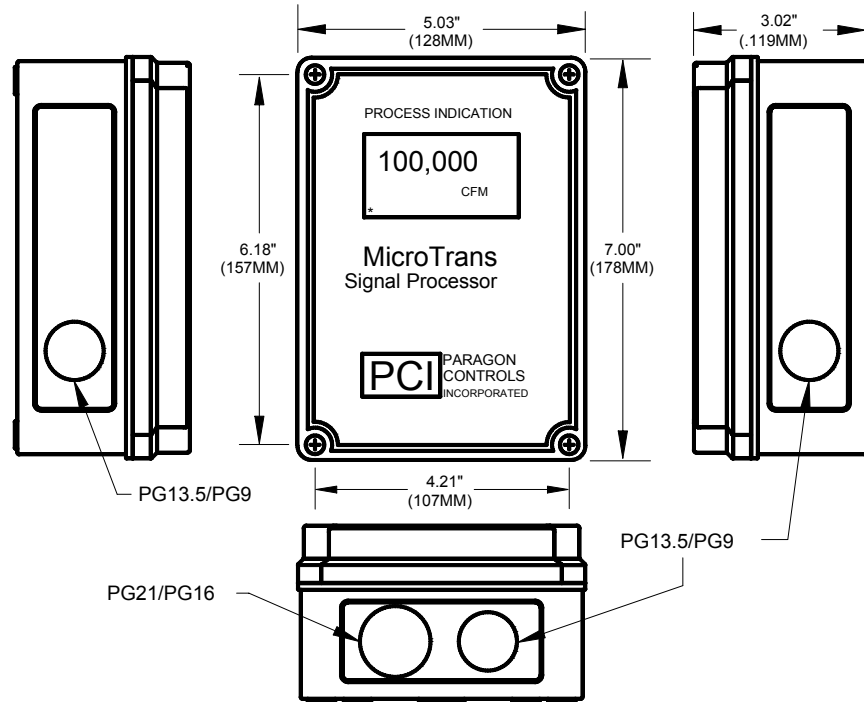
Installation Considerations

1. An identification label shall be placed on each airflow indicating transducer listing the model number, flow elements served, full scale value, and identifying tag number.

Manufacturer

1. Signal processors shall be Paragon Controls Inc. MicroTrans or equal as approved by the Engineer.
2. Naming of a manufacturer does not automatically constitute acceptance of this standard product nor waive the responsibility of the manufacturer to comply totally with all requirements of the proceeding specification.

Dimensions



Field Connections

