

# Air and Gas Pressure Transducers



I-865D

## DESCRIPTION

Low range gage and differential pressure transducers with digital display.

## APPLICATION

Measure gage or differential pressure of air or inert non-conductive gases in VAV, fan-coil, duct systems, and other air conditioning equipment, and transmit to any compatible electronic analog controller, DDC/PLC control or automation system.



certified  
ISO 9001

## FEATURES

- Large digital display
- Signal conditioned
- Temperature compensated
- Long life sensor
- Compact size
- Low power consumption
- Calibrated, traceable to NIST
- High overpressure
- Pluggable terminal block

## SPECIFICATIONS

### Electrical

Power supply 24 VDC (18 to 24 VDC);  
24 VAC,  $\pm 15\%$ , 50 to 60 Hz,  
polarity protected

Power consumption 30 mA, max.

### Sensor Performance

Media sensed Air, gases and liquids, limited  
only to media that will not attack  
PPS, PEI, Silicon, Silicon RTV,  
or Fluorosilicone

Sensor element Piezoresistive, with silicon  
diaphragm

Compensation Built-in temperature and signal  
conditioning

- range 50°F to 122°F (10°C to 50°C)

Accuracy  $\pm 1\%$  F.S.O.

incl. non-linearity, hysteresis,  
and non-repeatability at a  
fixed temperature

Stability  $\pm 0.5\%$  F.S.O./yr.

### Thermal effects

- zero  $\pm 0.042\%$  F.S.O./°F

- span  $\pm 0.006\%$  F.S.O./°F

### Adjustment

- zero offset Screw, up to 60% of F.S.O.

Pressure ranges 0-0.5" WC to 0-40 PSI (split  
ranges available), refer to  
ordering information

Overpressure 20 PSI or two times full scale  
pressure, whichever is greater

### Type of Control

General Continuous proportional analog  
sensor signal output

Analog output 4-20 mA, 3-wire,  
1-5 VDC, 1-6 VDC, or 1-10 VDC

### Load requirement

- current output Max loop resistance 250 or 500  $\Omega$   
@ 24 VDC power  
(= wire resistance plus controller  
input resistance)

- voltage output

Min load 2K  $\Omega$

### Digital Display

Type One line liquid crystal display  
"LCD"

Height of digit 0.38" (9.75 mm)

Digit display 3 1/2 (i.e. numbers max:  
1.999, 19.99, 199.9 or 1999)

### Environmental

Permissible ambient

- humidity 0 to 90% RH, non-condensing

- working temperature 32°F to 122°F (0°C to 50°C)

- storage temperature -13°F to 158°F (-25°C to 70°C)

### Physical

Enclosure

- material High impact ABS, UL94-HB  
Black

- color NEMA 1

- protection Surface mounted or  
DIN rail mounted

Dimensions 3.4 x 2.7 x 1.4 in.  
(87 x 68 x 35 mm), with  
mounting flanges

Wire connections Pluggable two-wire screw  
terminal block

Pressure connection

- P1. high port Barbed fittings for 1/8" I.D. tubing

- P2. low port Positive or high pressure

Weight 0.20 lb. (0.09 kg)

Warranty Two years material and  
workmanship

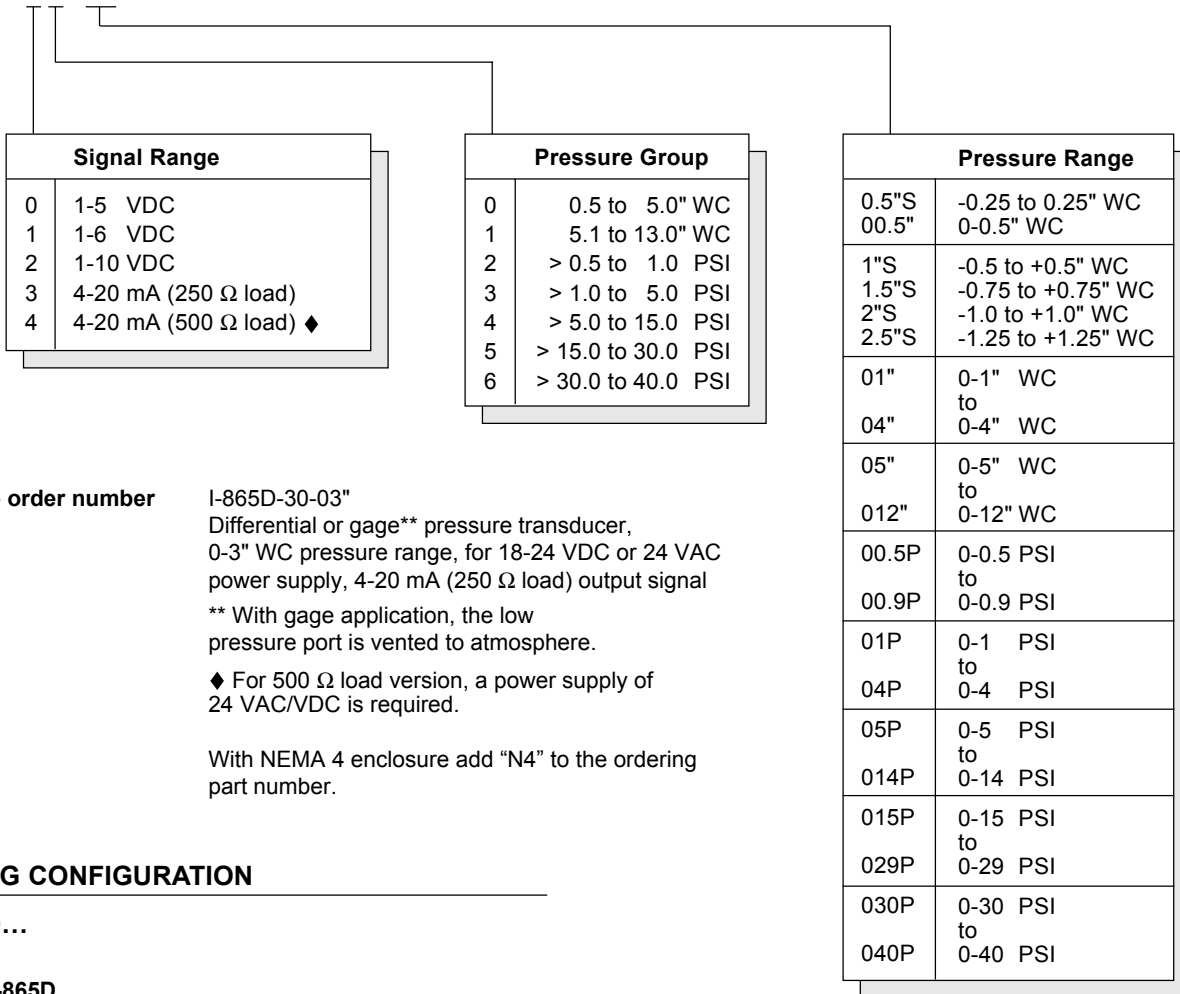
## OPTIONS

N4 NEMA 4 enclosure

D Enclosure w/DIN rail mounting

**ORDERING INFORMATION**

**I-865D - 3 0 - 03"**



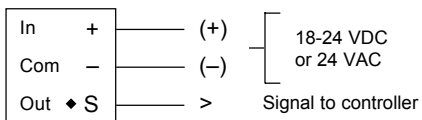
**Sample order number** I-865D-30-03"  
 Differential or gage\*\* pressure transducer, 0-3" WC pressure range, for 18-24 VDC or 24 VAC power supply, 4-20 mA (250 Ω load) output signal  
 \*\* With gage application, the low pressure port is vented to atmosphere.  
 ◆ For 500 Ω load version, a power supply of 24 VAC/VDC is required.  
 With NEMA 4 enclosure add "N4" to the ordering part number.

Custom split ranges are available on request.

**WIRING CONFIGURATION**

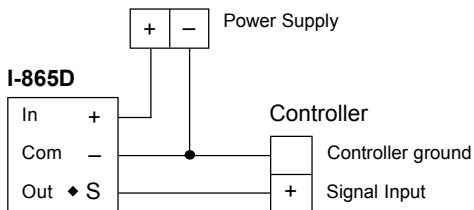
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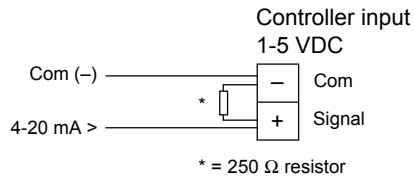


For AC voltage application, transducer must be referenced to controller ground.

**3-Wire to 2-Wire Connection**



Add 250 Ω resistor at controller input to convert transducer signal 4-20 mA to 1-5 VDC.



◆ **CAUTION:** Do not apply voltage to S terminal as permanent damage will occur.