

Installation Instructions for the SURSENSE® Ultra Low Pressure Sensors DRAL5 Series

ISSUE 2

PK 80163

▲WARNING

PERSONAL INJURY

DO NOT USE these products as safety or emergency stop devices, or in any other application where failure of the product could result in personal injury.

Failure to comply with these instructions could result in death or serious injury.

GENERAL INFORMATION

The DRAL5 Series sensors provide a precision calibrated, fixed 5.0 V output with SURSENSE®, a proprietary technology. Each sensor features the precision calibration found in the DCX Series with the addition of fully integrated signal conditioning in an industry-standard package. Capable of operating from a variable supply voltage from 12.0 V to 30.0 V, the DRAL5 gage pressure sensors provide a 1.0 V to 6.0 V output, while the differential versions provide a ± 2.5 V output centered on a 3.50 V zero pressure offset. These highly stable sensors are ideally suited for microprocessor or micro controller-based systems where variable supply voltages are present.

Product is patented by US patent 6023978.

SOLDERING/ASSEMBLY

Limit soldering to 315 °C [600 °F] maximum, with duration of five seconds maximum. Leads must be adequately supported during any forming/shearing operation to ensure that the leads are not stressed inside the plastic case.

ELECTRICAL SPECIFICATIONS

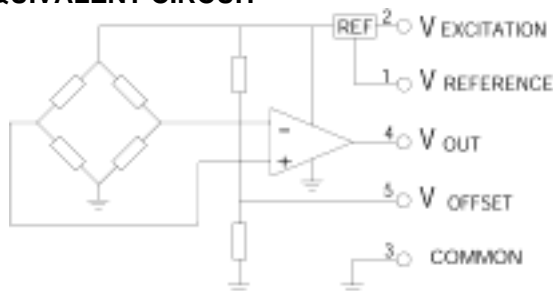
@ 25 °C, 12 VDC (UNLESS OTHERWISE NOTED)

Pressure Range	0 in H ₂ O [0 mBar] to 1 in H ₂ O [2,50 mBar]
	0 in H ₂ O [0 mBar] to 5 in H ₂ O [12,50 mBar]
	0 in H ₂ O [0 mBar] to 10 in H ₂ O [25,0 mBar]
	0 in H ₂ O [0 mBar] to 20 in H ₂ O [50,0 mBar]
	0 in H ₂ O [0 mBar] to 30 in H ₂ O [75,0 mBar]
Excitation	12.0 Vdc min., 30.0 Vdc max.
Offset - Gage	1.0 \pm 0.1 Vdc
Offset – Differential	3.50 \pm 0.1 Vdc
Span – Gage (P2>P1)	5.0 \pm 0.1 Vdc
Span – Differential (P2>P1)	+2.50 \pm 0.1 Vdc
(P1>P2)	-2.50 \pm 0.1 Vdc
Supply Voltage	12 Vdc min., 30 Vdc max.
Supply Current	5 μ A max.
Output Source Current	4 μ A max.
Output Sink Current	4 μ A max.

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-25 °C to 85°C [-13 °F to 185 °F]
Storage Temperature	-40 C° to 125 °C [-40 °F to 257°F]
Hysteresis and Linearity	0.05% Span, Typ.
Media Compatibility	P1 Port (Dry Gases Only): Media must be compatible with epoxy-based adhesive. P2 Port: Media must be compatible with nylon housing, epoxy adhesive and silicon.

EQUIVALENT CIRCUIT



PIN DESIGNATIONS

1. VRef
2. V Excitation
3. Common
4. V Output
5. -V Offset
6. N/C

