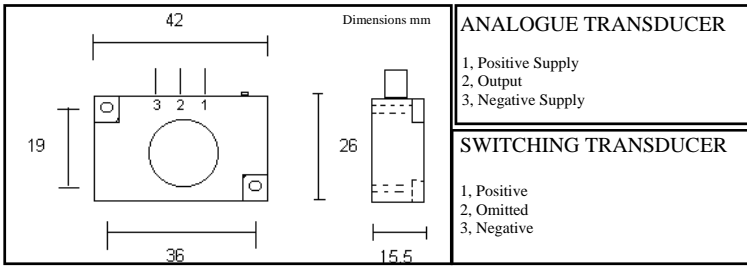


TRANSDUCER DATA SHEET

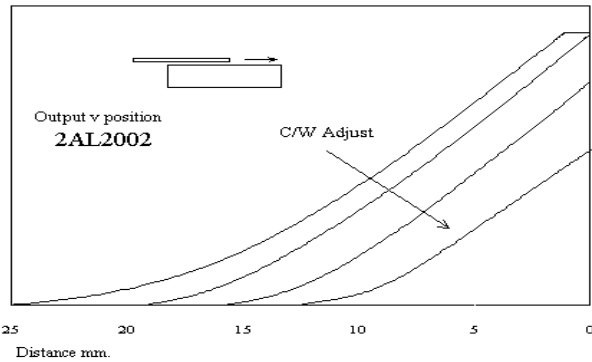


GENERAL SPECIFICATION 2ALXXX series

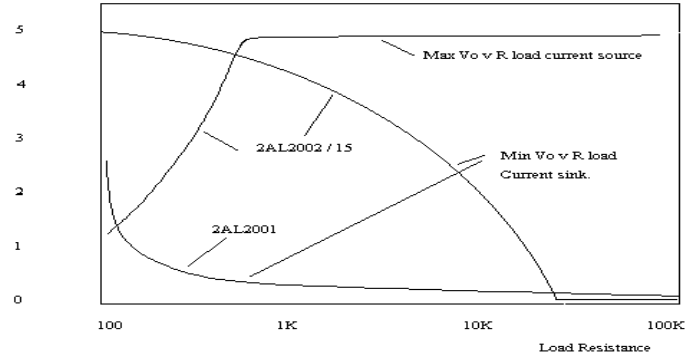
| | |
|------------------------|----------------|
| Temp Coefficient (typ) | 5mv/ °C |
| Storage Temperature | -40 to +125 °C |
| Operating Temperature | -25 to +70 °C |
| Relative Humidity | 100% |

OPERATING CHARACTERISTICS

Typical output with 25x25x1mm piece of aluminum over the 20mm diameter target area, 1mm above the surface.



Maximum and minimum voltage versus Load resistance



| ANALOGUE TRANSDUCERS | | 2AL2001 | 2AL2002 | 2AL2013 | 2AL2015 | UNITS |
|----------------------|---------------------------|----------|------------|------------|------------|--------------|
| (1) | Supply Voltage | 3.5 - 15 | 3.5 - 15 | 7 - 18 | 5 - 6.2 | Volts |
| (2) | Supply Current | 0.75 | 0.85 | 18 Max | 10.0 | Milliamperes |
| | Output Max | Vs-5mv | Vs-5mv | 5 (min) | 5 (min) | Volts |
| | Output Min | 0.6 | 0.005 | 0.1 | 0.005 | Volts |
| | Slope | Positive | Positive | Negative | Positive | |
| (3) | Sink Current Max | 100 | 0.3 | 0.3 | 0.3 | Milliamperes |
| | Source Current Max | 0.33 | 30 | 30 | 30 | Milliamperes |
| | Duration of Short Circuit | n/a | Indefinite | Indefinite | Indefinite | |
| | Operating Range | 0 - 15 | 0 - 15 | 0 - 15 | 0 - 15 | Millimetres |

Note 1, Model 2AL2015 may be supplied from higher voltages provided the current supply is limited to 10mA maximum. $R_s(\text{ohms}) = (V_s - 6.2) / 0.01$

Note 2, Values are at $V_{ss}=5v$ and on no load. When sourcing current the value of the load current will add to the supply current.

Note 3, The sink current on the 2AL2001 must be externally limited to a maximum of 100mA.

Note 4, The duration of short circuit current is indefinite for load supply voltages up to 10 volts. For higher voltages the S/C time must be limited to 5 seconds.

| SWITCHING TRANSDUCERS | | 2AL2101 | 2AL2110 | 2AL2201 | 2AL2210 | UNITS |
|-----------------------|-----------------------------|------------|------------|----------------|----------------|--------------|
| (1) | Switching Type | Voltage | Voltage | Current | Current | |
| | Supply Voltage | 3.5 - 15 | 3.5 - 15 | n/a | n/a | Volts |
| (2) | Supply Current | 0.85 | 0.85 | | | Milliamperes |
| (3) | Sense Response | Increase | Decrease | Increase | Decrease | |
| (4) | Sink Current Max | 100 | 100 | 0.6 | 0.6 | Milliamperes |
| | Source Current Max | 30 | 0.01 | 100 | 100 | Milliamperes |
| | Quiescent Output Voltage | 0.005 | Vs-5mv | Vs-0.006.Rload | 3.5 | Volts |
| | Output Voltage (operated) | Vs-5mv | 0.005 | 3.5 | Vs-0.006.Rload | Volts |
| (5) | Duration of Short Circuit | Indefinite | Indefinite | Indefinite | Indefinite | |
| | Sensing Range | 0 - 15 | 0 - 15 | 0 - 15 | 0 - 15 | Millimetres |

Note 1, Voltage switching types are 3 terminal models and output switches between supply rails. Current switching types are 2 terminal devices and current supply changes at the sensing point.

Note 2, Values are at $V_{ss}=5v$ and on no load. When sourcing current the value of the load current will add to the supply current.

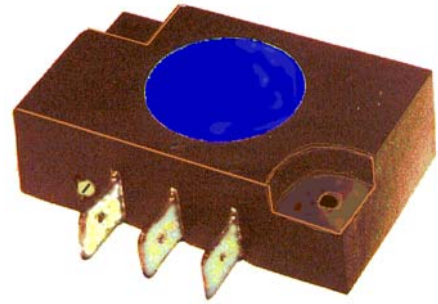
Note 3, The sensing response indicates the change in parameter when the target is sensed.

Note 4, The sink current on 2AL2101 and 2AL2110 must be externally limited to a Max of 100mA.

Note 5, The duration of short circuit current is indefinite for load supply voltages up to 10 volts. For higher voltages the S/C time must be limited to 5 seconds.

PROXIMITY TRANSDUCER

INTRODUCTION



Using a new approach to proximity sensing, the sensor module provides a potentiometric output, varying between the supply rails, depending on the proximity of a section of non-ferrous metal to the target area on the face of the module.

Operation is simply achieved by arranging for a piece of non-ferrous metal to either approach, or pass across, the face of the module as the pedal is depressed.

The Sloan transducer module is of robust construction and is encapsulated using an epoxy resin in a flame retardant case to enable reliable use in harsh environments where wide temperature or humidity ranges can occur.

The flat design makes it suitable for use in positions where access is impossible with other threaded rod type transducers.

Both switching and analogue voltage or current output transducers are available. Versions with supply current of less than 1ma are common and therefore provide a very efficient interface with almost any control system.

As no mechanical connection is made between the “target” and the transducer, no wear takes place, providing, in the case of the analogue transducer, a control method that can last a lifetime.

The very repeatable output allows for positional control of objects of any size to much less than 1mm at an unbelievably competitive price.

APPLICATIONS

Applications range from its use to replace potentiometers, including centre zero types in accelerator units for electric vehicles, position sensors on hydraulic rams, cranes or any situation which requires the sensing of the relative position of two separate objects. The standard transducer operates with only non ferrous, conductive materials or non conductive magnetic materials, so despite being only 15mm thick, it may be assembled directly onto steel plate and detect the presence of Aluminium or Brass plate at a distance of up to 20mm from the transducer target area. They are sensitive to materials of any thickness and can even detect the difference between plated and unplated mild steel.