



NEXSYS® Component Technology

# ARINC 429 MULTI-BIT CONVERTER

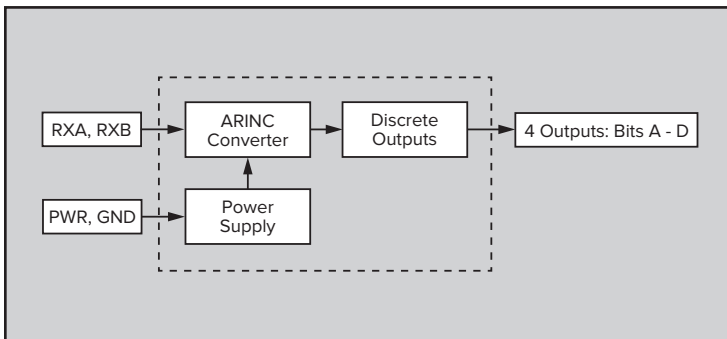


## PRODUCT DESCRIPTION

The ARINC 429 MULTI-BIT CONVERTER from Applied Avionics can convert up to four different bits from a single ARINC 429 data label to discrete outputs. See *Figure 1: Block Diagram*. The polarity of the four outputs is selectable by bit. The ARINC 429 MULTI-BIT CONVERTER is an 8-pin device, expandable to a 12-pin device.

The ARINC converter circuitry inside the ARINC 429 MULTI-BIT CONVERTER includes an internal Health Monitor that can provide a “fail” indication if power to the decoder is lost or upon loss of valid ARINC data input. The Health Monitor has a range of watchdog timings requiring a valid ARINC label to be received within a specified time interval. The Health Monitor signal can be selected as one of the discrete outputs.

**Figure 1: Block Diagram, 4 Bit Discrete Converter**



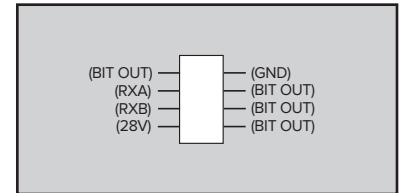
This device is part of our NEXSYS Component Technology and is configurable inside of a VIVISUN switch/annunciator or a NEXSYS Module. When used in a VIVISUN switch/annunciator, the compact size of the converter allows for the inclusion of additional NEXSYS components or electro-mechanical switch poles.

The ARINC 429 MULTI-BIT CONVERTER is designed, tested and qualified to applicable military standards. The ARINC 429 MULTI-BIT CONVERTER also meets the environmental requirements of DO-160.

## CONFIGURATIONS

### 4 Bit Discrete Converter

The ARINC 429 MULTI-BIT CONVERTER is an 8-pin device that converts up to four ARINC 429 data bits to discrete outputs. The polarity of each output (Open when Bit = 1 or Ground when Bit = 1)



can be selected by bit. Bits can be repeated (taking two outputs) in order to get both polarities of the same bit. The internal Health Monitor can also be a selected output, with polarity option (Normal = Ground, Fail = Open or Normal = Open, Fail = Ground).

Additional Options (not shown in *Figure 1: Block Diagram*)

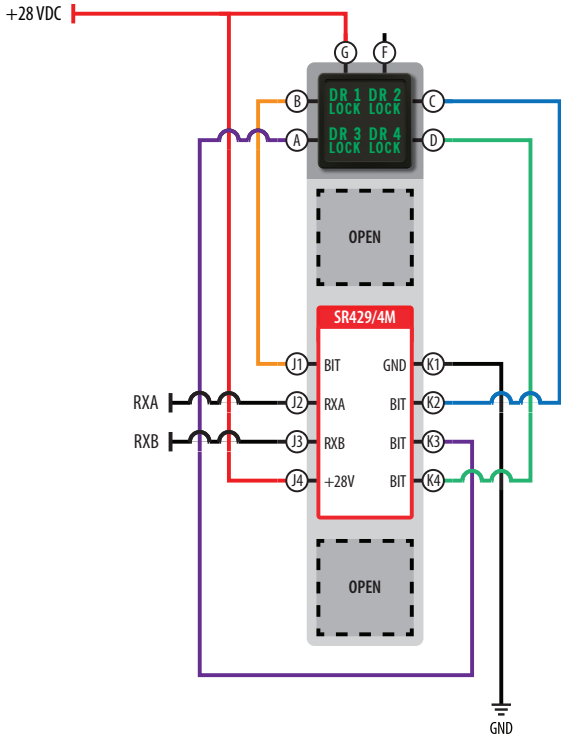
- By increasing to a 12-pin package, the standard and inverted polarities of the four selected bits can be available.
- Also in an expanded 12-pin package, the four discrete bits can be supplemented with a 2 X 4 decode of the two SSM bits (Bits 30 and 31) with polarity options. Additionally, the internal Health Monitor can be used in place of the SSM decode “00.”

## PARAMETRIC TABLE

Description	Parameters	
Operating Parameters		
Operating Voltage (Max./Nom./ Min.)	+32 VDC /+28 VDC/+18 VDC	
Power Supply Input Current	8 mA maximum	
Reset From Power Loss	5 second minimum @ +25°C	
Hold Up On Power Loss	200 ms minimum	
ARINC 429 inputs	Per ARINC 429 specification	
Low Level Output Voltage @ 0.5 A (VOL)	+0.4 VDC typical, +0.6 VDC maximum	
High Level Output Voltage (VOH)	Open Drain +32 VDC maximum pull-up allowed	
Output Load Capacity		
	Per Output	Total All Outputs
Resistive / Inductive	0.5 A maximum	1.5 A maximum
Temperature		
Operating	-55°C to +85°C	
Non-operating	-55°C to +125°C	
Reliability MIL-HDBK-217F, Notice 2		
Airborne Inhabited Cargo (AIC) at +40°C Continuous Operation	MTBF = 103,012 Hrs.	

**Ex. 1: Door Status Indicator**

This application employs the ARINC 429 MULTI-BIT CONVERTER to provide the status of four independent doors using ARINC data. A single ARINC data label may include the status (i.e. Locked = 0, Unlocked = 1) of four different doors on four separate bits within the label. This indicator can take this data and provide illumination to each cap quadrant when the respective door is in the locked condition.



**For more information:**

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