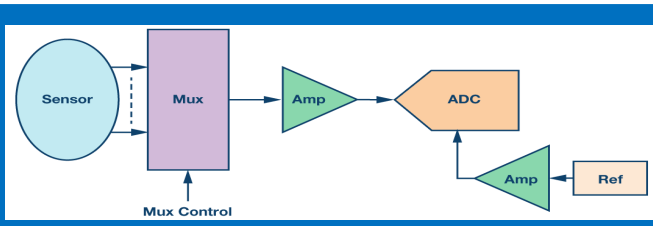
Protec GmbH
High-Rel Electronic Components

SPACE COMPONENTS NEWSLETTER *April 2020*



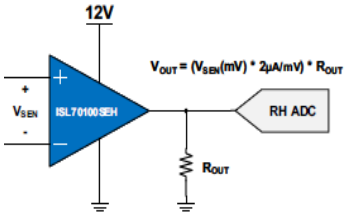
RadHard Components from Intersil / Renesas for Data Acquisition and Housekeeping

Temperature Sensor

The **ISL71590SEH** is a radiation-hardened two-terminal temperature transducer. It has a high impedance current output that allows it to be insensitive to voltage drops across long lines. With a supply voltage of between 4V and 33V applied to the input pin, the device acts as a proportional to absolute temperature (PTAT) constant current generator with a scale factor of 1µA/°C. The ISL71590SEH is specified over the -55°C to +125°C temperature range and can operate over the -55°C to +150°C temperature range no need of additional circuitry.

Current Sense Amplifier

The **ISL70100SEH** is a trans-conductance amplifier that monitor current using an external sense resistor and output a current proportional to the sensed voltage. The overall voltage gain is adjustable with a single resistor from the output to ground.



Precession Current Source

The **ISL70591SEH** and **ISL70592SEH** are two terminal floating current sources and that allows them to be used in high side, low side, and dual side load applications such as sensor excitation, biasing networks, low voltage references, floating voltage references, and ramp generators. The current sources were primarily designed for thermistor and other sensor excitation applications widely used in space crafts.

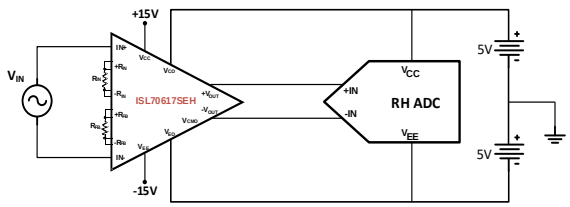
14-bit, 1Msps SAR ADC

The **ISL73141SEH** is a radiation tolerant high precision 14-bit, 1Msps SAR Analog-to-Digital Converter (ADC) that features SNR of 82.1dBFS and dissipates only 60mW when operating from 5V supply. With a 3.3V supply, the ADC operates at 750ksps with a power consumption of 28mW. The product features 1Msps throughput with no data latency and features excellent linearity and dynamic accuracy.

The ISL73141SEH provides a high-speed SPI-compatible serial interface that supports logic ranging from 2.2V to 3.6V using a separate digital I/O supply pin.

Rail-to-Rail ADC Driver

The **ISL70517SEH** is a high performance, differential input, single-ended output instrumentation amplifier designed for precision analog-to-digital applications. It can operate over a supply range of 8V (±4V) to 36V (±18V) and features a differential input voltage range up to ±30V.



The output stage has rail-to-rail output drive capability optimized for ADC driver applications. The output stage is powered by separate supplies. This feature enables the output to be driven by the same low voltage supplies powering the ADC, thereby providing protection from high voltage signals and low voltage digital circuits. Its versatility makes it suitable for a variety of general purpose applications.

OpAmp Selection

HS-OP470	Quad	Very Low Noise
ISL7124	Quad	
ISL70218	Dual	Rail-to-Rail Output, Low-Power
ISL70219	Dual	Precision Low Power
ISL70419	Quad	Precision Low Power
ISL70227	Dual	Precision
ISL70244	Dual	Rail-to-Rail Input-Output, Low-Power
ISL70444	Quad	Rail-to-Rail Input-Output, Low-Power
ISL70417	Quad	Precision Low Power

MUX Selection

HS-1840	16 Channel	Dual ± 15V
ISL71830SEH	16 Channel	Single 3,3V or 5V
ISL71831SEH	32 Channel	Single 3,3V or 5V
ISL71840SEH	16 Channel	Dual ± 15V or ±12V
ISL71841SEH	32 Channel	Dual ± 15V or ±12V

Voltage Reference

The **ISL71090SEH25** is an ultra low noise 2,5V, precision voltage reference input voltage range from 4V to 30V. Accuracy over temperature and radiation of 0.15%. Intersil also offers other voltages: 1,25V / 2,048V / 3,3V / 4,096V / 5V / 7,5V / 10V