APIX
Industrial Automation

8 QUAD ISOLATED THERMOCOUPLE INPUTS

ISODAQ SPi INTERFACE MODULE

Model DAQ8-TC4-1SPi

FEATURES

- **Ideal for Embedded Applications directly on your own boards**
- **No multiplexing, 8 Independent channels**
- **Each channel can be assigned a different thermocouple type**
- **Input Range ±80mV**
- **3 KVrms Isolation Input, Power and SPi Link**
- **2 KVrms Channel-to-Channel Isolation**
- **250 Vrms Signal Overrange Protection**
- **Highly stable Apix technology A/D Conversion**
- **160 db Common Mode Rejection**
- **90 db Normal Mode Rejection 50/60 HZ**
- **50/60 Conversions/Sec for all 8 channels converting synchronously**
- **+5 Volt Supply, 250 mADC**
- **-40 to 85 °C Operating Temperature Range**

DESCRIPTION

The Daqpak SPi Series Thermocouple Input Modules feature 8 independent channels and an SPi interface. Each channel can be assigned a different thermocouple type. They are fully isolated with 3 KVrms between Input, Power, SPi serial link and 2 KVrms Channel-to-Channel.

These are extremely compact and are ideal for embedded applications directly on your own boards.They combine Signal Conditioning, robust Isolation, linearization and highly stable A/D conversion technologies per channel.

Cold junction compensation is standard while sensor breakage and cable opens are detected automatically.

All 8 channels convert synchronously.The sampling rate of 60 Hz per 8 channel set is the default rate in order to take advantage of the rejection notches in the frequency response, coinciding with the power line frequency and its harmonics.

SPECIFICATIONS

MAXIMUM RATINGS

Power Supply Voltage (Vdd)	-0.5 to 6 VDC
Analog Input	250 Vrms
Storage Temperature	-55 to 125 Deg C

ANALOG INPUT

Range	±80 mV
Bandwidth	10 Hz (-3db)
Normal Mode Rejection	90 db at 50/60 Hz
Open TC Detect Bias Current	80 Nanoamps Max

COMMON MODE

Maximum CMV	3 KVrms
Rejection	160 db at 50/60 Hz
Leakage Current	2 µA rms at 1000 Vrms 50/60 Hz per channel
Capacitance	4 pF Total per channel

DIGITAL OUTPUT

Resolution	16 Bits Serial SPi
Conversion Rate	50/60 Hz

PERFORMANCE

Initial Accuracy	±0.01 % of SPAN
Zero Drift	±10ppm of Span per °C
Span Drift	±20ppm of Span per °C

POWER REQUIREMENTS

Supply Voltage Range	5 VDC ±5 %
Supply Current	250 mA Max
Power Consumption	1250 mW Max

ENVIRONMENTAL & MECHANICAL

Operating Temperature	-40 to 85 °C
Relative Humidity	< 95 % Non Condensing
Overall Dimensions	1.8 x 2 x 0.5 (inches) 46 x 51 x 13 (mm)