

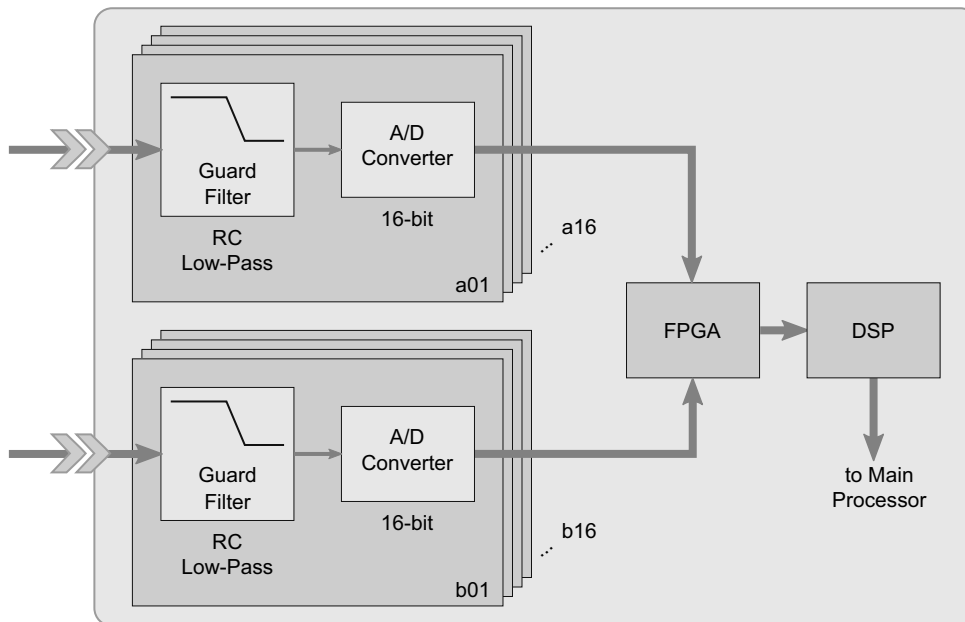


eDAQ Non-Isolated Thermocouple Layer

Special Features

- 32 channels of non-isolated thermocouple signal conditioning
- Independently configure channels for K-, J-, T- or E-type thermocouple
- Sampling rates up to 100 kHz
- Excellent channel-to-channel accuracy

Block Diagram



Detailed Description

The SoMat ENTB Non-Isolated Thermocouple Layer (1-ENTB-2) measures temperatures on 32 channels of non-isolated thermocouple signal conditioning through two 37-pin high density D-sub connectors of 16 channels each. The ENTB is compatible with the four most common thermocouple calibration types: K, J, T and E. Each channel is independently software-selectable between these calibration types. Since each bank of 16 channels share a common cold junction, the ENTB has excellent channel-to-channel accuracy. This is particularly useful when measuring thermal gradients. The ENTB requires two SoMat ECJTB Cold Junction Thermocouple Boxes for thermocouple termination.

Includes (2) 1-CBL-0007-00-2 Extension Cables with two male 37-pin, high-density D-Sub connectors.

Cables and Accessories (Order Separately)

Order No.	Description
1-ECJTB-2	Cold Junction Thermocouple Box Compatible with J, K, T and E Calibrations
1-ECJTB-16-K-2	Cold Junction Thermocouple Box - Type K - 16
1-ECJTB-32-K-2	Cold Junction Thermocouple Box - Type K - 32
1-ECJTB-16-J-2	Cold Junction Thermocouple Box - Type J - 16
1-ECJTB-16-T-2	Cold Junction Thermocouple Box - Type T - 16
1-ECJTB-16-E-2	Cold Junction Thermocouple Box - Type E - 16
1-CBL-0007-00-2	Extension Cable - ENTB Layer - 2 Meters Length

Specifications

Parameter	Units	Value
Layer dimensions		
width	cm	23
length	cm	25
height	cm	3.3
Layer weight	kg	2.0
Temperature range	°C	-20 ... 65
Relative humidity range, non-condensing	%	0 ... 90
Overall accuracy ¹	°C	0.5
Maximum thermo-equilibrium temperature change rate ¹	°C/min	2
Channel-to-channel thermocouple accuracy ²	°C	0.1
Input temperature range		
K-type thermocouple	°C	-100 ... 1350
J-type thermocouple	°C	-100 ... 760
T-type thermocouple	°C	-100 ... 400
E-type thermocouple	°C	-270 ... 1000
Typical thermocouple response time constant		
30 AWG	s	0.3
12 AWG	s	6.0
10 AWG	s	9.0
Sample rate range	Hz	0.1 ... 5
Power consumption with thermocouples ³	W	0.66

¹ The overall accuracy specification is not valid if the maximum thermo-equilibrium temperature change rate is exceeded. Maximum accuracy is obtained when the ENTB layer is calibrated at a steady-state operating temperature. Due to tolerance and temperature characteristics of the components, a change in temperature may cause an offset to the temperature measurement which can be eliminated by channel recalibration.

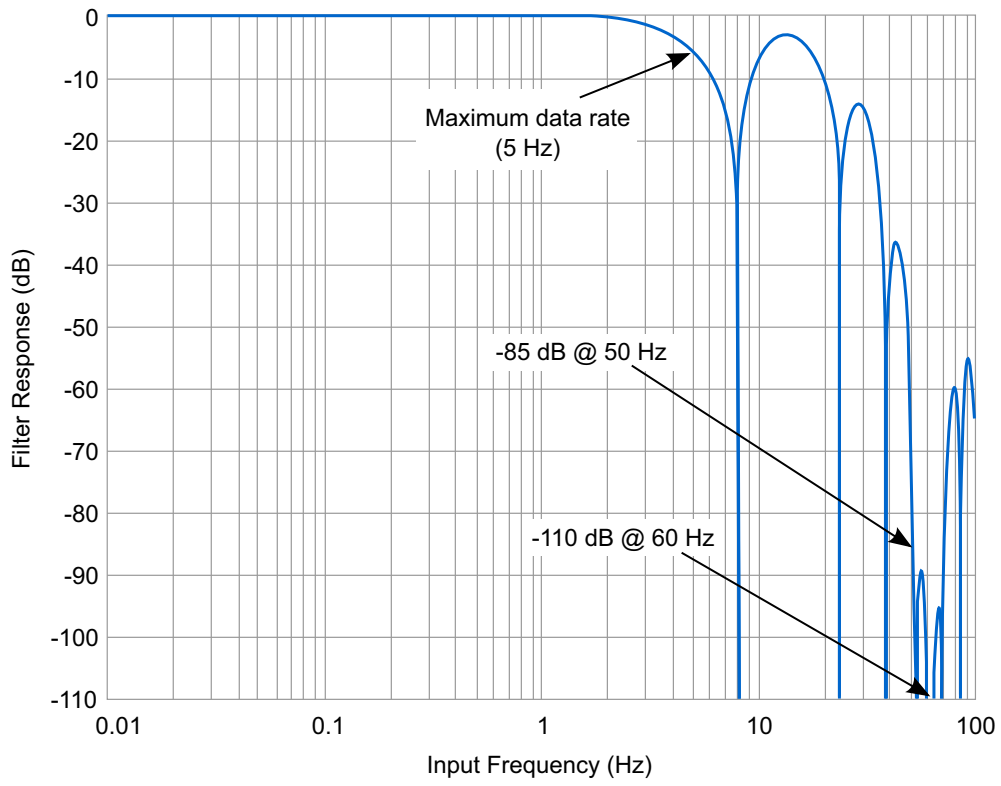
² Channel-to-channel thermocouple accuracy does not include inaccuracies in the thermocouples themselves.

³ Power consumption measurements are taken with the stated load on all 32 channels and include the efficiency of the power supply.

Standards

Category	Standard	Description
Shock	MIL-STD-810F	Method 516.5, Section 2.2.2 Functional Shock - ground vehicle
Vibration	MIL-STD-202G	Method 204D, Test condition C (10 g swept sine tested from 5 Hz to 2000 Hz)

Input Filter Frequency Response



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