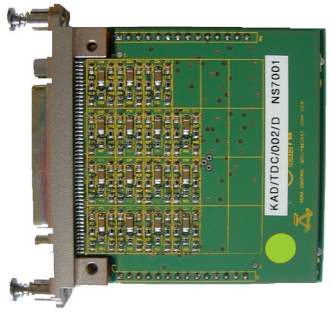
ACRA CONTROL KAM-500 TDC/002

15 channel thermocouple analog-to-digital converter with reference compensation



FEATURES

- 15 thermocouple (T/C) input channels
- ±5°C accuracy for K-type T/C
- Compensation block temperature measurement
- Programmable T/C type (per module)
- Digital reference junction compensation
- Up to 512 samples per second per channel
- Up to 40Hz bandwidth

APPLICATIONS

- Temperature measurements

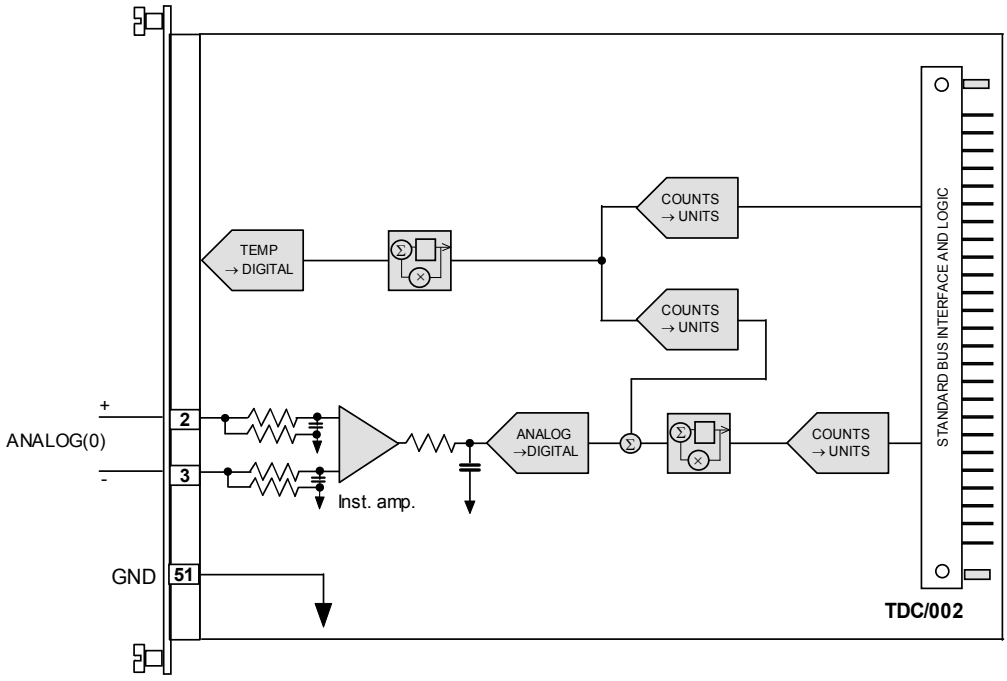
DESCRIPTION

The TDC/002 is used to digitize up to 15 thermocouple channels and the compensation block temperature. (The compensation block refers to the double-density connector.)

The compensation block temperature is a signal indicating the temperature of the compensation block.

This signal is digitized and put to 2 x 65536 point linearization tables. One is used to produce a compensation value to add or subtract from the other 15 channels (this table is T/C type specific) and the other is used to scale the compensation block temperature between -55°C and 125°C.

The compensation offset is removed from each of the T/C channels. Each T/C channel is then linearized using a 65536 point linearization table specific to the thermocouple type selected. Finally, all channels are scaled to the selected range.



Compensation channel plus first of 15 T/C channels

Selection guide and ordering information

Selection Paths

Airborne Data Acquisition → KAM-500 → Modules → Analog → Thermocouple

Ordering Information

Part Number	Mating Connector	Description
KAD/TDC/002/D	CON/KAD/002/SR	TDC/002/D with 52-way double density module compensation sensor connector. Module offers wider input range (-270 to +1372ºC for K type T/C)

By default, the standard mating connector above is included with each module in the shipment. Its part number will be added to the Confirmation of Order unless an alternative option is specified (see the *Cables* data sheet).

Revision History

Revision	Differences	Status
TDC/002/D and TDC/002/D/10M	Any sampling rate up to 512Hz is allowed	Recommended for new programs
TDC/002/C	Improved accuracy, sampling rate must be an integer division of 512Hz	Not recommended for new programs
TDC/002/B	15 channel thermocouple A/D converter with reference compensation, sampling rate must be an integer division of 512Hz	Not recommended for new programs

Related Products

Module	Details
TDC/001	16-channel A/D converter with excitation and signal conditioning for 2K2 or 10K thermistors
TDC/002/D/10M	TDC/002/D/10M with 52-way double density module compensation sensor connector. Module offers higher accuracy but narrower input range (-270 to +255ºC for K type T/C)
KSM-500	This module is supported by the KSM-500 suite of software tools

Related Documentation

Document	Details
TEC/NOT/010	Thermocouples
TEC/NOT/017	Accuracy on KAM-500 modules
DOC/MAN/018	KSM-500 Databook
DOC/HBK/002	Environmental Qualification Handbook
DOC/DBK/001	KAM-500 Databook

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