

CT2/4/8

2/4/8-Channel Compact Telemetry System

Including signal conditioning for STG, ICP, TH-K or high-level inputs



- 4 or 8 input channels, 12 bit ADC resolution, simultaneous sampling of all channels
- STG offset via potentiometer or optional Auto Zero calibration
- +/- 5V analog output at the receiver side, PCM output via optional special PCM PC interface and Software
- Signal bandwidth:
8 x 0-95 Hz with 40kbit transmitter,
8 x 0-750 Hz with 320kbit transmitter
- Line-of-sight distance between transmitter and receiver up to 500m
- Static acceleration up to 100g in all directions (Transmitter unit)

The CT2/4/8-Compact is a 2, 4 or 8-channel telemetry system including integrated signal conditioning for sensors, wireless digital data transmission and analog reproduction. Once conditioned the measured signals are routed via an anti-aliasing filter to a 12-bit A/D converter with simultaneous sampling of all channels, then encoded to PCM format and transferred to the HF transmitter as modulated data. The dynamic range is 72dB with a signal-to-noise ratio of approximately 70dB. Four different carrier frequencies are available with the 40kbit transmitter (433,3 to 434,5 MHz range) offering a signal bandwidth of 8 x 0-95 Hz. With the 320kbit/s transmitter only one carrier frequency is available in the 433,9 MHz band offering a signal bandwidth of 8 x 0-750 Hz.



Bandwidth matrix

Bit rate	Max. cut-off frequency (-3dB)		
	2 CH.	4 CH.	8 CH.
320 kbit/s	0 ... 3000 Hz	0 ... 1500 Hz	0 ... 750 Hz
40 kbit/s	0 ... 375 Hz	0 ... 190 Hz	0 ... 95 Hz

Various configurations of different sensor modules are available like signal conditioning for strain gages (STG), thermo-couples type K (TH-K), ICP and also voltage inputs (+/-5 or +/-10V), mixed configuration possible. Optional is a Auto Zero Calibration for strain gages application available!

Please specify at order!!

Transmitter Device (Encoder)



Front view with sensor inputs



Rear view with Power-In and Antenna-Out

SC Module STG:

Sensor:	strain gage, ≥ 350 Ohms
Bridge completion:	full, half and quarter-bridge
Excitation:	4 VDC (fixed), short-circuit protection up to 20mA
Gain:	200 or 1000 - selectable by solder jumpers (5mV/V or 1mV/V)
Offset	Zero adjustment by potentiometer or <u>optional Auto-zero</u> function (which is not lost by power-off), offset range up to 80% of full scale.

SC Module TH-K:

Sensor:	thermo-couple, type K
Temperature measuring range:	0°C to +900°C

SC Module ICP:

constant current:	1, 4 or 10mA
Gain:	2x, 4x, 8x, 16x or 32x

SC Module VOLT:

High-level inputs:	+/- 5 Volt or +/- 10 Volt
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System Parameters:

Channels:	4 or 8
Resolution:	12 bit A/D converter with anti aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	500 m with 10mW transmitting power (433MHz Band, FSK modulation)
Power input:	10 ... 18 VDC
Power consumption:	240 mA (at 12V) using 8 STG sensors at 350 Ohms
Analog signal bandwidth:	(-3dB cut-off frequency)
2-channel version	2 x 0 ... 3000Hz with 320 kbit/s transmitter (433,9 MHz) 2 x 0 ... 375Hz with 40 kbit/s transmitter (433,3 to 434,5 MHz)
4-channel version	4 x 0 ... 1500Hz with 320 kbit/s transmitter (433,9 MHz) 4 x 0 ... 190Hz with 40 kbit/s transmitter (433,3 to 434,5 MHz)
8-channel version	8 x 0 ... 750Hz with 320 kbit/s transmitter (433,9 MHz) 8 x 0 ... 95Hz with 40 kbit/s transmitter (433,3 to 434,5 MHz)
Transmitter carrier frequency:	433,9 MHz with 320 kbit/s transmitter 433,3, 433,7, 434,1 or 434,5MHz with 40 kbit/s transmitter
Dimensions:	130 x 85 x 55mm
Weight:	0,85kg
Operating temperature:	- 20 ... +70°C,
Humidity	20 ... 80% no condensing
Static acceleration:	100g in all directions
Shock:	200g in all directions

Receiver Device (Decoder)



Front view with 8 x BNC outputs



Rear view with Antenna-In, Power-In, HF-Level and Autozero LED displays

System Parameters:

Channels:	2, 4 or 8 analog outputs (BNC) with $\pm 5V$ range, (optional digital PCM output for PC interface)
Resolution:	12 bit D/A converter with smoothing filter
Dynamic range:	72dB
Power input:	10-30 VDC
Power consumption:	300mA at 10V, 100mA at 30V
Receiver carrier frequency:	433,9 MHz with 320 kbit/s transmitter - FSK modulation 433,3 to 434,5 MHz with 40 kbit/s transmitter - FSK modulation
Dimensions:	180 x 105 x 65mm
Weight:	1,25 kg without receiving antenna
Operating Temperature:	-20 ... +60°C
Humidity	20 ... 80% no condensing
Static acceleration:	10g in all directions
Shock:	100g in all directions
Overall system accuracy between encoder input and decoder output:	+/-0,5% without sensor influences

Technical specifications are subject to change without notice!