DocID: H-TEL-CTS-CR1-D004-031US

Multi-Channel Telemetry Systems CR1/2/3 and E8

The newly developed Multi-Channel Telemetry Systems of the E8 and CRx series enable conditioning, digitisation and wireless transmission of 8 or 16 parallel strain gage signals. Every channel can be switched at any time from strain gage to temperature input using the software.

- ***PC controlled Multi-Channel Telemetry-Unit***
- ***Wireless HF data-transmission from rotating wheels***
- ***8 or 16 Strain or Thermo Channels, switchable by Software***
- ***Power supply by rechargeable battery , optionally inductive***

The CRx/E8 series make it possible to record the forces and/or temperature of a stressed vehicle rim in several locations simultaneously. The selection of the measuring data, the automatic zero-adjustment and the internal Shunt-Calibration are remotely controlled by the software. The measuring system is connected during standstill via RS232 to a PC's or a Palm's COM-Port for programming.

The entire signal conditioning for 8 channels is placed within a 40mm thick package (without antenna) and weighs only 800 g (1.8 lbs.) with case. Due to axial mounting, the dynamic behavior of the wheel is only marginally influenced. An optional waterproof version for real driving on- or off-road and a 16 channel model for test rig mode are available.

The conditioned signals are converted into 12-bit and transmitted by a specialized RF-radio signal to the receiving unit. The digital PCM-Format of the acquired data guarantees the optimum interference resistance. The maximum data rate of a 3k sample (optional 12 k sample) per second allows a bandwidth of 75 Hz (150 Hz) per strain channel or 10 Hz for the thermo-channels.

The display unit contains the RF-receiver, a 3½-digit LED-Display and an analogue output connector. Furthermore the data can be transferred directly to the PC by a specialized interface. Once in the PC the data is ready to be analyzed by CAESAR's wide range of software-libraries on- and off-line. ■

DocID: H-TEL-CTS-CR1-D004-031US

Multi-Channel Telemetry Systems CR1, CR2, CR3, E8

System	E8	CR1	CR2 (waterproof)	CR3 (Test Rig)
Channels	8	8	8	16
Signal Bandwidth	75/300 Hz per Channel *) (10 Hz w/Thermo)	75 Hz per Channel (10 Hz w/Thermo)		150 Hz per Channel
Measuring Time	4 ... 10 h *)		4 ... 10 h *)	8 ... 24 *)
Size of mobile part	80 x 75 x 40 mm (3.1 x 3.0 x 1.6 in.)	130 mm Ø x 40 mm (5.1 ø x 1.6 in.)	150 x 72 x 48.5 mm (5.9 x 2.8 x 1.9 in.)	140 mm Ø x 140 mm *) (5.5 ø x 5.5 in.)
Weight of mobile part	280 g (0.6 lb.)	800 g (1.8 lb.)	800 g (1.8 lb.)	1600 g (3.5 lb.) *)
Operating Temperature	- 20 ... + 80 °C (-68 … 155 °F)			
Data transmission	contact-free, HF-Transmitter			HF, optional: inductive
RF distance	100 ... 300 m (300 … 1000 ft.)			
Data formats	digital, PCM IRIG 32+2			
Samples	40/160 kbps *)	40 kbps		160 kbps
Remote Control	RS 232, Software drivers for Windows 98, NT, XP, 2000 or PDA			
Remote Functions	Type of sensor, gain, Autozero, Shunt-Calibration			

Signal Conditioning			
Sensors	Strain, ≥ 350 Ω, Half- and full bridge; Thermocouple Type K and J		
Sensor supply	5 V, 15 mA		
Measuring Ranges	1 mV/V ... 32 mV/V (in binary steps,), -100 ... 1000 °C (-148 … 1832 °F)		
Shunt-Calibration	for strain, internal resistor, executable by software		
Autozero	for strain over 4 times full scale		
Linearization	in control unit or by on-line software pLab or µ–Lab		
Cold junction compensation	integrated		
Cable interruption detection	Shown as -FS on display		
Data conversion	12 bit A/D-Converter		
Aggregate sampling rate	3/12 kS/s *)	3 kSample /sec	12 kSample /sec
Parameter Memory	EEPROM, nonvolatile		
Power supply	external battery	integrated rechargeable battery with LED-charge indicator	exchang. recharg. batteries, optional inductively

Receiver/Control Unit			
Size		Compact housing 50 x 105 x 185 mm (2 x 4.1 x 7.3 in.)	19"-housing, 3HE
RF-Receiver	integrated		external
Analog Out	±10 V, 25 pol. SubD-Connector		
Digital Out	parallel dataport to PC interface		
Display	3 ½-digit LED display, Sync-indication		optional

Option Memory Unit	PCMCIA / ATA-FlashCard or hard disk, Type II or III, integrated in control unit

Option PCM-Serial / Parallel-Converter	for direct digital data transfer into a PC or palm with µ–Lab/pLab; control unit not required

*) dependent on configuration

CAESAR Datensysteme GmbH
Willi-Wien-Str. 28
80999 München
Phone: +49 (89) 892231-73
Fax: +49 (89) 892231-71

CAESAR DataSystems, Inc
24350 Indoplex Circle
Farmington Hills, MI, 48335
Phone: +1 (248) 888 8268
Fax: +1 (248) 888 8269

CAESAR DataSystems Ltd
2 Faraday Court, Rankine Road
Daneshill, Basingstoke
Hampshire RG24 8PF
Tel: +44 (1256) 332147, Fax: 814647

www.caesar-datasystems.com, www.caesar.us
info@caesar-datasystems.com