

9-Channel Telemetry Transmitter



Custom made integrated circuit (BICMOS technology 0.8 μm) with die size of 2 x 2.6 mm. Programmable for each channel, including an integrated rf-oscillator.

Fairly linear conversion of sensor resistance to pulse interval time.

After successful programming the lower part of the hybrid circuit is cut off.

Technical data

Channel 1: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 2: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 3: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 4: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 5: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 6: connection of SG (R = 260 - 420 Ohm) or NTC (R = 900 - 1100 Ohm)

Channel 7: hybrid temperature measurement (NTC, R = 900 - 1100 Ohm)

Channel 8: supplied power (DC voltage)

Channel 9: synchronisation (t < 200 μs)

Power supply: AC inductive

Magnetic field frequency: 4 kHz

Modulation: puls-interval-modulation (PIM)

Pulse duration: 10 μs

Mean pulse interval: 1000 μs

Transfer behaviour: linear

Radio frequency transmitter: 120 MHz - 170 MHz (ASK)

DC supply voltage: 4.0 V - 6.0 V

Average power consumption: 5 mW

Technology: thick-film hybrid technology, chip and wire, double-sided

Active components: 1 Custom IC (BICMOS 0,8 μm) 2,0 mm x 2,6 mm

Passive components: 6 SMD, 2 thin film resistors

Connections (solder points): 6 x SG / NTC, 2 x ground, 2 x energy coil, 2 x RF-antenna

Programming connections (solder points): 8 x data

Hybrid size: 12,5 mm x 6 mm (with program connections)

Hybrid size: 9,5 mm x 6 mm (without program connections)

Case: 10 mm x 7 mm in diameter (metal cylinder)

Manufactured since 2004 for instrumented vertebral body replacements, instrumented shoulder endoprotheses, instrumented knee endoprotheses and instrumented hip endoprotheses.