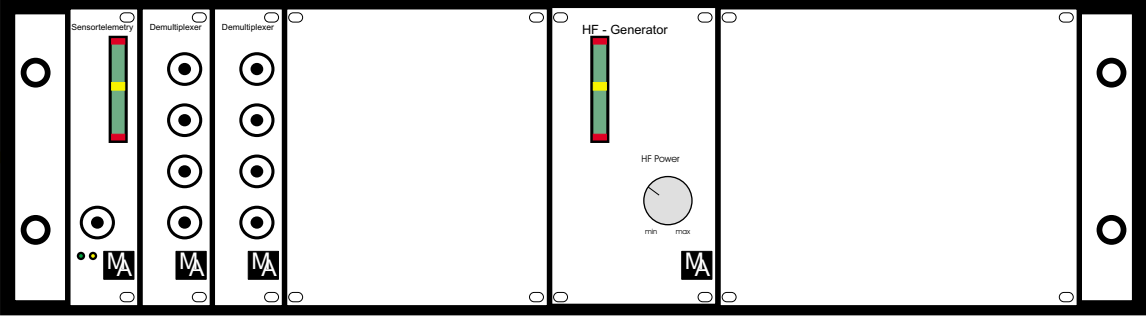
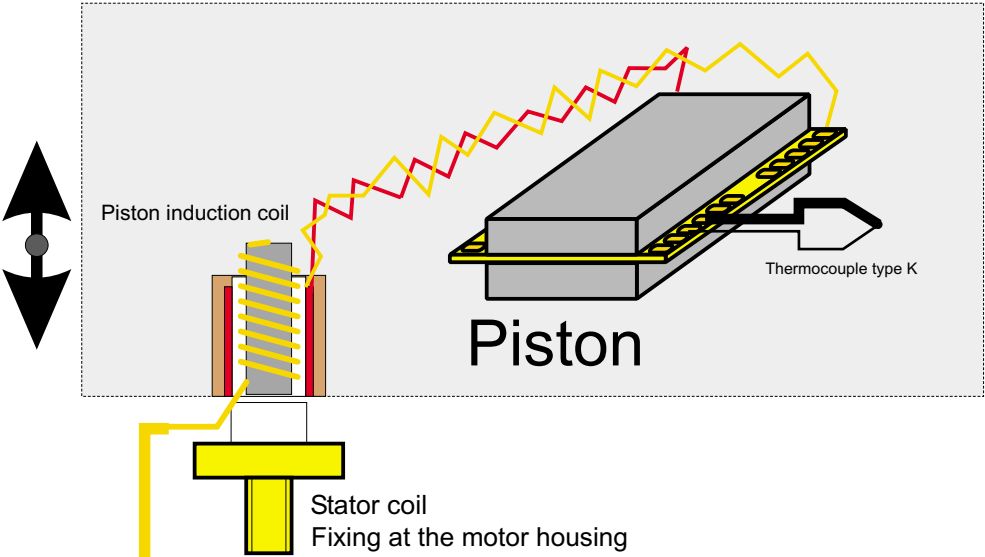


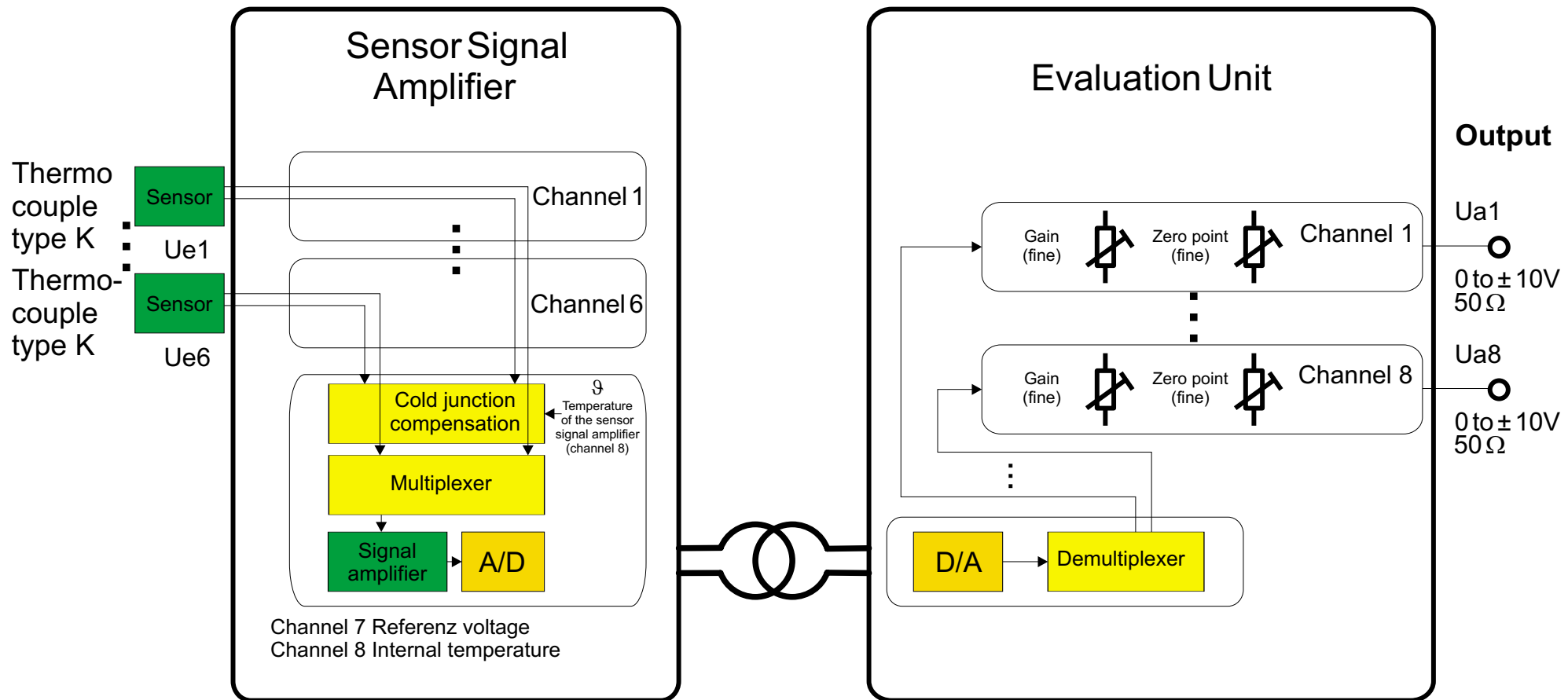
Instruction Manual

8 Channel Spot Telemetry System

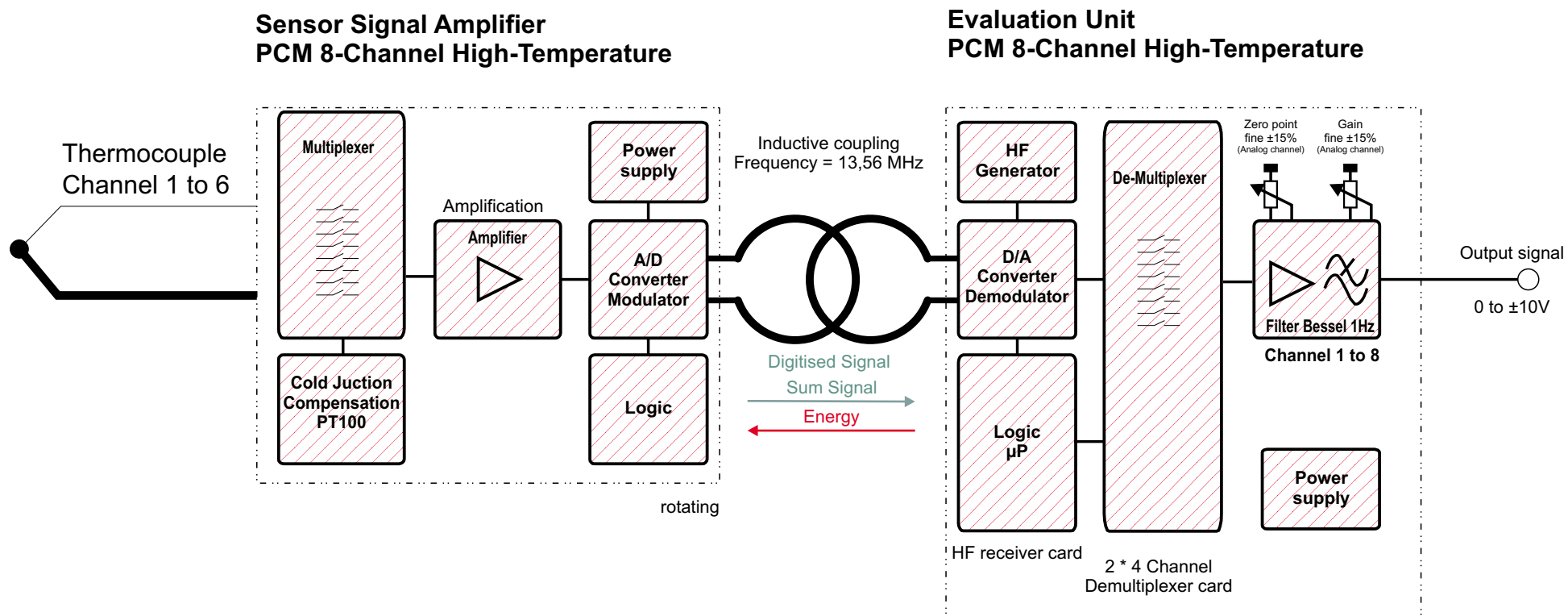
General Measurement Configuration



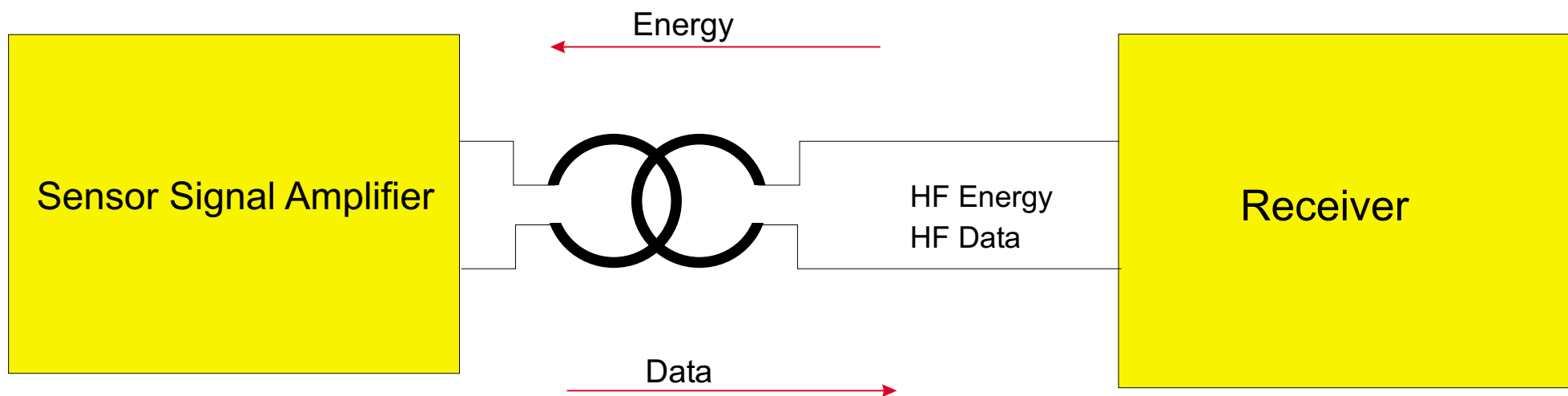
Block Diagram (1)



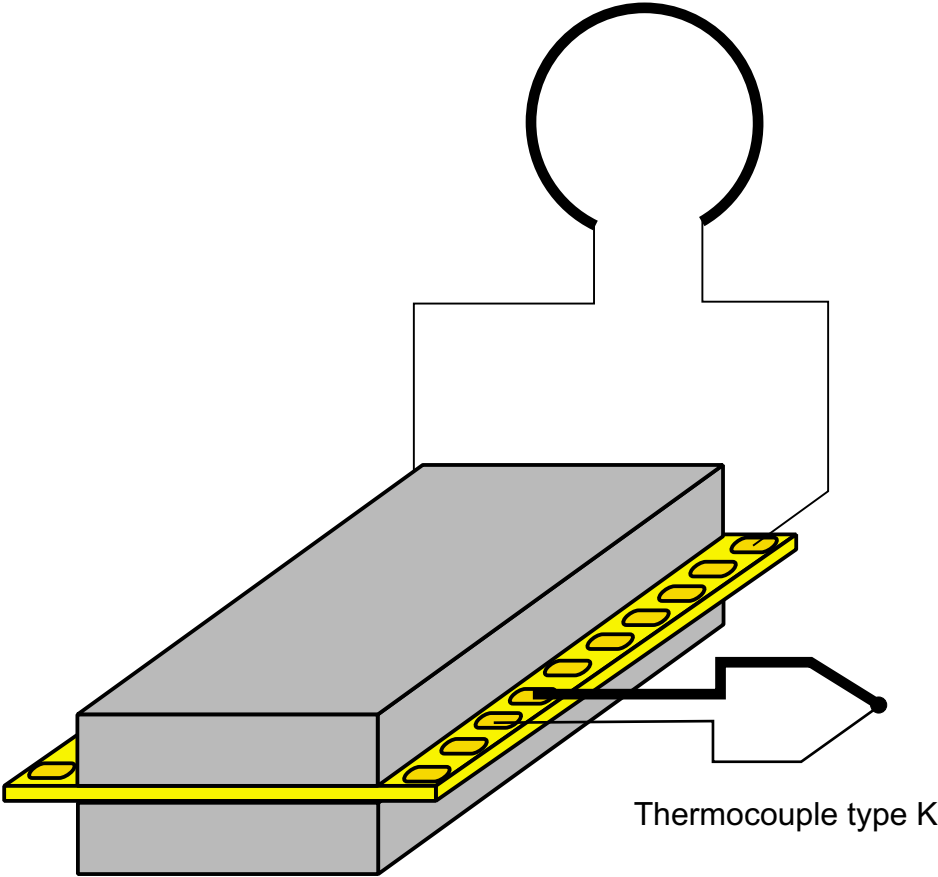
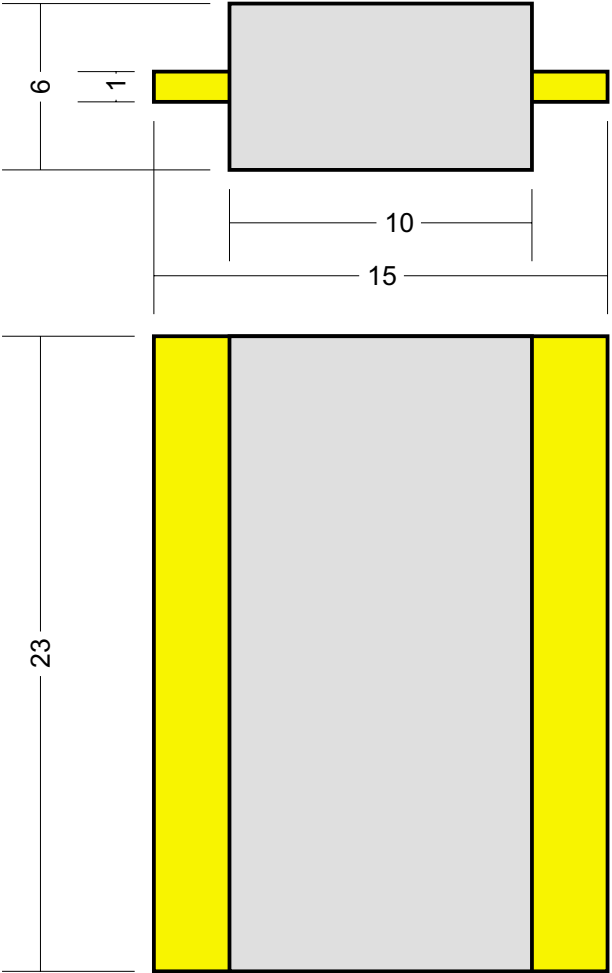
Block Diagram (2)



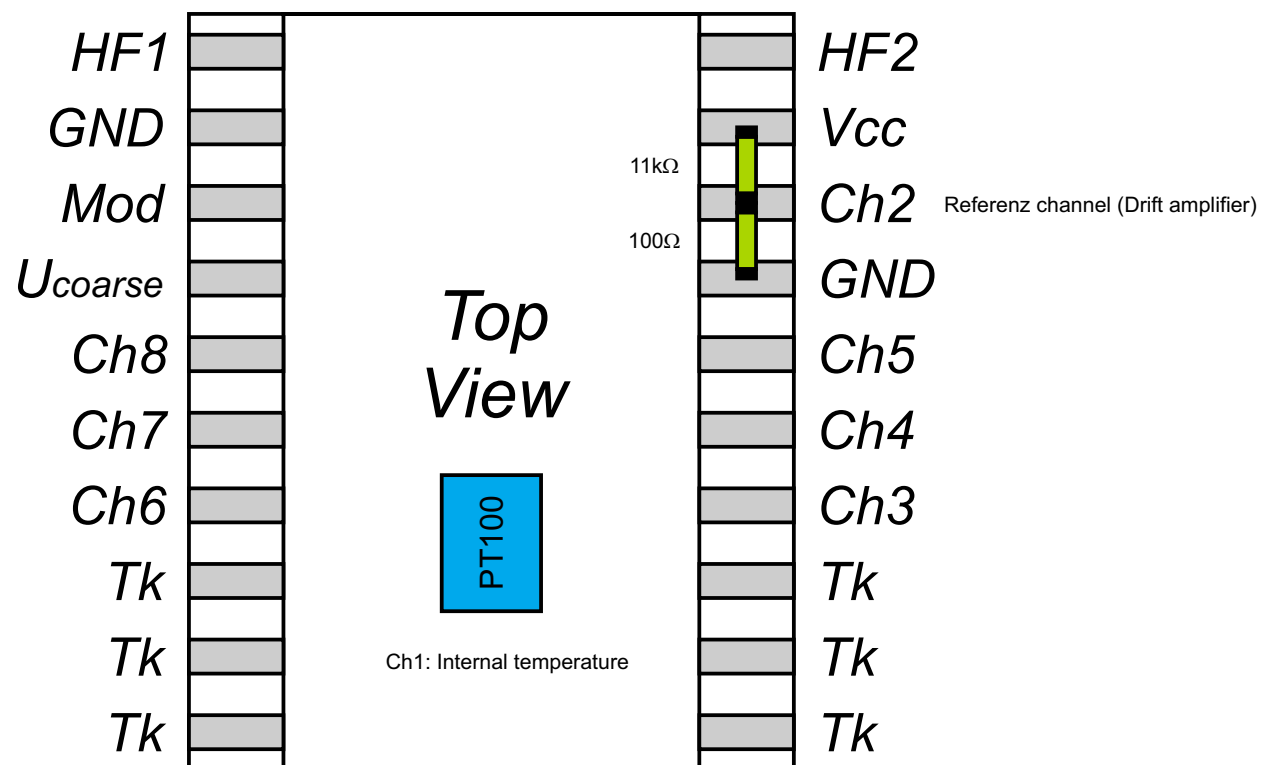
Flow of Energy and Data



Geometry Sensor Signal Amplifier



Pin Assignment Sensor Signal Amplifier



Channels not connected to sensors have to be shortened to Tk!

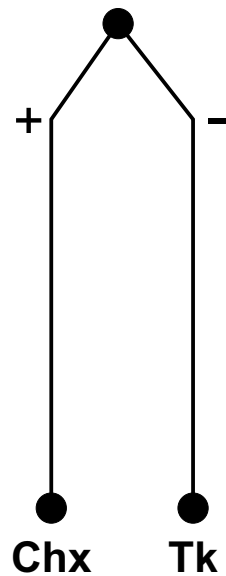
Gain Bandwidth Characteristic



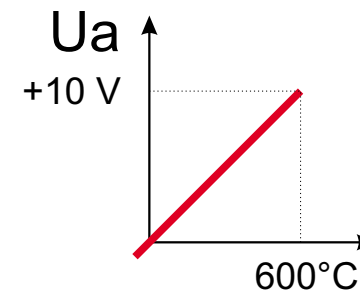
Mode Thermocouple

Thermocouple min.°C to max.°C

Insulated Thermocouple



Output
Thermocouple Mode



See Calibration Protocol

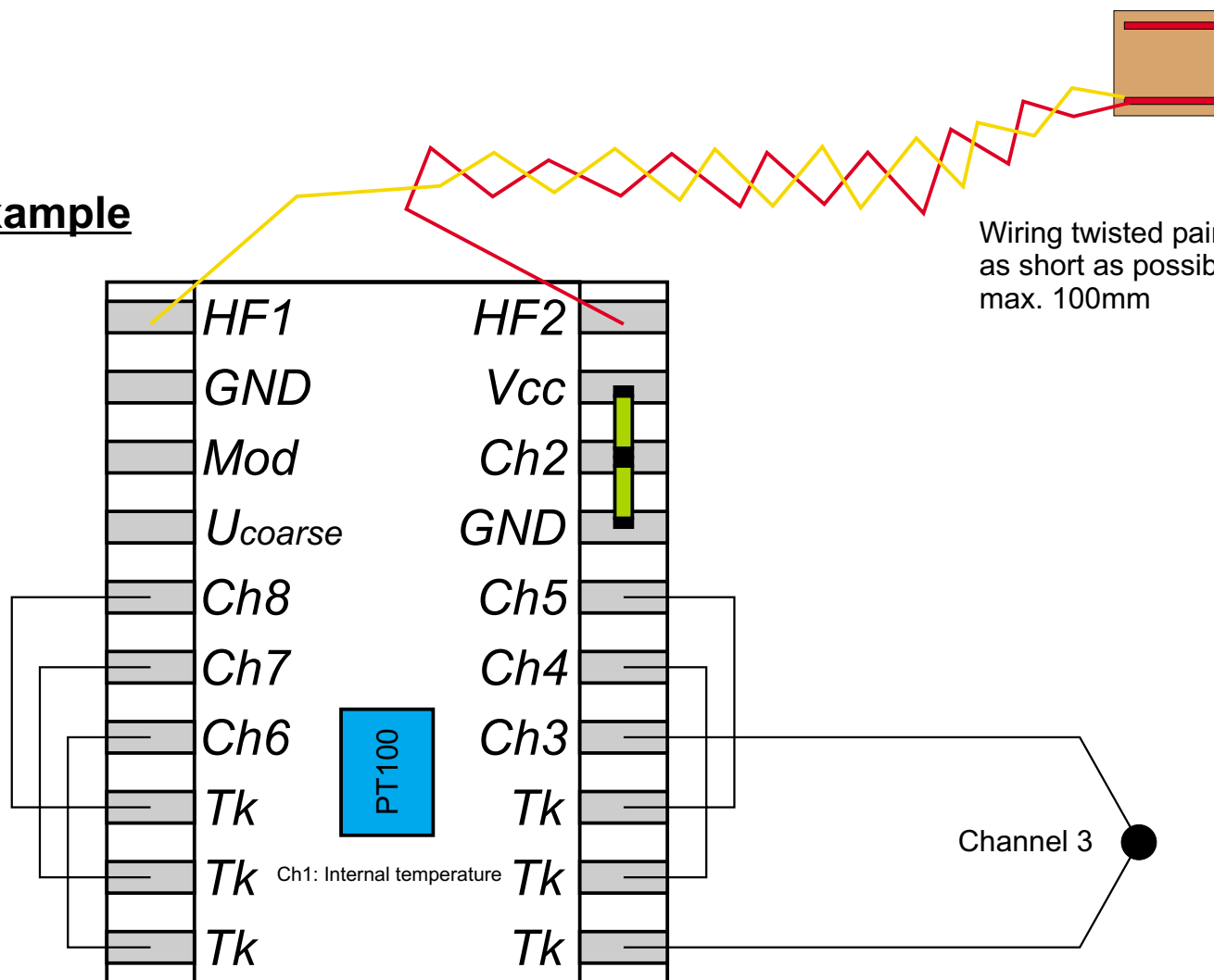
Channels not connected to sensors have to be shortened to Tk!

Connection Sensor Signal Amplifier and Rotor antenna

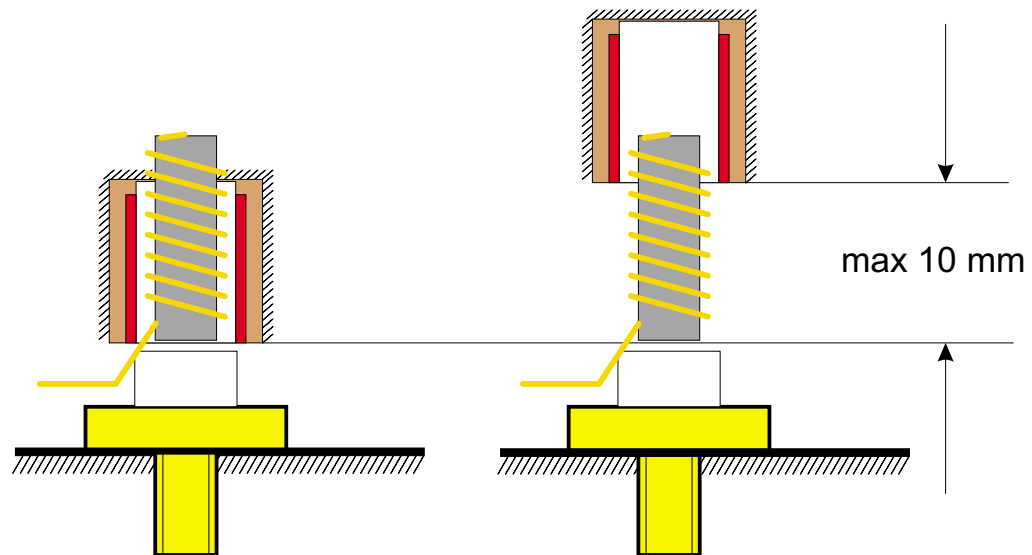
Example

Wiring twisted pair as short as possible max. 100mm

Channel 4-8 not connected

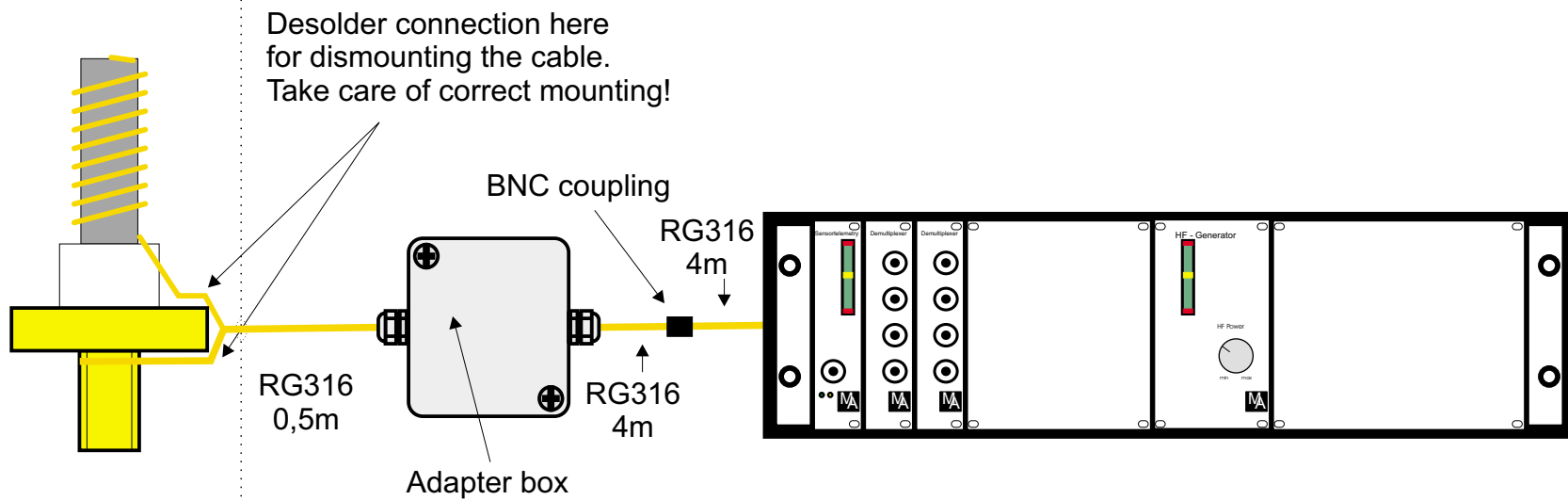


Contact Range of the HF Coupling Area

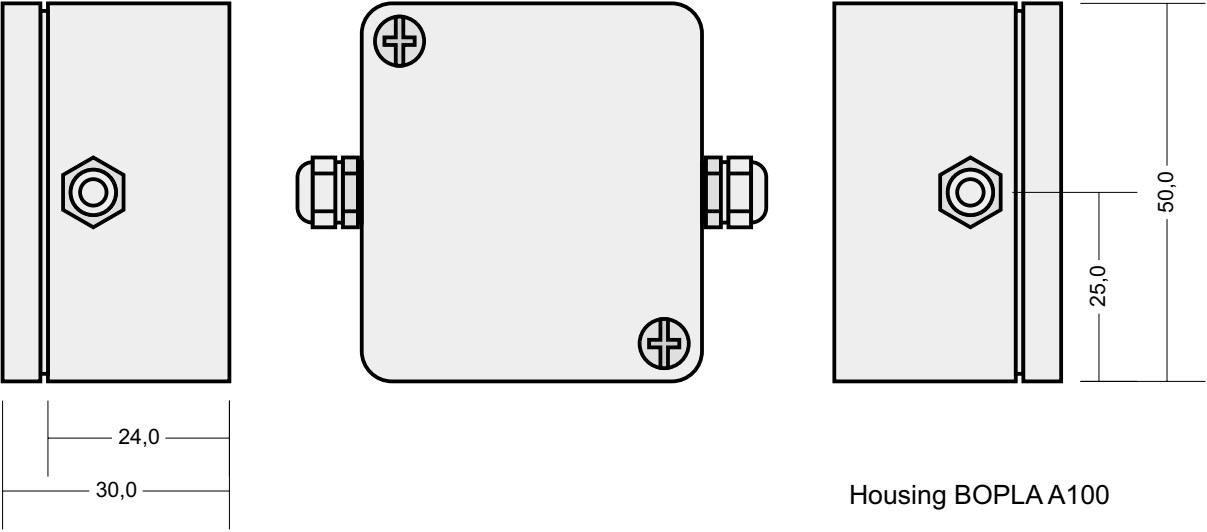


Connection Stator antenna and Evaluation Unit

Motor

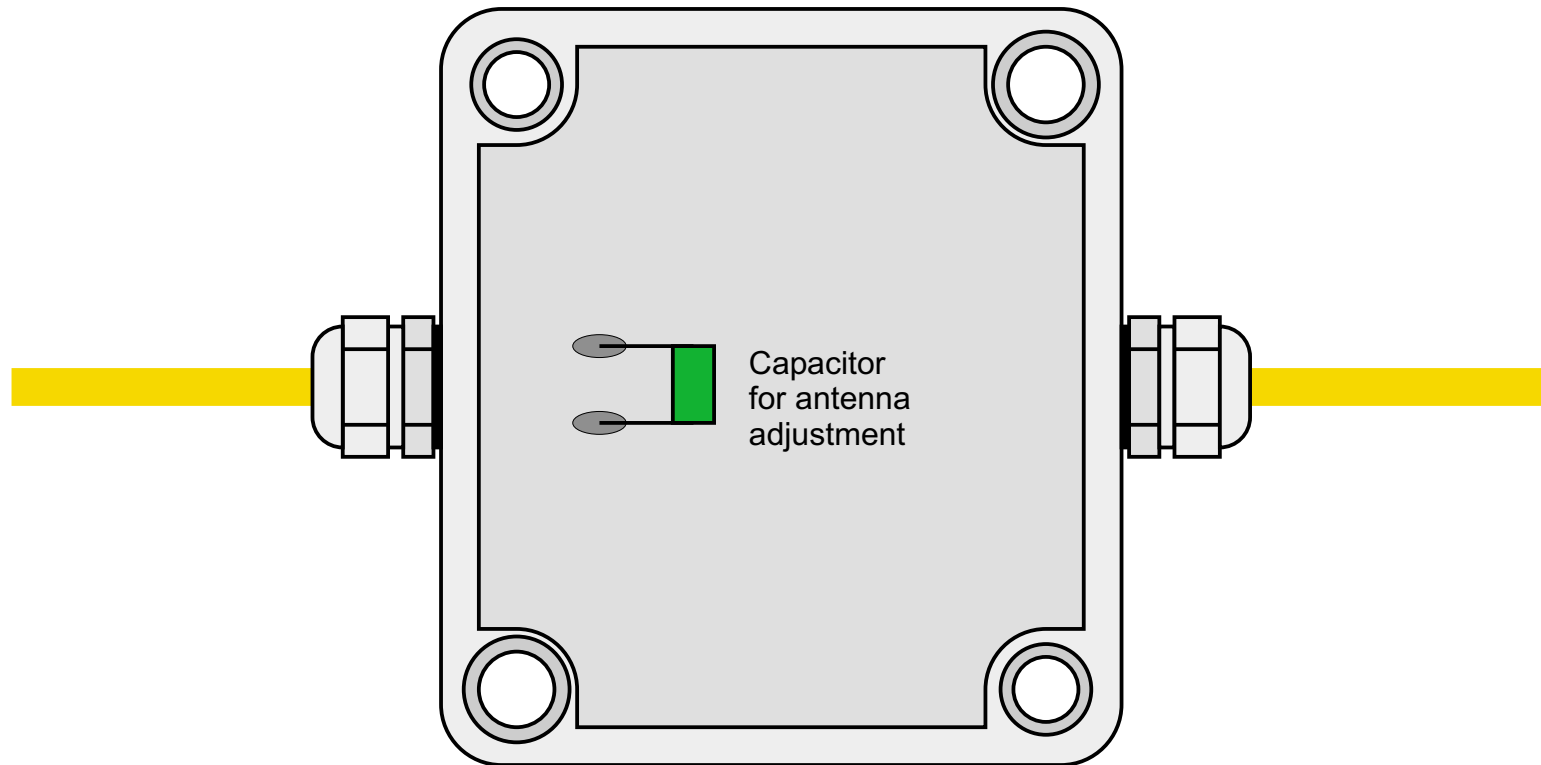


Geometry Adapter Box

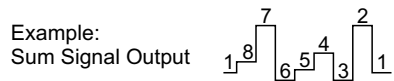
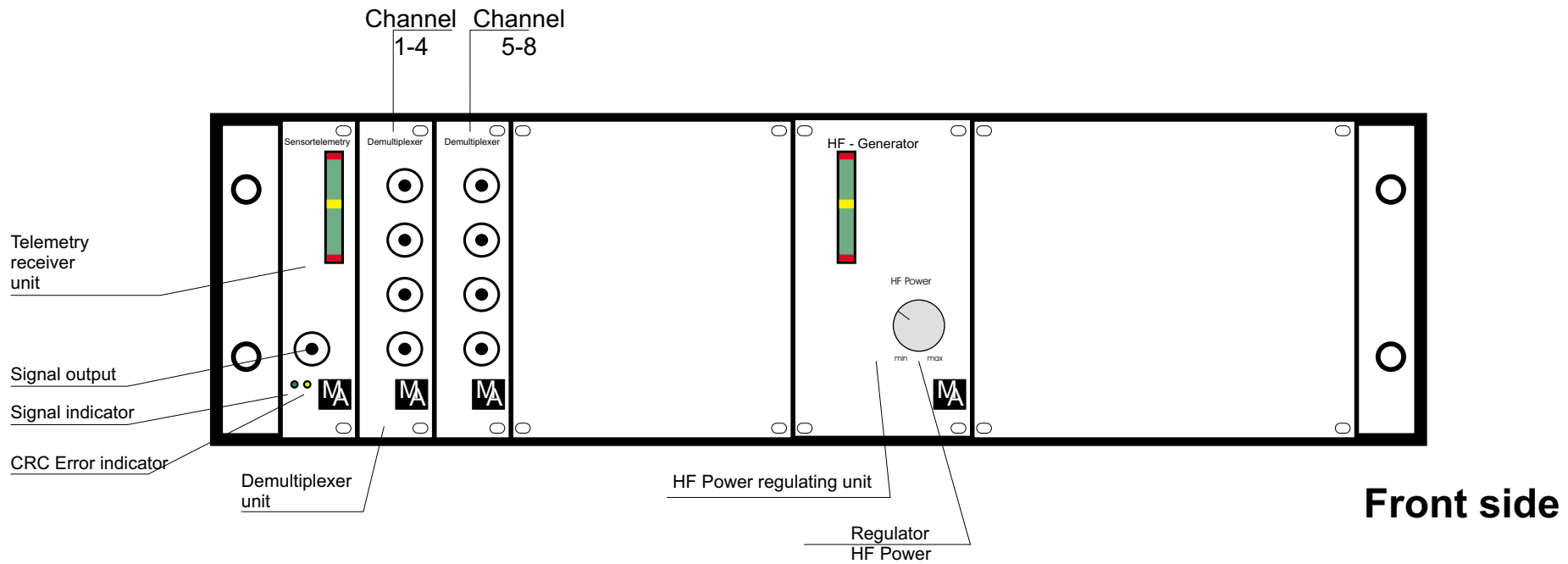


Adapter Box

for mounting outside the motor block

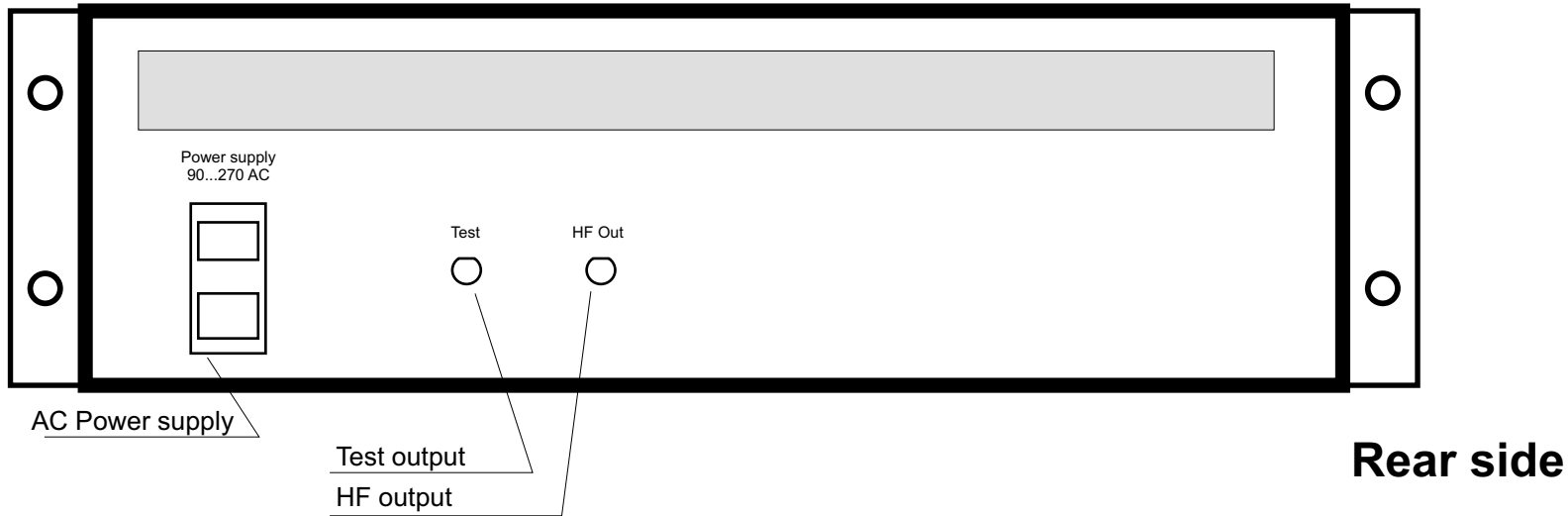


Evaluation Unit



Signal indicator: on, when correct data
 CRC Error indicator: on, when incorrect data or no transmission
 flickering, when rpm too low or coupling time too short

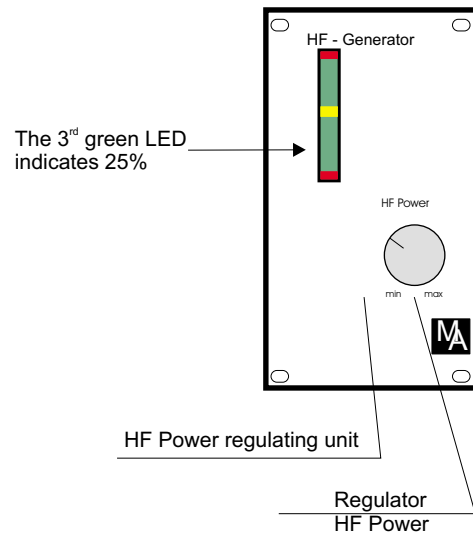
Evaluation Unit



Assignment Measuring Point to Channel Number

Channel Number	Measuring Point
8	1
7	2
3	3
4	4
5	5
6	6

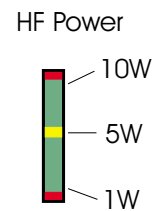
HF Generator



HF Power:

Here the output power of the HF generator can be adjusted to different requirements.
Measure the strain gauge bridge voltage of the sensor signal amplifier and look at its stability to check the optimal setting.
Also the unloaded measurement signal has to be stable and the noise adjusted to minimum.

Display:



Important !!

If the coupling is optimal the HF Power Display must show LESS than 25% !!

P_{\max} of the Sensor Signal Amplifier: < 2Watt !!

Preparation and Mounting

1. Mount sensor signal amplifier
2. Mount rotor antenna
3. Mount stator antenna and check insertion depth
4. Connect stator antenna with evaluation unit
5. Connect sensors

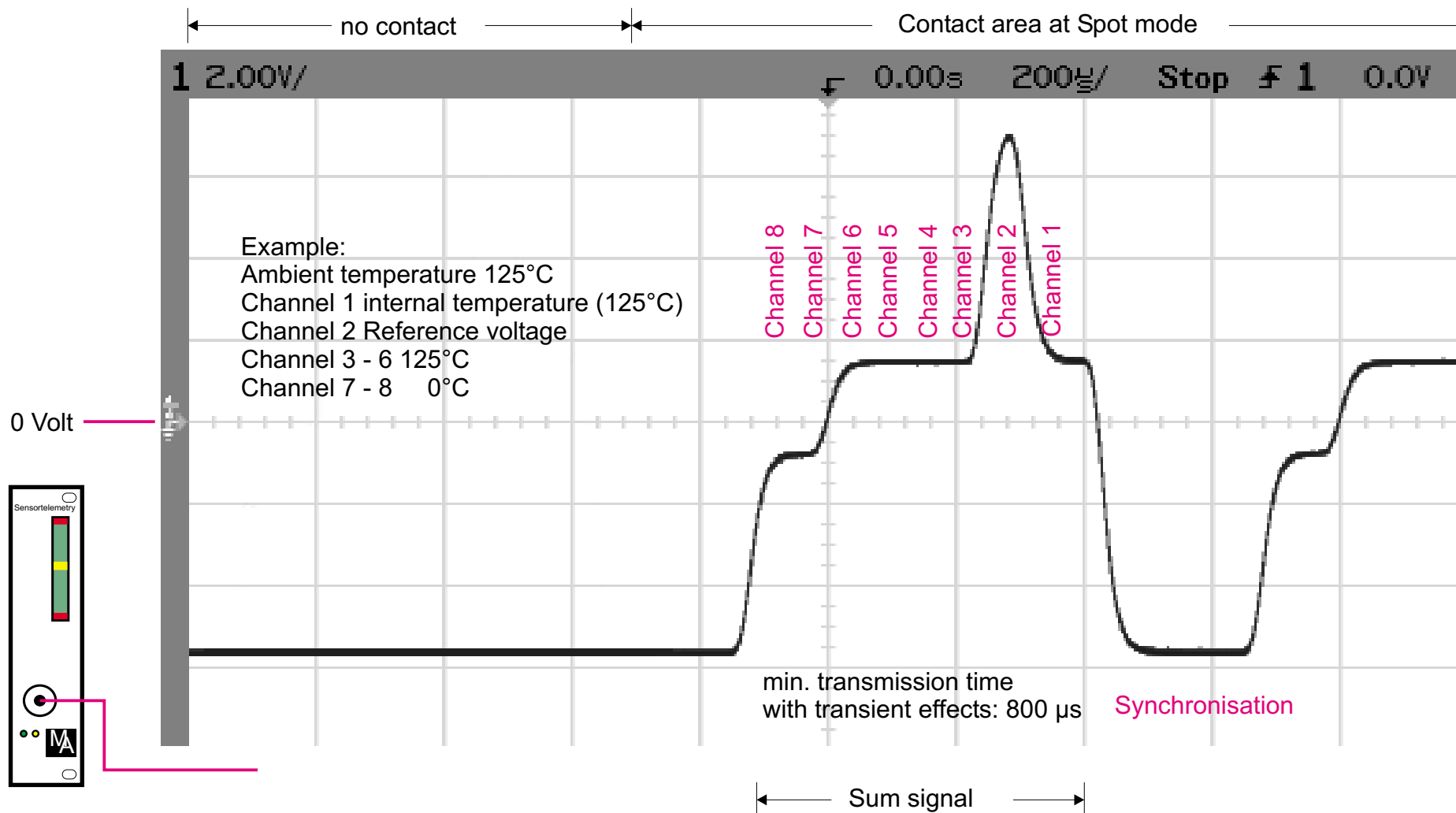
Starting (static mode) and Adjustment

1. Set HF power to MINIMUM
2. Connect oscilloscope to the signal output of the receiver unit (see picture)
3. Place stator antenna correct to the rotor antenna
4. Switch on the system
5. Increase HF power till the green signal display LED at the RECEIVER lights up - DO NOT EXCEED limit of 25% HF power!
At this setting the signal has to look like the signal at the picture (contact area) at page 'Adjustment to check the Transmission'

Starting (dynamic mode) and Adjustment

1. Start turning the rotor
2. Check the signal output of the receiver unit with the oscilloscope
At this setting the signal has to look like the signal at the picture at page 'Adjustment to check the Transmission'
- if not then correct HF power - DO NOT EXCEED limit of 25% HF power!

Adjustment to check the Transmission



Technical Data

System: Sensortelemetry

HF frequency: 13,56 MHz

HF power 1 to 10 W

integrated power supply rotor

Number of channels: 6 + 2 internal

Sensor: Thermocouple insulated NiCr-Ni (type K)

integrated cold junction compensation

Sample rate: 1,25 kSamples / s

Temperature measuring range: -30°C to 600°C

Analog output voltage: -10 V to +10 V at 50 Ω

Gain adjustment D/A converter (fine $\pm 15\%$) at the evaluation unit

Zero point adjustment D/A converter ($\pm 15\%$) at the evaluation unit

Bandwidth: 0 to 1 Hz (-3 dB)

Linearity: < 0,1 %

Accuracy: $\pm 0,01$ %/°C

Zero point drift: 0,01 % (0 to 70° C)

Ambiente temperature rotor: -25° to +150° C

Power supply: 90 to 270 V AC