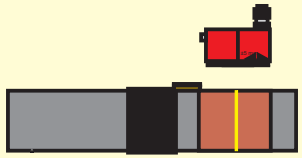
Special Solution for Wheel and Axial Shafts

Wheel transmitter, Universal shaft transmitter

MANNER®
Sensortelemetrie

Axial shaft / Wheel transmitters

Standard transmitting solution pick up type 8



Standard transmitting solution pick up type 7



Wheel transmitter end of shaft



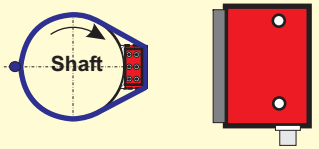
Beared wheel transmitter on axle shaft



Divideable wheel transmitter on axle shaft



Temperature wheel transmitter

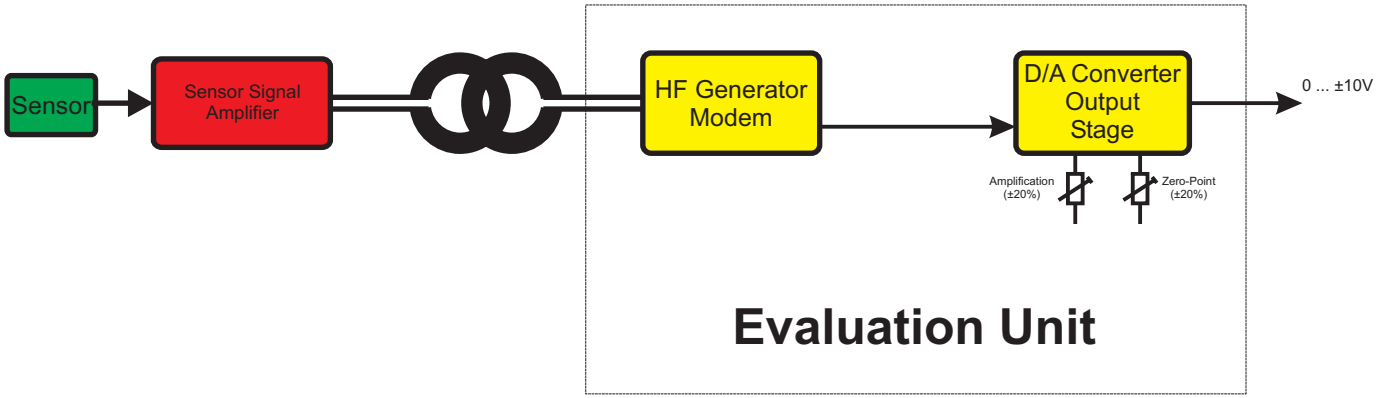


Radio telemetry end of axle shaft



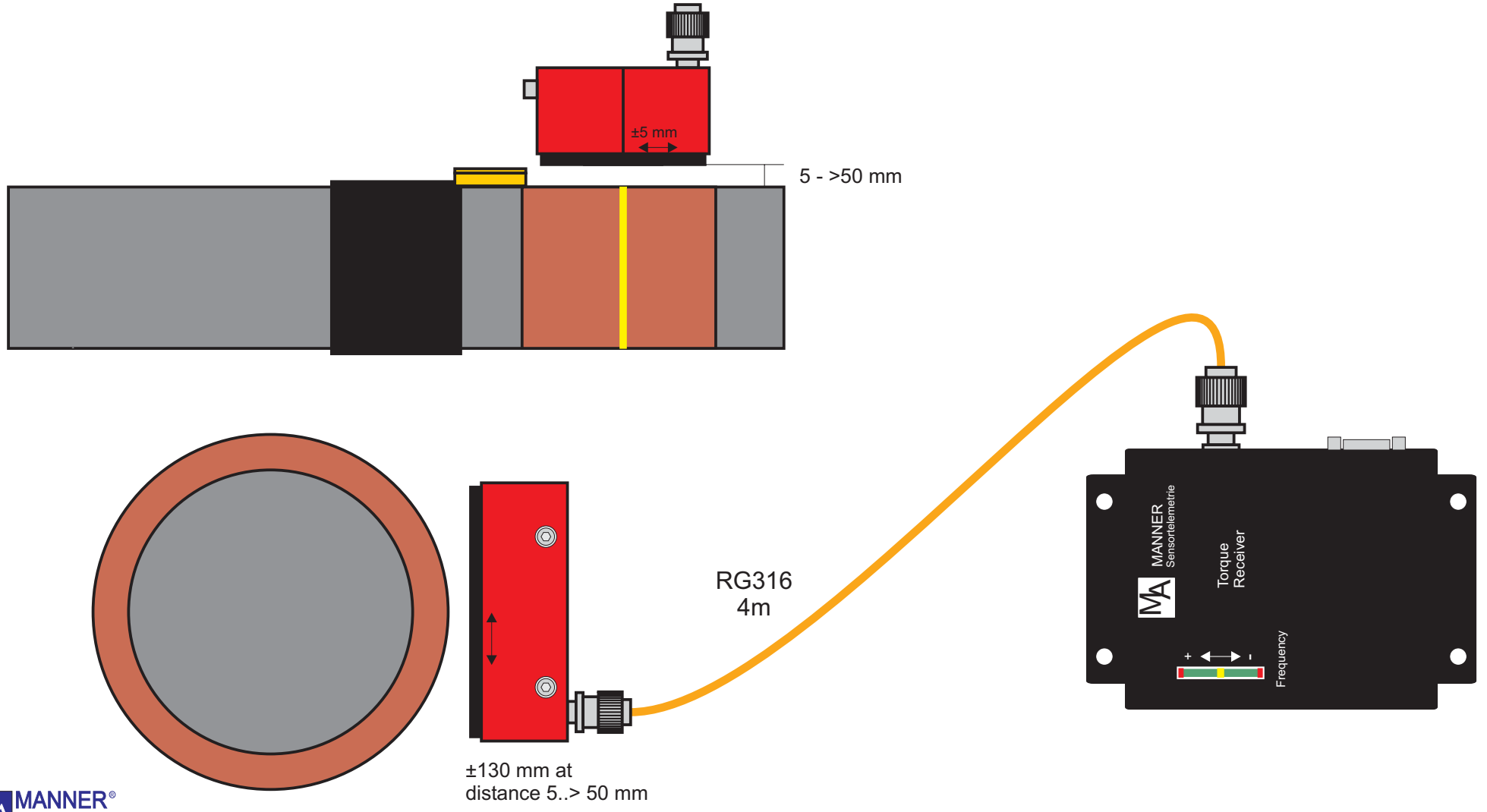
MANNER® Sensortelemetrie

Standard transmitting (Type 8)





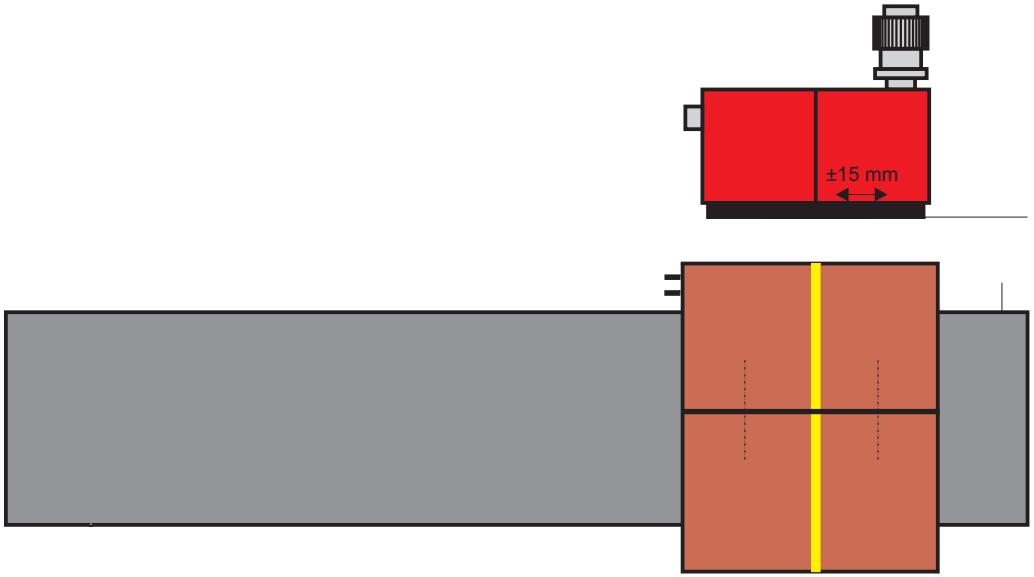
Coupling

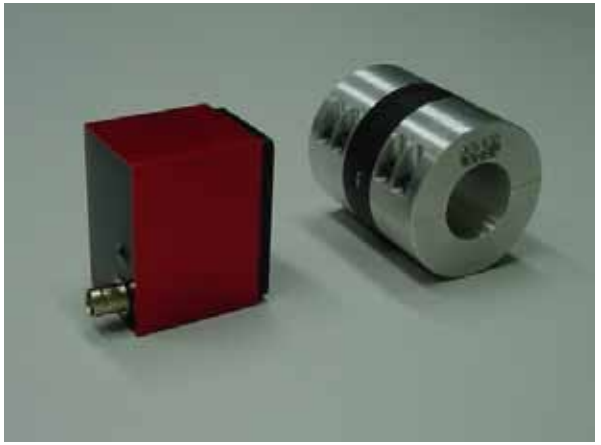


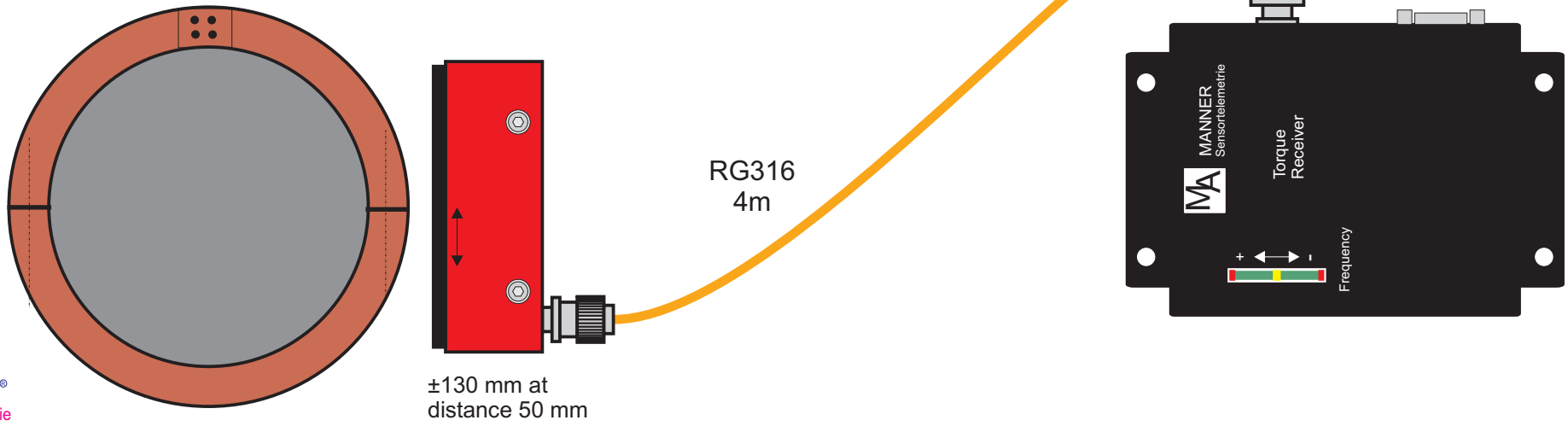
MANNER®
Sensortelemetrie

Coupling

dividable sensor signal amplifier







±130 mm at
distance 50 mm

MANNER®
Sensortelemetrie

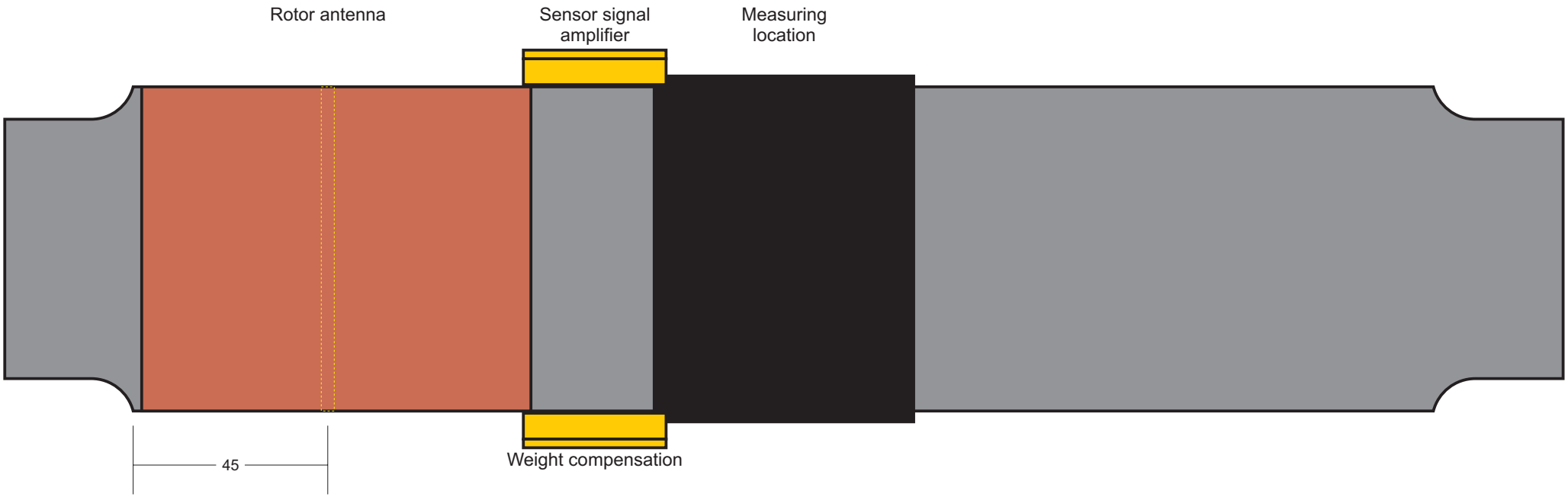
8 Channel Telemetry for Temperature Acquisition

Tmax: 180°C





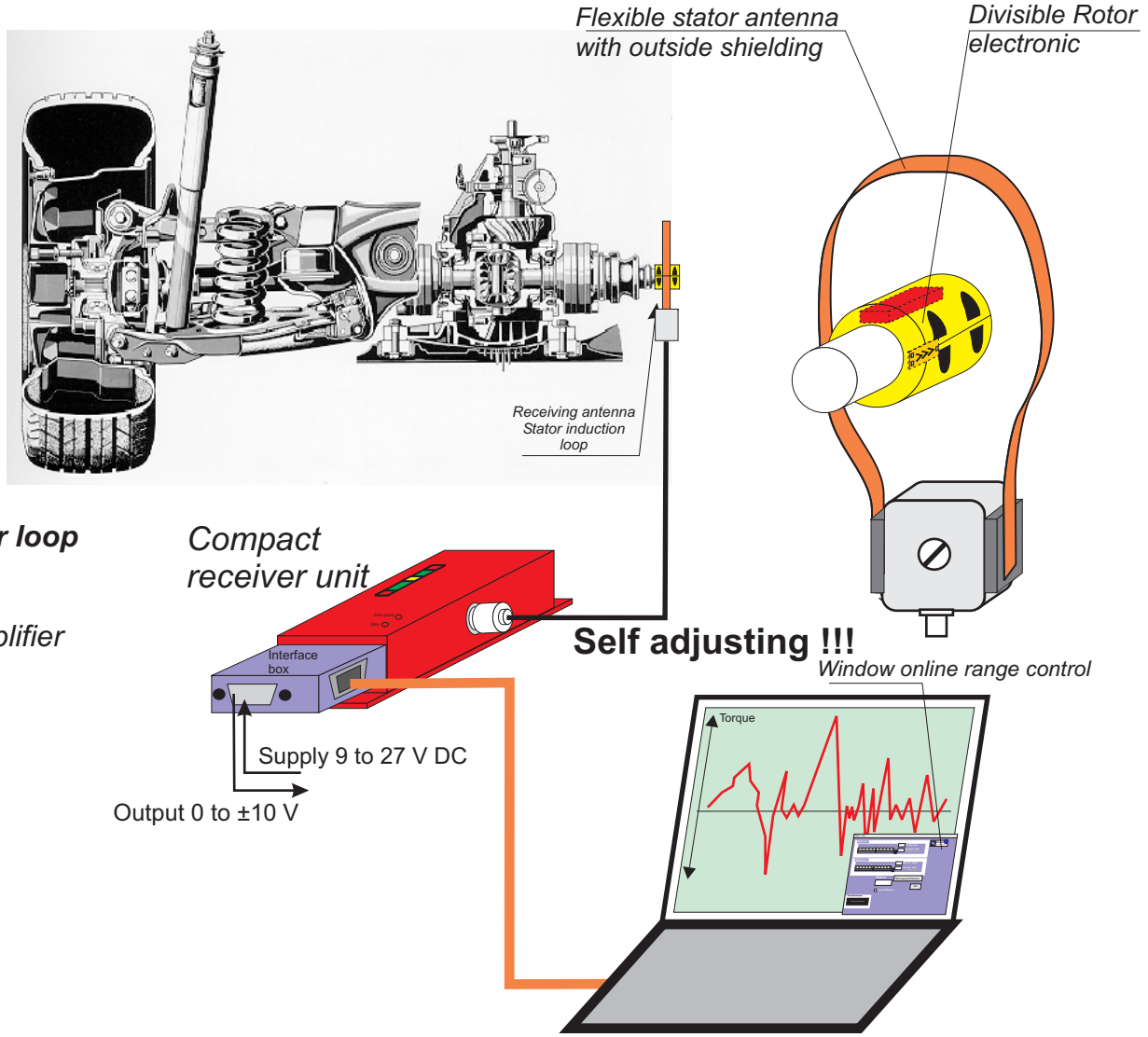
Driving Shaft



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Torque Measuring Telemetry at Axel Shaft (Type 7)

(driving shaft, automotive)



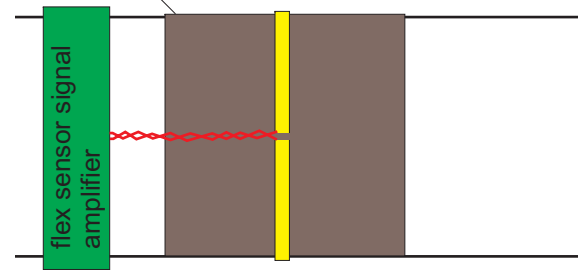
Technical data:

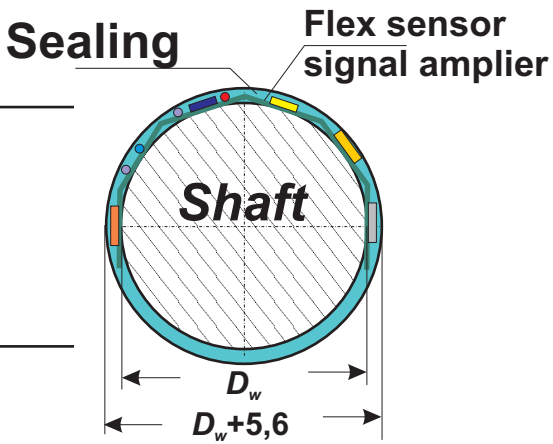
Number of channels: 1
Range of movement:
y = 0 to ±120 mm
x = 0 to ±50 mm
z = 0 to ±50 mm
Driving shaft diameter: 20 to 80 mm
Divisible rotor electronic with integrated rotor loop
Flexible stator loop with outside shielding
(no influence of car body)
Integrated remote programmable measuring amplifier
Remote programmable
*R**ange** 0,05 to 20 mV/V**, zero** ±250% at 1 mV/V,*
Autozero, remote shunt calibration
Inside rotor electronic
Sensors: strain gage, thermocouple NiCr-Ni
Display in Nm

MANNER® Sensortelemetrie

Torque Acquisition on Axle Shaft with Digital Sensor Telemetry (flexible stator induction loop, self adjusting)

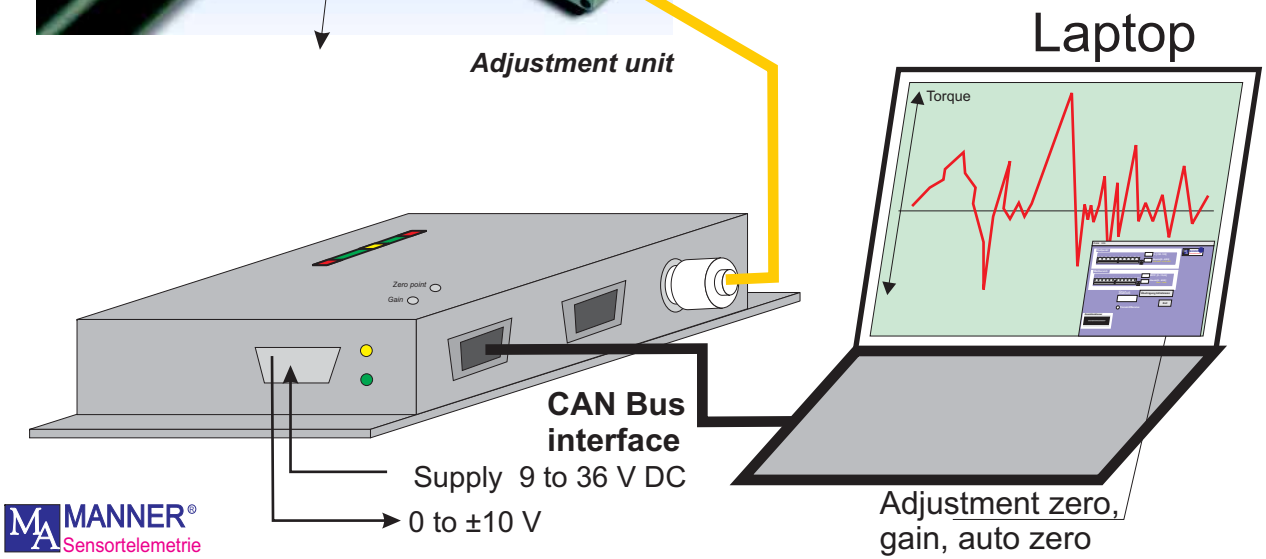






Principal build up

Self adjusting !!!



Technical data:

- ** Flexible stator loop (self tuning)*
- ** Very low build up (shaft radius +3 mm)*
- ** No adjustment necessary*
- ** Easy adjustment*
- ** No sensitivity on chasis contact (stator loop)*
- ** Digital technique: resolution: 16 Bit*
- ** Zero point drift: 0,004%/°C*
- ** Temperature range: -40 to 125°C*
- ** Remote online adjustment of zeropoint, gain and autozero with 16 bit resolution*
- ** Protected data transmitting*
- ** Very compact design*
- ** Optional temperature range up to 160°C*
- ** Interface: CAN, USB, 0 to ±10 V*
- ** Simple handling*

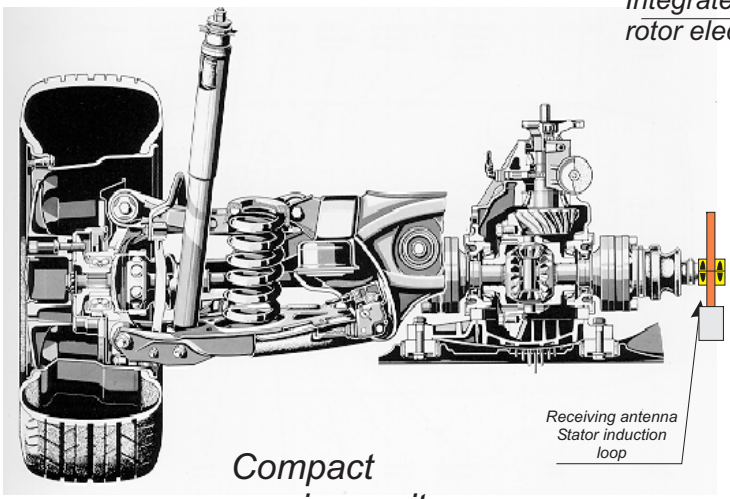
MANNER® Sensortelemetrie

Torque Measuring Telemetry with Flexible Self Adjusting Stator Loop (Type 7)

(driving shaft, automotive)

Technical data:

Number of channels: 1, 2
Range of movement:
y = 0 to ±70 mm
x = 0 to ±50 mm
z = 0 to ±40 mm
Driving shaft diameter: 20 to 100 mm
Rotor electronic with very thin height
Integrated rotor loop based on ferrit folie
Total height only 3,5 mm
Flexible Stator loop with outside shielding, self tuning (no influence of car body)
Integrated remote programmable measuring amplifier
Remote programmable
*R**ange** 0,05 to 20 mV/V, **zero** ±250% at 1 mV/V,*
Autozero, remote shunt calibration
Inside rotor electronic
Sensors: strain gage, thermocouple NiCr-Ni
Display in Nm



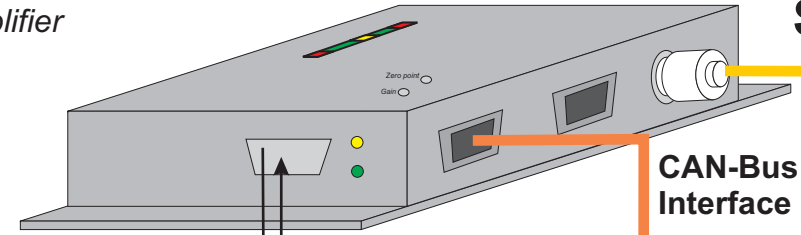
Compact receiver unit

Flexible stator antenna with outside shielding

Integrated rotor electronic



Self adjusting !!!

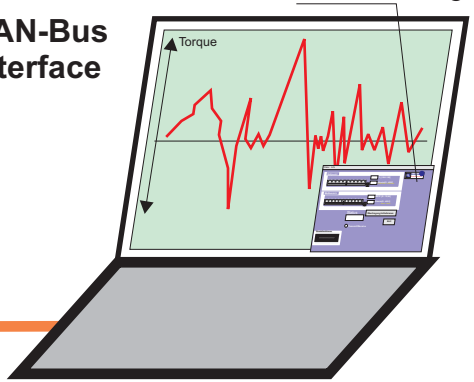


CAN-Bus Interface

Supply 9..36 V DC

0..+/-10 volts

Window online range control



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Applications with Flexible Stator Antenna





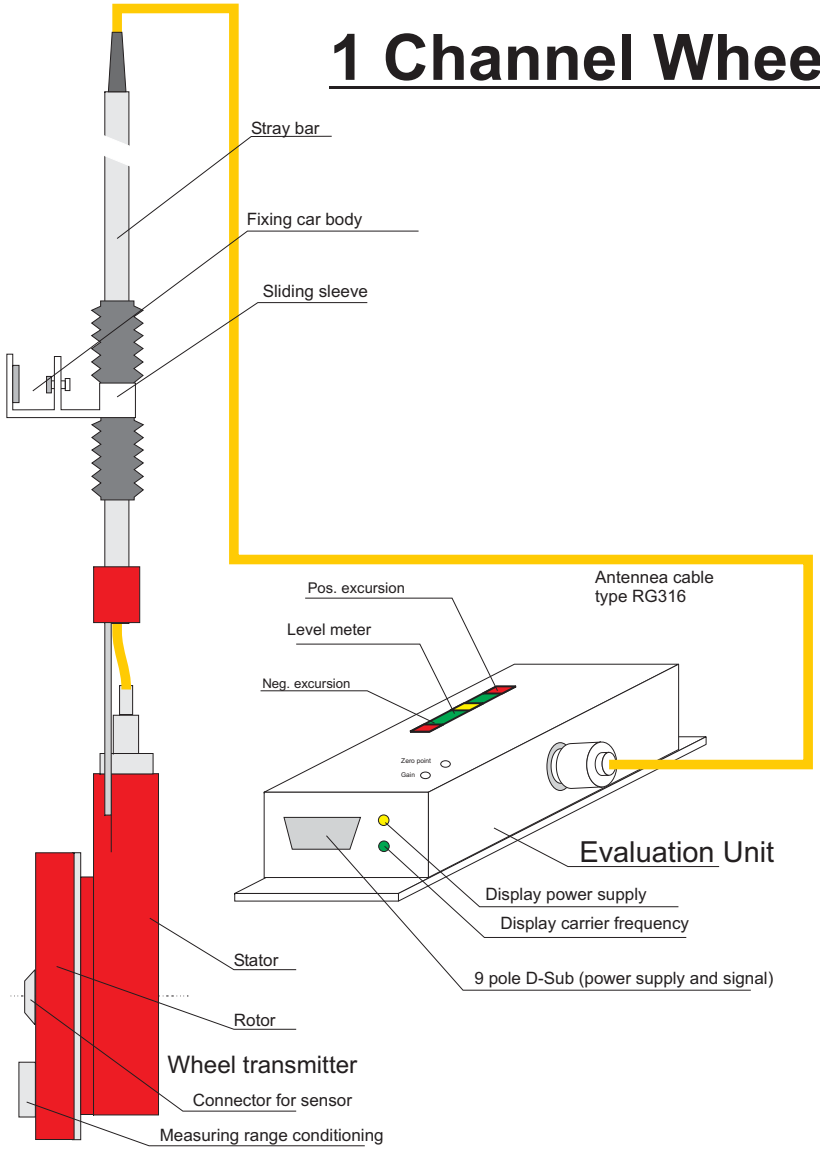






MANNER® Sensortelemetrie

1 Channel Wheel Transmitter

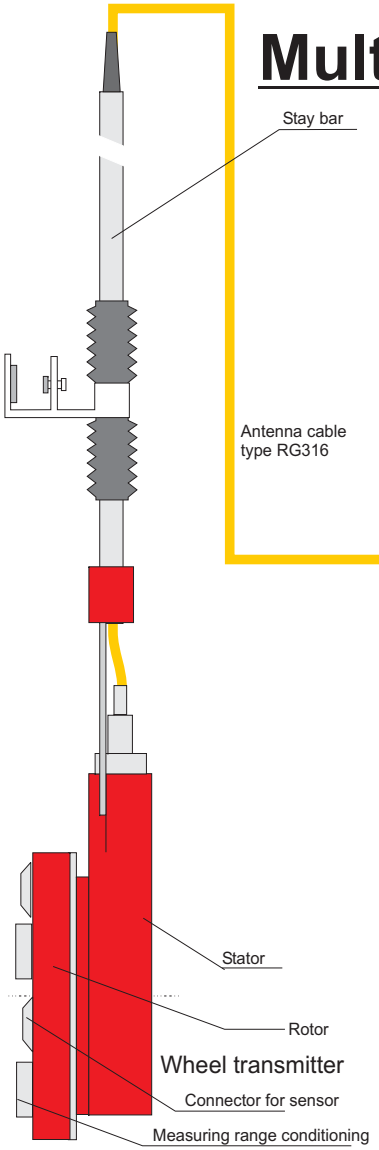


Technical Data:

HF frequency = 13,56 MHz
Carrier frequency: 100 kHz
Integrated power supply
Geometry: wheel transmitter
Width: 43 mm, diameter: 75 mm
Number of channels: 1
Mode: full bridge
Strain gage supply voltage: 5 V
Measuring range selectable with Rv: 0,1 to 4 mV/V
Strain gage resistance: 350 Ω
Amplification adjustment (fine ±15%) at the evaluation unit
Zero point adjustment (±20%) at the evaluation unit
Bandwidth: 0 to 1 kHz (-3 dB)
Zero point drift: 0,003%/°C (1 mV/V)
Linearity (typical): 0,05%
Temperature (wheel transmitter): -25 to +125°C
Temperature (evaluation Unit: -25 to +85°C
System of protection (wheel transmitter): IP65
Power supply: 9 to 18 V
Current consumtion: 280 mA (400 mA max)
RPM pulses: 360 / revolution
RPM range: 0 to 2500 revolutions / min.
Output RPM: open collector

MANNER® Sensortelemetrie

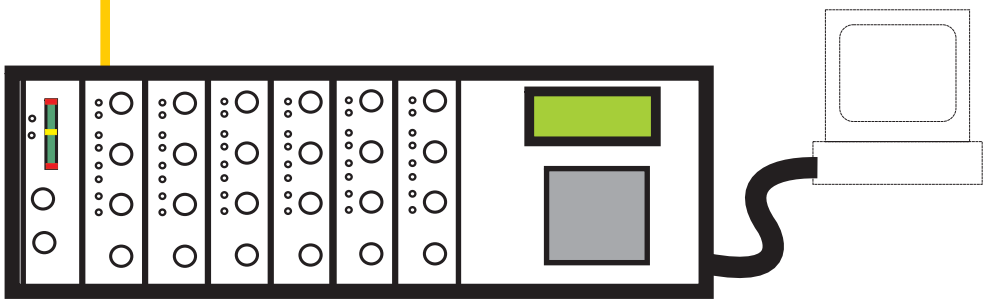
Multi Channel Wheel Transmitter



Technical Data:

Max. number of channels: 32
Sensor: Strain gage, thermocouple
NiCr.-Ni, charge Amplifier,
piezo electronic sensors
Sensitivity: 0,05 to 20 mV/V
Adjustment by solderable resistor or remote control
Sensor power supply: 2,5 V
Mode: time multiplex, digital
Max. sampling rate : 1 000 000 Sample/sec.
Code: PCM, Resolution: 12 Bit
Accuracy: 0,1%
Filter at the rotor electronic: 6 pole Butterworth
Time synchronous sampling for all channels

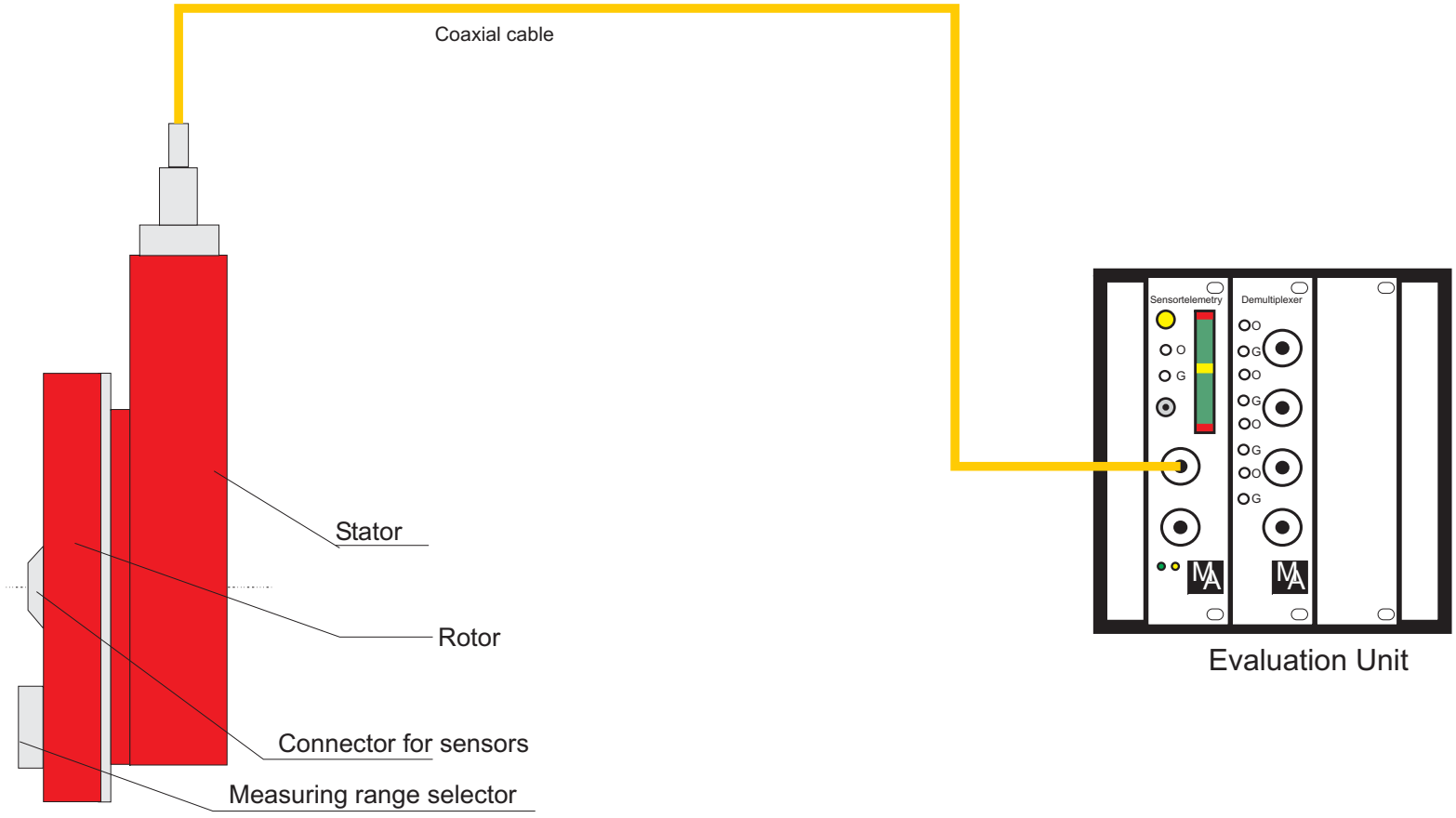
Inductive coupling
Temperature range: -10 to +85°C
-30 to +125°C
System of protection: IP67
Output:
PCM data serial: up to 15 MBit with optolink
Parallel digital interface (16 Bit wide)
Output voltage (analog): 0 to ±10 V
Option: serial interface: RS232
Option: remote calibration
Option: remote measuring range control
per channel
Option: remote zero point adjustment
per channel



Evaluation Unit Data acquisition

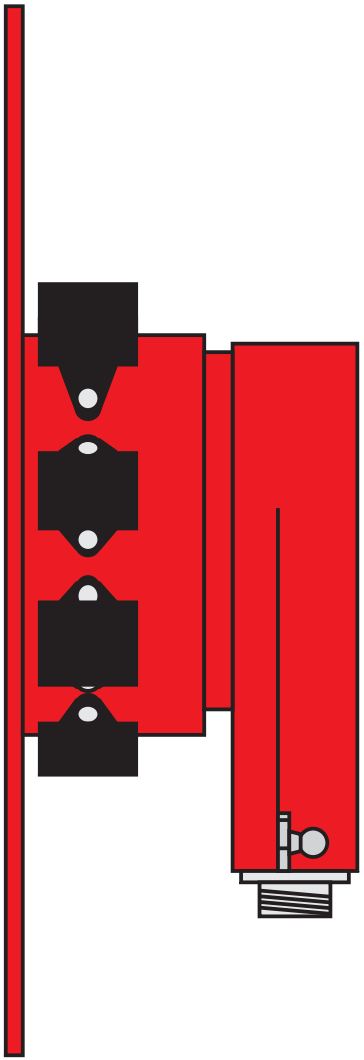
MANNER® Sensortelemetrie

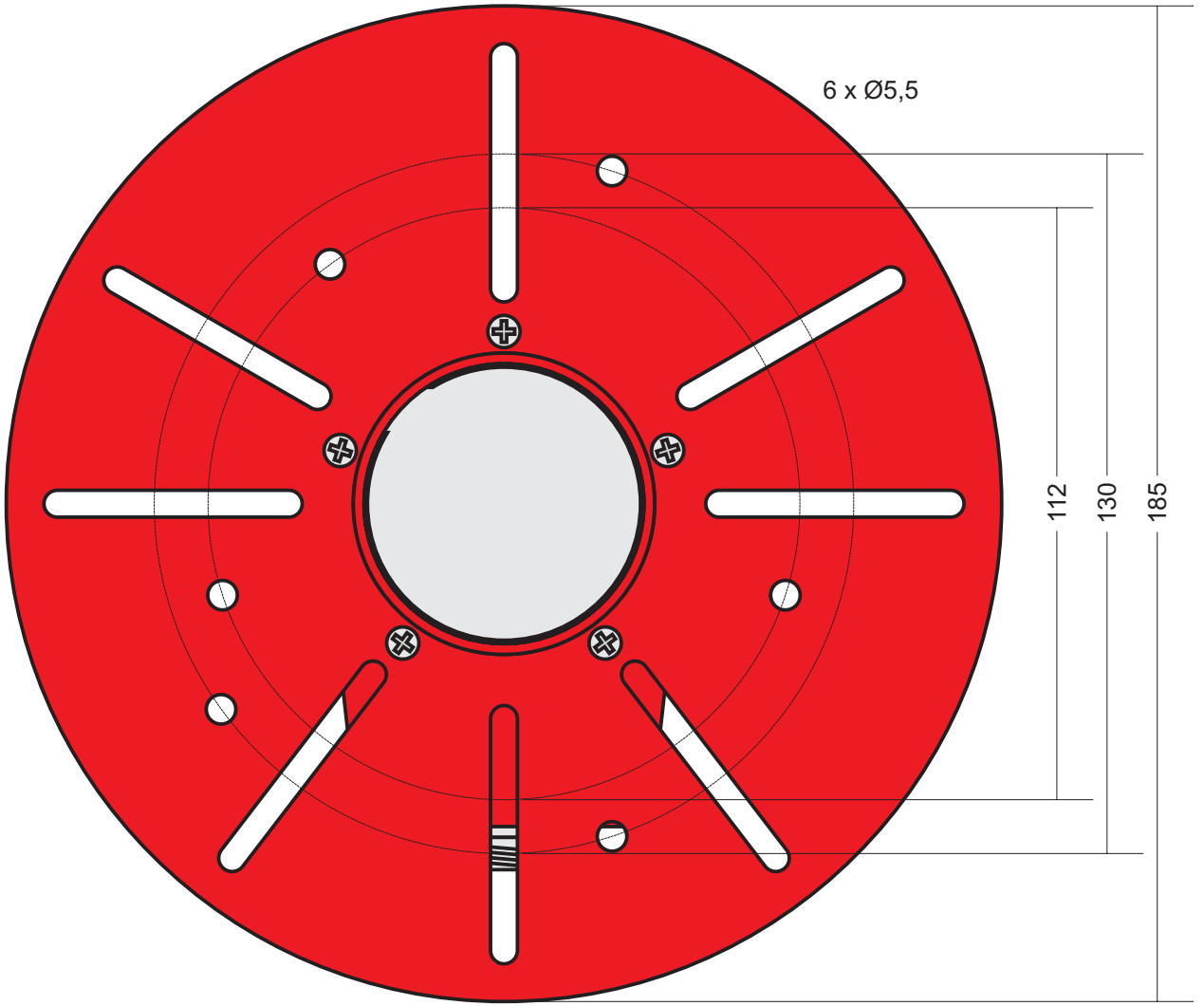
General Measurement Configuration



MANNER® Sensortelemetrie

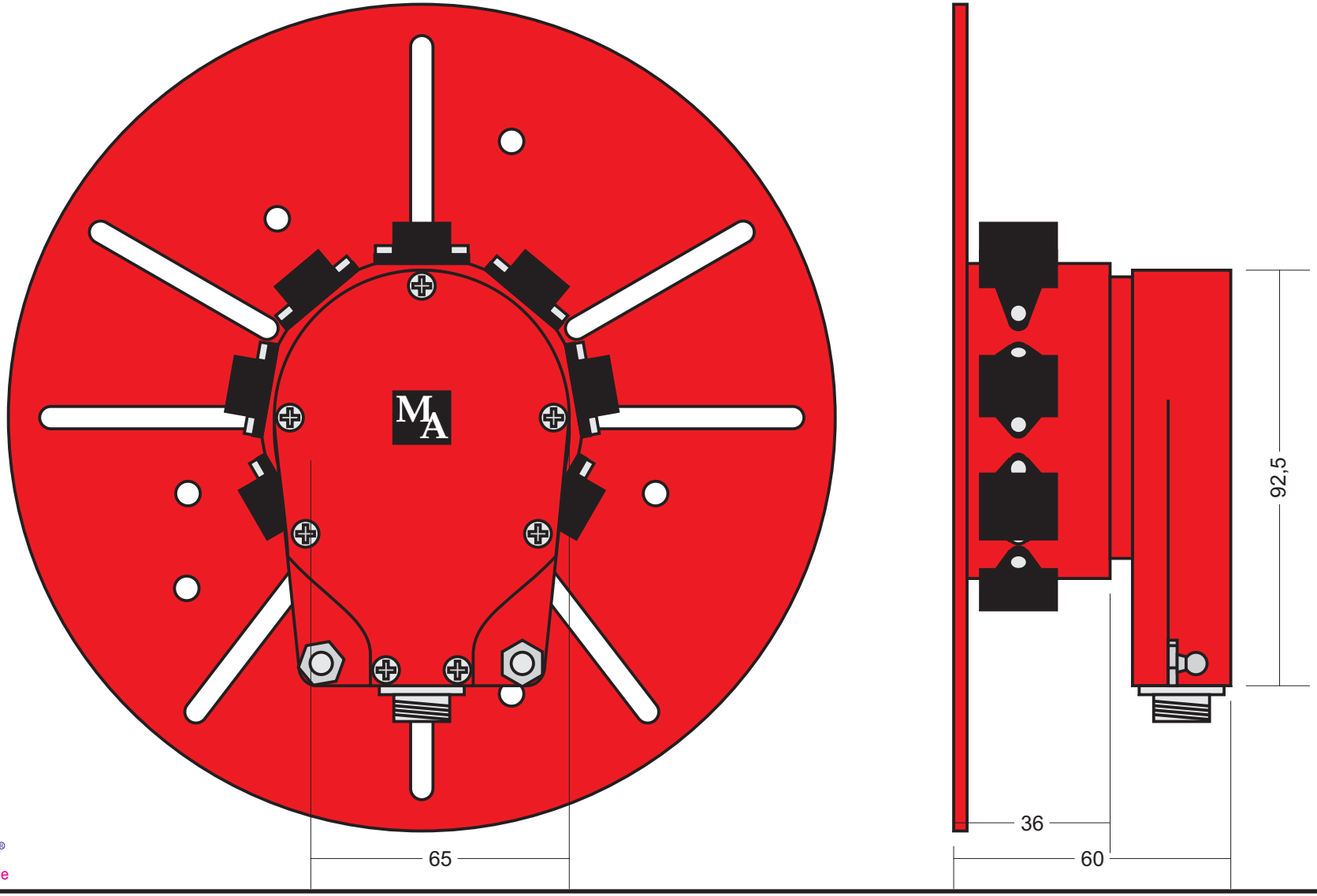
Wheel Transmitter Mechanic (1)





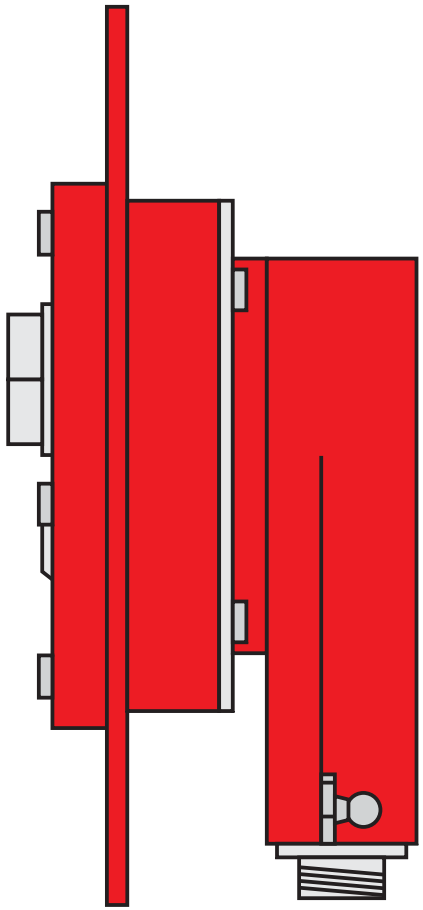
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Sensortelemetrie

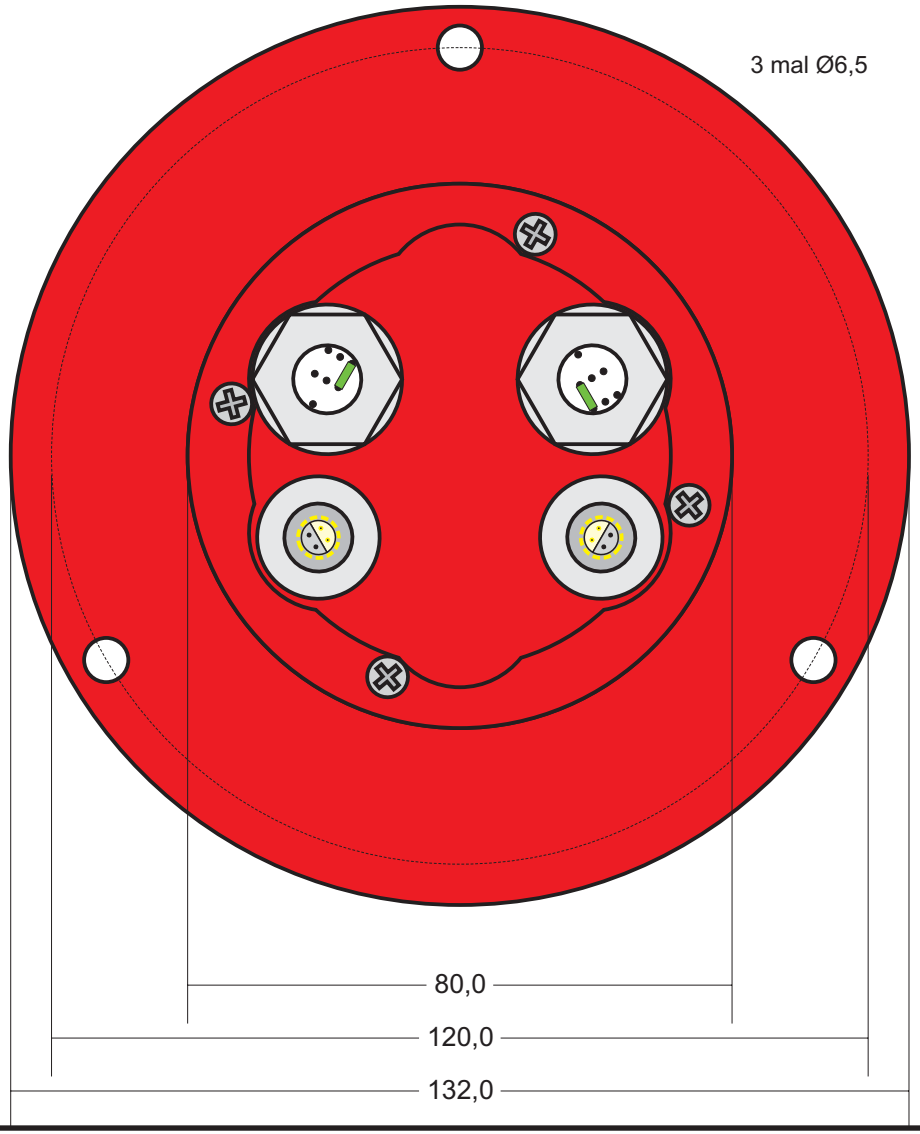
Wheel Transmitter Mechanic (2)



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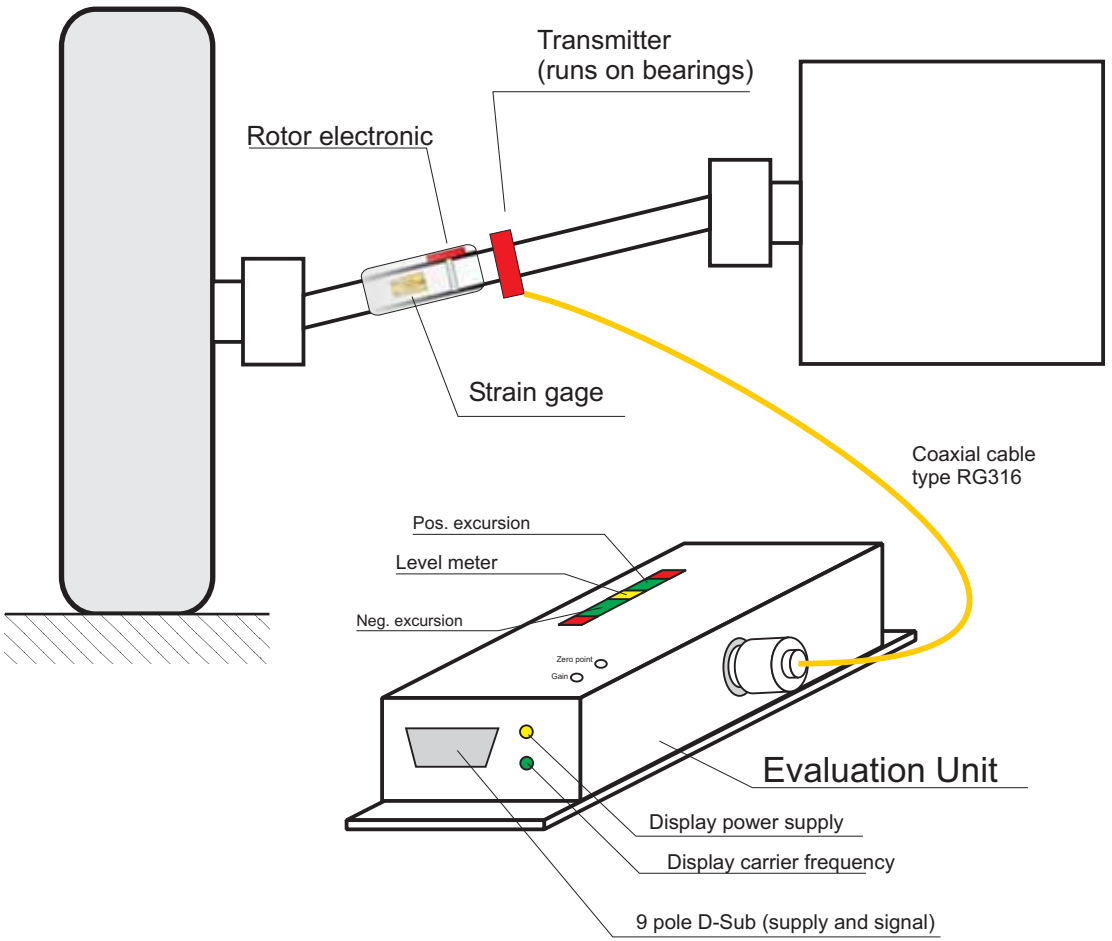
Wheel Transmitter Mechanic (1)





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Beared Wheel Transmitter



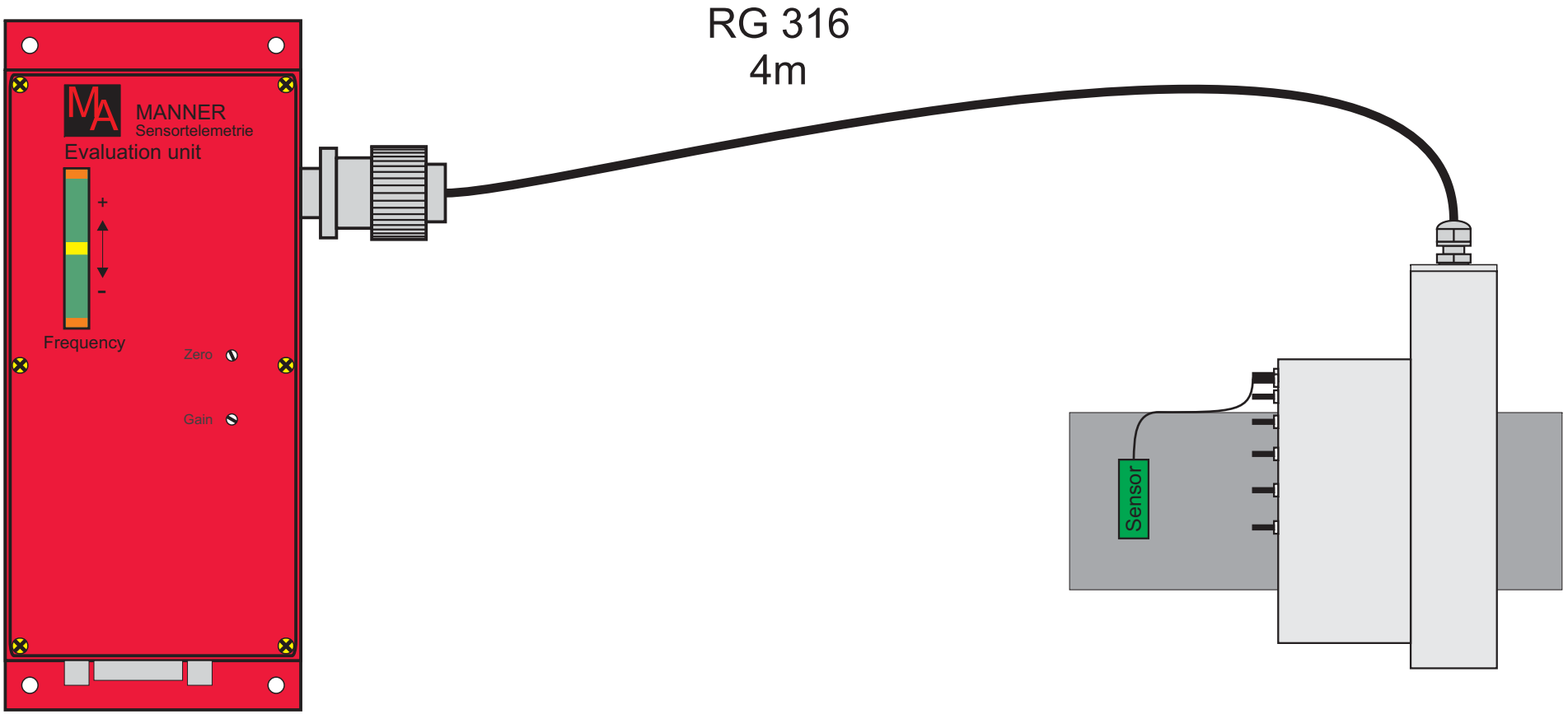
Technical Data (Transmitter):

HF coupling for 13,56 MHz
Max. HF power 3 W
Number of channels: 1
Output signal voltage: 0 to ±10 V / 0 (4) to 20 mA
Bandwidth: 1 kHz (-3dB)
Inner diameter: 36 to 81 mm
Max. rpm: 3000 revolutions / min
Cable type: RG316
Cable length: 4 m
Temperature range: -40 to +125°C
Splash-proof
Non divisible
Supply voltage: 9 to 36 V DC



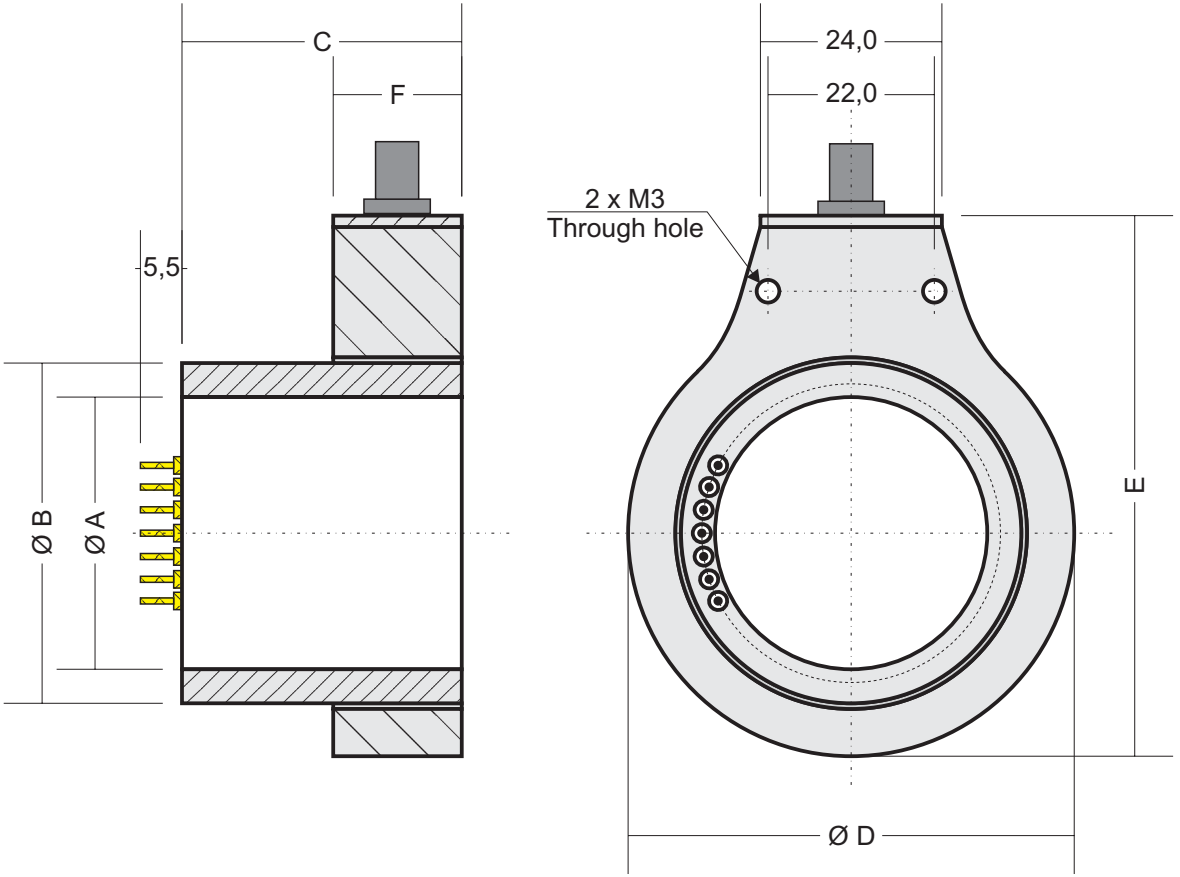
MANNER® Sensortelemetrie

Coupling


RG 316
4m
MANNER
Sensortelemetrie
Evaluation unit
+
-
Frequency
Zero
Gain
Sensor

Universal Shaft Transmitter with Sensor Signal Amplifier

(non divisible, 1 channel,with/without RMC, without rpm sensor)

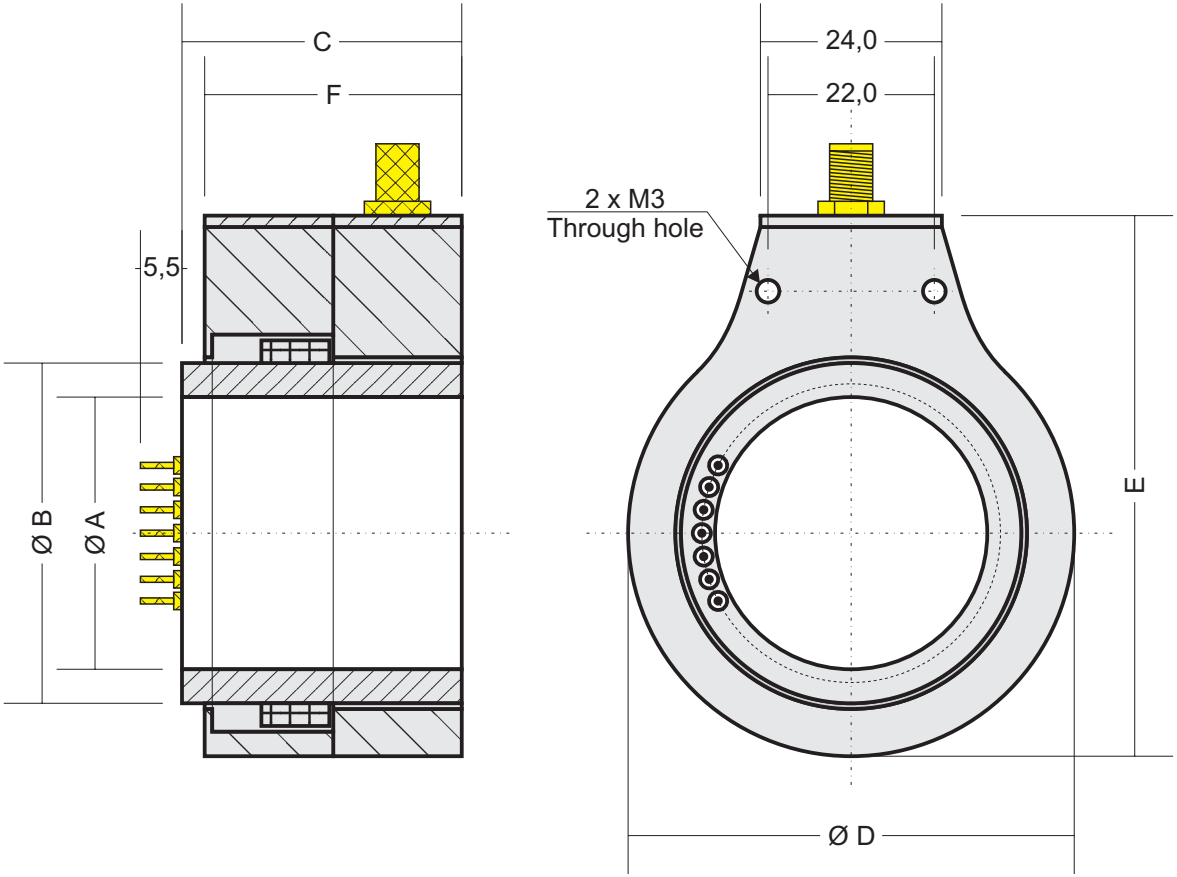


Dimensions					
Ø A [mm]	*Ø B [mm]*	*C [mm]*	*Ø D [mm]*	*E [mm]*	*F [mm]*
36	45	37	59	70	17
41	50	37	65	76	17
46	55	37	69	83	17
51	60	39	75	90	19
56	65	40	79	96	20
61	70	40	85	103	20
66	75	40	89	108	20
71	80	40	95	113	20
76	85	40	99	118	20
81	90	43	105	128	23
86	95	43	109	133	23
96	105	46	120	143	26

MANNER®
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Universal Shaft Transmitter with Sensor Signal Amplifier

(non divisible, 1 channel, without RMC, with rpm sensor)



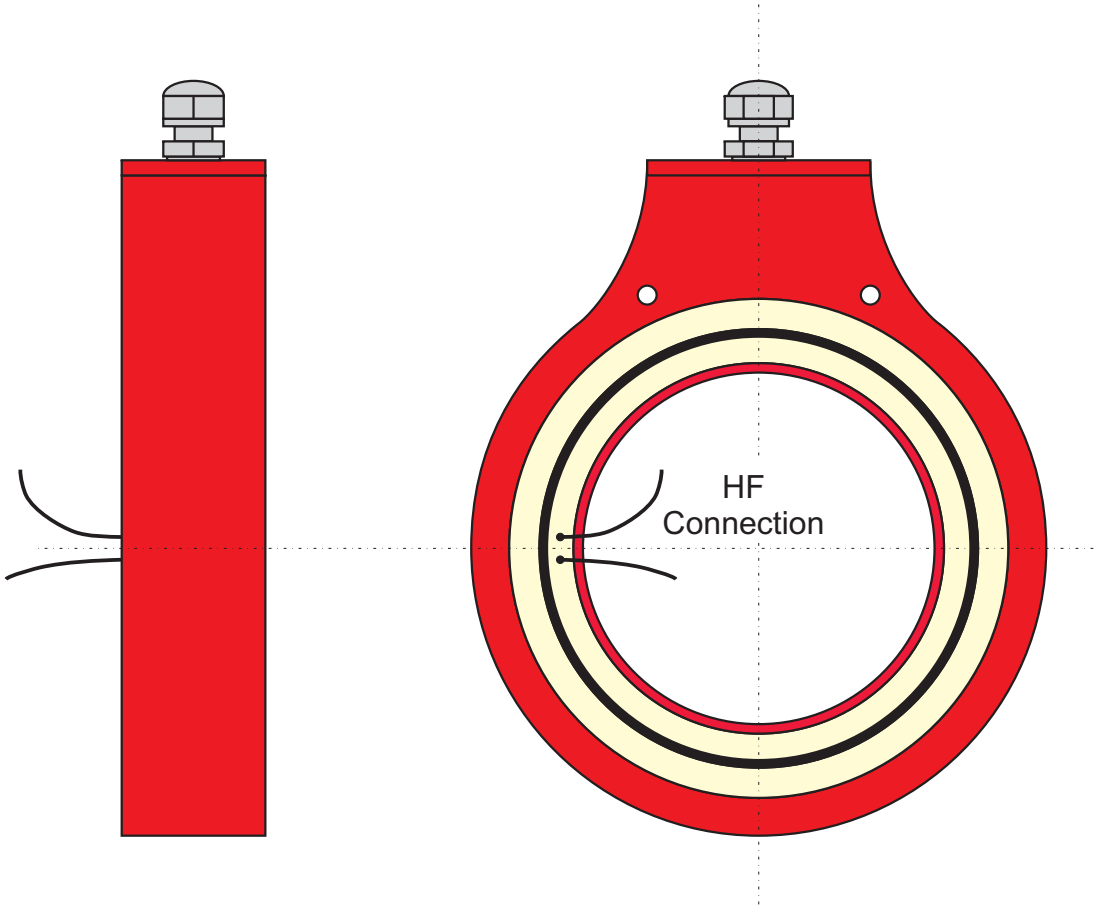
Dimensions

Ø A [mm]	Ø B [mm]	C [mm]	Ø D [mm]	E [mm]	F [mm]	Pulses / 360°
36	45	37	59	70	34	max. 40
41	50	37	65	76	34	max. 45
46	55	37	69	83	34	max. 48
51	60	39	75	90	36	max. 52
56	65	40	79	96	37	max. 56
61	70	40	85	103	37	max. 60
66	75	40	89	108	37	max. 64
71	80	40	95	113	37	max. 68
76	85	40	99	118	37	max. 72
81	90	43	105	128	40	max. 78
86	95	43	109	133	40	max. 80
96	105	46	120	143	43	max. 90

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Universal Shaft Transmitter (non divisible)

(without amplifier)

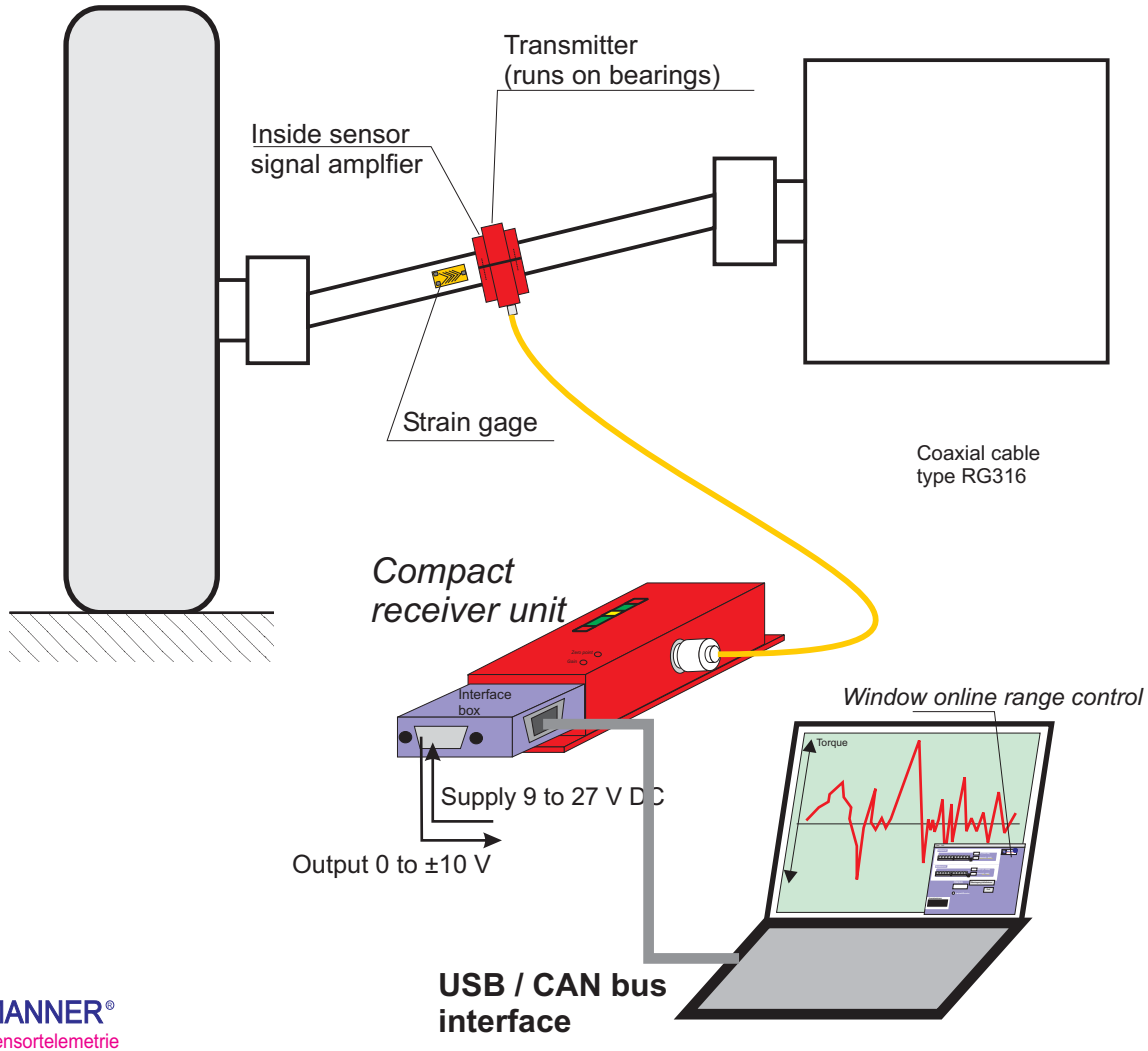


Inner Ø	Outer Ø
61 mm H7	92 mm
71 mm H7	102 mm
81 mm H7	117 mm

Mind free space of minimum 25 mm for cable connection
Over all free space diameter = outer diameter + 50 mm

MANNER® Sensortelemetrie

Divideable Beared Wheel Transmitter



Technical Data (Transmitter):

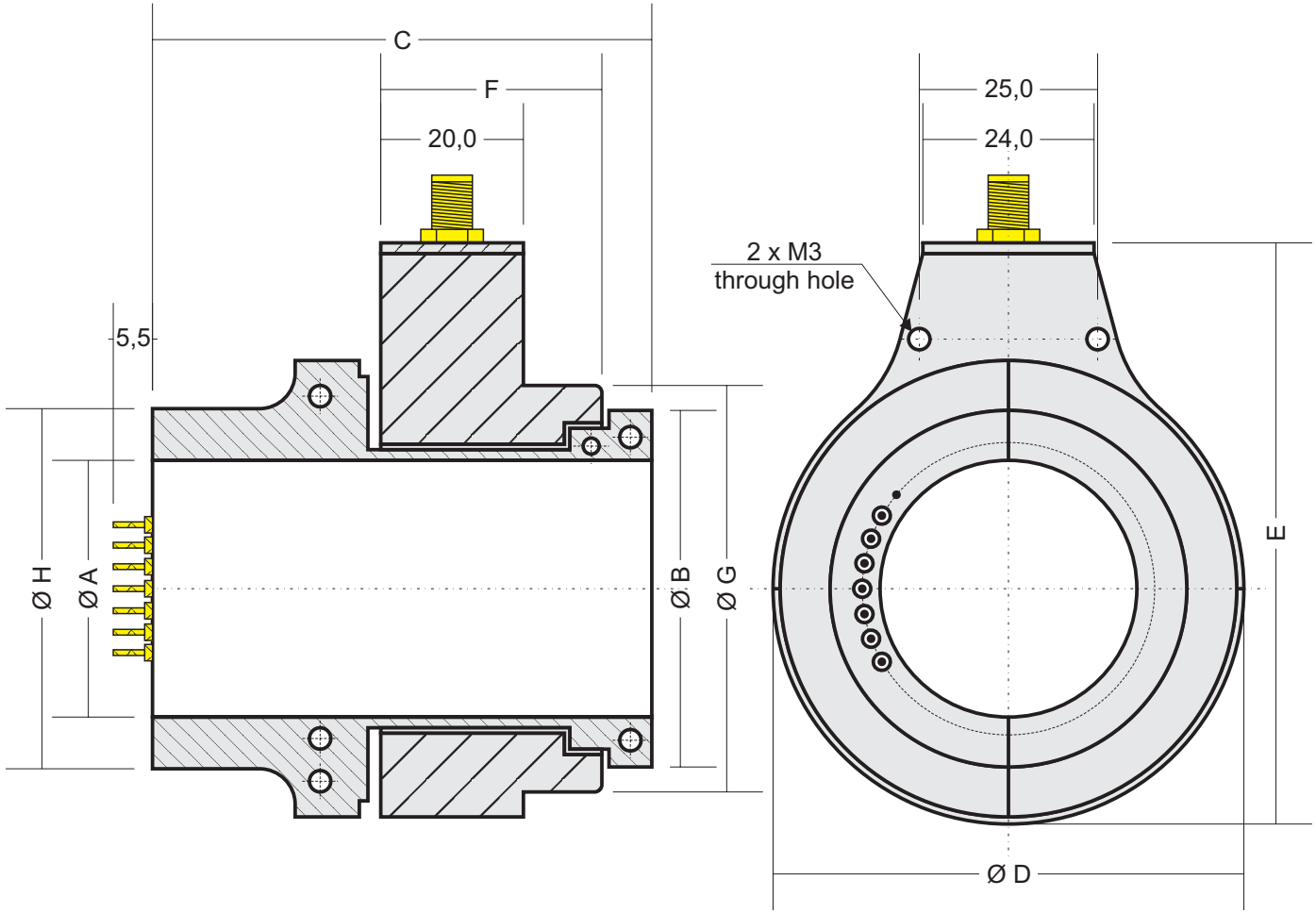
HF coupling for 13,56 MHz
Max. HF power 3 W
Number of channels: 1
Output signal voltage: 0 to ±10 V / 0 (4) to 20 mA
Bandwidth: 1 kHz (-3dB)
Inner diameter: 36 to 81 mm
Max. rpm: 3000 revolutions / min
Cable type: RG316
Cable length: 4 m
Temperature range: -40 to +125°C
Splash-proof
Divisible
Supply voltage: 9 to 36 V DC



MANNER® Sensortelemetrie

Universal Shaft Transmitter with Sensor Signal Amplifier

(divisible, 1 channel, without RMC, without rpm sensor)



Dimensions

Ø A [mm]	Ø B [mm]	C [mm]	Ø D [mm]	E [mm]
36	50	70	66	80
41	55	73	71	85
46	60	75	76	90

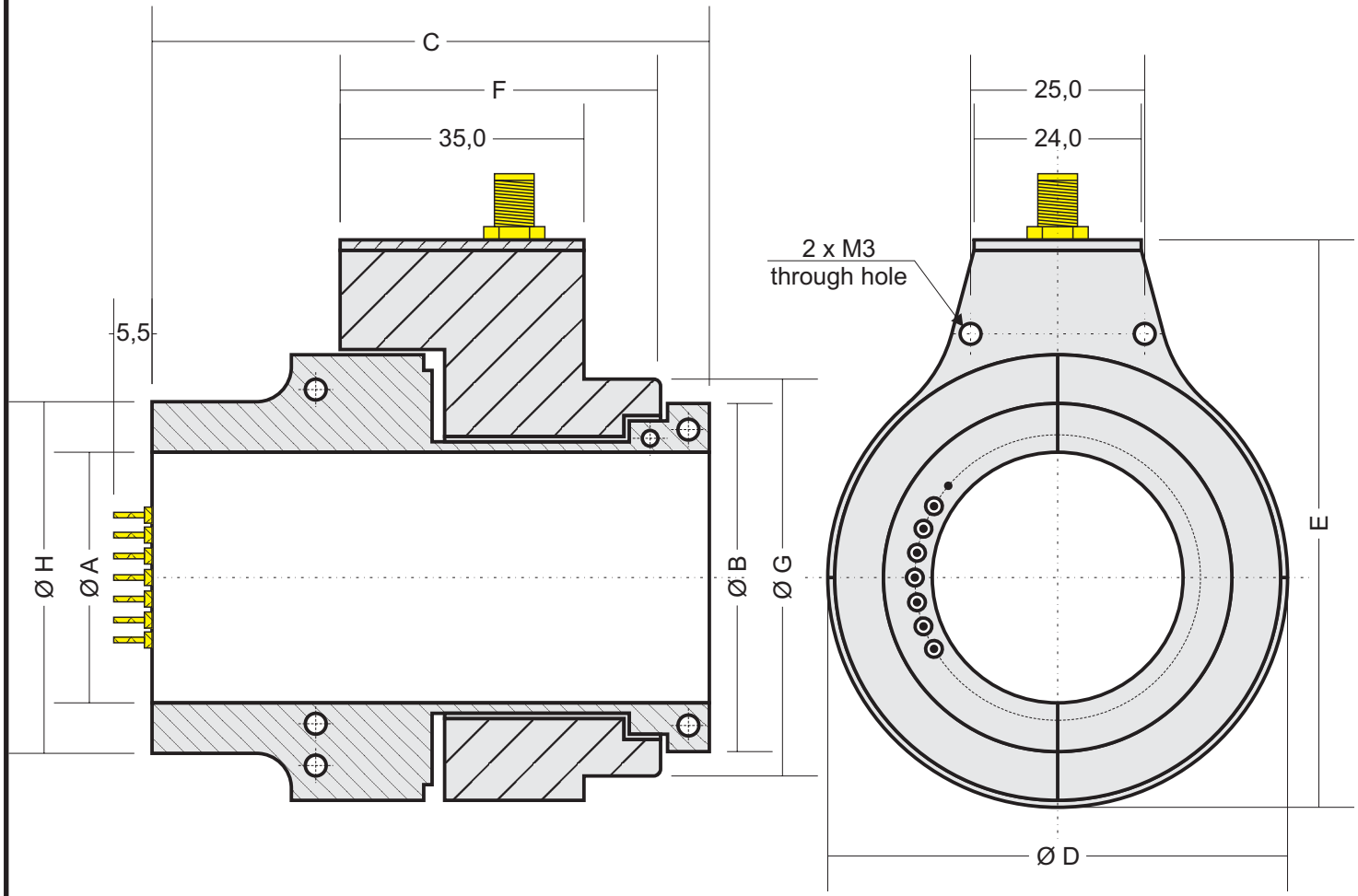
Continuation

Ø A [mm]	F [mm]	Ø G [mm]	Ø H [mm]
36	31	57	51
41	34	62	56
46	36	67	61

MANNER®
Sensortelemetrie

Universal Shaft Transmitter with Sensor Signal Amplifier

(divisible, 1 channel, without RMC, with rpm sensor)



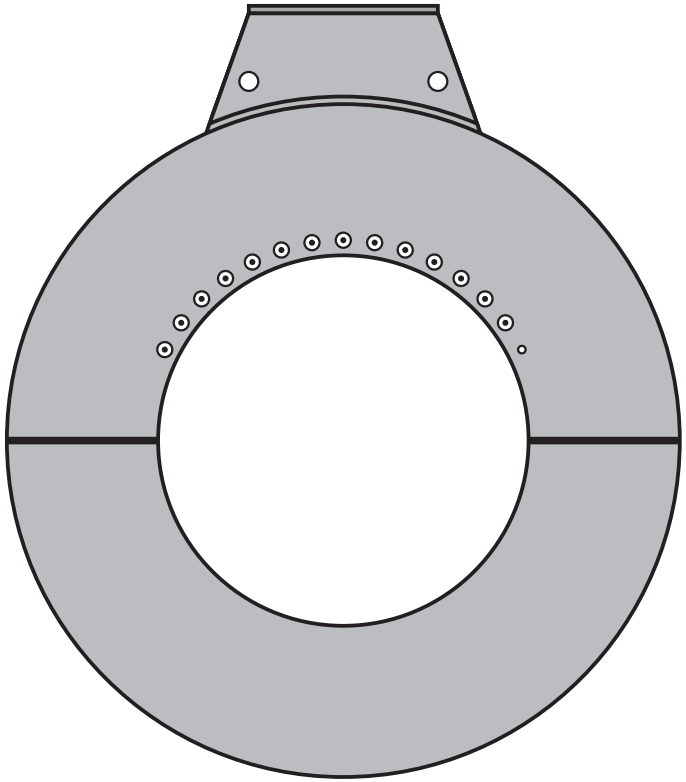
Dimensions				
Ø A [mm]	*Ø B [mm]*	*C [mm]*	*Ø D [mm]*	*E [mm]*
36	50	70	66	80
41	55	73	71	85
46	60	75	76	90

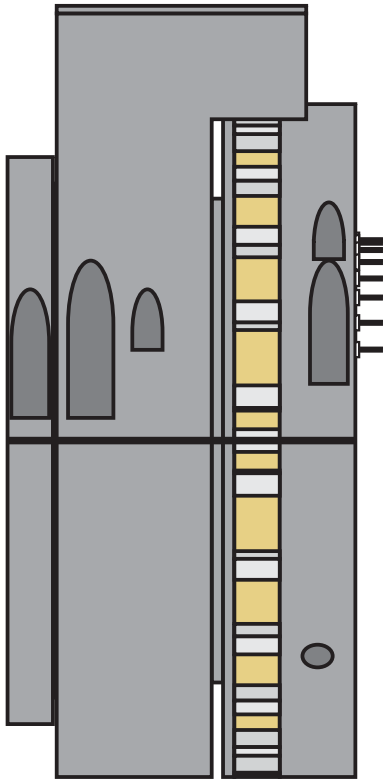
Continuation

Ø A [mm]	*F [mm]*	*Ø G [mm]*	*Ø H [mm]*
36	31	57	51
41	34	62	56
46	36	67	61

MANNER® Sensortelemetrie

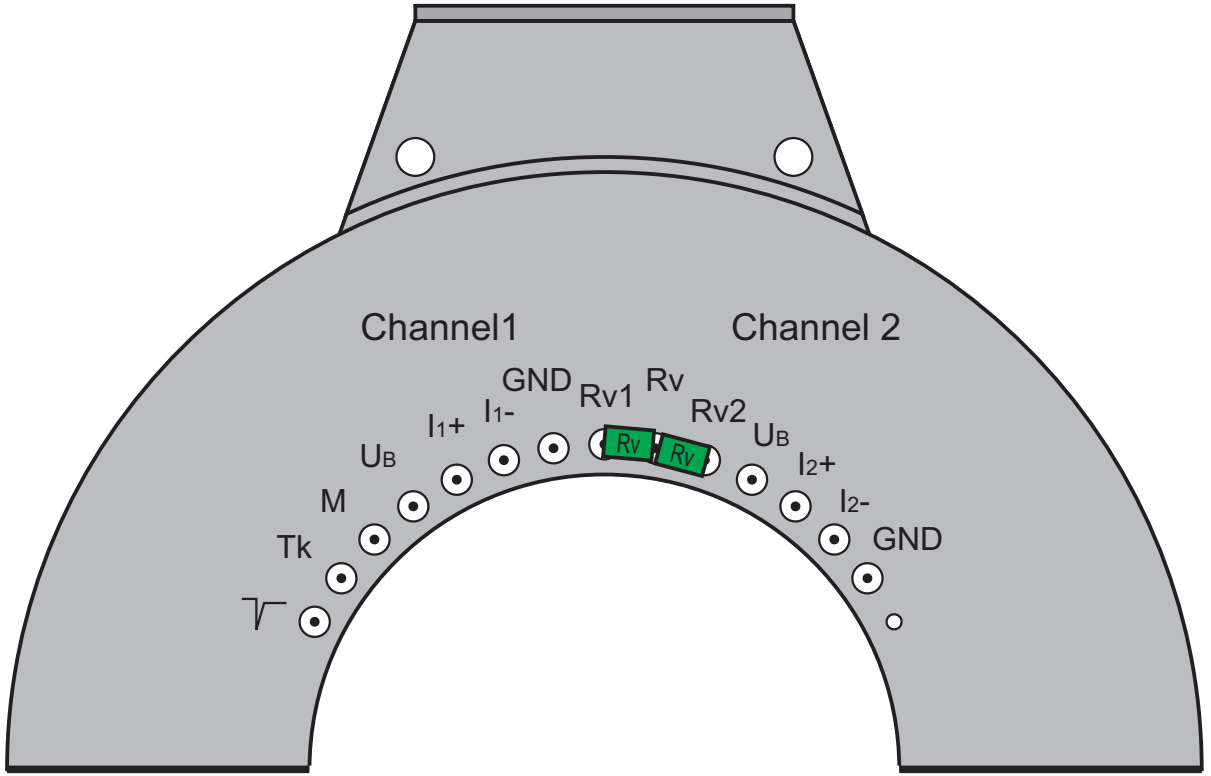
Universal Shaft Transmitter with Sensor Signal Amplifier (2 Channel Temperature) (with RPM Measurement)





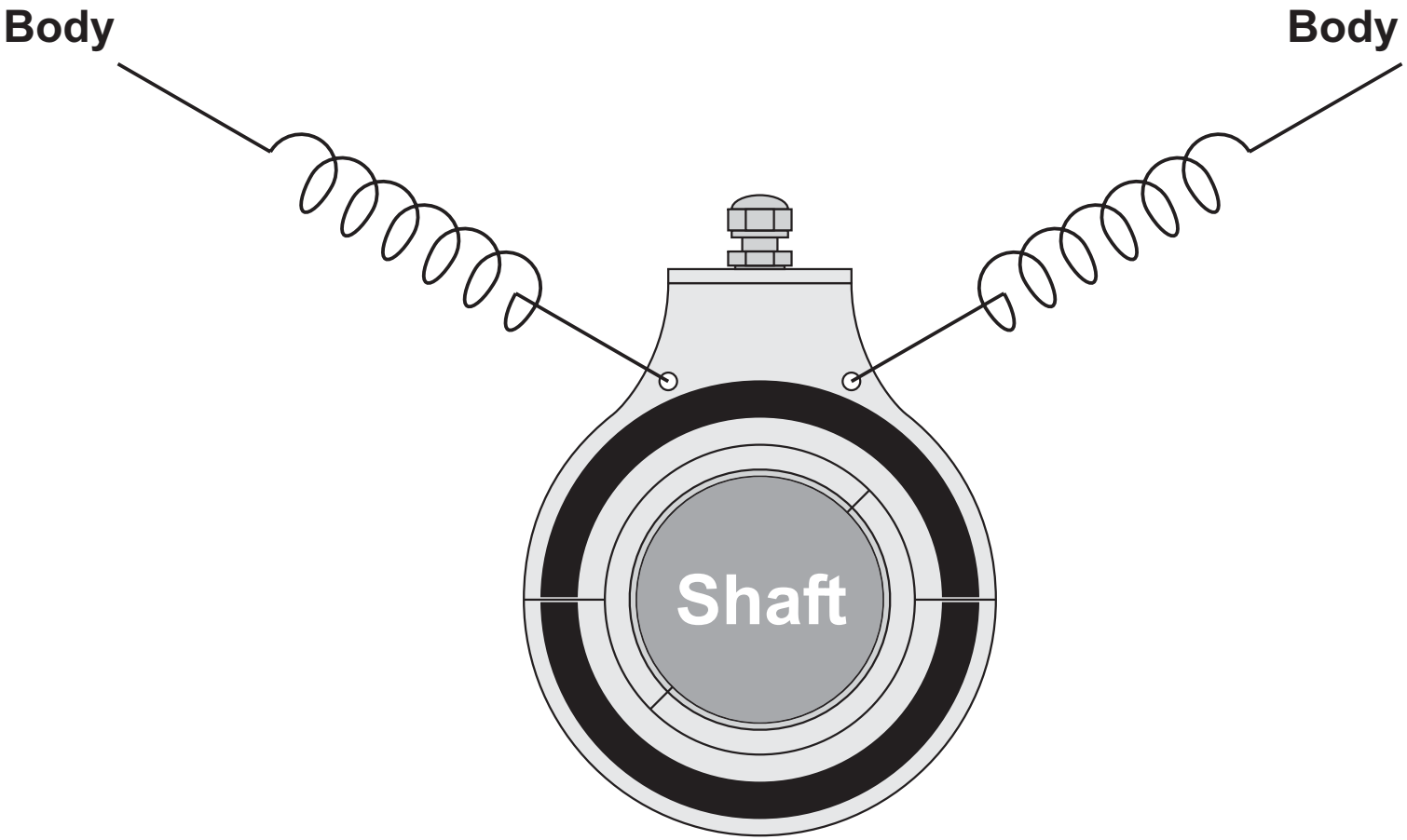
MANNER®
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Universal Shaft Transmitter with Sensor Signal Amplifier (2 Channel Temperature) (Pin Assignment)



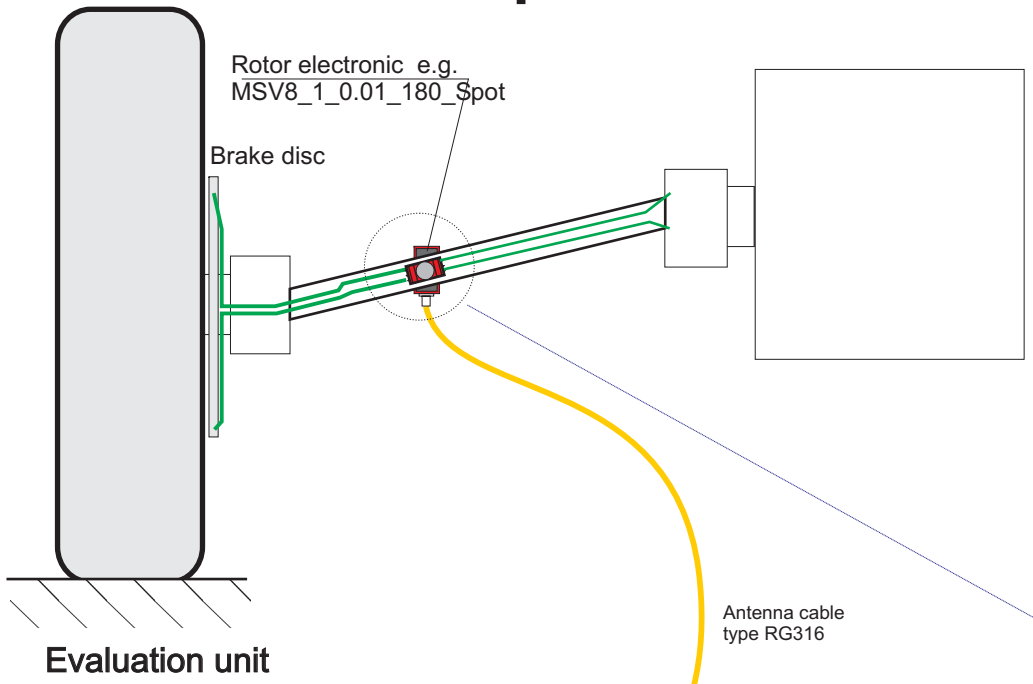
MANNER® Sensortelemetrie

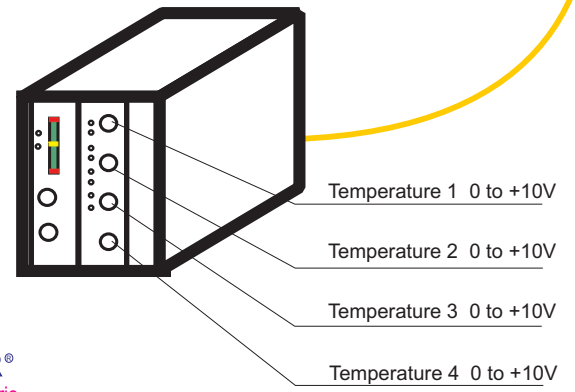
Mechanical Fixing



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Sensortelemetrie

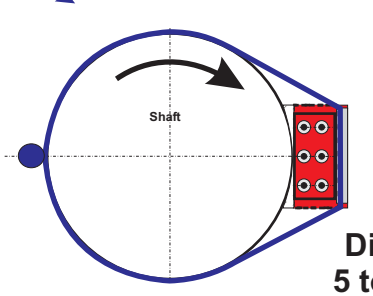
Temperature Wheel Transmitter (Spot)



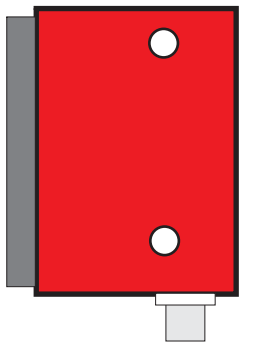


Technical Data

Mode: 1 sample per turn
Minimum signal contact time: 750 µs
Transmitting coverage: 90°
Contineous transmitting at revolution and right position
Transducer: thermocouple type K
Range 0 to 500°C
Max. rpm: 13 000 RPM
Shaft diameter: not limited
Cable: RG316
Enviroment temperature range: -35 to +180°C
IP68



Distance:
5 to 40 mm



Pick up

Kabel- oder Schlachbinder

MANNER® Sensortelemetrie

Temperature Wheel Transmitter (Spot)



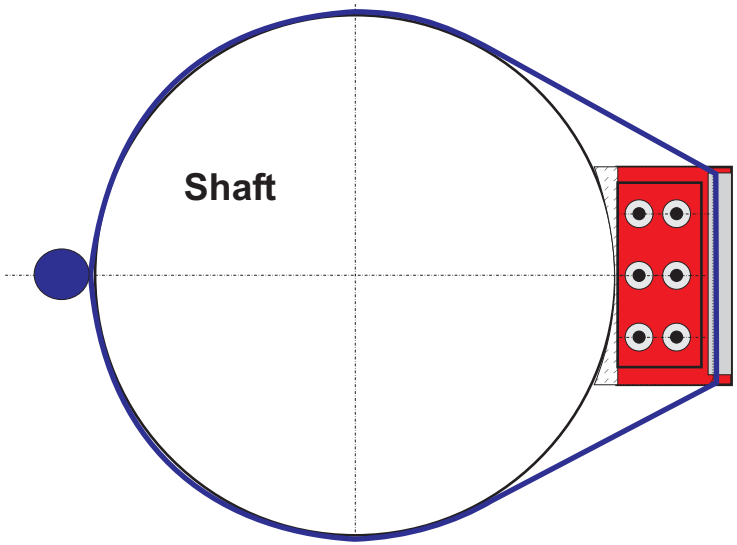
Evaluation unit

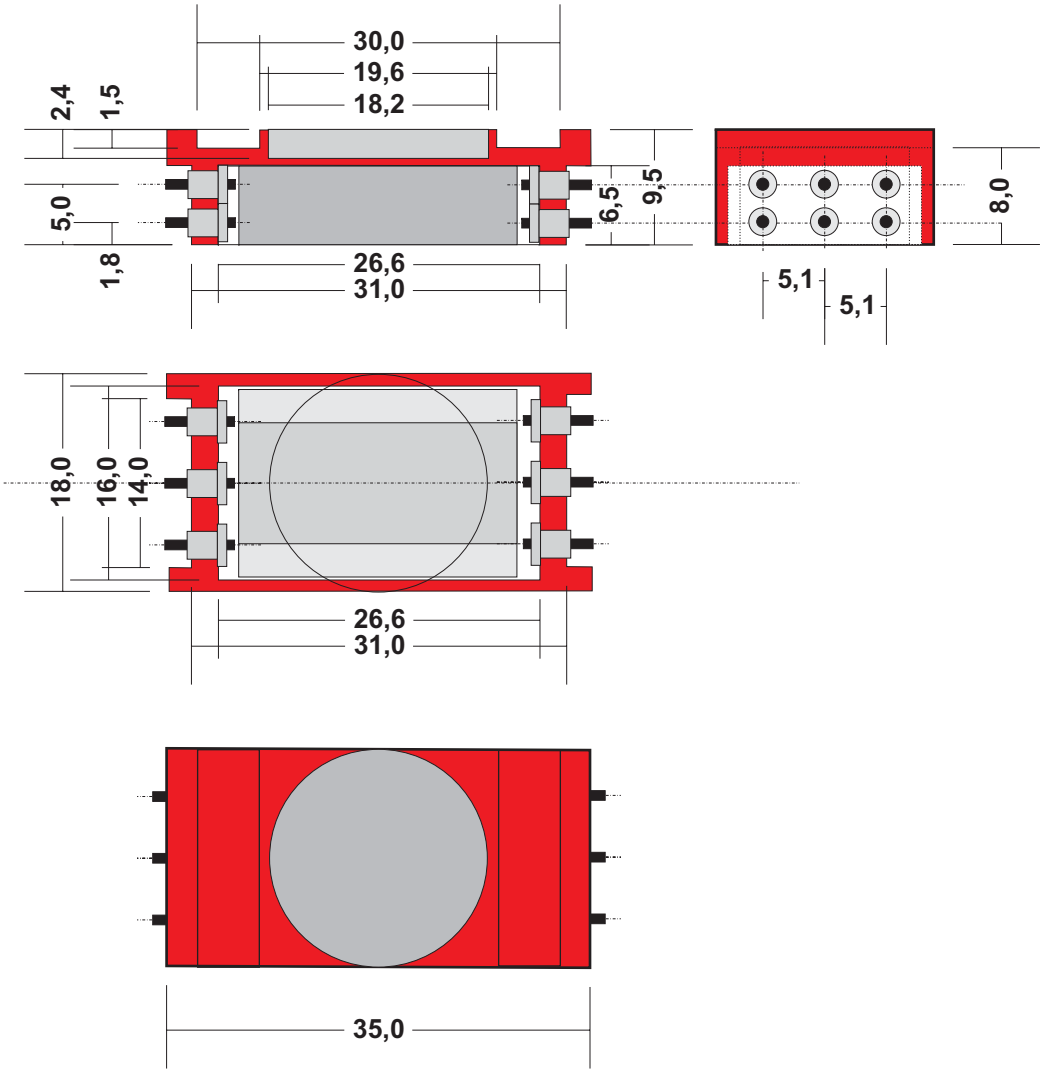
Multi channel sensor signal amplifier
with integrated antenna

Pick up

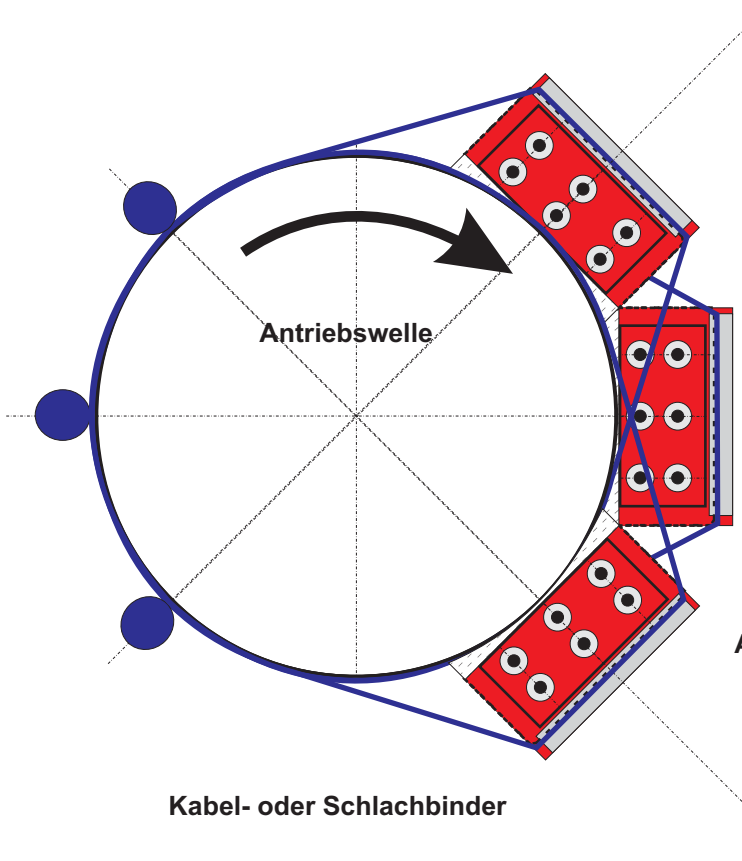


MANNER® Sensortelemetrie



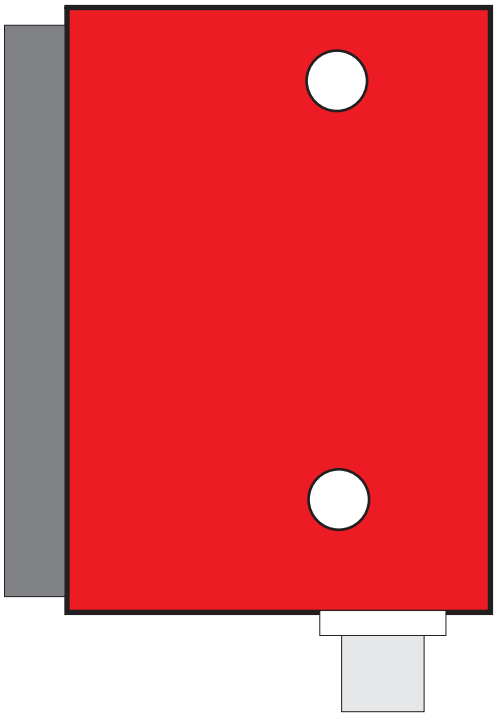


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Sensortelemetrie



Kabel- oder Schlachbinder

Abstand: 5 ...40 mm

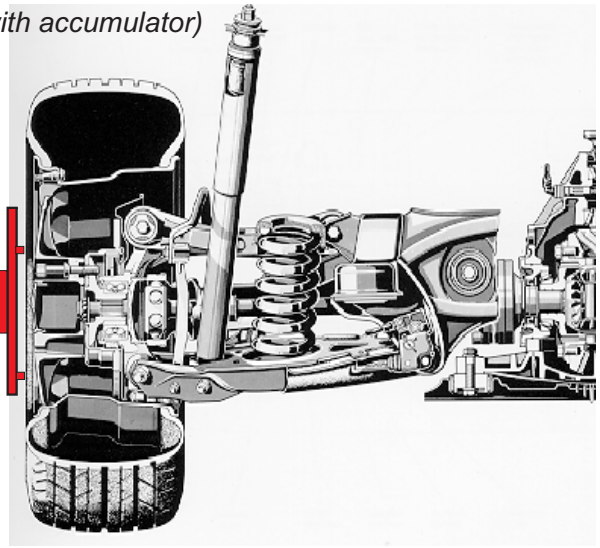


Pick up

Radio Telemetry at the Wheel

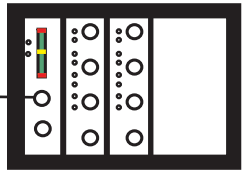
Multi channel rotor electronic with transmitter

(with accumulator)





Evaluation unit



Advantages:

* Digital Transmission technique 12 / 16 Bit resolution
* High grade measuring amplifiers with direct connection to strain gages and thermocouples
* Programmable measuring range
* Temperature range from -30 to 120°C
* High transmission range - receiving antenna can stay inside the cabin
* Data protection with 16 Bit CRC (errors in transmission are recognised and fade-out)
* Integrated accumulator supply with quick charging technique
* Measuring time 40 hours without recharging due to low current consumption
* Contactless charging technique for the accumulator
* Water resistent IP68
* Extremely small design (32 mm)
* Integrated charge control

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