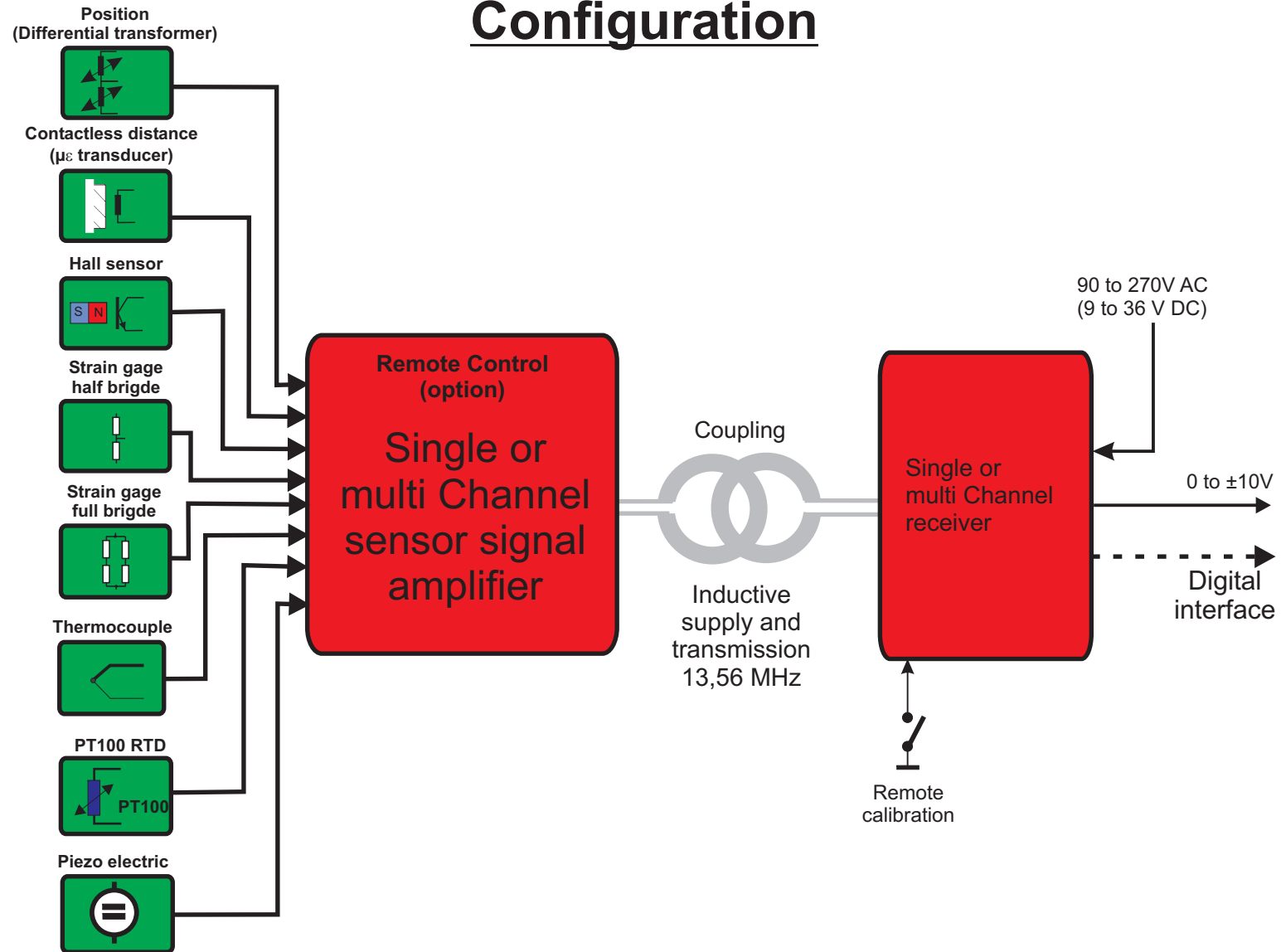


Coupling Inductive Sensor Telemetry

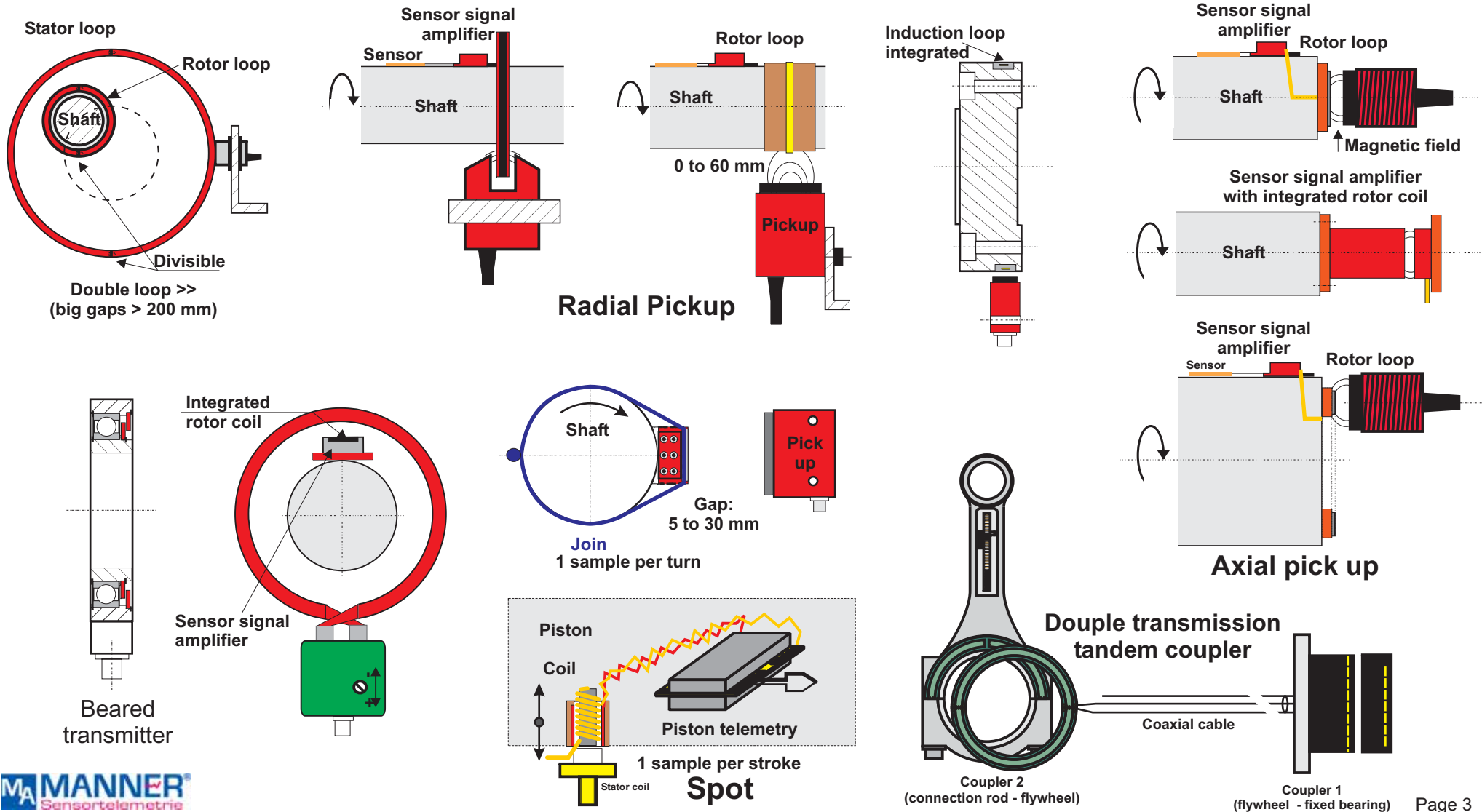
Rotor loop, Pick up

Page 2	Configuration
Page 3 ... 4	Overview coupler
Page 5 .. 16	Transmission types
Page 17 .. 26	Rotor loop
Page 27 .. 59	Pickup

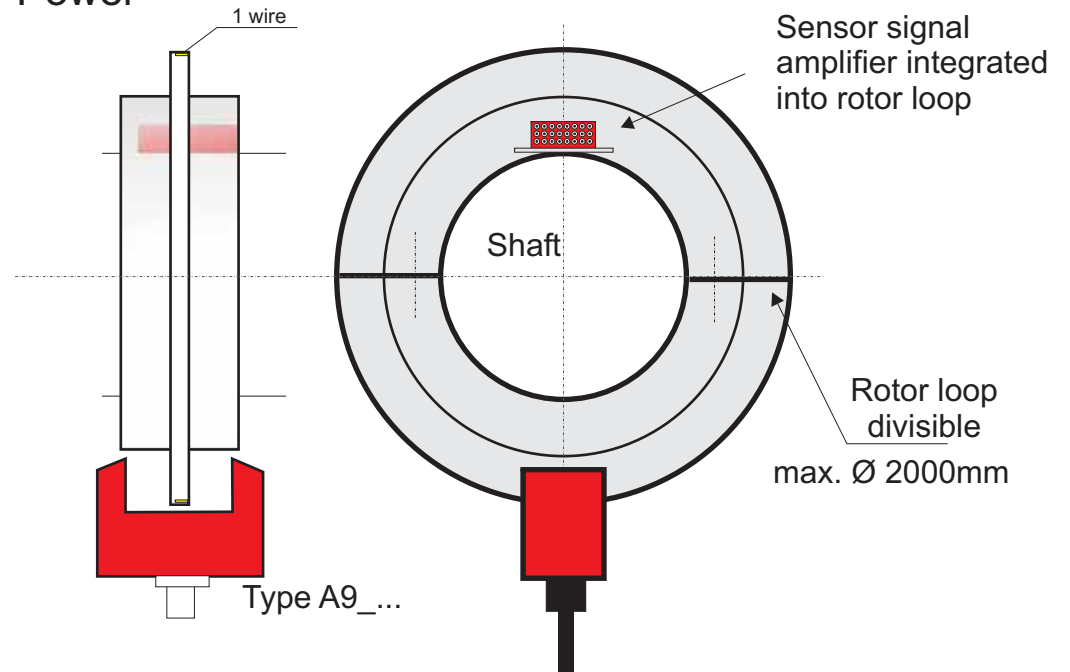
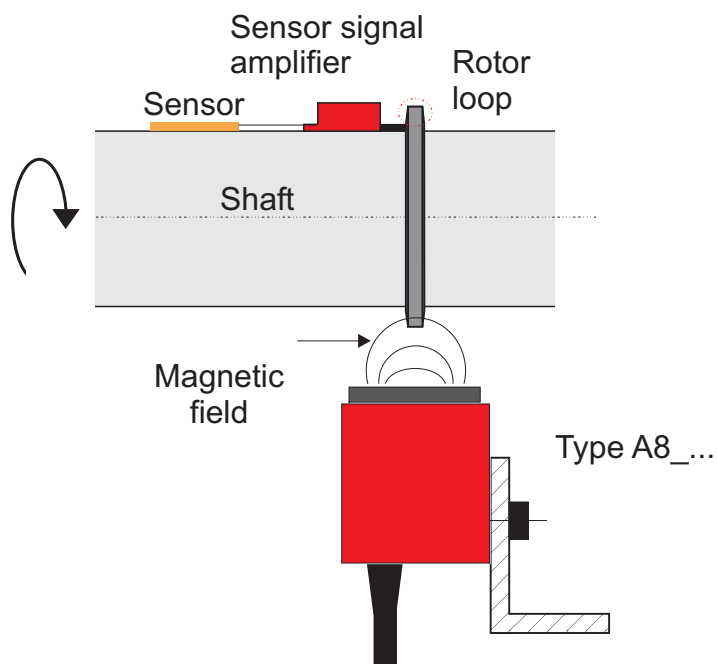
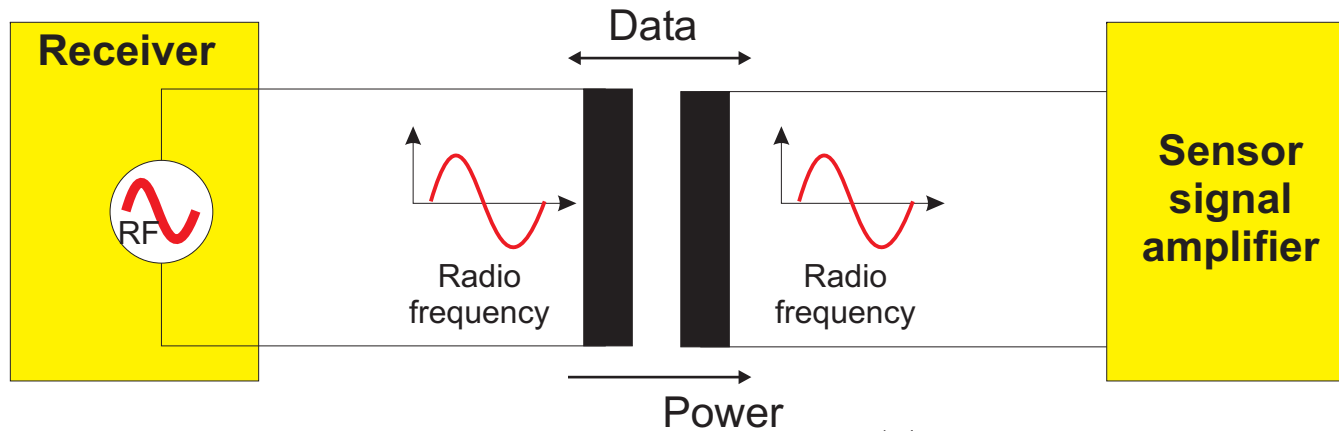
Configuration



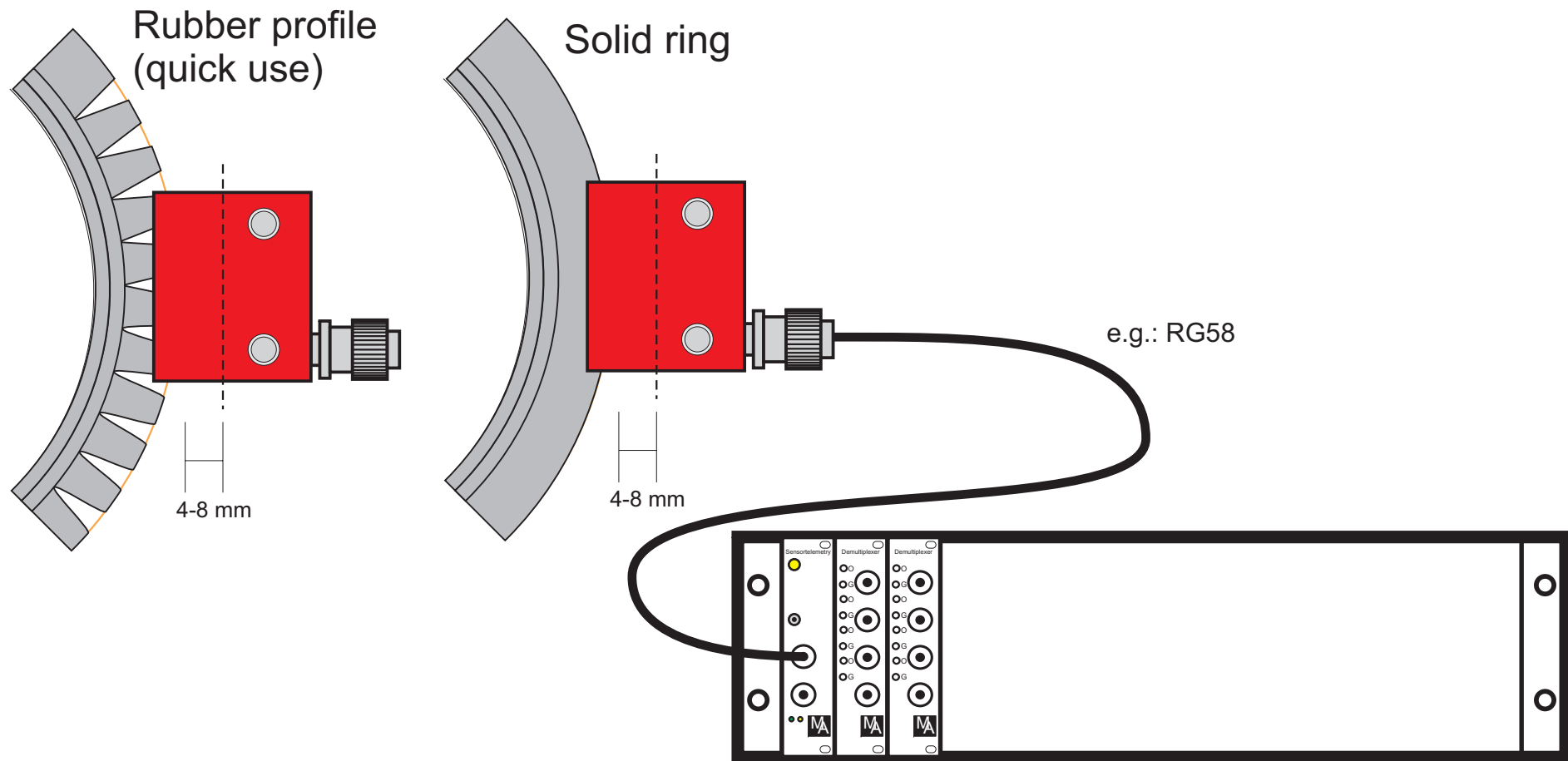
Different Possibilities of Transmission with Manner Inductive Sensortelemetrie



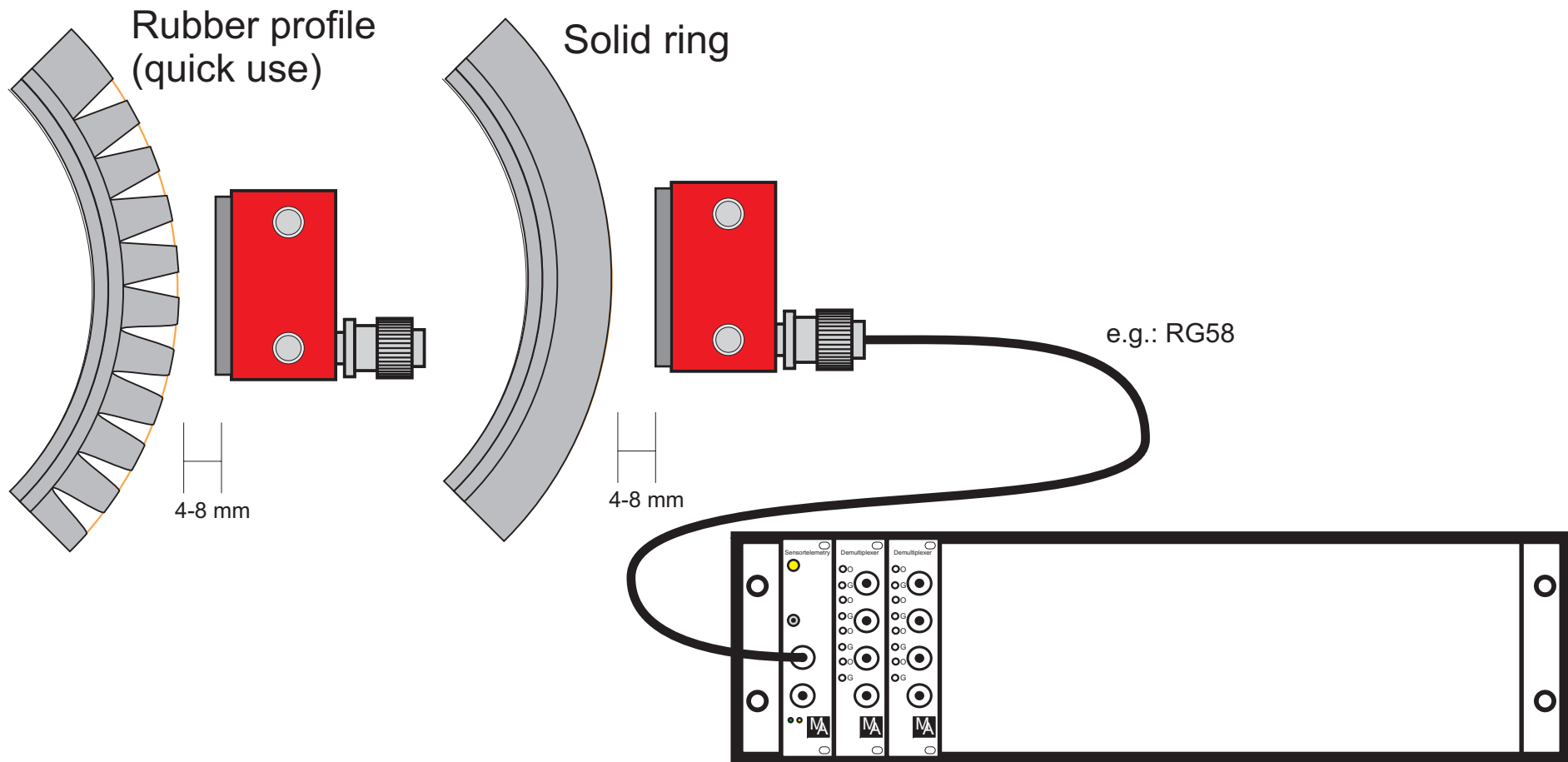
Principle of Transformer (Rotor and Stator Loop)



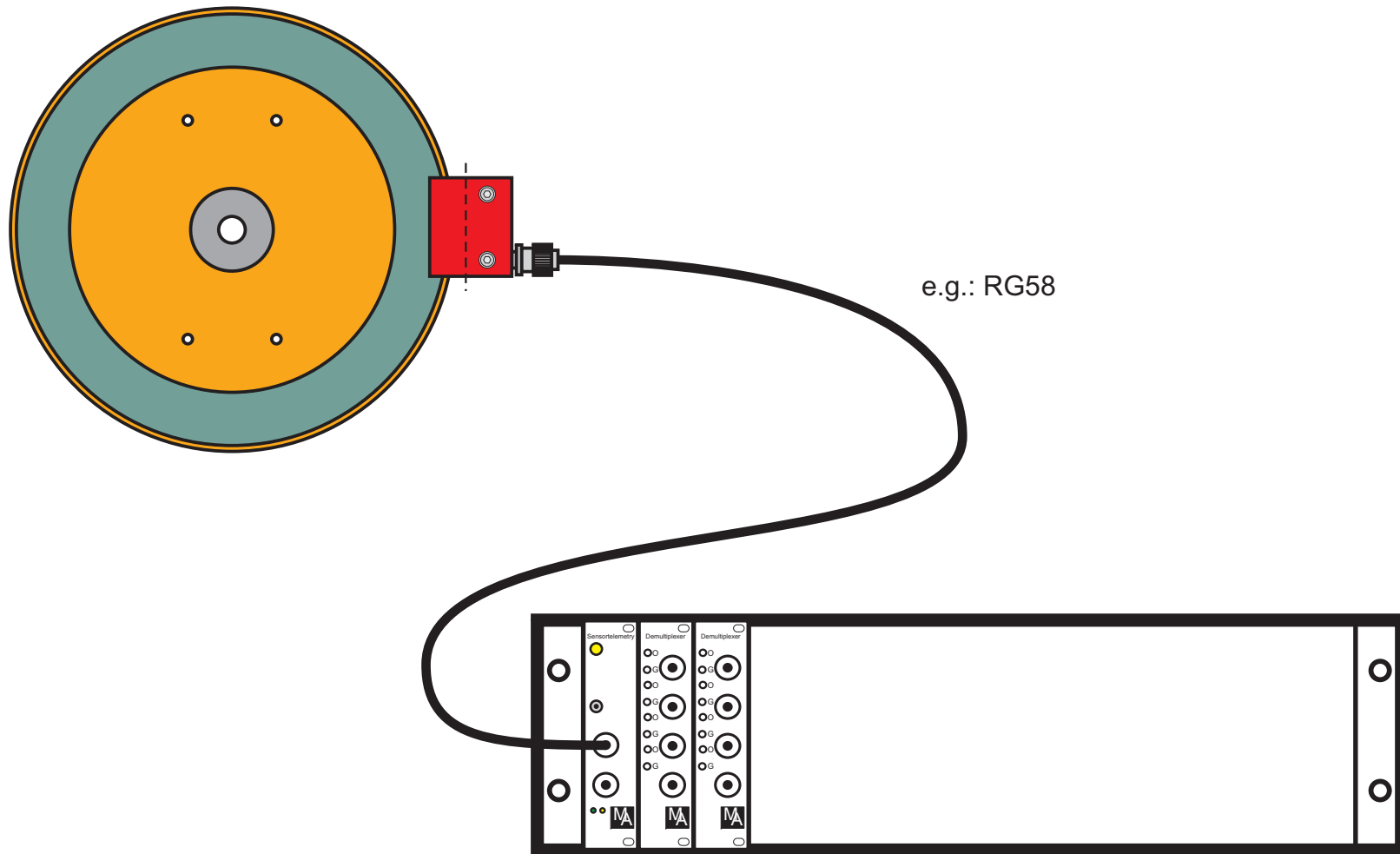
Transmission with Solid Rotor Ring / Rubber Profile



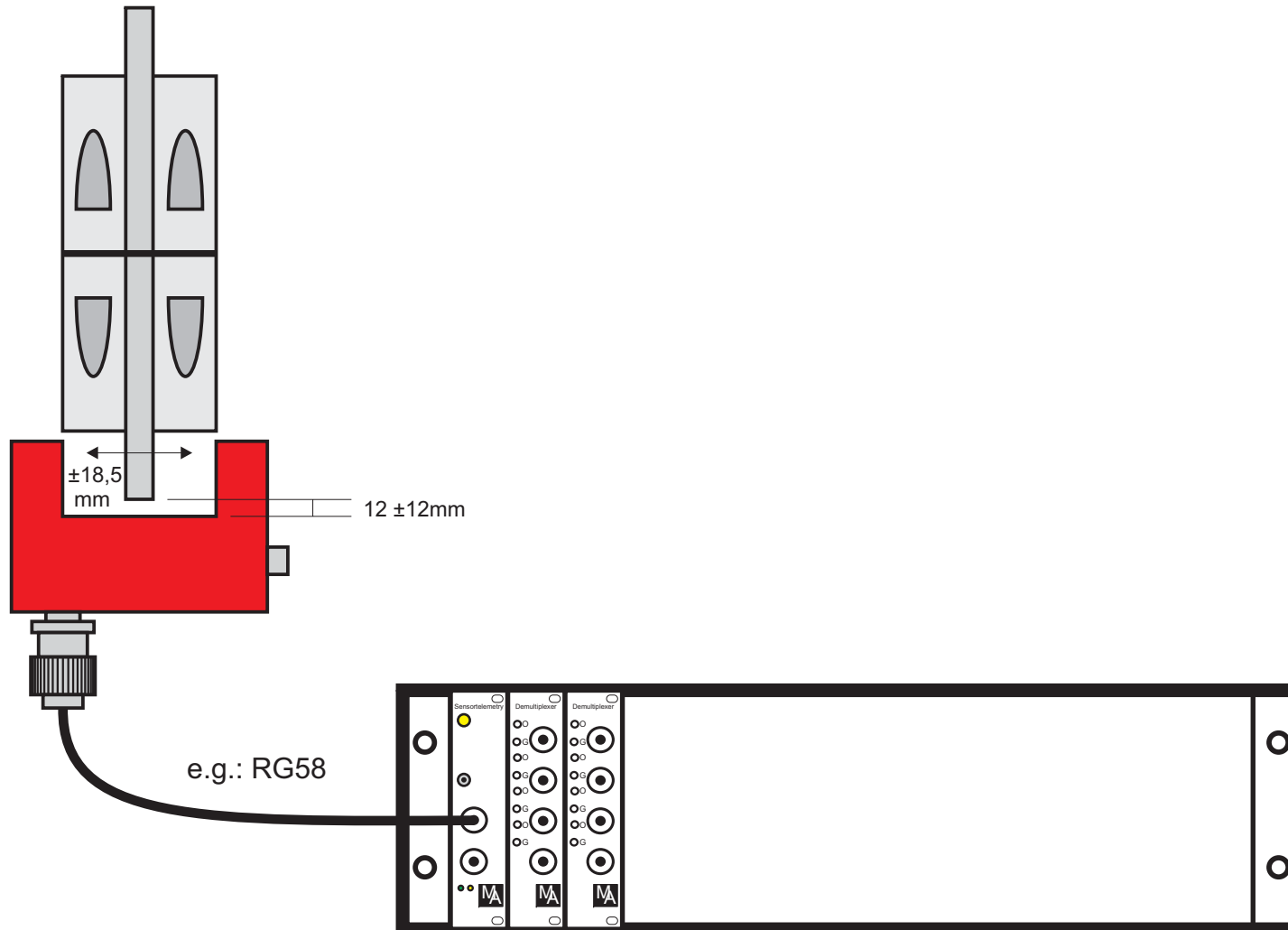
Transmission with Solid Rotor Ring / Rubber Profile



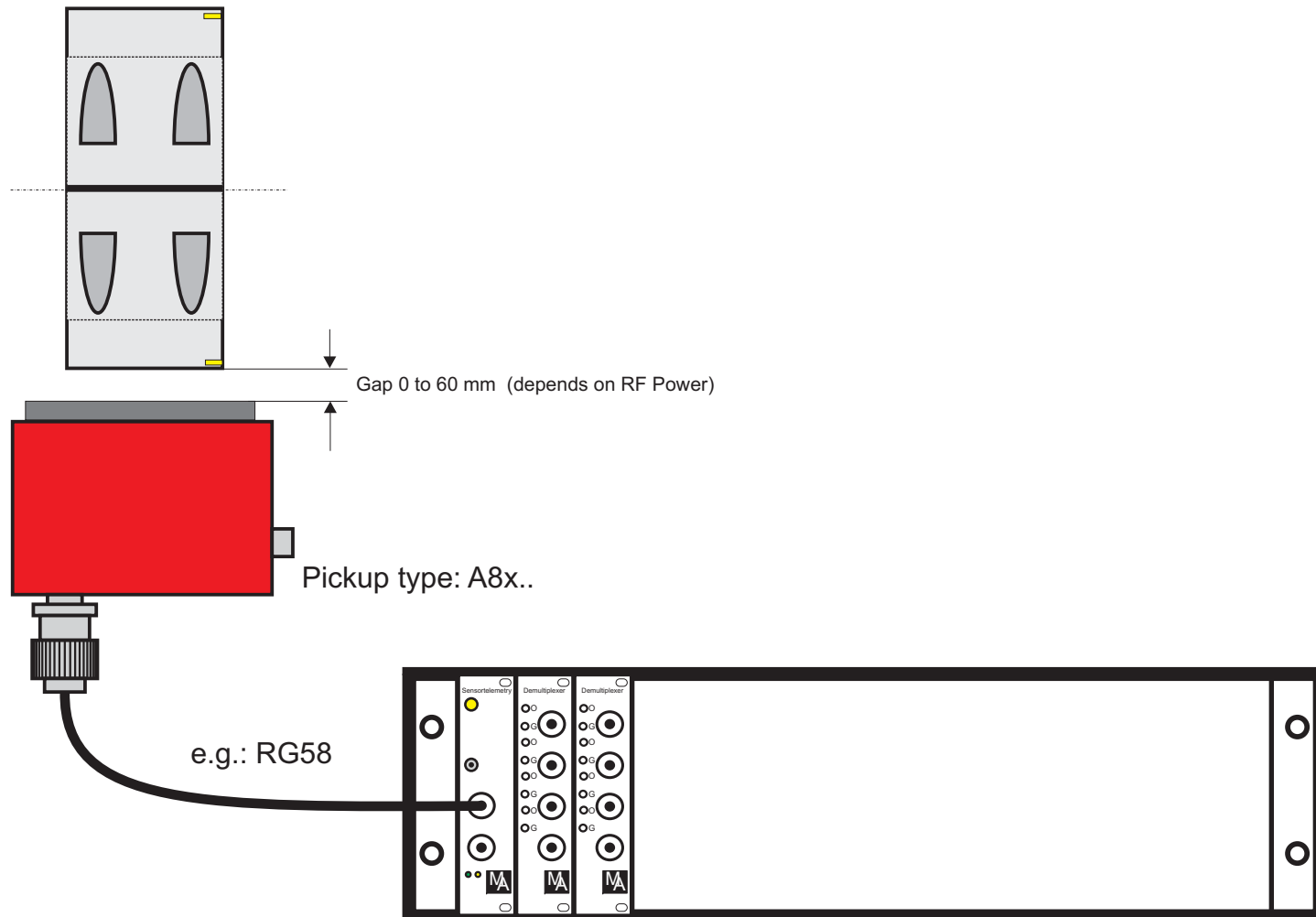
Transmission with Solid Rotor Ring



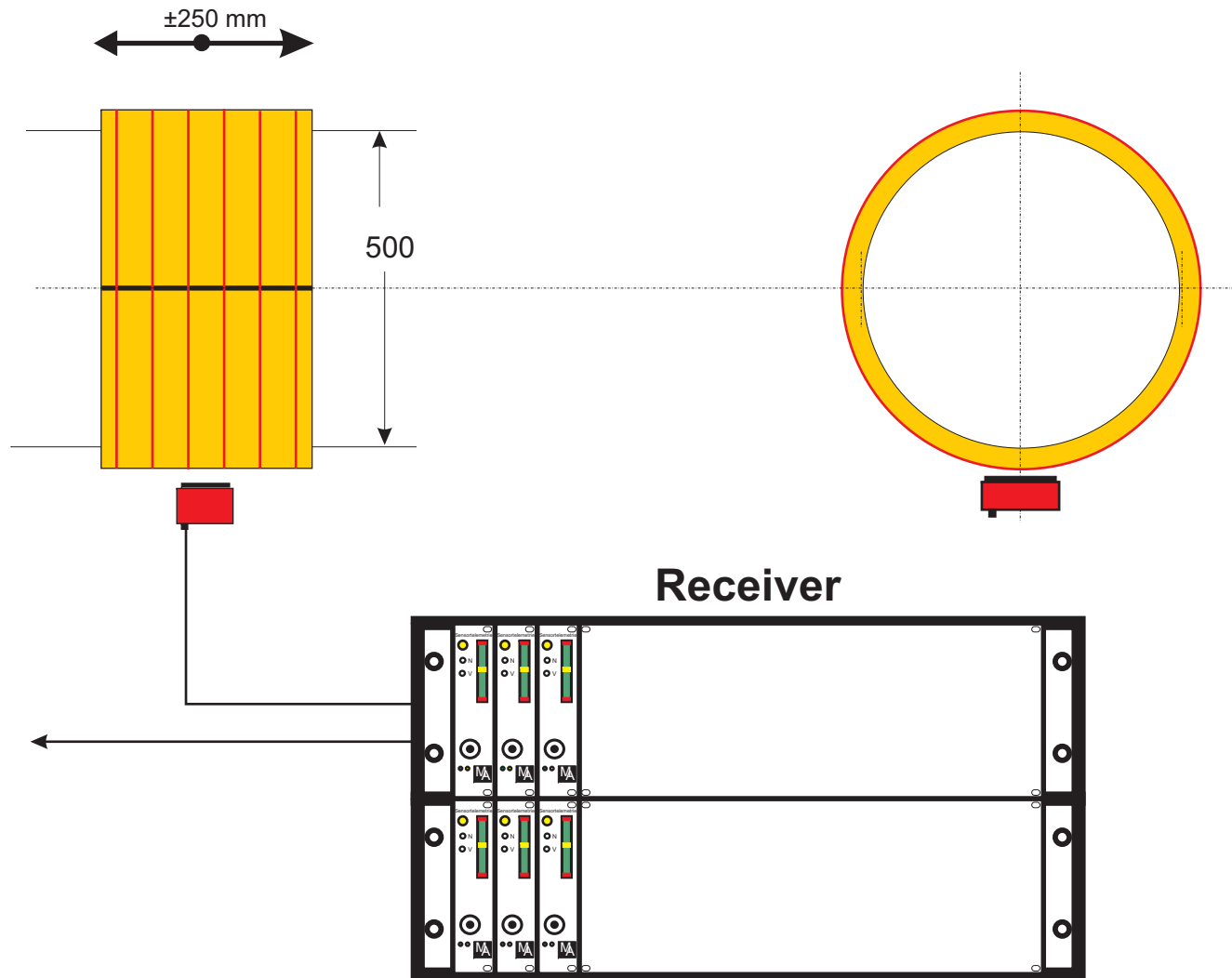
Transmission with larger Displacements of Rotor and Stator



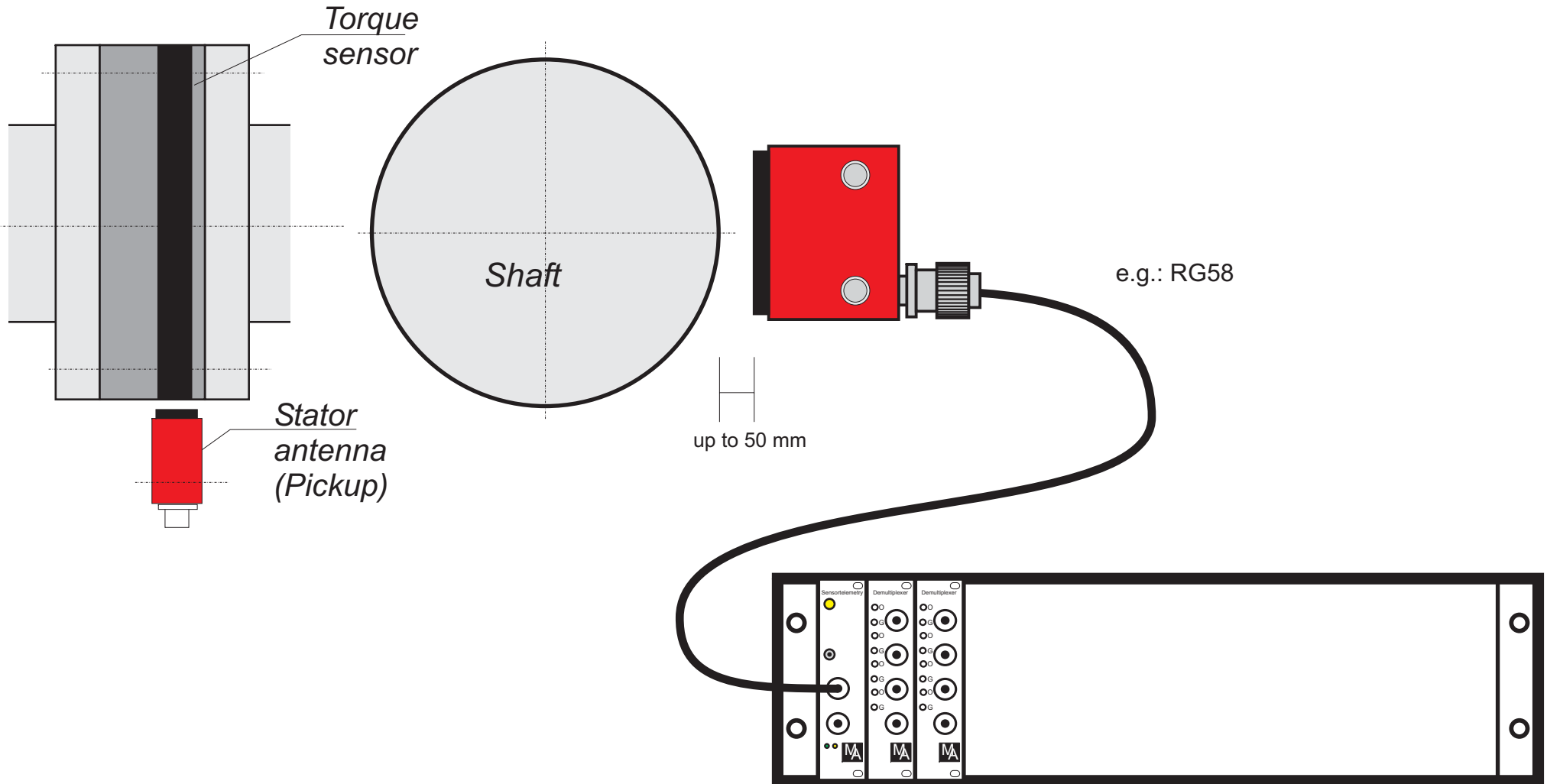
Transmission between Rotor and Stator (flat)



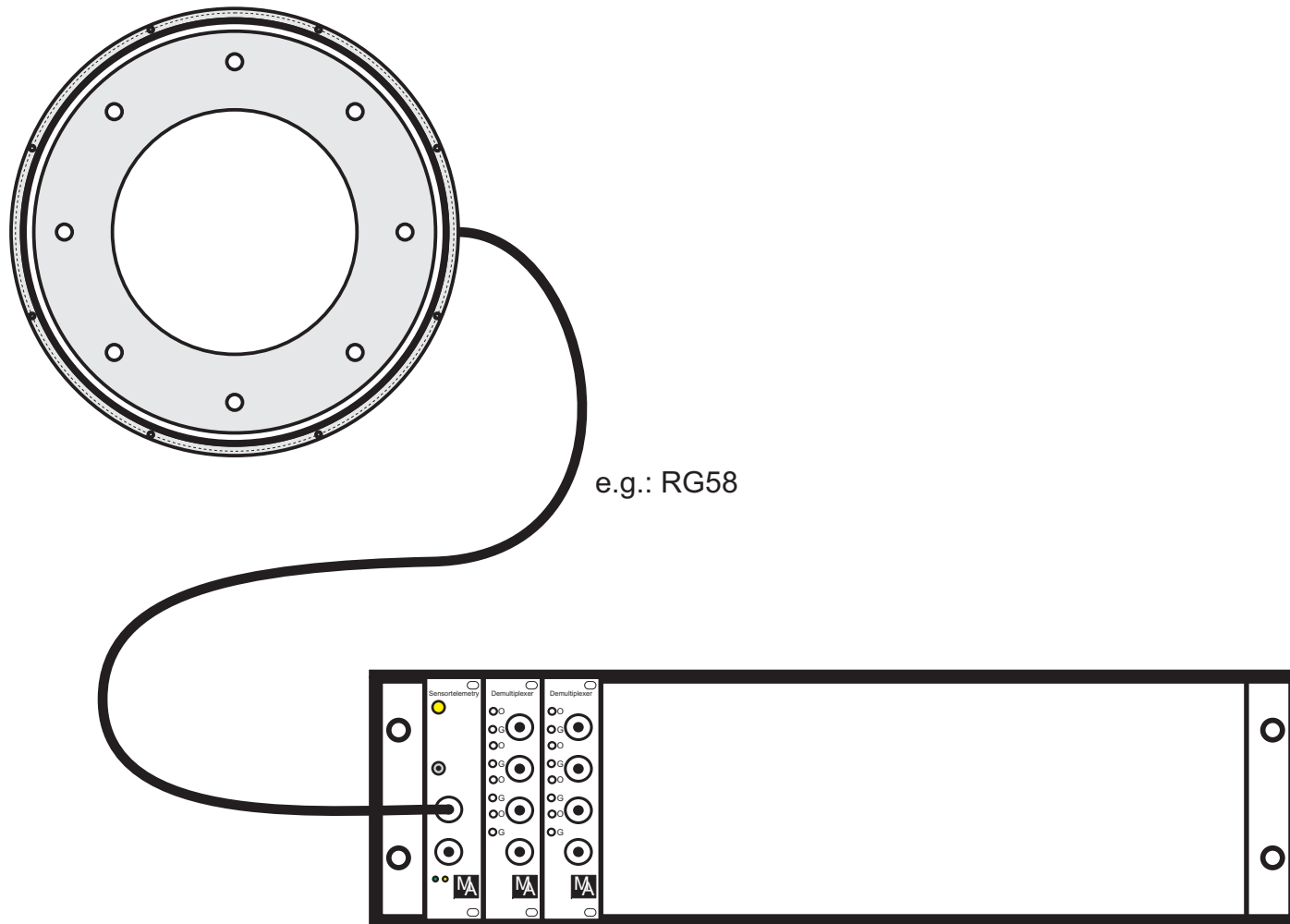
Transmission with larger Displacements of Rotor and Stator



Transmission with Antenna integrated into the Shaft

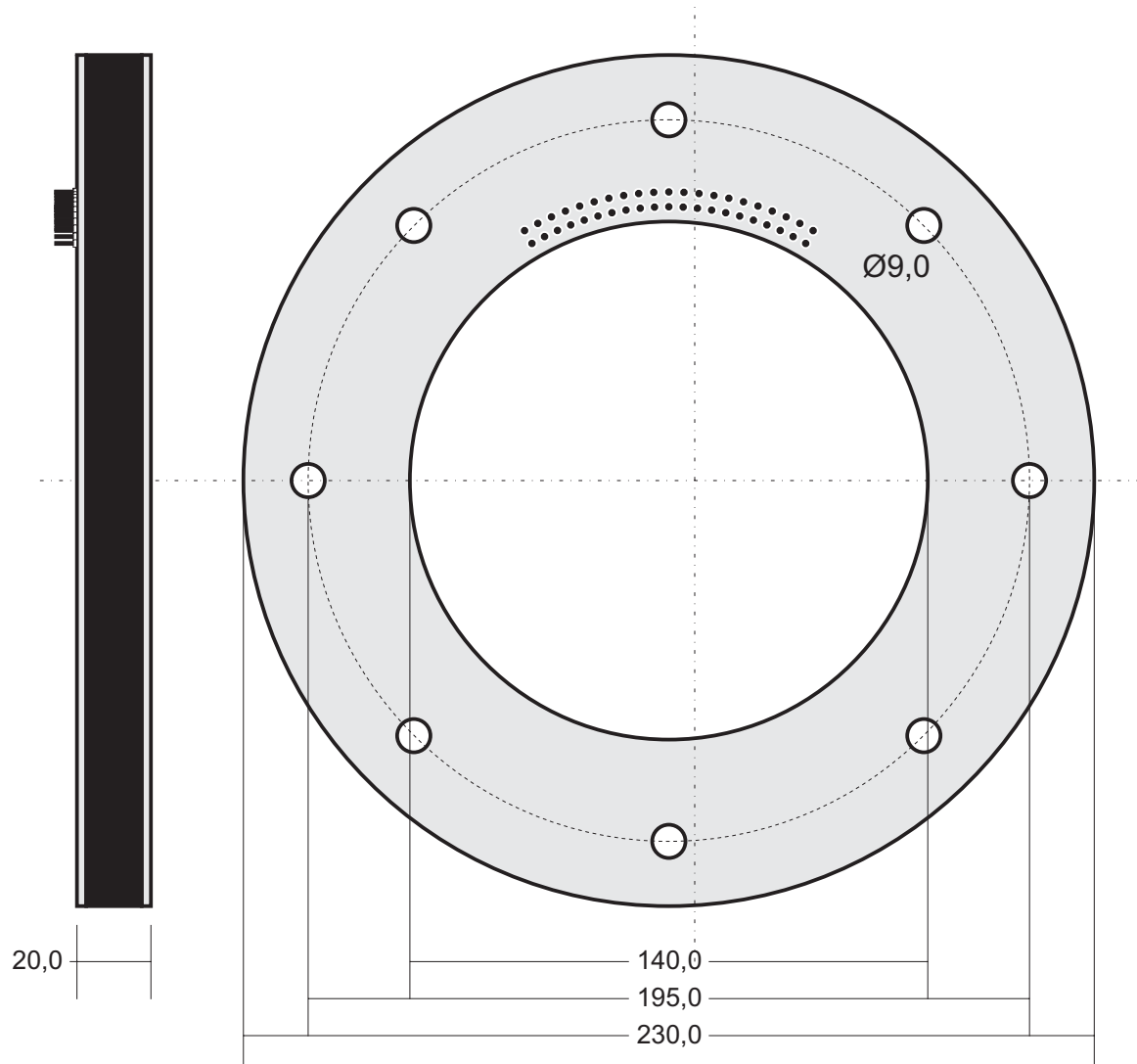


Radial Coupling

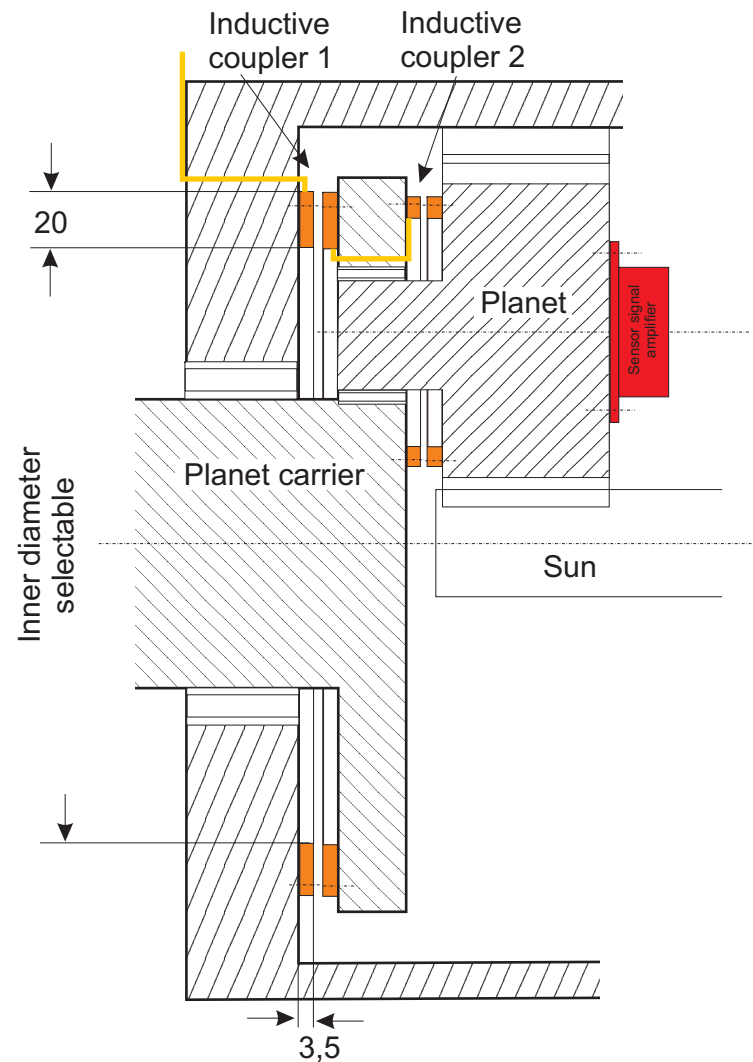


e.g.: RG58

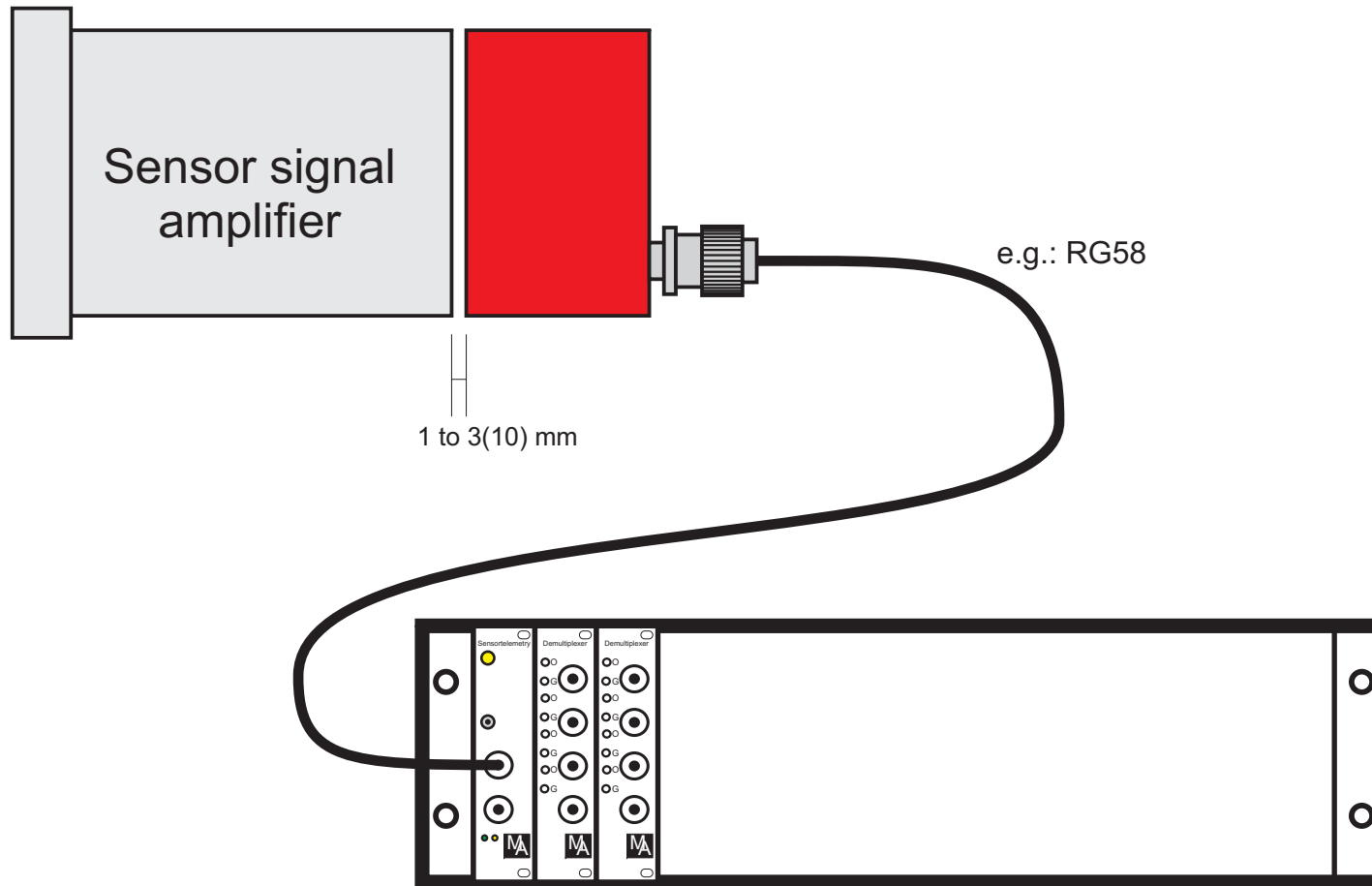
Radial Rotor Antenna with Sensor Signal Amplifier



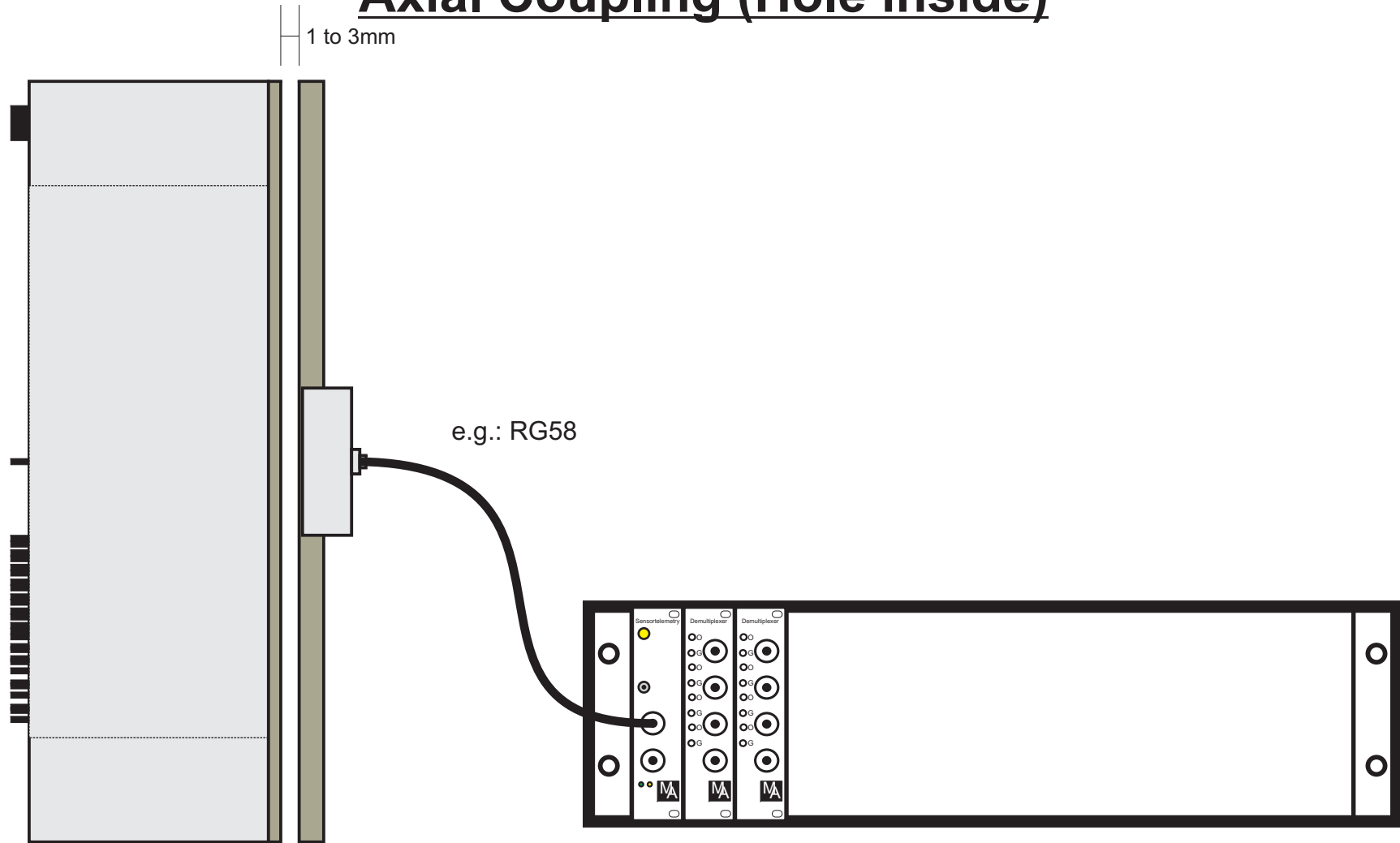
Double Transmission with 2 Axial Antennas on Planetary Gear Box



Axial Transmission



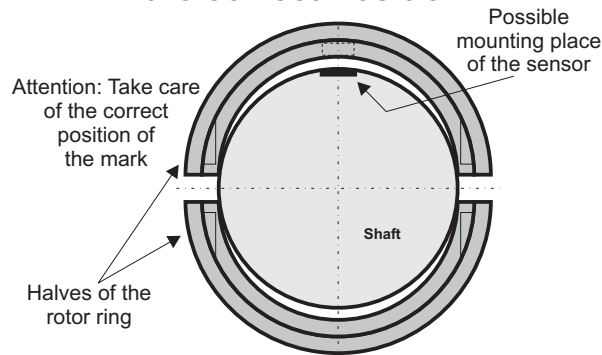
Axial Coupling (Hole inside)



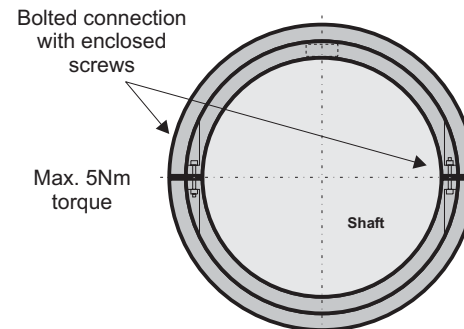
Rotor Antenna (Solid Rotor Ring, high Speed, long Term use, divisible)

Type: Rot_Mass_...

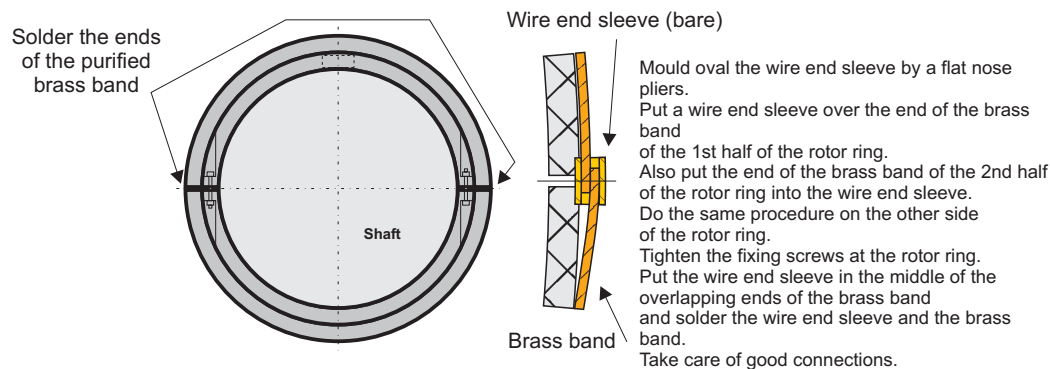
1. Mount Halves of the Rotor Ring in the correct Position



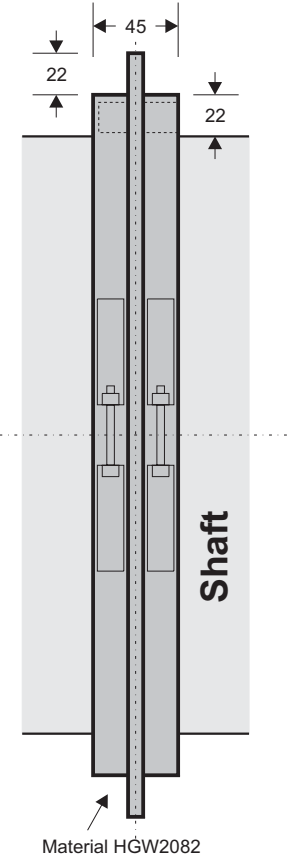
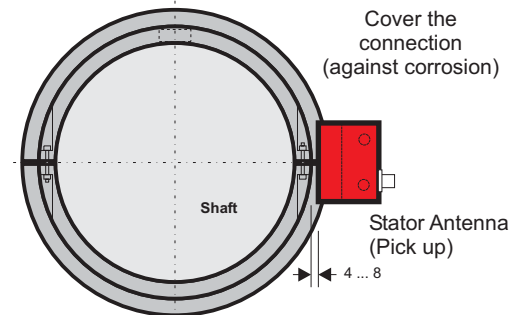
2. Bolt Connection of the Rotor Ring



3. Connection of the Induction Loop



4. Cover the Connection and mount the Stator Antenna



Order Code:

Rot_Mas_<Di>_<temperature range>

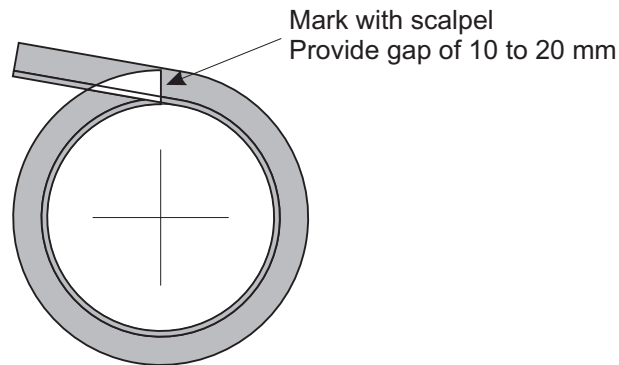
Di in mm:	temperature range:
	-10 to 85°C
	-25 to 125°C
	-50 to 125°C
	-10 to 160°C

Rotor Antenna (Rubber Profile, low speed, short Term use, Hight 24 mm)

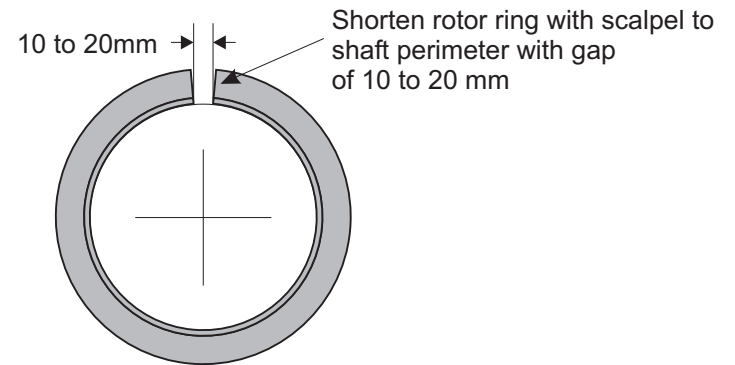
Type: Rot_Gum_...

(Part 1 of 2)

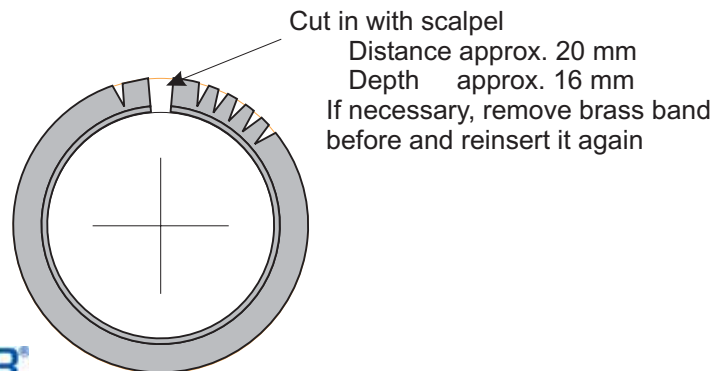
1. Measure Rotor Ring to right Length (Shaft Perimeter)



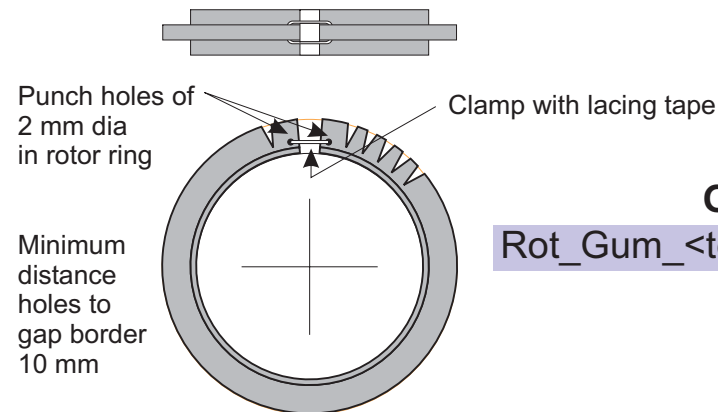
2. Shorten Rotor Ring to right Length (Shaft Perimeter)



3. For small Shafts provide Rotor Ring with Notches



4. Clamp Rotor Ring with Lacing Tape



Order Code:

Rot_Gum_<temperature range>

temperature range:

-10 to 85°C

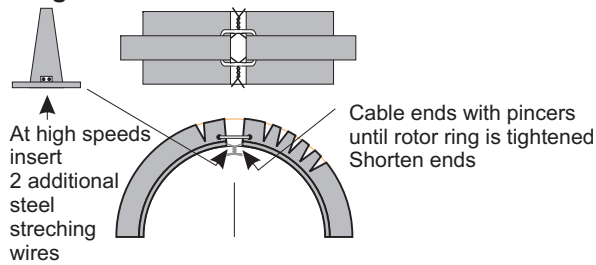
-25 to 125°C

-45 to 85°C

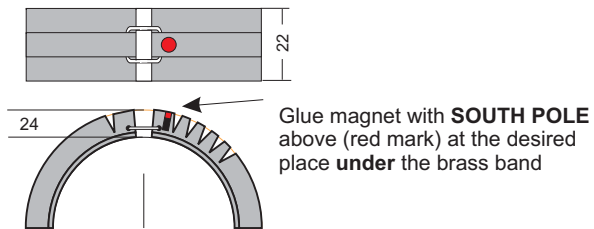
Rotor Antenna (Rubber Profile, low Speed, short Term use, Hight 24 mm)

Type: Rot_Gum_...

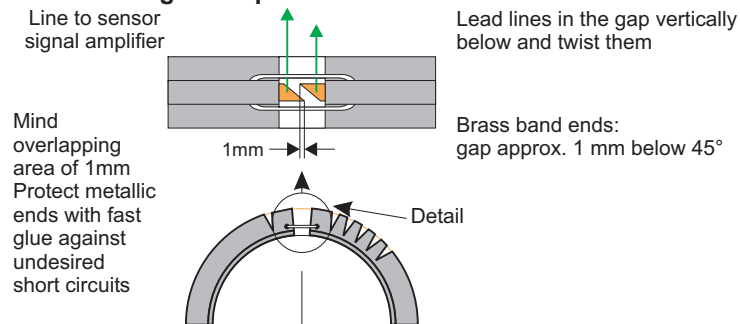
Secure rotor ring at high speeds with metal clamping band or glass fiber cord and glue it



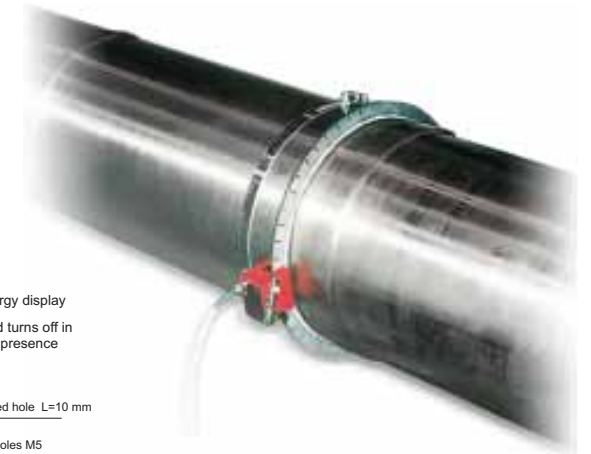
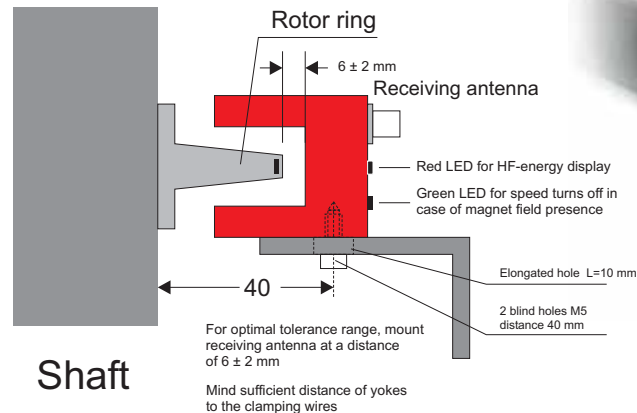
Trigger Mark for rotational speed measurement
Magnet integration (if not existing)



Connection of induction loop (brass band)
to sensor signal amplifier



Mounting of Receiving Antenna



Flexible Rotor Antenna

for flexible shaft diameters

Short-term mounting

Easy use

Max. radial load: 200 g

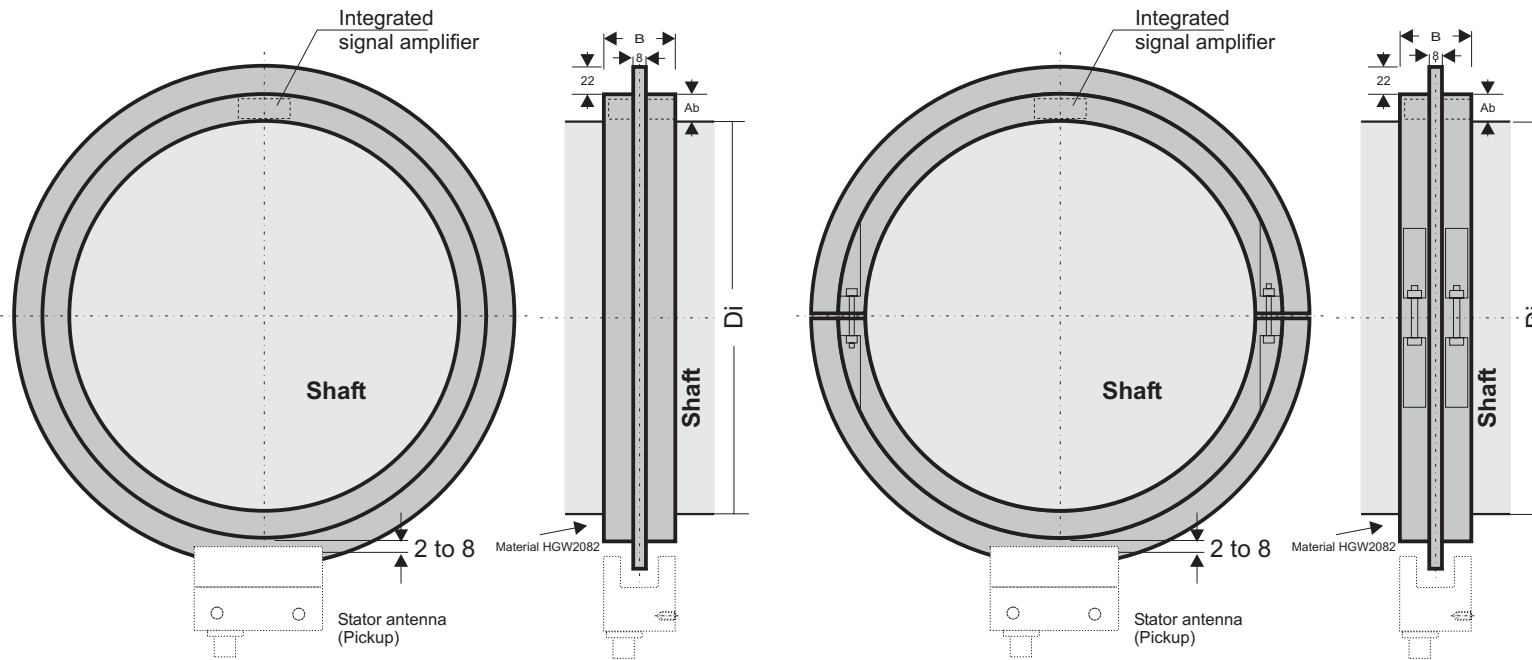
(with additional fiber glass tape (up to 1000 g)

Option integrated Trigger mark

Order code: Rot_Gum_<L>_<temperature range>_<speed mark>

L(mm)	temperature range:	speed mark:
500	-10 to 85°C	Dz
1000	-25 to 125°C	-
2000	-50 to 85°C	-
3000	-10 to 160°C	-

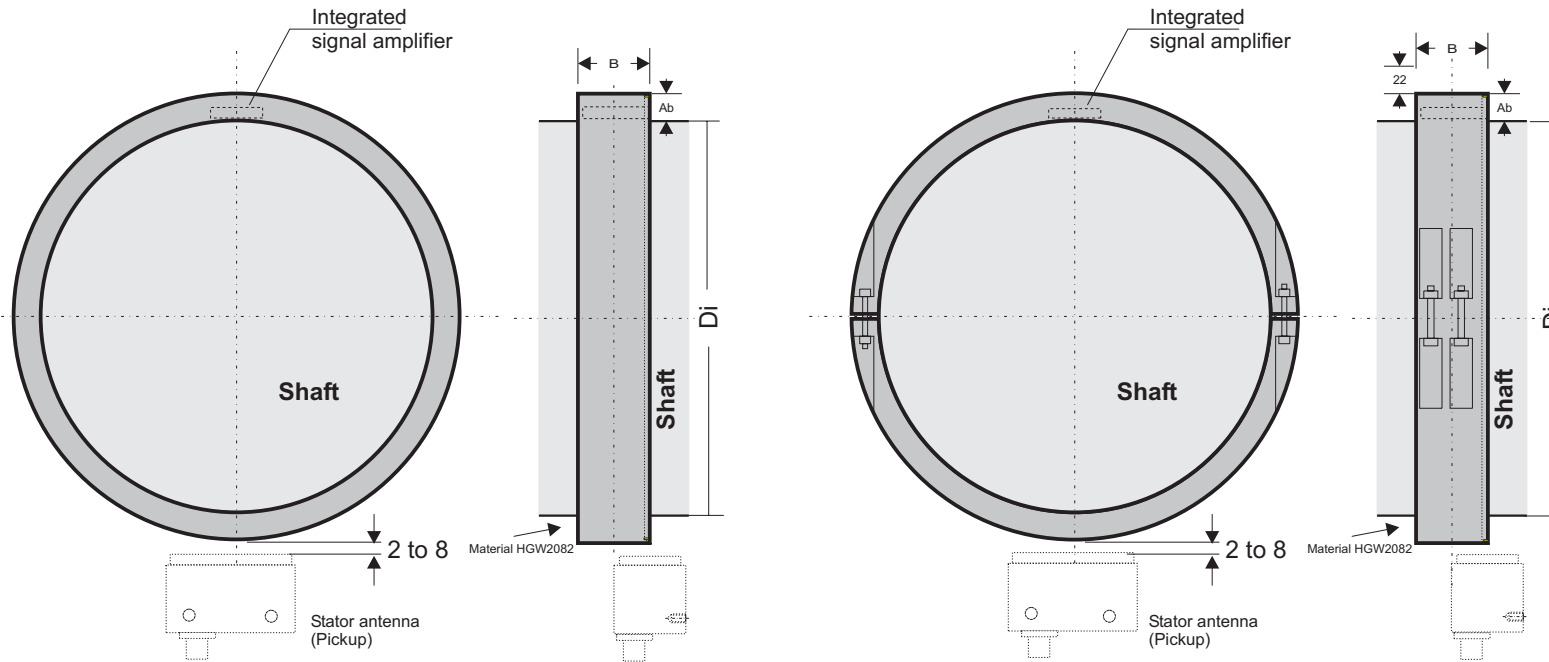
Rotor Antenna Massiv (HGW)



Order code: Rot_Mas_<Di>_<Ab>__<temperature range>_<speed mark>_<divisible>

Di(mm)	Ab(mm)	width(mm)	temperature range:	speed mark:	divisible:
xxx	xxx	xxx	-10 to 85°C	Dz	D
			-25 to 125°C	-	-
			-50 to 85°C		
			-10 to 160°C		

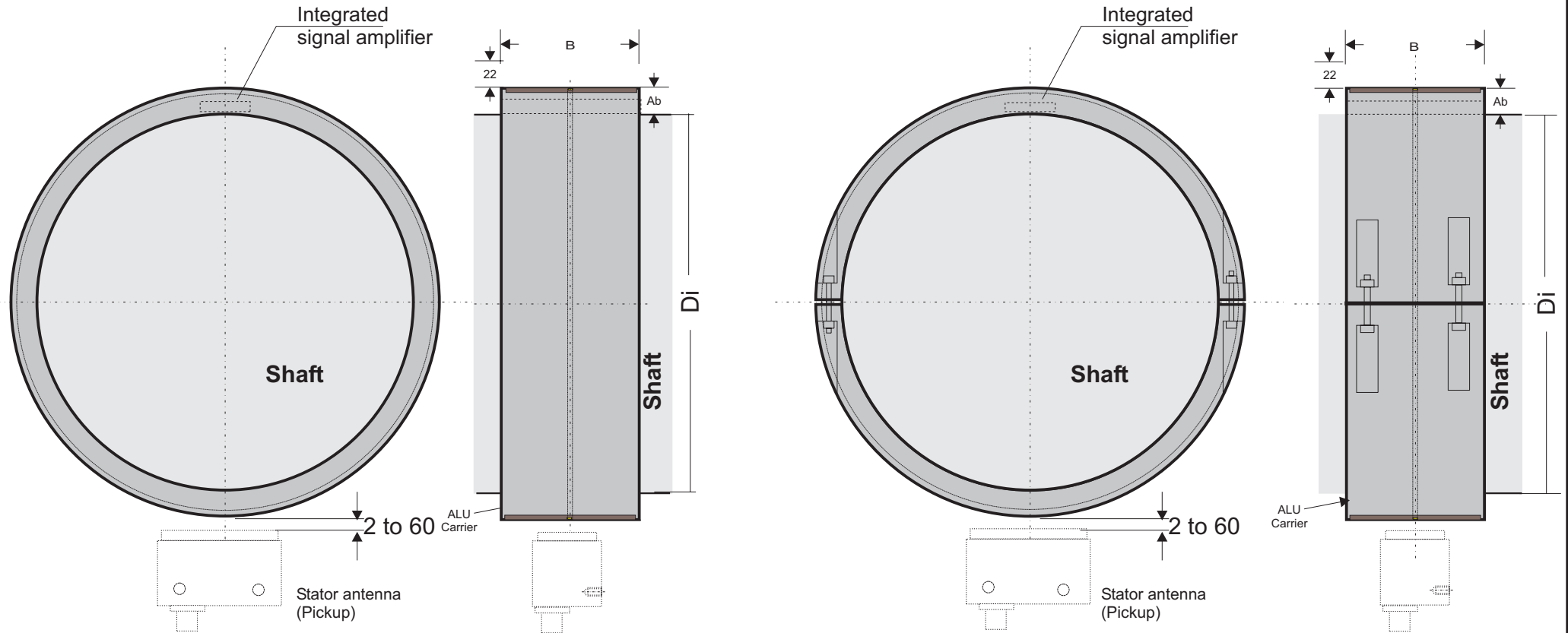
Rotor Antenna Flach_Massiv (HGW)



Order code: Rot_FI_HGW_<Di>_<Ab>__<temperature range>_<speed mark>_<divisible>

Di(mm)	Ab(mm)	width(mm)	temperature range:	speed mark:	divisible:
xxx	xxx	xxx	-10 to 85°C	Dz	D
			-25 to 125°C	-	-
			-50 to 85°C		
			-10 to 160°C		

Rotor Antenna Flach_Massiv (ALU)



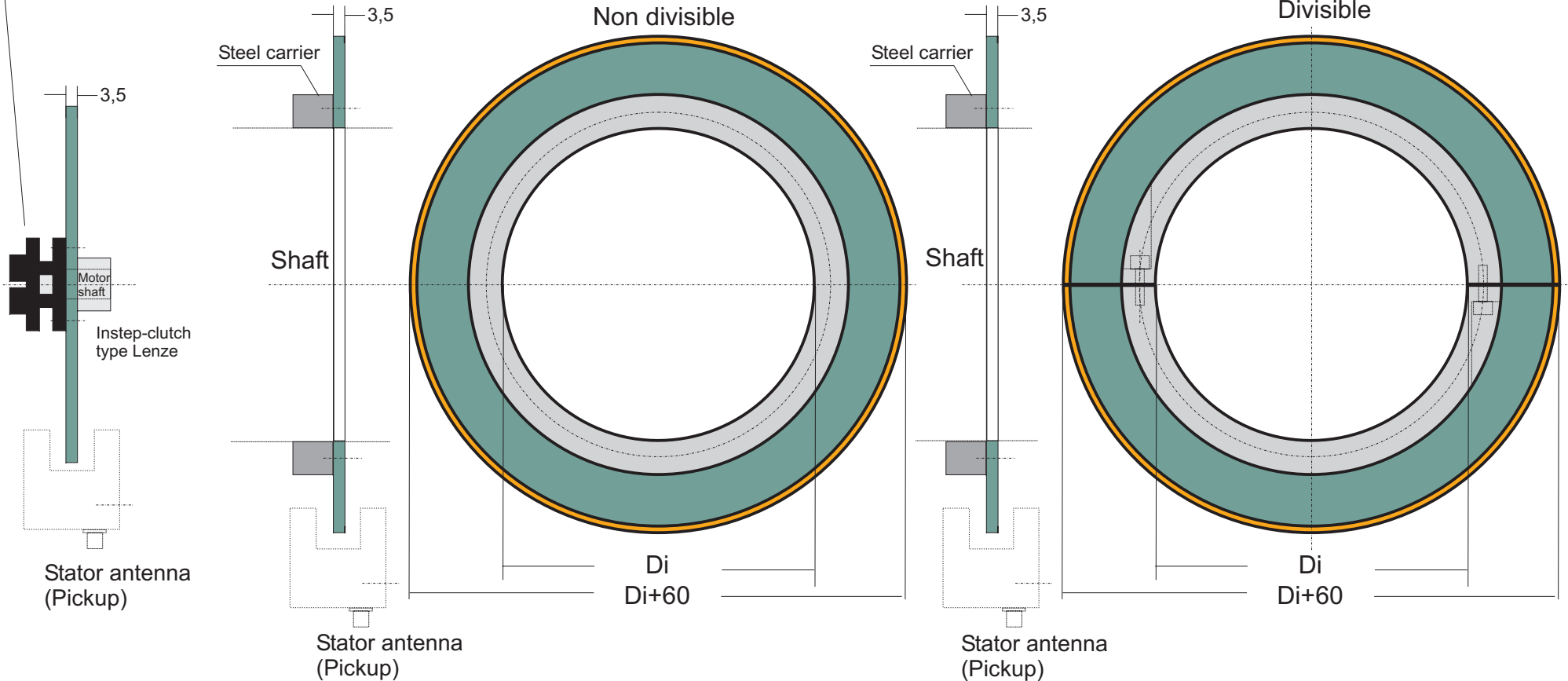
Order code: Rot_FI_ALU_<Di>_<Ab>__<temperature range>_<speed mark>_<divisible>

Di(mm)	Ab(mm)	width(mm)	temperature range:	speed mark:	divisible:
xxx	xxx	xxx	-10 to 85°C	Dz	D
			-25 to 125°C	-	-
			-50 to 85°C		
			-10 to 160°C		

Rotor Antenna (Epoxy)

very high speed

Special version
for motor shafts



Order code: Rot_Epoxy_<Di>__<temperature range>_<speed mark>_<divisible>

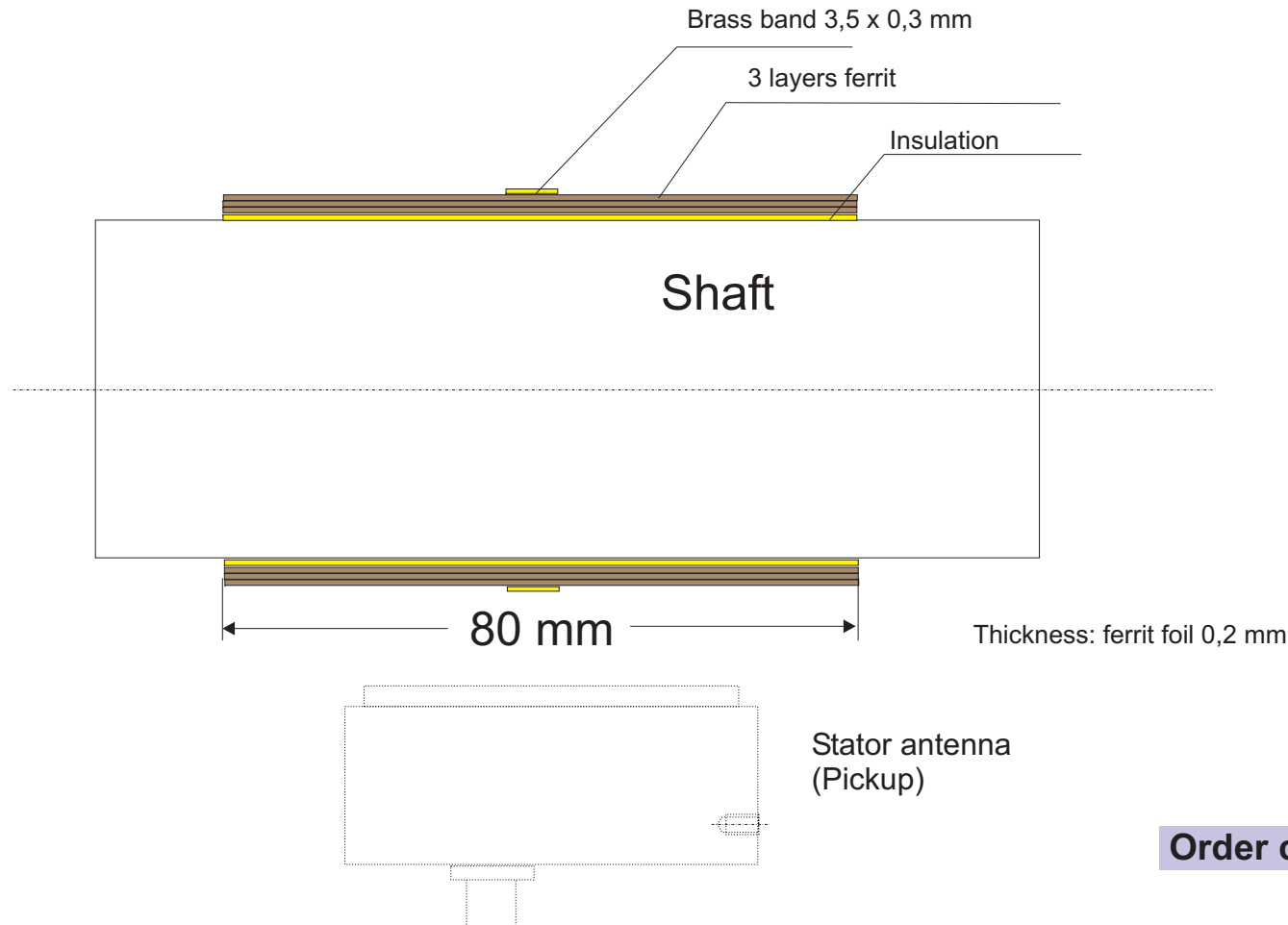
Remark:
The steel carrier is normally supplied
by the customer

Di(mm)	width(mm)	temperature range:	speed mark:	divisible:
xxx	xxx	-10 to 85°C	Dz	D
		-25 to 125°C	-	-
		-10 to 160°C		
		-10 to 180°C		

Rotor Antenna flat (Ferrit foil based, high Speed, Height 1,5 mm)

suited for Shaft Diameter < 150 mm, Kit available

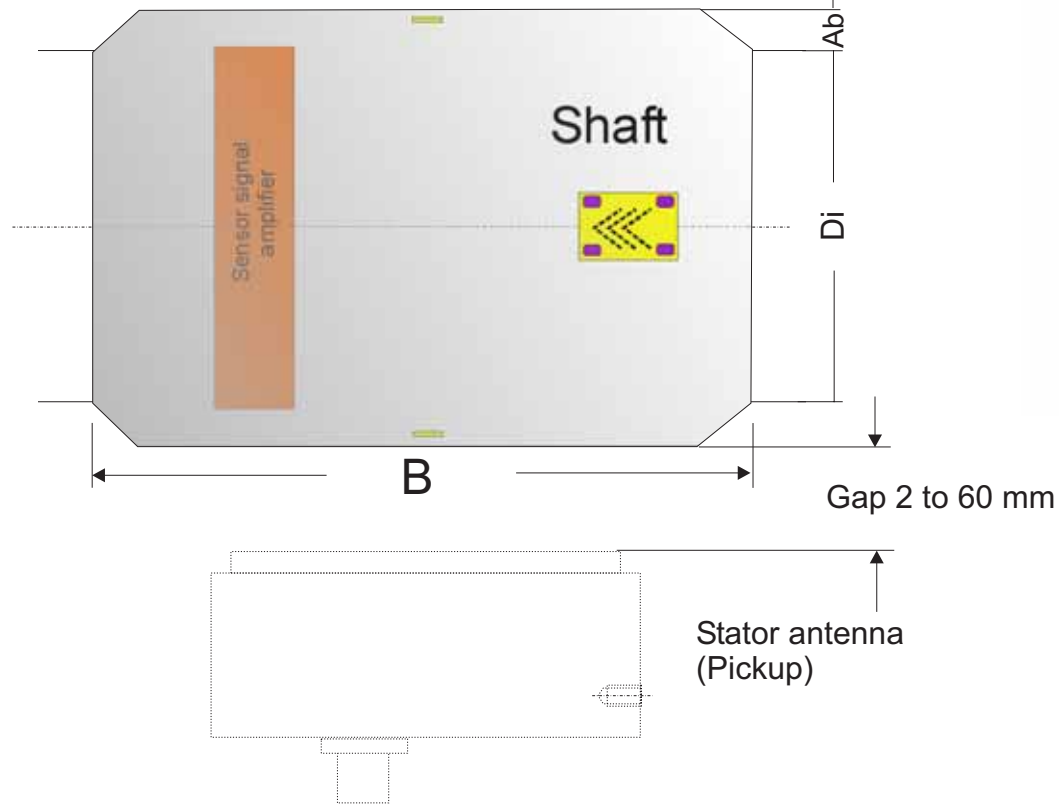
Type:Rot_Fer_...



Order code: Rot_Fer_<Di>

Di in mm:

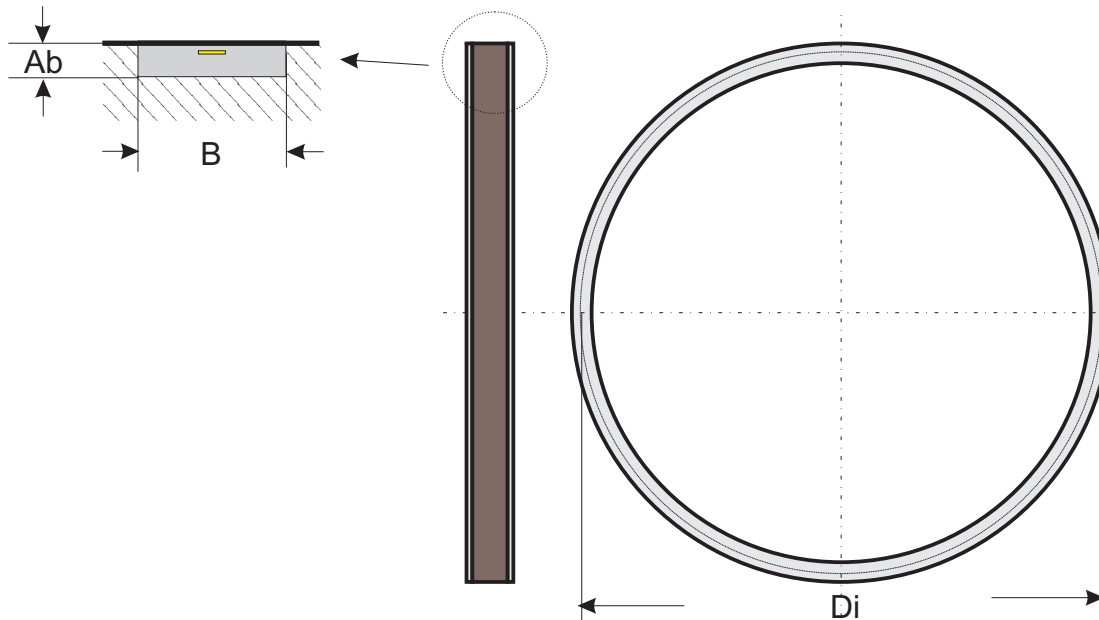
Rotor Antenna (Polyurethane)



Order code: Rot_Poly_<Di>_<Ab>__<temperature range>_<speed mark>

Di(mm)	Ab(mm)	width(mm)	temperature range:	speed mark:
xxx	xxx	xxx	-10 to 85°C	Dz
			-25 to 125°C	-
			-50 to 85°C	
			-10 to 160°C	
			-10 to 180°C	

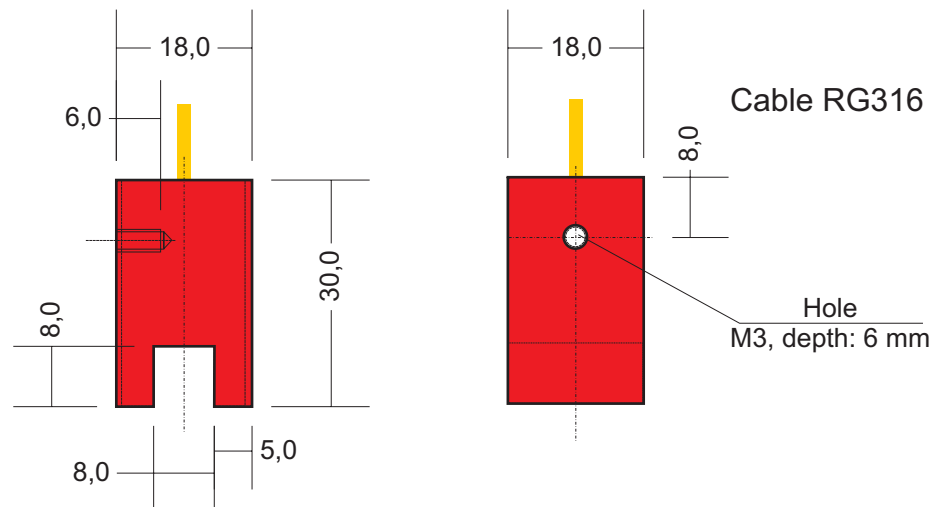
Rotor Antenna Ferrite Inlet



Order code: Rot_Fel_<Di>_<Ab>__<temperature range>_<speed mark>

Di(mm)	Ab(mm)	width(mm)	temperature range:	speed mark:
xxx	xxx	xxx	-10 to 85°C	Dz
			-25 to 125°C	-
			-50 to 85°C	
			-10 to 160°C	
			-10 to 180°C	

Pickup Type 1b



Order code: A1b_<temperature range>

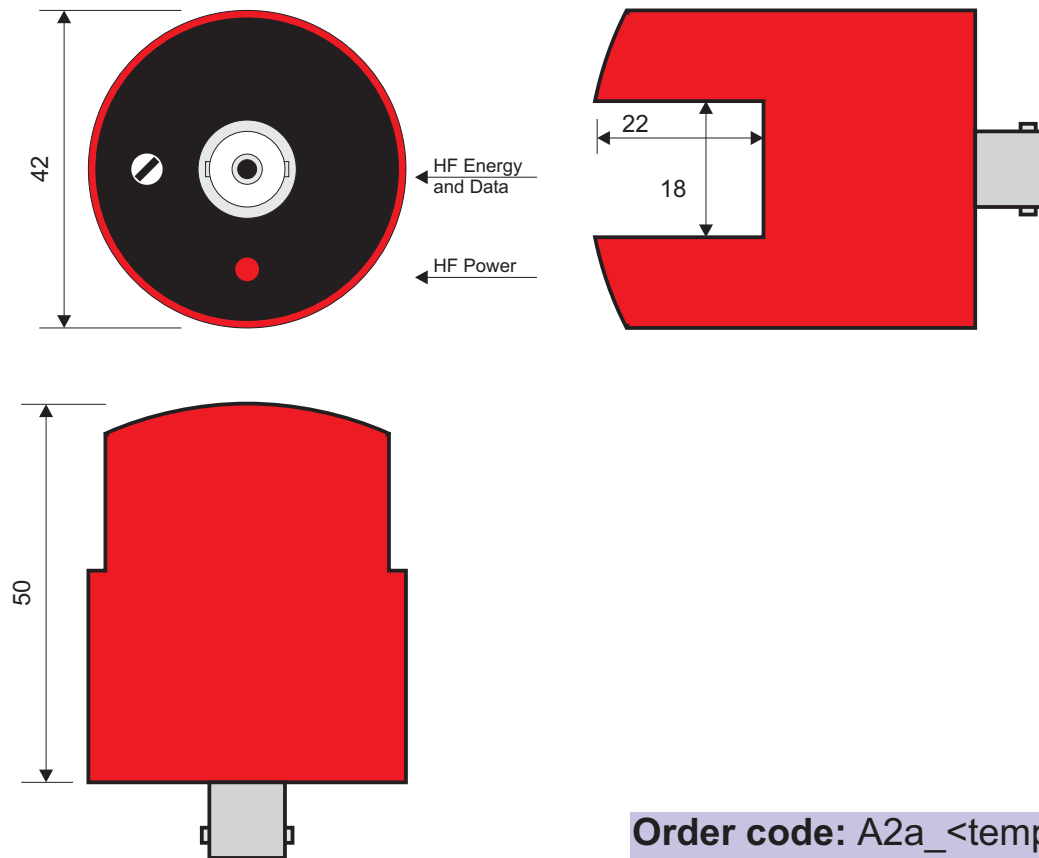
temperature range:

-10 to 85°C

-25 to 125°C

-45 to 85°C

Pickup Type 2



Order code: A2a_<temperature range>_<waterproof>

temperature range: waterproof:

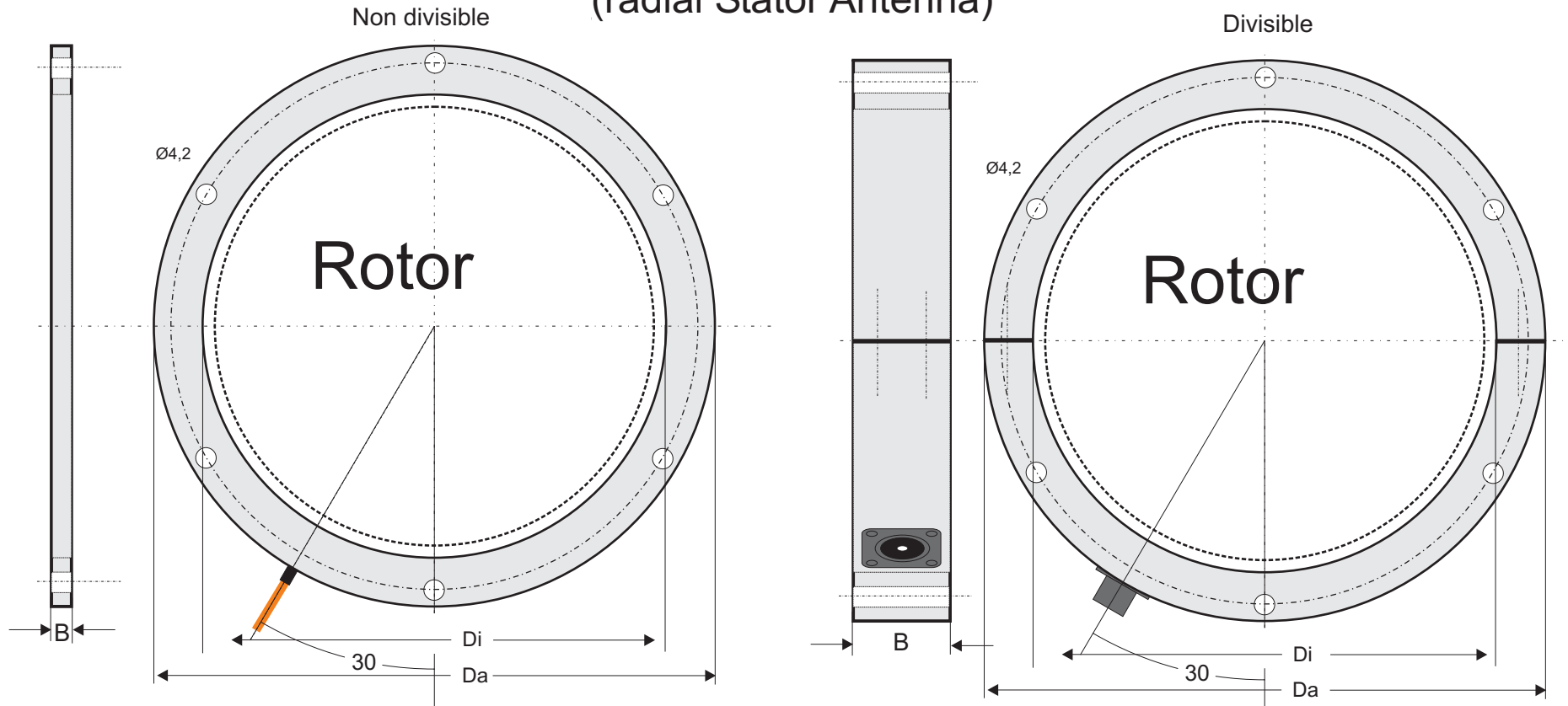
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

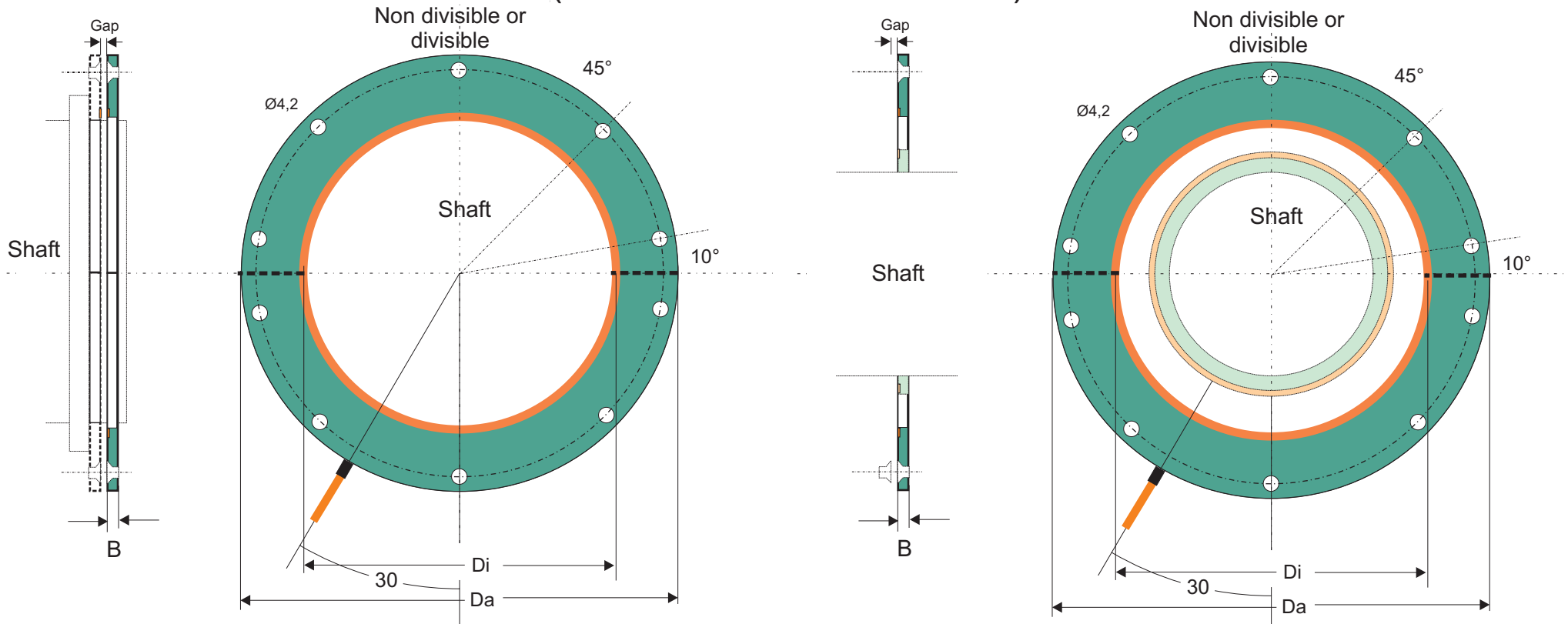
Pickup Type 3_HGW (radial Stator Antenna)



Order code: A3_HGW_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range:	PCM:	Di in mm:	Gap in mm:	Da in mm:	B in mm:	waterproof:	divisible:
-10 to 85°C							
-25 to 125°C	pcm					wa	di
-45 to 85°C							
-25 to 160°C							

Pickup Type 3 Epoxy (axial / radial Stator Antenna)



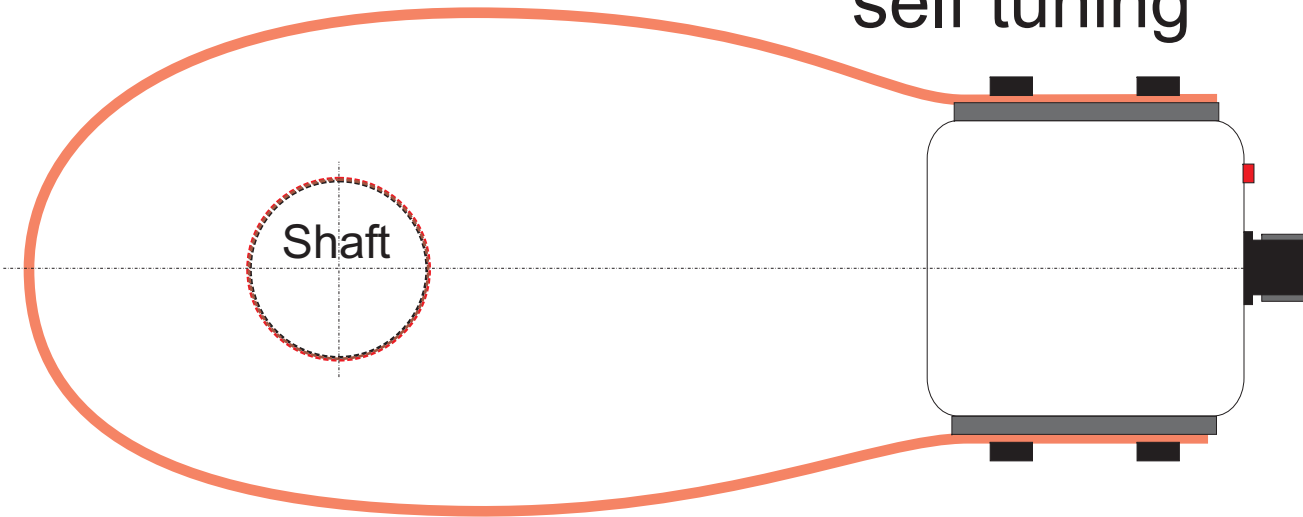
Order code: A3_Epoxy_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range:	PCM:	Di in mm:	Gap in mm:	Da in mm:	B in mm:	waterproof:	divisible:
-10 to 85°C						wa	di
-25 to 125°C	pcm						
-45 to 85°C							
-25 to 160°C							

Pickup Type 3 Anpassbar (flexible Stator Antenna)

Flexible stator loop
(exchangeable)

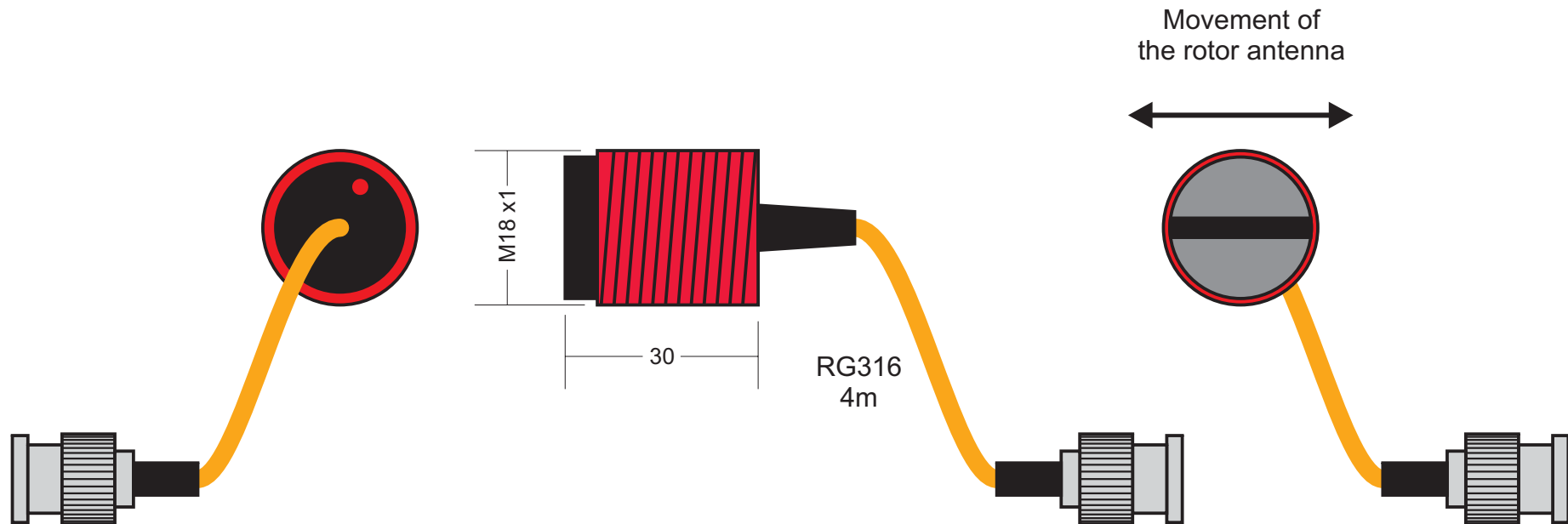
self tuning



Order code: A3b_flex_<temperature range>_<PCM>_<Da>_<waterproof>

temperature range:	PCM:	Da in mm:	waterproof:
-10 to 85°C			
-25 to 125°C	pcm		wa
-45 to 85°C			
-25 to 160°C			

Pickup Type 4a



Order code: A4a_<temperature range>_<waterproof>

temperature range: waterproof:

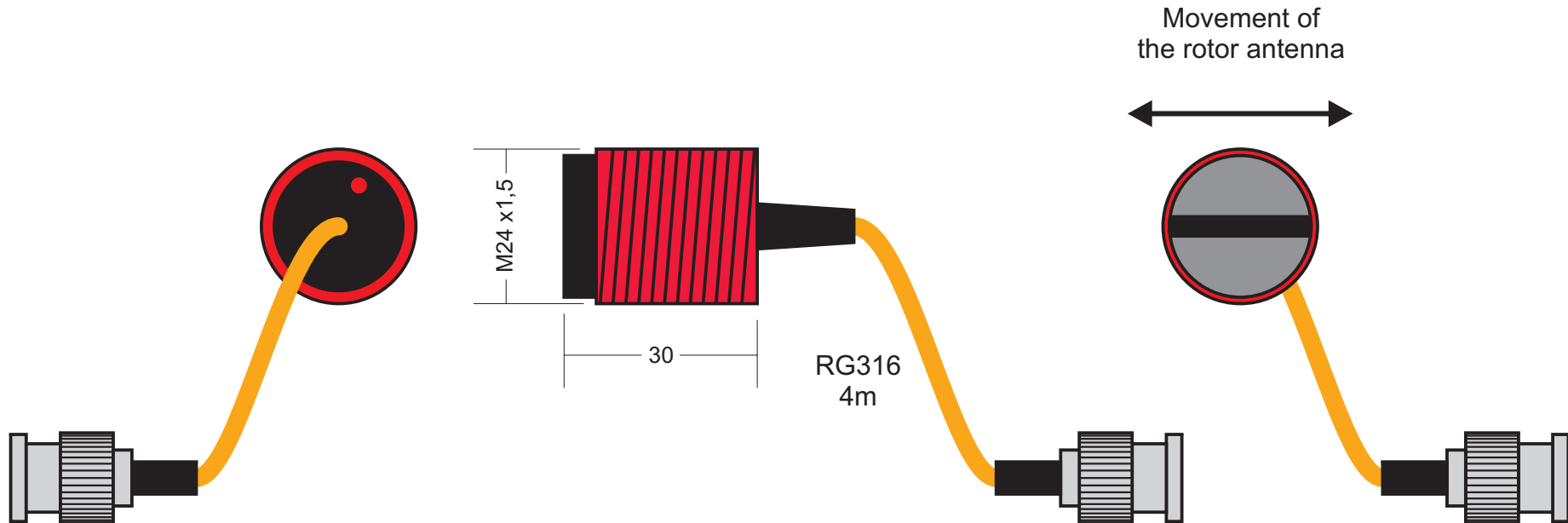
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

Pickup Type 4b



Order code: A4b_<temperature range>_<waterproof>

temperature range: waterproof:

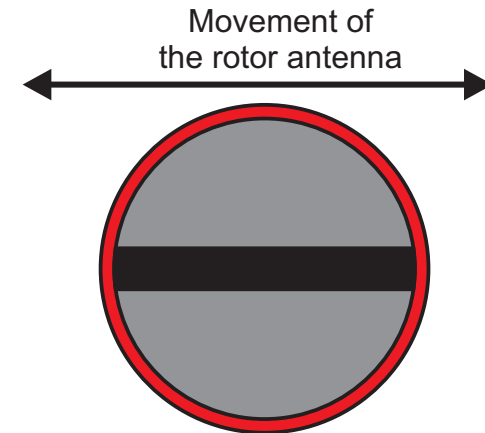
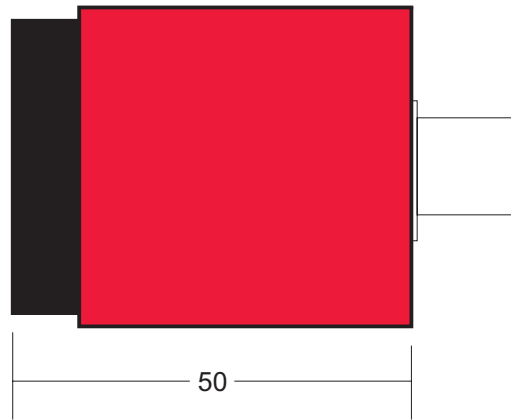
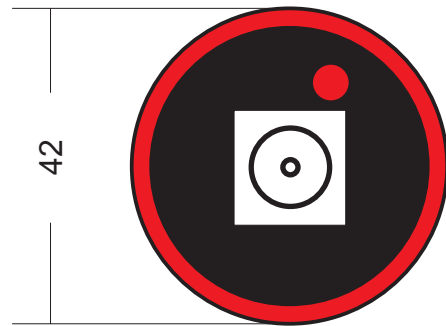
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

Pickup Type 4c



Order code: A4c_<temperature range>_<waterproof>

temperature range: waterproof:

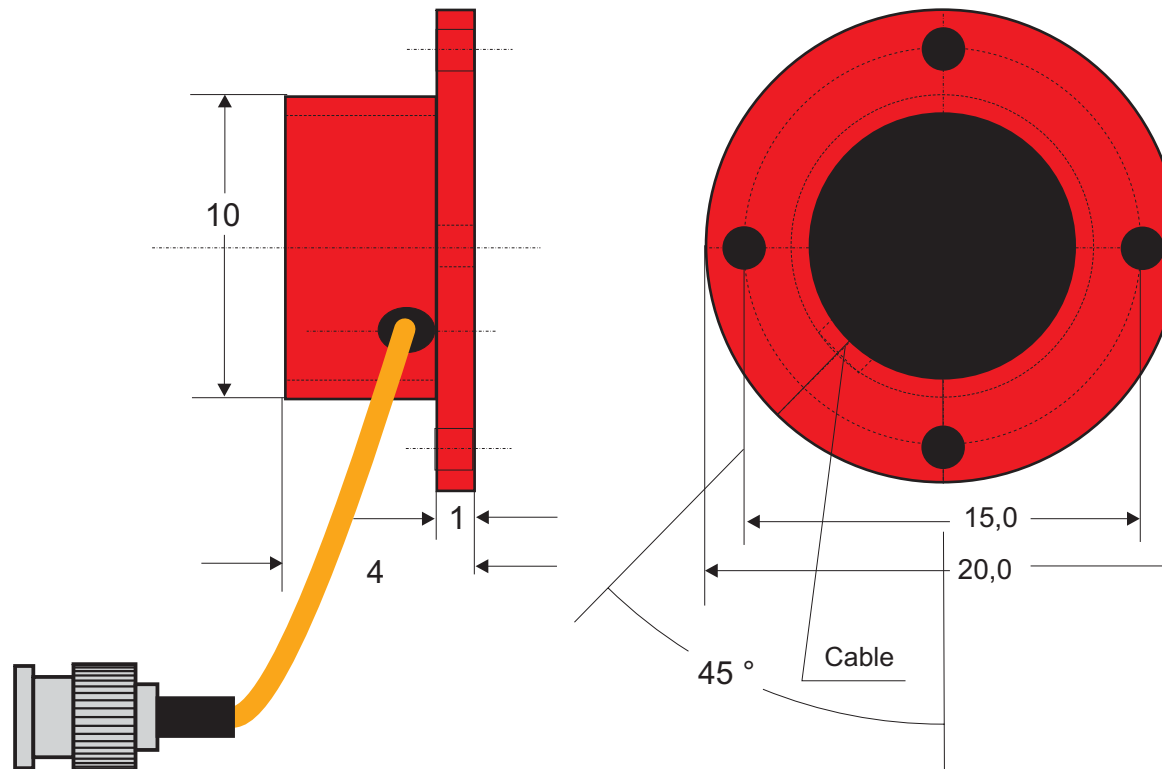
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

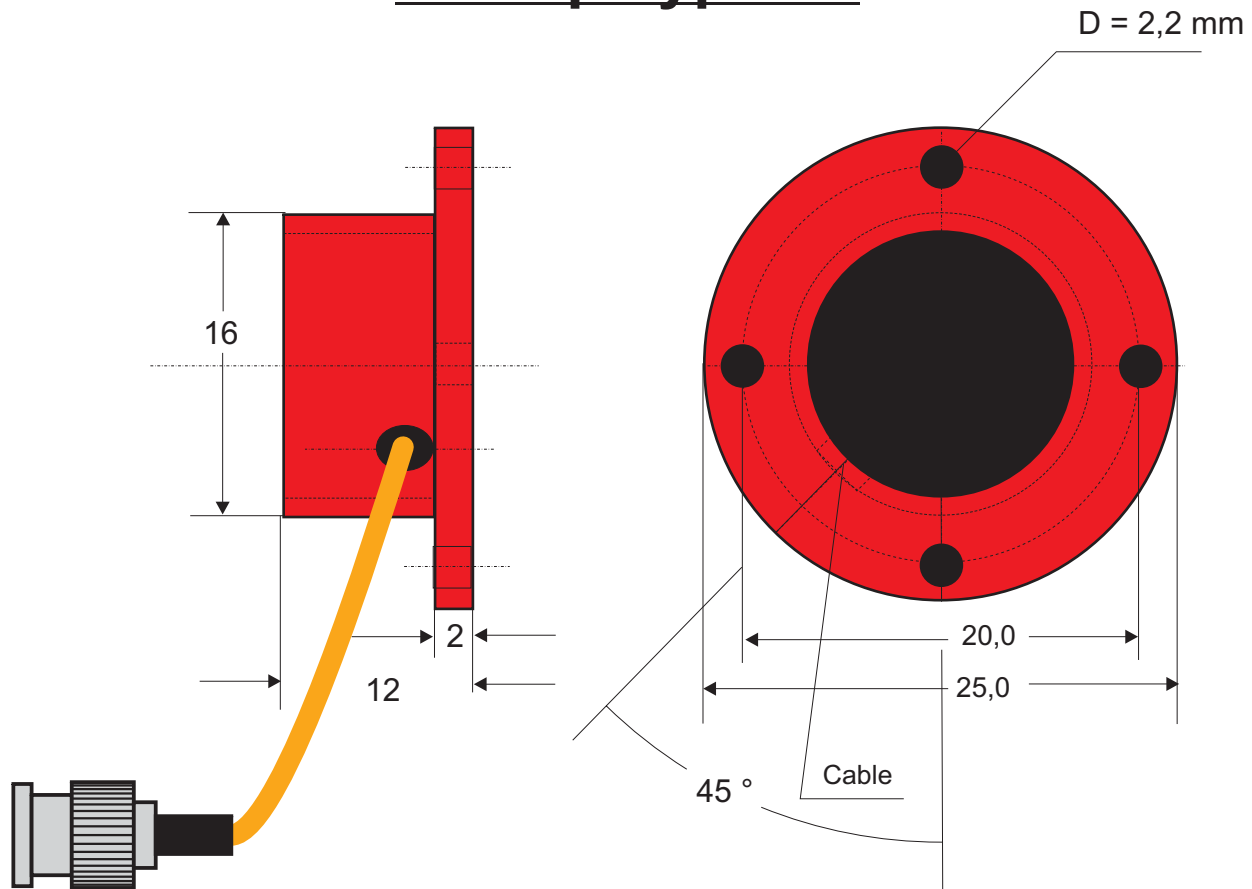
Pickup Type 5a



Order code: A5a_<temperature range>_PCM_<waterproof>

temperature range:	PCM:	waterproof:
-10 to 85°C		
-25 to 125°C	pcm	wa
-45 to 85°C		

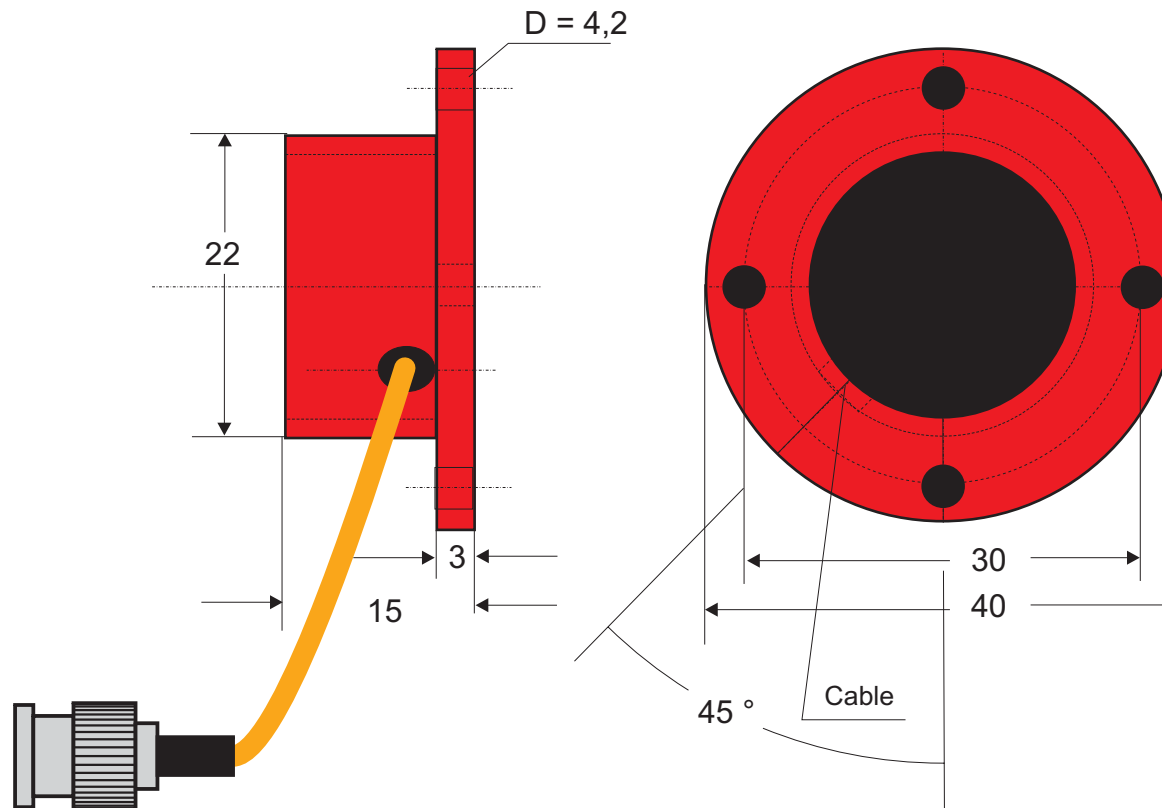
Pickup Type 5b



Order code: A5b_<temperature range>_PCM_<waterproof>

temperature range:	PCM:	waterproof:
-10 to 85°C		
-25 to 125°C	pcm	wa
-45 to 85°C		

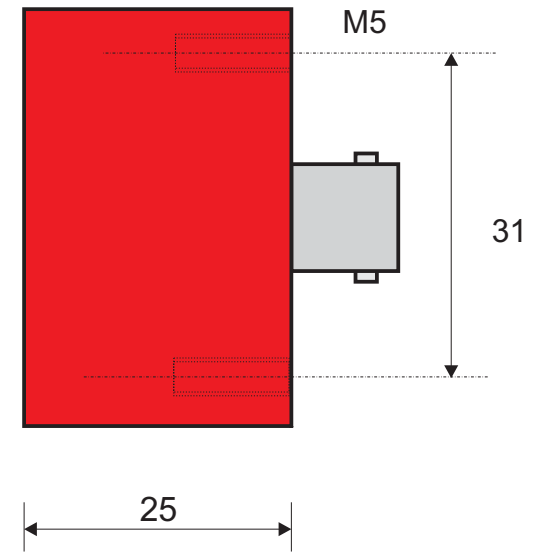
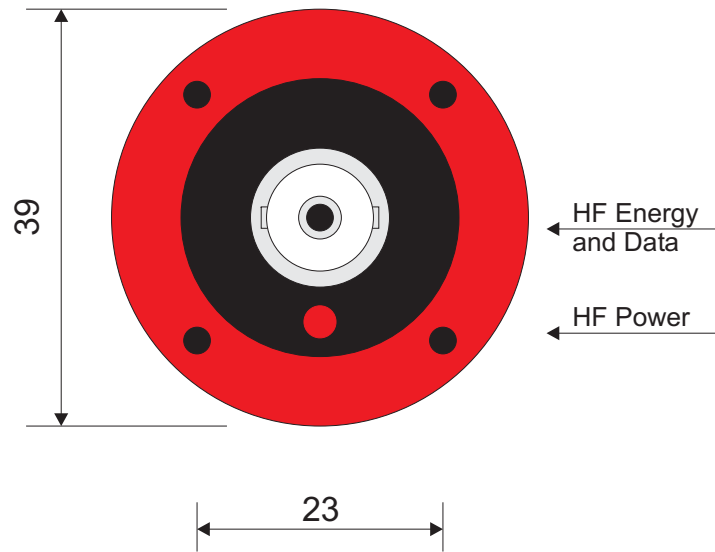
Pickup Type 5c



Order code: A5c_<temperature range>_PCM_<waterproof>

temperature range:	PCM:	waterproof:
-10 to 85°C		
-25 to 125°C	pcm	wa
-45 to 85°C		

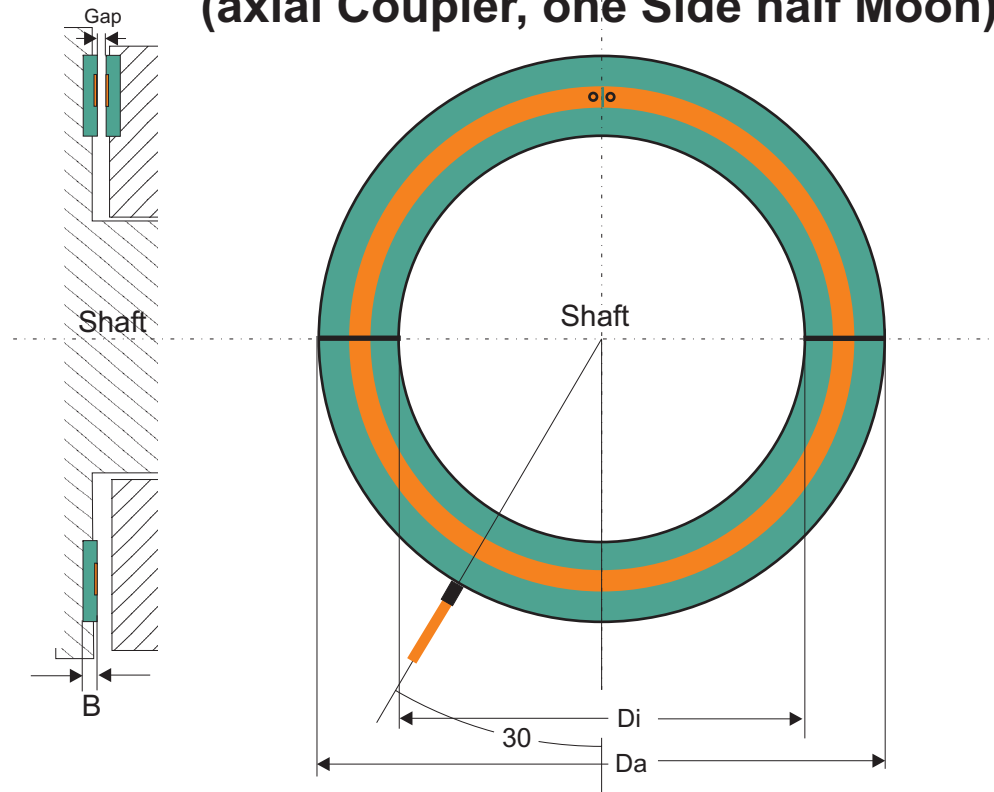
Pickup Type 5d



Order code: A5d_<temperature range>_PCM_<waterproof>

temperature range:	PCM:	waterproof:
-10 to 85°C		
-25 to 125°C	pcm	wa
-45 to 85°C		

Coupler Type 5e Epoxy (axial Coupler, one Side half Moon)



Order code: 5e_Epoxy_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range: PCM: Di in mm: Gap in mm: Da in mm: B in mm: waterproof: divisible:

-10..85°

-25..125°

-45..85°

-45..125°

-25..150°

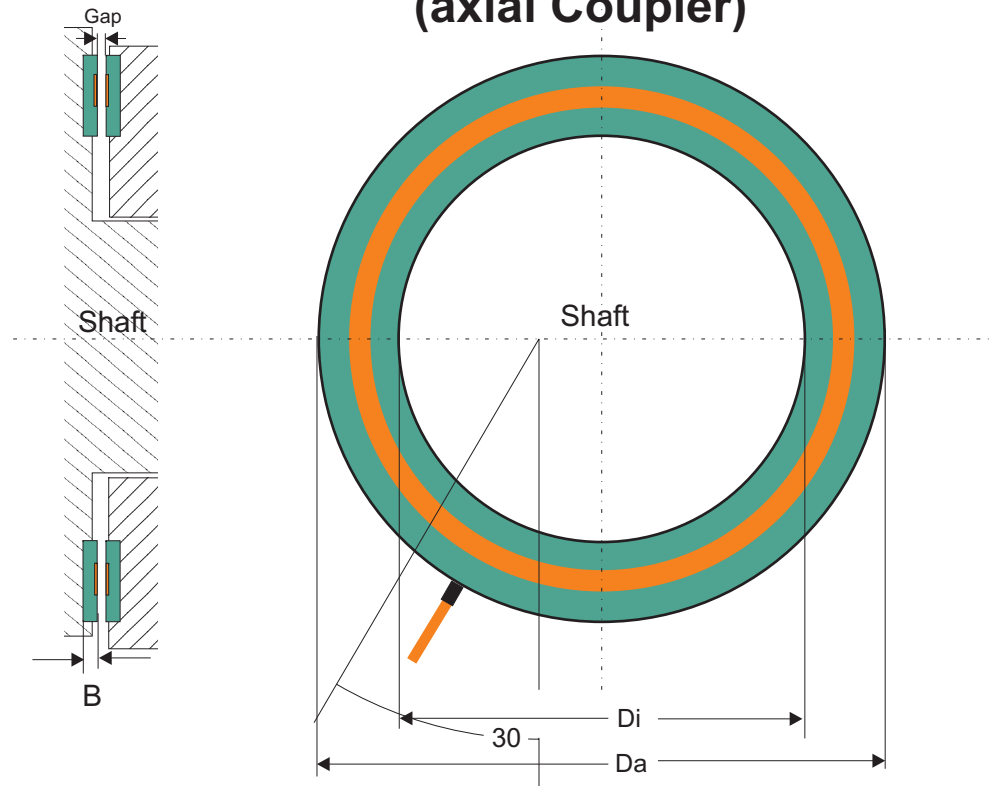
-10..180°

pcm

wa

di

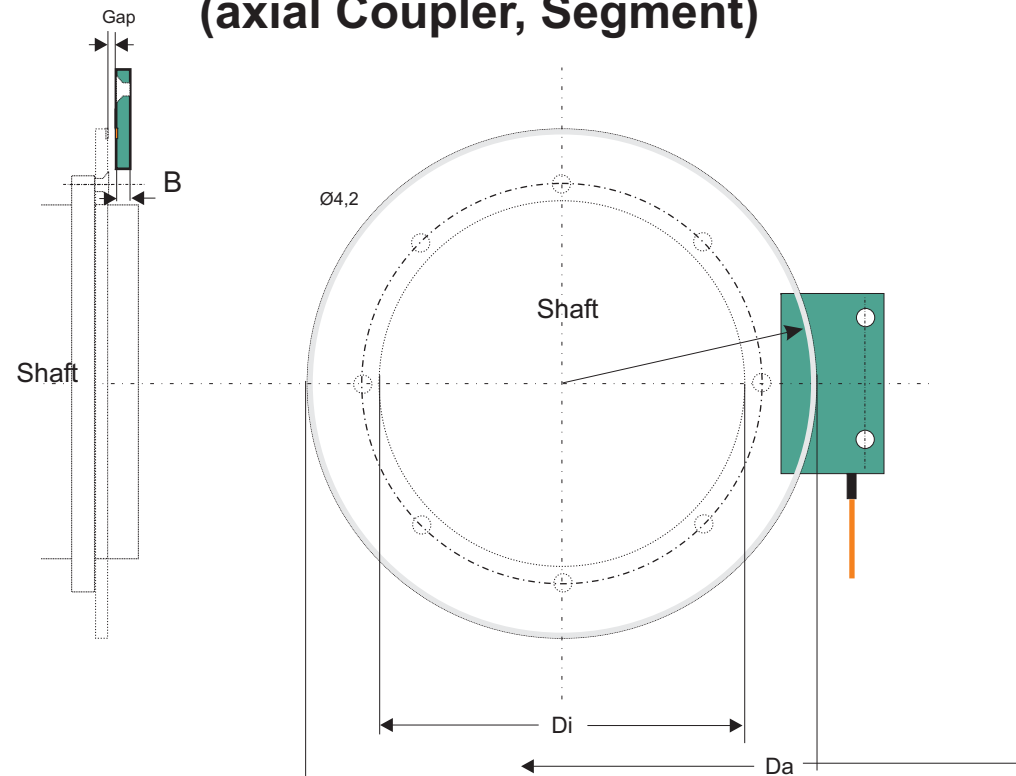
Coupler Type 5f Epoxy (axial Coupler)



Order code: A5f_Epoxy_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range:	PCM:	Di in mm:	Gap in mm:	Da in mm:	B in mm:	waterproof:	divisible:
-10..85°							
-25..125°	pcm					wa	-
-45..85°							
-45..125°							
-25..150°							
-10..180°							

Pick Up Type 5i (axial Coupler, Segment)



Order code: A5i_<temperature range>_<PCM>_<R>_<Gap>__<waterproof>

temperature range: PCM: R in mm: Gap in mm: B in mm: waterproof:

-10 to 85°C

-25 to 125°C

-45 to 85°C

-45 to 125°C

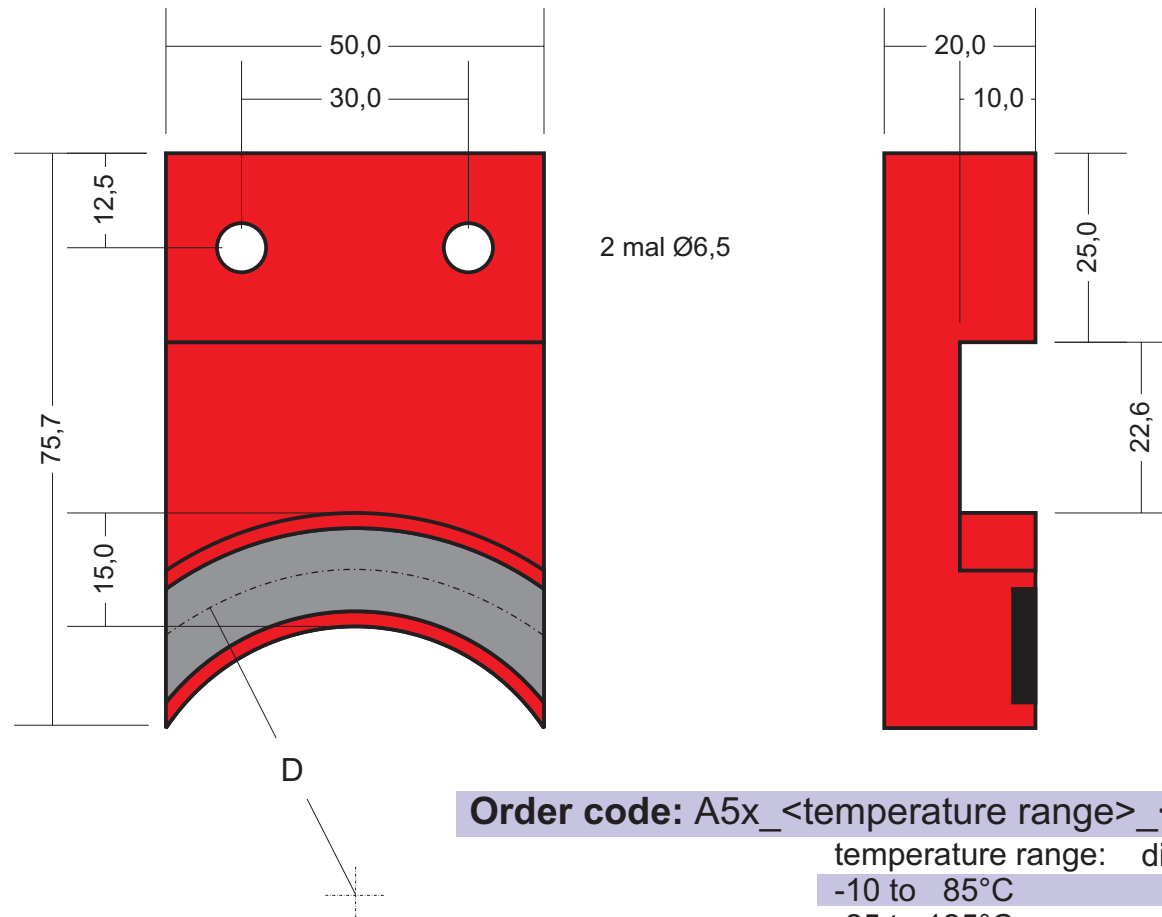
-25 to 160°C

-10 to 180°C

pcm

wa

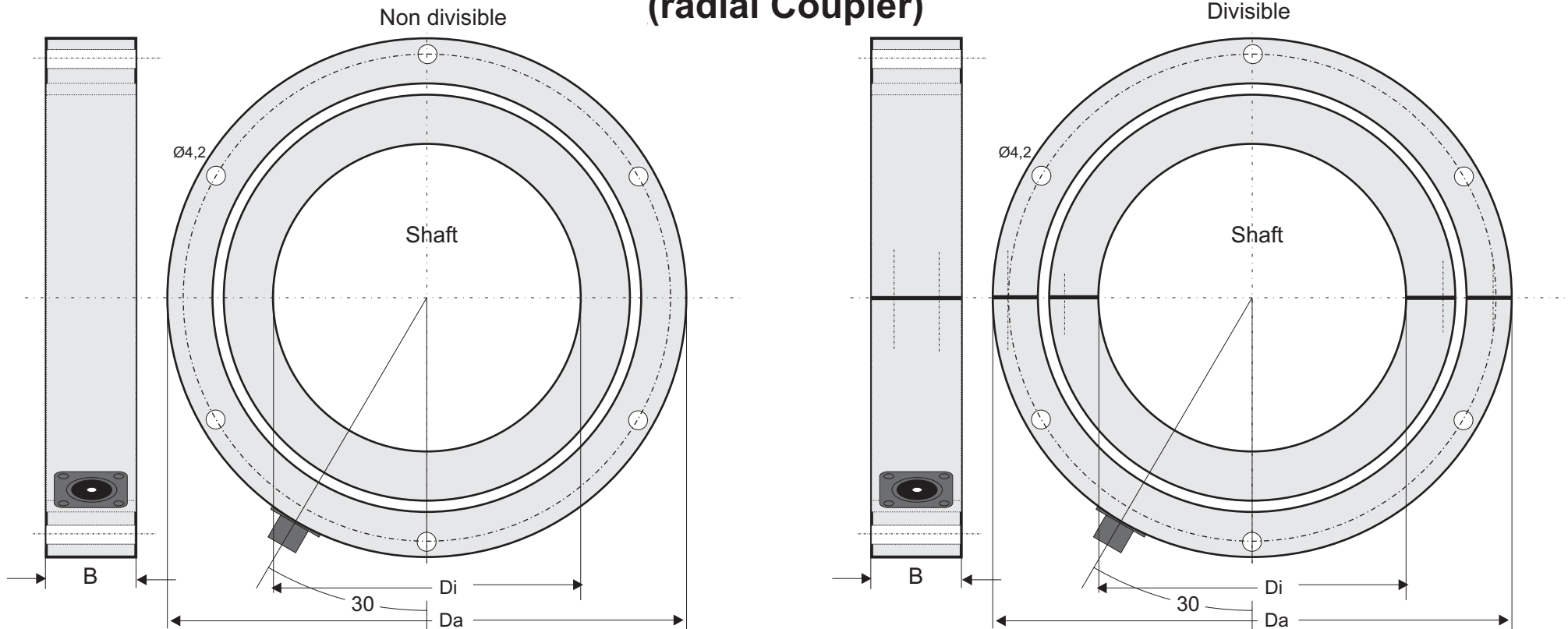
Pickup Type 5x (axial Coupler, Segment)



Order code: A5x_<temperature range>_<D>_<Mod>_<waterproof>

temperature range:	diameter	Mod.	waterproof:
-10 to 85°C	xxx	PCM	
-25 to 125°C		FM	wa
-45 to 85°C			

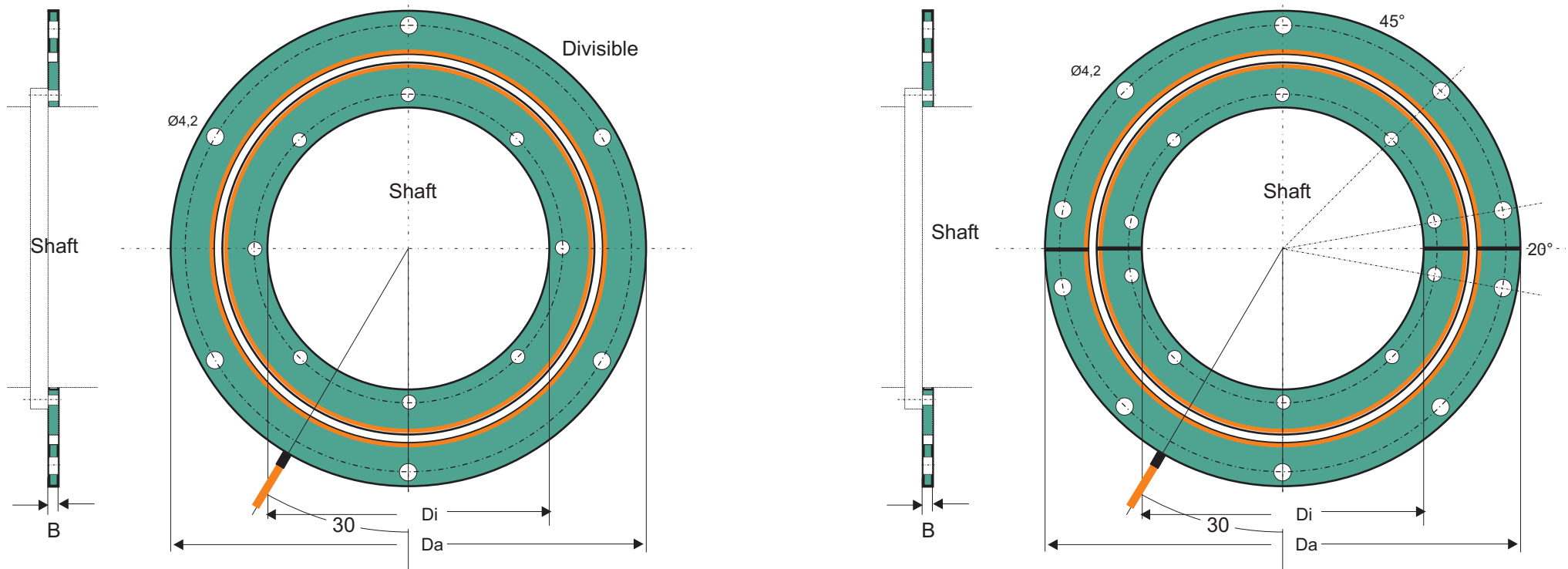
Coupler Type 7_HGW (radial Coupler)



Order code: A7_HGW_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range:	PCM:	Di in mm:	Gap in mm:	Da in mm:	B in mm:	waterproof:	divisible:
-10 to 85°C							
-25 to 125°C	pcm					wa	d
-45 to 85°C							
-25 to 160°C							

Coupler Type 7_Epoxy (radial Coupler)



Order code: A7_Epoxy_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range: PCM: Di in mm: Gap in mm: Da in mm: B in mm: waterproof: divisible:

-10 to 85°C

-25 to 125°C

-45 to 85°C

-45 to 125°C

-25 to 160°C

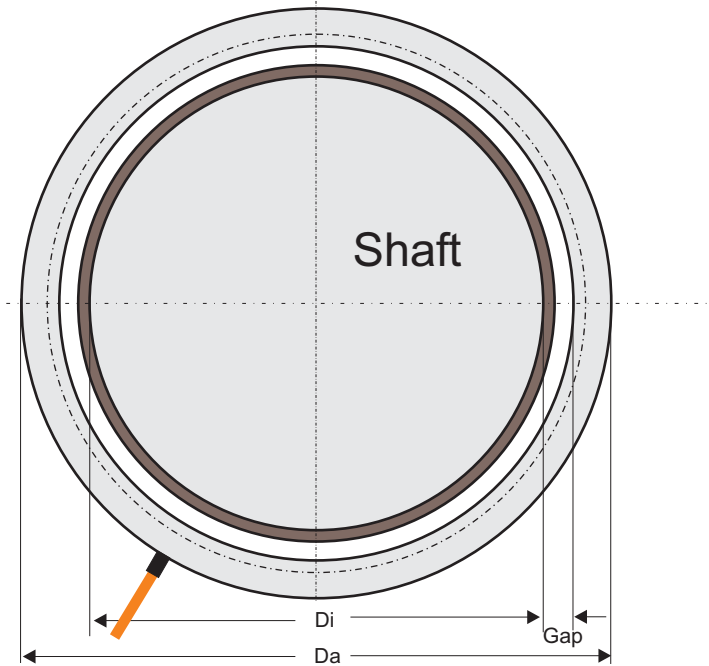
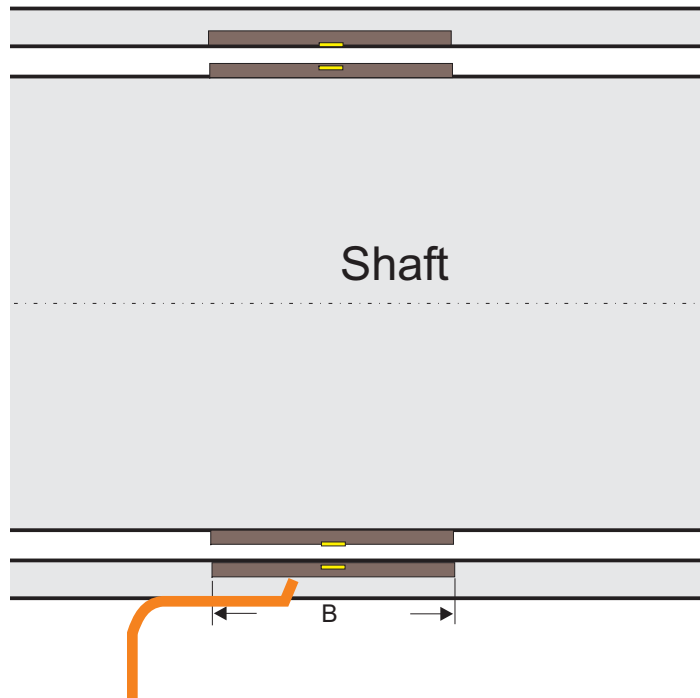
-10 to 180°C

pcm

wa

d

Customer Specific Coupler Type 7_Ferrit (integrated radial Coupler)

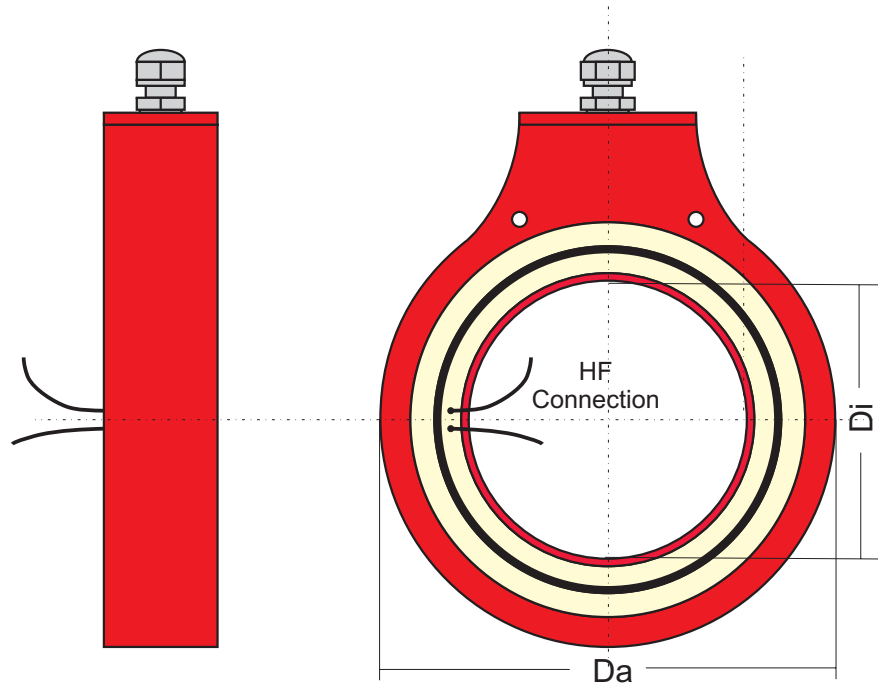


Order code: A7_Ferrit_<temperature range>_<PCM>_<Di>_<Gap>_<Da>__<waterproof>_<divisible>

temperature range:	PCM:	Di in mm:	Gap in mm:	Da in mm:	B in mm:	waterproof:	divisible:
-10 to 85°C							
-25 to 125°C	pcm					wa	-
-45 to 85°C							
-45 to 125°C							
-25 to 160°C							

Universal Shaft Transmitter (non divisible)

(without Amplifier)

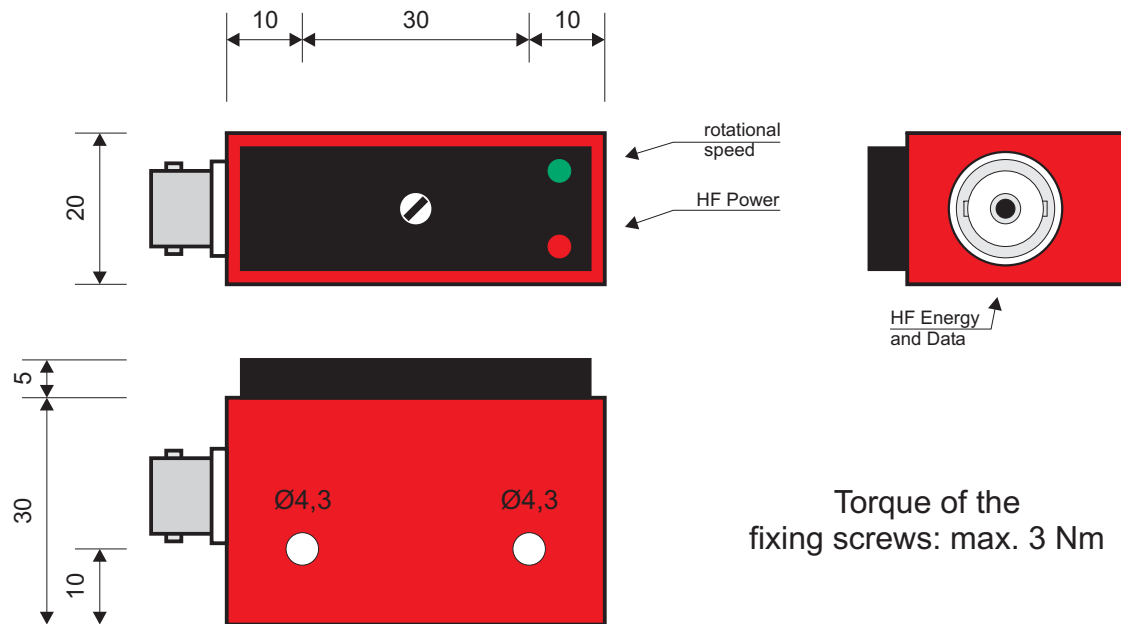


Solutions with integrated amplifier
see section: Universal shaft transmitter

Order code: A7_Lager_<Di>_<Da>_<temperatur range>_<PCM>_<IP65>

Di in mm:	Da in mm:	temperature range:	PCM:
36	59	-10 to 85°C	
41	65	-25 to 125°C	pcm
46	69	-45 to 85°C	
51	75	-45 to 125°C	
56	79	-25 to 160°C	
61	85		

Pickup Type 8a



Order code: A8a_<temperature range>_<waterproof>

temperature range: waterproof:

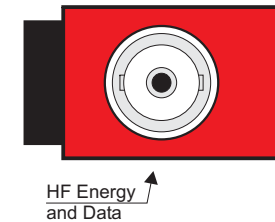
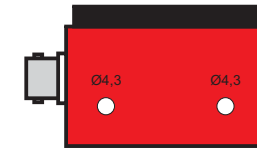
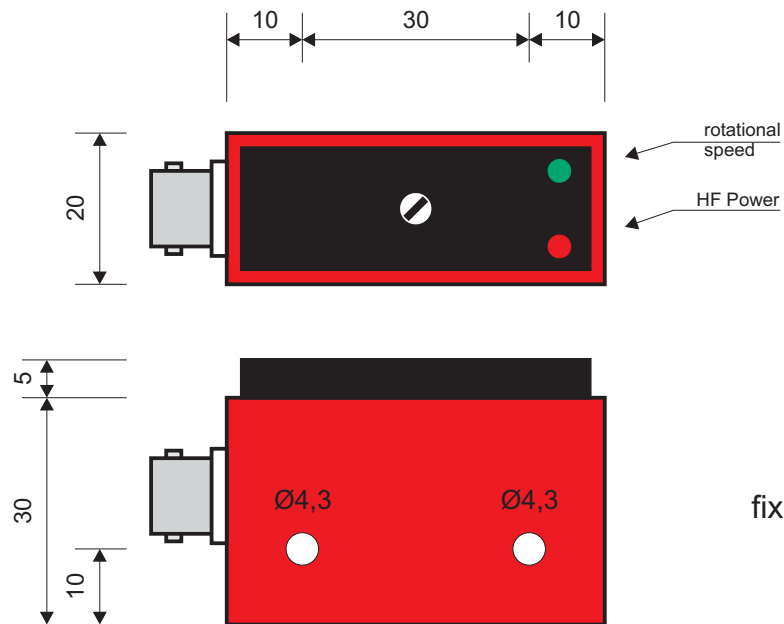
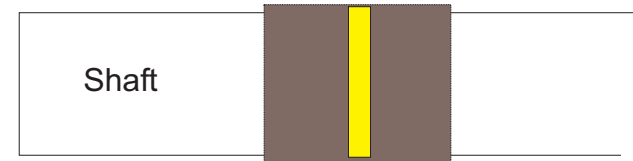
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

Pickup Type 8aq

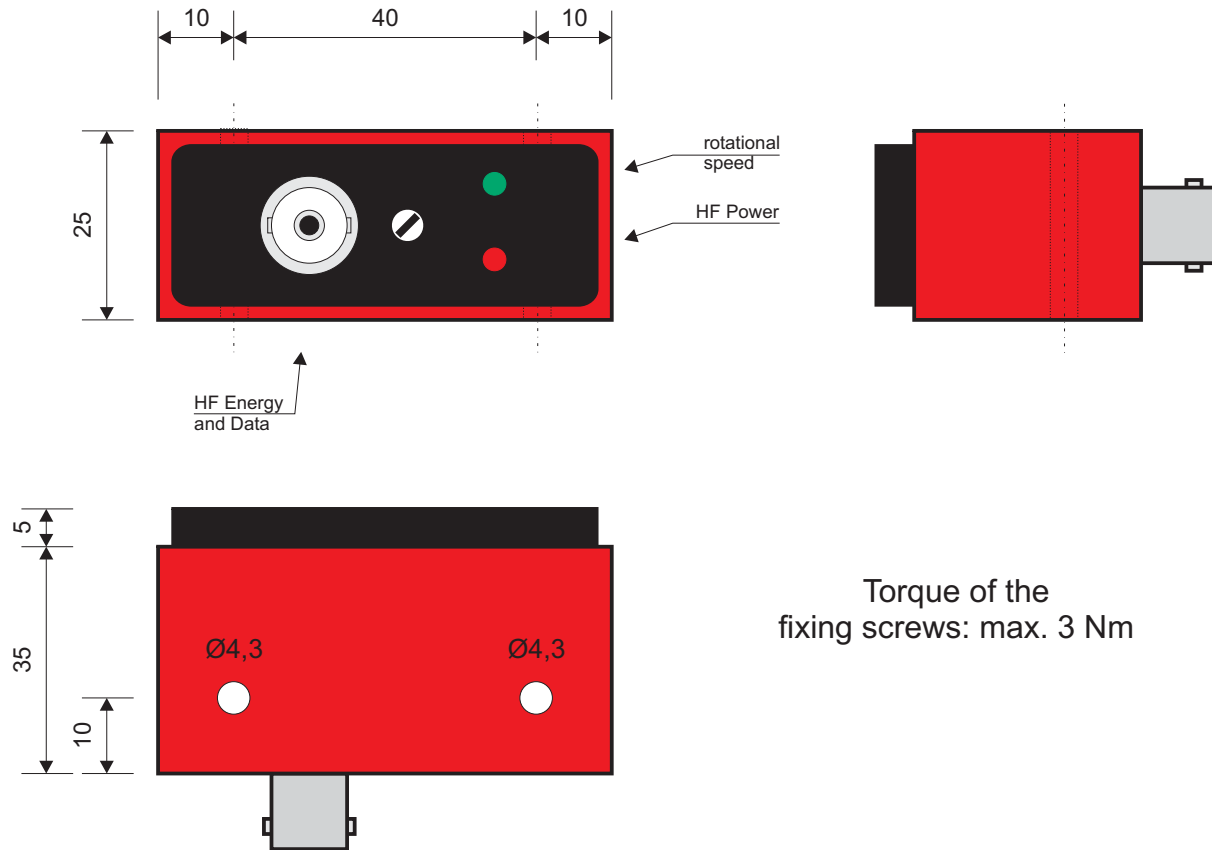


Torque of the fixing screws: max. 3 Nm

Order code: A8aq_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	

Pickup Type 8b

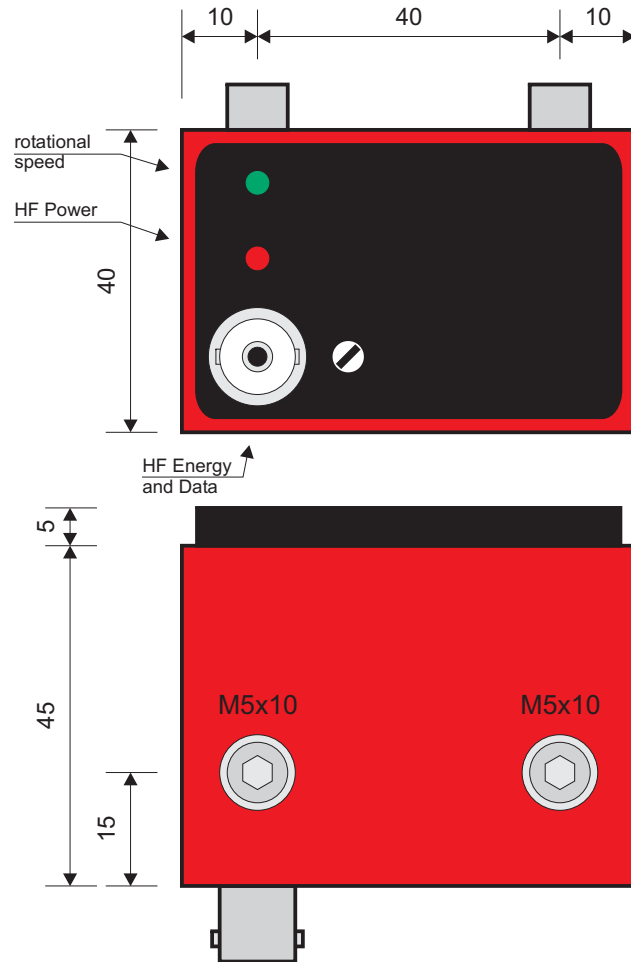


Torque of the
fixing screws: max. 3 Nm

Order code: A8b_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	

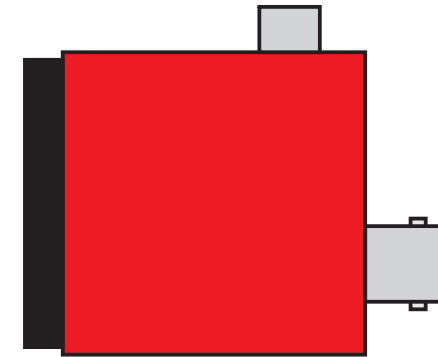
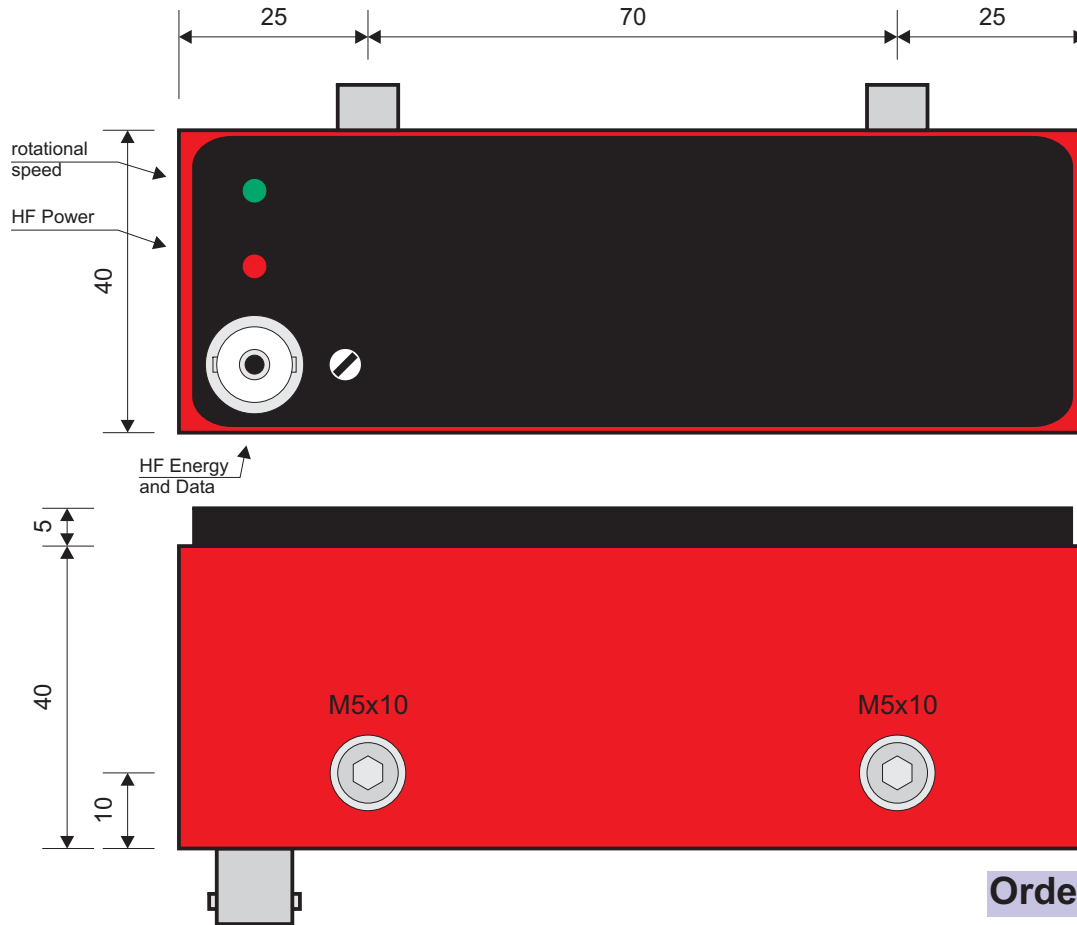
Pickup Type 8c



Order code: A8c_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	

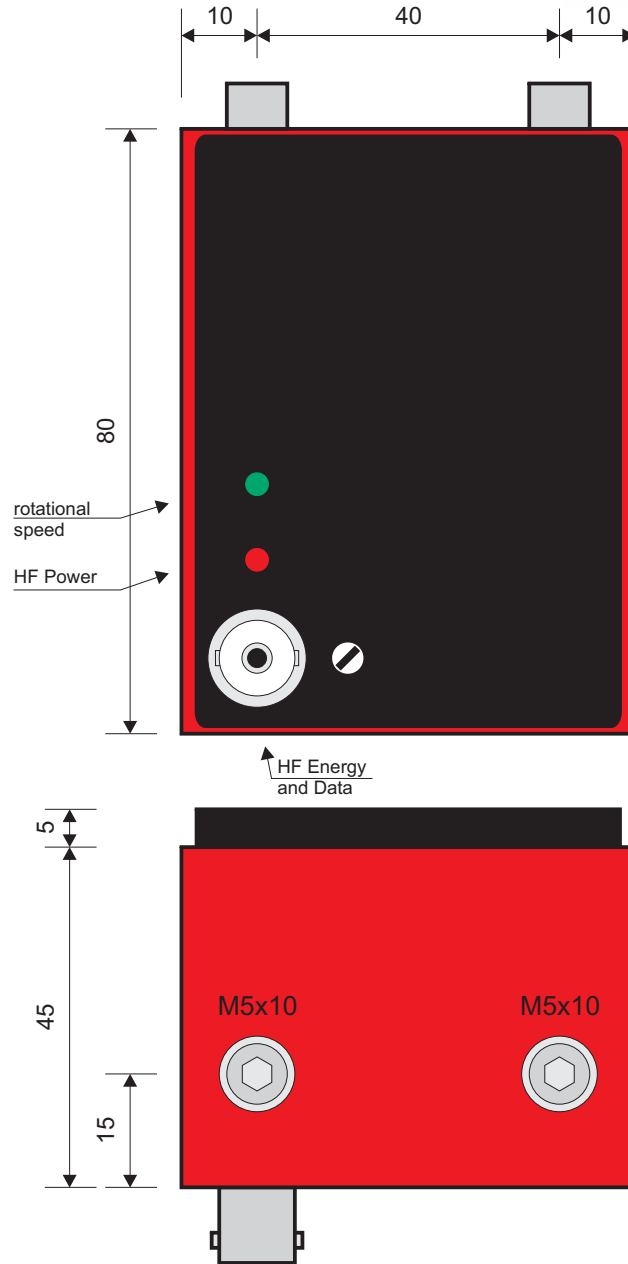
Pickup Type 8d



Order code: A8d_<temperature range>_<waterproof>

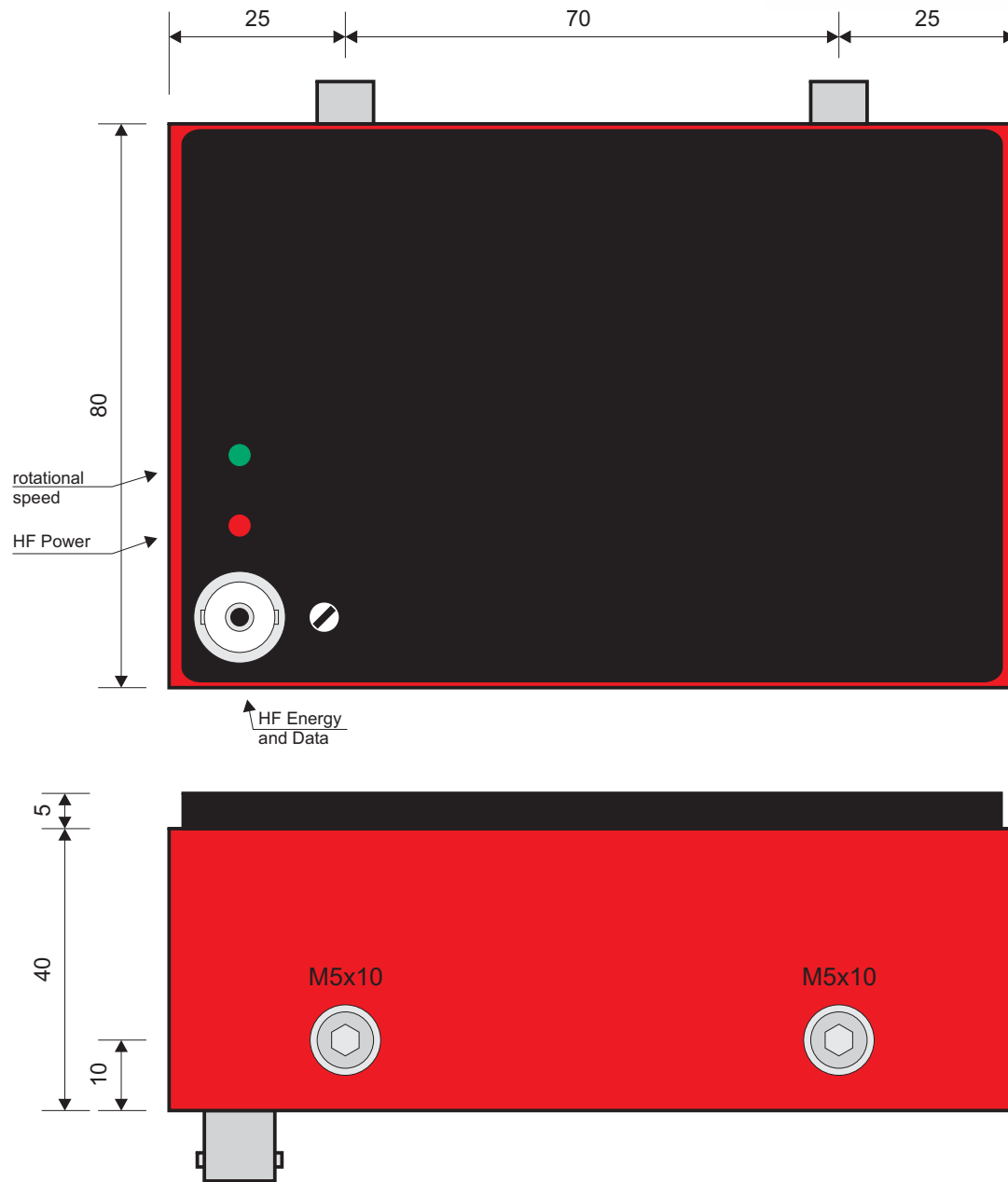
temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	

Pickup Type 8e

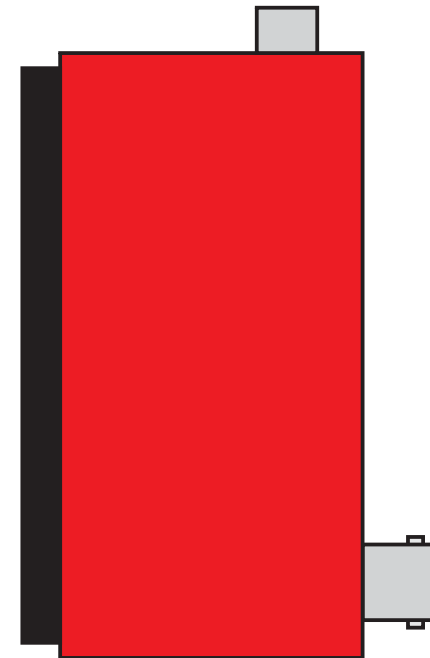


Order code: A8e_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	

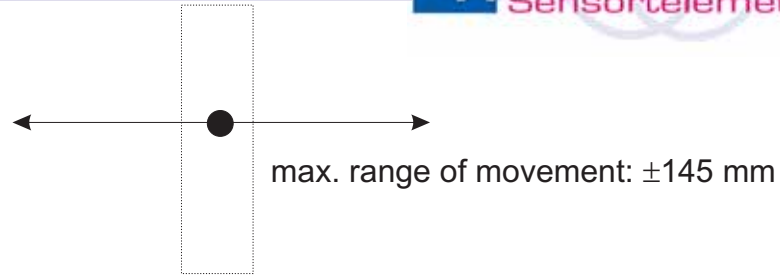


Pickup Type 8f

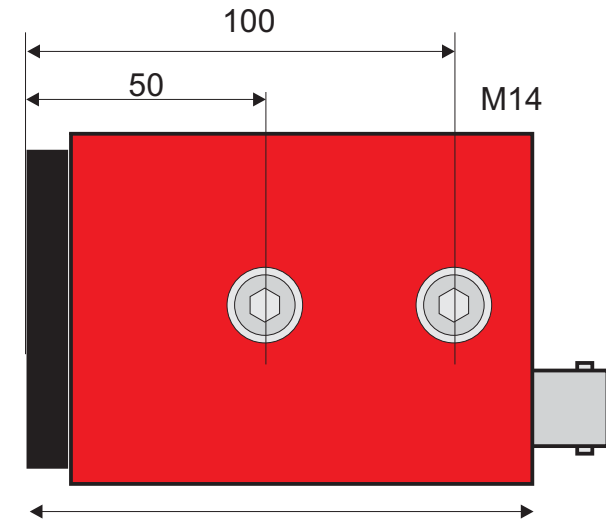
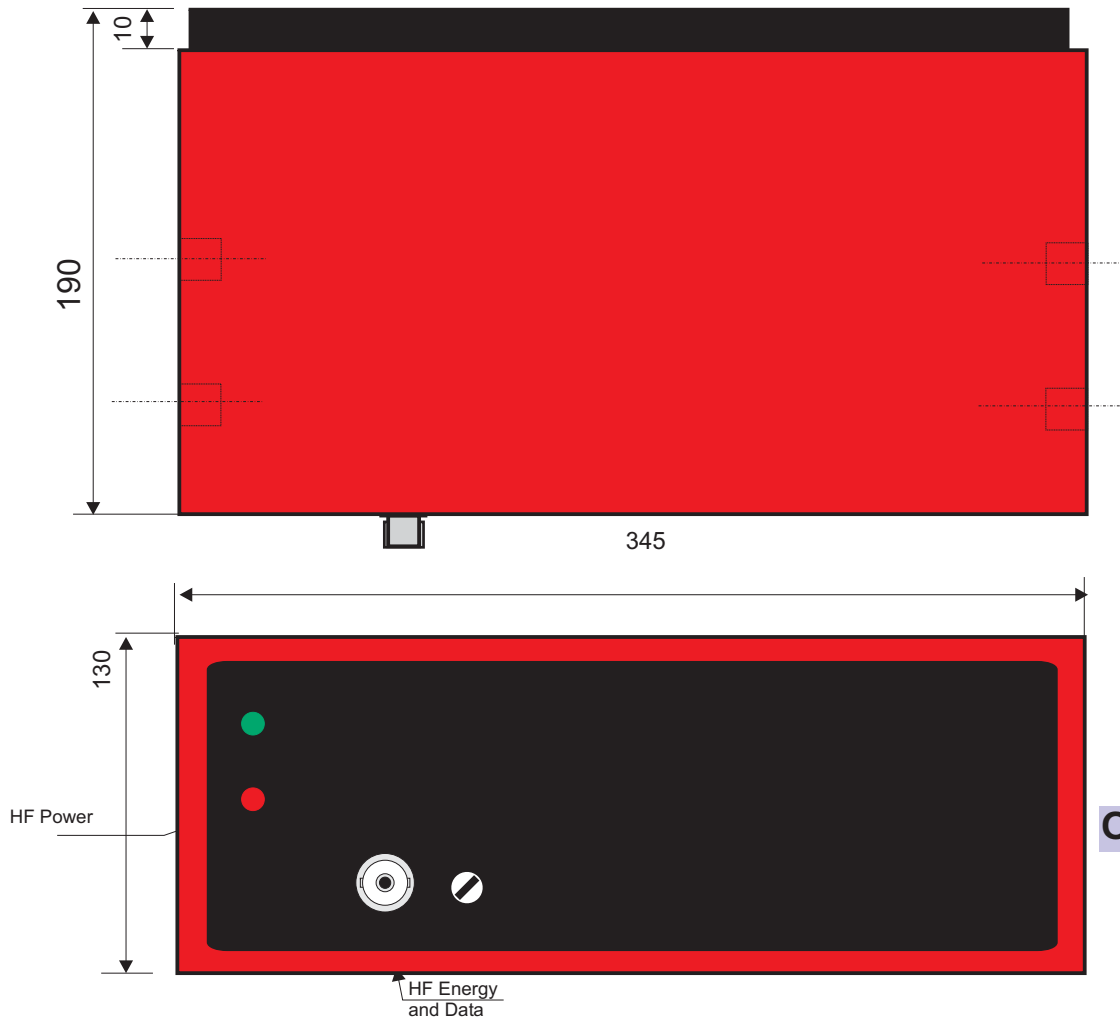


Order code: A8f_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	



Pickup Type 8g



Order code: A8g_<temperature range>_<waterproof>

temperature range: waterproof:

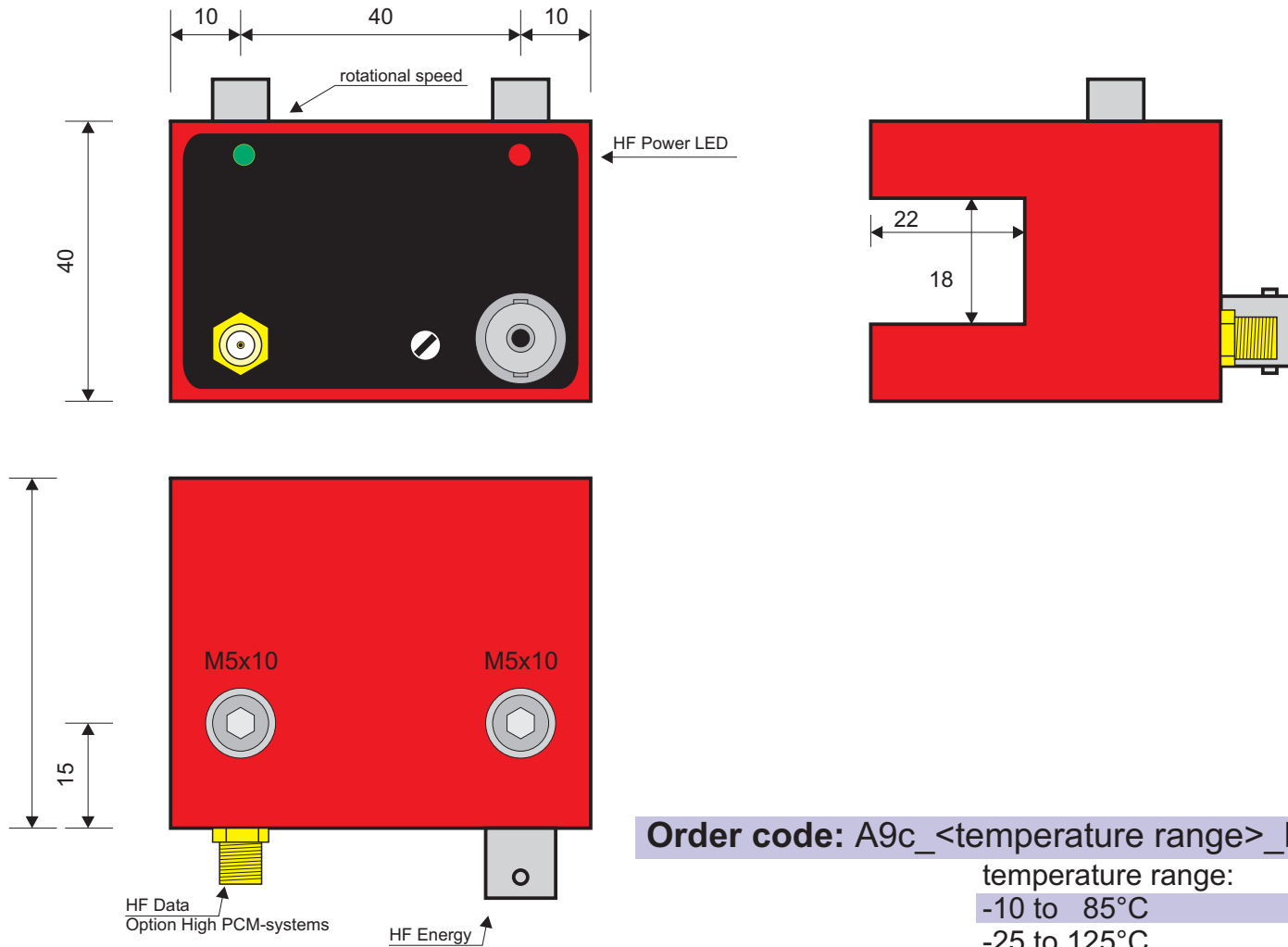
-10 to 85°C

-25 to 125°C

-45 to 85°C

wa

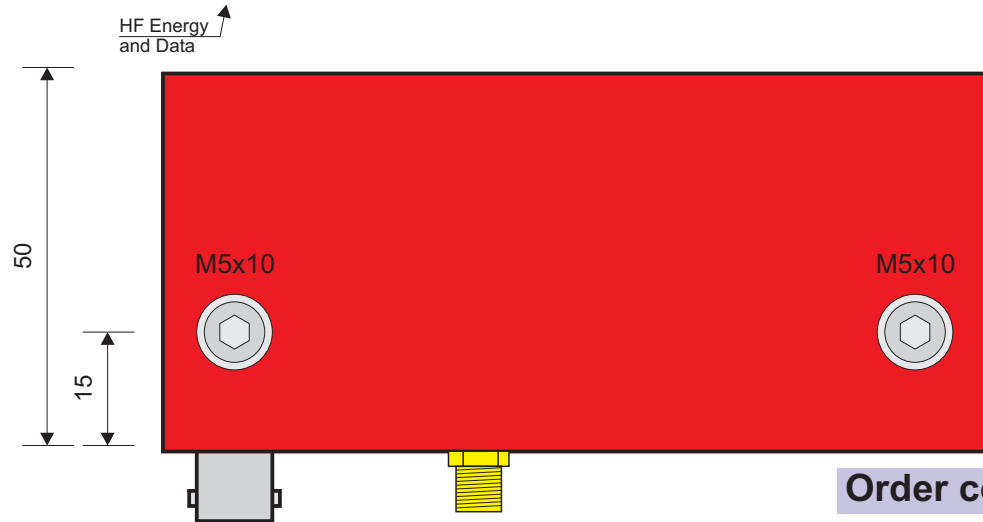
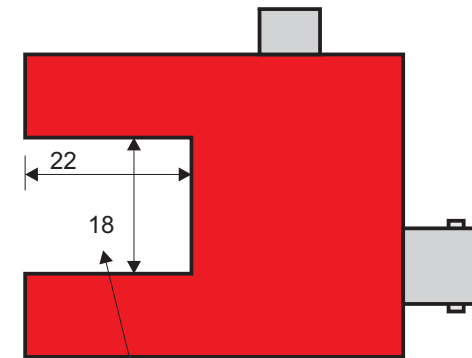
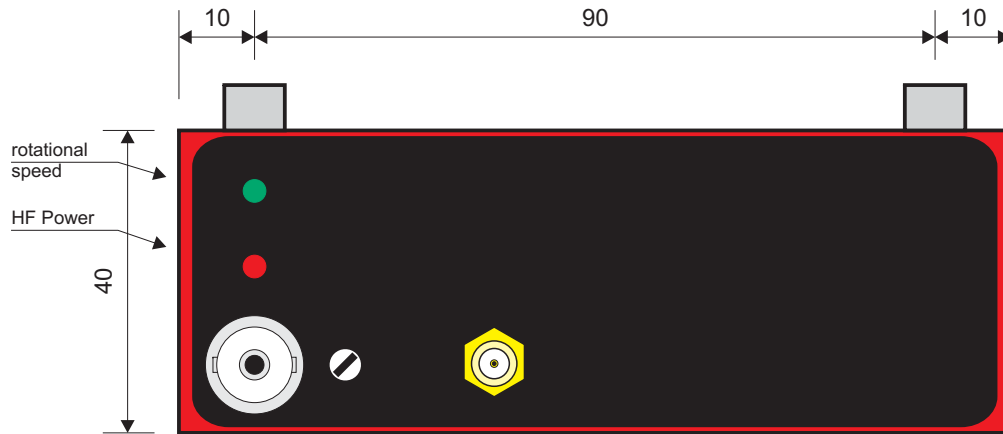
Pickup Type 9c (PCM)



Order code: A9c_<temperature range>_PCM_<waterproof>

temperature range:	PCM:	waterproof:
-10 to 85°C		
-25 to 125°C	pcm	wa
-45 to 85°C		

Pickup Type 9d (18mm)

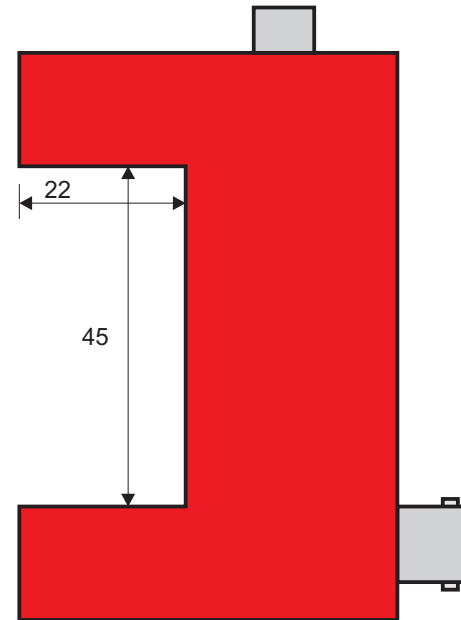
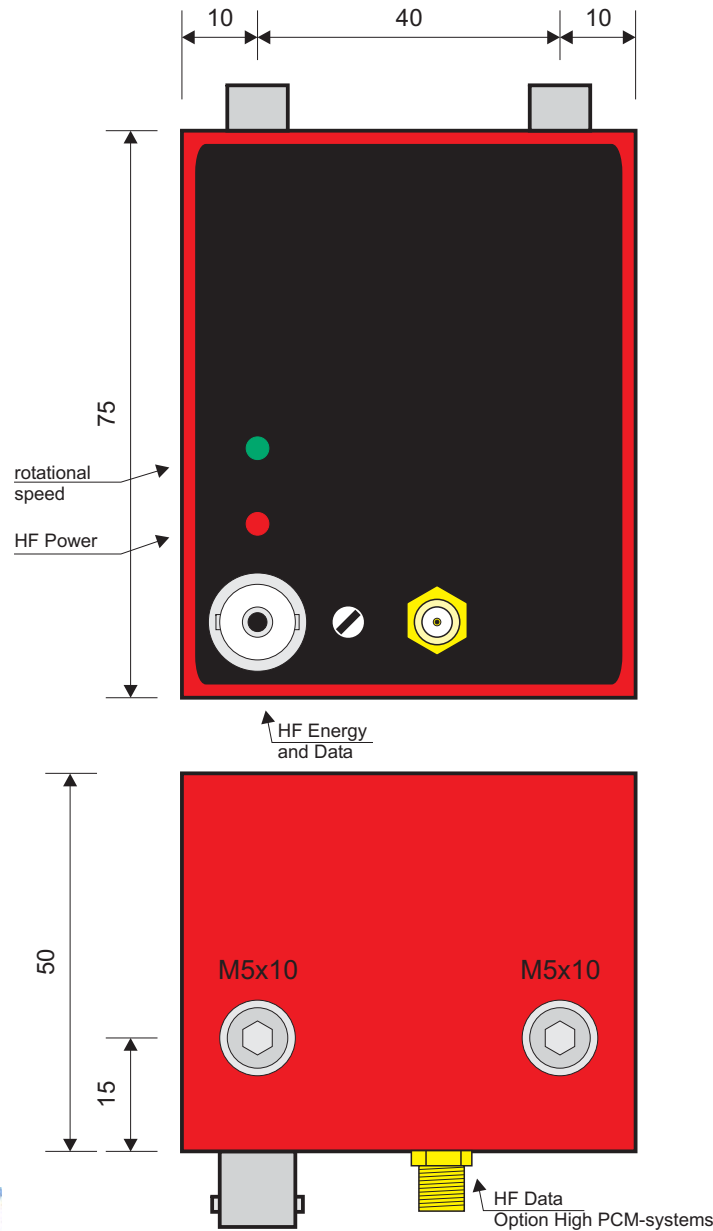


HF Data
Option High PCM-systems

Order code: A9d_<temperature range>_<slot>_<waterproof>

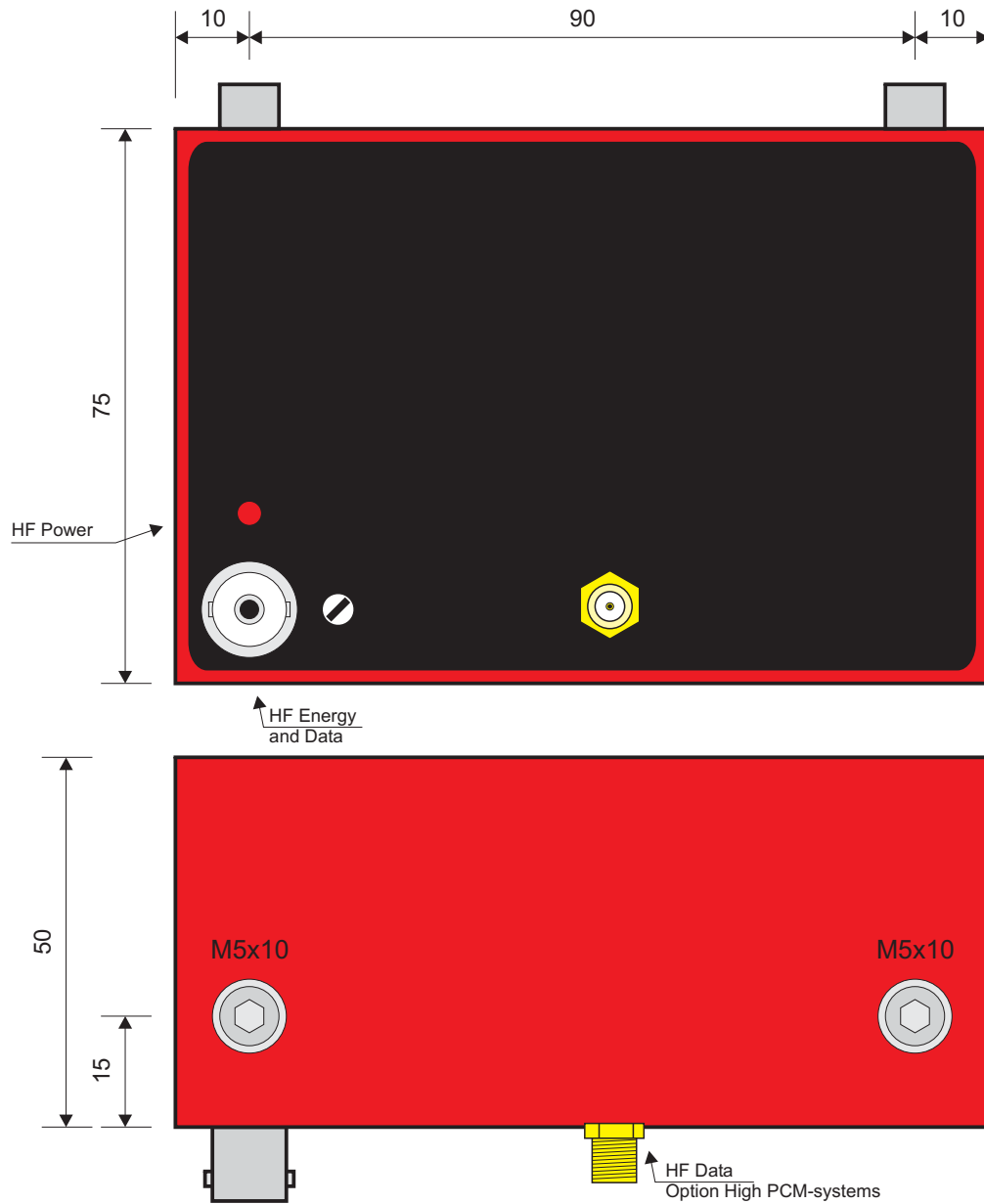
temperature range:	slowwaterproof:
-10 to 85°C	
-25 to 125°C	22 wa
-45 to 85°C	

Pickup Type 9e

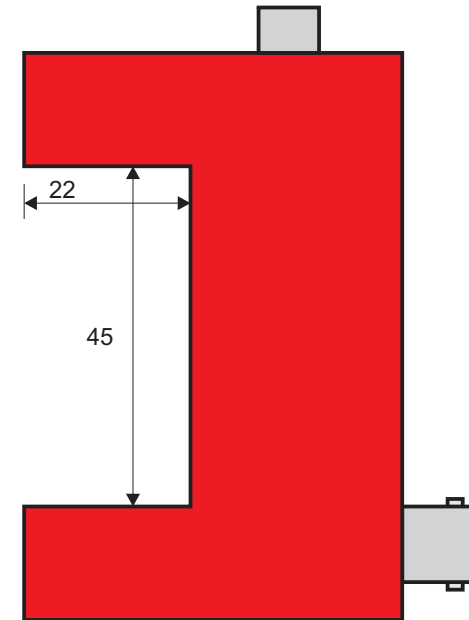


Order code: A9e_<temperature range>_<waterproof>

temperature range:	waterproof:
-10 to 85°C	
-25 to 125°C	wa
-45 to 85°C	



Pick Up Type 9f



Order code: A9f_<temperature range>_<waterproof>

temperature range: waterproof:

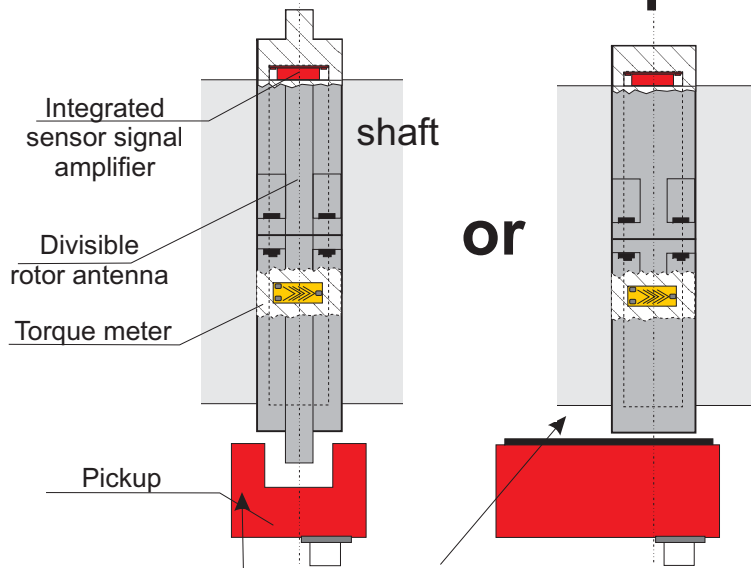
-10 to 85°C

-25 to 125°C

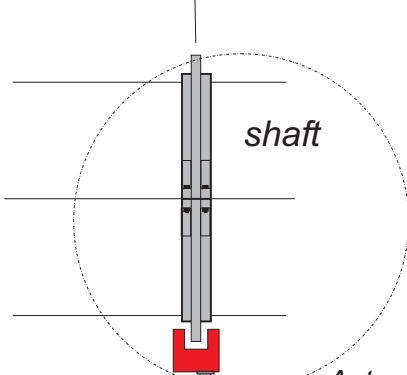
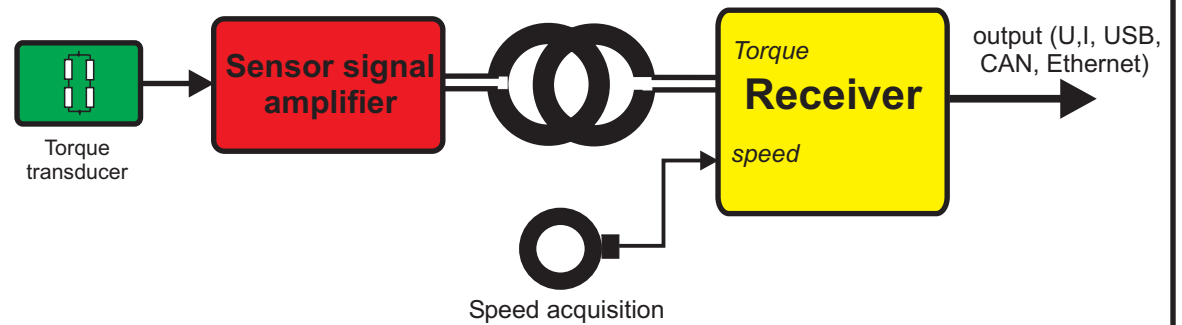
-45 to 85°C

wa

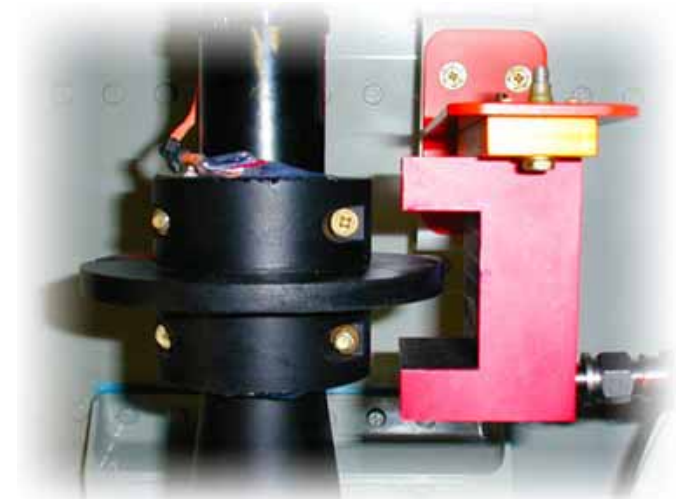
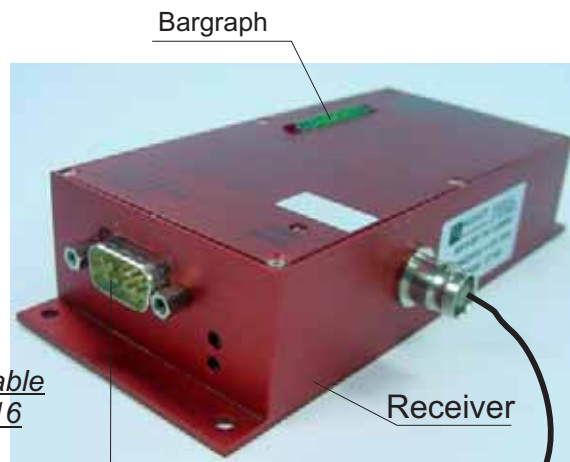
Torque/Power Acquisition on Shaft



- * High precise torque acquisition based on strain gauge
- * Integrated power supply (no batteries)
- * No maintenance, easy mounting
- * Special for longterm use
- * Digital interface
- * Environment temperature range -45 to 160°C
- * Simple coax cable connection



*Antenna cable
Type RG316*



Torque Measuring Telemetry with Flexible Self Tuning Stator Loop (Type 3 Anpass)

(drive 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

Drive shaft diameter: 20 to 100 mm

Rotor electronic with very low 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

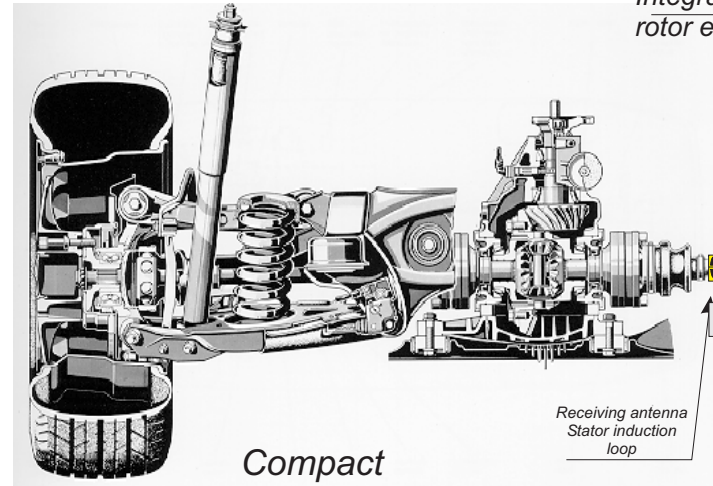
Range 0,05 to 20 mV/V, zero ±250% at 1 mV/V,

Autozero, remote shunt calibration

Inside rotor electronic

Sensors: strain gage, thermocouple NiCr-Ni

Display in Nm



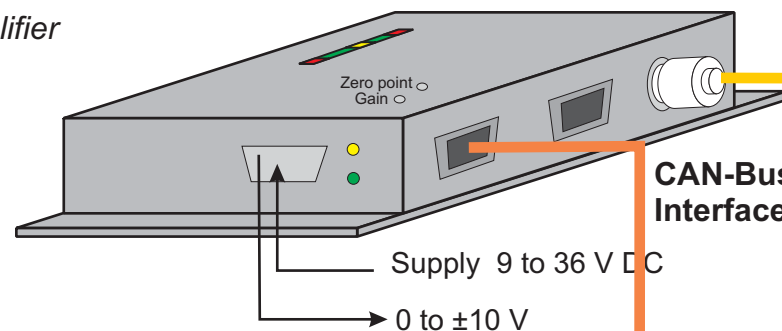
Compact receiver unit

Flexible stator antenna with outside shielding

Integrated rotor electronic



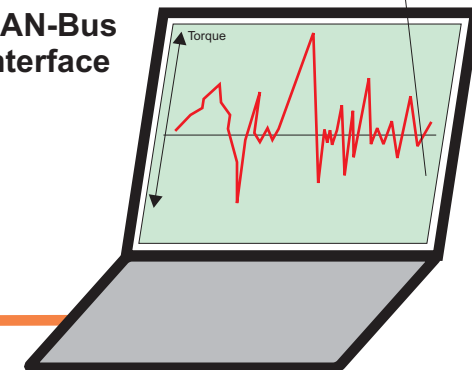
Receiving antenna Stator induction loop



Self tuning !!!

CAN-Bus Interface

Window online range control



Applications with flexible adaptive Stator Antenna

