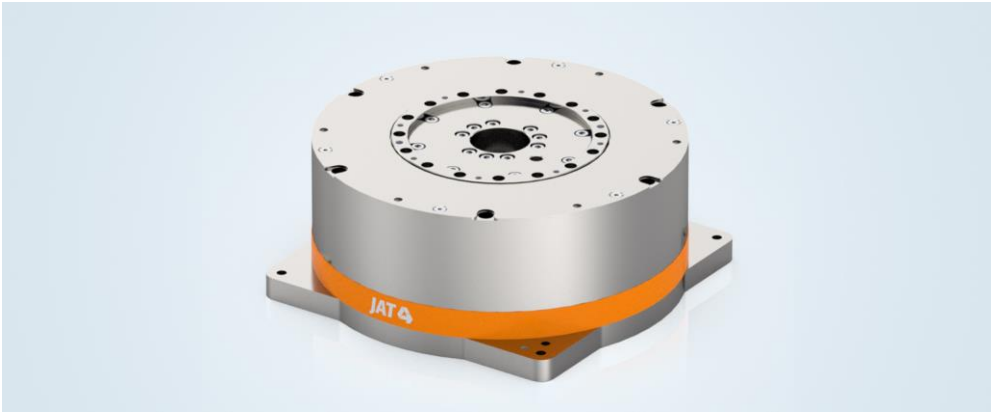
JAT JENAER ANTRIEBSTECHNIK

Rotary Table System Series HRT-210

Innovative design for highest dynamic and precision



Compact design

Highest torque density

Smaller packing means lowering footprint

Low cogging value

Smooth motion and positioning accuracy

No backlash

Highest stiffness

Integrated measuring system

Incremental or absolute value encoder, different types

Rotary table - ready to install

Mechanically & electrically ready for connection

M17 connectors

Direct drive

Precise & no backlash

Innovative design

Reduced moving mass for low inertia

Low cogging value

Smooth running characteristics

Customer specific modifications possible

Use with servo amplifiers:

ECOVARIO® 616(D)

Field bus interfaces:

CANopen, EtherCAT, Profibus, Profinet, Ethernet, RS232, RS485

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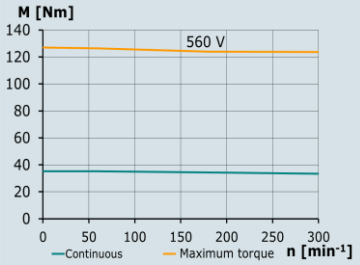
→ Technical data

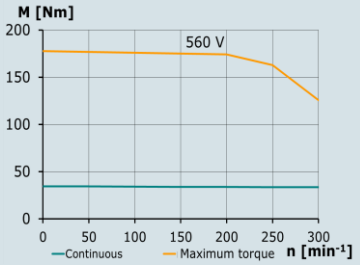
			Series HRT-210-65	Series HRT-210-85	Series HRT-210-105
Rated Values				(preliminary)	(preliminary)
Max. rated DC link voltage		V_{DC}	560	560	560
Peak torque (c.d.f. 5%) [1]		Nm	127	180	235
Maximum speed [2]		min^{-1}	300	300	300
Rated torque [1]		Nm	33	34	47
Max. current (per phase, c.d.f. 5%) [1]		A_{RMS}	16,0	16,0	16,0
Rated current (per phase) [1]		A_{RMS}	4,5	3,1	3,2
Repeatability [2] with encoder incremental / absolute		arcsec	±3 / ±5 (±2,5)[5]	±3 / ±5 (±2,5)[5]	±3 / ±5 (±2,5)[5]
Radial eccentricity	standard	µm	t.b.d.	t.b.d.	t.b.d.
	optional	µm	10	t.b.d.	t.b.d.
Axial eccentricity	standard	µm	t.b.d.	t.b.d.	t.b.d.
	optional	µm	10	t.b.d.	t.b.d.
Technical Data Motor					
Torque constant		Nm/A	7,4	11,1	14,8
Voltage constant		V/1000min^{-1}	508	795	1060
Winding resistance		Ω	6,2	8,5	10,6
Winding inductivity		mH	32	45	58
Number of pole pairs		2p	13	13	13
Motor inertia		kgm^2x10^{-3}	18,9	t.b.d.	t.b.d.
Max. axial load		N	1250 [3]	t.b.d.	t.b.d.
Max. radial load		N	750 [3]	t.b.d.	t.b.d.
Topple torque		Nm	120 [4]	t.b.d.	t.b.d.
Holding brake		Nm	18	t.b.d.	t.b.d.
Incremental Encoder					
Resolution (standard) [2]		inc/rev	795 200	795 200	795 200
Resolution (maximum) [2]		inc/rev	2 908 160	2 908 160	2 908 160
Operating voltage		V_{DC}	5 (±10%)		
Signal specification			RS422		
Absolute Value Encoder					
Resolution (standard)			18 Bit	18 Bit	18 Bit
Resolution (maximum) [5]			21 Bit	21 Bit	21 Bit
Operating voltage		V_{DC}	5 (±5%)		
Protocol			BiSS C		
Environmental Conditions					
Ambient temperature			0 ... 40 °C		
Temperature switch-off sensor			PTC , 105 °C		
Protection class			IP40		

1. without thermal decoupling
2. depends on the measuring system
3. speed: 300 min^{-1}, a higher individual load leads to a limitation of the bearing life
4. speed: 300 min^{-1} with maximum load, different application must be calculated
5. under preparation

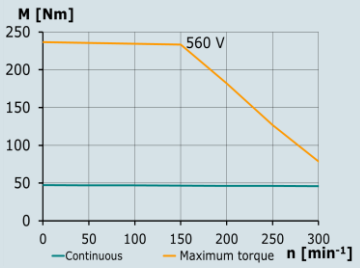
Characteristic HRT-210-65/ ECOVARIO® 616(D)



Characteristic HRT-210-85/ ECOVARIO® 616(D)



Characteristic HRT-210-105/ ECOVARIO® 616(D)

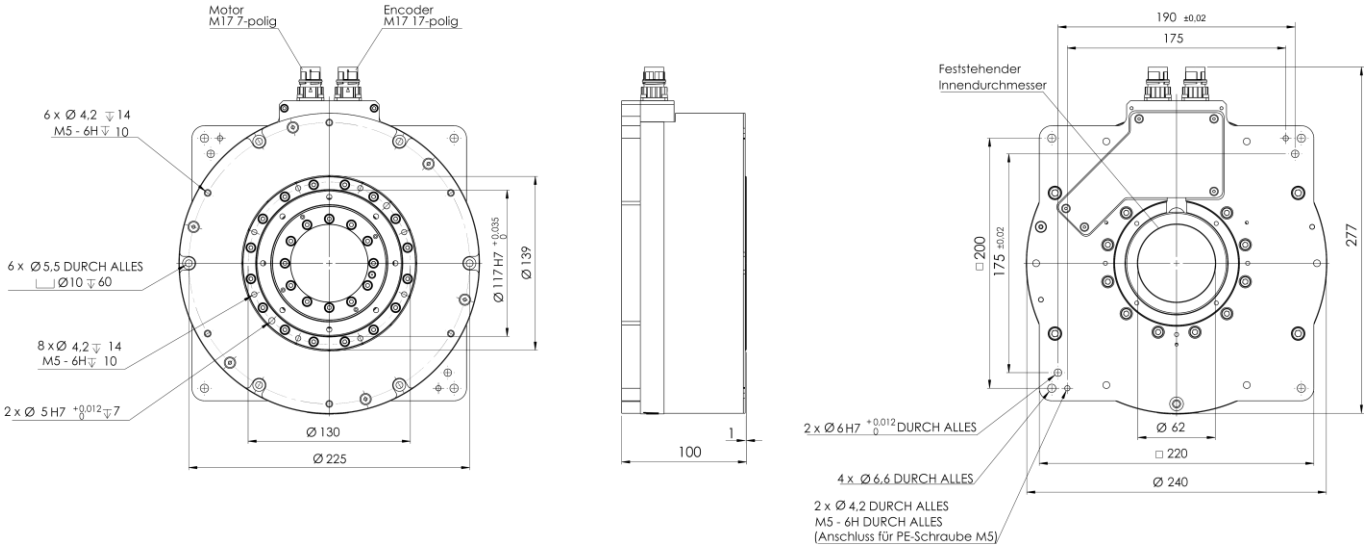


Rotary Table System Series HRT-210

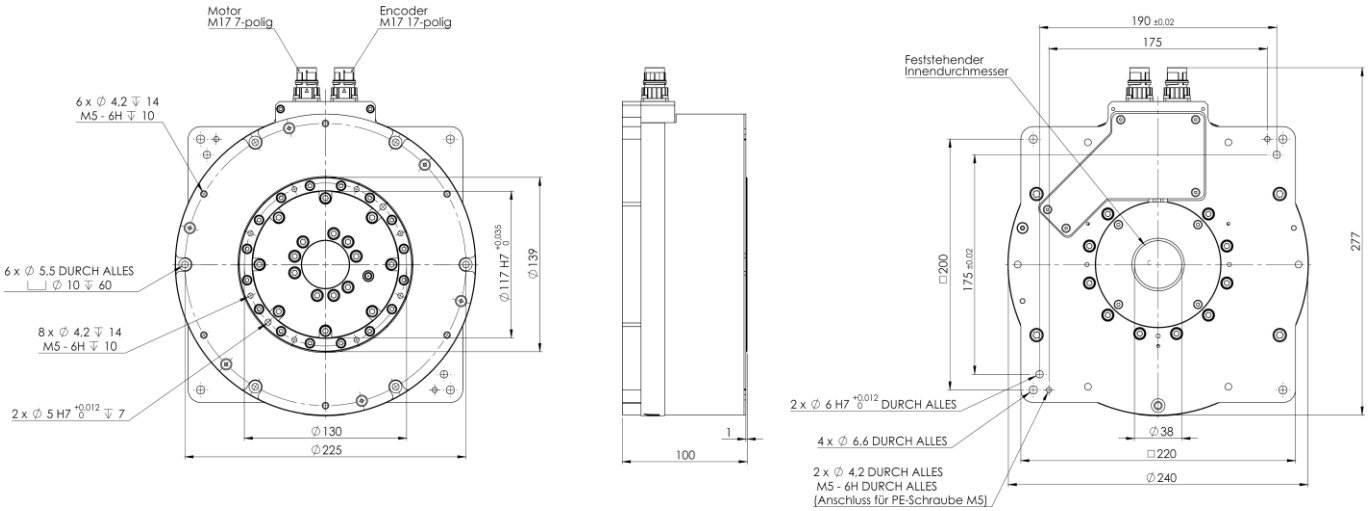
→ Dimensions

		Series HRT-210-65	Series HRT-210-85	Series HRT-210-105
Outer diameter	mm	240	240	240
Height	mm	100	120	140
Weight without brake	kg	13,5 / 14,7*	t.b.d.	t.b.d.
Weight with brake	kg	14,2 / 15,4*	t.b.d.	t.b.d.
*) with option "Improved radial and axial run-out"				

HRT-210-65 wihout holding brake:



HRT-210-65 with holding brake:



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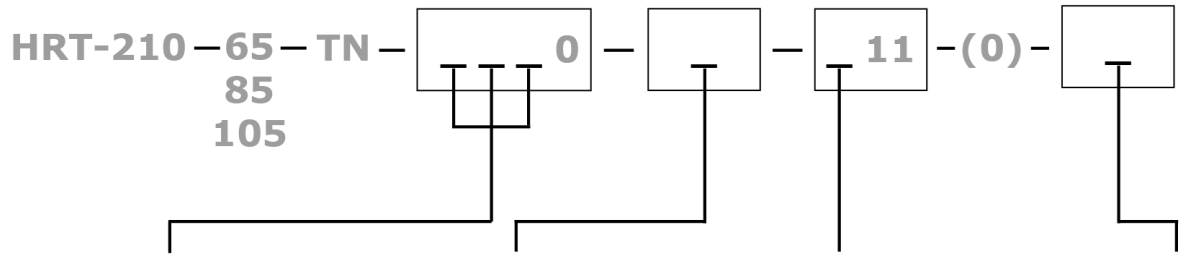
→ Ordering key



Measuring system	
511	Incremental 795 200 inc/rev
E04	Absolute 18 bit
E15	Absolute 21 bit *
*) under preparation	

Holding brake	
0	Without brake
P	Holding brake 18 Nm

Connector outlet	
R	Radial (default)
A	Axial

Option	
2	Default
4	Improved radial and axial run-out

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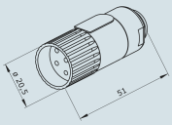
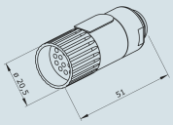
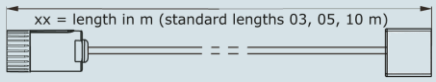
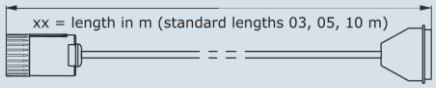
→ Accessories

Mating connector set 70.070 (for cables made by customer)	
Motor mating connector M17	
Encoder mating connector M17	

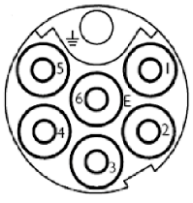
Cable assemblies		
Motor cable (for ECOVARIO® 414) MOT61-133-523-0xx-100	Ø 8,2 mm; trailing capability from bend radius > 80 mm	
Motor cable (for ECOVARIO® 616) MOT67-133-523-0xx-100	Ø 8,2 mm; trailing capability from bend radius > 80 mm	
Motor/brake cable (for ECOVARIO® 414) MOT63-134-523-0xx-100	Ø 10,8 mm; trailing capability from bend radius > 105 mm	
Motor/brake cable (for ECOVARIO® 616) MOT68-134-523-0xx-100	Ø ca. 10,8 mm; trailing capability from bend radius > 105 mm	
Incremental encoder cable (ECOVARIO® 414) INK65-491-525-0xx-000	Ø 9,5 mm; trailing capability from bend radius > 90 mm	
Incremental encoder cable (ECOVARIO® 616) INK65-305-525-0xx-000	Ø 9,5 mm; trailing capability from bend radius > 90 mm	
Absolute encoder cable ABS65-300-525-0xx-000	Ø 9,5 mm; trailing capability from bend radius > 90 mm	

→ Connector and cable assignment

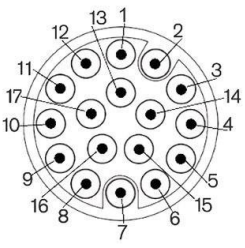
Assignment motor(/brake) cable

Connection	Motor connector pin M17	Motor (/brake) cable wire MOT61/63	Motor (/brake) cable wire MOT67/68
Phase U	4	3	1
Phase V	1	1	2
Phase W	5	4	3
Brake + (optional)	3	black (MOT63)	black (MOT68)
Brake - (optional)	6	white (MOT63)	white (MOT68)
PE	7	gn/ye	gn/ye
Shield	Housing	Shield	Shield

Motor connector:



Encoder connector:



Assignment incremental encoder cable

Connection	Encoder conn. pin	Encoder cable wire	Pin D-Sub 9 pin /HD 15 pins
+5V	15	brown	1
GND	16	white	6
Channel A	1	green	2
Channel /A	2	yellow	7
Channel B	3	grey	3
Channel /B	4	pink	8
Channel N	5	blue	4
Channel /N	6	red	9
PTC	7	violet	5
PTC	8	black	6 / 10
Shield*	Housing	bare	Shroud

*) D-Sub HD 15 pins: additional bridges in connector, double shielding

Assignment absolute encoder cable

Connection	Encoder conn. pin	Encoder cable wire	Pin D-Sub HD (15 pins)
+Up	13	brown	1
GND	16	white	6
Channel CLK	11	green	14
Channel /CLK	12	yellow	15
Sens S-	17	grey	11
Sens S+	14	pink	12
Channel DAT	9	blue	4
Channel /DAT	10	red	9
PTC	7	violet	5
PTC	8	black	10
Shield	Housing	bare	Shroud

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