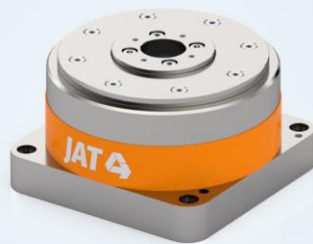


## Rotary Table System Series HRT-78

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:

ECOMODUL

ECOVARIO® 114D

ECOVARIO® 414

### Field bus interfaces:

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

# Rotary Table System Series HRT-78

## → Technical data

		Series HRT-78-17	Series HRT-78-25	Series HRT-78-34	Series HRT-78-60
<b>Rated Values</b>		<b>(preliminary)</b>	<b>(preliminary)</b>	<b>(preliminary)</b>	<b>(preliminary)</b>
Max. rated DC link voltage	$V_{DC}$	560	560	560	560
Peak torque (c.d.f. 5%) <sup>1)</sup>	Nm	1,15	1,3	2,0	5,2
Maximum speed <sup>2)</sup>	$\text{min}^{-1}$	800	800	800	t.b.d.
Rated torque <sup>1)</sup>	Nm	0,29	0,64	0,97	2,6
Max. current (per phase, c.d.f. 5%) <sup>1)</sup>	$A_{RMS}$	14,0	14,0	14,0	14
Rated current (per phase) <sup>1)</sup>	$A_{RMS}$	3,5	7,0	7,0	7,0
Repeatability <sup>2)</sup> with encoder incremental / absolute	arcsec	$\pm 3 / \pm 5$	$\pm 3 / \pm 5$	$\pm 3 / \pm 5$	$\pm 3 / \pm 5$
Radial eccentricity	standard	$\mu\text{m}$	t.b.d.	t.b.d.	t.b.d.
	optional	$\mu\text{m}$	t.b.d.	t.b.d.	t.b.d.
Axial eccentricity	standard	$\mu\text{m}$	t.b.d.	t.b.d.	t.b.d.
	optional	$\mu\text{m}$	t.b.d.	t.b.d.	t.b.d.

### Technical Data Motor

Torque constant	Nm/A	0,083	0,091	0,14	0,37
Voltage constant	$V/1000\text{min}^{-1}$	7,1	7,9	12,0	32,0
Winding resistance	$\Omega$	1,7	0,7	0,9	2,2
Winding inductivity	mH	2,7	1,5	2,1	6,8
Number of pole pairs	2p	6	6	6	6
Motor inertia	$\text{kgm}^2 \times 10^{-3}$	0,072	0,087	0,102	t.b.d.
Max. axial load	N	100 <sup>3)</sup>	100 <sup>3)</sup>	100 <sup>3)</sup>	t.b.d.
Max. radial load	N	75 <sup>3)</sup>	75 <sup>3)</sup>	75 <sup>3)</sup>	t.b.d.
Topple torque	Nm	5 <sup>4)</sup>	5 <sup>4)</sup>	5 <sup>4)</sup>	t.b.d.

### Incremental Encoder

Resolution (standard) <sup>2)</sup>	inc/rev	435 000	435 000	435 000	435 000
Resolution (maximum) <sup>2)</sup>	inc/rev	t.b.d.	t.b.d.	t.b.d.	t.b.d.
Operating voltage	$V_{DC}$	5 ( $\pm 10\%$ )			
Signal specification		RS422			

### Absolute Value Encoder

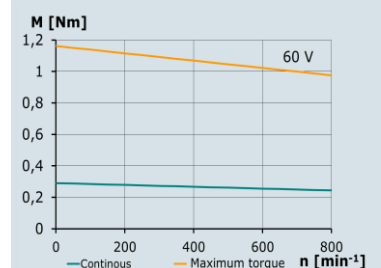
Resolution		19 Bit	19 Bit	19 Bit	19 Bit
Operating voltage	$V_{DC}$	5 ( $\pm 5\%$ )			
Protocol		BiSS C			

### Environmental Conditions

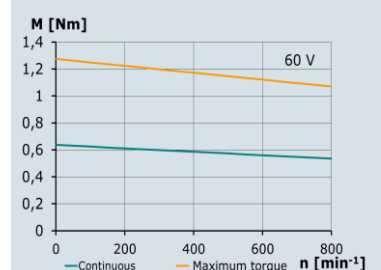
Ambient temperature		0 ... 40 °C			
Temperature switch-off sensor		PTC , 105 °C			
Protection class		IP40			

1. Mounting flange 250 mm x 250 mm / thickness 20 mm
2. Depends on the measuring system
3. speed: 300  $\text{min}^{-1}$ , a higher individual load leads to a limitation of the bearing life
4. speed: 300  $\text{min}^{-1}$  with maximum load, different application must be calculated

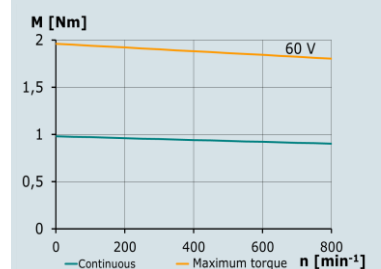
### Characteristic HRT-78-17/ECOVARIO® 114D



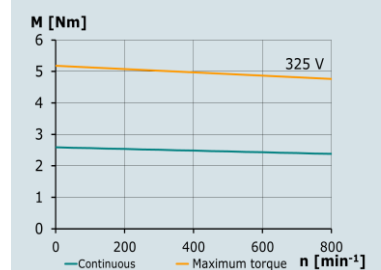
### Characteristic HRT-78-25/ECOVARIO® 114D



### Characteristic HRT-78-34/ECOVARIO® 114D



### Characteristic HRT-78-60/ECOVARIO® 414



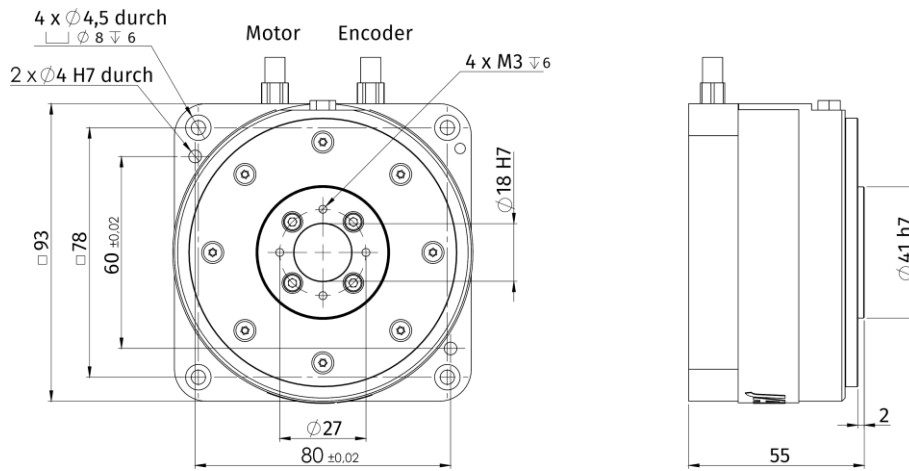
# Rotary Table System Series HRT-78

→ Dimensions

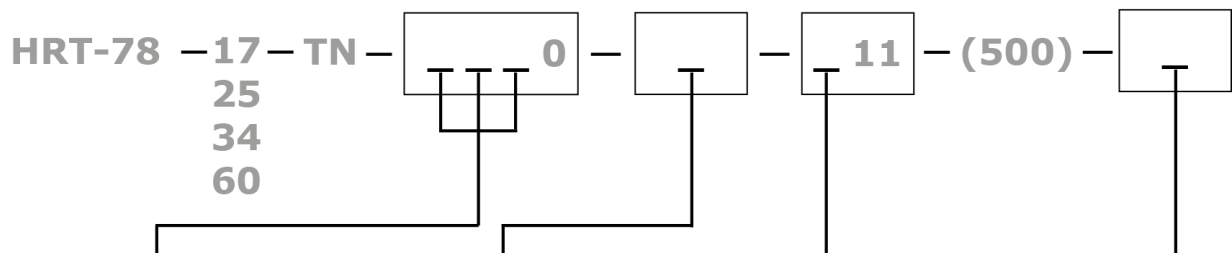
		Series HRT-78-17	Series HRT-78-25	Series HRT-78-34	Series HRT-78-60
Outer diameter	mm	93	93	93	93
Height	mm	55	63	72	t.b.d.
Weight	kg	1,3 / 1,4*	1,5 / 1,6*	1,8 / 1,9*	t.b.d.

\*) with option "Improved radial and axial run-out"

**HRT-78-17:**



→ Ordering key



Measuring system	
506	Incremental 435 000 inc/rev
E13	Absolute 19 bit

Holding brake	
0	Without brake

Connector outlet	
R	Radial (default)
A	Axial

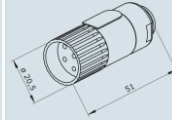
Option	
2	Default
4	Improved radial and axial run-out

# Rotary Table System Series HRT-78

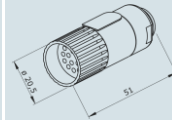
→ Accessories

Mating connector set 70.070 (for cables made by customer)

Motor mating connector M17



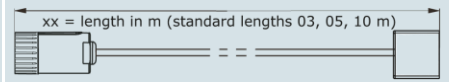
Encoder mating connector M17



Cable assemblies

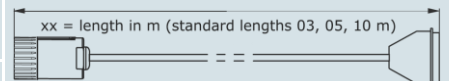
Motor cable (for ECOVARIO®)  
MOT61-133-523-0xx-100

Ø 8,9 mm;  
trailing capability from bend radius > 90 mm



Incremental encoder cable (ECOVARIO®)  
INK65-305-525-0xx-000

Ø 9,5 mm;  
trailing capability from bend radius > 90 mm



Absolute encoder cable (for ECOVARIO®)  
ABS65-300-525-0xx-000

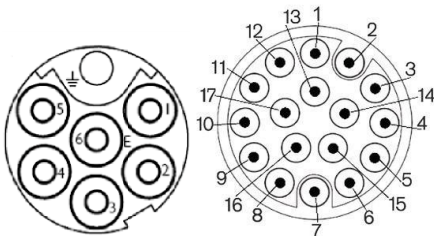
Ø 9,5 mm;  
trailing capability from bend radius > 90 mm

→ Connector and cable assignment

Motor connector M17 assignment		Encoder connector M17 assignment (Ink/SinCos encoder)				Encoder connector M17 assignment (Absolute value encoder)			
Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	Phase U	1	A+ / Sin+	10	-	1	-	10	Channel /DAT
2	-	2	A- / Sin-	11	-	2	-	11	Channel CLK
3	Brake + (option)	3	B+ / Cos+	12	-	3	-	12	Channel /CLK
4	Phase V	4	B- / Cos-	13	-	4	-	13	+U <sub>p</sub>
5	Phase W	5	Z+	14	-	5	-	14	Sens S+
6	Brake - (option)	6	Z-	15	+5 V	6	-	15	-
7	PE	7	PTC*	16	GND	7	PTC*	16	GND
		8	PTC*	17	-	8	PTC*	17	Sens S-
		9	-			9	Channel DAT		

Motor connector:

Encoder connector:



\*) not 2<sup>nd</sup> measuring system connector

\*) not 2<sup>nd</sup> measuring system connector