

TSX 40 RIO Encoder, Ø40 mm, 1...524 288 counts/21 bit

Optical – ensure clean environment



TSX

Key data		TSX RIO incremental and absolute
Number of channels		3
Max. counts per turn	CPT	1...524 288
Steps per turn		1...2 097 152
Resolution (bit single turn)		1...21
Encoder length	mm	11.7
Ambient temperature	°C	-40...+105
Weight	g	16
Protection class		not protected

Selection criteria		TSX RIO incremental and absolute
Speed and rotation direction detection		■
Speed and position control		■
Compact and robust design		■
High resolution		■
Cost effective		▲

■ suitable ▲ suitable to a limited extent ● not suitable

Specifications		Axial cable outlet	Radial cable outlet
Supply voltage V_{CC}	V	5V ±0.5	5V ±0.5
Typical current draw	mA	60	60
Max. operating frequency	MHz	6.67	6.67
Max. electrical speed	rpm	1500...42 000	1500...42 000
Axial connector manufacturer	Molex	Pin 1 NTC-	Pin 1 V_{CC}
Axial connector part no. 501331-1407		Pin 2 NTC+	Pin 2 GND
Radial connector manufacturer	JST	Pin 3 DATA/ (SLO/)	Pin 3 $\bar{A}$
Radial connector part no. SM14B-NSHSS-TB		Pin 4 DATA (SLO)	Pin 4 A
		Pin 5 CLK/ (MA/)	Pin 5 $\bar{B}$
		Pin 6 CLK (MA)	Pin 6 B
		Pin 7 I	Pin 7 $\bar{I}$
		Pin 8 $\bar{I}$	Pin 8 I
		Pin 9 B	Pin 9 CLK (MA)
		Pin 10 $\bar{B}$	Pin 10 CLK/ (MA/)
		Pin 11 A	Pin 11 DATA (SLO)
		Pin 12 $\bar{A}$	Pin 12 DATA/ (SLO/)
		Pin 13 GND	Pin 13 NTC+
		Pin 14 V_{CC}	Pin 14 NTC-
		Output signal: EIA-Standard RS 422	Output signal: EIA-Standard RS 422
		Output current per channel: ±20 mA	Output current per channel: ±20 mA
Additional 300 mm adapter cable for		EPOS4: 708582 EPOS4 Disk: 865363	EPOS4: 708585 EPOS4 Disk: 865362



Variants		Axial cable outlet		Radial cable outlet	
Part number		850587	850586	779667	746421
Cable outlet		axial	axial	radial	radial
Max. counts per turn ¹	CPT	32 768	32 768	32 768	32 768
Resolution (bit single turn) ¹		19	19	19	19
Signal protocol		BiSS-C	SSI	BiSS-C	SSI

modular system	Page	Dimensions of standard configuration	1:2	Notice
EC frameless				
EC-i 40	306–311			The angle "zero" and the index are aligned with commutation angle zero in accordance with page 66. Wiring diagram for Hall sensors see page 67. ¹With resolutions higher than 19-bit or 32 768 counts per turn, the encoder is no longer «noise-free». See product information. Other resolutions available upon request. You can find more information in the maxon online shop under Downloads.
EC-i 52	312–313			