

TECHNICAL DATASHEET

Incremental Encoder RI 42



- Economical miniature encoder
- High protection IP65
- Output Push-pull or NPN-O.C.
- High mechanical efficiency
- Applications: textile machinery



NUMBER OF PULSES

5 / 10 / 20 / 25 / 28 / 32 / 50 / 60 / 72 / 100 / 128 / 144 / 200 / 250 / 256 / 288 / 300 / 360 / 400 / 500 / 512 / 600 / 720 / 900 / 1000 / 1024

Other number of pulses on request

TECHNICAL DATA mechanical

Housing diameter	40 mm
Shaft diameter	6 mm (Solid shaft)
Flange (Mounting of housing)	Pilot flange
Protection class shaft input (EN 60529)	IP64
Protection class housing (EN 60529)	IP65
Shaft load axial / radial	5 N / 10 N
Max. speed	max. 10 000 rpm
Torque	≤ 1 Ncm
Vibration resistance (DIN EN 60068-2-6)	100 m/s ² (10 ... 2000 Hz)
Shock resistance (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Material shaft	Aluminum
Material housing	Plastic
Weight	approx. 75 g
Connection	Cable, axial

TECHNICAL DATA electrical

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II
Supply voltage ¹	Push-pull (D): DC 5 V ± 10 % Push-pull (K): ± 10% DC 5 V or DC 10 - 30 V Push-pull antivalent (I): DC 10-30 V Open Collector NPN (S): DC 10-24 V
Max. current w/o load	40 mA (DC 5 V), 30 mA (DC 24 V, with push-pull K, I), 40 mA (DC 24 V, NPN-O.C.)
Max. pulse frequency	DC 5 V: 300 kHz DC 10 - 30 V: 200 kHz DC 10 - 24 V: 50 kHz
Standard output versions ^{2,3}	Push-pull (K): A, B, N, \overline{A} Alarm Push-pull 5V, ± 30 mA (D): A, B, N, \overline{A} Alarm Push-pull complementary (I): A, B, N, \overline{A} , \overline{B} , \overline{N} , \overline{A} Alarm NPN-O.C. (S): A, B, N

TECHNICAL DATASHEET

Incremental Encoder RI 42

TECHNICAL DATA electrical (continued)

Pulse width error	± max. 25° electrical
Number of pulses	5 ... 1024
Alarm output	NPN-O.C., max. 5 mA
Pulse shape	Square wave
Pulse duty factor	1:1

¹ With push-pull (K): pole protection

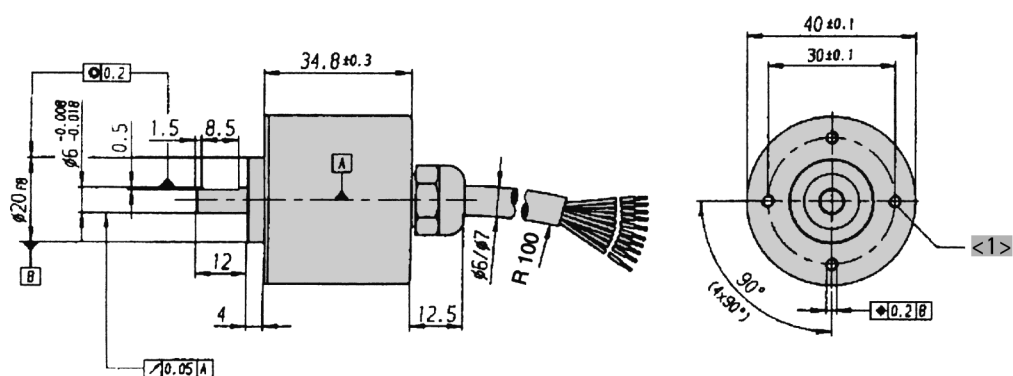
² Output code "K": short-circuit-proof

³ NPN-O.C. with internal pull-up resistor = 10 K Ω , max. pulse frequency = 50 KHz, max. output lead = ± 30 mA, tolerance ≤ ± 30° electrical, delay time ≤ 4 μ s

ELECTRICAL CONNECTIONS Cable

Colour (PVC)	Output circuit	
	push-pull (K, D), Open Collector (S)	push-pull complementary (I)
white	Channel A	Channel A
white/brown		Channel \bar{A}
green	Channel B	Channel B
green/brown		Channel \bar{B}
yellow	Channel N	Channel N
yellow/brown		Channel \bar{N}
yellow/black	Alarm	Alarm
yellow/red		Sense V _{CC}
red	DC 5/ 10 - 30/ 10 - 24 V	DC 10 - 30 V
black	GND	GND

DIMENSIONED DRAWINGS



<1> mounting thread M3x5

Cable bending radius R for flexible installation ≥ 100 mm

Cable bending radius R for fixed installation ≥ 40 mm

Dimensions in mm

TECHNICAL DATASHEET

Incremental Encoder RI 42

ORDERING INFORMATION

Type	Number of pulses	Supply voltage ^{1, 2, 3}	Flange, Protection, Shaft	Output ^{4, 5}	Connection
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RI42	5 ... 1024	A DC 5 V C DC 10 - 24 V E DC 10 - 30 V	R.41 Pilot, IP64, 6 mm	K Push-pull I Push-pull complementary D Push-pull 5V, ± 30 mA S Open Collector NPN	A Cable, axial

¹ DC 5 V: only with output "K", "D" available

² DC 10 - 30 V: only with output "K", "I" available

³ DC 10 - 24 V: only with output "S" available

⁴ Output code "K": ± 10 mA at DC 5 V, ± 30 mA at DC 10 - 30 V

⁵ Output code "K" and "I": short-circuit-proof

ORDERING INFORMATION

Selection of cable length

Versions with cable outlet (connection A, B, E or F) are available with various lengths of cable. To order your desired cable length, please add the respective code to the end of your ordering code. Further cable lengths on request.

Code	Cable length
without code	1.5 m
-D0	3 m
-F0	5 m
-K0	10 m
-P0	15 m
-U0	20 m
-V0	25 m

TECHNICAL DATASHEET

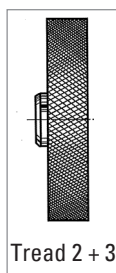
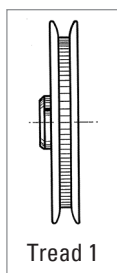
Incremental Encoder RI 42 Accessories

FLEXIBLE COUPLINGS



		Ordering code
Helical coupling 19/28	6 mm / 6.35 mm	3 520 051
Helical coupling 25/32	6 mm / 9.53 mm	3 520 052
Helical coupling 25/32	6 mm / 10 mm	3 520 066
Isolated disk coupling	6 mm / 6 mm	3 520 081
Isolated disk coupling	6 mm / 10 mm	3 520 082
Plastic coupling	5 mm / 6 mm	3 520 033
Plastic coupling	6 mm / 6 mm	1 761 026

MEASURING WHEELS



Tread 1

with rim and fine crosshatched knurl
Applications such as threads and yarns

Tread 2 B

with glued-on rubber profile B = low-wear rubber surface with good grip (white)
Applications such as paper and cardboard, measuring cables, nongreasy metals, fleece, undressed or surface-treated wood, soft and hard plastics

Material	Bore diameter (mm) fitting to encoder shaft	Circumference	Tread	Width of bearing surface	Ordering code
Aluminum	6 mm	0.2 m	1	4 mm	0 601 015
Aluminum	6 mm	0.2 m	2 B	12 mm	0 601 048