

Инкрементные энкодеры ICURO RI41, RI42

Технические характеристики

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TECHNICAL DATASHEET

Incremental Encoder RI 41



- Replacement for type RIM
- Economical miniature encoder
- Up to 14,400 steps with 3,600 pulses
- High mechanical efficiency
- Applications: wood working machines, FHP motors, graphic machines, table robots



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 / 1250 / 1500 / 2000 / 2048 / 2500 / 3000 / 3600
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)	IP40
Protection class housing (EN 60529)	IP50
Shaft load axial / radial	5 N / 10 N
Max. speed	max. 10 000 rpm
Torque	≤ 0.2 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	-10 °C ... +70 °C
Storage temperature	-25 °C ... +85 °C
Material housing	Aluminum
Weight	approx. 60 g
Connection	Cable, radial

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
Max. current w/o load	40 mA (DC 5 V), 60 mA (DC 10 V), 30 mA (DC 24 V)
Max. pulse frequency	DC 5 V: 300 kHz DC 10 - 30 V: 200 kHz
Standard output versions ²	Push-pull (K): A, B, N, $\overline{\text{Alarm}}$ Push-pull 5V, ± 30 mA (D): A, B, N, $\overline{\text{Alarm}}$
Pulse width error	± max. 25° electrical
Number of pulses	5 ... 3600
Alarm output	NPN-O.C., max. 5 mA
Pulse shape	Square wave
Pulse duty factor	1:1

TECHNICAL DATASHEET

Incremental Encoder RI 41

TECHNICAL DATA electrical (continued)

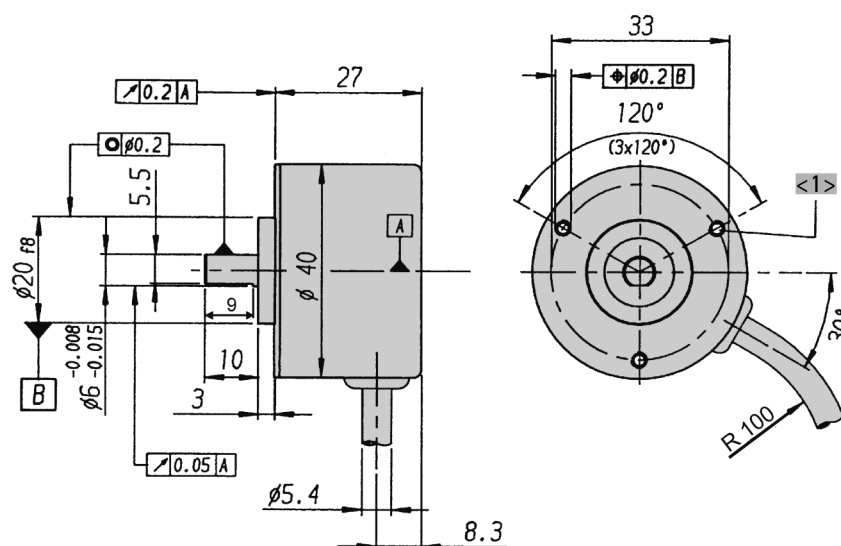
- ¹ With push-pull (K): pole protection
² Output code "K": short-circuit-proof

ELECTRICAL CONNECTIONS Cable

Description (push-pull)	Lead Ø mm ²	Colour
DC 5 V/10 - 30 V	0.5	red
Channel A	0.14	white
Channel B	0.14	green
Channel N	0.14	yellow
GND	0.5	black
Alarm	0.14	yellow/black
screen ¹		screen ¹

¹ not connected with encoder housing

DIMENSIONED DRAWINGS



<1> mounting thread M3x3

Cable bending radius R for flexible installation ≥ 100 mm

Cable bending radius R for fixed installation ≥ 40 mm

Dimensions in mm

ORDERING INFORMATION

Type	Number of pulses	Supply voltage ¹	Flange, Protection, Shaft	Output ^{2,3}	Connection
☐	☐	☐	☐	☐	☐
RI41	5 ... 3600	A DC 5 V E DC 10 - 30 V	R.11 Pilot, IP40, 6 mm	K Push-pull D Push-pull 5V, ± 30 mA	B PVC cable, radial

¹ DC 10 - 30 V: only with output "K" available

² Output code "K": ± 10 mA at DC 5 V, ± 30 mA at DC 10 - 30 V

³ Output code "K": short-circuit-proof

TECHNICAL DATASHEET

Incremental Encoder RI 41

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

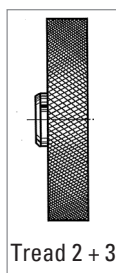
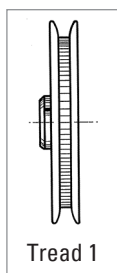
Incremental Encoder RI 41 Accessories

FLEXIBLE COUPLINGS



		Ordering code
Helical coupling 19/28	5 mm / 6 mm	3 520 035
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

TECHNICAL DATASHEET

Incremental Encoder RI42-O



- Economical miniature encoder
- High protection IP65
- Incremental output HTL or TTL
- High mechanical efficiency
- Up to 4.096 steps with 1.024 pulses
- 10.000 rpm continuous operation
- Applications: textile machinery

ICURO®
industry



Number of pulses

5 / 10 / 20 / 25 / 30 / 50 / 60 / 72 / **100** / 128 / 144 / 200 / 250 / 300 / 360 / 400 / **500** / 512 / 600 / 720 / 900 / **1000** / 1024 / 1250 / 2500 / 3600
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 ¹	5 N / 10 N
Max. speed ¹	max. 10.000 U/min
Starting torque	≤ 1 Ncm
Vibration resistance ¹ (DIN EN 60068-2-6)	100 m/s ² (10 ... 2000 Hz)
Shock resistance ¹ (DIN EN 60068-2-27)	1000 m/s ² (6 ms)
Operating temperature ¹	0 °C ... +60 °C
Storage temperature	-25 °C ... +85 °C
Material shaft	Aluminum
Material housing	Plastic
Weight	approx. 75 g
Connection	Cable, axial

¹ higher values on request

TECHNICAL DATA
electrical

ELECTRICAL CONNECTION
Cable PVC

TECHNICAL DATASHEET

Incremental Encoder RI42-O

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class I
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
Max. current w/o load	40 mA (DC 5 V), 30 mA (DC 24 V, with push-pull K, I)
Max. pulse frequency	DC 5 V: 300 kHz DC 10 - 30 V: 200 kHz DC 10 - 24 V: 50 kHz
Standard Output versions ²	Push Pull (K): A, B, N, <u>Alarm</u> Push Pull (D): A, B, N, <u>Alarm</u> Push Pull complementary (I): A, B, N, <u>A</u> , <u>B</u> , <u>N</u> , <u>Alarm</u>
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

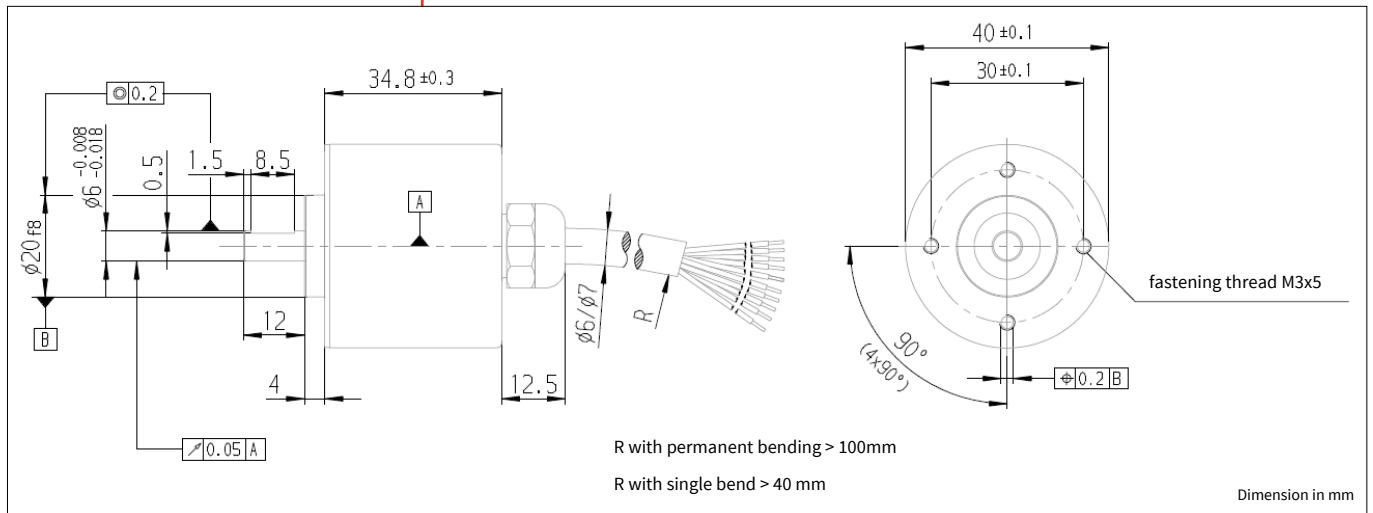
² Output code (K): short-circuit-proof

Cable PVC	Output circuit		
Colour	Push Pull (K)	Push Pull (D)	Push Pull complementary (I)
white	Channel A	Channel A	Channel A
white/brown			Channel <u>A</u>
green	Channel B	Channel B	Channel B
green/brown			Channel <u>B</u>
yellow	Channel N	Channel N	Channel N
yellow/brown			Channel <u>N</u>
yellow/black	Alarm	Alarm	Alarm
yellow/red			Sense V cc
red	DC 10 - 30 V	DC 5 V	DC 10 - 30 V
black	GND	GND	GND

TECHNICAL DATASHEET

Incremental Encoder RI42-O

DIMENSION DRAWING



ORDERING INFORMATION

Type	Number of pulses	Power voltage ^{1,2}	Flange, Protection, Shaft	Output ³	Connection
RI42-O	5 ... 3600	A DC 5 V E DC 10 - 30 V	R.41 Pilot, IP64 , 6 mm	K Push Pull I Push Pull, complementary D Push Pull 5V	A PVC-cable, axial

¹ DC 5 V: only with output D available
² DC 10-30 V: only with output K,I available
³ Output K, I short circuit proof

ORDERING INFORMATION

Selection of cable length

The cable outlet (connection A) is available with different cable lengths. To obtain the desired cable length, please put the corresponding code at the end of the order key. For variants with a plug at the end of the cable, insert the code between the selection of cable length and plug. Other cable lengths on request.

Code	Cable length	Code	Cable length
without Code	1,5 m	-U0	20 m
-D0	3 m	-V0	25 m
-F0	5 m	-W0	30 m
-K0	10 m	-X0	40 m
-P0	15 m	-Y0	50 m

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