



EL - EF 49 C / P

THROUGH HOLLOW SHAFT INCREMENTAL ENCODER

MAIN FEATURES

∅ 49 mm encoder recommended in feedback control systems on AC servomotors, interchangeable with size 19 Resolver.

- Easy mechanical mounting
- Small dimensions
- Wide range of resolutions available
- High temperature resistance

EL series

Basic version with 3 channels incremental outputs. Several output types available

EF series

6 channels encoder with optical generation of "Hall effect phases" (commutation signals)
Signal transmission by bit parallel bus



ORDERING CODE

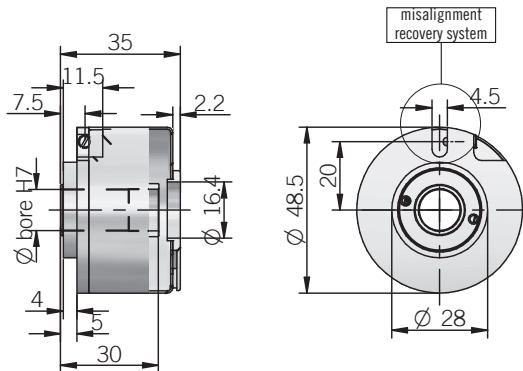
ORDERING CODE	EF	49C	6	L	500	S	5	L	8	X	6	PR	.XXX
SERIES	incremental encoder EL	incremental encoder with Hall phases EF											
MODEL	blind hollow shaft 49C	through hollow shaft 49P											
EF MOTOR POLES	4 poles 4	6 poles 6	8 poles 8										
EF ELECTRONIC INTERFACE FOR COMMUTATION SIGNALS	NPN open collector C	line driver RS-422 L											
RESOLUTION	ppr from 100 to 2048	see table for pulses availability											
ZERO PULSE	without zero pulse S	with zero pulse Z											
POWER SUPPLY	5 V DC 5	(mod. EL) 8 ... 24 V DC 8/24											
ELECTRONIC INTERFACE	(mod. EL) NPN N	(mod. EL) NPN open collector C	(mod. EL) push-pull P	line driver L									
BORE DIAMETER	mm 6	mm 8	9,52 mm (3/8") 9	mm 10	mm 12	12,7 mm (1/2") 12.7							
ENCLOSURE RATING	IP 40 X												
MAX ROTATION SPEED	6000 rpm 6												
OUTPUT TYPE	radial cable (standard length 0,3 m) PR												
VARIANT	custom version XXX												



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OPTICAL HOLLOW SHAFT INCREMENTAL ENCODERS | EL - EF 49 C / P

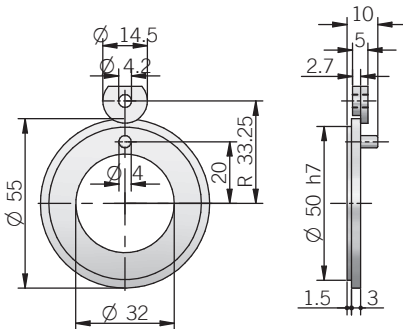
EL - EF 49 C / P



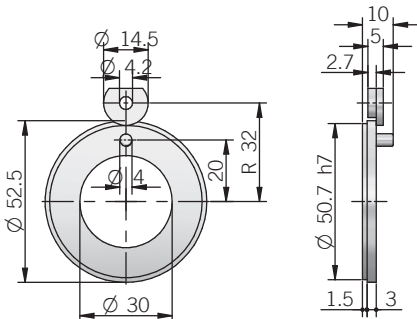
dimensions in mm

ACCESSORIES

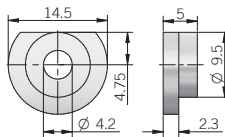
Size 19 resolver flange (01 version) ordering code: **FLG000** (P/N 94010087)



Size 19 resolver flange (14 version) ordering code: **FLG001** (P/N 94010065)



Set n.3 fixing clamps (P/N 94080001)



for mounting instruction please refer to product installation notes

RESOLUTIONS

100 4 / 6 poles - 200 4 / 6 poles - 500 4 / 6 / 8 poles - 512 4 / 6 / 8 poles
1000 4 / 6 / 8 poles - 1024 4 / 6 / 8 poles - 2000 4 / 6 / 8 poles
2048 4 / 6 / 8 poles

please directly contact our offices for other pulses

ELECTRICAL SPECIFICATIONS

Resolution	from 100 to 2048 ppr (see table)
Max load current	N / C / P = 30 mA / channel L = 20 mA / channel
Max output frequency	150 kHz
Counting direction	A leads B clockwise (shaft view)
Electromagnetic compatibility	IEC 61000-6-1 IEC 61000-6-3

ELECTRICAL SPECIFICATIONS EL SERIES

Power supply	5 = 4,5 ... 5,5 V DC 8/24 = 7,6 ... 25,2 V DC
Current consumption without load	100 mA max
Output type	NPN / NPN open collector / push-pull / line driver

*output levels according to power supply, for further details please see under Technical basics section

ELECTRICAL SPECIFICATIONS EF SERIES

Power supply	5 = 4,5 ... 5,5 V DC
Current consumption without load	150 mA max
Output type for incremental signals	line driver RS-422
Output type for Hall phases	NPN open collector (max pullup +30V DC) line driver RS-422

MECHANICAL SPECIFICATIONS

Bore diameter	ø 6 / 8 / 9,52 / 10 / 12 / 12,7 mm
Enclosure rating	IP 40 (IEC 60529)
Max rotation speed	6000 rpm
Shock	50 G, 11 ms (IEC 60068-2-27)
Vibration	5 G, 10 ... 500 Hz (IEC 60068-2-6)
Moment of inertia	$2 \times 10^{-6} \text{ kgm}^2$
Starting torque (at +20°C / +68°F)	< 0,01 Nm
Body material	EN-AW 2011 aluminum
Shaft material	1.4305 / AISI 303 stainless steel
Housing material	nickel plated brass
Bearings	2 ball bearings
Bearings life	10^9 revolutions
Operating temperature	-20° ... +85 °C (-4° ... +185°F) -10° ... +100°C (+14° ... +212°F) on demand
Storage temperature	-25° ... +85°C (-13° ... +185°F)
Weight	150 g (5,29 oz)

CONNECTIONS

Function	EL cable output	EL cable output	EF cable output
	N / C / P	Line driver	
+V DC	red	red	red
0 V	black	black	black
Ch. A	green	green	green
Ch. B	yellow	yellow	yellow
Ch. Z	blue	blue	blue
Ch. A-	/	brown	brown
Ch. B-	/	orange	orange or pink
Ch. Z-	/	white	white
Ch. U	/	/	grey
Ch. V	/	/	violet
Ch. W	/	/	grey-pink
Ch. U-	/	/	red-blue
Ch. V-	/	/	white-green
Ch. W-	/	/	brown-green
⊥	shield	shield	shield



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Headquarter Switzerland:
Pewatron AG
Thurgauerstrasse 66
CH-8050 Zurich
Phone +41 44 877 35 00
info@pewatron.com

Office Germany:
Pewatron Deutschland GmbH
Edisonstraße 16
D-85716 Unterschleißheim
Phone +49 89 374 288 87 00
info.de@pewatron.com



PEWATRON
SENSORS · POWER SOLUTIONS

We are here for you. Addresses and Contacts.

Sales Germany & Austria

Geometrical sensors Other products

Kurt Stritzelberger
Phone +49 89 374 288 87 22
kurt.stritzelberger@pewatron.com

Pressure sensors Other products

Gerhard Vetter
Phone +49 89 374 288 87 26
gerhard.vetter@pewatron.com

Gas sensors and modules

Peter Felder
Phone +41 44 877 35 05
peter.felder@pewatron.com

Sales Switzerland & Liechtenstein

Postcode 3000 – 9999

Basil Frei
Phone +41 44 877 35 18
basil.frei@pewatron.com

Postcode 1000 – 2999

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@pewatron.com

Sales International Key Accounts

Peter Felder
Phone +41 44 877 35 05
peter.felder@pewatron.com

Sales Other Countries / Product Management

Pressure Sensors Load Cells

Philipp Kistler
Phone +41 44 877 35 03
philipp.kistler@pewatron.com

Gas sensors Gas sensor modules

Dr. Thomas Clausen
Phone +41 44 877 35 13
thomas.clausen@pewatron.com

Flow / Level / Medical products

Dr. Adriano Pittarelli
Phone +49 89 374 288 87 67
adriano.pittarelli@pewatron.com

Power supplies

Sebastiano Leggio
Phone +41 44 877 35 06
sebastiano.leggio@pewatron.com

Linear position sensors Angle sensors

Eric Letsch
Phone +41 44 877 35 14
eric.letsch@pewatron.com

Accelerometers Sensor elements

Christoph Kleye
Phone +49 89 374 288 87 61
christoph.kleye@pewatron.com

Drive technology

CH Postcode 5000 – 9999 / DE

Roman Homa
Phone +41 76 444 00 86
roman.homa@pewatron.com

Drive technology

CH Postcode 1000 – 4999 / AT / IT / FR

Christian Mohrenstecher
Phone +41 76 444 57 93
christian.mohrenstecher@pewatron.com

Harald Thomas

Phone +49 89 374 288 87 23
harald.thomas@pewatron.com