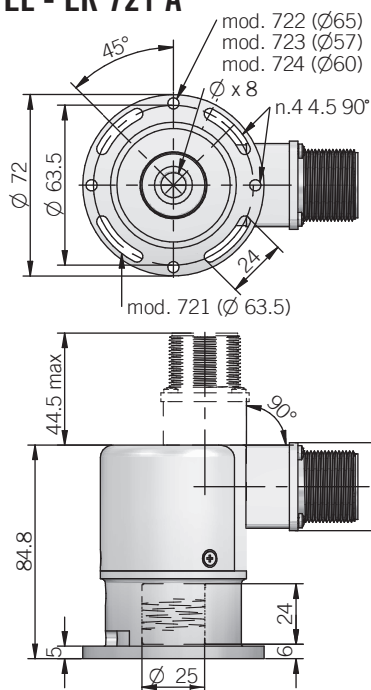
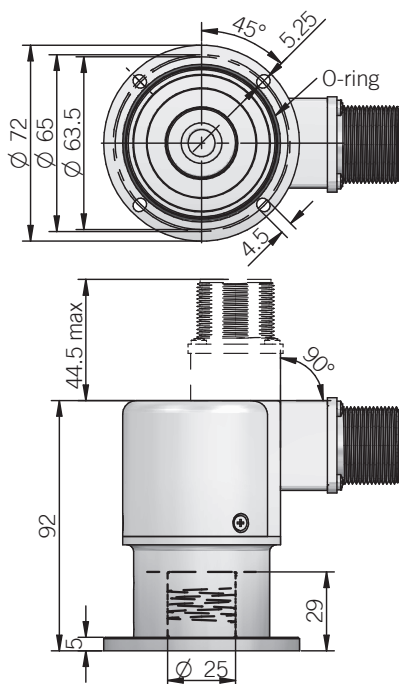




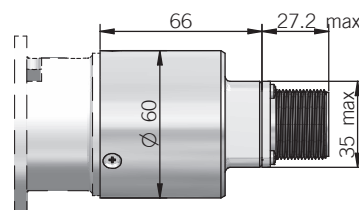
## EL - ER 721 A



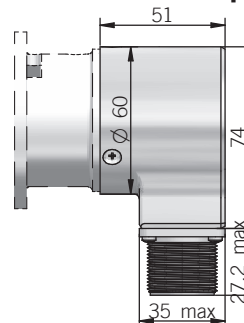
## EL - ER 721 A IP 66 version



## Dimensions with metal cover axial output



## Dimensions with metal cover radial output



dimensions in mm

### ELECTRICAL SPECIFICATIONS

<b>Resolution</b>	from 1 to 24000 ppr
<b>Power supply</b>	5 = 4,5 ... 5,5 V DC 5/28 = 4,75 ... 29,4 V DC 8/24 = 7,6 ... 25,2 V DC (reverse polarity protection)
<b>Power draw without load</b>	800 mW
<b>Max load current</b>	N / C / P / PC = 50 mA / channel L / RS = 20 mA / channel
<b>Output type*</b>	NPN / NPN open collector / push-pull / line driver
<b>Max output frequency</b>	250 kHz up to 6'000 ppr 500 kHz from 7'200 ppr
<b>Counting direction</b>	A leads B clockwise (shaft view)
<b>Electromagnetic compatibility</b>	IEC 61000-6-2 IEC 61000-6-4

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

### EL SERIES RESOLUTIONS

1 - 2 - 4 - 5 - 10 - 15 - 16 - 20 - 25 - 30 - 32 - 40 - 50 - 60 - 70 - 80 - 90 - 100\*  
- 160 - 180 - 240\* - 250\* - 350 - 450 - 500\* - 660 - 700 - 900\* - 1000\* - 1024\*  
- 1250\* - 1300\* - 1800\* - 2000\* - 2048\* - 2500\*

\* only with model EL721 / EL722 with "S" enclosure rating

### ER SERIES RESOLUTIONS

**100** - 120 - 128 - 150 - 200 - 240 - 250 - 256 - 300 - **360** - 400 - 480 - **500** - **512**  
- **600** - 625 - **720** - 750 - 800 - 900 - **1000** - **1024** - 1200 - 1250 - 1440 - 1500  
- 1600 - 1800 - **2000** - **2048** - **2500** - 3000 - **3600** - 4000 - 4096 - **5000** - 6000  
- **7200** - 8000 - 8192 - 9000 - **10000** - 10240 - 12000 - **14400** - 16000 - 16384 -  
18000 - **20000** - 20480 - 24000

please directly contact our offices for other pulses, preferred resolutions in bold

## 72 B flange version

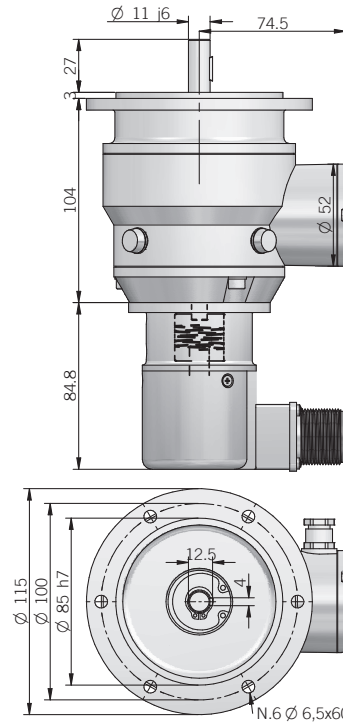


### MECHANICAL SPECIFICATIONS

<b>Bore diameter</b>	ø 6 / 8 / 10 mm
<b>Enclosure rating</b>	X = IP 54 (IEC 60529) S = IP 66 (IEC 60529)
<b>Max rotation speed</b>	X = 6000 rpm S = EL 3000 rpm / 60° C ER 3000 rpm / 70° C - 2000 rpm / 85° C
<b>Max shaft load</b>	200 N axial / radial
<b>Shock</b>	50 G, 11 ms (IEC 60068-2-27)
<b>Vibration</b>	10 G, 10 ... 2000 Hz (IEC 60068-2-6)
<b>Moment of inertia</b>	3,5 x 10 <sup>-6</sup> kgm <sup>2</sup>
<b>Starting torque (at +20°C / +68°F)</b>	< 0,02 Nm (IP 54) < 0,04 Nm (IP 66)
<b>Body material</b>	EN-AW 2011 aluminum
<b>Shaft material</b>	1.4305 / AISI 303 stainless steel
<b>Housing material</b>	PA66 glass fiber reinforced / painted aluminum
<b>Bearings</b>	2 ball bearings
<b>Bearings life</b>	10 <sup>9</sup> revolutions
<b>Operating temperature</b>	-10° ... +60°C (+14° ... +140°F) EL series -25° ... +85°C (-13° ... +185°F) ER series
<b>Storage temperature</b>	-25° ... +70°C (-13° ... +158°F)
<b>Weight</b>	400 g (14,11 oz)

**TECHNICAL SPECIFICATIONS FOR TACHOMETRIC DYNAMO**

Peak to peak ripple	≤ 1%	
Effective value ripple	≤ 0,4%	
Linearity error	≤ 0,2%	
Reversibility error	± 0,1%	
Voltage tolerance	± 3%	
Voltage variation with temperature	-0,02% for °C	
Insulation class	B	
N. of poles	4	
N. of slots	33	
N. of laminas	33	
Field excitation by magnets	ALNICO	
Winding	60V / 1000 rpm	20V / 1000 rpm
Nominal voltage at 1000 rpm	60 V	20 V
Load - free voltage at 1000 rpm	61,2 V	20,3 v
Max current admitted	70 mA	200 mA
Nom. current	5 mA	10 mA
Max speed	5000 rpm	6000 rpm
Armature resistance at 25°C	240 Ω	26 Ω
Electric time constant	0,7 ms	0,7 ms
Enclosure rating	IP 55 (IEC 60529)	
Weight	2,35 Kg (82,89 oz)	
Moment of inertia	2 x 10 <sup>-6</sup> kgm <sup>2</sup>	

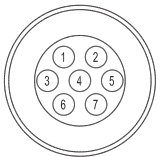
**Application with tachometric dynamo**

*dimensions in mm*
**ACCESSORIES**

Description	P/N
Dynamo 60 V / 1000 rpm	22130001
Dynamo 20 V / 1000 rpm	22130002

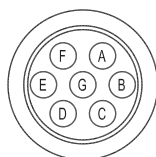
**CONNECTIONS**

Function	Cable output	Cable output	7 pin J output	7 pin J output	7 pin M output	7 pin M output	10 pin J output	10 pin M output	5 pin M12 output	8 pin M12 output	12 pin H output	5 pin C output	8 pin C output
	N / C / P / PC	Line driver	N / C / P / PC	Line Driver no Zero	N / C / P / PC	Line Driver no Zero	Line Driver with Zero	Line Driver with Zero	N / C / P / PC	Line Driver	CCW	N / C / P / PC	Line Driver
+V DC	red	red	6	4	F	D	4 - 5	D - E	2	7	12	5	7
0 V	black	black	1	6	A	F	6	F	4	1	10	1	8
Ch. A	green	green	3	1	C	A	1	A	3	6	5	2	1
Ch. A-	/	brown	/	3	/	C	7	G	/	5	6	/	2
Ch. B	yellow	yellow	5	2	E	B	2	B	1	4	8	4	3
Ch. B-	/	orange	/	5	/	E	8	H	/	3	1	/	4
Ch. Z	blue	blue	4	/	D	/	3	C	5	2	3	3	5
Ch. Z-	/	white	/	/	/	/	9	I	/	8	4	/	6
⊥	shield	shield	7	7	G	G	10	J	housing	housing	9	/	/

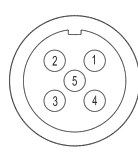
J connector (7 pin)  
JIS-C-5432 Size 16  
solder side view FV



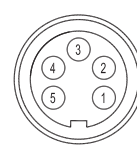
M connector (7 pin)  
Amphenol MS3102-E-16-S  
solder side view FV



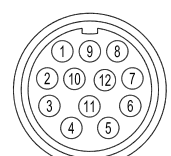
M12 connector (5 pin)  
M12 A coded  
solder side view FV



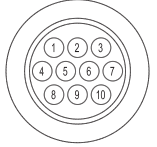
C connector (5 pin)  
IEC 60130-9  
solder side view FV



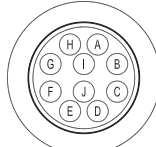
H connector (12 pin) - M23 CCW  
Hummel 7.410.000000 -  
7.002.912.603  
solder side view FV



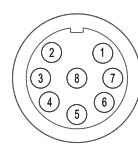
J connector (10 pin)  
JIS-C-5432 Size 16  
solder side view FV



M connector (10 pin)  
Amphenol MS3102-E-18-1  
solder side view FV



M12 connector (8 pin)  
M12 A coded  
solder side view FV



C connector (8 pin)  
IEC 60130-9  
solder side view FV

