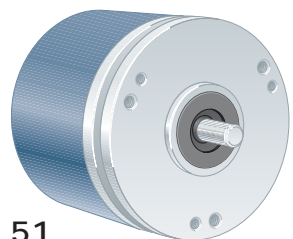
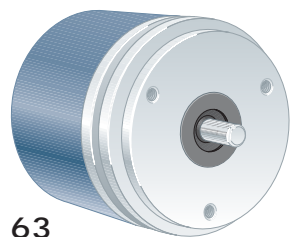


504 — Ruggedized Shaft encoder, Incremental

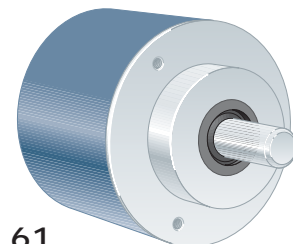
EXTENDED TEMPERATURE



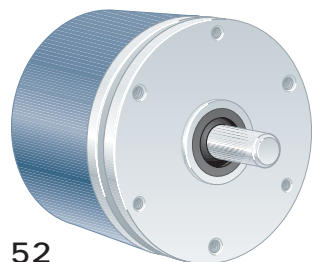
51



63



61



52

Short description:

- >> 6 short-circuit protected outputs
- >> IP 67 at housing, IP 66 at shaft inlet
- >> 5 Vdc or 9...30 Vdc
- >> Robust housing for harsh environment
- >> Shock and vibration protected

Suitable applications:

- >> Standard to demanding industrial applications
- >> High temperature applications

General information

Encoder data		
Type	RSI 504	
Operating temperature	-20°C .. +100°C	
Storage temperature	-20°C .. +80°C	
Ingress protection class	IP-67 according to IEC 60529	
At shaft inlet	IP-66 according to IEC 60529	
Vibration (55 to 2000Hz)	< 300 m/s ² according to IEC 60068-2-6 ⁽¹⁾	
Shock (6ms)	< 2000 m/s ² according to IEC 60068-2-27	
Cover material	Aluminium	
Cover surface treatment	Coated and cromated or anodized	
Weight	Approx. 300g	
Accuracy and resolution		
Line count	1..5000 ppr	5001..10 000 ppr
Dividing error	± 50 °el	± 90 °el
Channel separation	90 ± 25 °el	90 ± 45 °el
Measuring steps	4 x Line count	

Flange option

Flange type	51, LL58	63, Synchro	61, Clamping	52, LL68
Outer diameter	ø58 mm	ø58 mm	ø58 mm	ø68 mm
Mounting holes	3 x M3 & 3 x M4	3 x M4	3 x M3	3 x M3 & 3 x M4
Flange material	Aluminium	Aluminium	Aluminium	Aluminium
Surface treatment	Anodized	Anodized	Anodized	Anodized

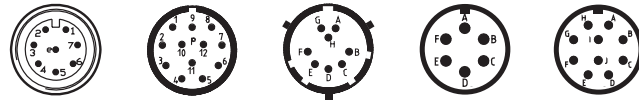
Shaft option

Shaft type	Ø 6 round	Ø 6 with face	Ø 10 round	Ø 10 with face
Axial shaft load	50 N	50 N	50 N	50 N
Radial shaft load	60 N	60 N	60 N	60 N
Mech. permissible speed	6000 rpm (12 000)	6000 rpm (12 000)	6000 rpm (12 000)	6000 rpm (12 000)
Shaft material	Stainless steel	Stainless steel	Stainless steel	Stainless steel
Moment of inertia	1,9 x 10 ⁻⁶ kgm ²	1,9 x 10 ⁻⁶ kgm ²	2,0 x 10 ⁻⁶ kgm ²	2,0 x 10 ⁻⁶ kgm ²

⁽¹⁾<150m/s² on encoders with connectors

504 — Ruggedized Shaft encoder, Incremental

EXTENDED TEMPERATURE



Connection option

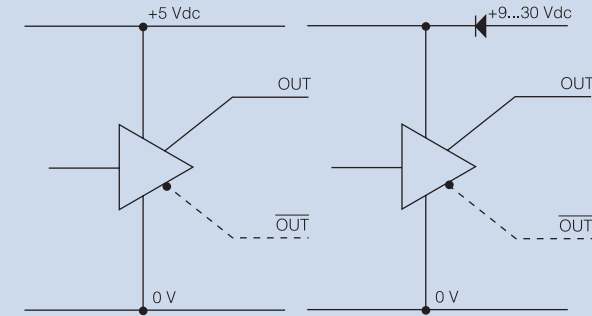
Connector type	Cable	8 pin M12	12 pin EML	8 pin PT	6 pin MS	10 pin MS
Function	Colour	PIN	PIN	PIN	PIN	PIN
S00	Yellow	5	5	D	D	D
S00 inverted	Black	4	6	C	C	C
S90	Green	3	8	A	A	A
S90 inverted	White	1	1	B	B	B
Sref	Brown	2	3	G	NA	G
Sref inverted	Violet	6	4	H	NA	H
+E Volt	Red	8	12	E	E	E
0 Volt	Blue	7	10	F	F	F
STATUS	Grey	NA	7	NA	NA	I
Case	Shield					
Connecting direction (available on flange option -51, -63, -61)						
Axial	Yes	Yes	Yes	Yes	Yes	Yes
Radial	Yes	Yes	Yes	Yes	No	No
Connecting direction (available on flange option -52)						
Axial	No	No	No	Yes	No	Yes
Radial	Yes	No	No	No	No	No

Electrical option

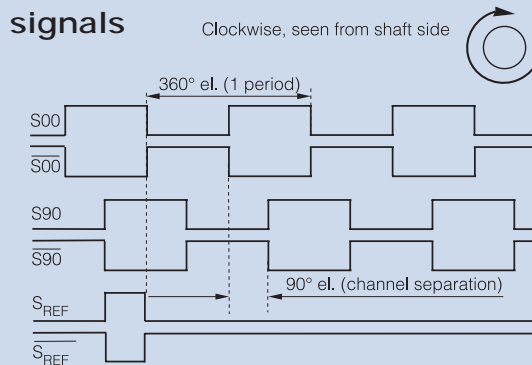
Power supply	5 V ±10%	9-30 V	
Polarity protected	No	Yes	
Output signals	TTL ¹	HTL	RS-422
Short circuit protected	Yes	Yes	Yes
Current consumption	45 mA	50 mA at 24Vdc	25 mA at 24Vdc
Max consumption	75 mA	75 mA	40 mA
Output load (max)	±20 mA	±40 mA	±20 mA
Output frequency (max)	300 kHz	300 kHz	300 kHz
U _{high} at 10mA load	> 3.0 V	> +EV - 2.0 V	> 3.0 V
U _{low} at 10mA load	< 0.4 V	< 1.15 V	< 0.4 V
Cable length (max)	50 m	200 m @ 50 kHz	1 km (TIA/EIA-422-B)
STATUS output	Yes	Yes	Yes
High level	Encoder OK	Encoder OK	Encoder OK
Low level	Warning/Failure	Warning/Failure	Warning/Failure

¹TTL output comply to the RS-422 standard when differential transmission is used NA=Not Available

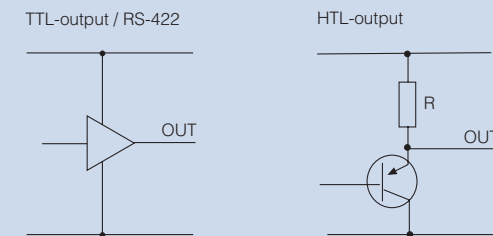
Output circuit



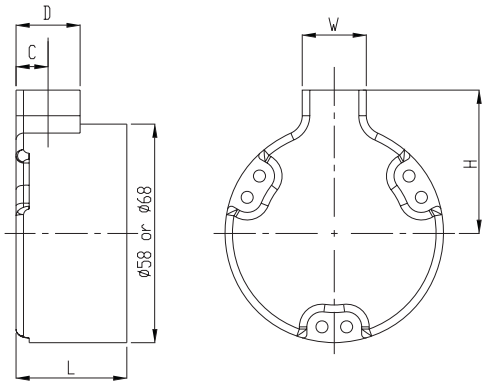
Output signals



Status outputs



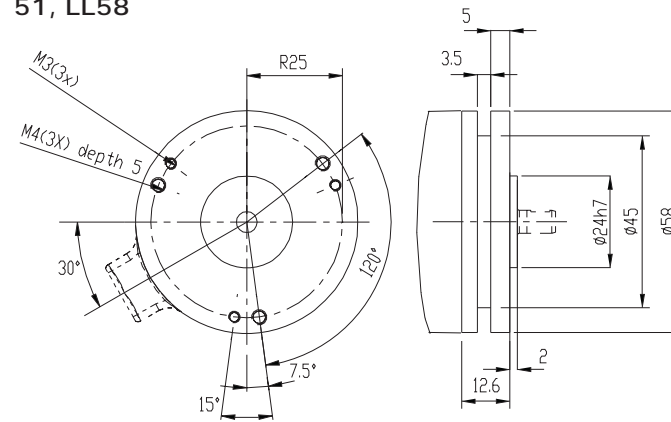
Dimensions



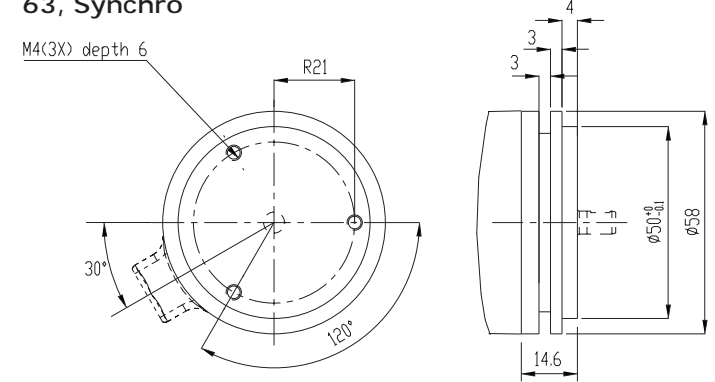
Connector	Orientation	L	H	W	D	C
Cable	Radial Ø58	29.4	34	17	17	8.5
	Radial Ø68	44.7	34	0	0	14
	Axial	38.9	-	-	-	-
EML	Radial	29.4	32	27	27	13.5
	Axial	38.9	-	-	-	-
PT 8p	Radial	29.4	41	27	27	13.5
	Axial Ø58	38.9	-	-	-	-
	Axial Ø68	44.7	-	-	-	-
MS 6p	Radial	-	-	-	-	-
	Axial	38.9	-	-	-	-
MS 10p	Radial	-	-	-	-	-
	Axial Ø58	43.9	-	-	-	-
	Axial Ø68	44.7	-	-	-	-
M12 8p	Radial	29.4	38	27	27	9.5
	Axial	38.9	-	-	-	-

Flanges

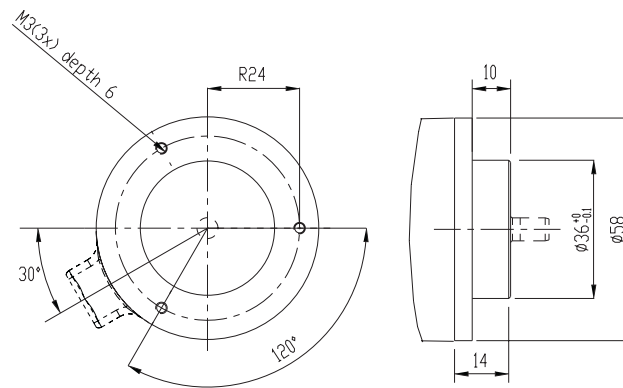
51, LL58



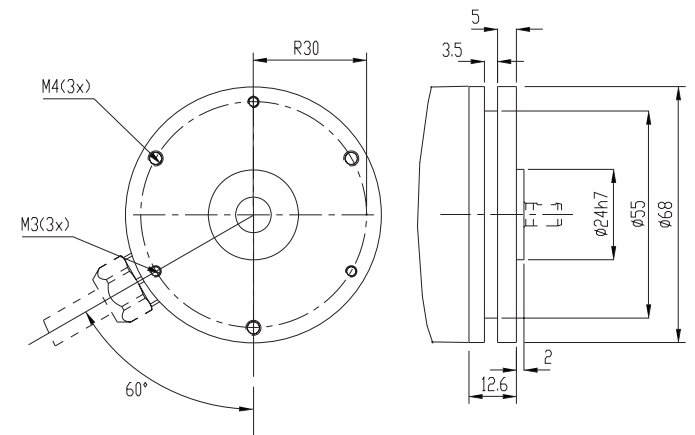
63, Synchro



61, Clamping



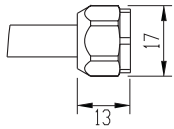
52, LL68



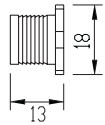


Connectors

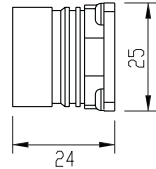
Cable
5x2x0,25 shielded



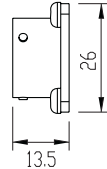
8pin M12



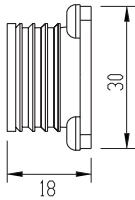
12pin EML



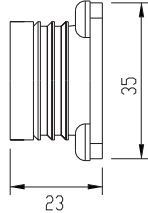
8pin PT



6pin MS

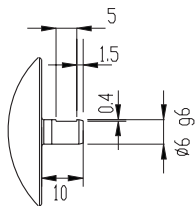


10pin MS

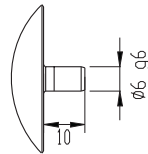


Shafts

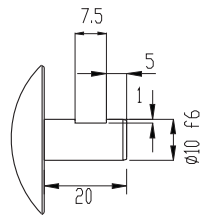
6 mm with face



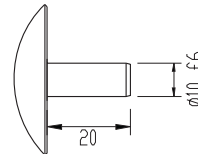
6 mm round



10 mm with face



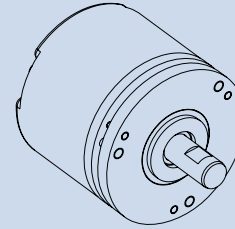
10 mm round



Various combinations / examples

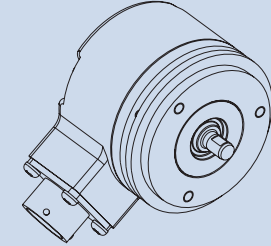
RSI 504 51

10 mm with face, axial cable



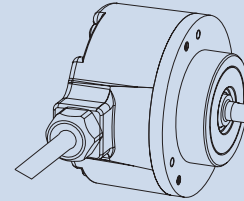
RSI 504 63

6 mm with face, radial PT



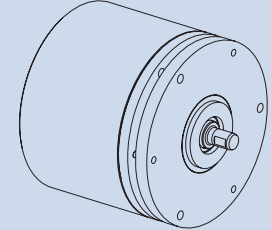
RSI 504 61

6 mm round, radial cable



RSI 504 52

6 mm with face, radial cable



Ordering information Tick your choice

Type	RSI 504					
Shaft	Ø 6 round	Ø 6 with face	Ø 10 round	Ø 10 with face		
Flange	51, LL58	63, Synchro	61, Clamping	52, LL68		
Electronics ⁽¹⁾	Supply	5Vdc	9-30Vdc			
	Output	TTL	RS-422			
Connection	Cable	8 pin M12	12 pin EML	8 pin PT	6 pin MS	10 pin MS
Connecting direction	Axial ² /Radial	Axial ² /Radial ²	Axial ² /Radial ²	Axial/Radial ²	Axial ²	Axial
Line count	1..5000	5001..10 000				

⁽¹⁾ Possible combinations: 5Vdc/TTL, 9-30Vdc/HTL or 9-30Vdc/RS-422

⁽²⁾ Not available on flange option -52, LL68

Please, specify line count and cable length when ordering

Ordering example: RSI 504 ø6 round 63 synchro 5Vdc TTL 8 pin PT Axial 1024