

Short description:

- >> 6 short-circuit protected outputs
- >> IP 67 at housing
- >> 5 Vdc or 9...36 Vdc
- >> Shock and vibration protected
- >> Status output for warning indication

Suitable applications:

- >> Standard to demanding industrial applications
- >> Space limited applications

General information

Encoder data	
Type	MSI 303
Operating temperature	-40°C .. +70°C
Storage temperature	-40°C .. +85°C
Ingress protection class	IP-67 according to IEC 60529
Vibration (55 to 2000Hz)	200m/s ² according to IEC 60068-2-6
Shock (6ms)	3000m/s ² according to IEC 60068-2-27
Cover material	Aluminium
Weight	Approx. 70g
Accuracy and resolution	
Line count	20, 25, 30, 50, 60, 80, 100, 125, 160, 200, 250, 400, 500,
Other line counts on request	512, 600, 625, 800, 1000, 1024, 1200, 1250
Dividing error	± 50 °el
Channel separation	90 ± 25 °el
Measuring steps	4 x Line count

Flange option

Flange type	31
Outer diameter	ø30 mm
Mounting holes	3 x M3
Flange material	Aluminium

Shaft option

Shaft type	Ø6 with face
Axial shaft load	10N
Radial shaft load	10N
Mech. permissible speed	3000rpm (12000rpm)
Shaft material	Stainless steel
Moment of inertia	0,15 x 10 ⁻⁶ kgm ²



Connection option

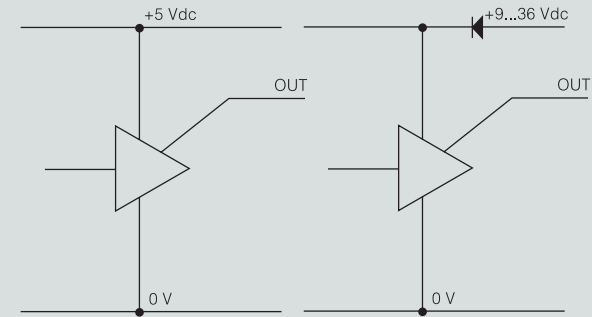
Connector type	Cable PVC 5x2x0,25mm ²	8 pin M12
Function	Colour	PIN
S00	Yellow	4
S00 inverted	Black	5
S90	Green	3
S90 inverted	White	1
Sref	Brown	2
Sref inverted	Violet	6
+E Volt	Red	8
0 Volt	Blue	7
STATUS	Grey	NA
Case	Shield	Chassis
Connecting direction		
Axial	Yes	Yes
Radial	No	No

NA=Not Available

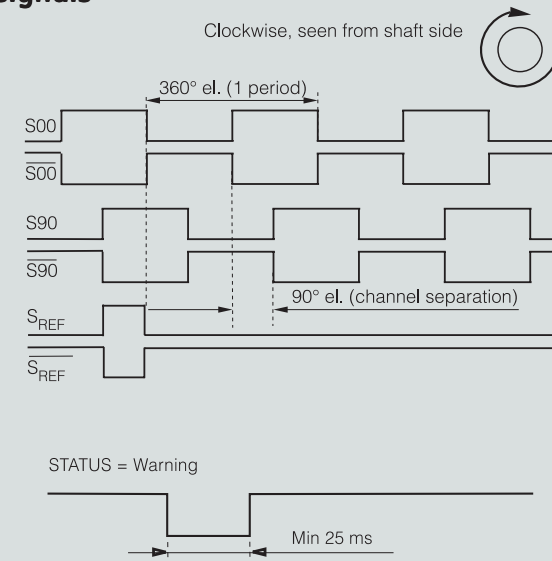
Electrical option

Power supply	5 V ±10%	9-36 V
Polarity protected	No	Yes
Output signals	TTL	HTL
Short circuit protected	Yes	Yes
Current consumption	30mA	10mA @ 24V
Max consumption	90mA	70mA
Output load (max)	± 20mA	
Frequency range	0...200kHz	
U _{high} at 10mA load	> 3.0V	> +EV - 2.0V
U _{low} at 10mA load	< 0.4V	< 1.15V
Cable length (max)	100m @ 50kHz	
STATUS output	Yes	Yes
<i>High level</i>	Encoder OK	Encoder OK
<i>Low level</i>	Warning/Failure	Warning/Failure

Output circuit



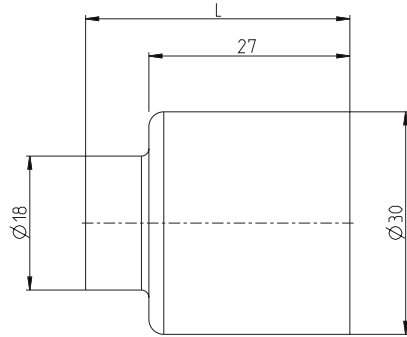
Output signals



303 — Miniature Shaft encoder, Incremental

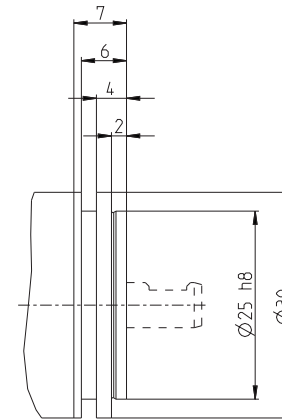
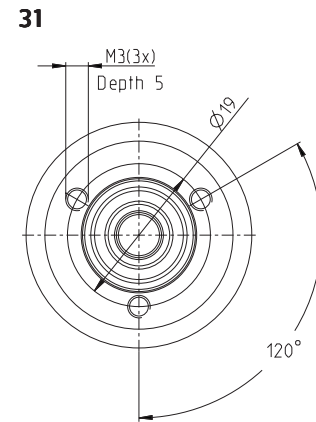


Dimensions



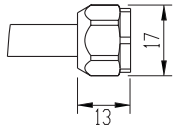
	L
Cable	28.5
8pM12	35

Flanges

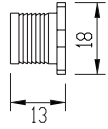


Connectors

Cable
5x2x0,25 shielded

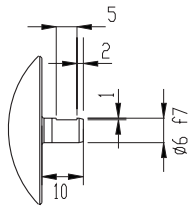


8pin M12



Shafts

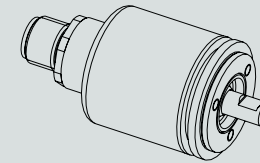
6 mm with face



Various combinations/example

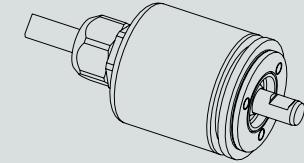
MSI 303 31

6 mm with face, axial M12



MSI 303 31

6 mm with face, axial cable



Ordering information Tick your choice

Type	MSI 303		
Shaft	Ø6 with face		
Flange	31		
Electronics ⁽¹⁾	Supply	5Vdc	9-30Vdc
	Output	TTL	HTL
Connection	Cable	8 pin M12	
Connecting direction	Axial	Axial	
Line count	1..1250		

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

Please, specify line count and cable length when ordering

Ordering example: MSI 303 31 Ø6wf 5Vdc 1024ppr TTL 8 pin M12 Axial