GUBOA

Ver. 212 313 104-en

Manual

IGS Incremental Encoder

Applications

- Speed and position feedback for high speed spindles, motors, CNC machines

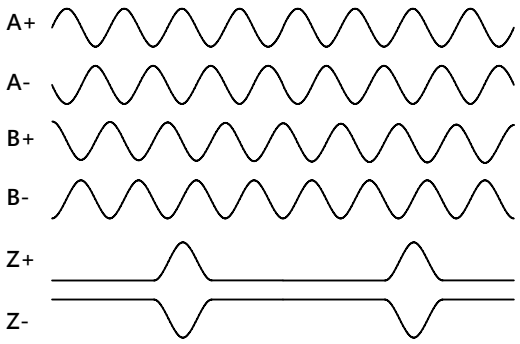
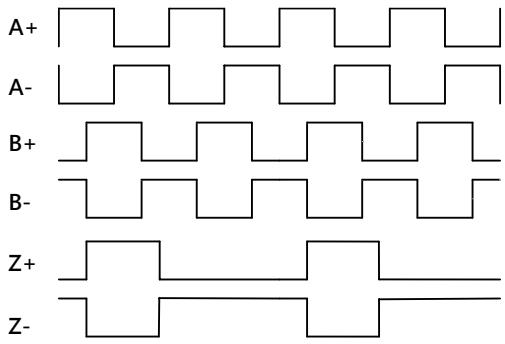
General Information

- Contactless scanning of rotating position and speed.
- Compact design for used in limited space.
- Contact free detection without any mechanical wear problem.
- High protecting class IP67.
- Sensing gear wheel from module 0.3 ~ 1.0
- High response, up to 100,000 rpm
- Customized according to dimensions.
- The MIS3 3rd generation sensor possess additional auto-calibration and speed distribution chart features by connecting to the PST-06A Signal Analyzer.

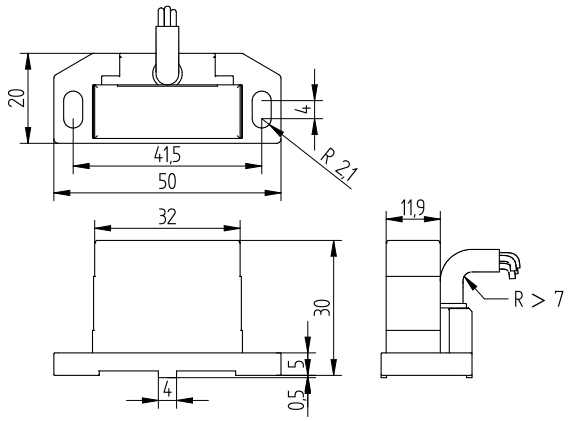
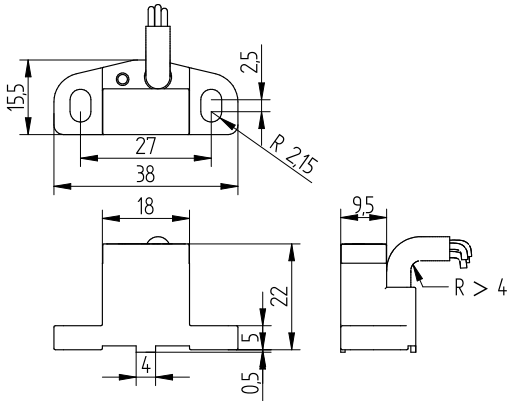
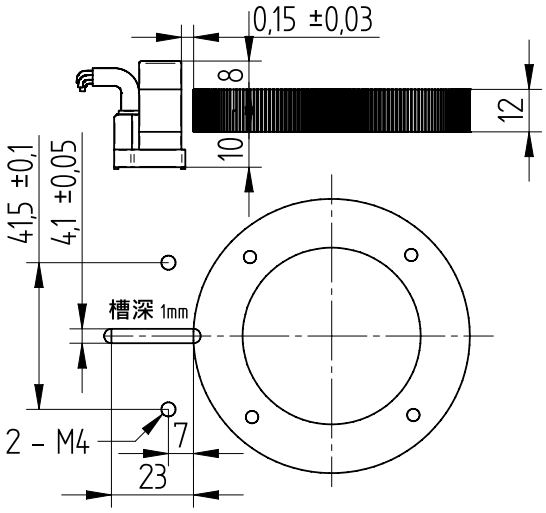
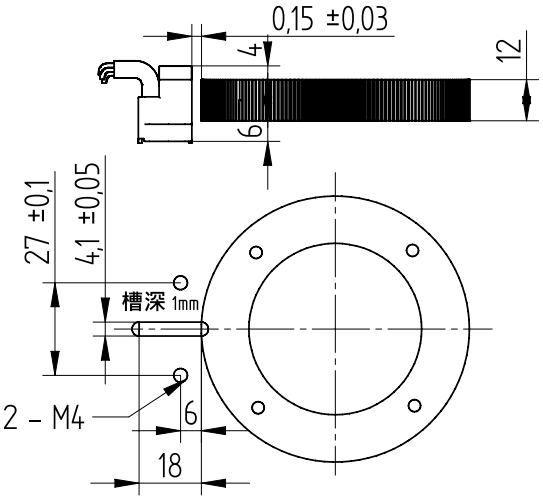
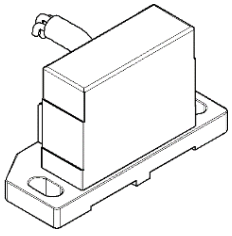
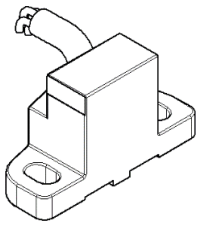
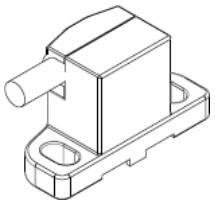
Specification

	1 Vpp (A)	TTL (T)
Power supply Vcc (DCV)	5 V ± 5%	5 V ± 5%
Load current (open output)	≦60 mA	≦60 mA
VOH (open -output)	N/A	≧2.5 V
VOL (open -output)	N/A	≦0.5 V
Output signal type	Differential Analog (1 Vpp)	RS 422 (TTL)
Max. Output signal frequency	150 KHZ	500 KHZ
Output signal amplitude	≧1 Vpp	N/A
A 、 B phase shifting	≦90 ± 10°	≦90 ± 25°
Sensing gap	0.15 ± 0.03 mm	0.15 ± 0.03 mm
Operating temperature	-20℃ ~ 100℃	-20℃ ~ 100℃
Protection rating	IP 67	IP 67
Approx weight scanning head (g)	Standard head 30 ± 5% ; Mini head 10 ± 5% MIS3 25± 5% -3rd Gen. sensor	

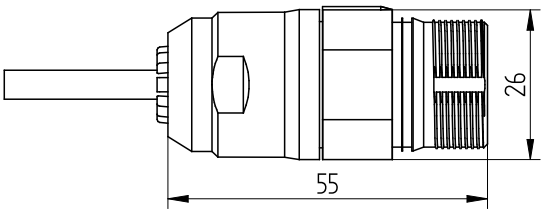
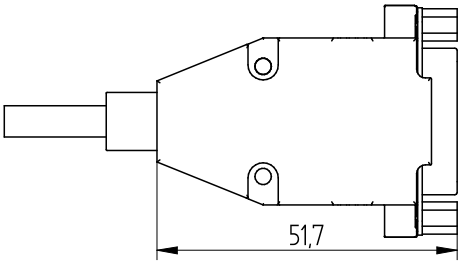
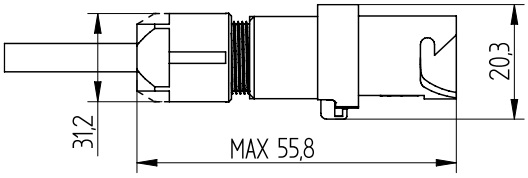
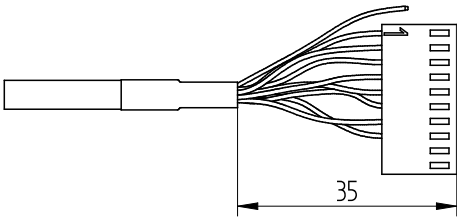
Signal diagram

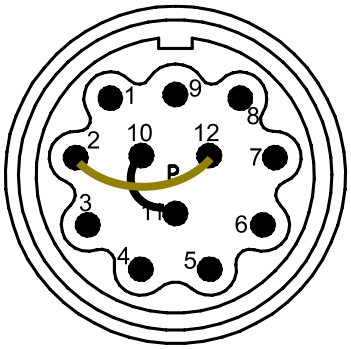
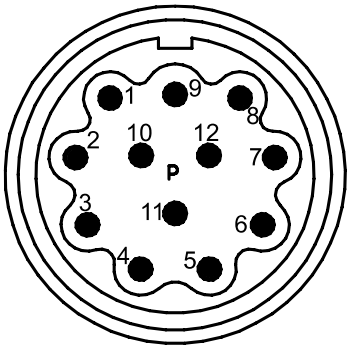
1 Vpp (A)	TTL (T)
	 2, 4, 8, 16 interpolation Ex. 4 folds interpolation sensor head with 256T sensor gear : 1024 pulses TTL signal

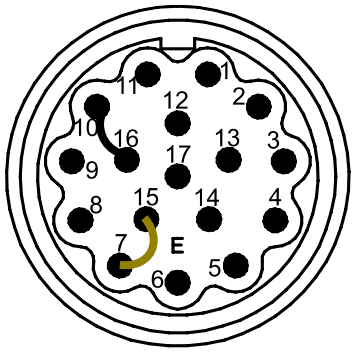
Dimension & Installation

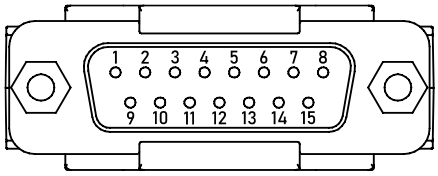
	Standard (SI)	Mini (MI)
Encoder Dimension		
Installation		
Cable Outlet	 Axial	 Axial  Right (R)

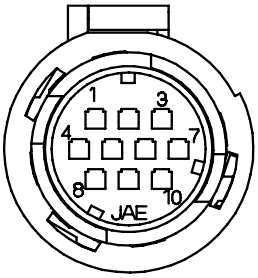
Connectors

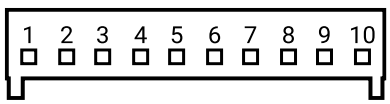
Connector type	code	
M23 12 Pin / 17 Pin	E12 / E17	
D–SUB 15 Pin	D	
JAE 10 Pin	P	
Open-end	N	

M23 12 Pin				
1Vpp （A）	Pin	Signal	Color	TTL（T）
	1	B-	red	
	2	sensor +	-	
	3	Z+	grey	
	4	Z-	pink	
	5	A+	green	
	6	A-	yellow	
	7	-		
	8	B+	blue	
	9	-		
	10	0V	white	
	11	sensor -	-	
	12	+ 5V	brown	
	cover	GND	shielding	

M23 17 Pin	Pin	Signal	Color
	1	A+	green
	2	A-	yellow
	3	Z+	grey
	4	-	
	5	-	
	6	-	
	7	0V	white
	8	-	
	9	-	
	10	+ 5V	brown
	11	B+	blue
	12	B-	red
	13	Z-	pink
	14	-	
	15	sensor -	-
	16	sensor +	-
	17	-	
	cover	GND	shielding

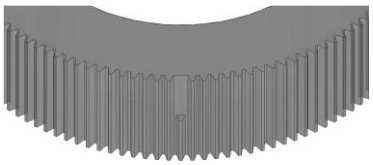
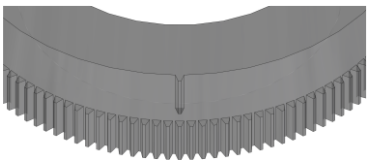
D–SUB 15 Pin	Pin	Signal	Color
	1	+ 5V	brown
	2	0V	white
	3	A+	green
	4	A-	yellow
	5	-	
	6	B+	blue
	7	B-	red
	8	-	
	9	-	
	10	Z+	grey
	11	-	
	12	Z-	pink
	13	-	
	14	-	
	15	-	
	cover	GND	shielding

JAE 10 Pin	Pin	Signal	Color
	1	B+	blue
	2	B-	red
	3	GND	shielding
	4	+ 5V	brown
	5	A+	green
	6	A-	yellow
	7	0V	white
	8	Z+	grey
	9	Z-	pink
	10	-	

Open-end	Pin	Signal	Color
	1	A+	green
	2	A-	yellow
	3	+ 5V	brown
	4	0V	white
	5	B+	blue
	6	B-	red
	7	Z+	grey
	8	Z-	pink
	9	-	
	10	-	

Gear model

Sensing gear code	
M X XXX - XXX - XXX (1) (2) (3) (4)	
(1)	**Module:** 3 : module 0.3 4 : module 0.4 5 : module 0.5
(2)	**Teeth:** 128 : 128 teeth 256 : 256 teeth 384 : 384 teeth 512 : 512 teeth
(3)	**Inner diameter** (mm) Ex. 125
(4)	**Reference mark:** STD : gap FR : flag

Reference mark	Image
STD	
FR	

Encoder model

Encoder type code	
GS XX - X - XX - XX - X - X- X - XX – X (1) (2) (3) (4) (5) (6) (7) (8) (9)	
(1)	**Module** 03 : 0.3 ; 04 : 0.4 ; 05 : 0.5
(2)	**Signal type** A : 1 Vpp T : TTL / RS422
(3)	**Interpolation** 01 : 1 , For 1 Vpp & TTL 11 : 1 , For 1 Vpp signal control 02 : 2 , For TTL only 04 : 4 , For TTL only 08 : 8 , For TTL only
(4)	**Encoder Dimension** MI : Mini SI : Standard
(5)	**Cable Lenth** S : 1 m L : 3 m
(6)	**Functional version** - : Signal measurement 3 : Signal measurement , Auto-calibration, Speed distribution chart (1 Vpp output type only)
(7)	**Connectors** E12 : M23 12 Pin E17 : M23 17 Pin D : D-sub 15 Pin P : JAE 10 pin N : Open end
(8)	**Reference mark of gear** STD : gap FR : flag
(9)	**Cable outlet** - : Axial R : Right (Mini type only)