

# Multi-Turn Absolute Rotary Encoder

Housing Dia.:38,50,58mm; Solid Shaft Dia.:6,8,10mm;

Interface: **SSI**; Resolution: Max.16bits, Single turn max.16bits, Total Max.29bits

**GMA-S Series**



- ▶ Housing Diameter 58mm;
- ▶ Solid/hollow Shaft Diameter: 10mm;
- ▶ Interface: SSI;
- ▶ Resolution: Max.16bits, Single turn max.16bits, Total Max.29bits
- ▶ Supply Voltage: 5v, 8-29v;
- ▶ Output Code: Binary, Gray, Gray Excess, BCD;
- ▶ Widely used in various fields of automatic control and measurement system, such as machinery manufacturing, shipping, textile, printing, aviation, military industry Testing machine, elevator, etc.
- ▶ Vibration-resistant, corrosion-resistant, pollution-resistant;



## Product characteristics

Housing Dia.:	58mm
Solid Shaft Dia.:	10mm

## Electrical Data

Resolution:	Max.16bits, Single turn max.16bits, Total Max.29bits
Interface:	SSI/NPN/PNP open collector, Push pull, Line Driver;
Output Code:	Binary, Gray, Gray Excess, BCD
Supply Voltage:	8-29V
Max. Frequency Response	33Khz~4Mhz

		Item		Min	Max
Input Signal	Clock	Voltage	VIH	2.1v	Vcc
			VIL		0.9v
Output Signal	Data	Voltage	VOH	2.0v	Vcc
			VOL		0.5v
		Current	IO		15mA

## Mechanical Data

Start Torque	$4 \times 10^{-3} \text{ N}\cdot\text{M}$
Max. Shaft Loading	Axial: 5-30N, Radial: 10-20N;
Max. Rotary Speed	5000rpm
Weight	160-200g

## Environment Data

Working Temp.	-30~80°C
Storage Temp.	-40~80°C
Protection Grade	IP54

## Connection Leading:

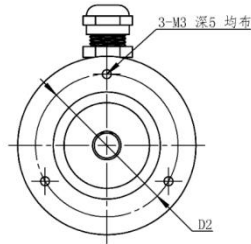
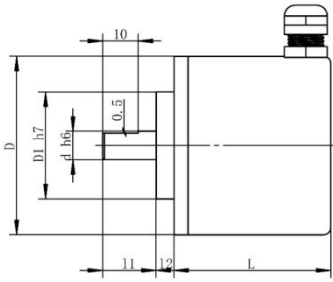
Signal	Vcc	GND	Clock+	Clock-	Data+	Data-	Zero
Colour	Brown	Blue	White	Gray	Black	Purple	Yellow

## Interface

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Clock Period	$t_{CL}$	0.25		$2 \times t_M$	$\mu\text{s}$	
Clock High	$t_{CHL}$	0.1		$t_M$	$\mu\text{s}$	
Clock Low	$t_{CLO}$	0.1		$t_M$	$\mu\text{s}$	
Monoflop time	$t_M$	15	19	25	$\mu\text{s}$	



## Dimensions



D	38	50	58
d	6	8	10
D1	20	30	36
D2	30	40	48
L	35	35	44
11	15	15	20
12	5	5	10

### Note:

- ▶ Adopt elastic soft connection shall be applied between encoder shaft and output shaft of user end to avoid damage of encoder shaft system due to serial movement and run out of user shaft.
- ▶ Please pay attention to the allowable axle load during installation.
- ▶ Make Sure that the difference Between Axial Degree of encoder shaft and user output shaft shall be no more than 0.20mm, and the deviation angle with axis shall be less than 1.5 °.
- ▶ Try to avoid knocking and falling collision during installation;
- ▶ Do not connect the power line and the ground wire in reverse.
- ▶ The GND wire shall be as thick as possible, generally larger than  $\phi 3$ .
- ▶ Output lines of encoder shall not be overlapped with each other to avoid damaging output circuit.
- ▶ Signal line of encoder shall not be connected to DC power supply or AC current to avoid damaging output circuit.
- ▶ The motor and other equipment connected to the encoder shall be well grounded without static electricity.
- ▶ Shielded cable shall be used for wiring.
- ▶ Before starting the machine, carefully check whether the wiring is correct.
- ▶ During long-distance transmission, the signal attenuation factor shall be considered, and the output mode with low output impedance and strong anti-interference ability shall be selected.
- ▶ Avoid using in strong electromagnetic wave environment.