GTEACH

GTEACH

INCREMENTAL ROTARY ENCODER

INSTRUCTION SHEET

Thank for you selecting GTEACH product.This sheet primarily describes precautions required in installing and operationg the product.

Before operating the product,read the sheet thoroughly to acquire sufficient knowledge of the product.For your convenience,keep the sheet at your disposal.

CE RoHS

HUT116126001E HUT116126001R

www.sdgteach.com

Precautions on safety

- *Meaning of Signal Worlds*

⚠ CAUTION	ndicates a potentially hazardous situation which,if not avoided,may result in minor or moderate injury or in property damage.

- Alert statements

⚠ CAUTION

Do not attempt to take ant unit apart while the power is being supplied.Doing so may result in electric shock.

Precautions for Safe Use

1) Do not use the product in excess of the rated voltage. Applying voltages beyond the rated voltage range may cause the product to break or burn.
2) Avoid wiring the product's cables paralel to power lines.Doing so may cause the priduct to malfunction due to induction or may cause the damage the product.
3) If surge ocurs in the power supply,conect a surge absorber between the power upply terminals to absorb the surge. Minimize the wiring lengthe to prevent the product from being afected by noise, etc.
4) Since improper pulses may occur when the power is turned on or off,use the devices connected to this product at least 1.0 secondes before or after the power is turned on or off.
5) Becareful when wiring,such as being careful with the polarities of the power supply.
6) Do not short-circuit the load. Doing so may break or burn the product.
7) Do not use the encoder under the enviroment with explosive or ignition gas.
8) Never disassemble,repair nor tamper with the porduct.

Precautions for Correct Use

1) Since the product consists of high-precision components,handle it with utmost care.
2) Be careful not expose the product to water or oil.
3) Be sure to turn off the power supply before wiring. If the output line while the power is being supplied, the output circuit may be damaged.
4) If the product is mounted and wired with a cord, do not pull the cord with force greater than 29.4 N.
5) Be careful not to apply excessive load to the shaft.Excessive load may cause the product break.
6) If an installation error such as misalignment is too large, (in case using the coupling or without coupling) the shaft will be subjected to an excessive load which will damage it or shorten its service life. Be careful when instaling.
7) When inserting the shaft in the coupling, do not use excessive force (by-striking it with hammer,for example).
8) When iinstalling or removing the coupling, do not apply an excessive being,compresing, or tensile force.

⚠ Safety notes !

- Observe the aplicable profesional asocaiton safety and accident regulations for your country.
- Switch off the voltage to all devices/systems affected by the mountiong/installation.
- Never establish or disconect electrical conections to the encoder with the voltage switched on as this can otherwise lead to a device defect.
- Always prevent impacts and shocks to the encoder shaft.This can lead to bearing defects.
- For a proper functioning of the encoder, ensure that an EMC-suitable shielding conection(aplication of the shielding on both sides) occurs!

■ Pin asignment

Be sure connecting the right wire.

Wire color	OC VE OP 3-channel	TTL/HTL 6-channel	Pin 9-pole	Explanation
RED	Vcc	Vcc	1	Supply voltage
BLACK	0V	0V	4	Common port
GREEN	A	A	5	Signal wire
WHITE	B	B	3	Signal wire
YELLOW	Z	Z	8	Signal wire
BROWN	–	–A	6	Signal wire
GRAY	–	–B	7	Signal wire
ORANGE	–	–Z	2	Signal wire
SHIELD	SHIELD	SHIELD	9	SHIELD

⚠ CAUTION!

PIN assignment valid for standard encoders only Please use the appropriate data sheet for customer-specific encoders.

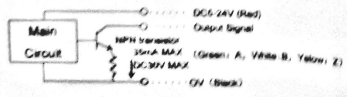
▶ In order to achieve a high signal quality, we recomment a differential evaluation of the encoder signals.

▶ Unused signal wires shall be connected diferrentially,i.e. a resistor needs to be conected between signal wire and inverted signal wire. The resultiong current should be 12.5mA +/-20%

▶ For encoders with connector,the unused signals must not be connected to the customer cabling.

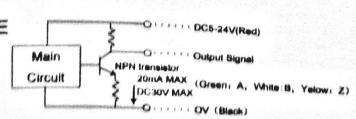
■ OUTPUT CIRCUIT DIAGRAM

OC



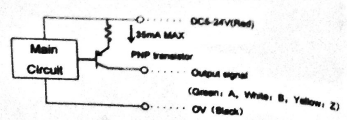
OC：NPN Open Collector

VE



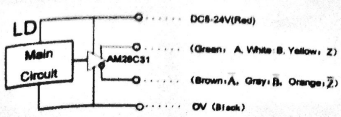
VE：Votage Output

OP



OP：PNP Open Collector

LD



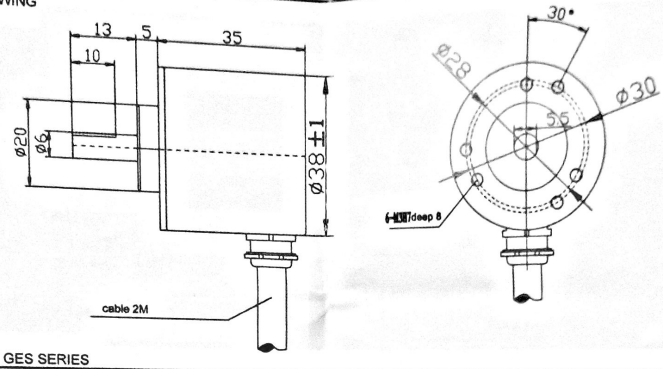
LD：Long Driver Output 6V
LDH：Long Driver Output 5-24V (TL7272B)

ENGLISH

■ RATINGS OF GTS SERIES

TYPE	GTS06-OC	GTS06-VE	GTS06-OP	GTS06-LD	GTS06-LDH
Output Circuit Configuration	NPN Open Collector	Voltage	Push-pull Output	LONG Driver Output	
Supply Voltage	DC 5-24V	DC 5-24V	DC 5-24V	DC 5V	DC 5-24V
Current Consumption	≤40 mA	≤40 mA	≤40 mA	≤150 mA	≤200 mA
Resolution	10-5000 PPR				
Max Response Frequency	100KHZ-300KHZ				
Slewing speed	3000rpm				
Shaft Loading	Axial：10N Radial：20N				
Starting Torque	1.5X10^{-3} N.m				
Moment Of Inertia	3.5X10^{-6} kgm^2				
Ambient Temperature	-20℃-80℃				
Ambient Humidity	30-85% RH				

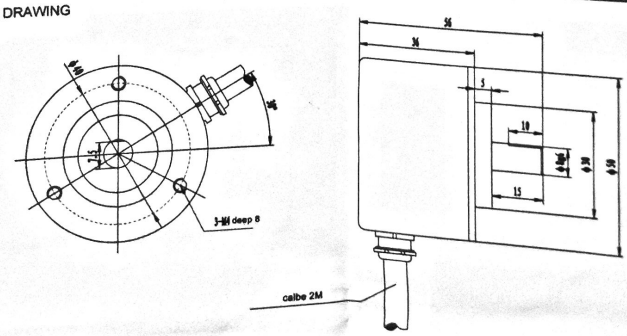
■ OUTLINE DRAWING



■ RATINGS OF GES SERIES

TYPE	GES08-OC	GES08-VE	GES08-OP	GES08-LD	GES08-LDH
Output Circuit Configuration	NPN Open Collector	Voltage	Push-pull Output	LONG Driver Output	
Supply Voltage	DC 5-24V	DC 5-24V	DC 5-24V	DC 5V	DC 5-24V
Current Consumption	≤40 mA	≤40 mA	≤40 mA	≤150 mA	≤200 mA
Resolution	10-5000 PPR				
Max Response Frequency	100KHZ-300KHZ				
Slewing speed	3000rpm				
Shaft Loading	Axial：25N Radial：35N				
Starting Torque	1.5X10^{-3} N.m				
Moment Of Inertia	3.5X10^{-6} kgm^2				
Ambient Temperature	-20℃-80℃				
Ambient Humidity	30-85% RH				

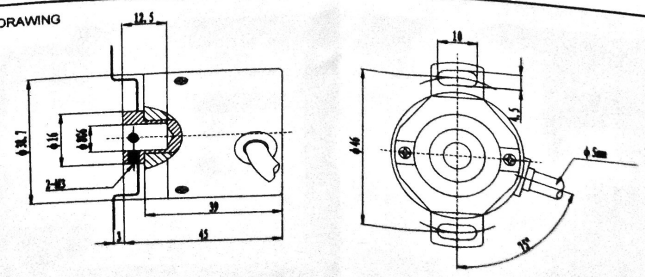
■ OUTLINE DRAWING



■ RATINGS OF GTK SERIES

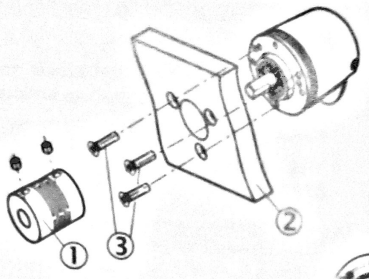
TYPE	GTK08-OC	GTK08-VE	GTK08-OP	GTK08-LD	GTK08-LDH
Output Circuit Configuration	NPN Open Collector	Voltage	Push-pull Output	LONG Driver Output	
Supply Voltage	DC 5-24V	DC 5-24V	DC 5-24V	DC 5V	DC 5-24V
Current Consumption	≤40 mA	≤40 mA	≤40 mA	≤150 mA	≤200 mA
Resolution	10-5000 PPR				
Max Response Frequency	100KHZ-300KHZ				
Slewing speed	3000rpm				
Shaft Loading	Axial：10N Radial：20N				
Starting Torque	1.5X10^{-3} N.m				
Moment Of Inertia	3.5X10^{-6} kgm^2				
Ambient Temperature	-20℃-80℃				
Ambient Humidity	30-85% RH				

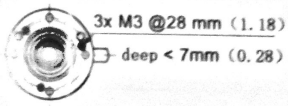
■ OUTLINE DRAWING

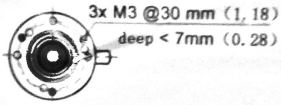


■ Installing the GTS0ll face mount flange via the flange-side threade holes

- ▶ Please obey the flange types with the corresponding hole patterns.
- ▶ Lock the customer drive shaft.
- ▶ Mount the coupling (1) to the drive shaft; make sure that this does not scrape.
- ▶ Slide the encoder onto the coupling (1) and centering fixture/clamping atachment(2).
- ▶ Align the encoder so that the hole pattern in the applicating matches with the corresponding hole paaatern of the encoder
- ▶ Fasten the encoder using 3 screws M3 (3) and mount the coupling (1) on the encoder.
- ▶ The coupling may not be subjected to mechanical stress.
- ▶ Make the electrical connections with the voltage switched off.
- ▶ Switch on the voltage and check the functioning of the encoder.

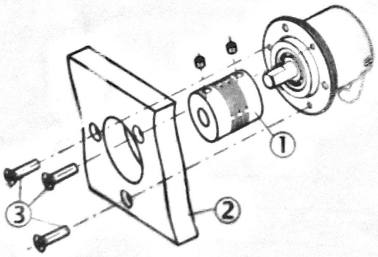


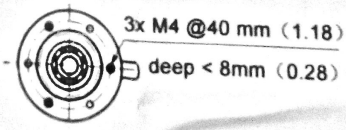




■ Installing the GES face mount flange via the clamping atachment

- ▶ Lock the customer drive shaft.
- ▶ Mount the coupling(1); make sure that this does not scrape on the encoder flange.
- ▶ Slide the encoder onto the coupling(1) and slide the clamping attachment into the clamping device(2)
- ▶ Clamp the encoder firml withe screw (3).
- ▶ Mount the coupling(1)on the drive shaft.
- ▶ The coupling may not be subjected to mechanical stress.
- ▶ Make electrical connections with the voltage switched off.
- ▶ Switch on the coltage and check the functioning of the encoder.





■ Installing the GTK blind hollw shaft with stator coupling

- ▶ Only use the screw next to the grove and the screw offset clockwise by 90 degrees to mount the encoder shaft onto the customer shaft. The other two screws are used to fix the clamping ring to the shaft and must not be loosened or tightened.
- ▶ Lock the customer drive shaft.
- ▶ Losen the 2 hexagon socket screws(1)on the clamping ring (2)withe a hexagon socket wrench size 1.5.
- ▶ Take note of the mounting information in Figure 1.Min. = 6mm, Max.=21mm.
- ▶ Slide the encoder onto the drive shaft.
- ▶ Please ensure that the encoder shaft does not scrape against the customer application.
- ▶ Fasten stator coupling (3)with 2 screws M3 and washers(4) While doing so, make sure that you selected a
- ▶ tightening torque that ensures that the encoder will not to twist.
- ▶ Please observe that the stator coupling is not pretensioned.
- ▶ Lightly tighten bothe hexagon socket screws(1)on the clamping ring(2)(torque 0.2Nm)then subsequently tighten up fullly. Locking torque = 0.6 Nm.
- ▶ Make electrical connections with the voltage switched of.
- ▶ Swith on the voltage and check the functioning of the encoder.