

# Series GSI2



Guided magnetic Incremental Length Measuring System suitable for Press Brakes

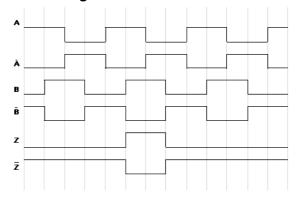
## **GS12** Guided Magnetic Incremental – Length measuring system

**General:** *GSI2* is a guided magnetic incremental length measuring system with free adjustable index pulse. The index impulse may adjust arbitrary with a distance of 5.0 mm. The system consists of sensor head, an integrated evaluation electronic, guide carriage and guide rail with magnetic tape. This guiding rail is available in all lengths up to one meter. The series *GS12* operates with a resolution of up to 0.001 mm at 4-edge triggering. The repeating accuracy is +/- 1 incremental. The *GS-I* measuring system has been constructed for dynamic applications with an operating speed up to 4 m/s and has been developed for sheet metal working. The evaluation electronic evaluates the signals detected by sensor and supplies speed proportional, 90° phase shifted square waves in 5V/TTL– Line driver or 10-30 V/HTL push-pull. The sensor head is moved contactless over the magnetic tap. This will be assured though mechanical guiding system. Thus, the system is totally maintenance free and free of wear. Due to a direct measuring, tolerances like slip or pitch are balanced.

#### **Product Features:**

- Free adjustable index impulse
- \*Max. resolution of 0.001 mm (at 4-edge triggering)
- Power supply / signal level 5 V or 10-30 V
- Differential signals/ reference pulse
- Measuring length up to 1 meter
- High-quality guiding system
- Speed proportional square wave outputs
- Robust, dirt– and shock resistant
- Cost-effective alternative to glass scales
  - \* depending on order

#### **Pulse diagram:**



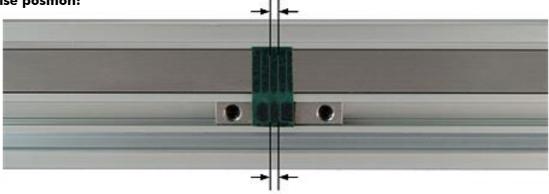
The channels A and B are **90°** phase shift

The index pulse output will effect according to the adjustable index pulse platelet

#### Pin assignment:

Function	Colour
OV / GND	white
10-30 VDC / 5 VDC	brown
Channel A	green
Channel A inverted	violet
Channel B	yellow
Channel B inverted	orange
Channel Z	black
Channel Z inverted	grey





Mechanical data		(
Measuring principle	incremental	
Measuring length	max. 1000 mm resp. 1 meter	
Distance sensor / magnetic tape	fixed by guide carriage	
Dimensions guide unit	$L \times W \times H = 80 \times 54 \times 31$ mm (wthout cable)	
Dimensions guide rail	$L \times W \times H = (150 + measuring length) \times 55 \times 20 \text{ mm}$	
Sensor housing material	zinc die cast	
Guide carriage material	aluminium	
Connection type	open cable ends (optionally with connector)	
Sensor cable	1.5 m standard (others on request) drag chain suitable	
Weight	approx. 620 g at 330 mm measuring length	
Electrical Data	approx. 525 g ar 555 mm measoring longin	
Power supply	10 30 VDC / 5 VDC, stabilized	
Residual ripple	10 - 30 VDC $<$ 10 % 5 VDC $\pm$ 25 mV	
	1030 VDC: max. 50 mA	
Consumption	5 VDC: max. 100 mA (with unloaded outputs)	
Repeat accuracy	± 1 increment (without consideration of mechanical influences)	
System accuracy	$\pm$ (25 + 20 x L) L = measuring length in meter (without consideration of mechanical influences)	
Output signals	channels A, A', B, B', phase shifted by $90^{\circ}$ (phase shift $\pm$ 20%)	
Output level	HTL or TTL (depends on order information)	
Reference pulse	position is adjustable	
Output current	max. 20 mA per channel	
Resolution	depends on order information	
Max. output frequency per channel	depends on selected resolution	
Operating speed (measuring system)	depends on selected resolution e. g. max. 4 m/s at 0.1 mm resolution	
Environmental conditions		
Storage temperature	-25 +85 °C	
Operating temperature	-10 +70 °C	
11 . 19	(-25 +85 °C on request)	
Humidity	95 %, non-condensing	
Protection class	IP67 (sensor head) IP54 (mechanical parts)	

#### **Order reference:**

For orders, please use the following order code:

#### A SN-number

**00** ELGO Standard

01 First special version

**02** Second special version

#### B Signal cable length in XX . X m

**01.5** 1.5 m Standard cable length

#### **C** Resolution

1	0.1 mm	5	0.05 mm
2	0.01 mm	6	0.0025 mm
3	0.005 mm	7	0.001 mm
4	0.5 mm	8	0,00122 mm

#### D Supply / signal level

**00** 10-30 V DC / 10-30 V DC

**01** 10-30 V DC / 5 V-TTL

11 5 V DC / 5 V-TTL

## E Measuring length in XXXX mm

e.g. 0220 = 220 mmmax. 1 meter ( 1000 mm )

#### F Connector

X without connector

1 M23 pin terminal 12 Pin

2 M12 pin terminal 8 Pin

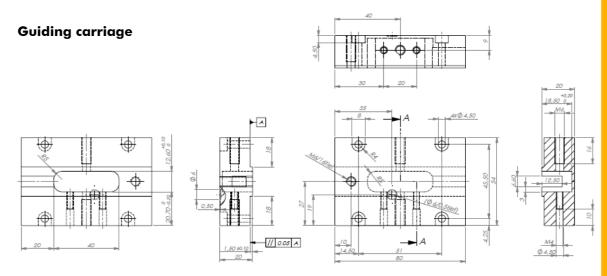
3 D-SUB 9 Pin

#### Example:

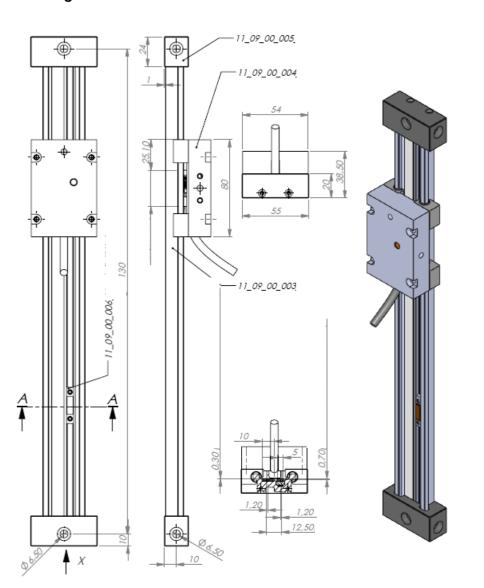
GSI2 ELGO standard, signal cable length of 1.5 m, 0.005 mm resolution, a supply of 5 VDC push/pull, 5 VDC signal levels, a measuring length of 220 mm and M12 pin terminal.

Your order:

#### **Mechanical drawing:**



#### **Guiding rail**



Document No.: 799000663

Document Name: GSI2-00-FL\_E\_50-24

Subject to change and errors - © 2024

ELGO Electronic GmbH & Co. KG

## ELGO Electronic GmbH & Co. KG Measuring | Positioning | Control Carl - Benz - Str. 1, D-78239 Rielasingen

Carl - Benz - Str. 1, D-78239 Rielasingen Fon:+49 (0) 7731 9339-0, Fox:+49 (0) 7731 28803 Internet: www.elgo.de, Mail: info@elgo.de

