

Series GS12



Guided magnetic Incremental Length Measuring System suitable for Press Brakes

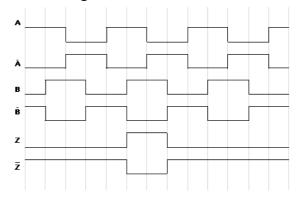
GS12 Guided Magnetic Incremental – Length measuring system

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	violette
Channel B	yellow
Channel B inverted	orange
Channel Z	black
Channel Z inverted	grey





Mechanical data			
Measuring principle	Incremental		
Repeating accuracy	+/- 1 Incremental		
,	(depending on order)		
System accuracy in μ m at 20 °C	+/- $(25 + 20 \times L)$ L = effective measuring length in meter		
Sensor distance to magnetic tape	designed by guide carriage		
Pole length	5 mm (>0.001 mm resolution) 2 mm (0.001 mm resolution)		
Housing material	steel		
Sensor housing size (guide carriage)	L x W x H = 80 x 55 x 33 mm		
Necessary magnetic tape	MB20-50-10-1-R (>0.001 mm resolution) MB20-20-10-1-R (0.001 mm resolution)		
Measuring length	max. 1 Meter		
Cable connection	open cable ends (optionally with connector)		
Weight	ca. 620 g at 330 mm measuring length		
Ambient Temperature			
Stock temperature	-25 +85 °C		
Operation temperature	-10 +70 °C (-25 +85 °C) on request		
Protection class	IP54 (Sensor head)		
Electrical Data			
Power supply	10 30 VDC / 5 VDC, stabilized		
Ripple	10 - 30 V $<$ 10% +/- (5 V +/- 25 mV)		
Current consumption	1030 VDC: max. 50 mA 5 VDC: max. 100 mA		
Output signals	A/B 90° shifted +/- 20%		
Output level	HTL 10 30 VDC Push/Pull or 5 V-TTL line driver		
Resolution (4 edge triggering)	up to 0.001 mm (regarding reference code)		
Reference pulse	Position is adjustable		
Output current	max. 20 mA per channel		
Max. operating Speed	4 m/s at 0.1 mm resolution		
Sensor cable	1.5 m standard (others on request) drag chain suitable		

Order reference:

For orders, please use the following order code:

A SN-number

00 ELGO Standard

01 First special version

O2 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

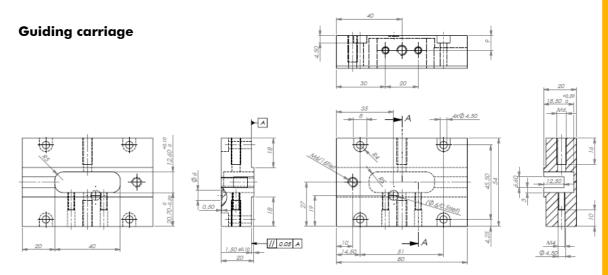
3 D-SUB 9 Pin

Example:

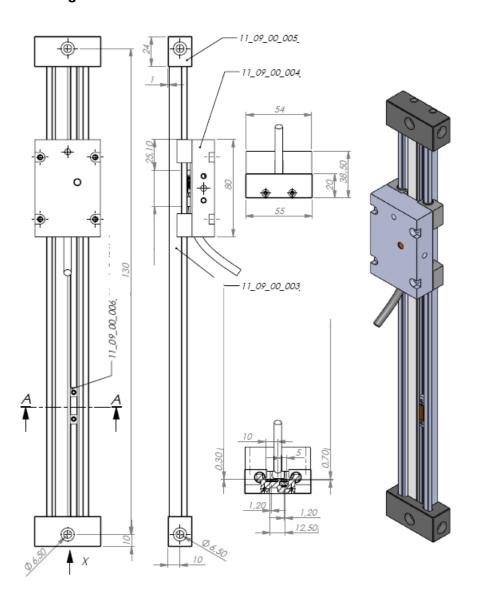
GSI2 ELGO standard, signal cable length of 1.5 m, 0.005 mm resolution, a supply of 5 VDC push/pull, 5 VDC signal levels, a measuring length of 220 mm and M12 pin terminal.

Your order:

Mechanical drawing:



Guiding rail



Document No.: 799000663

Document Name: GSI2-00-FL_E_27-16

Subject to modifications - © 2016

ELGO Electronic GmbH & Co. KG

ELGO Electronic GmbH & Co. KG
Measure - Control - Position
Carl - Benz - Str. 1, D-78239 Rielasingen

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

