

## Accessories

### ADAPTER: PD-U-ENC

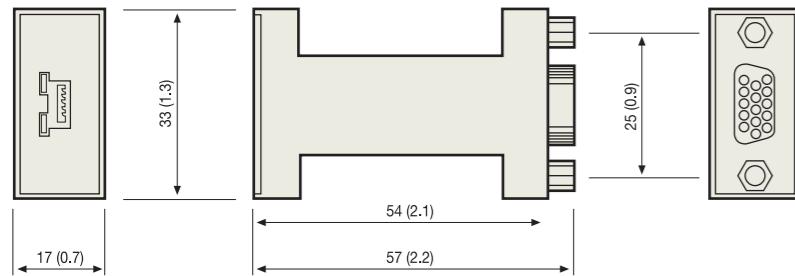
- For communication between PC and the programmable encoders.
- For configuring the position of the reference marks, travel limits and the resolution of the programmable encoders.
- For analyzing the quality of the encoder signal, its running status and characteristics.

Note: The PD-U-ENC is supplied with:

- 1 x CD ROM that contains the operating software and drives.
- 1 x USB cable to connect the PD-U-ENC to the PC.



#### Dimensions in mm (inches)



PD-U-ENC

## Connection cables

### CA-ENC-DRO CABLE

to connect the Innova DRO to the PD-U-ENC adapter



CA-ENC-DRO

### EC-B-D CABLE

to connect the programmable encoder to the PD-U-ENC adapter



EC-B-D

### USB CABLE

to connect the PC to the PD-U-ENC adapter



USB

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Distributed by:

**Fagor Automation S.Coop.**  
B° San Andrés, 19, Apdo. 144  
E-20500 Arrasate-Mondragón, Spain  
Tel. 34-943 71 92 00 / 34-943 03 98 00  
Fax 34-943 79 17 12  
[www.fagorautomation.com](http://www.fagorautomation.com)  
E-mail: [info@fagorautomation.es](mailto:info@fagorautomation.es)



**Fagor Automation, Catalunya, Spain**  
Tel. 34-93 474 43 75 - Fax 34-93 474 43 27

**Fagor Automation GmbH, Germany**  
Tel. 49-7161156850 - Fax 49-71611568579

**Fagor Italia S.R.L., Italy**  
Tel. 39-0295301290 - Fax 39-0295301298

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**Beijing Fagor Automation Equipment Co. Ltd. Office and Service Centre, China**  
Tel. 86-10-84505858 - Fax 86-10-84505860

**Beijing Fagor Automation Equipment Co. Ltd. Nanjing Office., China**  
Tel. 86-25-83328259 - Fax: 86-25-83328260

**Beijing Fagor Automation Equipment Co. Ltd. Guangzhou Rep. Office., China**  
Tel. 86-20-86553124 - Fax: 86-20-86553125

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Tel. 86-28-66132081 - Fax: 86-28-66132082

**Fagor Automation Korea, Ltd., Korea**  
Tel. 82-2-21130341/2 - Fax 82-2-21130343

**Fagor Automation do Brasil Com.Imp.Exp.Ltda., Brazil**  
Tel. 55-11-56940822 - Fax 55-11-56816271

**Fagor Automation Corp., USA**  
Tel. 1-847-9811500 - Fax 1-847-9811311

**Fagor Automation West Coast, USA**  
Tel. 1-714-9579885 - Fax 1-714-9579891

**Fagor Automation East Coast (New Jersey-USA)**  
Tel. 1-973-7733525 - Fax 1-973-7733526

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Worldwide reliability

705 ENC PROG - EN A.G. Elkar D.L. BI-1188-07



# Fagor programmable linear encoders

We keep on creating and innovating with customizable solutions

- Encoders that may be programmed at a PC using FAGOR's «EasyPro» program, extremely easy to use.
- Programming of
  - Up to 5 reference marks (I<sub>o</sub>)
  - 2 travel limits.
  - Feedback resolutions of 5µm, 1µm & 0.5µm





## SUD / SVUD series

The programmable linear encoder may be customized as required by the application and is based on the technology of the absolute linear encoder.

With this encoder, it is possible to program the feedback resolution, the position of the reference marks and that of the travel limits before and during the installation on the machine.

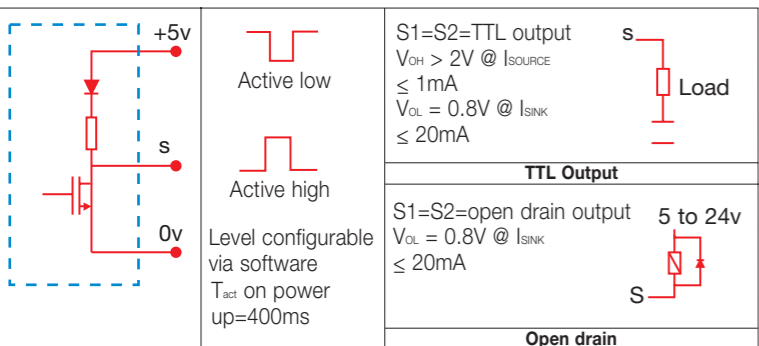
This represents a huge advantage over other manufacturers because a single encoder may be used in many different ways.

### SPECIFICATIONS SUD/SVUD

Measurement	By means of a 20 µm-pitch chromed glass.
Thermal expansion coefficient	$\alpha_{\text{therm}} = 8 \text{ ppm/K}$
Accuracy	$\pm 5 \text{ µm}$ ( $\pm 0.0002''$ ) $\pm 3 \text{ µm}$ ( $\pm 0.00012''$ )
Maximum feedrate	120 m/min. (396 feet/min.)
Maximum vibration	< 10g without mounting plate (SUD) < 20g with mounting plate (SVUD)
Moving thrust	< 5N
Working temperature	0°...50°C
Storage temperature	-20°...70°C
Weight	S: 0.25 Kg + 0.5 Kg/m SV: 0.25 Kg + 1.55 Kg/m
Relative humidity	20...80%
Protection	IP 53 (standard) IP 64 (DIN 40050) using pressurized air in linear encoders
Slippage	Using roller bearings in the cursor
Supply voltage	5V $\pm$ 5%, 200 mA
Reader head	With built-in connector
Measuring resolution (programmable)	5µm, 1µm ó 0,5µm
Incremental output signals	Differential TTL
Reference marks (programmable)	Up to 5 locations
Travel limits (programmable)	2, on location and high/low state (1/0)
Signal period	20 µm, 4 µm, 2 µm
Limit frequency (Para las siguientes resoluciones)	100 kHz para 5 µm / 500 kHz para 1 µm / 1 MHz para 0.5 µm
Maximum cable length	50 m (163 feet)
USB connection	for programming and analysis (PD-U-ENC adapter needed)

## Electrical signals

### LIMIT SWITCH OUTPUTS



### VERY EASY TO PROGRAM

It is very easily programmed using the «EasyPro» program that offers a graphic interface making it possible to enter the position of the reference marks and travel limits by simply writing the position or by moving the reader head to the desired position and saving the position. The signal resolution is selected on the PC screen.

### MEASURING LENGTH: SUD / SVUD SERIE

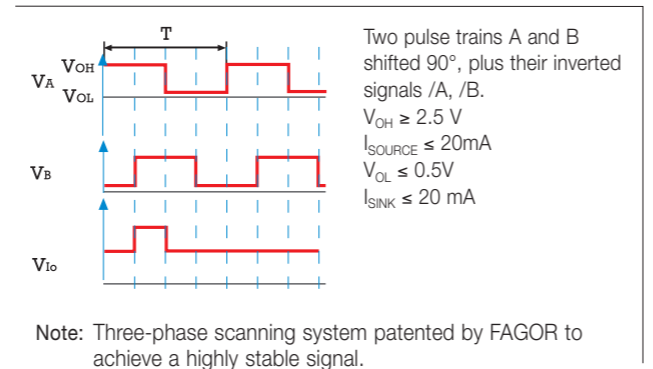
mm	inches	mm	inches	mm	inches
70	2,7	520	20,5	1240	48
120	4,7	570	22,4	1340	52
170	6,7	620	24,4	1440	56
220	8,6	720	28	1540	60
270	10,6	770	30	1640	64
320	12,6	820	32	1740	68
370	14,5	920	36	1840	72
420	16,5	1020	40	2040	80
470	18,5	1140	44		

- Recommended with mounting plate (SVUD)
- These measuring lengths require a mounting support plate. (SVUD)

### ORDER IDENTIFICATION EXAMPLE: SVUD - 720 - 5 - B - A

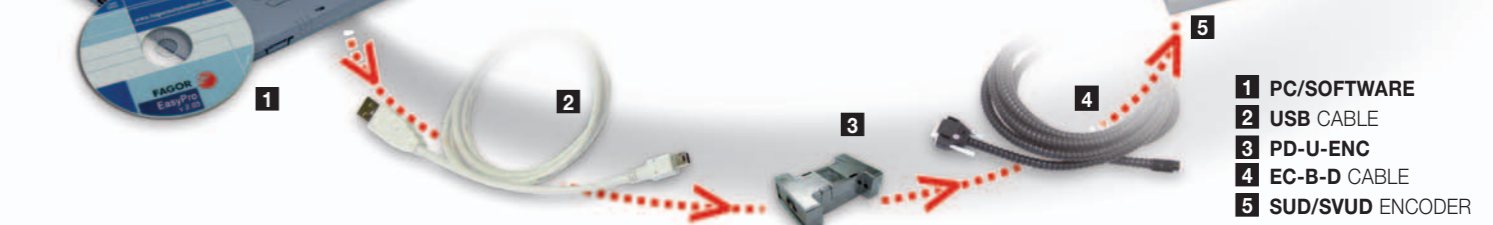
- SV** Type of profile: For limited space
  - S: Standard mounting for vibration up to 10 g
  - SV: Special mounting for vibration up to 20 g
- U** Programmable encoder
- 720** Measuring length in mm  
In the example (720) = 720 mm (28 inches)
- 5** Accuracy
  - 5:  $\pm 5 \text{ µm}$  ( $\pm 0.0002 \text{ inch}$ )
  - 3:  $\pm 3 \text{ µm}$  ( $\pm 0.00012 \text{ inch}$ )
- B** Linear encoder with or without mounting support
  - Blank space: Without support. Vibration up to 10 g
  - B: with support for vibration up to 20 g
- A**
  - Blank space: Without air inlet on the reader head
  - A: With air inlet on the reader head

### TTL SIGNAL CHARACTERISTICS

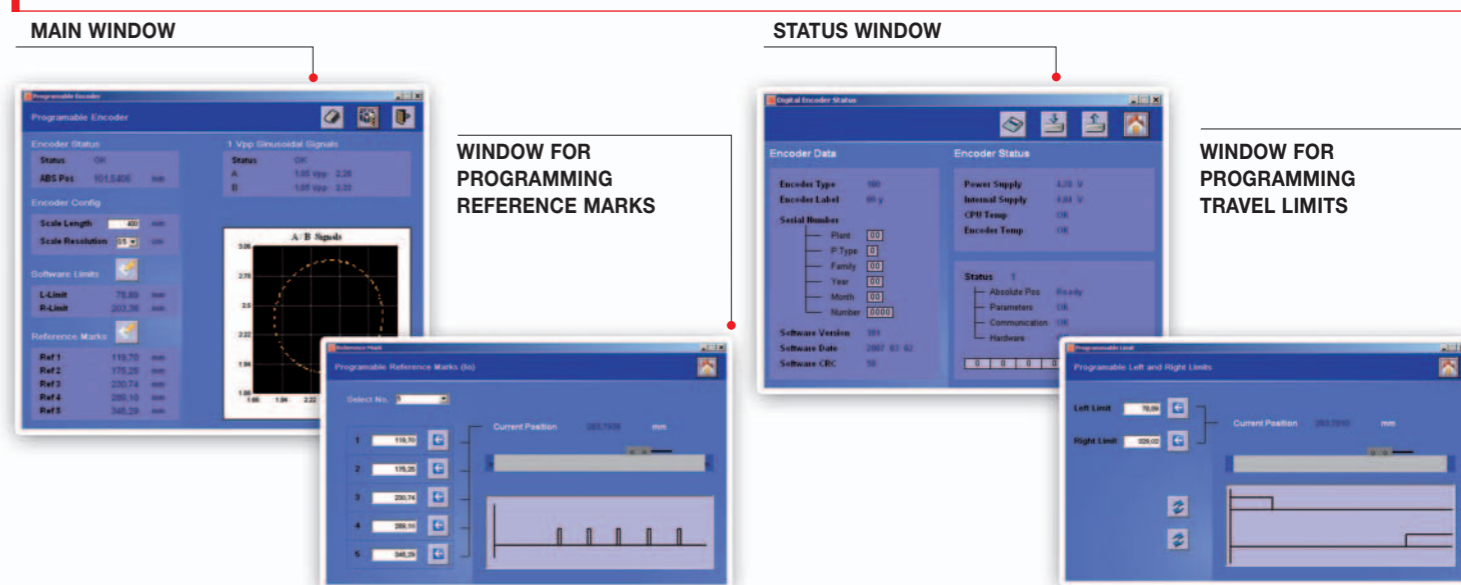


## PC connection diagram

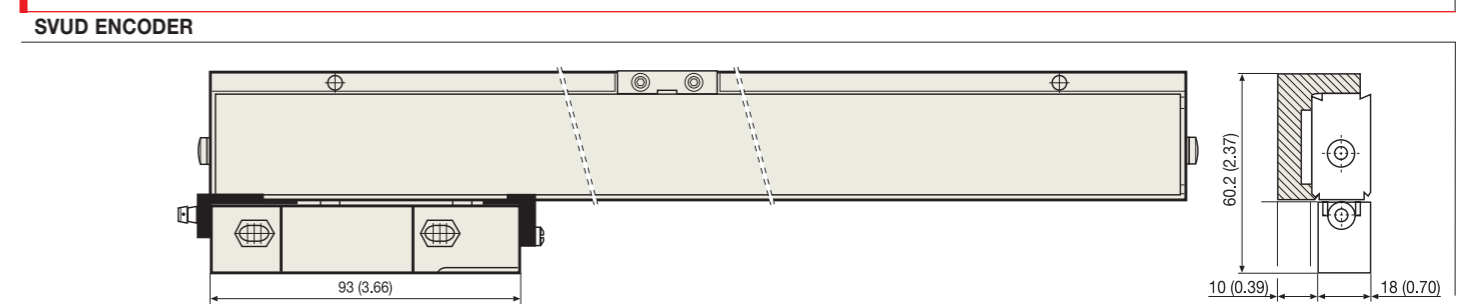
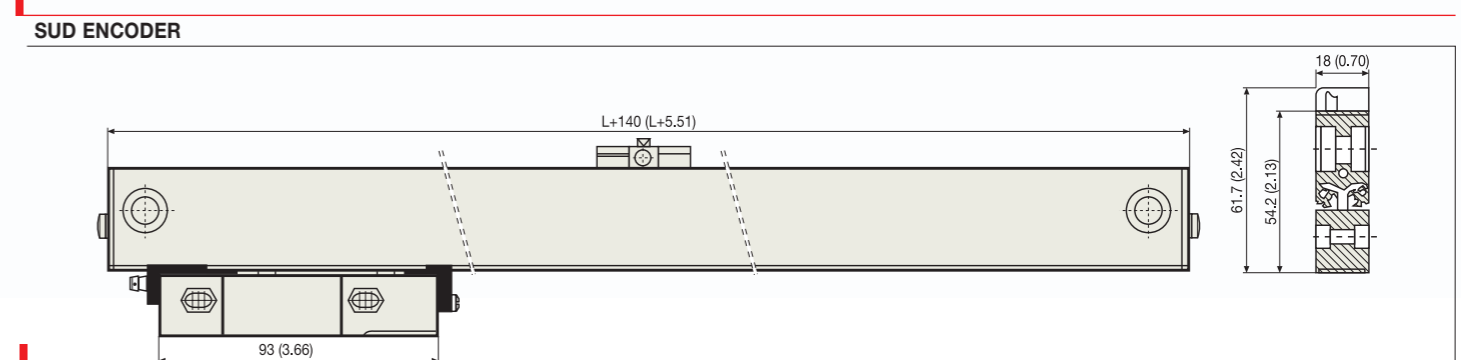
- Data that may be configured in the programmable linear encoders: resolution, reference signals and travel limits.
- Encoder data monitoring: Type, label, serial number, version, etc.
- Encoder status monitoring: Power supply, internal power supply, CPU-encoder, temperature.
- Operating system: Windows 2000, Windows XP and Windows Vista.



## Windows for programming assistance



## Dimensions in mm (inches)



• With TDMS (thermal mounting system) defined to minimized the errors caused by temperature changes (at the SVUD encoder).