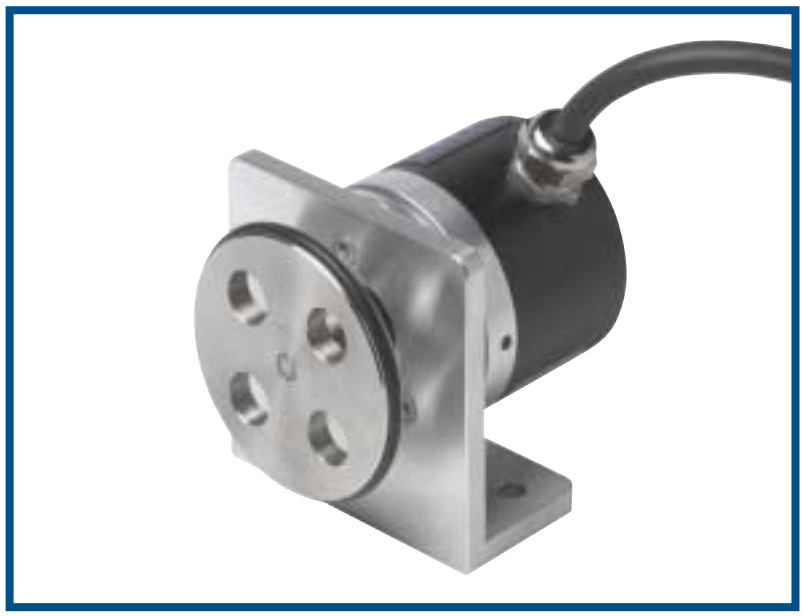
Product focus



Shaft encoders for Linx printers

Production lines are typified by intermittent stop-starts and variable speeds. Linx ink jet printers that code and mark the products moving along these lines can automatically compensate for this variability and ensure consistently high print quality and correct print position on the products. Shaft encoders installed on the production line and linked to the printers are a straightforward way of achieving this.

With their industrial bearings, shielded bodies, screened cables, and IP65 seals, Linx shaft encoders are rugged and designed to withstand the demands of harsh production environments. They are compatible with the complete range of Linx ink jet printers and will accommodate most applications.

Whatever the production line speed, there is a suitable Linx encoder. A comprehensive selection of wheels and couplings enables the printer to take a direct measure from the conveyor, product or a convenient drive shaft.

Reliable and robust encoders – low maintenance and long life

Tested with Linx printers – meet E.U. and U.S. EMC standards

Fitted connectors – ready to install

Comprehensive range of wheels to achieve desired print width

Mounting accessories for convenient installation

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Technical data

	Single channel, incremental shaft encoders	Width Adjuster Unit	Splitter box
Function	Eliminate print stretch and shrink with line speed variations	Gives fine adjustment of message position and length by multiplying shaft encoder pulses	Enables up to 4 printers to be driven by one shaft encoder and/or product sensor
Physical characteristics			
Dimensions (mm)	58 dia x 60 long, with shaft 6.0 dia x 24.6 long. Cable entry is radial	139 x 94 x 55	150 x 100 x 45
Weight (kg)	0.3	0.6	0.5
Material	Aluminium housing with stainless steel shaft	Painted diecast zinc alloy	Painted diecast zinc alloy
Environmental protection rating	IP67	IP65	IP41
Ambient temperature range (operational)	0°C to 45°C	5°C to 45°C	5°C to 45°C
Ambient humidity range (operational)	0% RH to 90% RH (non-condensing)		
Mounting options	3-off Mounting holes, M4 on 42 mm PCD. Linx offers a range of brackets and wheels suitable for most applications. Screws are supplied with the encoder	Box has mounting flanges with 4-off M5 clearance holes	Box has mounting flanges with 4-off M5 clearance holes
Power supply	5V ±5% supplied by the Linx printer	Powered by the printer	Powered by the printer
Current consumption	180 mA (max)	50 mA (max)	10 mA (max)
Performance			
Input frequency	N/A	Shaft encoder pulses in the range 520 Hz to 17.1 kHz	N/A
Speed of response	N/A	Speed ramping limited by internal filter – not suitable for rapidly indexing lines	N/A
Linearity	N/A	Better than 2% over the top ¾ of the speed range (assumes 1:1 mark:space ratio input)	N/A
Maximum output frequency	>80 kHz maximum input frequency of Linx printers	N/A	N/A
Output drive	5V line driver to suit Linx printer inputs. 40 mA drive current for up to 4 printer inputs	Sufficient for 1 Linx printer input	Linx sensors and encoders are selected to drive up to 4 printer inputs via the Splitter box
Controls and indicators	N/A	Input scaling procedure at set-up uses rotary switch and LED indicators internal to unit. Width adjustment during normal running is by screwdriver adjustment via external access plug	Indication of next object input by LED on the top face of the unit
Compatibility with Linx printers	Compatible with all Linx 4000, 4200, 4800, 6000 and 6200 series printers – refer to page 2 for relevant part numbers	Compatible with all Linx 4000, 4200, 4800, 6000 and 6200 series printers – refer to page 3 for relevant part numbers	Compatible with all Linx 4000, 4200, 4800, 6000 and 6200 series printers
Connections			
Input	N/A	Single input for a Linx shaft encoder fitted with 9-way D-type plug	Two 9-way D-type inputs for Linx NPN sensors (next object and auxiliary types) and/or Linx shaft encoder
Output	Fully screened 5 m cable, terminated as follows: FA61088, FA61090, FA61092: 9-way IP67 D-type plug FA61089, FA61091, FA61093: 10-way MIL-style plug	One 2 m long output cable terminated as follows: FA63021: 9-way IP67 D-type plug FA63022: 10-way MIL-style plug	Four 2 m long output cables terminated with a 9-way D-type plug
Regulatory compliance only for operation in combination with a Linx 4800, 6200R or 6200S printer			
Electro-magnetic compatibility	EMC Directive 89/336/EEC as amended by 92/31/EEC European EMC Standards EN50081-1:1992 EMC Emissions and EN50082-1: 1997 EMC Immunity		
Safety	Low Voltage Directive 73/23/EEC European Safety Standard EN60204: 1997 Electrical Safety – Machinery		

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MP42042

Shaft encoders

A printer working in conjunction with an encoder gives a constant print width regardless of line speed. This is because the shaft encoder feeds signals from the line to the printer to control the rate at which a message is printed. Three models with different pulse configurations are available to cater for different applications.

Applications	Encoder output	Linx 6000S and 6200S	All other printers
High speed, coarser pitch adjustment	2 500 p.p.r.	FA61089	FA61088
Medium speed, medium pitch adjustment	5 000 p.p.r.	FA61091	FA61090
Lower speed, fine pitch adjustment	10 000 p.p.r.	FA61093	FA61092

Measuring wheels

A wheel is required where the shaft encoder cannot be mounted directly onto a production line drive shaft. Wheels are mounted on the spindle of the shaft encoder and need to make good contact with either the production line conveyor or the product itself (e.g. continuous products such as cables, wires and extrusions).

We offer a choice of materials and sizes to suit a wide variety of substrates and line speeds. All Linx wheels and shaft encoders are compatible.

Tyre material		Rubber	Polyurethane	Fluted Hytrel	Knurled Aluminium
					
Applications		A soft rubber tyre which is ideal for smooth surfaces that may mark easily. Also suitable for wet surfaces. A slim profile makes it ideal for applications where the measuring track is narrow.	For use with smooth materials, e.g. soft paper, matting, cardboard, fine weave textiles, metals. The broad tread width minimises contact pressure and marking.	A multi-purpose hard-wearing wheel, which is ideal for direct contact with conveyors and other substrates which are unlikely to be dented.	Ideal for use with rubber, coarse-weave textiles, wood and foam. Not suitable for softer substrates, which may mark.
Wheel circumference	50 mm	BP910030 or BP910046	–	–	–
	200 mm	BP910023	BP910024	BP910006	BP910025
	304.8 mm (1 ft)	BP910027	BP910028	–	BP910029
	333 mm	BP910043	BP910044	–	BP910045
	500 mm	BP910020	BP910021	BP910042	–

Selection

Selecting the right shaft encoder, drive or wheel and printer settings for the application is critical to ensure a reliable installation. Linx is able to help with this process.

Mounting brackets and couplings

Shaft encoders can be mounted to be driven by a convenient drive shaft, the conveyor, or the product itself (if continuous). Linx offers a choice of brackets to make installation as convenient and robust as possible.

Flat, bendable bracket MP61042

Designed for installing an encoder into a tight spot, this bracket can be adjusted on site by bending it to fit the application. If a stiffer bracket is required, two can be used together.
Dimensions (mm): 110 high x 60.75 wide x 1.2 thick.

L-shaped flange MP61043

This bracket holds the encoder securely at a right angle to the production line mounting surface.
Dimensions (mm): 76.2 high x 75 wide x 38.1 deep.

Bell housing BP910034

A neat way of mounting the encoder onto the ends of shafts using the Oldham coupling. The housing holds the encoder rigidly and protects the coupling from damage and contamination.
Dimensions (mm): 82.5 dia x 38.4 high.

Spring coupling BP910040

Good general-purpose aluminium coupling, allowing for shaft misalignment.
Dimensions (mm): 16 dia x 35 long.

Spring coupling BP910039

Good general-purpose coupling. Made of stainless steel, it is ideal for hygiene-critical applications.
Dimensions (mm): 16 dia x 25.4 long.

Oldham coupling BP910041

A short coupling for mounting on the ends of shafts, especially with the Bell housing.
Dimensions (mm): 19 dia x 26 long.

Shaft encoder accessories

Width Adjuster Unit

This accessory is the simplest solution for ensuring exact message position and length when printing onto a limited space on a product if the line speed is variable. The Width Adjuster Unit is connected between the Linx printer and the shaft encoder to process the shaft encoder signal. It is compatible with all Linx encoders, but not appropriate for all applications; Linx will be pleased to advise on the limits for high speed lines, indexing lines and cable marking.

Width Adjuster Unit option	Linx 6000S and 6200S	All other printers
Width Adjuster Unit only	FA63022	FA63021
Width Adjuster Unit and 2 500 p.p.r. shaft encoder	FA63024	FA63023

Splitter box FA63012

The Splitter box allows the output from one shaft encoder (and one product sensor) to interface with up to four printers. Accepts any Linx encoder fitted with a D-type connector.