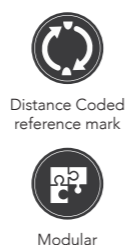
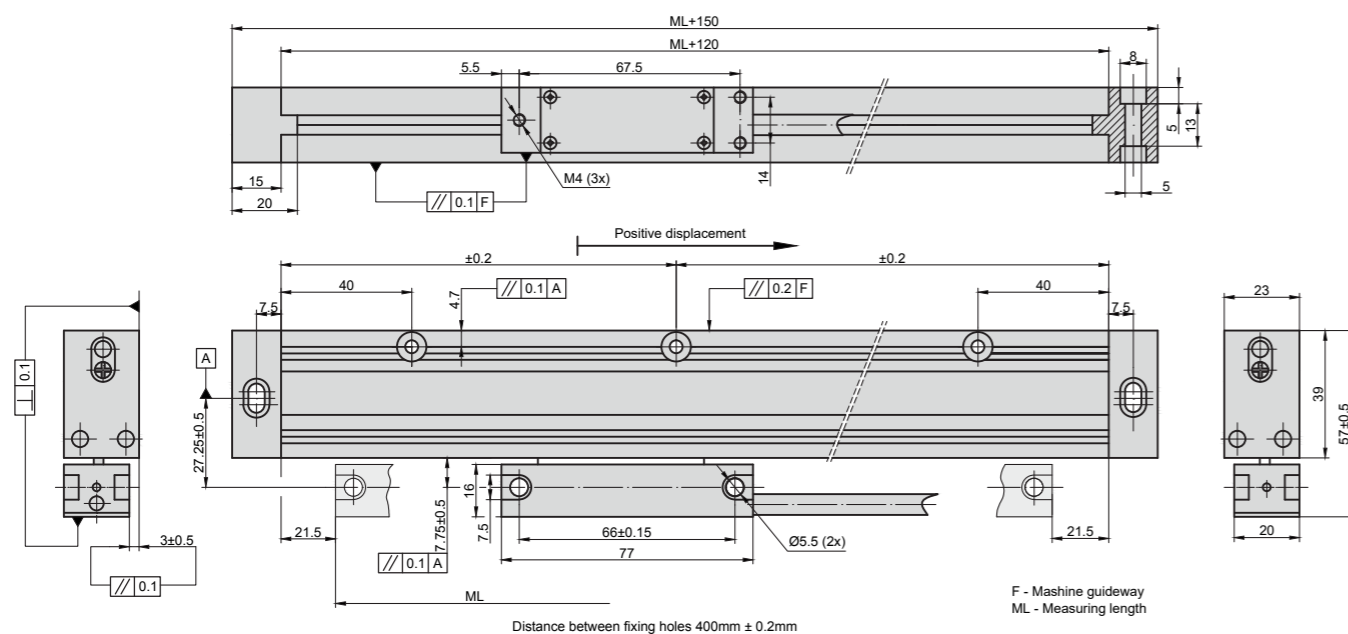


# L23

## PHOTOELECTRIC LINEAR ENCODER



Photoelectric modular linear encoder L23 can have up to 20.000 mm measuring length or even more on special order and is able reach up to  $\pm 3 \mu\text{m}$  accuracy.



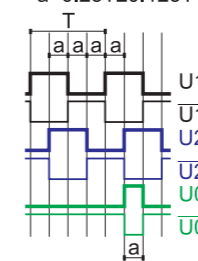
### MECHANICAL DATA

Measuring lengths (ML), mm	250, 300, 350, 400, 450, 500...20000 (more on option)	Reference marks (RI): - N - M - P (optional)	without reference mark every 50 mm RI number and place
Accuracy grades to any metre within the ML (at 20°C)	$\pm 10; \pm 5; \pm 3 \mu\text{m}$	Required moving force	< 4 N
Grating period (T)	400; 40; 20 $\mu\text{m}$	Protection (IEC 529) -without compressed air -with compressed air	IP54 IP64
Max. traversing speed: - when T=400 $\mu\text{m}$ and resolution 100, 50, 10 $\mu\text{m}$ - when T=40 $\mu\text{m}$ and: - resolution 10, 5 $\mu\text{m}$ - resolution 1 $\mu\text{m}$ - when T=20 $\mu\text{m}$ and: - resolution 5 $\mu\text{m}$ - resolution 0,5 $\mu\text{m}$	2 m/s 1,3 m/s 0,4 m/s 1 m/s 0,2 m/s	Weight	0.4 kg + 2.8 kg/m
		Operating temperature	0...+50°C
		Storage temperature	-20...+70°C
		Permissible vibration (10...2000 Hz)	$\leq 100 \text{ m/s}^2$
		Permissible shock (11 ms)	$\leq 150 \text{ m/s}^2$
		Coefficient of thermal expansion	$10.6 \times 10^{-6} \text{ } ^\circ\text{C}$

### ELECTRICAL DATA

VERSION	L23-F TTL
Supply voltage ( $U_p$ )	+5V $\pm 5\%$ / 65 mA; +12V $\pm 5\%$ / 65mA
Light source	LED
Resolution	100, 50; 10; 5; 1; 0.5 $\mu\text{m}$ (after 4-fold in subsequent electronics)
Incremental signals	Differential square-wave U1/U1 and U2/U2
Reference signal	Differential square-wave U0/U0
Signal levels at load current 20 mA:	- low (logic "0") < 0.5 V at $U_p=+5\text{V}$ - high (logic "1") > 2.4 V at $U_p=+5\text{V}$ - low (logic "0") < 1.5 V at $U_p=+12\text{V}$ (HTL) - high (logic "1") > ( $U_p-2$ ) V at $U_p=+12\text{V}$ (HTL)
Direction of signals	U2 lags U1 (displacement from left to right and head position down)
Standard cable length	4 m armoured, without connector
Maximum cable length	25 m

$$a = 0.25T \pm 0.125T$$



Note: If cable extension is used the power supply conductor section should not be smaller than 0.5 mm<sup>2</sup>.

### ACCESSORIES

CONNECTORS FOR CABLE	B12 12-pin round connector	C9 9-pin round connector	C12 12-pin round connector	D9 9-pin flat connector	D15 15-pin flat connector	RS10 10-pin round connector	ONC 10-pin round connector
DIGITAL READOUT DEVICES	CS3000			CS5500			

### ORDER FORM

RESOLUTION:	MEASURING LENGTH:	REFERENCE MARKS:	ACCURACY:	SUPPLY VOLTAGE:	CABLE LENGTH:	CONNECTOR TYPE:
F05 - TTL 0,5 $\mu\text{m}$ F10 - TTL 1 $\mu\text{m}$ F50 - TTL 5 $\mu\text{m}$ F100 - TTL 10 $\mu\text{m}$ F500 - TTL 50 $\mu\text{m}$ F1000 - TTL 100 $\mu\text{m}$	0250 - 250mm 0500 - 500mm ... 20000 - 20000mm ... - (on request)	N - none RI M - every 50mm P - RI number and place on option	10 - $\pm 10 \mu\text{m}$ 05 - $\pm 5 \mu\text{m}$ 03 - $\pm 3 \mu\text{m}$	05V - +5V 12V - +12V	01 - 1m armoured 02 - 2m armoured 03 - 3m armoured ...	W - without connector B12 - round, 12 pins C9 - round, 9 pins C12 - round, 12 pins D9 - flat, 9 pins D15 - flat, 15 pins RS10 - round, 10 pins ONC - round, 10 pins
ORDER EXAMPLE:	1) L23-F100-16000-N-10-05V-04/C12					