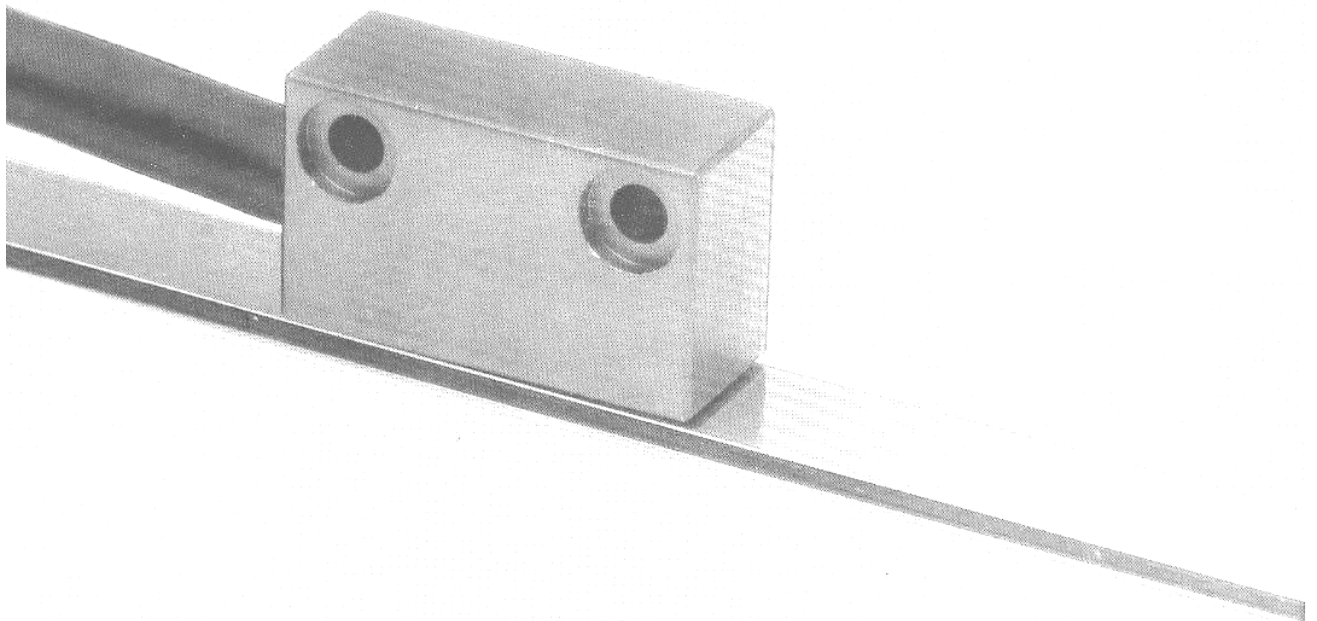


## MX17 series

Magnetic  
Length Measuring  
System



## Magnetic Length Measuring System, Series MX 17

### Essential Features

A flexible tape is precisely calibrated with north and south poles. These divisions are picked up by a Sensor. The space between poles on the tape provides an analogue sinusoidal voltage output for the sensor.

### High Accuracy

With a maximum cumulative error of 0,02 mm/m and resolution of 0,1 mm this measuring system can achieve a longer length (up to 25 m) with better accuracy. Backlash, slip, screw pitch, gear-box or other mechanical errors are eliminated with this direct measurement system.

### Simple Mounting

The tape is simple to attach to the machine (eg by means of double sided sticky tape). Due to its high flexibility it can cope with uneven surfaces or radii without affecting accuracy. A second steel tape is fitted on top of the magnetic tape, to protect it. The equipment will operate satisfactorily with a measuring gap of 0,1 to 2,5 mm.

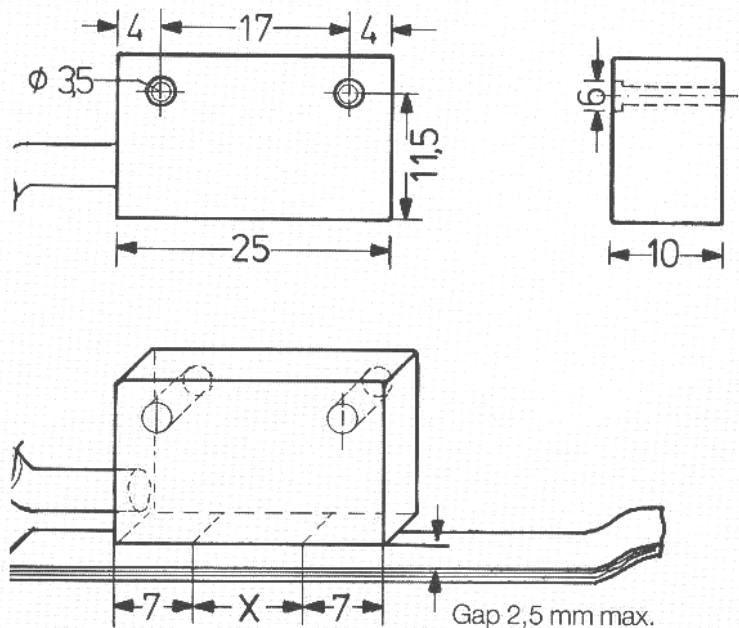
### High Environmental Protection Class

The magnetic measuring system offers the greatest protection against hostile environments. Sensor and tape are protected to IP66.

## Sensor MS 17.60

The Sensing Head provides the signal from which the pulse output is created by the electronic system.

### Dimensions:



Over the distance X, the gap between sensor and measuring tape must fall between 0,1 and 2,5 mm.

### Sensor Cable Length – signal processing

Since the resistance of the cable has an influence on the signal, the sensor is supplied in standard length 3,0 m.

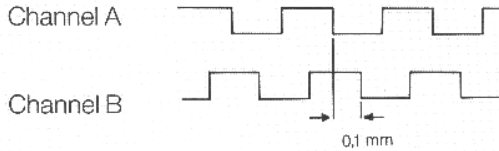
Other lengths are available on request (30 m max.)

This comprises a 6 core flexible cable with screen, with D connector fitted.

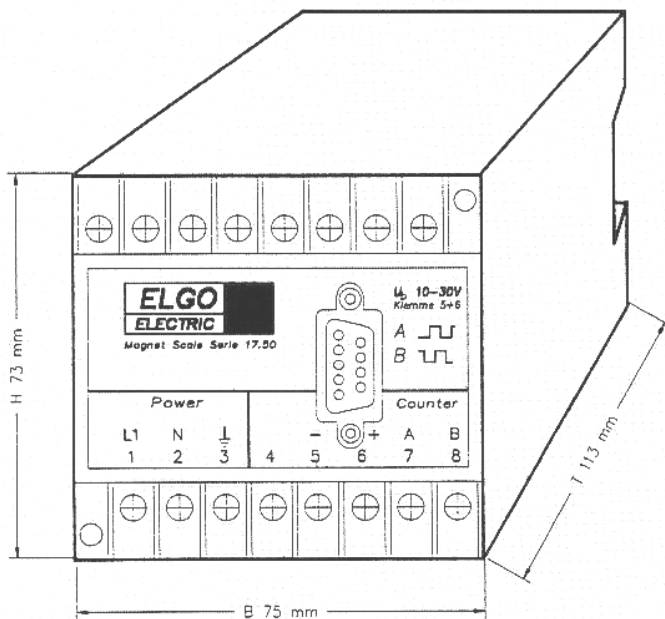
### Pulse Conditioning Module MC 17.50

To satisfy the broadest range applications, the electronic control module is supplied as a separate item.

#### Output Signals:



Resolution of 0,1 mm is achieved by counting all 4 edges of the output.



#### Connection plan:

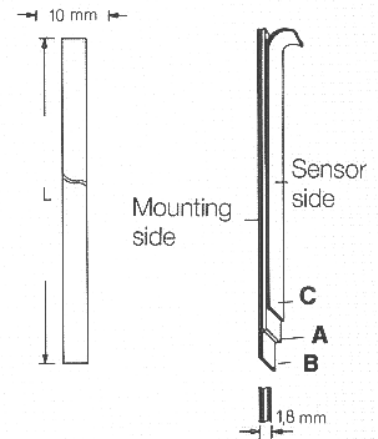
Terminal	Function		
1	L1		
2	N	Line input 220 V 50 Hz	
3	E		
4	E		
5	OV	Zero Voltage	
6	10 to 30 V*	Power supply	"Encoder" Output
7	A	Channel A	
8	B	Channel B	

The Sensor Cable uses the D connector.

\*can also be delivered as 5 VTTL option.

### Magnetic Tape MB 17.40

The complete tape comprises 3 components.



Can be supplied in lengths from 0,5 to 25 m.

- A. The magnetised highly flexible tape, whose underside is bonded to:
- B. A ferrous flexible steel tape. This tape shields the rubber tape from mechanical damage and at the same time forms the magnetic path. This provides security against external magnetic influences. A and B are supplied factory bonded.
- C. To enable the above tape to be flexible for transport and mounting, the third steel tape (nonferrous) is supplied separately. This is used to protect the magnetic tape from mechanical damage and is fitted over the tape.



## Technical Data

### Sensor

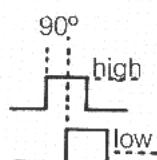
Maximum operating speed: 100 KHz  
= 300m/min  
Cable Length: 3 m (other on request)  
Operating Temperature: -5 degrees to + 45 degrees  
Protection: IP 66  
Mounting attitude: any

### Electronic Conditioning Module

Mains input: 220 V 50 Hz  
Output voltage: 10 – 30 V DC – MC 17.50  
5 V DC – MC 17.51

Power consumption: 5 VA

Output:  
2 x 90 degrees phased square wave signals suitable for position indicators and controllers.



Resolution: 0,4 mm per pulses  
(0,1 mm with 4 times multiplier in counter)

Protection: IPOO  
Dimensions: Width 75mm  
Height 73mm  
Depth 113mm  
Mounting: In any attitude, on DIN rail.

### Magnetic Tape

This comprises magnetic material bonded to ferrous tape. A stainless steel protection tape is supplied loose.

It can be supplied in lengths from 0,5 to 25 m rolled up.

Accuracy: 0,02 mm/m

Temperature coefficient: 0.000011 mm/°C  
Operating temperature: -5°C to +45°C  
Mounting attitude: any

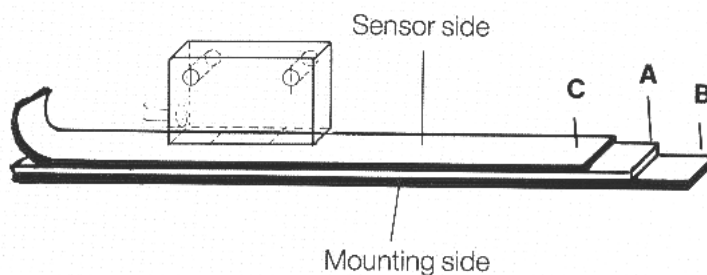
## Hints on mounting of the Tape

Use double sided sticky tape (or other adhesive).

It is important that the base tape B with the bonded rubber tape A is firmly fixed to the machine bed.

The separately delivered tape C is only for mechanical protection of the rubber tape and not necessary for measurement purposes.

The Sensor operates with a gap of 0,1 to 2,5 mm from the Tape C. The tape can be mounted at any angle.



## Additional Equipment

The following Elgo controllers and indicators can be connected directly to the Magnetic measuring system.

### Position Indicator

- Series 30** 6 digit with memory  
10 mm red LED
- Series 52** 6 digit with preset function  
10 mm red LED
- Series 55** Indicator with selection of absolute/incremental and inch/metric.

### Position Controller

- Series 71 P** Single axis controller  
Fast/slow/stop positioning
- Series 85 P** Single axis controller with larger keypad
- Series 87 P** Programmable axis controller
- Series 88 P** Simple 2 axis single dimension controller
- Series 98 P** 2 axis programmable controller

### Ordering Code:

**Sensor** S 17.60 + length of cable required, in m.  
(3 m standard, 30 m max.)

**Electronic conditioning module:** MC 17.50 (or MC 17.51)

**Magnetic Tape:** MB 17.40 + length of tape required, in m  
(max. 25 m)  
Aluminium cover available in 2 m lengths

## Liability exclusion / Guarantee

We have checked the contents of this instruction manual carefully, to the best of our knowledge and belief for conformity with the described hardware and software. Nevertheless errors, mistakes or deviations can not be excluded, therefore we do not guarantee complete conformity. Necessary corrections will be included in the subsequent editions. We appreciate your ideas and improvement suggestions very much.

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Damages verifiably not caused by ELGO Electric GmbH and due to improper handling are excluded from any guarantee e.g. by applying faulty voltage, diffusion of liquid into the interior of the engine, using force, scratching the surface, chemical influences etc.!

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**ELGO - Electric - GmbH**  
**Measure - Control - Position**

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