

DISPLAYS

POSITION INDICATORS

ELGO
ELECTRONIC























MEASURE ► CONTROL ► POSITION



For more than 30 years, **ELGO** has been concentrating on the core competencies „Measure - Control - Position“, which made it well known on the market. Today, **ELGO** produces length measuring systems, position indicators and controls for engineering, storage and logistics, lift systems, medical technologies, and other branches.

Symbols for technical data and their meaning

| Position indicator property | Symbol | Explanation |
|--|---|--|
| Display constitution |   | Monochrome BLACK- or BLUE LCD |
| Connection voltage |    | 1.5 V battery, 3 V battery or 24 VDC supply voltage |
| Incremental measuring system input without index pulse |   | HTL-(single ended) or TTL-signal (coincident) available as option |
| Incremental measuring system input with index pulse |   | HTL-(single ended) or TTL-signal (coincident) available as option |
| Absolute measuring system input (option) |  | Interface for absolute ELGO measuring system (option) |
| Incremental measuring system input |  | Interface for incremental ELGO measuring system |
| Scope of delivery of position indicator |  | Position indicator with incremental sensor |
| Integrated incremental sensor |  | with integrated incremental sensor |
| Type of protection |  | IP 54 when installed |
| Number of axes |   | 1 or 3 axes |
| Interfaces |     | RS232 communication / RS485 communication or 868 MHz radio transmission; dependent on position indicator |

Position indicators

With the age of automation, the requirements on measuring technologies have increased. Never before has it been more important to fulfill the wishes for quality, flexibility, and customized solutions.

Wherever, measured values need to be displayed and read directly on-site, ELGO's position indicators are the first choice. In combination with ELGO's measuring systems, many customized applications can be realized, whether they are power-supplied or completely independent solutions that are battery-powered.

The main advantages of ELGO's position indicators:

- Compact, standardized design
- High clearness of display
- Power-supplied and battery-powered solutions
- Up to 3 axes can be measured and processed
- Extensive display possibilities
- Individual adjustments through parameter options
- Adaptation to various sensor interfaces
- Transfer of the measured data to subordinate control units via serial interface



Contents

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| Power supplied position indicators | | |
| Power-supplied position indicators from ELGO Electronic can be used for one up to three axes. In combination with length measuring systems, encoders or angle measuring systems the position indicators enable a visualization of measuring values for lathes, milling machines, wood-working machines, saws, machining centers, grinding machines, drill machines and more. | Z 25 | 2 |
| | Z 50 | 4 |
| | Z 60 | 6 |
| Battery-powered position indicators | | |
| Battery-supplied position indicators stand out due to their compact configuration. Due to the low installation costs, these systems consisting of a sensor and a position indicator are particularly suited for small machines and retrofitting. | IZ 16 E | 10 |
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| System components | | |
| Our system components complement the position indicators and offer the complete solution for incremental or absolute measurement of distances and angles. Through a combination of position indicators, sensors and magnetic tapes all requirements for modern measuring applications are covered. These measuring systems can easily be connected to superior PCs or programmable controls. | LMIX1 / EMIX1 | 18 |
| | LMIX2 / EMIX2 | 18 |
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| Our proven products for standard applications and replacements will also be available for the next few years. | Z 15 / Z 16 / Z 17 | 22 |
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Z 25

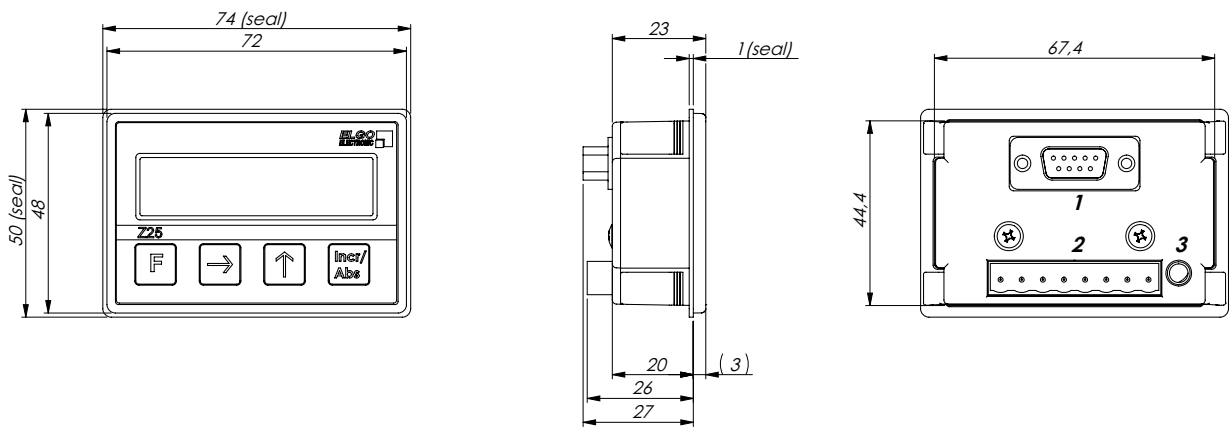
Type: 1 axis miniature position indicator



Features:

- 7-digit LCD Display
- Sign
- Degree display
- Rotation speed indication
- 2 external inputs
- 2 external outputs
- Easy mounting
- Inch-mode with fraction display
- Tool offset function
- Switch-over between incremental and absolute measuring
- Actual value memory
- Adjustable reference value
- Adjustable pulse scaling factor
- Edge triggering
- Operation modes up/down or differential counter





The 1 axis miniature position indicator is ELGO's smallest indicator. In spite of its tiny dimensions, the high-contrast illuminated display guarantees that the actual position that was measured can be read precisely and comfortably.

The indicator can be reset to zero alternatively via the dustproof keypad or via external signals. This further development of our mini position indicator can interpret incremental length measuring systems or rotary encoders, as well as absolute measuring systems.

The mini position indicator can be applied wherever measured data have to be displayed and read on site, e.g. mechanical stop adjustments, length and angle measurements or speed measurement.

| Technical Data | |
|--|--|
| LCD-display | 7-digits with special characters (digit high: 8mm) |
| Perspective | 12 o'clock |
| Power supply | 24 VDC, +/- 20% |
| Power consumption (without measuring system) | max. 30 mA |
| Max. current load | max. 300 mA |
| Operation temperature | 0°... +50° C |
| Storage temperature | - 20°... +80° C |
| Housing | Norm panel housing, plastic |
| Dimensions | W x H x D = 74 x 50 x 23 mm |
| Panel cut out | W x H = 68 x 45 mm |
| Front area protection class (when installed) | IP 54 |

Z50

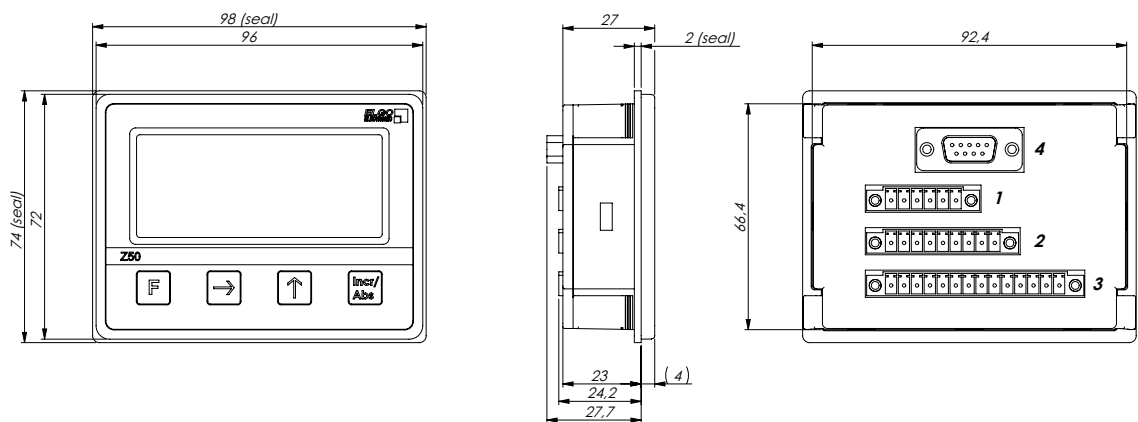
Type: 1 axis universal position indicator



Features:

- 7-digit LCD Display
- Sign
- Degree display
- Rotation speed indication
- 3 external inputs
- 4 external outputs (open drain)
- Easy mounting
- Inch-mode with fraction display
- Tool-offset function
- Switch-over between incremental and absolute measuring
- Actual value memory
- Adjustable reference value
- Adjustable pulse scaling factor
- Adjustable edge triggering
- Operation modes up/down or differential counter





With this 1-axis position indicator, an universally applicable type of indicator was realized. All of ELGO's measuring systems, whether their signal output is incremental or absolute, can be connected to and processed by this indicator.

The standard indicator is equipped with a RS232 interface. The functions and parameter menu is well arranged. It is clearly structured and easy to use.

The versatile universal indicator can be applied wherever length, angle and velocity are measured and displayed. Typical applications for the use in woodworking machines are: parallel guide and back stop in saws, depth measurement in drilling machines and grinding machines.

| Technical Data | |
|--|---|
| LCD-display | 7-digits with special characters (digit high: 14mm) |
| Perspective | 12 o'clock |
| Power supply | 24 VDC, +/- 20% (230 VAC resp. 115 VAC; please use the external power supply pack: ELGO NG13.0) |
| Power consumption (without measuring system) | max. 70 mA |
| Max. current load | max. 300 mA |
| Operation temperature | 0°... +50° C |
| Storage temperature | -20°... +80° C |
| Housing | Norm panel housing, plastic |
| Dimensions | W x H x D = 98 x 74 x 27 mm |
| Panel cut out | W x H = 93 x 67 mm |
| Front area protection class (when installed) | IP 54 |

Z 60

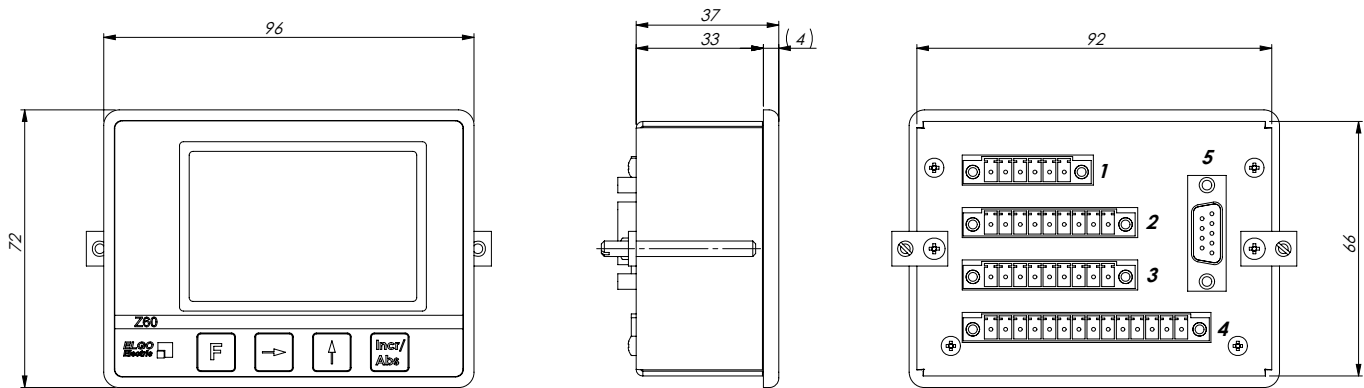
Type: 1-3 axes position indicator



Features:

- Graphic Display 120 x 80 pixels
- Sign
- Rotation speed indication in RPM
- Bitmaps
- 3 digital external inputs
- 1 analog input 0...10 VDC or 4...20 mA (option)
- 2 outputs open-drain
- 2 relay outputs
- 1 analog output 0...10 VCD and 1 analog output 4...20 mA (option)
- Easy mounting
- Inch-mode
- Tool-offset function
- Switch-over between incremental and absolute measuring
- Actual value memory
- Adjustable reference value
- Adjustable pulse scaling factor / edge triggering
- Operation modes up/down or differential counter





The universal position indicator was developed for the simultaneous interpretation of 1 – 3 axes. An extensive standard menu permits individual adjustments to the asked requirements.

The indicator can be integrated into incremental and absolute measuring systems. Optionally, an analog input can be realized, which permits the connection of analog measuring systems, e.g. linear potentiometers or tachometers. Thus, a flow indicator can be realized as well. Z 60 standard version is equipped with a RS232 interface. Optionally, an analog output is available. A bus solution is possible as well in order to connect several indicators and to communicate with a superior PC.

This indicator can be applied in engineering, e.g. in molding machines, lathes, milling machines and machining centers.

Technical Data

| | |
|--|--|
| LCD-display | Graphical, 120 x 80 pixels |
| Perspective | 12 o'clock |
| Power supply | 24 VDC, +/- 20 % (230 VAC resp. 110 VAC; please use the external power supply pack: ELGO NG 13.0) |
| Power consumption (without measuring system) | max. 120 mA |
| Max. current load | max. 600 mA |
| Operation temperature | 0° ... +50°C |
| Storage temperature | -20° ... +80°C |
| Housing | Norm panel housing, metal |
| Dimensions | W x H x D = 96 x 72 x 37 mm |
| Panel cut out | W x H = 93 x 67 mm |
| Front area protection class (when installed) | IP 54 |

Detailed and updated data can be found on www.elgo.de

ELGO – In Touch with t



the Future



Apprentices:

- Electronic technician for devices and systems
- Industrial business management assistant
- Industrial business management assistant (European business management with foreign languages)
- Warehouse logistics operator

Students at Universities of Cooperative Education:

- Bachelor of Arts – Management in Industry for Small and Medium-sized Companies
- Bachelor of Engineering – Electrical Engineering/ Automation Engineering
- Bachelor of Arts – Trade / Sales Management
- Bachelor of Arts – International Business Management

IZ 16 E

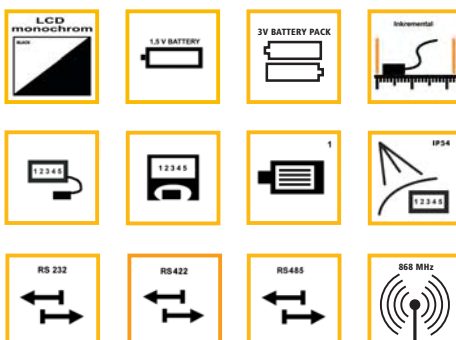
IZ16 E / IZ15 E / IZ14 E

Type: **Battery-powered incremental position indicator**



Features:

- 7-digit LCD display
- Sign and special characters
- Battery-status display
- Degree display
- Resolution up to 0.01 mm
- 2 external inputs
- 2 external outputs
- Easy mounting
- Inch-mode with fraction display
- Tool-offset function
- Switch-over between incremental and absolute measuring
- Adjustable reference value
- Adjustable multiplication factor
- Available interfaces: RS232 / RS422 / RS485 / 868 MHz



Please note that not all devices are available with all options. Please visit our website (www.elgo.de) for technical specifications and further information.

IZ 15 E



The battery-powered incremental position indicators consist of a combination of indicator and a magnetic sensor, which is connected to the indicator via a tug-chain suitable cable (length up to 2 m). Because of that no wiring or connections are needed during installation. The new clipping assembly permits an easy installation in the defined panel-cut-out on the front.

The position indicators are predestined to be mounted on manually movable sleds, guide carriages and stop systems, as there is no supply cable.

Detailed and updated data can be found on www.elgo.de

IZ 14 E



Technical data

Position indicators IZ 16 E / IZ 15 E / IZ 14 E

| | |
|--|--|
| LCD display | 6...7 decades for counting with sign, battery status, dimension unit and degree symbol |
| Perspective | 12 o'clock |
| Power supply | Battery (1.5 V / 3 V) – integrated or external |
| Power consumption (with measuring system) | < 1 mA at 1.5 V |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Norm panel housing, plastic, black |
| Housing dimensions | IZ 16E 96 x 72 x 43 mm IZ 15E 72 x 48 x 23 mm IZ 14E 72 x 36 x 19,8 mm |
| Front area protection class (when installed) | IP 54 |

Magnet sensor MS 20.25

| | |
|-----------------------|-------------------|
| Sensor cable length | 0.1 m... 2.0 m |
| Resolution | 0.1 mm... 0.01 mm |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Zinc die cast |
| Installation position | User-defined |
| Min. bend radius | 60 mm |
| Distance sensor/tape | max. 0.8 mm |
| Protection class | IP 67 |

AZ16I / AZ16E / AZ17E / AZ14EType: **Battery-powered absolute position indicator**

AZ16E

AZ16I

**Features:**

- 7-digit LCD-display
- Sign and special characters
- Battery status display
- degree-display
- Easy mounting
- Millimeter or inch operation
- Inch mode with fraction display
- Tool-offset function
- Switch-over between incremental and absolute measuring
- Adjustable reference value
- Adjustable multiplication factor

Please note that not all devices are available with all options.
Please visit our website (www.elgo.de) for technical specifications and further information.



AZ 17 E



No connections, no effort of wiring, but nevertheless absolute measuring. The absolute position indicators offer more comfort and additional safety. The systems consist of the display unit with a wide range of parameters, and an absolute sensor. This ensures that the actual position is always recorded and displayed. This makes reference runs redundant.

The battery-powered systems are completely self-sufficient and can be installed without any wiring or cables. Measuring lengths up to 8 m are available.

The AZ 16 is also available with an integrated sensor (on the back of the display unit) and a guide rail. The type designation is then AZ 16I.

Thanks to an energy-saving mode, batteries can last up to 4 years.

Detailed and updated data can be found on www.elgo.de

AZ 14 E



Technical data

Position indicators AZ16E / AZ16I / AZ17E / AZ14E

| | |
|--|--|
| LCD-display | 6...7 decades for counting with sign, battery status, dimension unit and degree symbol |
| Perspective | 12 o'clock |
| Power supply | Battery (1,5 V / 3 V); integrated or external |
| Power consumption (with measuring system) | < 1 mA at 1,5 V |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Norm panel housing, plastic, black |
| Housing dimensions | AZ16I / AZ16E 96 x 72 x 43 mm AZ17E 96 x 48 x 27 mm AZ14E 72 x 36 x 19,8 mm |
| Front area protection class (when installed) | IP 54 |

Magnetic sensor AZS

| | |
|------------------------|---------------|
| Sensor cable length | max. 20.0 m |
| Resolution | 0.1 mm |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Plastic, ABS |
| Installation position | User-defined |
| Min. bend radius | 150 mm |
| Distance sensor – tape | max. 1.5 mm |
| Protection class | IP 67 |

AZ 16 E - 300

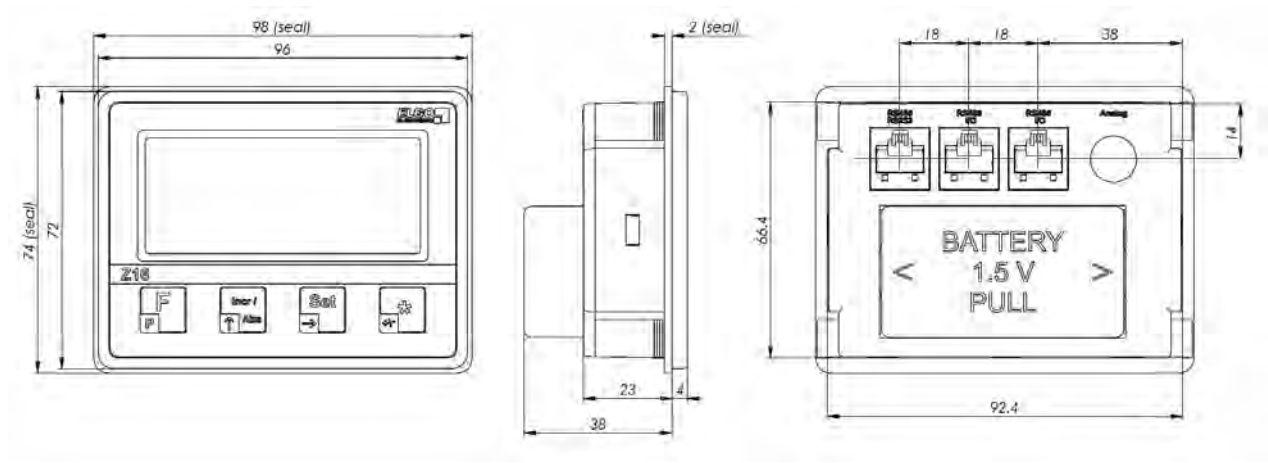
Type: **Battery-powered absolute linear measuring system for up to 3 axes**



Features:

- 7-digit LCD-display
- Sign and special characters
- Battery-status display
- Easy mounting
- Up to 3 external magnetic sensors (switchable)
- Millimeter and inch operation possible
- Inch mode with fraction display
- Switch-over between incremental and absolute measuring
- Adjustable reference value
- Adjustable multiplication factor





Up to 3 external switchable absolute sensors can be connected to the battery-powered position indicator AZ16E-300.

With a cable length up to 20 m (sensors) and the absolute encoded magnetic tape with a length of up to 8 m, the absolute measuring system offers multiple fields of application.

It is very suitable for the mounting on movable sledges and stop systems, where cables are not wanted. The determined values can be read directly on-site.

Technical data

Position indicator AZ 16E-300

| | |
|--|---|
| LCD-display | 7 decades for counting with sign, battery status and dimension unit |
| Perspective | 12 o'clock |
| Power supply | 1 x battery type C, 1.5 V |
| Power consumption (with measuring system) | < 1 mA at 1.5 V |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Norm panel housing, plastic, black |
| Dimensions | W x H x D = 98 x 74 x 42 mm |
| Panel cut out | W x H = 93 x 67 mm |
| Front area protection class (when installed) | IP 54 |

Magnetic sensor AZS

| | |
|------------------------|---------------|
| Sensor cable length | max. 20.0 m |
| Resolution | 0.1 mm |
| Operation temperature | 0°... +50°C |
| Storage temperature | -20°... +80°C |
| Housing | Plastic, ABS |
| Installation position | User-defined |
| Min. bend radius | 150 mm |
| Distance sensor / tape | max. 1.5 mm |
| Protection class | IP 67 |

AZ 17 E - 600

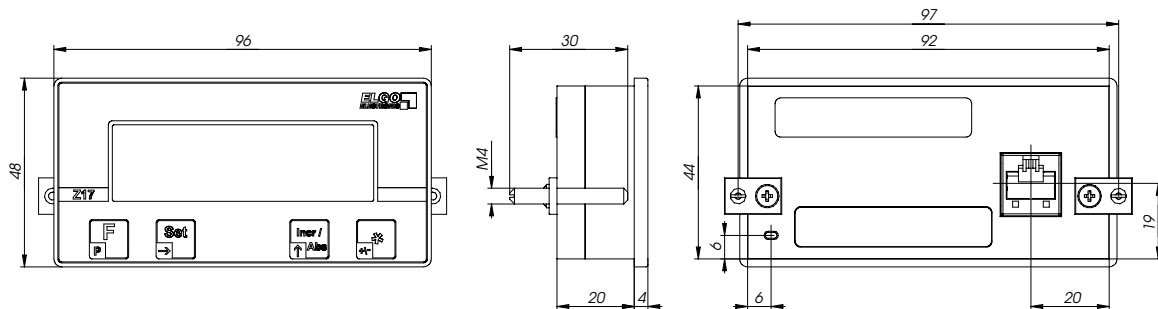
Type: **Battery-powered absolute measuring indicator**
with integrated radio module 868 MHz



Features:

- 7-digit LCD display
- Sign and special characters
- Battery-status display
- Resolution up to 0.1 mm
- Easy mounting
- Inch mode with fraction display
- Tool-offset function
- Switch-over between incremental and absolute measuring
- Adjustable reference value
- Adjustable multiplication factor
- Indicator with integrated radio module 868 MHz





Technical data

Position indicator AZ 17 E-600

| | |
|--|--|
| LCD-display | 7 decades for counting with sign, battery status, dimension unit |
| Power supply | Cable exit for external battery case 1.5 V |
| Operation temperature | 0° ... +50°C |
| Storage temperature | -20° ... +80°C |
| Housing | Norm panel housing, plastic, black |
| Dimensions | W x H x D = 96 x 48 x 24 mm |
| Panel cut out | W x H = 93 x 45 mm |
| Front area protection class (when installed) | IP 54 |

868 MHz-radio module

Frequency range North America will be defined soon

| | |
|--------------------|---|
| Range | Up to 200 m (intervisibility) |
| HF-data rate | 38 kbps |
| Output power | Type 2 dBm e.i.r.p. (10 dBm at 50 [Ohm]) |
| Frequency range | 868 – 868.6 MHz |
| Channel spacing | 50 KHz |
| Type of modulation | 2-FSK, MSK |
| Antenna | Integrated ceramic antenna |
| Topology | Point to Point |
| Transmission | Bi-directional, half-duplex, with acknowledgement of receipt, with CRC checksum, 5x repetition of not receipted radio telegrams |

Magnetic sensor AZS

| | |
|---------------------------|----------------|
| Sensor cable length | max. 20.0 m |
| Resolution | 0.1 mm |
| Housing | Plastic, ABS |
| Operation temperature | 0° ... +50°C |
| Storage temperature | -20° ... +80°C |
| Installation position | User-defined |
| Min. bend radius | 150 mm |
| Distance sensor / tape | max. 1.5 mm |
| Protection classification | IP 67 |

Radio modul

USB-stick

The battery-powered position indicator AZ 17E-600 (SLAVE) with an external absolute sensor AZS is equipped with an 868 MHz-radio module (ISM band) for the transmission of the actual position (displayed position).

As an accessory an 868 MHz transceiver (MASTER) is available with RS232 interface or as USB flash drive, which is tuned exactly to the AZ 17E-600. The bidirectional radio communication serves as a substitute for a cable between MASTER and SLAVE.

Detailed and updated data can be found on www.elgo.de

ELGO System components

LMIX 1 / EMIX 1



Type: **Magnetic incremental length measuring system**

Features:

- Smallest sensor with external translator in the SUB-D connector
- Periodic index pulse
- Speed-proportional output of square waves
- (EMIX) Resolution 0.01 mm / repeating accuracy +/- 0.01 mm
- (LMIX) Resolution 0.025 mm / repeating accuracy +/- 0.025 mm
- Robust zinc die cast housing

LMIX 2 / EMIX 2



Type: **Magnetic incremental length measuring system**

Features:

- Small sensor with integrated translator
- Periodic index pulse
- Speed-proportional output of square waves
- With index pulse
- (EMIX) Resolution 0.01 mm / repeating accuracy +/- 0.01 mm
- (LMIX) Resolution 0.025 mm / repeating accuracy +/- 0.025 mm
- Robust zinc die cast housing

LMIX 22 / EMIX 23



Type: **High-resolution magnetic incremental μ m linear measuring system**

Features:

- Small sensor with integrated translator
- With periodic index pulse
- Speed-proportional output of square waves
- (EMIX 23) high resolution up to 1 μ m
- (LMIX22) resolution up to 2.5 μ m at big distance from the magnetic tape possible
- Selectable interpolation up to 1 μ m
- Robust zinc die cast housing

EMAX 2

Type: **Magnetic absolute length measuring system with distance detection**



Features:

- Resolution up to 0.01 mm
- Up to 20 m measuring length
- Automatic distance detection if sensor and tape are too far apart
- Error bit display at SSI
- Robust zinc die cast housing

AZS 8

Type: **Absolute magnetic sensor for AZ series**



Features:

- Resolution up to 0.1 mm
- Measuring length up to 8 m
- Sensor connectable via RS 485 interface

AZS 4

Type: **Absolute magnetic sensor for AZ series**



Features:

- Resolution up to 0.1 mm
- Measuring length up to 4 m
- Sensor connectable via RS 485 interface

DMIX

Type: **Magnetic length measuring system with max. distance between sensor and tape of 10.00 mm**

Features:

- Smallest sensor with external translator in the SUB-D connector
- Periodic index pulse
- Speed-proportional output of square waves
- Resolution 1.00 mm
- The distance between sensor and measuring tape can vary between 0.1...10.0 mm
- Robust zinc die cast housing

SMIX

Type: **Magnetic length measuring system with end position signals (min/max)**

Features:

- Resolution 0.01 mm
- The distance between sensor and measuring tape can up to 2.00 mm
- Max. measuring length is the same as max. tape length
- Very robust against dirt
- Integrated end position signals

Rotative measuring systems

MIRE

Type: **Magnetic incremental rotative angle measuring system**



Features:

- 256 pulses/revolution (resolution 1.40625°)
- Speed-proportional output of square waves A and B
- Direct measuring over the round magnet at the engine shaft or the axis possible

MR



Type: **Magnetic ring for rotative measurement**

Features:

- Interpolation up to 22,800 pulses/revolution
- Direct assembly on shaft possible
- Resistant against vibrations and agitations
- Available in different sizes

Encoders



Type: **Rotary encoders**

Features:

- Incremental square wave signals with channels A and B (rotation direction detection)
- Permanently short-circuit protected push/pull outputs

Our proven position indicators ... still available

Z15



Type: **Battery-powered incremental length measuring system**

Features:

- Permanent data retention of the parameters
- No effort of wiring
- Compact and space-saving
- Housing dimensions: W x H = 72 x 48 mm
Installation depth (incl. cable) = 68 mm

Z16



Type: **Battery-powered incremental length measuring system**

Features:

- Permanent data retention of the parameters
- No effort of wiring
- Compact and space-saving
- Fraction display in inch mode possible
- Housing dimensions: W x H = 96 x 72 mm
Installation depth (incl. cable) = 40 mm

Z17



Type: **Battery-powered incremental length measuring system**

Features:

- Permanent data retention of the parameters
- No effort of wiring
- Compact and space-saving
- Fraction display in inch mode possible
- Housing dimensions: W x H = 96 x 48 mm
Installation depth (incl. cable) = 40 mm

Z 57



Type: **Position indicator with programmable pre-selection and counting function**

Features:

- External set / reset input as well as counting break
- Actual value memory
- Adjustable pulse scaling factor / edge triggering
- Extensive possibilities for programming
- Potential-free changeovers as output relay

Z 58



Type: **Universal 1 axis position indicator**

Features:

- RS 232 interface
- Actual value memory
- Adjustable pulse scaling factor / edge triggering
- Switch-over between inch / mm possible
- 2 shutter relay outputs (option)

Z 59 / Z 89



Type: **Position indicator with 2 to 3 axes**

Features:

- Actual value memory
- Adjustable pulse scaling factor / edge triggering
- Adjustable tool-offset
- Adjustable reference value
- Reversible counting direction

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Subject to change

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You will find further details and updated information about our products at www.elgo.de.

You can download operation manuals, brief descriptions and product photos.

Please be assured that our team is always on hand to answer any further questions you may have. Please contact us!

Please also note:

The mentioned features are not available with every device. Please see our brief descriptions or visit our homepage for further details www.elgo.de.



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