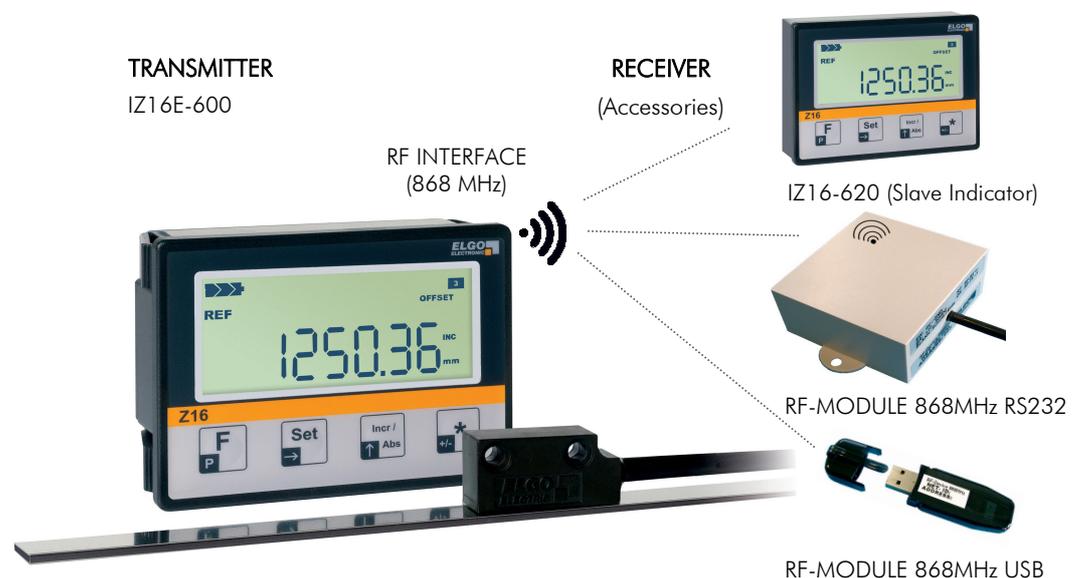


IZ16E-600

Battery powered Position Indicator with external Incremental Encoder and 868 MHz Radio Transmission



- Indicator with encoder and integrated 868 MHz RF module
- Integrated high performance ceramic antenna for a transmission range up to 200 meters (with intervisibility)
- Measuring system for linear or angular measurements (by using a coded magnetic tape or magnetic ring)
- Two selectable resolutions (0.01 / 0.10 mm)
- Display in inch mode „0.001 Inch“ possible
- Pluggable screw terminal for external battery supply
- Fast and easy installation by snap-in housing (optionally built-on housing with integrated battery case available)
- RF transmission via SET key or cyclically every 250 ms
- Auto Power Off function at sensor inactivity
- Auto Power On at sensor movement or keypress
- RF modules (RS232, USB2.0) and an external Slave Indicator (IZ16E-620) available as accessory parts

IZ16E-600 - Measuring and Display System with 868 MHz RF Module

General:

IZ16E-600 is a combination of battery powered display unit and incremental linear encoder. It consists of an external magnetic sensor, which is connected via drag-chain suitable cable to a position indicator. For linear measurement, a coded magnetic tape is glued along the distance to be measured. The magnetic tapes supplies the necessary information (current position) to the incremental sensor. The sensor is guided contactless and absolutely wear-free over the magnetic tape.



Magnetic ring

Alternatively, a magnetic ring (see photo on the left) is available for rotary applications (e. g. angle measurements).

Thanks to its high IP67 protection class, the external sensor is insensitive against dust, dirt and water. The compact sensor design allows an easy installation as well into existing as new machine constructions. A fixed cable outlet connects the sensor to the display unit. Alternatively a threaded round plug connector is available (see cable option "1" in the type designation).

During installation, only two cables for the supply voltage must be connected to the plug-in screw terminal, which can be supplied with a 1.5 or 3 V power supply or external batteries. External battery holders can be found in the table "Accessories for IZ16E-600" on the last page. On request, the screw terminal can be modified for external 24 VDC power supply (see "Type Designation" option „24V"). Optionally, instead of the panel housing with a screw terminal, a built-on housing (option "AG" or "AG1") with an integrated battery case (power supply option "8") can be supplied. This housing version is equipped with an adjustable mounting bracket. Thus the system is predestined for mounting on movable machine parts, e. g. slide carriages, stop systems or guide units, since no cables must to be carried along.

Display:

The display unit, which is equipped with a well legible 14 mm high LCD display, offers a wide range of parameterization options and can easily be adapted to the respective application. For example, the indicator is programmable to display values in length units as mm / m / inch or as ° symbol for angle measurements. Further, a fractional display can be programmed when using the Inch mode.

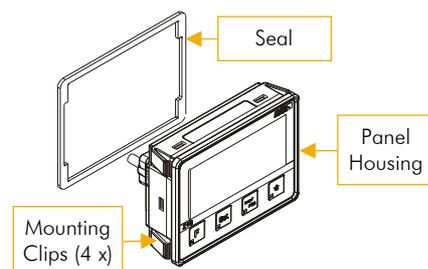
Wireless Radio Module:

The unit IZ16E-600 is equipped with an 868 MHz radio module (ISM band) for the transfer of the current actual value (display value). The IZ16E-600 as well as the accessorial 868 MHz transceivers are equipped with powerful, integrated ceramic antennas. External antennas are not necessary. Under optimal conditions, an operating range of up to 200 meters is possible. The desired RF channel / RF address / RF net address / RF target address / RF target net address and the type of RF protocol can be set via parameters.

Installation / Mounting:

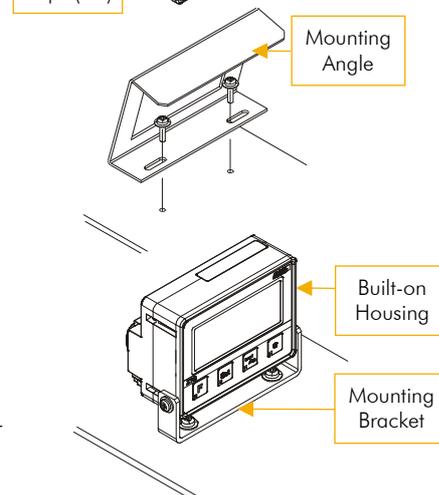
With panel housing (standard):

Due to the snap-in housing with 4 attached mounting clips, the device can be quickly and easily installed into the panel cutout. The rubber seal (supplied with the delivery) increases the front protection class against dust, dirt and splash and should generally be used. If no panel cutout available, or if the display unit should be mounted on a fixed or movable surface, the accessorial mounting angle MW-IZ16E (made of 2 mm galvanized steel sheet) with a suitable cutout can be used. In this case, the rubber seal additionally improves the fit in the cutout. The inclination of the mounting angle ensures good readability of the display.



With built-on housing (option AG resp. AG1):

The built-on housing (available as an option) is equipped with an inclinable mounting bracket, which can be screwed on a fixed or movable surface. The viewing angle can be adjusted by tilting the indicator to the optimum position.



Accessories for IZ16E-600:

As accessories are 868 MHz transceivers available, which has been adapted exactly to the IZ16E-600. The transceiver is available as a separate box (55 x 51 x 28 mm) with RS232 interface or as a compact stick with USB 2.0 interface. In addition, the measured value transmitted via radio can be received and visualized by the external slave indicator IZ16E-620. It is also possible to transmit the data of several IZ16E-600 units to the same USB or RS232 receiver (does not apply for IZ16-620 units). An important feature of the wireless modules used here, is the bi-directional data transfer with CRC checksum, with up to 5-times repetition of not quitted Data messages and receipt acknowledgment. More accessories see on last page.

IZ16E-600 - Measuring and Display System with 868 MHz RF Module

Technical Data:

Mechanical Data	
Housing	norm panel housing
Housing material	plastic, black
Housing dimensions	W x H = 96 x 72 mm
Panel cutout	W x H = 93 x 67 mm
Keyboard	foil with short stroke keys
Installation depth	min. 30 mm (depends on version)
Electrical Data	
Display	7 digit LCD (digit height 14 mm) with sign, battery state, measurement units and symbols
Perspective	12 o'clock
Measurement units	mm / Inch / m / °
Accuracy (indicator)	± 1 digit
Power supply voltage	1.5 V or 3 V battery or external 24 VDC (option 24V)
Current consumption	< 1 mA at 1.5 V (with sensor)
Battery service life	1 ... 3 years (depending on battery type)
Connections	standard: fixed cable outlet optional: round connector
Data memory	Flash
Interfaces (optionally)	RF 868 MHz
External inputs	2 x 5 ... 30 V (on request)
External outputs	2 x 30 V open collector (on request)
Environmental Conditions	
Operating temperature	0 ... +50° C
Storage temperature	-10 ... +60° C
Humidity	non-condensing, max. 80 %
Protection class (front)	IP54 (installed state with seal) IP40 (installed state without seal) IP50 (option AG) / IP64 (option AG1)
Protection class (rear)	IP40; IP50 (option AG) / IP64 (AG1)
Magnetic Sensor	
Required magnetic tape	MB20-25-10-1-R (linear measurements)
Required magnetic ring	MR 3848 (angular measurements)
Pole pitch of the tape	2.5 mm
Sensor cable length	0.1 m ... max. 2.0 m
Sensor cable	drag chain suitable, 6-wire, twisted pairs and double shielded
Housing	zinc die cast
Protection class	IP67
Mounting position	arbitrary
Bending radius (cable)	min. 60 mm
Resolution	0.1 mm ... 0.01 mm
Repeat accuracy	± 2 increments
Distance sensor - tape	max. 0.8 mm
Influence of external magnetic fields	External magnetic fields > 1 mT, which directly impinge upon the sensor can affect the system accuracy

Technical Data:

868 MHz Specification	
Transmission range	up to 200 m (with intervisibility)
HF data rate	38 Kbps
Output power	Typ. 2 dBm e.i.r.p. (10 dBm at 50 Ω)
Input sensitivity	up to -102 dBm (-110 dBm at 50 Ω)
Frequency range	863 ... 868.6 MHz
Channel spacing	50 kHz
Type of modulation	2-FSK, MSK
Antenna	integrated ceramic antenna
Topology	Point to Point
Transmission	- bidirectional - half duplex - with acknowledgement - with CRC checksum - 5 times repetition of not receipted radio telegrams
Addressing	2 Byte address range, max. 64.000 different addresses
Conformity (Europe)	EN 300220-1, EN 301489-1/-3, EN 60950-1, EN 50371

Type Designation:

IZ16E - $\overline{A} \overline{A} \overline{A} - \overline{B} - \overline{C} \overline{C} \overline{C} - \overline{D} - \overline{E}$

A SN Number

600 = with integrated RF 868 MHz wireless module

B Power Supply

6 = pluggable screw terminal
2 pin / 1 mm² for 1.5 V or 3 V
8 = integrated battery case with cover
1x type D / LR20 / mono / 1.5 V (only for built-on housing option „AG“ or “AG1”)

C Signal Cable Length in XX.X m

01.5 = 1.5 m (example), max. 2 m possible

D Cable Options

0 = fixed cable outlet
1 = round connector (threaded)

E Options*

CAP = integrated voltage back-up capacitor for battery change without loss of actual value
24V = external power supply 10 ... 30 VDC**
AG = built-on housing with mounting bracket (IP50)
AG1 = built-on housing with mounting bracket, sealed (IP64). Only for devices without RJ45!

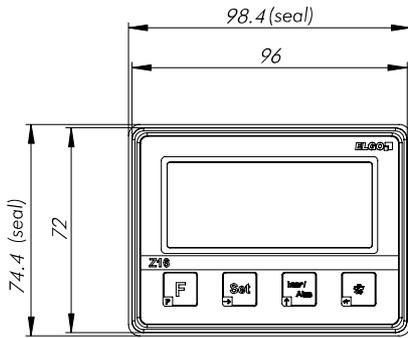
*) multiple indications possible **) on request

Order example:

IZ16E - 6 0 0 - 6 - 0 2 . 0 - 0 - CAP
A A A - B - C C . C - D - EEE

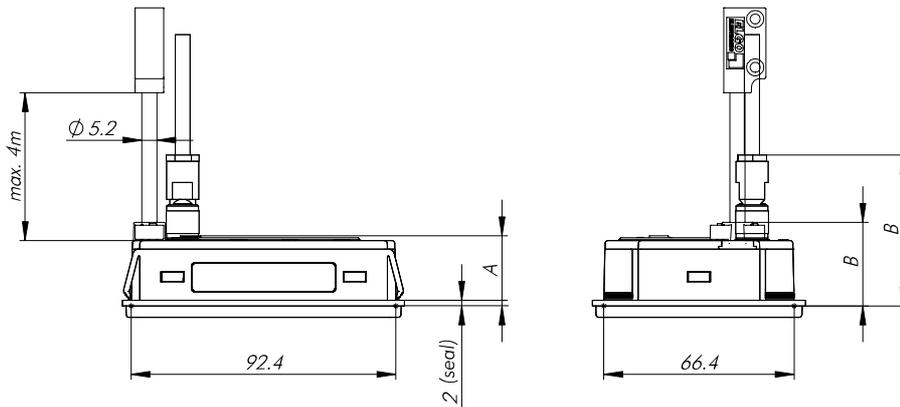
IZ16E-600 with plug-in screw terminal for 1.5 / 3.0 V power supply, 2 m long sensor cable, fixed cable outlet and back-up capacitor.

Dimensions IZ16E:

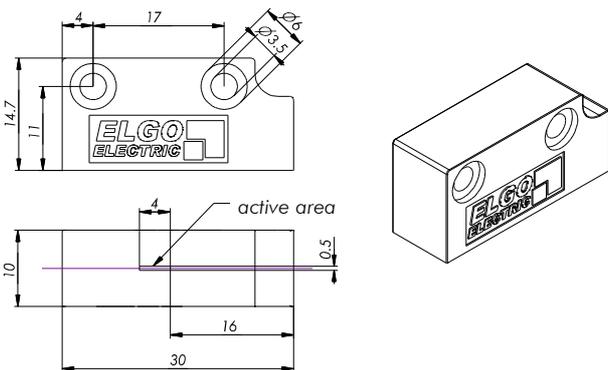


Type	A (mm)	B (mm)
IZ16E-XXX-6-XX.X-0	25	30
IZ16E-XXX-6-XX.X-1	25	53

Dimensions of built-on housing option "AG" resp. "AG1": W x H x D = 96 x 72 x 60 mm



Sensor dimensions:



Accessories for IZ16E-600:

Order Designation	Description
MB20-25-10-1-R-XX.X*	Magnetic tape for linear measurements, 2.5 mm pole pitch for MS-250 sensor *) please indicate the desired measuring length in XX.X meters
FS-XXXX	Aluminium profile guide rail for the magnetic tape (XXXX = length in m)
FW-2060	Guide carriage for sensor head, suitable for guide rail FS-XXXX
End cap set 10 mm	End caps for fixing 10 mm wide magnetic tapes
MR 3848	Magnetic ring for rotative measurements, 2.5 mm pole pitch for MS-250 sensor
RF-MODUL 868MHz USB	Radio Module Stick with USB 2.0 interface and closure cap
RF-MODUL 868MHz RS232	Radio Module Box with RS232, 1 m long cable and open cable ends (standard)
RF-MODUL 868MHz RS232-3m	Radio Module Box with RS232, 3 m long cable and open cable ends
IZ16-620	External Slave Indicator with 7-digit LCD display and radio module
MW-IZ16E	Mounting angle with suitable IZ16E cutout; made of 2 mm galvanized steel sheet
Battery holder-set 1 x C assembly	Consisting of battery holder (type C), battery and 2 cable shoes
Battery holder-set 1 x C open	Consisting of battery holder (type C), battery and 2 cable shoes

