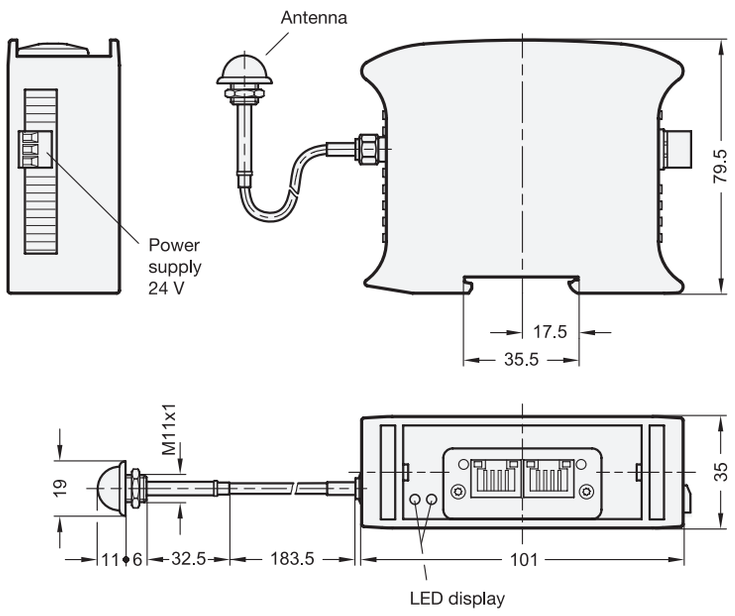


Metric

elesa
Original design UC-RF

1 Interface

1 Profinet
2 Modbus TCP
3 Ethernet / IP

Specification

- Plastic
  Technopolymer (Polycarbonat PC)
  - ABS reinforced
  - Self-extinguishing
- *Plastic Characteristics → page 2135*
- RoHS compliant

On request

- Control unit with interface
  Profibus, RS485 or RS232

Information

Control units EN 9150 are designed for digtial position indicators EN 9153 / EN 9154 with data transmission via radio frequency. They communicate via radio frequency with the position indicators as a wireless system for quick positioning.

Position indicators EN 9153 / EN 9154 are required for the system to function. Control units EN 9150 form the interface between the position indicators and the machine control. A target position value is sent by the machine control to the control unit, which transmits this via radio frequency to the position indicator. The position indicator signals its current position value back to the control unit.

In combination with the machine control, this makes it possible to ensure that the production cycle does not start when the position set on the position indicator is incorrect, which can prevent errors in the production process.

see also...

- *Description of Function → page 384*
- *Digital Position Indicators EN 9153 → page 382*
- *Digital Position Indicators EN 9154 → page XYZ*

How to order		
EN 9150-1	1	Interface

Electrical and mechanical characteristics	
Power supply	24 V DC
Power consumption	50 mA
Frequency range	2.4 GHz - 2.48 GHz
Antenna connector	SMA bushing Coaxial cable RG 174/U
Protection class	II
Reverse voltage protection	Yes
Working temperature	32 °F - 122 °F (0 °C - 50 °C)
Humidity	Max. 80 % (without condensation)
EMV	Acc. to EN 61000-6-2; EN 61000-6-3
Mounting	On top hat rails acc. to IEC 60715
Bus systems	EtherNet/IP™ PROFINET® Modbus
Integration machine control	With network cable RJ45

Security information

The position indicators and control units communicate using a proprietary ELESA protocol. The control unit can only process the target and current position value of the position indicators and send these to the machine control. The machine control therefore cannot be accessed directly over the wireless network of the control unit. The radio communication is therefore protected against system alterations or third-party access.
Disruptions or interference from other typical wireless networks, such as WiFi, Bluetooth, etc. do not impair the functioning of the system, but they may lengthen the response time of the position indicators to the control unit.
Avoid placing the control unit immediately next to high-powered components, such as motors, converters, etc. If this is not possible, a safe distance of at least 200 mm should be ensured.
Other important information and instructions can be found in the operating instruction for control units EN 9150. This is included with every control unit and can be downloaded at www.jwwinco.com in the “Service” section.

Description of function

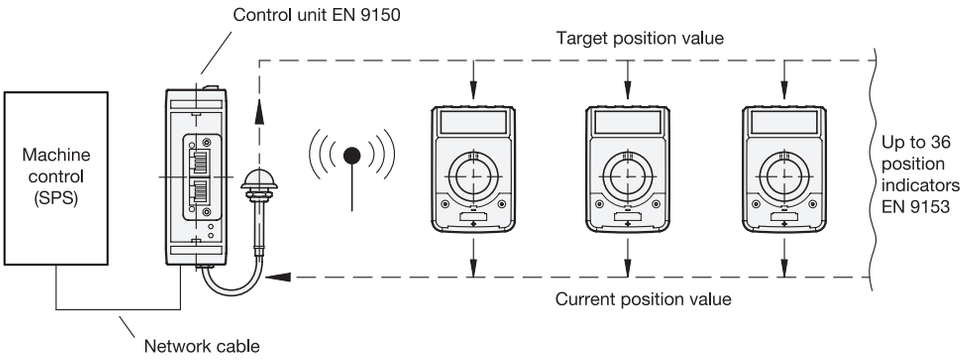
The following components are required to start up the wireless system:

- Digital position indicator EN 9153 / EN 9154
- Control unit EN 9150

Each control unit can be coupled to up to 36 position indicators. A RJ45 network cable is used to connect to the machine control. The following standard bus systems are offered for the control unit:

- Profinet
- Modbus TCP
- Ethernet / IP

The control unit can send the target position value received from the machine control to the position indicators. The indicators then report their current position via radio frequency.



If the target position value and current position value do not match, the LCD display of the position indicator begins to flash. The machine technician must then adjust the position indicator to the correct value. The LCD display shows the difference between the target position value and the current position value and the direction in which it must be turned. It must be turned until a value of 0 appears on the display, meaning zero deviation between the current and target position value.

Example: The current position of the position indicator is 80 mm, the specified target position is 100 mm, and a difference of 20 mm appears on the display of the position indicator. The indicator must be turned in the appropriate direction until the value 0 appears on the display.

The position indicators communicate with the control units via a proprietary ELESA protocol and use the ISM SRD frequency range of 2.4 GHz – 2.48 GHz. The following data is communicated over the radio signal:

- Target position value of the position indicator
- Current position value of the position indicator
- Battery change required

The effective range of the radio communication is up to 30 meters (98 feet). The antenna of the control unit must be in a clear and ideally high location. It can also be extended, if necessary.

The response time of a position indicator to the control unit via radio communication is 1 second. When using multiple position indicators, these are connected in series; in other words, the maximum number of 36 position indicators results in a response time of 36 seconds. The response time can be shortened if necessary; however, this reduces the battery life.