Wireless spindle positioning system
Efficient Machine Set-Up

The system allows to save time during the format alignment process.
- Once the set-up profile has been called up by PLC, UC-RF control unit transmits the target position to each DD52R-E-RF position indicator.
- The current / target position is displayed on LCD display of DD52R-E-RF indicator.
- The operator manually sets the position of the spindles following the arrow displayed on LCD display (clockwise/anti-clockwise rotation).
- Once all the spindles are correctly set, UC-RF control unit communicates to PLC of the machine that the set-up has been completed.

Easy installation

Up to 36 position indicators can be networked (via radio frequency) to the control unit.
No cables required to connect the position indicators to the control unit.

Safety

The system prevents the machine from starting up until the machine set-up is completed, avoiding production issues.
**BASE AND CASE**
High-resistance polyamide based (PA) technopolymer. Black base.  
Case in the following colours:  
- **C2**: RAL 2004 orange, glossy finish.  
- **C3**: RAL 7035 grey, glossy finish.  
Available on request in RAL 7021 grey-black colour (C1).  
Cover with perfectly sealed gasket and AISI 304 stainless steel UNI 6955 type self-tapping screws with six-lobe socket TORX®T06 (registered trademark by TEXTRON INC.).  
The ultrasonic welding between the base and the case prevents separation and avoids dust and liquid penetration.

**BOSS**  
AISI 304 stainless steel with Ø 20 mm H7 reamed hole, fitting to shaft by means of AISI 304 stainless steel grub screw, hexagon socket and cup end UNI 5929-85, included in the supply.

**WINDOW**  
Transparent polyamide based (PA-T) technopolymer, moulded over the case and with a perfect seal. Resistant to solvents, oils, greases and other chemical agents (avoid contact with alcohol during cleaning operations).

**DISPLAY**  
- 6-digit LCD of 12.0 mm height and special characters.  
The visualization parameters can be set and modified by the operator by means of appropriate keys:  
- values displayed in mm, inches or degrees  
- display of mode for use (absolute or incremental mode)  
- reading orientation (right or reverse).

**KEYBOARD**  
Polyester membrane. Resistant to solvents, alcohol, acids, alkalis.

**INTERNAL GASKET**  
O-ring front sealing in NBR synthetic rubber, between the case and the boss. Brass bushing with double O-ring sealing in NBR synthetic rubber inside the rear cavity of the base (DD52R-E-SST-IP67).

**REAR GASKET**  
Foam polyethylene, supplied.

**STANDARD EXECUTIONS**  
- **DD52R-E-RF-SST-IP65**: completely sealed indicator with IP 65 protection class, see EN 60529 table.  
- **DD52R-E-RF-SST-IP67**: completely sealed indicator with IP 67 protection class, see EN 60529 table obtained by means of a brass bushing with double seal ring inside the rear cavity of the base.

**ACCESSORIES ON REQUEST** (TO BE ORDERED SEPARATELY)  
- **RB52-SST**: AISI 304 stainless steel reduction sleeves.

**ASSEMBLY INSTRUCTIONS**
1. Drill a Ø 6 mm by 10 mm hole in the body of the machine with a 30 mm centre distance from the spindle to fit the rear referring pin.  
2. Fit the indicator onto the spindle and make sure that the referring pin fit the hole.  
3. Clamp the boss to the spindle by tightening the grub screw with hexagon socket and cup end, according to UNI 5929-85.
FEATURES AND APPLICATIONS
DD52R-E-RF position indicators, with battery power supply, can be used on passing through shafts in any position to provide the reading of the absolute or incremental positioning of a machine component.

- The 6-digit display of 12.0 mm height ensures excellent readability even from a distance and from different viewing angles.
- The window in transparent technopolymer protects the LCD display against accidental shocks.
- In the operating mode, by using the 4 function keys, it is possible to select the incremental or the absolute mode, the unit of measure (mm, inches or degrees), reset the absolute counter or load a preset source value and the preset offset value.
- In the programming mode, through the 4 function keys, it is possible to program the reading after one revolution of the shaft, the direction of rotation, the display orientation, the resolution (number of decimal digits displayed), the source value and the offset value, the max. speed of rotation and set the functions of the keys for the different options available.
- The internal battery ensures long battery life (over 3 years). A special symbol appears on the display when it is necessary to replace the battery. The replacement can be performed easily by removing the front cover (Fig.1), without disassembly of the indicator from the control shaft and without the loss of configuration parameters.

QUICK POSITIONING SYSTEM
DD52R-E-RF indicators (Elesa Patent) are networked to the control unit UC-RF via radio frequency (RF), constituting a wireless system for rapid positioning of the machine parts (fig.2).

This system is particularly suitable for applications that require frequent format changes, facilitating the correct adjustment of the target/current position of the machine parts, also representing a safety system. In fact, even if a single DD52R-E-RF indicator is not placed in the target position, PLC doen’t allow the beginning of the machine production cycle, thus avoiding production issues.

The installation of the system is quick and easy as it does not require the use of connecting cables between the control unit and the indicators. Further technical information available in "Operating instructions".

**Mechanical and electrical characteristics**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>Tension feed</td>
<td>Lithium battery CR2477 3.0 V</td>
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<tr>
<td>Battery life</td>
<td>3 years</td>
</tr>
<tr>
<td>Display</td>
<td>6-digit LCD of 12 mm height and special characters</td>
</tr>
<tr>
<td>Reading scale</td>
<td>-1999999, 999999</td>
</tr>
<tr>
<td>Number of decimal digits</td>
<td>programmable (1)</td>
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<tr>
<td>Unit of measure</td>
<td>mm, inches, degrees programmable (1)</td>
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<tr>
<td>Rotation max. speed</td>
<td>300/600/1000 r.p.m (2) programmable (1)</td>
</tr>
<tr>
<td>Precision</td>
<td>10,000 impulses / revolution</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP65 or IP67</td>
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<tr>
<td>Working temperature</td>
<td>0 to 50 °C</td>
</tr>
<tr>
<td>Storing temperature</td>
<td>-20 to +60 °C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>Max. 95% at 25°C without condensation</td>
</tr>
<tr>
<td>Interference protection</td>
<td>IEC 61326-1</td>
</tr>
</tbody>
</table>

(1) See the operating instructions.
(2) Default: 600 r.p.m.
Higher rotation speed to 600 r.p.m. can be maintained for short periods of time.
The value of the max. speed affects the battery life.
## DD52R-E-RF | Electronic position indicators

### Code and Description

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<th>Description</th>
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UC-RF Control unit for DD52R-E-RF
PLC connection, data transmission via radio frequency

MATERIAL
ABS reinforced polycarbonate, self-extinguishing.

STANDARD EXECUTIONS
- UC-RF RS232: control unit with RS232 serial interface.
- UC-RF RS485: control unit with RS485 serial interface.
- UC-RF ETHERNET/IP: control unit with Ethernet/IP serial interface.
- UC-RF MODBUS TCP: control unit with Modbus TCP serial interface.

UC-RF control unit can manage up to 36 position indicators. DD52R-E-RF (see page 4).
Compatible for mounting on DIN RAIL. Two leds (green and red) for correct diagnostics.

FEATURES AND APPLICATIONS
UC-RF control unit, connected directly to PLC, receives the target positions and sends them to DD52R-E-RF electronic position indicators, receiving their current position (Fig.1).
This system is particularly suitable for applications that require frequent format changes, facilitating the correct adjustment of the target/current position of the machine parts, also representing a safety system.
In fact, even if a single DD52R-E-RF indicator is not placed in the target position, PLC doesn't allow the beginning of the machine production cycle, thus avoiding production issues.

SPECIAL EXECUTION ON REQUEST
Control unit with Profibus serial interface.

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<th>Code</th>
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<tr>
<td>CE.99223</td>
<td>UC-RF RS485</td>
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<tr>
<td>CE.99225</td>
<td>UC-RF ETHERNET/IP</td>
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<tr>
<td>CE.99229</td>
<td>UC-RF MODBUS TCP</td>
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</tbody>
</table>

PLC

Target position

Up to 36 indicators DD52R-E-RF

Current position

Fig.1

Antenna

Power supply 24V

Status LED

ELESA Original design