More Precision

wireSENSOR // Draw-wire displacement sensors
Low-cost draw-wire displacement sensors

wireSENSOR MK120 analog

- Robust plastic housing
- Customized versions for OEM
- Potentiometer, current and voltage output

Model MK120 (Measuring range 3000, 5000mm)

Model MK120 (Measuring range 7500mm)
### Article description

**WPS - 3000 - MK120 - CR - P**

Output option:
- P: potentiometer
- U: voltage
- I: current

Connection CR: integrated cable, radial, 1m

Model MK120

Measuring range in mm

<table>
<thead>
<tr>
<th>Model</th>
<th>WPS-3000-MK120</th>
<th>WPS-5000-MK120</th>
<th>WPS-7500-MK120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>P, U, I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring range</td>
<td>3000mm</td>
<td>5000mm</td>
<td>7500mm</td>
</tr>
<tr>
<td>Linearity</td>
<td>&lt;0.15% FSO</td>
<td>&lt;4.5mm</td>
<td>&lt;7.5mm</td>
</tr>
<tr>
<td>Resolution</td>
<td>quasi infinite</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>-20 to 80°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>housing plastic PA6</td>
<td>coated polamide stainless steel (ø 0.45mm)</td>
<td></td>
</tr>
<tr>
<td>Wire mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>wire clip</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wire acceleration</td>
<td>2.5g</td>
<td>1.5g</td>
<td></td>
</tr>
<tr>
<td>Wire retraction force (min)</td>
<td>5.5N</td>
<td>5N</td>
<td>7N</td>
</tr>
<tr>
<td>Wire extension force (max)</td>
<td>8N</td>
<td>13N</td>
<td></td>
</tr>
<tr>
<td>Electrical connection</td>
<td>integrated cable, radial, 1m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection class</td>
<td></td>
<td>IP 65</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>0.75kg</td>
<td>0.9kg</td>
<td></td>
</tr>
</tbody>
</table>

FSO = Full Scale Output
Specifications for analog outputs on page 51.
**Accessories and mounting**

**Accessories:**

- **WE-xxxx-M4**  Wire extension with M4 wire connection, x=length
- **WE-xxxx-Clip**  Wire extension with eyelet, x=length
- **TR1-WDS**  Pulley wheel, adjustable
- **TR2-WDS**  Pulley wheel, fixed
- **GK1-WDS**  Attachment head for M4
- **MH1-WDS**  Magnetic holder for wire mounting
- **MH2-WDS**  Magnetic holder for sensor mounting
- **MT-60-WDS**  Mounting clamp for WDS-P60
- **FC8**  Female connector for WDS, 8-pin
- **FC8/90**  Female connector 90° for WDS
- **PC 3/8-WDS**  Sensor cable, length 3m
- **PS 2020**  (Power Supply 24 V / 2.5 A, Input 100 - 240 VAC, output 24 VDC / 2.5 A, for snap in mounting on DIN 50022 rail)
- **WDS-MP60**  Mounting plate for P60 sensors

**Installation information:**

**Wire attachment:** The free return of the measurement wire is not permissible and it is essential that this is avoided during installation.

**Wire exit angle:**

When mounting a draw-wire displacement sensor, a straight wire exit (±3° tolerance) must be taken into account. If this tolerance is exceeded, increased material wear on the wire and at the wire aperture must be expected.

**Mounting plate WDS-MP60**

85
78.5
6.5
40
2x Ø4.5
2x Ø5.3

wire aperture 0° (±3° tolerance)
# Output specifications analog

<table>
<thead>
<tr>
<th>Output</th>
<th>Plug M16 -SA / -SR</th>
<th>Integrated cable -CA / -CR</th>
<th>Open contacts</th>
</tr>
</thead>
</table>

### Potentiometric output (P)

- **Supply voltage**: max. 32VDC at 1kOhm / 1 Wmax
- **Resistance**: 1kOhm ±10% (potentiometer)
- **Temperature coefficient**: ±0.0025% FSO/°C

![Potentiometric output diagram](image)

1 = input +  
2 = ground  
3 = signal  
white = input +  
brown = ground  
green = signal  
1 = input +  
2 = signal  
3 = ground

### Voltage output (U)

- **Supply voltage**: 14 ... 27VDC (non stabilised)
- **Current consumption**: max. 30mA
- **Output voltage**: 0 ... 10VDC  
  Option 0 ... 5 / ±5V
- **Load impedance**: >5kOhm
- **Signal noise**: 0.5mV<sub>eff</sub>
- **Temperature coefficient**: ±0.005% FSO/°C
- **Electromagnetic compatibility (EMC)**: EN 61000-6-4  
  EN 61000-6-2

![Voltage output diagram](image)

1 = supply  
2 = ground  
3 = signal  
4 = ground  
white = supply  
brown = ground  
green = signal  
yellow = ground

### Current Output (I)

- **Supply voltage**: 14 ... 27VDC (non stabilised)
- **Current consumption**: max. 35mA
- **Output current**: 4 ... 20mA
- **Load**: <600Ohm
- **Signal noise**: <1,6 µA<sub>eff</sub>
- **Temperature coefficient**: ±0.01% FSO/°C
- **Electromagnetic compatibility (EMC)**: EN 61000-6-4  
  EN 61000-6-2

![Current output diagram](image)

1 = supply  
2 = ground  
white = supply  
brown = ground

### Adjustment ranges (if supported by the model)

- **Zero**: ±20% FSO  
  ±20%  
- **Sensitivity**: ±20%  
  ±15%
High performance sensors made by Micro-Epsilon

Sensors and systems for displacement and position
Sensors and measurement devices for non-contact temperature measurement
2D/3D profile sensors (laser scanner)
Optical micrometers, fibre optic sensors and fibre optics
Color recognition sensors, LED analyzers and color inline spectrometer
Measurement and inspection systems