



# Runner Clearance Probe

## RCP-004

### FEATURES

- Non-contact proximity probe based on eddy current measuring principle
- Linear range: 0 to 4mm
- Frequency range : up to 500 Hz(-3dB)
- Stainless steel sensor body and sensor tip protection to achieve excellent chemical and mechanical rigidity and excellent wear resistance
- 10 meters integral cable
- +24VDC power supply, single ended

### Monitoring solution

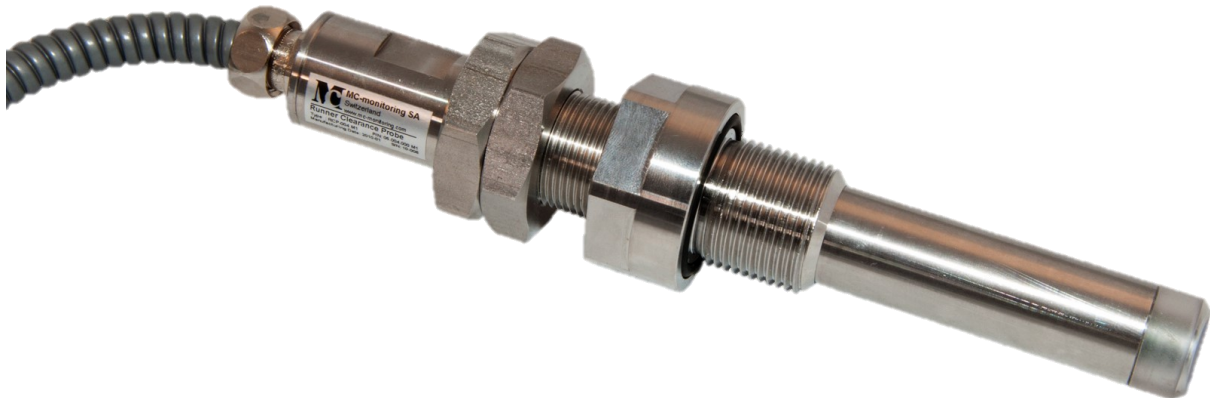


Runner clearance monitoring

### Typical applications



Hydrogenerators



### DESCRIPTION

The RCP-004 displacement probe is used for non-contact measurements of turbine runner clearance of large Francis or Kaplan turbines. The high performance casing probe material allows sealed mounting of the eddy current probe into the turbine throat ring or turbine labyrinths.

The entire signal processing is built in the sensor body.

The voltage output is directly proportional to the measured distance between the metallic target and the sensor face.

## GLOBAL SPECIFICATIONS

---

### OPERATION

Linear range	0 to 4mm
Sensitivity	2V/ $\mu$ m
Linearity (full scale)	$\pm$ 2.5%
Minimum target size	$\varnothing$ 15mm
Reference target material	<ul style="list-style-type: none"> <li>◆ ST37-2K (1.0037)</li> <li>◆ VCL 140 (1.7223)</li> <li>◆ X3CrNiMo13-4 (1.4313)</li> <li>◆ C35E (1.1181)</li> <li>◆ 15NiCr13 (1.5752)</li> <li>◆ CA 6NM (1.4317)</li> </ul>
Signal output	2 to 10V
Resolution	Less than 1 $\mu$ m
Temperature stability	Less than 0.05%/ $^{\circ}$ C
Power	
Supply	+15V <sub>DC</sub> to +30V <sub>DC</sub>
Current consumption	30mA max.

---

### ENVIRONMENTAL

Temperature range	
Sensor & cable	
Operation	0 $^{\circ}$ to +55 $^{\circ}$ C
Non-destructive	-20 $^{\circ}$ to +70 $^{\circ}$ C
Shock and vibration	IEC 60947-5-2 / 7.4
Ingress protection	IP67

---

### PHYSICAL

Sensor dimensions [mm]	M1 : 184 L x $\varnothing$ 19.9
Maximum insertion depth [mm]	M1 : 105
Threaded part of the sensor	M24 x 1.5mm
Output cable dimensions	10m x $\varnothing$ 10mm

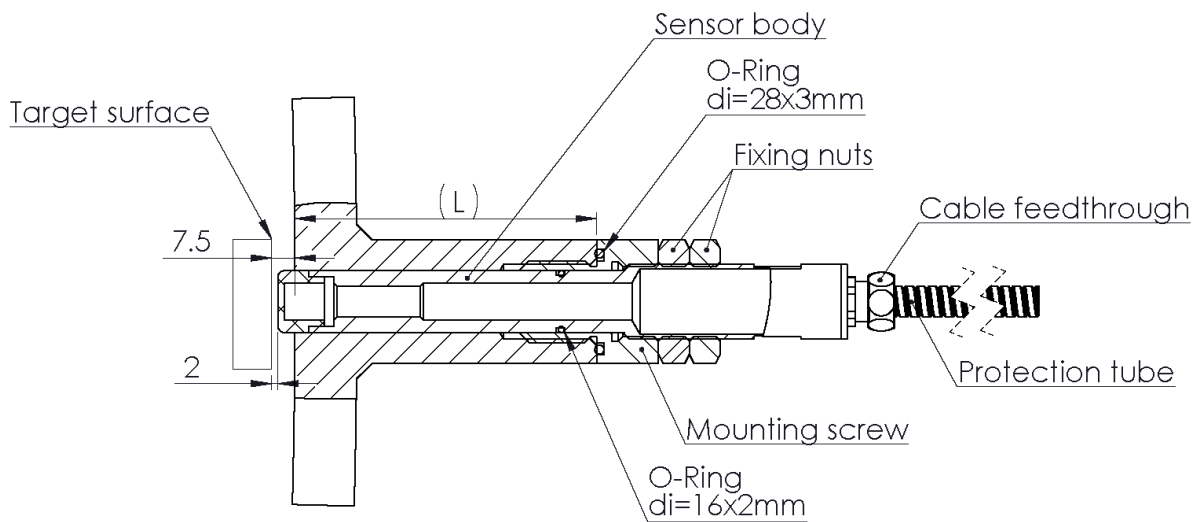
---

## ORDERING INFORMATION

Part type	RCP-004 M1
Ordering code	05.004.000 M1
Description	Standard runner clearance probe, max insertion depth = 105mm

Part type	RCP-004 M2
Ordering code	05.004.000 M2
Description	Runner clearance probe with extended length, max insertion depth = 215mm

## MECHANICAL DRAWING



### L LENGTH

M1	97.5mm
M2	212mm

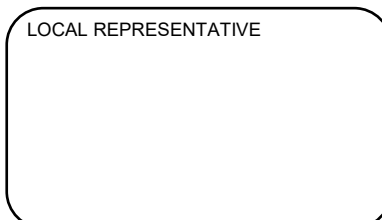
### FIELD WIRING

<i>Brown</i>	Power supply (+15 to +24VDC)
<i>Green</i>	Voltage output
<i>White</i>	Signal common 0V
<i>Black</i>	Cable shield

MC-monitoring Quality certifications



LOCAL REPRESENTATIVE



MC-monitoring SA  
Route André Pillier 19 | PO BOX 97  
CH-1762 Givisiez | Switzerland  
Phone : +41 58 411 54 00  
Fax : +41 58 411 54 10  
Mail : [info@mc-monitoring.com](mailto:info@mc-monitoring.com)  
[sales@mc-monitoring.com](mailto:sales@mc-monitoring.com)  
Web : [mc-monitoring.com](http://mc-monitoring.com)