

# Runner Clearance Probe

## RCP-015

### FEATURES

- Non-contact proximity probe based on eddy current measuring principle
- Digitally linearized model available
- Linear range:
  - 0 to 15mm for linearized model
  - 0 to 12mm for non linearized model
- Sensitivity :
  - 0.53 V/mm for linearized model
  - 0.83 V/mm for non linearized model
- Frequency range : DC to 350 Hz(-3dB)
- Excellent chemical and mechanical rigidity, excellent wear resistance
- 31 meters integral cable. Other length upon request
- Sensor delivered with stainless steel mounting flange

### Monitoring solution



Runner clearance monitoring

### Typical applications



Hydrogenerators



### DESCRIPTION

The RCP-015 displacement probes is used for non-contact measurements of turbine runner clearance of large Francis or Kaplan turbines. The high performance casing material of the probe offers excellent wear resistance.

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 SPECIFICATION

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### OPERATION

Version	Non-linearized	Digitally linearized
Linear range	0 to 12mm	0 to 15mm
Non-linear range	12mm to 15mm	n.a.
Sensitivity	0.83V/mm	0.53V/mm
Linearity tolerance (reading)	+5%/-26% (0 to 12mm)	+/-3% max. (0 to 15mm)
Minimum target size		ø50mm
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 corresponding to linear range	0 to 10V	2 to 10V
Short circuit protected	Yes	yes
Resolution	n.a.	Less than 10µm
Temperature coefficient		Max 13µm/K
Linearization module	None	Built-in
Power		
Supply	+15V <sub>DC</sub> to +30V <sub>DC</sub>	
Current consumption	30mA typical	

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### ENVIRONMENTAL

Temperature range	
Sensor & cable	
Operation	0° to +55°C
Non-destructive	-20° to +70°C
Flanges	0 to +100°C
Shock and vibration	IEC 60947-5-2 / 7.4
Flanges & sensor ingress protection	IP69
Max. static water pressure	10 bar

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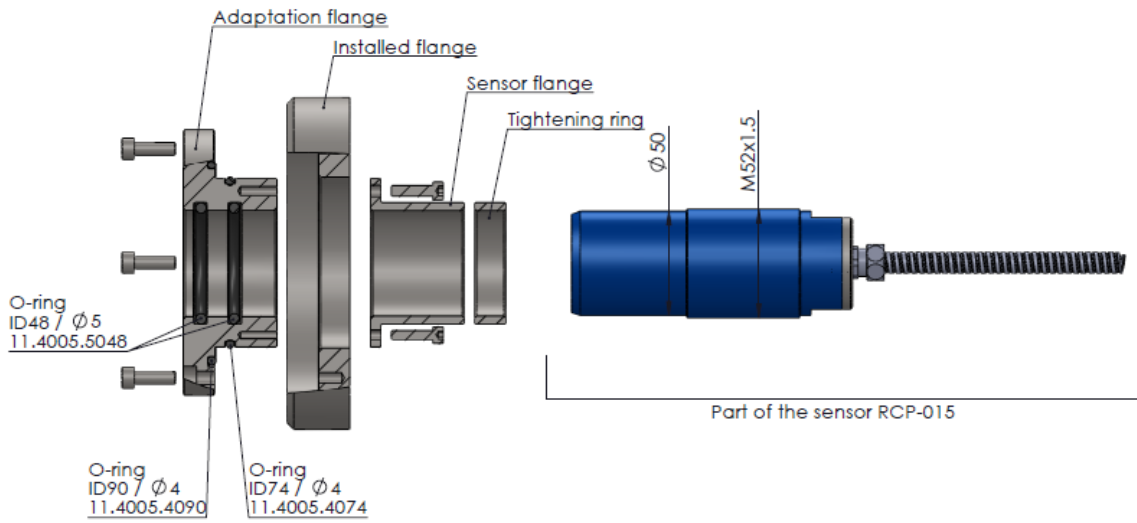
### PHYSICAL

Sensor casing dimensions [mm]	150 L x ø50 ; threaded part : M52x1.5
Integrated cable	31m x ø6mm
Cable protection	30m IP68 waterproof PVC-coated metal tube
Flanges	
Material	Stainless steel 1.4305
Sealing method	Four NBR O-rings
Sealing grease	Supplied special silicone grease for O-ring, is mandatory for sealing

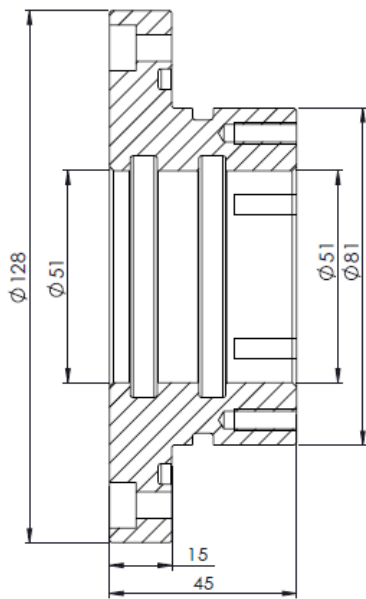
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**MECHANICAL DRAWING**

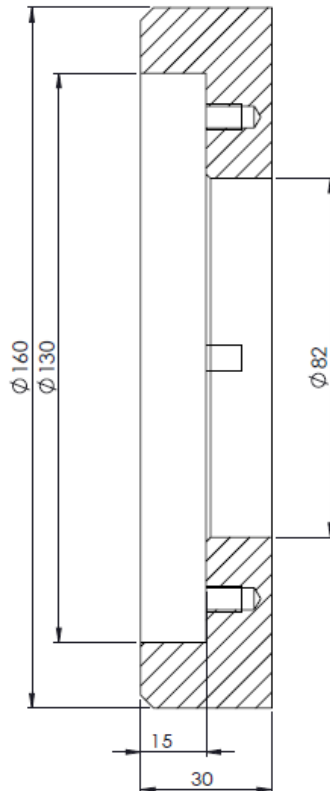
**OVERVIEW**



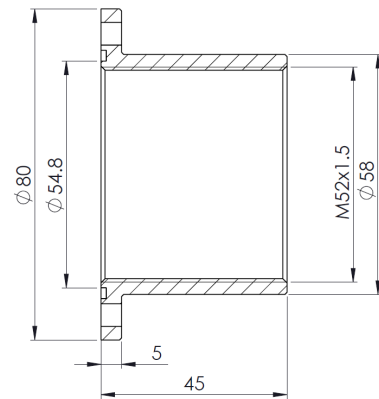
**ADAPTATION FLANGE**



**INSTALLED FLANGE**



**SENSOR FLANGE**



**FIELD WIRING**

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<i>Power supply</i>	Brown
<i>Voltage output</i>	Green
<i>Signal common 0V</i>	White
<i>Cable shield</i>	Clear

**ORDERING INFORMATION**

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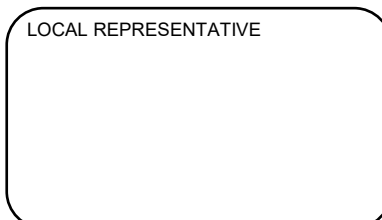
<b>Product description</b>	<b>P/N</b>
RCP-015M1 including 30m integral cable	05.015.001 M1
Installed flange	55.015.001
Adaptation flange	55.015.002
Set of O-rings	55.015.003

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MC-monitoring Quality certifications



LOCAL REPRESENTATIVE



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