FOR THE DETECTION OF ENTRAPPED MOISTURE

MCM-2 HYDROTector™

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Neutron Backscatter Moisture Detection of Corrosion Under Insulation (CUI) and Corrosion Under Fireproofing (CUF)
API Report 583-2014
The MCM-2 Hydrotector® non-destructive, neutron moisture measurement gauge is designed for quick determination of water content in the thermal insulation of pipes and vessels at chemical and petrochemical plants.

Designed as a screening tool to rapidly locate areas of trapped moisture, the MCM-2 works well in conjunction with corrosion detection equipment to quickly detect areas where corrosion under insulation is highly probable.

The MCM-2 is an easy-to-use and superior alternative to other methods of detecting moisture in insulating materials and can be put to the task with minimal operator instructions. The sensor head, attached to the end of a telescopic pole, communicates with the hand-held control unit using Bluetooth® technology to collect data.

By taking readings along a pipe section the neutron backscatter data is analyzed to detect increased amount of moisture in pipe insulation and fireproofing. The readings can be compared against each other on relative to historic data to determine change in moisture content over time.

Rugged and reliable the MCM-2 detector assembly is enclosed in a durable, light-weight aluminum housing. The LCD readout is sealed in a dust-proof, water resistant enclosure, protected by a rubber case.

**PROJECT STORAGE**

Project storage allows for three modes of storage, Simple Project, Daily Project, or Continuous Logging. Both Simple and Daily storage allow for a project ID. The user can also set up templates defining locations and sections within locations. A 2 GB internal SD card allows the user to store a large number of templates and projects. Projects and templates can be transferred to a computer via USB flash drive or Bluetooth.

**FEATURES**

- Wireless communications between Handheld and Sensor ensures that no problematic wires get in the way of readings.
- User-friendly alphanumeric keypad and 20 character backlit LCD.
- Rapid, precise repeatable moisture measurements.
- Lightweight and portable.
- Storage and recall selection of linear calibrations for 32 tubing/insulation types.
- Operator selected time of test
- Data downloaded to a USB mass storage device (Thumb Drive) or via a PC application available from InstroTek's website.
- Rechargeable NiMh batteries.
- Templates for easy project creation for different work sites.
- Windows software to organize project data.
ADVANTAGES

- Lightweight, Wireless telescopic pole allows for testing from a distance up to 10 ft.
- Fast and easy to use; allows thousands of feet of insulated pipe to be tested in a day.
- Designed for maximum accessibility in hard-to-reach areas.
- All tests can be stored and identified for each pipe or vessel location. Using Bluetooth®, the data can be quickly uploaded to a computer or printer.
- Includes PC software for creating section and location templates for downloading project and logging info.

APPLICATIONS

- Evaluate insulated tanks and vessels quickly for potential corrosion problems.
- Investigate insulated pipe for high concentrations of moisture to identify areas for corrosion inspection.
- Quickly detects liquid/moisture levels in containment vessels.

MCM-2 HYDROTECTOR INCLUDES:

1. MCM-2 Hydrotector Sensor, 2. MCM-2 Hydrotector Handheld, 3. MCM-2 Hydrotector Extension Pole
8. AC Chargers - 2, 9. Manual of operation and gauge paperwork (not shown)

All InstroTek gauges come standard with a 1-year limited warranty and are backed with unmatched customer service and technical support.
## SPECIFICATIONS

### DIRECT READOUT FEATURES

- **LCD DISPLAY**
  4 x 20 character LCD with back light

- **CALIBRATION**
  32 selectable calibrations allow for varying conditions.

- **SOFTWARE DRIVEN MENU SELECTION**
  Selection of gauge functions for counting, self-calibration, unit selection, data definition, and storage format.

- **DATA STORAGE**
  2 GB of project storage.

- **DATA TRANSFER**
  USB or Bluetooth.

- **FUNCTION**
  NDT measurement of insulation materials by manual counts.

- **RANGE**
  0 to 70% moisture

- **COUNT TIME**
  User selectable. Average manual count is 4 seconds.

- **POWER**
  Hand-held Control Unit: 6 AA rechargeable NiMetal Hydride. Sensor Head: 4 AAA

### BATTERY LIFE

- 20 - 40 hours on a single charge, dependent on usage.

### ALERTS

- Red & green LED alert lights on handle illuminates when elevated moisture is detected. Status LED lights on sensor head.

### RADIOLOGICAL

- **NEUTRON SOURCE**
  50 mCi Americium-241/Be (1.85 GBq).

- **ENCAPSULATION**
  Double Encapsulated, Stainless Steel, CPN-131

- **SHIPPING**
  RO, UN 3332, Radioactive Material, Type A Package, Special Form 7
  AM-241 1.85 GBq
  Type A Package
  Yellow II, TI = 0.2

### DIMENSIONS/SHIPPING WEIGHTS

<table>
<thead>
<tr>
<th></th>
<th>Width</th>
<th>Depth</th>
<th>Height</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Detector Assembly</td>
<td>7.0 in (178 mm)</td>
<td>21 in (533 mm)</td>
<td>5.0 in. (27 mm)</td>
<td>3.8 lbs. (1.72 kg)</td>
</tr>
<tr>
<td>with Short Pole</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detector Assembly</td>
<td>27.0 in (686 mm)</td>
<td>12.0 in (305 mm)</td>
<td>12.0 in (305 mm)</td>
<td>24.5 lbs (11.11 kg)</td>
</tr>
<tr>
<td>In Shipping Container</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustable Pole</td>
<td>5.5 in (140 mm)</td>
<td>5.5 in (140 mm)</td>
<td>6.66 ft (2.03 m)</td>
<td>15.0 lbs (6.80 kg)</td>
</tr>
<tr>
<td>In Shipping Container</td>
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### LICENSING AND TRAINING

InstrőTek® offers the necessary radiation safety and application training to ensure proper use of this device on a continuous basis.

For more information about MCM-2 Hydrotector contact: InstrőTek, Inc., Research Triangle Park, NC
phone: 919.875.8371 email: sales@InstrőTek.com | visit: www.InstrőTek.com

OTHER LOCATIONS: Bensalem, PA phone: 215.645.1064 | Grand Rapids, MI phone: 616.726.5850
Denver, CO phone: 303.955.5740 | Austin, TX phone: 512.452.8848 | Las Vegas, NV phone: 702.270.3885
Concord, CA phone: 925.363.9770