

Liquid Level Measuring Device

The measuring device is used to measure the level of liquid FM-200® in 106, 147, 180, and 343 litre containers. The weight of the FM-200® in the container is determined by converting the level measurement into a weight measurement using the weight conversion tables in appendix D of this manual. The operating temperature range for the liquid level measuring device is 0 to 54 °C (32 to 130 °F).

The liquid level is found by lifting the measuring tape from inside the tube to the end (or approximately 75 mm (3") above the anticipated liquid level) and slowly lowering the tape until a magnetic interlock with the float is felt. The tape will then remain in the up position, allowing a reading at the top of the housing. This measurement is accomplished without removing the tank from the fire suppression system.

The device must be installed in an empty container assembly before filling, the liquid level measuring device must be ordered as a separate line item.

106 litre Part No. 300.015.127

147, 180, 343 litre Part No. 300.015.128

Technical Information

Mounting Thread: 1.3125-12UN-2A

Stem Material: Brass

Mounting Material: Brass

Float Material: ECCO

Model: Diptape Indicator

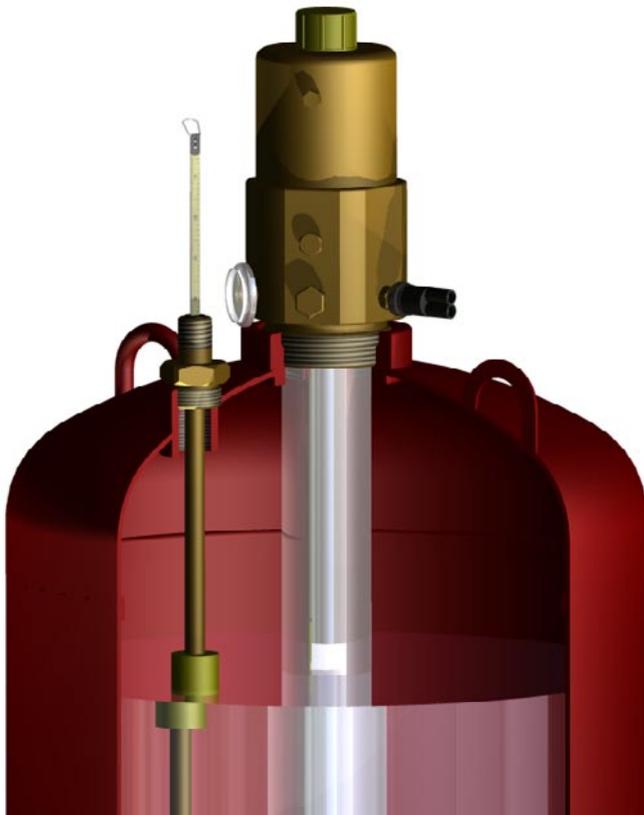
Approximate Length: 814 mm (32") (Part No. 300.015.127)

1093 mm (43") (Part No. 300.015.128)

Weight: 1.13 kg (2.49 lbs) (Part No. 300.015.127)

1.52 kg (3.36 lbs) (Part No. 300.015.128)

Figure 33 - Liquid Level Measuring Device

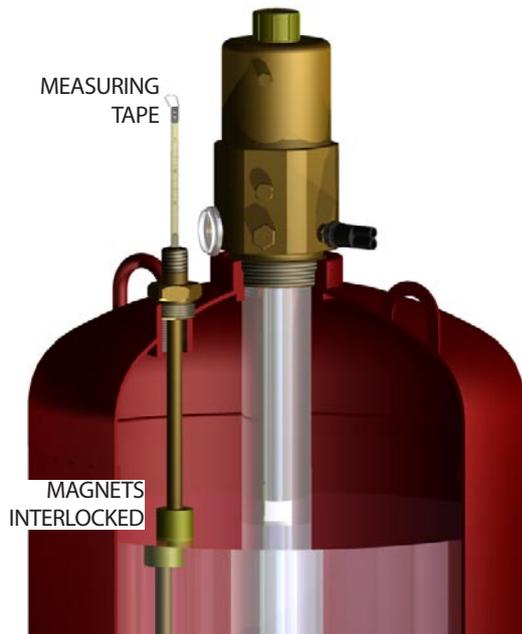


SECTION 8 - MAINTENANCE**Operation**

To measure the liquid FM-200® level:

1. Remove the protective cap from the measuring device housing.
2. Lift the measuring tape to the end (or approximately 75 mm (3") above the expected level). Slowly lower the tape until a magnetic interlock is felt (see Figure 67).

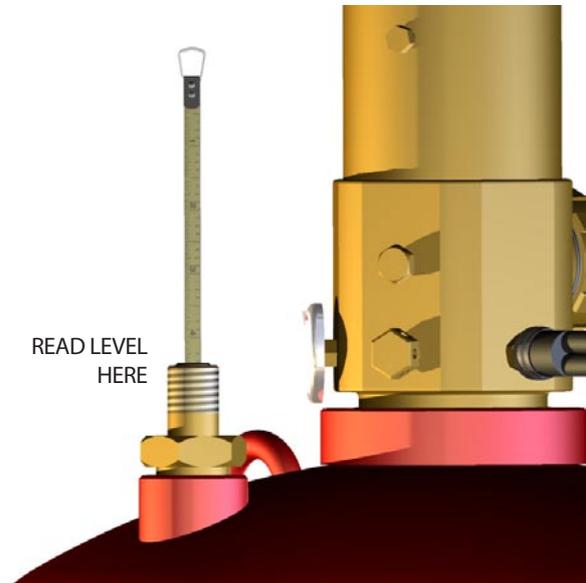
Figure 67 - Liquid Level Measuring Device



3. Read the measurement on the tape directly at the top of the plastic sleeve in the measuring device housing (see Figure 68). Record this measurement and note the temperature of the container module.

Notice. The container module temperature can be determined by measuring the ambient temperature at the container location. The container must be stored at this temperature for at least 24 hours to obtain an accurate liquid level reading.

Figure 68 - Reading Liquid Level



4. To reinstall tape, quickly pull on the tape to disengage the magnetic interlock. Then slide the tape into the housing and replace the protective cap.
5. Using the Weight Conversion Table located in Appendix D, determine the FM-200® weight of charge as follows:
 - a. Find the liquid level reading along the left hand vertical line of the table.
 - b. From that point, follow the horizontal line to the point where it intersects with the temperature column (using the FM-200® tank temperature noted in Step 3).
 - c. Read the weight of FM-200® at the level / temperature column intersection.
6. Compare the weight from the table to the weight of charge stamped on the container nameplate. If the measurement shows a net weight loss of more than 5%, the tank must be weighed to verify the liquid level measurement. If the weight loss still exceeds 5% of the weight of charge, the container requires recharging.

Example: Using the Container Weight Conversion Table

A semi-annual weight check is being performed on a 180 litre FM-200® tank filled with 137 kg (301 lbs.) of FM-200®. The temperature of the container is 16 °C (60 °F). The liquid level measuring device reading is 36.2 cm. (14¼ in.)

Find the 36.2 cm (14¼ in.) line on the left side of the 180 litre container table and read horizontally across the table to the 16 °C (60 °F) column. Then, by reading the weight of FM-200® at the level/temperature column intersection, it is determined that the weight of FM-200® is 136 kg. (299.2 lbs.)

To determine if this is within the 5% weight loss tolerance, multiply the weight of charge (taken from the container nameplate) by 0.95 to determine the minimum weight of FM-200® required in this container:

$$137 \text{ kg} \times 0.95 = 130 \text{ kg} \quad (301 \text{ lb.} \times 0.95 = 286 \text{ lb.})$$

Because the measured weight of FM-200®, 136 kg, (299.2 lb.) is more than the minimum required FM-200® weight of 130 kg (286 lb.), the weight of FM-200® is within the 5% weight loss tolerance.

If the measured weight had been less than the 5% weight loss tolerance, the container should be weighted to verify the liquid level measurement. If the weight loss still exceeds 5% of the weight of charge, the container must be recharged.

6 Monthly Control Valve & Actuator Check

Check all manual and pneumatic actuators for free movement of the piston. Replace whole unit where appropriate. Check all control valves for correct manual function and automatic valves additionally, for correct automatic function.

6 Monthly Pipe Network Check

Externally check pipework to determine its conditions. Replace or pressure test and repair as necessary Pipework showing corrosion or mechanical damage.

6 Monthly Nozzle Check

Inspect nozzles for dust and debris, clean out where necessary.

6 Monthly Enclosure Check

Carry out a full visual check of the enclosure for integrity and confirm the dimensions and the configuration of the hazard are as the original drawings or previous visit. If drawings are not available and this is the first visit then dimensions should be taken and passed to the engineering department together with the quantity of agent to enable a calculation to be carried out to ensure the correct quantity of gas has been used.

12 Monthly Hose Check

All system hoses should be examined for damage. If visual examination shows any deficiency, the hose shall be replaced.

12 Monthly Integrity Test

Integrity test the enclosure to determine if the leakage area has changed sufficiently from that measured during installation.

Electrical Actuator Ten Year Lifespan

The removable electrical actuator has a life span of 10 years from manufacture, which is indicated on the label, and so should be replaced before this date is reached.

Personnel Training

All persons who may be expected to inspect, test, maintain or operate the fire extinguishing system shall be kept adequately trained in the functions they are expected to perform. Personnel working in an enclosure protected by a gaseous extinguishant shall receive training in the operation, use of the system and safety issues.