This manual is intended for use with the ANSUL AUTOMAN II-C Releasing Device.

Those who install, inspect, maintain or service this releasing device, should read the entire manual. Specific sections will be of particular interest depending upon one’s responsibility.

ANSUL AUTOMAN II-C is an electrical/mechanical device. It requires periodic care. Maintenance to provide maximum assurance that your releasing device will operate effectively and safely should be conducted at six month intervals. Inspection to provide reasonable assurance that your releasing device is operable should be conducted at more frequent intervals.
INTRODUCTION
The ANSUL AUTOMAN II-C Releasing Device is designed for use with Ansul fire suppression systems. It provides automatic-pneumatic actuation of fixed nozzle fire suppression systems when connected to a suitable listed fire detection/alarm system.

DESCRIPTION
The ANSUL AUTOMAN II-C is shown in Figure 1 and 2. It is comprised of a metal enclosure which contains a spring-loaded puncture pin release mechanism, an actuation cartridge (order separately), an auxiliary function switch, and a terminal strip for making electrical connections. Knockouts for the connection of conduit are provided in the top, bottom and sides of the steel enclosure. The enclosure also contains four surface mounting holes.

OPERATION
When energized, a solenoid mounted on the actuator trips the release mechanism puncturing the cartridge. Actuation gas from the cartridge is directed through piping to pneumatically activate the fire suppression system.

Manual actuation is provided by means of an integral STRIKE button at the release enclosure which may be supplemented by use of a remote manual cable pull station.

CAUTION
A number of basic variations are available in the ANSUL AUTOMAN II-C assembly. Your ANSUL AUTOMAN II-C may have either a carbon dioxide actuation cartridge or a nitrogen actuation cartridge. In every case Ansul Incorporated recommends that all systems employing carbon dioxide actuators be restricted to installations in areas where the ambient temperature is never less that 32 °F (0 °C) or greater than 120 °F (49 °C). If ambient temperatures in the area of the actuation cartridge fall below 32 °F (0 °C) or exceed 120 °F (49 °C), it is mandatory that a nitrogen cartridge be used. Be certain when replacing cartridges that the proper type is used, and that it meets the temperature range and weight requirements outlined in the instruction manual for that type of system. The pressure relief device in the actuation line may be either the actuation line vent (which relieves automatically) or the pressure relief valve (pull ring to effect total relief). Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.
OPERATION (Continued)

MOUNTING “ANSUL AUTOMAN” II-C RELEASE
The reliability of an Ansul fixed nozzle fire suppression system depends greatly upon proper installation of the releasing device, associated equipment and wiring. Unless noted otherwise in the fire suppression system manual, the mounting location for the ANSUL AUTOMAN II-C release must be maintained within a temperature range of 32 °F to 120 °F (0 °C to 49 °C). This requirement and the following instructions are critical for reliable operation.

CAUTION
A number of basic variations are available in the ANSUL AUTOMAN II-C assembly. Your ANSUL AUTOMAN II-C may have either a carbon dioxide actuation cartridge or a nitrogen actuation cartridge. Ansul Incorporated recommends that all systems employing carbon dioxide actuators be restricted to installations in areas where the ambient temperature is never less that 32 °F (0 °C) or greater than 120 °F (49 °C). If ambient temperatures in the area of the actuation cartridge fall below 32 °F (0 °C) or exceed 120 °F (49 °C), it is mandatory that a nitrogen cartridge be used. In every case be certain when replacing cartridges that the proper type is used, and that it meets the temperature range and weight requirements outlined in the instruction manual for that type of system. The pressure relief device in the actuation line may be either the actuation line vent (which relieves automatically) or the pressure relief valve (pull ring to effect total relief). Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.

Installing the Release
1. Select a shock and vibration free surface in a clean dry area for mounting the ANSUL AUTOMAN II-C release enclosure. The mounted release should be completely visible and accessible for maintenance.

   NOTICE
   The STRIKE button must be accessible for manual operation. Follow local, state, or federal regulations for proper location. If the release cannot be mounted in this manner, a remote manual pull station should be installed to facilitate manual actuation.

2. Open the release cover and secure the enclosure at the selected location utilizing the four mounting holes. Use lag screws or toggle bolts depending on the mounting surface. Figure 3 provides detailed mounting data.

3. Connect the release and the extinguishing agent tank(s)/activating mechanism with 1/4 in. (6 mm) Schedule 40 or Schedule 80 pipe, starting from the gas outlet port in the release as shown in Figure 4. Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System for the maximum allowable length of actuation line piping.
4. Use one of the 1/2 in. (13 mm) knockouts provided in the top, bottom or side of the release enclosure to exit the pipe and install balance of pipe, fittings and pressure relief valve as shown in Figure 5. Wrench tighten all pipe joints to prevent leakage of gas. All applications will require an actuation line pressure relief device, such as a line vent or pressure relief valve. The type of pressure relief device used will be determined by the type of suppression system. Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.

5. If remote manual cable pull station is to be installed, complete the steps in the following section. Otherwise, go to WIRING THE ANSUL AUTOMAN II-C RELEASE on page 4.

REMOTE MANUAL PULL STATION INSTALLATION (CABLE TYPE)

The remote pull station, (Part No. 4835) allows the ANSUL AUTOMAN II-C to be manually actuated from some point distant from the release. Refer to appropriate NFPA Standards and the ADA (Americans with Disabilities Act) for mounting guidelines.

1. Select location for mounting manual remote cable pull station. (Pull station must be located within 100 feet (30.5 m) of the release or as stated in the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.)

2. Fasten 4 in. (102 mm) junction box (not furnished) where pull station is to be mounted. (Position the junction box with printing right side up.)

3. Install and secure 1/2 in. (13 mm) rigid conduit from ANSUL AUTOMAN II-C release assembly to pull station using pulley elbows (Part No. 45771) for changes in direction. (Do not use more than 8 pulley elbows between the release and the pull station.)

4. Feed wire rope through pull station junction box and conduit into release. Make sure wire rope rides on top of and in center of pulley sheave. If the 50 ft. (15.2 m) wire rope provided is not long enough, obtain wire rope (Part No. 4595) and splice lengths with two sleeves (Part No. 4596). Do not allow wire rope splice to be within 12 in. (30.5 cm) of any pulley elbow.

5. Fasten pull station assembly cover to junction box.

6. Thread wire rope through rear guide hole in manual trip lever on release. See Figure 6.

7. Pull slack out of wire rope and thread end through sleeve (Part No. 4596).

8. Loop the wire rope back up around and through top of sleeve.

9. Position sleeve approximately 1/2 in. (13 mm) from trip lever and crimp to secure wire rope.

10. Make certain ring pin is not installed in release puncture pin assembly.

11. Remove red glass indicator rod from pull station by removing set screws on side of stud and slide rod out.

12. Pull ring on pull station. If release mechanism is tripped easily, pull station is properly installed. If release does not trip easily, remove pulley covers and check to see that wire rope is correctly positioned in pulley elbow sheave.

13. Cut off excess wire rope 3/4 in. (19 mm) below sleeve assembly.

14. Reinstall glass indicating rod.

15. Proceed to “WIRING THE ANSUL AUTOMAN II-C RELEASE.”
REMOTE MANUAL PULL STATION INSTALLATION (CABLE TYPE) (Continued)

The ANSUL AUTOMAN II-C is designed for use with the separately listed or approved fire detection and releasing control unit which will initiate the electrical signal to operate the release. Accordingly, conduit and wiring connections between the release and the detection/alarm control system should be made by or under the supervision of the detection/control system manufacturer’s technician.

Installation of Wiring

A terminal strip is provided inside the ANSUL AUTOMAN II-C enclosure for making field terminations. It is to be connected to a nominal 12 VDC or 24 VDC releasing circuit. The activation current is 450 mA at 12 VDC or 750 mA at 24 VDC for approximately 55 milliseconds. The wiring diagram shown in Figure 7 provides the details for making the field wiring connections.

All interconnecting wiring to the solenoid is to be a minimum of 18 AWG. All wiring should be done in accordance with the National Electric Code and/or local codes and standards.

The circuit connections from the output of the Releasing Control Unit are made to Terminals 4 and 8 of the ANSUL AUTOMAN II-C release. The release is shipped with a jumper (J2) installed across Terminals 4 and 5. If the releasing control unit that is to be connected to the release requires an in-line supervisory device to maintain proper circuit supervision, jumper J2 should be removed and the appropriate in-line supervisory device installed in its place. Refer to the installation instructions from the manufacturer of the releasing control unit for polarity requirements when installing an in-line supervisory device.

Install the in-line supervisory device (SDx in Figure 7) across terminals 4 and 5. Refer to the releasing control unit installation instructions for supervisory device requirements. If an in-line supervisory device is not required, install jumper J2 across terminals 4 and 5.

Terminals 1 through 3 are provided for auxiliary device connections. Auxiliary equipment is controlled through the action of switch S1. Refer to the following ELECTRICAL DATA SECTION for the contact ratings of S1.

Replace the protective cover over the terminal strip upon completion of field wiring. Test the system by following the procedures on the following pages.

**ELECTRICAL DATA**

**Input Current:** 750 mA at 24 VDC for 50 milliseconds
450 mA at 12 VDC for 50 milliseconds

**Input Voltage:** 12.5 – 30 VDC

**Polarization:** Polarization will result only by installation of a polarized in-line supervisory device (SDx). Observe polarity when connected to a release circuit; terminal 4 positive, terminal 8 negative.

**Contact Ratings:** S1 and S2 contact ratings are 15A, 1/3 HP, 125 or 250 VAC resistive; 1/2A, 125 VDC; 1/4A, 250 VDC; 5A, 120 VAC inductive

**SOL1 Coil Resistance:** 28 ohms ± 10% at 77 °F (25 °C)

**Operating Sequence**

With solenoid cut-off switch (S2), in the normal position (the release reset lever in the armed position), an electrical circuit is formed between terminals 4 and 8. As the supervisory release circuit of the control unit is activated, power is applied between terminals 4 and 8 of TB1 causing solenoid SOL1 to operate the ANSUL AUTOMAN II-C release. As the release operates, S1 and S2 will change positions with S2 cutting power to the solenoid, which opens the release circuit. S1, being a condition switch, provides an isolated set of form "C" contacts for auxiliary functions at terminals 1, 2 and 3 of TB1.

**CAUTION**

Do not install cartridge until all testing has been completed and the system is ready to be armed as instructed on the following pages.

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**FIGURE 6**

**FIGURE 7**
RELEASE CIRCUIT TESTS

**CAUTION**

Fire suppression systems contain agents under high pressure. Make certain electric actuators are removed from valve and gas cartridges are removed from release mechanism before performing release circuit wiring or checkout. Failure to comply could result in accidental agent discharge.

RELEASING CONTROL UNIT (Detection/Alarm Control System)

Refer to the Installation, Operation and Maintenance Manual provided by the releasing control unit manufacturer for release circuit test procedures pertaining to the releasing control unit. Tests should be conducted to verify that the releasing control unit is operating properly prior to conducting release circuit testing on the ANSUL AUTOMAN II-C release.

TEST OF WIRING

Electrical tests should be conducted jointly by the installer and the technical representatives of both the detection/alarm control system and the fire suppression system manufacturers.

**CAUTION**

Do not install cartridge until all testing has been completed and the system is ready to be armed as instructed on the following pages.

1. Raise the release manual reset lever up to the armed position by using the cocking lever (Part No. 26310). Do not install ring pin. See Figure 8.

2. Energize the detection/alarm control system.

3. Activate a detector in accordance with procedures as recommended by the detection/alarm control system manufacturer. Check that the ANSUL AUTOMAN II-C release has operated — reset lever should be in the down (FIRED) position as illustrated in Figure 8. If the release does not operate refer to the SOLENOID CHECKOUT PROCEDURE on page 6.

4. Return detection/alarm control system to normal supervisory operation, reset the ANSUL AUTOMAN II-C release and install ring pin as illustrated in Figure 9.

TEST ACTUATION OF FIRE SUPPRESSION SYSTEM

Depending upon the hazard requirements, the actuation system design for the agent tank assembly will differ. For this reason, the operational test of the actuation system must be performed by an authorized Ansul representative.

1. Refer to the Installation, Operation and Maintenance Manual(s) furnished with the Ansul Fire Suppression System and disarm/remove the agent tank assembly actuation mechanism before test firing.

2. Check ANSUL AUTOMAN II-C release — reset lever should be in the ARMED position and ring pin inserted in the puncture pin assembly shaft.

3. Weigh the proper cartridge (replace cartridge if weight is 1/4 oz (7.1g), or more, below weight stamped on cartridge). Install fully charged cartridge in the release and hand tighten. (Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System for selection of proper cartridge.)

4. Remove ring pin from release mechanism and close the release cover.

5. Operate the release by depressing the STRIKE button.

6. Confirm that the detection/alarm control system performed all of its associated functions and that the agent tank assembly actuation system functioned properly.

7. If the actuation piping contains a relief valve, leak test the pneumatic pipe and fittings between the release and agent tank assembly.

8. Verify that the actuation pressure has been fully relieved. If the system has a relief valve in the actuation line, pull the ring to release all pressure. If the system has an actuation line vent plug, the pressure will be relieved.

**CAUTION**

Failure to disarm/remove actuation device will result in agent discharge upon operation of the release.
TEST ACTUATION OF FIRE SUPPRESSION SYSTEM  
(Continued)
9. Restore the agent tank(s) actuation mechanism to the normal position and reinstall on each agent tank.
10. Rearm release (using cocking lever Part No. 26310) and insert ring pin in release mechanism.
11. Remove spent cartridge.
12. Continue with SOLENOID CHECKOUT PROCEDURE.

SOLENOID CHECKOUT PROCEDURE
If one of the following has occurred during maintenance or installation, the solenoid for the releasing device may be damaged, rendering the system inoperative.

1. The release was tripped electrically (fired) with the ring pin inserted such that the release mechanism was pinned in the cocked position.
2. The lever arm of the mounted switch was bent such that the cut-off switch does not operate when the release roll pin was bottomed out in the fired position.
3. If an attempt was made to recock the release mechanism while power was applied to the release through the alarm contacts.

In any event, the solenoid should be checked to ensure that it is operating properly as follows:
1. Electrically operate the ANSUL AUTOMAN II-C release.
2. Using an ohmmeter, measure the resistance of the solenoid coil. The resistance should be 21-32 ohms.

NOTICE
If the solenoid is found to have burned out as a result of the preceding situations, a replacement can be ordered (Part No. 25924).

ARMING THE SYSTEM
1. Make sure release is armed with ring pin inserted.
2. Weigh new cartridge and replace if cartridge weight is 1/4 oz. (7.1 g) or more, below weight stamped on cartridge. Install fully charged cartridge and hand tighten. (Refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.)
3. Remove ring pin and close cover.
4. Insert ring pin in STRIKE button and attach lead and wire seal (Part No. 197).

CARTRIDGE AND PRESSURE RELIEF DEVICE SELECTION
The ANSUL AUTOMAN II-C can be used as a release mechanism in a variety of ways and with a variety of suppression systems. The limitations of the release mechanism, when used as a releasing device for a particular type of system, are partly dependent upon the operating parameters of the equipment that it is used to operate. Several important considerations for use are temperature, length of actuation pipe (pipe volume), and pressure requirements. For proper selection of cartridge and pressure relief device, refer to the Installation, Operation and Maintenance Manual provided with the Ansul Fire Suppression System.

INSPECTION
Inspection, to provide reasonable assurance that your release is armed and operable, should be conducted at least monthly or more frequently by visually determining that the ring pin is properly inserted and sealed in the STRIKE button and that the reset lever is in the up (ARMED) position.

NOTICE
Every Ansul fixed nozzle system is subject to a mandatory inspection after installation. This inspection must be performed by an authorized Ansul representative to ensure that the complete system is installed properly and is ready for service.
The ANSUL AUTOMAN II-C release is a mechanical device. It requires periodic care. Maintenance, to provide maximum assurance that your release will operate effectively and safely, should be conducted at regular intervals, not more than six-months apart, or when specifically indicated by an inspection.

1. Remove ring pin from STRIKE button and open enclosure.
2. Insert ring pin as shown in Figure 9.
3. Remove cartridge and install safety shipping cap.
4. Perform steps 2 through 4 in the “TEST OF WIRING” section on page 5.
5. Perform steps 1 through 11 in the “TEST ACTUATION OF FIRE SUPPRESSION SYSTEM” section on page 5.
6. Perform the “SOLENOID CHECKOUT PROCEDURE” on page 6.
7. After all fire suppression system maintenance procedures have been completed, place the system back into service by following steps 1 through 4 in the “ARMING THE SYSTEM” section on page 6.
8. Record date of maintenance examination.