

S7999D SOLA Operator Interface Display

INSTALLATION INSTRUCTIONS

APPLICATION

The S7999D is microprocessor-based color touch-screen Operator Interface (OI) display that provides an operator interface for monitoring and configuring parameters in the Sola Hydronic Control and Sola Steam Control system.

The S7999D can be used to monitor an individual boiler but is also used for multiple boiler applications in a lead/lag arrangement. It consists of 2 RS485 ports (COM 1 & COM 2) and USB port. The S7999D display can be flush front or behind mounted into a panel cutout. Wiring connections to the S7999D are through a removable 8-pin wiring connector.

This document provides installation and initial setup instructions. Other applicable publications are:

- 65-0315: S7999D SOLA Operator Interface Display Product Data
- 66-1171: SOLA Hydronic and Steam Control Product Data

Documents can be viewed or downloaded at:
<http://customer.honeywell.com>

SPECIFICATIONS

Electrical Ratings:

Input Voltage: 18 – 30 Vac (24Vac nominal), 50/60 Hz

Input Current: 500 mA max

Power consumption: 12W max

Operating Temperature: -4 to 158 °F (-20 to 70 °C)

Storage/Shipping Temperature: -22 to 176 °F (-30 to 80 °C)

Humidity: 90% RH, non condensing

Enclosure rating: IP10 / NEMA 1

Approvals:

FCC Part 15, Class A Digital Device

Underwriter's Laboratories, Inc. (UL) (cUL) Component Recognized (for non-continuous operation): File Number MH17367 (MJAT2, MJAT8).

Replacement Parts

50063482-001 Bag assembly includes:

- 8-pin connector
- CR2032 coin battery
- Mounting hardware

- 3 clamp filters (1 for 24V power and 1 for each Modbus)

SAFETY FEATURES

The OI Display contains software that incorporates many features that are designed to guide you safely through the commissioning process. Safety, however, is your responsibility.

Read all documentation carefully and respond appropriately to all error messages

WARNING

Explosion Hazard.

Improper configuration can cause fuel buildup and explosion.

Improper user operation may result in PROPERTY LOSS, PHYSICAL INJURY or DEATH.

Using the OI Displays to change parameters, must be attempted by **only experienced and/or licensed burner/boiler operators and mechanics.**

INSTALLATION INSTRUCTIONS

The OI Display can be mounted on the door panel of an electrical enclosure.

1. Select the location on the door panel to mount the display; note that the device will extend into the enclosure at least one inch past the mounting surface.
2. Provide an opening in the panel door 8" wide X 5 1/2" high (for front panel mount) or 7 1/8" wide X 4 11/16" high (for rear panel mount). Use cutout templates provided in Fig. 8 and Fig. 9.
3. Place the OI Display in the opening and use it as a template to mark the location of the four mounting screw holes. Remove the device.
4. Using pilot holes as guides, drill 1/4 in. holes through the door panel.
5. Place the display in the opening, aligning the mounting holes in the device with the drilled holes in the panel.
6. Secure the display to the panel with four #6-32 screws and nuts provided.
7. Wire the 24 Vac power supply and the RS-485 cables using the wiring diagram in Fig. 3.



8. Ensure the 8-pin connector plug is aligned with the header pins when inserting the 8-pin connector plug back onto the Display. Secure firmly.
9. Please make sure resistive spark cable is used with the Sola, and route the wires away from the display as much as possible.

WIRING

The S7999D OI Display must be appropriately wired for both power and communications.

The communication is done over two RS-485 bus ports:

- COM1: connected directly to the SOLA device J3 connector to either Modbus (MB1 or MB2)
- COM2: A bus to the Building Automation System

Table 1. 8-pin Connector Terminals.

Pin #	Function
1	COM1 A
2	COM1 B
3	COM1 C*
4	COM2 A
5	COM2 B
6	COM2 C*
7	24 Vac Common *
8	24 Vac Power

* These 3 terminals are connected internally and can be connected to earth ground

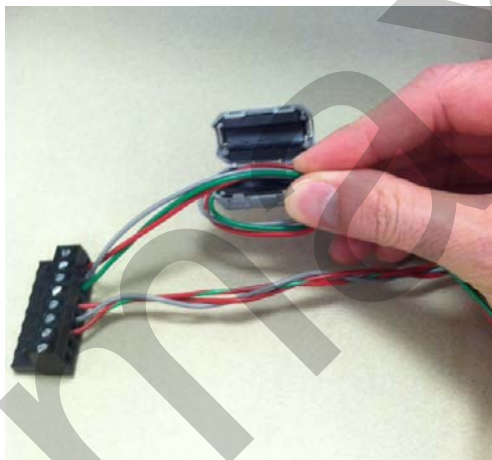
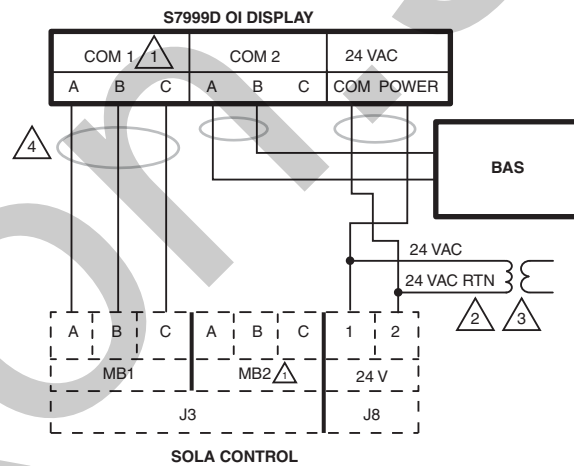


Fig. 2. Clamp filter in place.



- 1 COM PORTS ARE NOT RESTRICTED TO A SPECIFIC DEVICE, BUT CAN BE CONNECTED TO SOLA CONTROLS OR BAS SYSTEM. DISPLAY CAN BE CONNECTED TO MB2.
- 2 SIZE 24V TRANSFORMER ACCORDING TO LOAD REQUIREMENT.
- 3 ENSURE THE S7999D 24 VAC COM TERMINAL AND THE SOLA COMMON TERMINAL (J8-2) ARE BOTH CONNECTED TO THE 24 VAC RTN (RETURN) OF THE EXTERNAL TRANSFORMER.
- 4 TO PROTECT AGAINST CONDUCTED AND RADIATED TRANSIENT NOISE, USE CLAMP FILTERS (INCLUDED IN 50063482-001 BAG ASSEMBLY) AS ILLUSTRATED IN FIGURES 1 AND 2.

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Fig. 3. S7999D wiring diagram.

Fig. 1. Install clamp filters on 24V and Modbus connections.

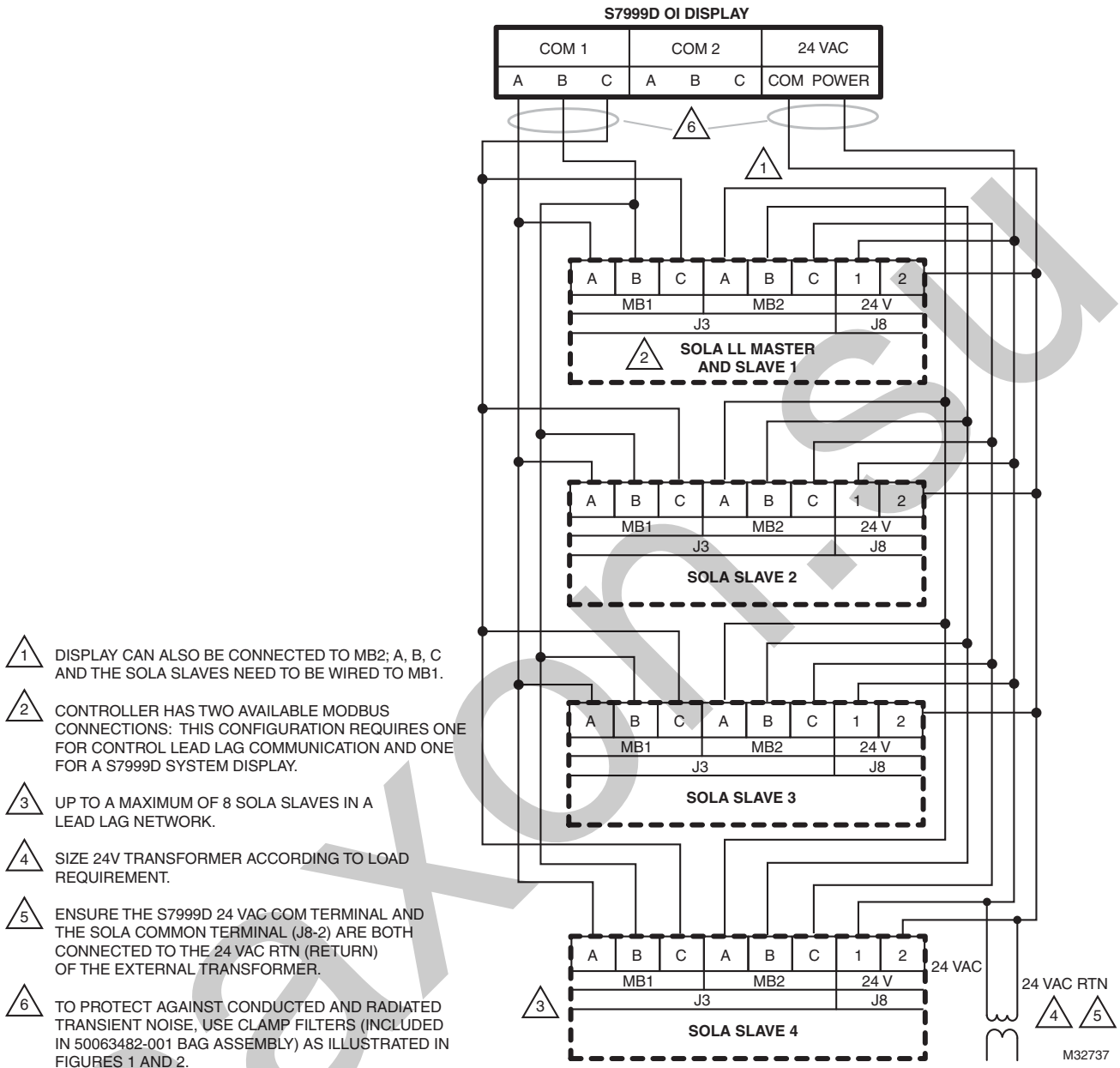


Fig. 4. S7999D wiring diagram for multiple SOLA controls (lead lag setup is shown).

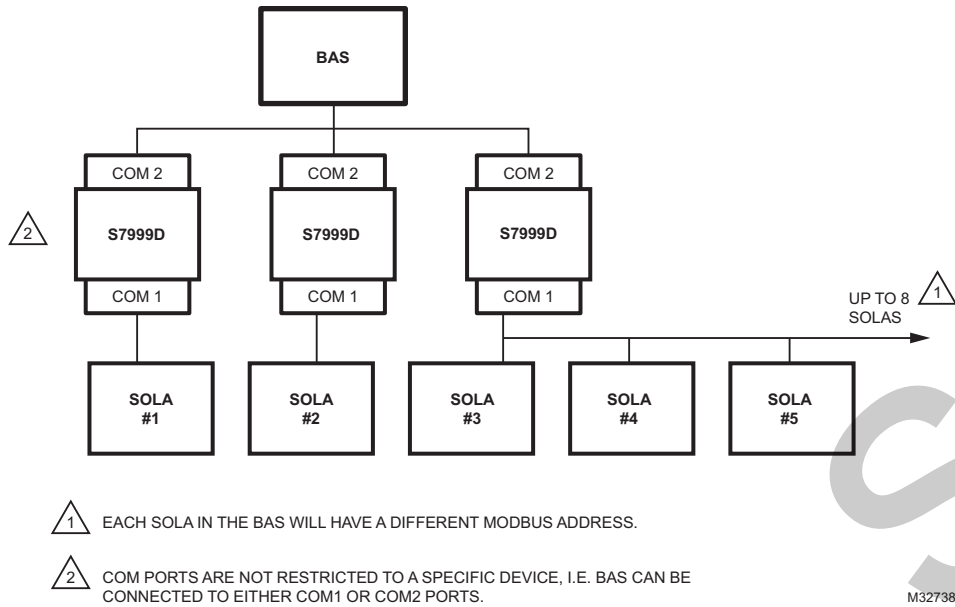


Fig. 5. S7999D in a Building Automation System.

QUICK SETUP

1. Make sure the S7999D 8-pin connector is properly aligned and pressed firmly in place.
2. Make sure the wires between the 8-pin connector and the controller are properly wired and secured.
3. Make sure the power supply is connected securely to the power source.

⚠ WARNING

Electrical Shock Hazard.
Can cause severe injury, death or equipment damage.
 Line voltage is present at the 120 Vac power supply.

STARTING THE S7999D OI DISPLAY

Power-up Validation

The Home page will appear when the device is properly powered. Select the Setup button to adjust backlight and sound as desired. If the screen is dim, check Pin 7 and 8 wiring connections.

A “camera” icon on the left top corner is for screen snapshot use. Up to 16 snapshots can be stored in the display and can be copied to a USB memory stick.



Fig. 6. S7999D Home page (Boiler 1 in normal operation).

Home page

Make sure a screen similar to Fig. 6 appears after the OI Display has completely powered up.

The number of Sola controls connected and powered up to the S7999D are displayed on the Home page.

On System applications, each SOLA Control is represented on the Home page by an icon and name. Pressing the icon allows the user to zoom in on that boiler and see its specific details.

These details are provided on a new page, which can include additional buttons that display detail and operation information, which itself leads to other pages. The pages are traversed in a tree structure method, as shown in Fig. 7.

The SOLA icons will appear in one of four colors indicating the boiler status.

- **Blue:** Normal operation
- **Red:** Lockout condition
- **Yellow:** Holding mode
- **Gray:** Communication error (disconnected or power off)

Up to 8 systems can be displayed on the Home page. The name of each boiler is displayed next to the SOLA icon button. When Lead Lag is enabled, the system header temperature and firing rate are displayed for each System. When the burner is in standby or not firing the firing rate is not displayed.

NOTE: The boiler name may be cut off on the Home page when all icons are present.

The Home page also includes buttons for Lead Lag configuration when lead lag master and slave in the SOLA control is enabled.

Pressing the Setup button on the Home page displays miscellaneous setup and diagnostic functions. It also contains the setup configuration for BAS applications.

The “Control snapshot” button allows the user to dump the current status and/or configuration settings of any SOLA controller into a text document. The text document can be viewed on the display, saved to flash for later viewing, and can be written to a USB stick for viewing on a PC or file transfer.

Pressing the SOLA icon opens that control’s status page. Go to “Configure” button to continue. See form 65-0315 S7999D Operator Interface Display Product Data sheet for details.

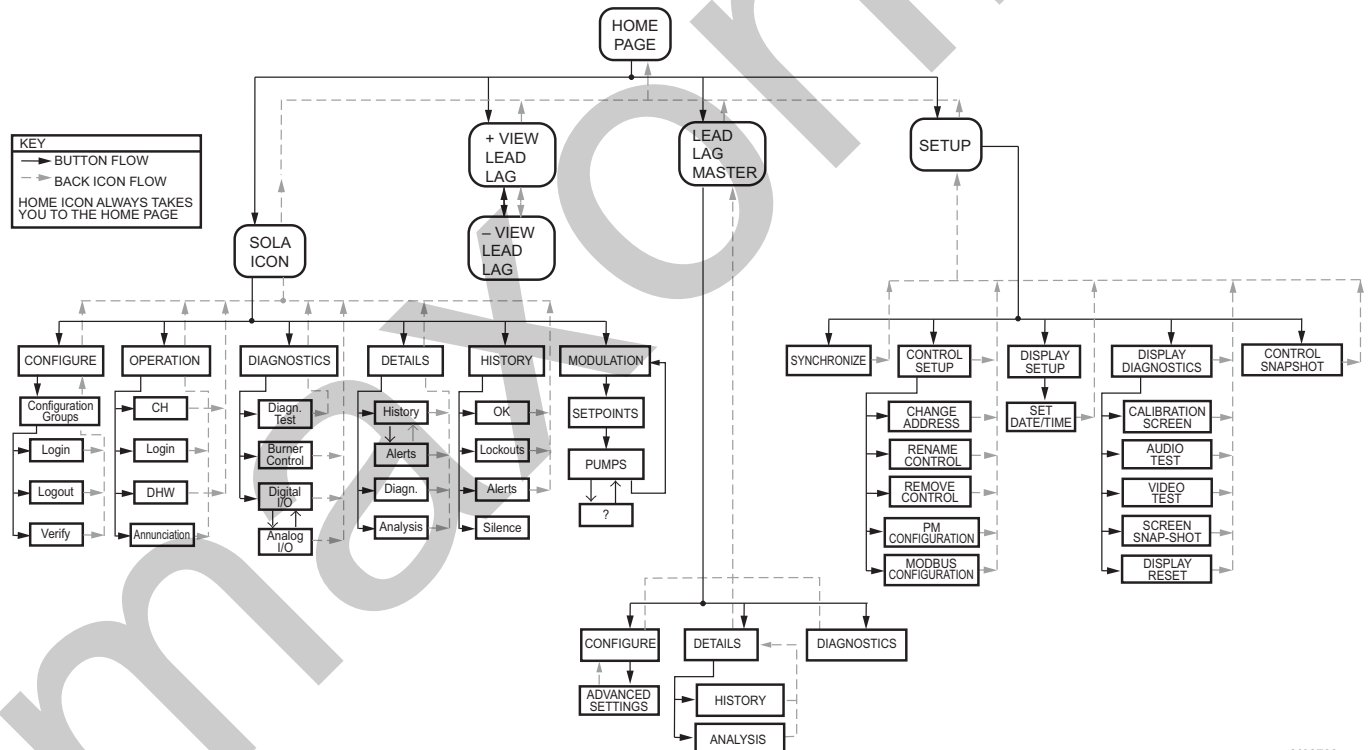


Fig. 7. S7999D display page flow.

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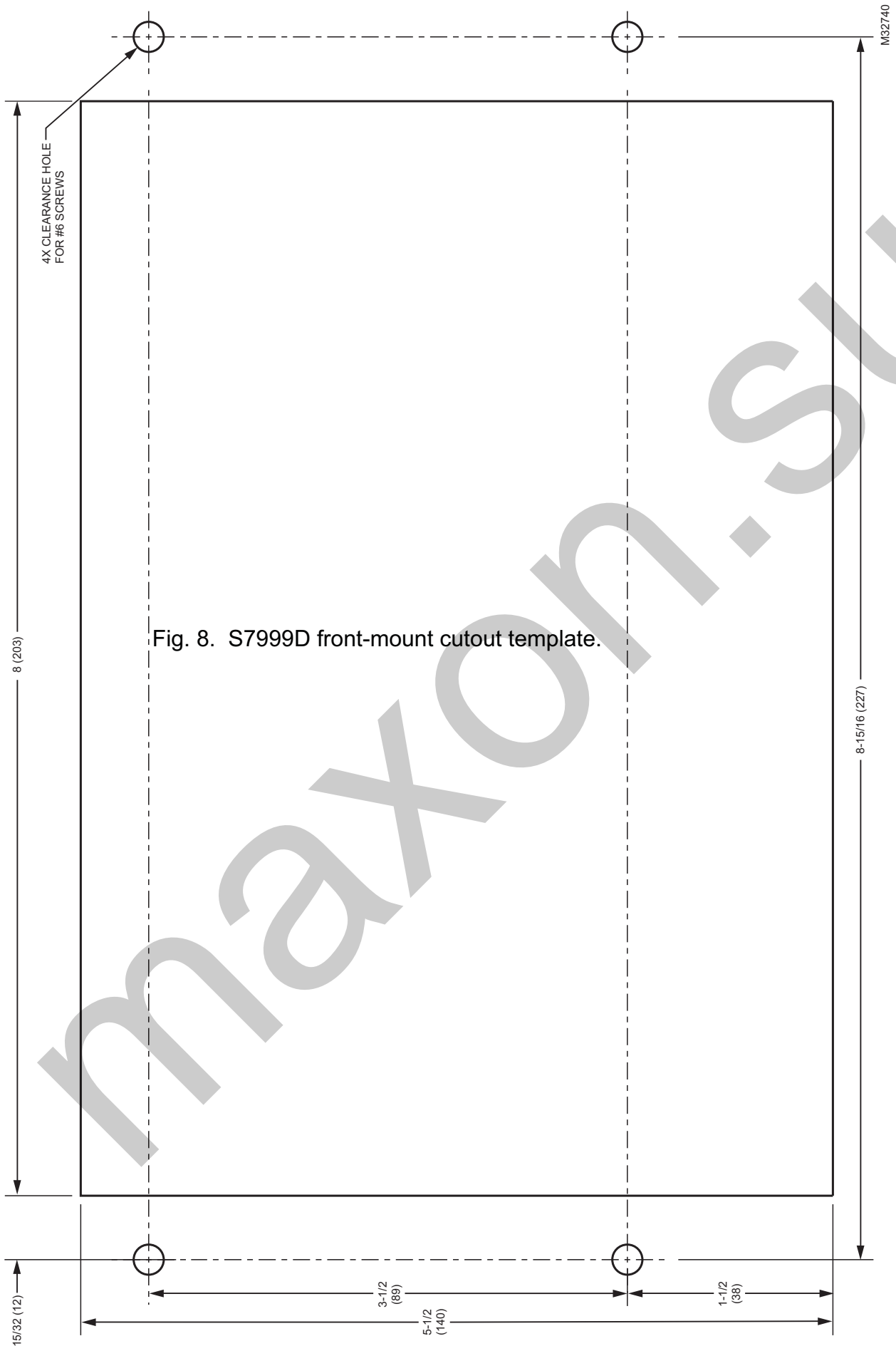


Fig. 8. S7999D front-mount cutout template.

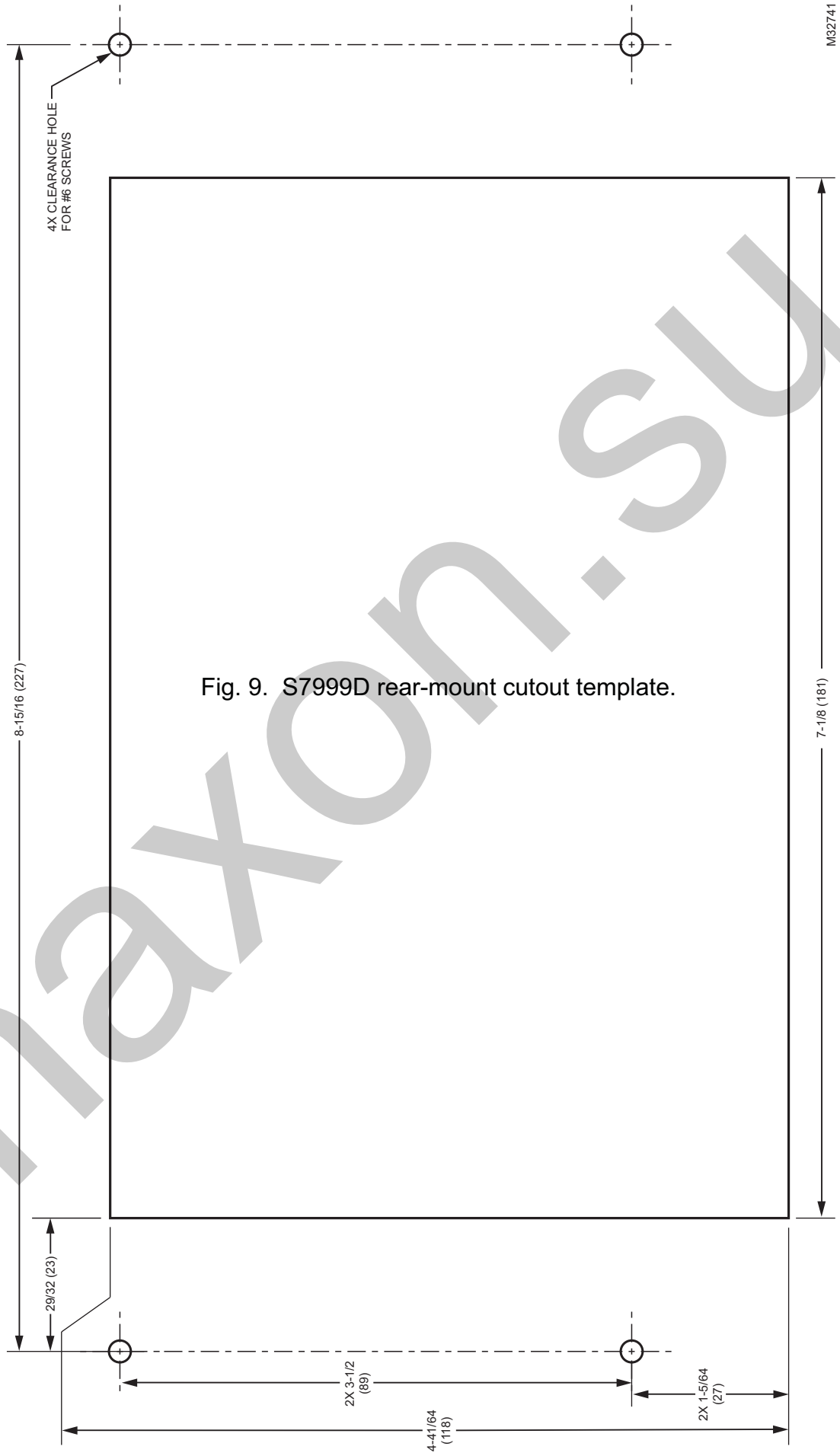


Fig. 9. S7999D rear-mount cutout template.

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