TRANE Symbio 800 Controller Instruction Manual

Contents

TRANE Symbio 800 Controller Instruction Manual

Required Tools and Accessories

- USB type A/B cable
- Computer (PC) with web browser
- Firmware file for the Symbio 800

Part Numbers:

MOD02979 Symbio 800 replacement controller
X13651678002 Symbio 800 field-installed controller

SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

Warnings, Cautions, and Notices

Read this manual thoroughly before operating or servicing this unit. Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:

WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe
NOTICE Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants-including industry replacements for CFCs such as HCFCs and HFCs.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

WARNING

Proper Field Wiring and Grounding Required!
Failure to follow code could result in death or serious injury. All field wiring
MUST be performed by qualified personnel. Improperly installed and grounded field wiring poses FIRE and ELECTROCUTION hazards. To avoid these hazards, you MUST follow requirements for field wiring installation and grounding as described in NEC and your local/state electrical codes.

WARNING

Personal Protective Equipment (PPE) Required!
Failure to wear proper PPE for the job being undertaken could result in death or serious injury. Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, MUST follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians MUST put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). ALWAYS refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, ALWAYS refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of
  Classification and Labeling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians
  MUST put on all PPE in accordance with OSHA, NFPA 70E, or other countryspecific requirements for arc flash protection, PRIOR to servicing the unit. NEVER PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.

WARNING

Follow EHS Policies!
Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

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Storage and Operation Specifications

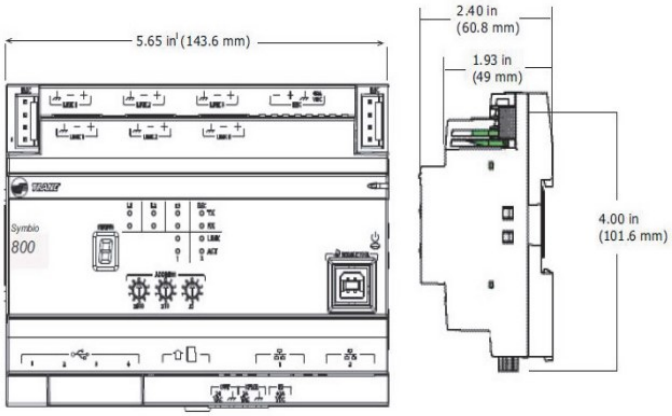
Storage

Temperature:	-67°F to 203°F (-55°C to 95°C)
Relative humidity:	Between 5% to 95% (non-condensing)
Operation	
Temperature:	-40°F to 158°F (-40°C to 70°C)
Relative humidity:	Between 5% to 95% (non-condensing)
Power:	Input: If the max operating temperature is 60°F or less, the current draw for the Symbio 800 is 400mA at 24VDC, which includes up to 1000mA of current supplied to the USB host ports. See Symbio 800 Power Requirements for more information.
Time Clock:	On-board real time clock with battery backup
Mounting weight of controller:	Mounting surface must support 1.3 lb. (0.6 kg)
Environmental rating (enclosure):	NEMA 1, IP3x (ingress protection)
Installation:	UL 840: Category 3
Pollution:	UL 840: Degree 2
Processor:	Arm A9 Cortex Dual Core
Memory:	FLASH 4 GB eMMC SDRAM 1 GB DDR3

Agency Listings:	• UL916 PAZX, Open Energy Management Equipment • UL94-5VA Flammability • CE • FCC Part 15, Subpart B, Class B Limit • BTL Listed – B-BC, B-ACC See Symbio 800 BTL listing for details

Installing the New Symbio 800 Controller

Controller Dimensions



Mounting the Symbio 800

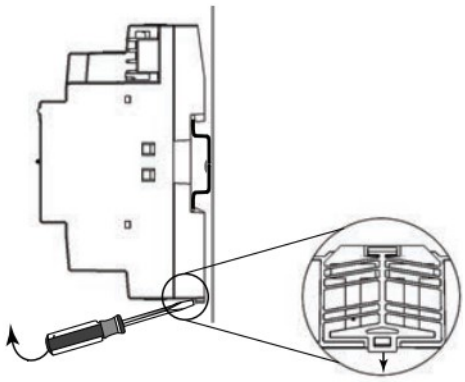
The Symbio 800 controller mounts on the provided standard 35mm DIN rail

To mount device:

1. Hook device over top of DIN rail.
2. Gently push on lower half of device in the direction of arrow until the release clip clicks into place.

To remove/reposition device:

1. Disconnect all connectors before removing or repositioning.
2. Insert screwdriver into slotted release clip and gently pry upward with the screwdriver to disengage the clip.
3. While holding tension on the clip, lift device upward to remove or reposition.
4. If repositioned, push on the device until the release clip clicks back into place to secure the device on the DIN rail. Slotted release clip shown from back side



Powering Up the Symbio 800 Controller

The Symbio 800 controller powers up automatically when power is applied. It is not necessary to press the Service button to power up the controller. The factory-supplied ground wire must be connected from any chassis ground connection on the device to an appropriate earth ground.

Symbio 800 Power Supply Requirements

Power the Symbio 800 controller as follows:
The PM014 power supply module, through inter-module-communication, is the preferred method of powering the Symbio 800 controller.

- PM014 Output: 4 A max at 24 VDC at 70°C. Refer to the *PM014 Power Supply IOM* (BAS-SVX33-EN). Any 24 VDC power supply can be used if it has sufficient power output.
- Any user-provided power supply must provide power for three line cycles if AC power is This can prevent

controllers from rebooting with shorter, but more frequent, power losses.

Important: *Powering the Symbio 800 from an XM70, or XM90 Expansion Module is not advised.* If the maximum operating temperature is 60°C or less, the current draw for the Symbio 800 is 400mA@24VDC, which includes up to 1000mA of current supplied to the 5 Volt USB Host ports. At maximum operating temperature of 70°C, the current on the USB Host ports is limited to 500mA (see the following table).

Table 1. Symbio 800 power draw

Temperature °C	24 VDC Current (mA)	USB Rated Current (mA)
–40 to 60	400	1,000
60 to 70	300	500

All LEDs illuminate and the following sequence flashes on the 7-segment display: 8, 7, 9, 5, 4, L, dancing dash pattern. The dancing dashes persist while the Symbio 800 is operating normally. Refer to the *Symbio 800 IOM, BAS-SVX080-EN,* for more information about the 7-Segment Display.

Replacing the Symbio 800 Controller

Removing the Original Controller

1. Turn off power to the unit and the
2. Note the point of connection for each terminal
3. Remove all terminal blocks from the
4. Remove the original controller from the

Inserting the microSd Card (if applicable)

Some Symbio 800 controllers ship from the equipment factory with a microSD memory card containing a backup of the controller configuration. If your existing controller has a microSD card, refer to the following steps to restore the equipment controller backup on the memory card.

To simplify the controller replacement process, transfer the microSD card from the original controller to the replacement controller.

1. Remove the microSD card from the original controller by gently pressing on the card and carefully extracting it from the controller.

   Figure 1. Remove microSD card

2. Install the microSD card in the new controller by gently pushing the cardinto the controller until it clicks into place.

   Figure 2. Insert microSD card into new controller

Install the New Controller

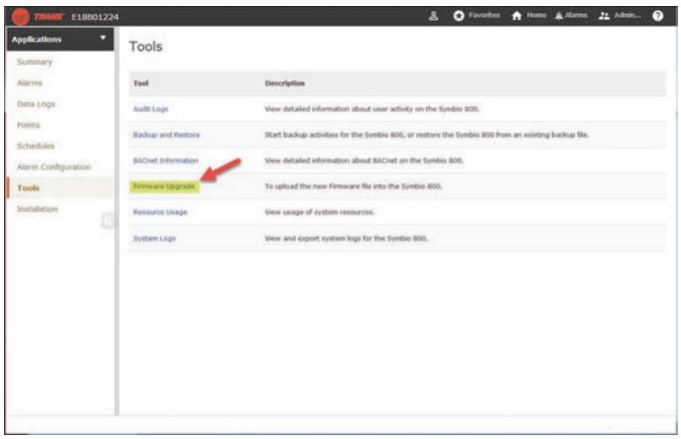
1. Restore all wiring connectors on the new
2. Safely apply power to the unit and the

Updating the Controller Firmware

Before loading the backup of the controller configuration from the microSD card, the firmware must be upgraded in the controller.
The preferred method for upgrading the firmware in the controller is by using the Symbio user interface (UI).

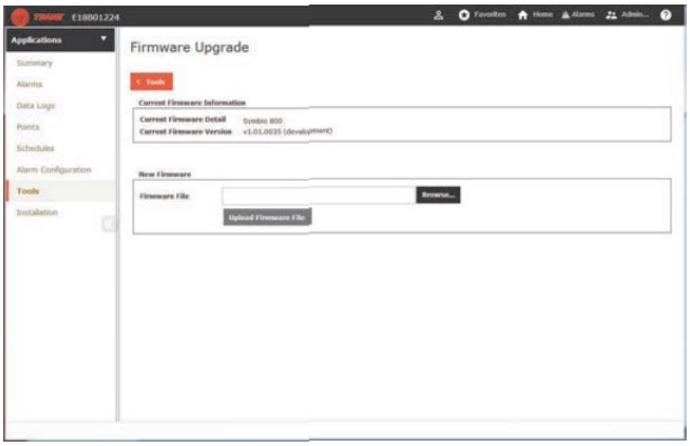
1. Establish a connection between the PC and the controller by connecting the USB cable to the PC and the service tool port on the Symbio 800
2. Open a web browser and enter the following IP address: **80.18.1**
3. Click **Log In.**
4. From the Summary page, select Tools/Firmware Upgrade.

   Figure 3. Firmware upgrade



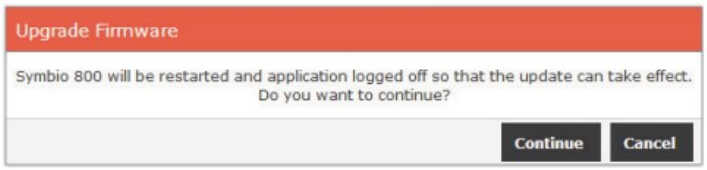
5. Click Browse… to select the most recent firmware file. If you do not have a firmware file, contact your local Trane representative or use Tracer TU to complete the firmware upgrade.

Figure 4. Select firmware



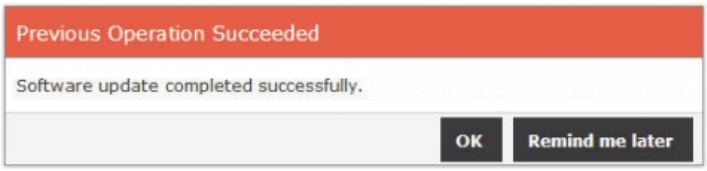
6. Click Upgrade Firmware File.
7. When prompted, click Continue.

Figure 5. Continue firmware upgrade



8. When the upgrade is complete, click OK.

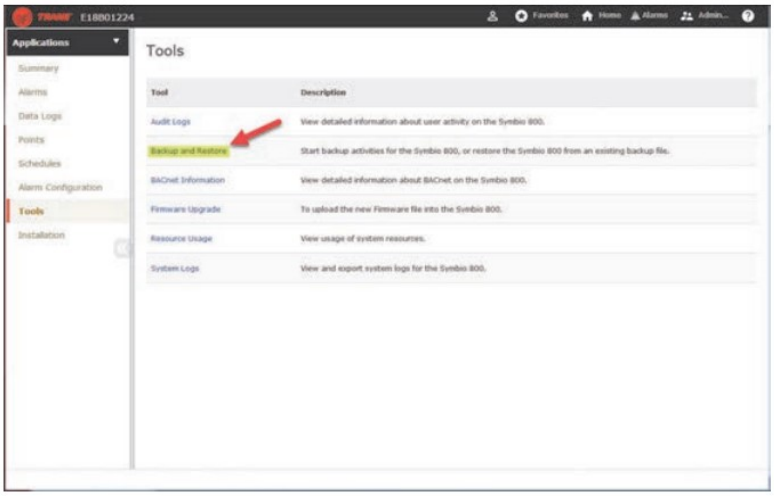
Figure 6. Upgrade complete



Restoring the Controller Backup

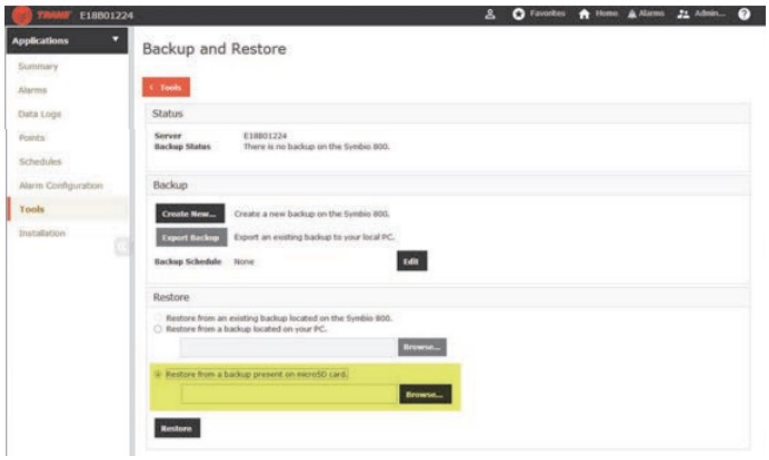
1. Ensure that the microSD card is installed in the replacement controller.
2. From the web browser, select Tools/Backup and Restore.

Figure 7. Backup and restore



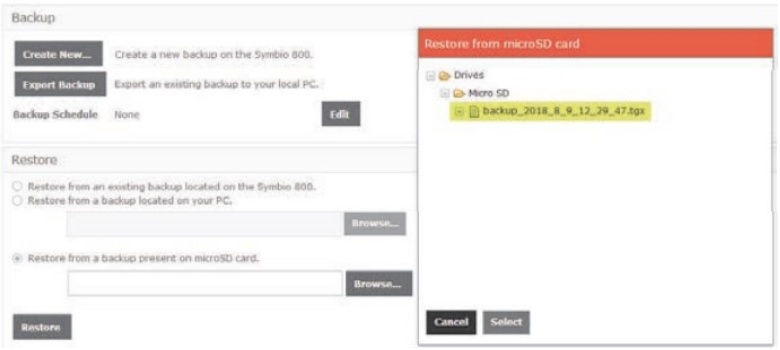
3. Select Restore from a backup present on microSD card. Or if the most recent controller backup is on your PC, select Restore from a backup located on your PC.

Figure 8. Restore from a backup



4. Click Browse… and select the most recent controller backup.

Figure 9. Select backup file



5. Click Select to complete the firmware upgrade and controller restore

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BAS-SVN033D-EN 25 Apr 2022
Supersedes BAS-SVN033C-EN (Nov 2021)

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Documents / Resources

	**TRANE Symbio 800 Controller** [pdf] Instruction Manual Symbio 800 Controller, Symbio 800, Controller

References

- **Trane Heating & Air Conditioning**
- **Trane Technologies | A Leader in Climate and Sustainability**

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