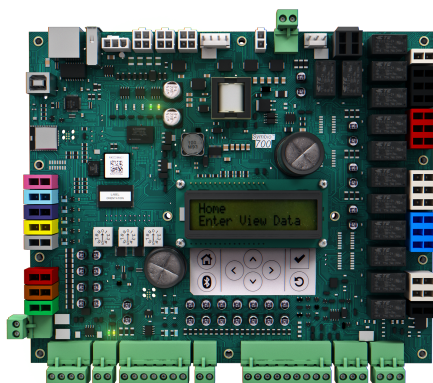




Integration Guide

LonTalk® Integration

Symbio™ 700



⚠ 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.

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TRANE
TECHNOLOGIES™



Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

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:



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



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 practices.



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.

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/national 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 Labelling 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 country-specific 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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Overview

Purpose

The purpose of this document is to provide instructions for integrating the Symbio™ 700 controller into building automation systems. This document is targeted to system integrators and controls contractors.

Symbio™ 700 Controller Overview

The Symbio™ 700 controller has been installed, programmed, wired, commissioned, and tested in the factory prior to shipment. While some sensors and end devices are normally wired in the field, nearly all other wiring is factory-provided. Power for the controller is provided and connected from within the control panel.

The unit and associated controller can be applied as standalone or as part of a building automation system.

Note: *For communicating applications to third-party control systems, network communication wiring must be provided by others.*

Communication Options

The Symbio™ 700 controller supports the following communication protocol options for integration to either Trane or non-Trane control systems:

- BACnet® MS/TP
- BACnet Air-Fi®
- BACnet IP
 - Ethernet
 - Wi-Fi
- Modbus® RTU
- Modbus TCP
- LonTalk®

For information pertaining to the integration of the Symbio 700 controller using either Modbus or BACnet communication, refer to the integration guides specific to those applications.

Units of Measure

The communicated data of the Symbio 700 controller will be passed in SI by default. The Symbio™ Service and Installation mobile app allows the user to change and customize the Data Display Units Preferences.

Regardless of the communicated (system) units of measure, the user may change the displayed units of measure on their smart device – user preference. These user preference units of measure are independent of the communicated units.



Communication Setup and Configuration

The Symbio controller can be factory ordered with a specific protocol configuration. The Symbio 700 controller supports BACnet MS/TP, BACnet IP, BACnet/Zigbee (Air-Fi™ Wireless) and LonTalk and can be ordered from the factory with all of these configured.

Depending on the protocol of use and associated parameter definition, use of the mobile application may be necessary. Refer to the following section for additional information on using the mobile application.



LonTalk Protocol Setup

The Symbio 700 controller supports LonTalk communications with the optional U60 LonTalk module. The LonTalk module is din rail mounted and connected to the Symbio 700 controller using USB.

Figure 1. Symbio 700 U60 LonTalk module



Note: The Symbio 700 rotary addresses do not apply to LonTalk communications.

Communication between the U60 module and Symbio 700 controller is automatic, established upon connection. The user is not required to complete any further setup or configuration.

A virtual service pin is included through the on-board display of the Symbio 700 controller, found under the utilities menu. When pressed, the service pin will send a service pin message to the LonTalk network. A service pin broadcasts the Neuron ID to the LonTalk network so a LonTalk network management tool can find a device and set its Domain, Subnet, and Node address.



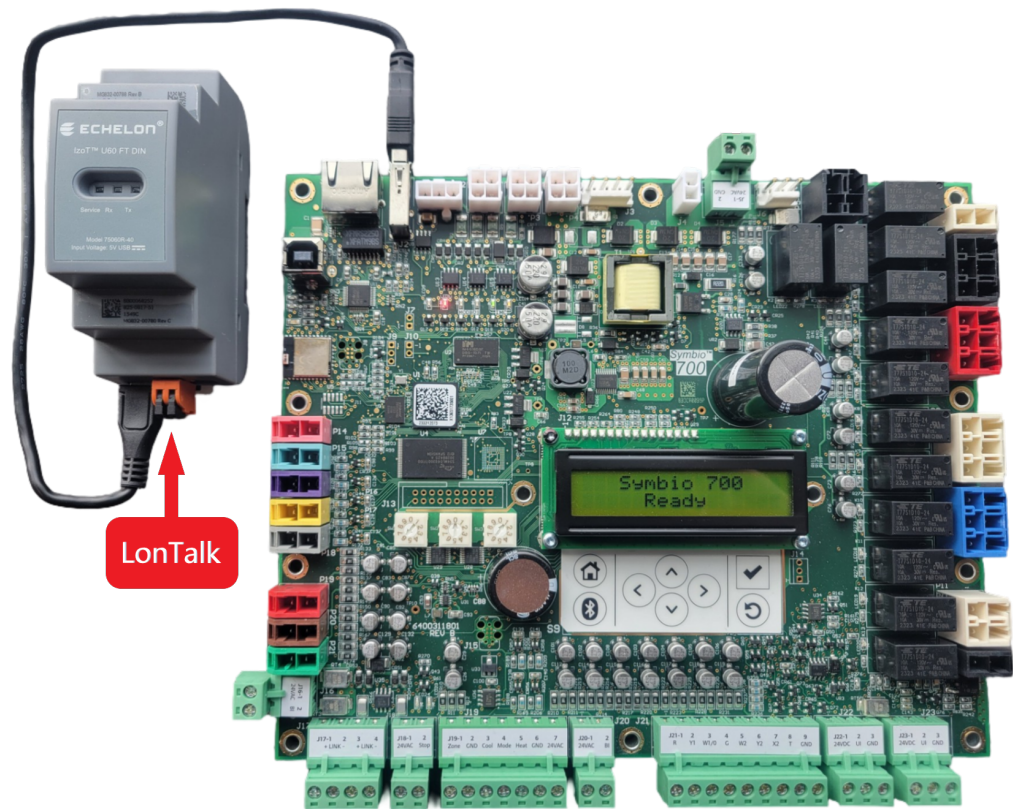
LonTalk Protocol Setup

Home	
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Status	
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Settings	
▼	
Service	
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Utilities	<input checked="" type="checkbox"/>
▼	
Alarms	About
▼	▼
Bluetooth	Unit Config
	▼
	Display
	▼
	Date and Time
	▼
	Backup/Restore
	▼
	Firmware Update
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	Restart Controller
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	Export Trends
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	Performance Test State Request
	▼
	Lon
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	Service Pin
	<input checked="" type="checkbox"/>
	▼
	Comm Protocol Settings
	▼
	IP Settings

Connect the pair of communication wires to the LonTalk adapter. LonTalk does not require wire polarity, though the factory recommends that the installing technician observe polarity. Refer to the LonTalk standard documentation for detailed information on LonTalk wiring.

All LonTalk devices must have a unique DSN address and must have the same Domain value. The Symbio 700 LonTalk adapter ships on the zero-length domain, easily allowing network managers and tools to discover the device.

Figure 2. Symbio 700 controller with LonTalk module





Network Variables

Download

Equipment-specific LonTalk® points lists are available on the trane.com product page.

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