

Installation and Service Instructions

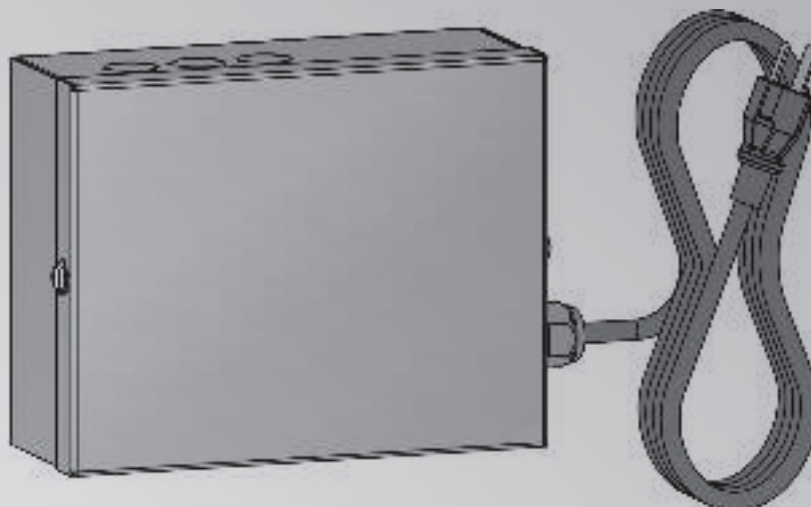
for use by heating contractor

VIESSMANN

ADIO electronics module

Function extension for connecting circulation pumps

EM-P1 Extension



Certified as a component
part for Viessmann boilers

Product may not be exactly as shown

IMPORTANT

**Read and save these instructions
for future reference.**

Safety, Installation and Warranty Requirements

Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause product/property damage, severe personal injury, and/or loss of life. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

■ Product documentation

Read all applicable documentation before commencing installation. Store documentation near boiler in a readily accessible location for reference in the future by service personnel.

► *For a listing of applicable literature, please see section entitled "Important Regulatory and Safety Requirements".*



■ Warranty

Information contained in this and related product documentation must be read and followed. Failure to do so renders the warranty null and void.



■ Licensed professional heating contractor

The installation, adjustment, service and maintenance of this equipment must be performed by a licensed professional heating contractor.

► *Please see section entitled Safety and "Important Regulatory and Installation Requirements".*



■ Advice to owner

Once the installation work is complete, the heating contractor must familiarize the system operator/ultimate owner with all equipment, as well as safety precautions/requirements, shutdown procedure, and the need for professional service annually before the heating season begins.

	Page
Safety	Safety, Installation and Warranty Requirements..... 2
Important Precautions	Important Regulatory and Installation Requirements 4
General Information	About these Installation Instructions 5
	Intended Use 5
	Product Information 5
Installation	Mounting the Extension 6
Connections	Overview of Electrical Connections 7
	Connecting the DHW Recirculation Pump 8
	Connecting the Heating Circuit Pump 8
	Rotary Switch S1 10
	Connecting the PlusBus to the Boiler 10
	Power Supply 11
	Connecting Several Accessories 12
	Wiring Diagram 13
Specifications	Specifications 14

Important Regulatory and Installation Requirements

Approvals

Viessmann boilers, burners and controls are approved for sale in North America by CSA International.

Codes

The installation of this unit shall be in accordance with local codes. In the absence of local codes, use:

- CSA C22.1 Part 1 and/or local codes in Canada
- National Electrical Code ANSI/NFPA 70 in the U.S.

Always use latest editions of codes.

The heating contractor must comply with the Standard for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1 where required by the authority having jurisdiction.

Working on the equipment

The installation, adjustment, service, and maintenance of this product must be done by a licensed professional heating contractor who is qualified and experienced in the installation, service, and maintenance of hot water boilers. There are no user serviceable parts on the boiler, burner, or control.

Power supply

Install power supply in accordance with the regulations of the authorities having jurisdiction or, in absence of such requirements, in accordance with National Codes. Viessmann recommends the installation of a disconnect switch to the 120V power supply outside of the boiler room.


Ensure main power supply to equipment, the heating system, and all external controls have been deactivated. Close main oil or gas supply valve. Take precautions in both instances to avoid accidental activation of power during service work.

- Please carefully read this manual prior to attempting installation. Any warranty is null and void if these instructions are not followed.

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product.

We offer frequent installation and service seminars to familiarize our partners with our products. Please inquire.

- The completeness and functionality of field supplied electrical controls and components must be verified by the heating contractor. These include low water cut-offs, flow switches (if used), staging controls, pumps, motorized valves, air vents, thermostats, etc.

	<p>! WARNING</p> <p>Turn off electric power supply before servicing. Contact with live electric components can cause shock or loss of life.</p>
--	--

About these Installation Instructions



Take note of all symbols and notations intended to draw attention to potential hazards or important product information.



WARNING

Warnings draw your attention to the presence of potential hazards or important product information.

- Indicates an imminently hazardous situation which, if not avoided, could result in death, serious injury or substantial product/property damage.



CAUTION

Cautions draw your attention to the presence of potential hazards or important product information.

- Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product / property damage.

IMPORTANT



- Helpful hints for installation, operation or maintenance which pertain to the product.
- This symbol indicates to note additional information
- This symbol indicates that other instructions must be referenced.

Intended Use

The appliance is only intended to be installed and operated in sealed unvented heating systems, with due attention paid to the associated installation, service and operating instructions as well as the details in the datasheet.

It is only designed for the heating up of heating water. Commercial or industrial usage for a purpose other than the heating up of heating water shall be deemed inappropriate.

Intended use presupposes that a fixed installation in conjunction with permissible components designed for this purpose has been carried out.

Every other use will be deemed to be inappropriate. Any resulting losses are excluded from the manufacturer's liability.

Any usage beyond this must be approved by the manufacturer for the individual case.

Intended use also includes the adherence to maintenance and inspection intervals.

Product Information

Spare parts lists

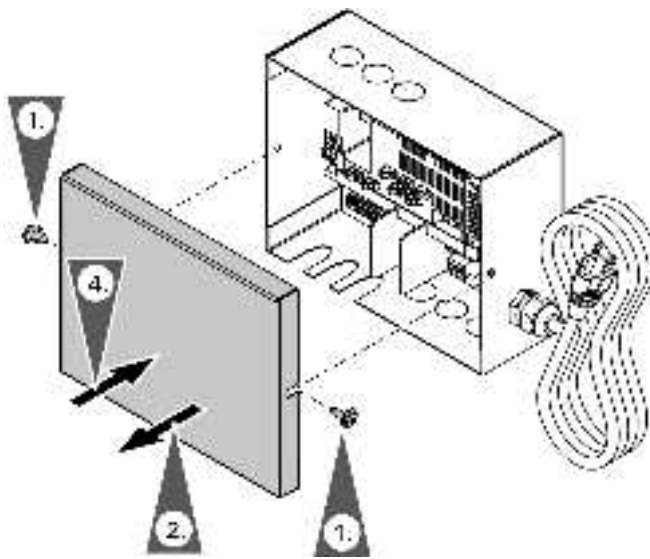
Information about spare parts can be found on the Viessmann spare parts app.



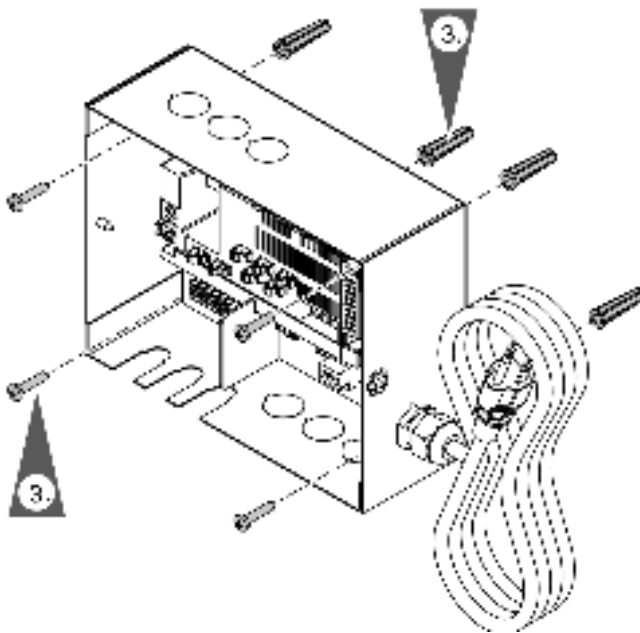
The following circulation pumps can be connected:

- Heating circuit pump for heating circuit without mixing valve
- DHW recirculation pump

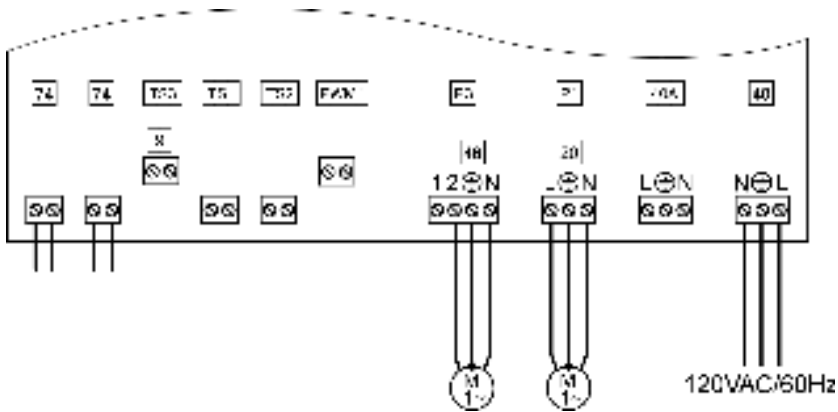
Mounting the Extension



1. Loosen the retaining screws from the extension kit enclosure (do not remove).
2. Remove cover and set aside.
3. Mount the extension module enclosure to the wall using the supplied hardware.
4. Install the cover.



Overview of Electrical Connections



- Legend**
Plug 120VAC
P1 20 Heating circuit pump (on site)
P3 46 DHW recirculation pump (on site)
40 Power supply
40A Power supply for accessories

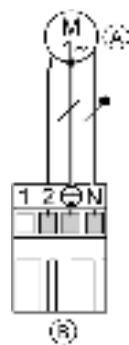
- LV connections**
PWM1 No function
TS1 No function
TS2 No function
TS3 9 No function
74 PlusBus

CAUTION

The electronic modules are static sensitive. To avoid damage caused by static discharge, follow Electro-Static Discharge safety procedures.

Note: Apply strain relief to on-site cables.
Secure individual wires directly to each plug using cable ties.
Seal any unnecessary apertures with cable grommets (not cut open).

Connecting the DHW Recirculation Pump

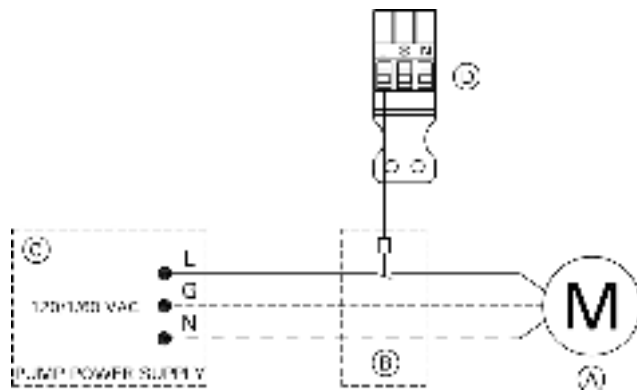


- Legend**
- (A) DHW recirculation pump
 - (B) Plug 46 to slot P3

- 1. If there is already a plug connected to the DHW recirculation pump:
Remove it and connect plug 46.
- 2. Insert the plug into slot P3.

Specification	
Rated current	1A
Rated Voltage	120VAC

Connecting the Heating Circuit Pump



- Legend**
- (A) Heating circuit pump
 - (B) Contactor/Relay
 - (C) Power supply with disconnect and protection
 - 20 To the extension kit

Heating circuit pump 120V ~

Specification of the heating circuit pump 120V ~

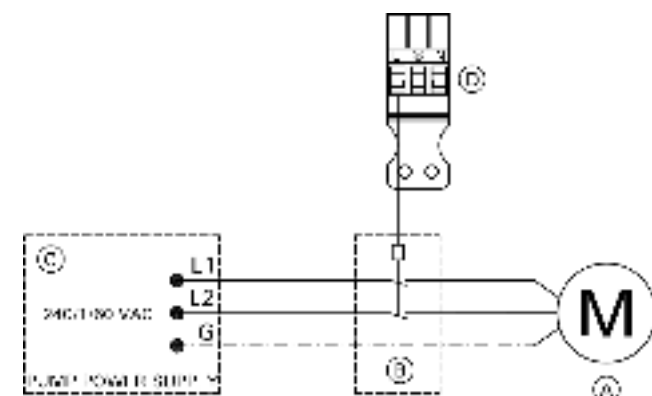
Rated current: > 1A

Specification of the contactor:

Rated voltage: 120V ~

Rated current: 1A

Connecting the Heating Circuit Pump *(continued)*



Legend

- Ⓐ Heating circuit pump
- Ⓑ Contactor/Relay
- Ⓒ Power supply with disconnect and protection
- Ⓓ To the extension kit

Heating circuit pump 240V ~

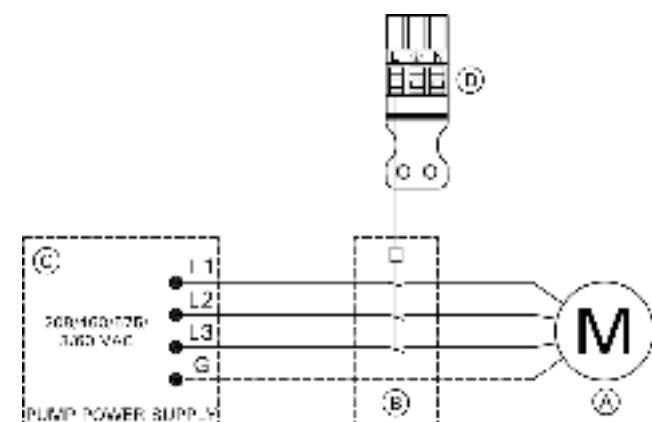
Note: In underfloor heating circuits, integrate a temperature limiter on site for limiting the maximum temperature of underfloor heating systems.

Specification of the heating circuit pump 240V ~

Specification of the contactor:

Rated voltage: 120V ~

Rated current: 1A



Legend

- Ⓐ Heating circuit pump
- Ⓑ Contactor/Relay
- Ⓒ Power supply with disconnect and protection
- Ⓓ To the extension kit

Heating circuit pump 208/460/575V ~

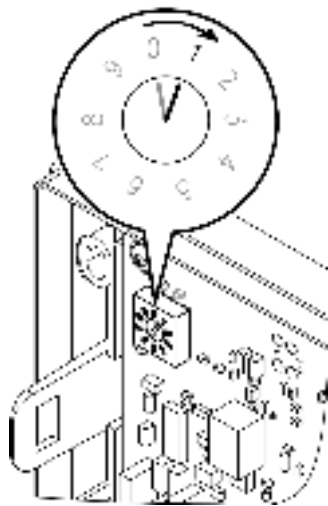
Specification of the heating circuit pump 208/460/575V ~

Specification switching the contactor:

Rated voltage 120V ~

Rated current 1A

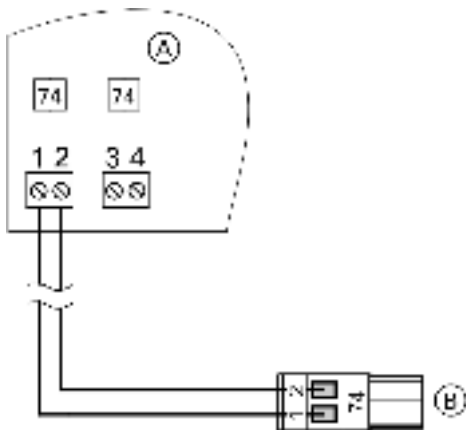
Rotary Switch S1



Rotary switch S1 on the EM-P1 extension and rotary switch S1 on the mixer extension kit must be set according to the following table.

Heating circuit	Rotary switch S1 on mixer extension kit Factory setting: 1	Rotary switch S1 on EM-P1 extension Factory setting: 1
System with 1 heating circuit without mixer		
1	--	1
System with 1 heating circuit with mixer		
2	1	2
System with several heating circuits with mixer		
2	1	4
3	2	4
4	3	4

Connecting the PlusBus to the Boiler



For connection to heat generators with external plug, luster terminals or spring-loaded terminals:
For the bus connection, disconnect plug 74. Connect the wires directly. The wires are interchangeable.

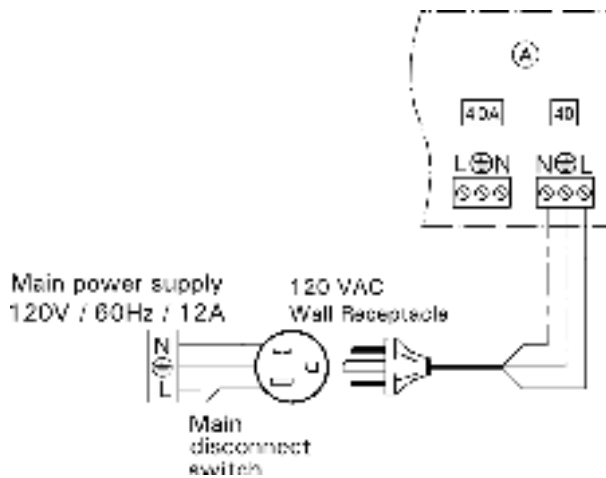


Boiler installation and service instructions

Legend

- (A) Extension (electronics module)
- (B) PlusBus to heat generator

Power Supply



Legend

(A) Extension P1

Direct power supply



WARNING

Incorrectly executed electrical installations can result in injuries from electrical current and in equipment damage.

Connect the power supply (see page 4) and implement all grounding measures (e.g. RCD circuit) in accordance with the following regulations:

- In Canada all electrical wiring is to be done in accordance with the latest edition of CSA C22.1 Part 1 and/or local codes. In the U.S. use the National Electrical Code ANSI/NFPA 70. The heating contractor must also comply with both the Standard for Controls and Safety Devices for Automatically Fired Boilers, ANSI/ASME CSD-1, and the Installation Code for Hydronic Heating Systems, CSA B214-01, where required by the authority having jurisdiction.
- Connection requirements specified by your local power supply utility
- Protect the power cable with max. 15A



WARNING

The absence of component grounding in the system can lead to serious injury from electrical current if an electrical fault occurs. Connect the appliance and pipework to the equipotential bonding of the building in question.



WARNING

Incorrect core allocation can result in serious injury and damage to the appliance.
Never interchange cores "L" and "N".

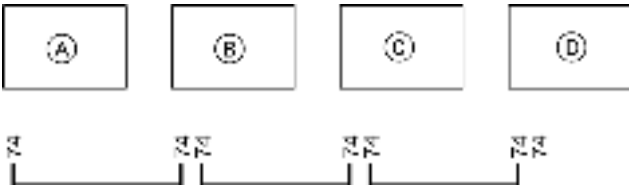


CAUTION

An incorrect phase sequence can cause damage to the appliance. Check for phase equality with the power supply connection of the control unit.

Connecting Several Accessories

Some accessories with direct power supply



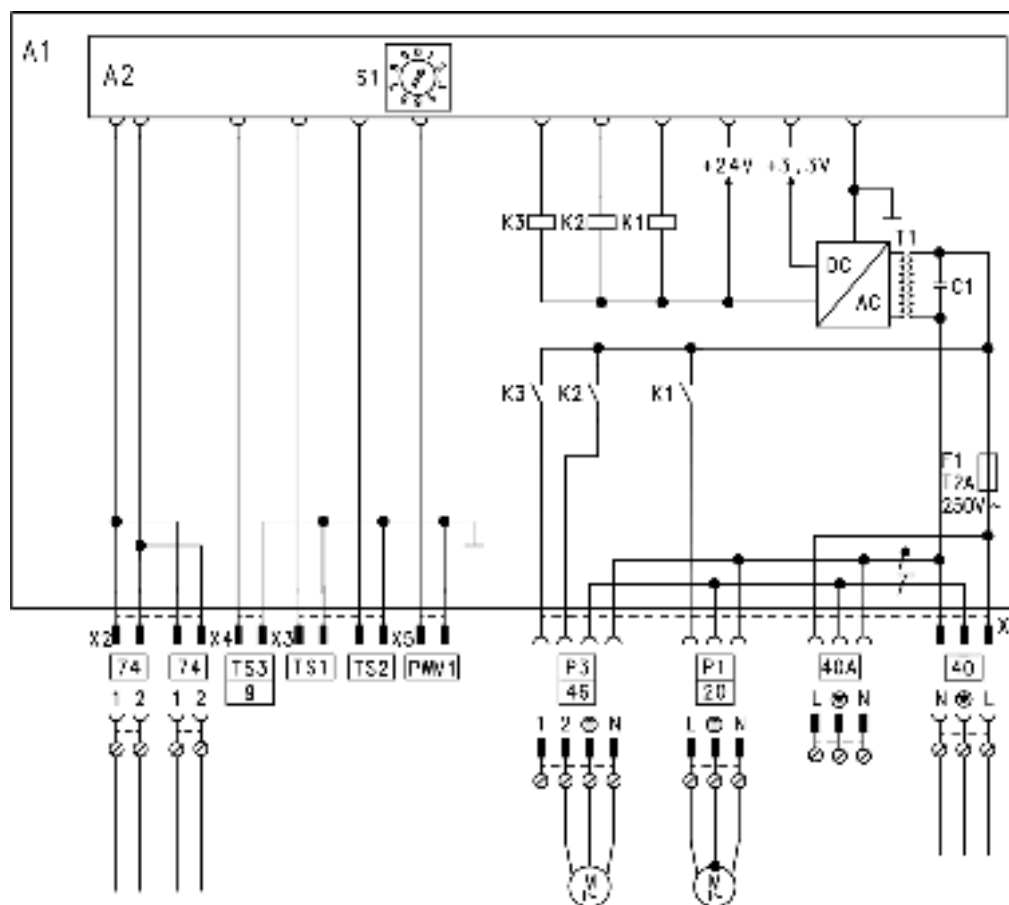
Legend

- Ⓐ Boiler control unit
- Ⓑ Mixing valve extension kit for heating circuit with mixing valve M2 (electronics module)
- Ⓒ Mixing valve extension kit for heating circuit with mixing valve M3 (electronics module)
- Ⓓ Further accessories
- 74 PlusBus

Power supply and PlusBus connection

- In the following circumstances, use the contact (output) of the accessories only to switch an on-site relay:
An actuator with a higher power demand than the fuse rating required for the accessories, e.g. a circulation pump, is connected to the contact (output) of the accessories.

Connecting Several Accessories *(continued)*



Legend

- A1 PCB, EM-P1 extension (ADIO electronics module)
- A2 PCB
- F1 Fuse
- S1 Rotary switch

120V ~ plugs

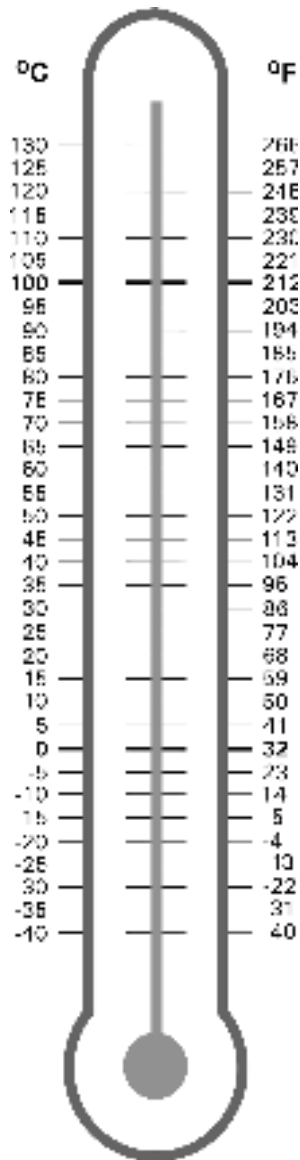
- P1 20 Heating circuit pump (on site)
- P3 46 DHW recirculation pump (on site)
- 40 Power supply 120VAC/60 Hz
- 40A Power supply for accessories

LV plug

- PWM1 No function
- TS1 No function
- TS2 No function
- TS3 9 No function
- 74 PlusBus for connection to the boiler control unit and one other accessory

Specifications

Rated voltage	120VAC
Rated frequency	60 Hz
Rated current	2A
Power consumption – electronics	2 W
Power consumption	9 mA
Permissible ambient temperature	
■ Operation	32 to 104°F (0 to +40°C)
■ Storage and transport	-4 to 149°F (-20°C to +65°C)
Rated relay output breaking capacity	
■ P 1 (heating circuit pump)	1A 120VAC
■ P 3 (DHW recirculation pump)	1A 120VAC



Printed on environmentally friendly
(recycled and recyclable) paper.



Technical information subject to change without notice.

Scan for
digital copy
of this
document



Viessmann Manufacturing Company (U.S.) Inc.
45 Access Road
Warwick, Rhode Island · 02886 · USA
TechInfo Line 1-888-484-8643
1-800-288-0667 · Fax (401) 732-0590
www.viessmann-us.com · info@viessmann-us.com

Viessmann Manufacturing Company ULC
750 McMurray Road
Waterloo, Ontario · N2V 2G5 · Canada
TechInfo Line 1-888-484-8643
1-800-387-7373 · Fax (519) 885-0887
www.viessmann.ca · info@viessmann.ca