

## LON Communication Module

KWE P/N 704086  
Vi P/N 7834 357

### For use with:

Viessmann Vitotronic 100, KW10B



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## Technical, Installation and Configuration Information

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### Cautionary Statement

The information presented in this document is only to be used by those familiar with its application and use.




<b>IMPORTANT</b>
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Read and save these instructions for future reference


## About these instructions




Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include "WARNING", "CAUTION" and "IMPORTANT". See below.

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

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

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

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

 <b>CAUTION</b>
Static sensitive components may be damaged by improper handling or work within the control. Ensure all possible measures are taken to eliminate build-up of static electricity.

<b>IMPORTANT</b>
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→ *Helpful hints for installation, operation or maintenance which pertains to the product.*

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## Important Regulatory and Installation Requirements

### Codes

The installation of this unit must be in accordance with local codes.

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


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 completeness and functionality of field supplied electrical controls and components must be verified by those installing the device*

The installing contractor must comply with the Standard of 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 unit must be done by a licensed professional heating contractor or persons who are qualified and experienced in the installation, service, and maintenance of similar products. There are no user serviceable parts on this control.

 **WARNING**

More than one live circuit. See wiring diagram in this manual. Turn off power supply to control and damper/blower before servicing. Contact with live electrical components can result in serious injury or death

### Power supply

Install power supply in accordance with the regulation of the authorities having jurisdiction or in absence of such requirements, in accordance with National Codes.

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## Purpose of Device and Operation

The purpose of the LON Communication Module is to provide compliment the KW10B with LON Communications to allow the boiler control to be controlled by LON enabled cascade controls such as the Viessmann Vitocontrol-S, MW1 or allow remote monitoring of boiler temperature/operation.

## Installation

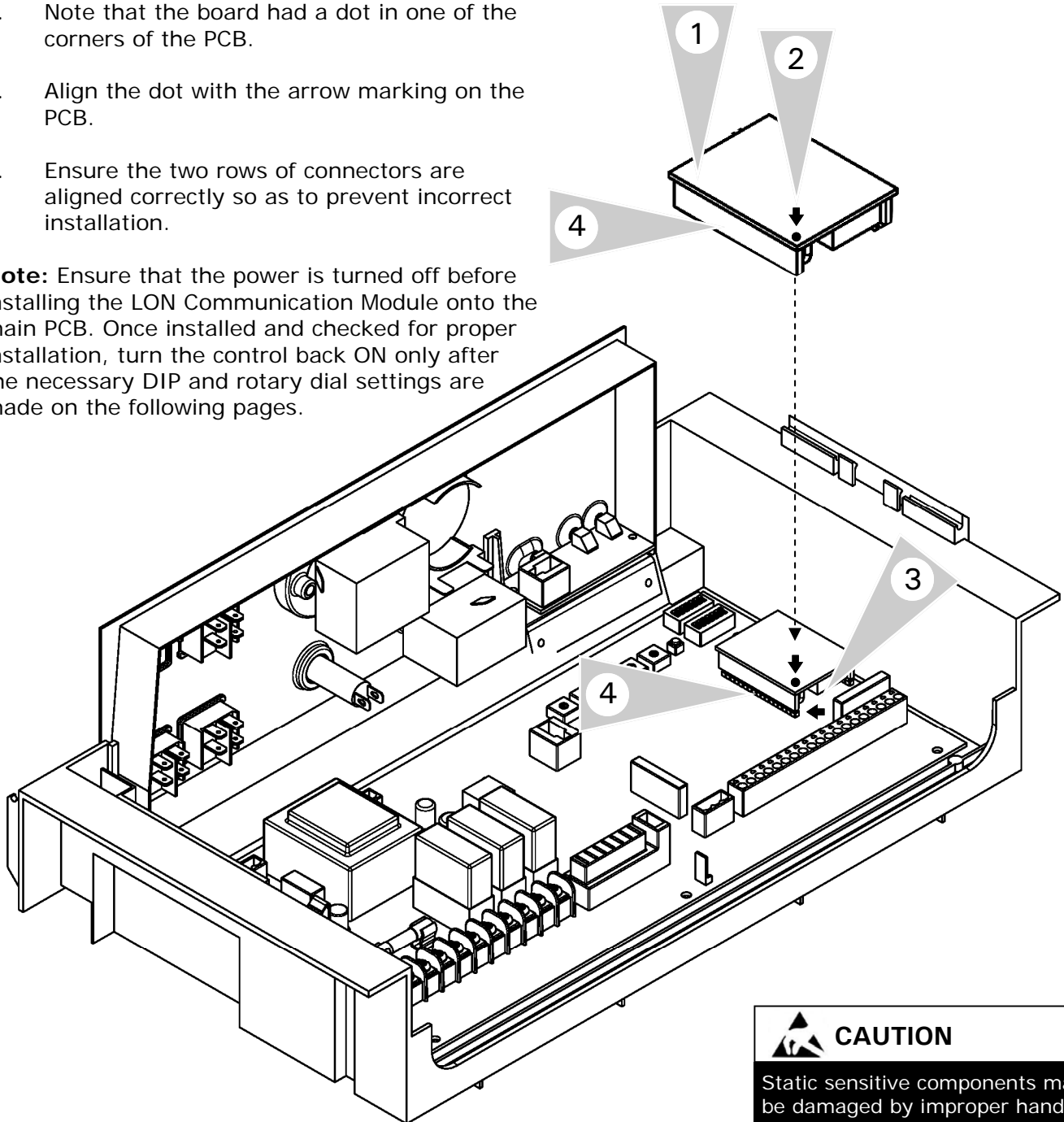
### Installing the LON Communication Board

#### Important:

**Ensure Control is OFF before proceeding**

1. Unpack the LON Communication Module from the protective packaging.
2. Note that the board had a dot in one of the corners of the PCB.
3. Align the dot with the arrow marking on the PCB.
4. Ensure the two rows of connectors are aligned correctly so as to prevent incorrect installation.

**Note:** Ensure that the power is turned off before installing the LON Communication Module onto the main PCB. Once installed and checked for proper installation, turn the control back ON only after the necessary DIP and rotary dial settings are made on the following pages.



#### CAUTION

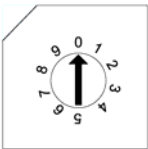
Static sensitive components may be damaged by improper handling or work within the control. Ensure all possible measures are taken to eliminate build-up of static electricity.

# Installation

## Adjusting PCB Settings for LON Communication

### S1 Rotary Dial Setting Position

Setting	Description
0	To work as a single boiler with HK1/3
1 to 4	Address boiler on LON to communicate with Viessmann controls.
5 to 8	addresses are used in conjunction with special custom control panel
9	Reset control back to self binding mode with service button.

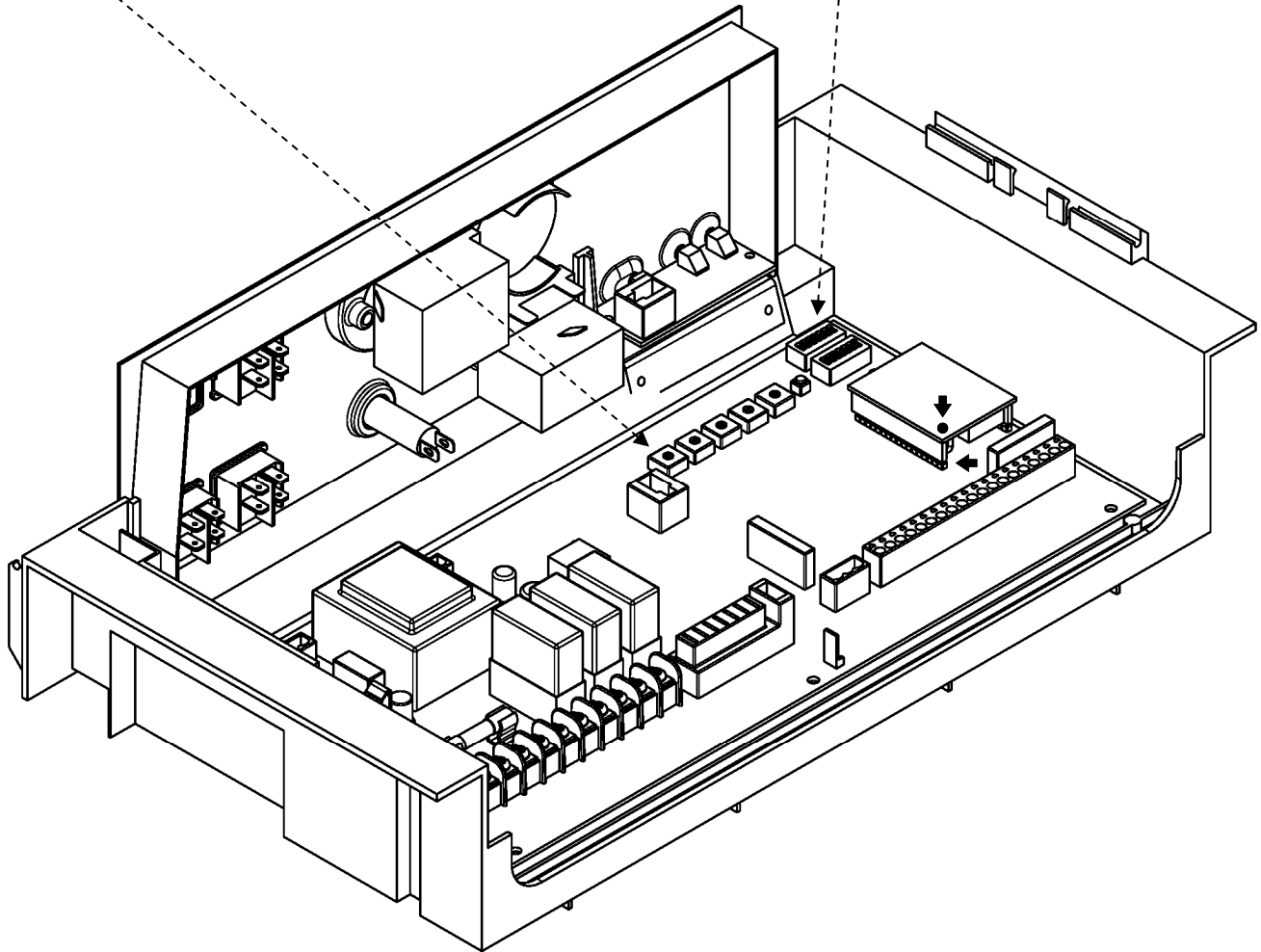
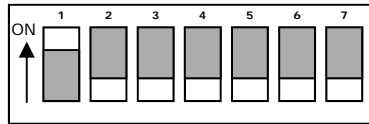


**NOTE:** This is viewed from in front of the control.

### S6.1 DIP Switch Setting

Setting	Description
1	Move S6.1 DIP Switch from the Off position to ON. This will enable the LON communication.

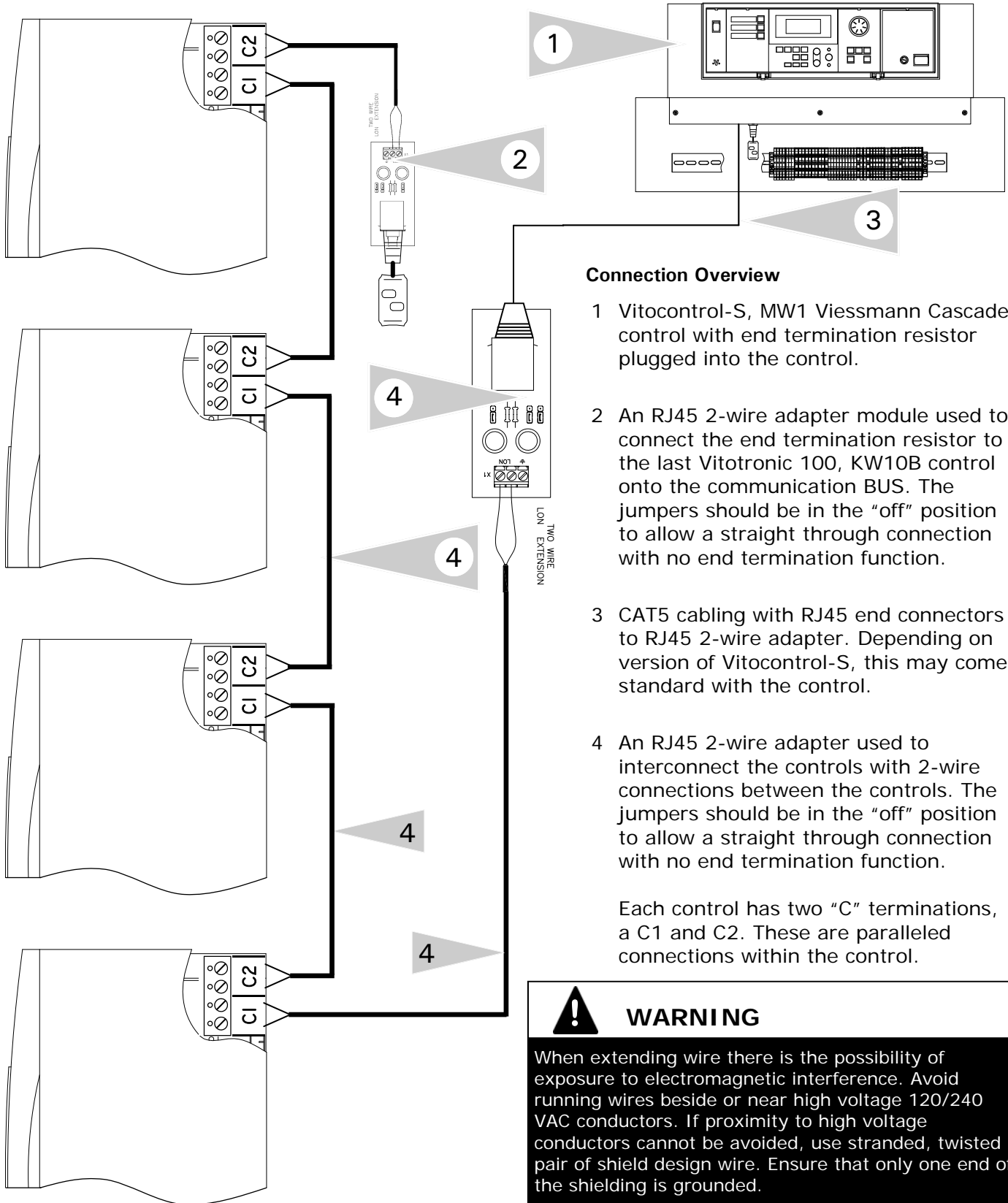
**NOTE:** This is viewed from in front of the control.



# Communication Interconnections

Communication connections—Vitotronic 100, KW10B  
 Use with Vitocontrol-S, MW1 with RJ45 2-wire adapter

KWE P/N 394030 LON Communication Module V1.0 06/2011 Technical information subject to change without notice



### Connection Overview

- 1 Vitocontrol-S, MW1 Viessmann Cascade control with end termination resistor plugged into the control.
- 2 An RJ45 2-wire adapter module used to connect the end termination resistor to the last Vitotronic 100, KW10B control onto the communication BUS. The jumpers should be in the "off" position to allow a straight through connection with no end termination function.
- 3 CAT5 cabling with RJ45 end connectors to RJ45 2-wire adapter. Depending on version of Vitocontrol-S, this may come standard with the control.
- 4 An RJ45 2-wire adapter used to interconnect the controls with 2-wire connections between the controls. The jumpers should be in the "off" position to allow a straight through connection with no end termination function.

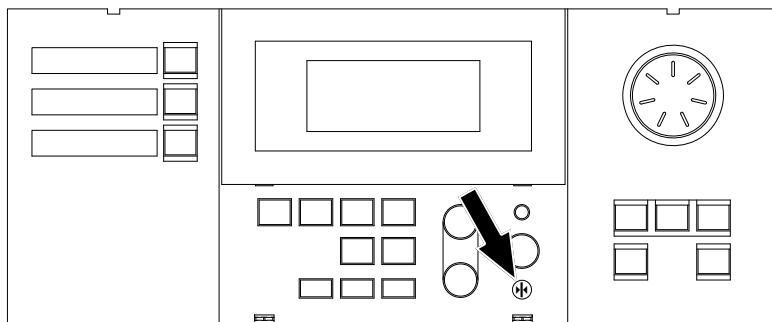
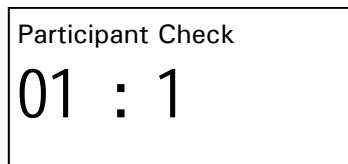
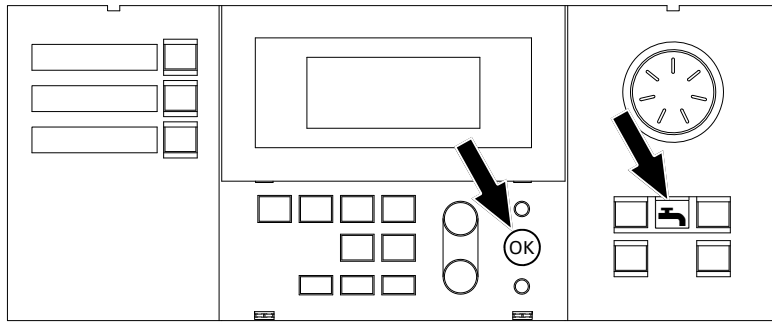
Each control has two "C" terminations, a C1 and C2. These are paralleled connections within the control.



### WARNING

When extending wire there is the possibility of exposure to electromagnetic interference. Avoid running wires beside or near high voltage 120/240 VAC conductors. If proximity to high voltage conductors cannot be avoided, use stranded, twisted pair of shield design wire. Ensure that only one end of the shielding is grounded.

## Update Participant List for Vitocontrol-S, Cascade Control



### Participant Update

This is to be carried out after all the communication connections have been completed and the Vitocontrol-S, is coded as the error manager (factory setting).

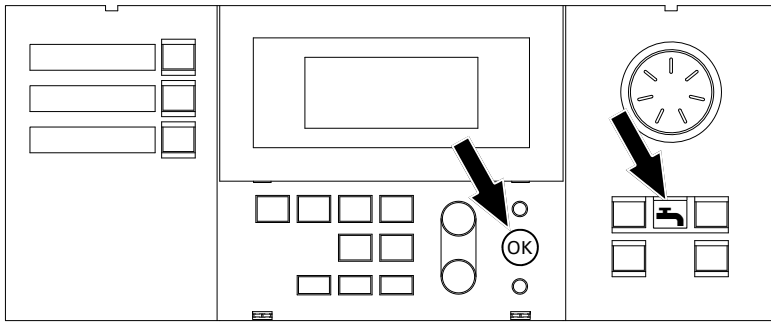
#### Requirements:

Vitocontrol-S, must be coded as the error manager (default). Refer to the Vitocontrol-S manual address 79:01.

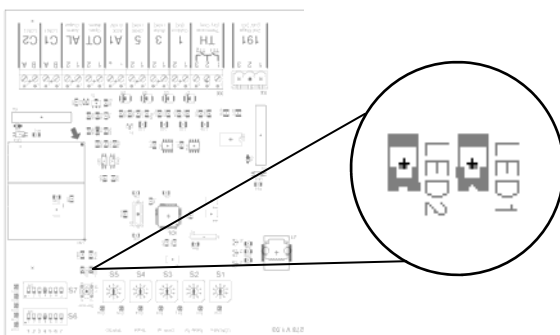
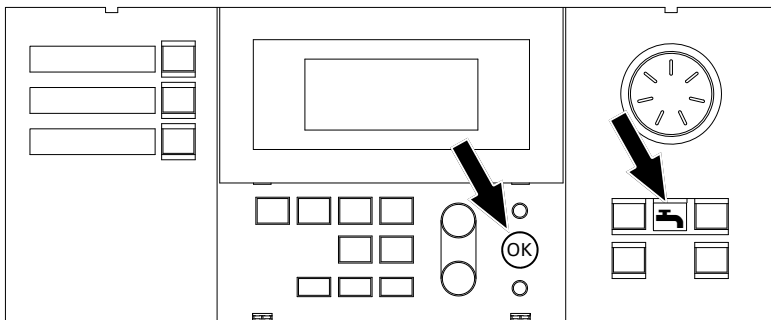
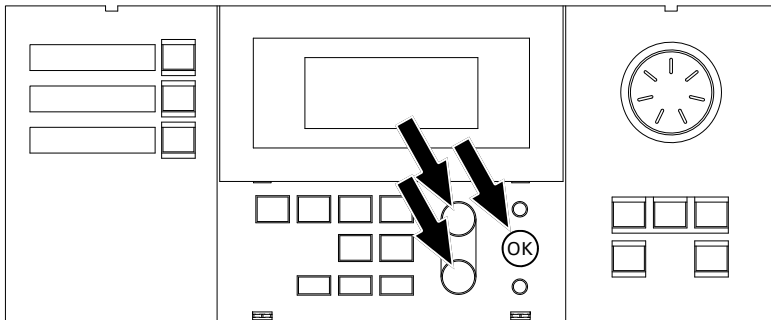
To ensure a correct Participant Update, ensure that all of the boiler controls are addressed before proceeding with this step. Failure to do so may result in duplicate participant numbers or communication errors.

1. Press the faucet and OK buttons simultaneously for approximately 2 seconds. The words Participant Check will appear in the screen.
2. Press the reset button. The participant list will be updated after approximately 2 minutes. The participant check will then be terminated.
3. If an insufficient amount of time has passed before trying to re-enter the participant check, the control will not allow the check to proceed and exit from the check.

## Participant Check Vitocontrol-S, MW1 Cascade Control



Participant Check  
01 : 1



### Participant Check

The participant check is used to confirm communication between the boiler controls and the Vitocontrol-S, system control.

Requirements:

1. Vitocontrol-S, must be coded as the error manager (default). Refer to the Vitocontrol-S manual address 79:01. The LON participant number must be assigned in each of the boiler controls before proceeding.
  2. Press the faucet and OK buttons simultaneously for approximately 2 seconds. The words Participant Check will appear in the screen.
  3. Select the required participant by using the + or — sign.
  4. Activate the check with the OK button. If communication between the selected boiler control and Vitocontrol-S is verified, "Check OK" will appear in the screen. If there is a problem with communication, "Check not OK" will appear.
- When the Participant Check is active for a particular control, the LED2 will flash for the duration of the test.
- If the check was not successful, verify all wiring between the controls and ensure that the power is turned ON.
5. If the check was successful, select a different user by using the + or — signs. Once selected press OK and repeat the same procedure as outlined in point 3.
  6. To exit the check, press the faucet and OK button again for 2 seconds. The participant check is terminated.

**Note:** Position of the LEDs when viewed from in front of the control

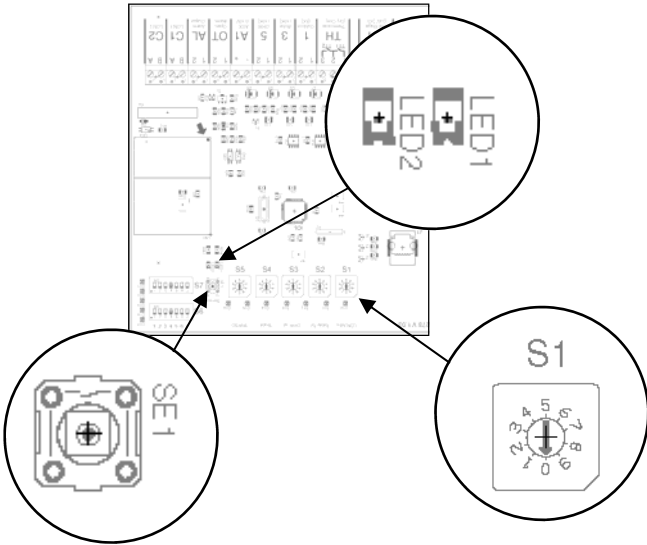


## Additional Information

### Discovering the Control

When performing a control discovery, ensure that the BMS software is set to a domain ID of 07.

### Autobinding Reset



It may be necessary to reset the KW10B from Tool Binding to AutoBinding. Follow the proceeding steps.

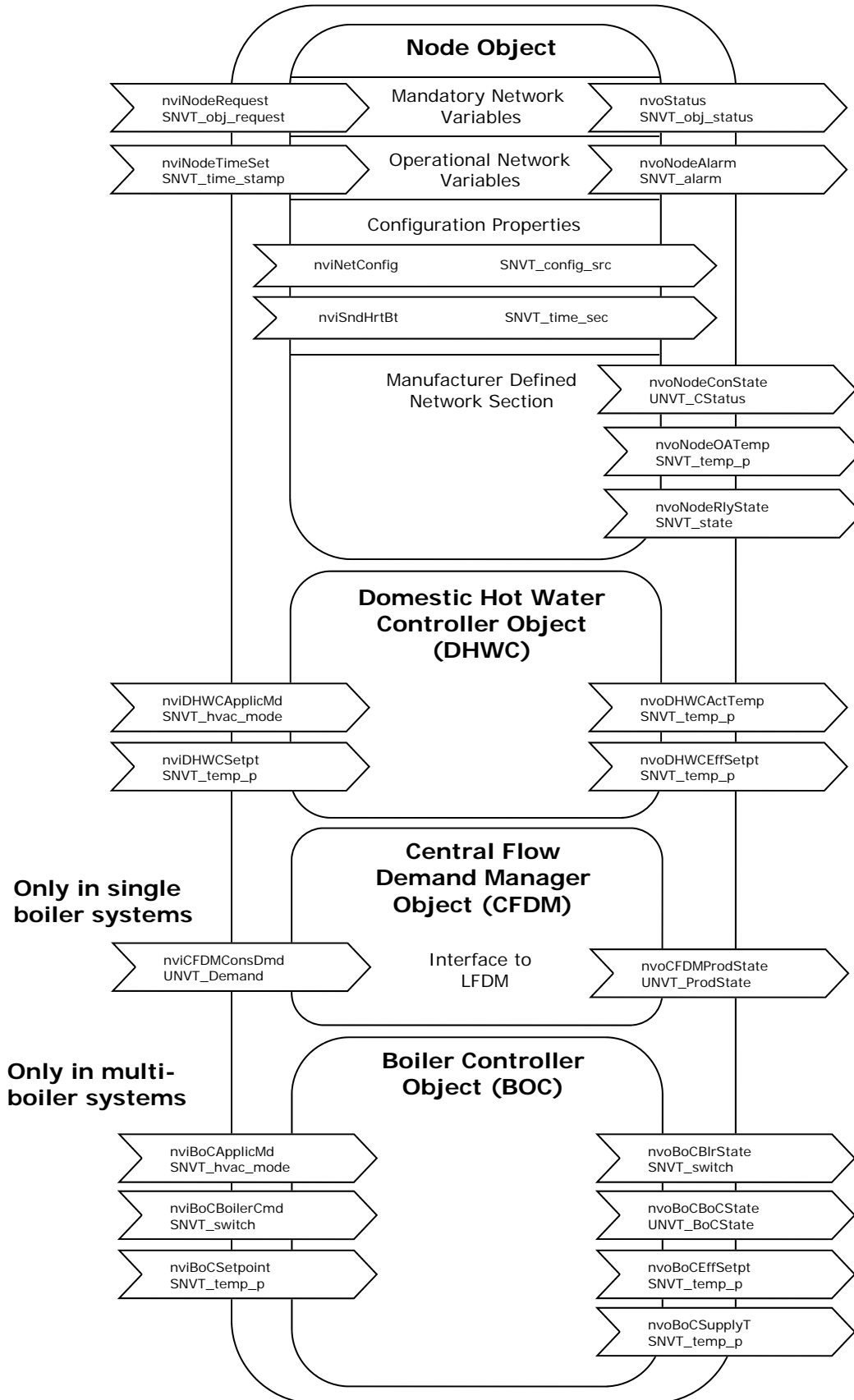
1. Adjust the S1 addressing dial to position 9.
2. Wait 10 seconds
3. Depress the SE1 (Service) Button for 2 seconds (note that LED2 illuminates) and release button
4. Wait 10 seconds
5. Adjust the S1 dial back to desired setting.
6. LED2 should illuminate within 10 second period.

Repeat if necessary.

### Fault Diagnosis

Control will not communicate	Check wiring between controls
	Check RJ45 plug/CAT5 wire adapter
	LON Communication Module not correctly seated
	LON Communication Module backwards
	Rotary address selector improperly set (between numbers)
	Perform Participant Update
	DIP Switch S6.1 not set ON to enable LON communications
	Vitocontrol-S Addressing incorrect
	Control power is turned off
	Ensure proper Tool Binding Commissioning processes are followed

# KW10B Node Object



## KW10B LON Points Information

Functional Block	Input/Output	Point	Type	Description
<b>BoC</b>	Inputs	nviBoCApplcMd	SNVT_hvac_mode	Operating Mode
		nviBoCBoilerCmd	SNVT_switch	Boiler Setpoint Output
		nviBoCSetpoint	SNVT_temp_p	Boiler Setpoint Temperature
	Outputs	nvoBoCBlrState	SNVT_switch	Actual Boiler Output
		nvoBoCBoCState	UNVT_BoCState	Boiler Status
		nvoBoCEffSetpt	SNVT_temp_p	Effective System Setpoint Temp.
nvoBoCSupplyT	SNVT_temp_p	Actual Boiler Temperature		
<b>CFDM</b>	Inputs	nviCFDMConsDmd	UNVT_Demand	Heating Circuit Demand
	Outputs	nvoCFDMProdState	UNVT_ProdState	System Status
<b>DHWC</b>	Inputs	nviDHWCApplicMd	SNVT_hvac_mode	DHW Operating Mode
		nviDHWCSetpt	SNVT_temp_p	DHW Setpoint Temperature
	Outputs	nvoDHWCActTemp	SNVT_temp_p	Actual DHW Temperature
		nvoDHWCEffSetpt	SNVT_temp_p	Effective DHW Temperature
<b>NODE</b>	Inputs	nviNodeRequest	SNVT_obj_request	Object Request
		nviNodeTimeSet	SNVT_time_stamp	Time of Day Input
	Outputs	nvoNodeAlarm	SNVT_alarm	Fault Messages
		nvoNodeConState	UNVT_CStatus	Used Internally for Debugging
		nvoNodeOATemp	SNVT_temp_p	Outdoor Temperature
		nvoNodeRlyState	SNVT_state	Relay Status
nvoStatus	SNVT_obj_status	Object Status		
<b>Virtual Functional Block</b>	Inputs	nviNetConfig	SNVT_config_src	Selfbinding/Toolbinding Mode
		nviSndHrtBt	SNVT_time_sec	Send Heartbeat

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