Commissioning Guide Use with Viessmann Vitotronic NR2 controls with LonMaker® based building automation system software



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IMPORTANT

Note:

This guideline provides necessary information to assist in the setup of LonMaker® software to access Viessmann LON system. This information is purely a supplement to the information provided by LonMaker® and Viessmann. It should only be used by those familiar with the product and processes required for commissioning of these systems.

More Viessmann control information can be found in the LON Handbook available from Viessmann or download from www.kwe-tech.com documentation web page.

Toolbinding Overview

In the factory default setting, Viessmann control units are bound via self-installation process (Selfbinding or Autobinding). This self-installation process establishes all necessary connections for data exchange between Viessmann control units. This, however, does not cover the entire range of requirements.

Specifically, the following requirements cannot be covered by the selfbinding process:

- If data must be exchanged between Viessmann control units and devices from other manufacturers.
- If, in addition to the relay outputs of the control, logical signals of the controls processor should be used via an in-/ output module.
- If, for example, via an external 0-10V analog signal, a heat demand is connected for heat production.
- If Viessmann control units in a system are located on both sides of a router due to long cabling.
- If data exchange between Viessmann control units must take place in a different manner than prescribed by the selfbinding process, e.g. if the outdoor temperatures of three sensors must be distributed to two devices.
- If more than five Viessmann heating plants are installed in a network.
- Other possible requirements

If one of the above requirements applies, the system must be configured via start-up software (toolbinding) such as LONmaker. When configuring the system using LONmaker, all bindings that would have been established by the self-installation process, must be recreated.

Configuring the Controls.

A few key-configuration parameters need to be configured, even in toolbinding mode, to ensure proper communication. On the Vitotronic 100 boiler control the following must be set correctly.

Vitotronic 100, GC1 Codings

CA (hex)	Description: Function	Value	Meaning
01	Single/ Multiple boiler system: determines whether it is dealing with a single or multiple boiler system	1 2	Single boiler system Multiple boiler system
07	Boiler number: determines the number of a boiler in a multiple boiler system	1 4	Boiler number 1 4
77	Participant number:	1 99	Participant number 1 99

Vitotronic 333/300-K, MW1 and MW2 Codings

CA (hex)	Description: Function	Value	Adjustment necessary?				
35	Number of boilers: determines number of boilers in a system	1 4	Number of boilers 1 4				

Configuration using LonMaker.

In this example we're using a Vitotronic333 cascade control and four Vitotronic100 GC1 boiler controls.

1. Commission all 5 controls using XIF files provided on our website (http://www.kwe-tech.com)

Vitotronic controls generally have two LON communication cards; one is a generic boiler/ zone control card and the other is for a master cascade controller. Use the appropriate xif file.



2. It is important that the controls, at this point, are set to tool binding mode. This will prevent the control from attempting to selfbind at start-up and use internal EEPROM stored connections instead. These are the connections that you will create using LonMaker.

This is done by force-writing the nciNetConfig variable to CFG_EXTERNAL

Toolbinding configuration can be verified by reviewing the following scan codes in the diagnostic screen:

> Vitotronic 100 – Scan 0 and Scan 1 Vitotronic 333/300K – Scan 5 and Scan 6

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Subsystem 1	Vitotronic333	PM4	nviPM4SupplyT		N	60.80								0	Auto	on
Subsystem 1	Vitotronic333	PM4	nvoPM4ApplicMd		N	HVAC_NUL								1	Tool	
Subsystem 1	Vitotronic333	PM4	nvoPM4BoilerCmd		H	0.00							0			
Subsystem 1	Vitotronic333	PM4	nvoPM4Setpoint		N	64.60							to	Softwar	e version	
Subsystem 1	Vitotronic333	Virtual Functional Block	nciNetConfig		N	CFG_EXTERNAL		ti –		0	(O	F	Commu	nication coprocess	or
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Point to Point Connections

3. We now create the bindings that are usually created during the selfbinding process. The connections are as follows:



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4. The controls can now be power cycled and all current data should become visible in the LONmaker browser.

💱 [Viesmann	Test] LonMa	ker Browser - l	Untitled				×				
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Subsystem	Device	Functional Block	Network Variable	Config Prop	Mon	Value	^				
Subsystem 1	Vitotronic333	NODE	nvillodeRequest		N	0,RQ_NORMAL					
Subsystem 1	Vitotronic333	NODE	nvillodeTimeSet	1	N	00/00/00 0:00:00					
Subsystem 1	Vitotronic333	NODE	nvollodeAlarm		N	80 5 0 0 0 0 0 AL_NO_CONDITION PR_LEVEL_0 0 <15					
Subsystem 1	Vitotronic333	NODE	nvollode0ATemp		N	8.50					
Subsystem 1	Vitotronic333	NODE	nvollodeRlyState		N	0,0,1,0,0,0,0,0,1,0,1,1,0,0,0,0	•				
Subsystem 1	Vitotronic333	NODE	nvollodeStatus		N	0 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0	1				
Subsystem 1	Vitotronic333	NODE	nvollodeTimeSet		N	19/03/2011 6:47:33					
Subsystem 1	Vitotronic333	PM1	nviPM1BIrState		N	50.0 1					
Subsystem 1	Vitotronic333	PM1	nviPM1BoCState		N	00004029AB0100506400					
Subsystem 1	Vitotronic333	PM1	nviPM1SupplyT		N	59.80					
Subsystem 1	Vitotronic333	PM1	nvoPM1ApplicMd		N	110					
Subsystem 1	Vitotronic333	PM1	nvoPM1BoilerCmd	-	N	0.5 -1					
Subsystem 1	Vitotronic333	PM1	nvoPM1Setpoint		N	50.50					
Subsystem 1	Vitotronic333	PM2	nviPM2BIrState		N	50.0 1					
Subsystem 1	Vitotronic333	PM2	nviPM2BoCState		N	00004008830100506400					
Subsystem 1	Vitotronic333	PM2	nviPM2SupplyT		N	51.20					
Subsystem 1	Vitotronic333	PM2	nvoPM2ApplicMd		N	110					
Subsystem 1	Vitotronic333	PM2	nvoPM2BoilerCmd		N	0.5 -1					
Subsystem 1	Vitotronic333	PM2	nvoPM2Setpoint		N	50.50					
Subsystem 1	Vitotronic333	PM3	nviPM3BlrState		N	0.0 0	1				
Subsystem 1	Vitotronic333	PM3	nviPM3BoCState		N	000000148C0100506400	1				
Subsystem 1	Vitotronic333	PM3	nviPM3SupplyT		N	50.70	~				
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Ready						1	1				

Note:

Faults that may appear on the screens of the controls maybe caused by incomplete connections performed during the point binding process.

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