

# Buderus GB142 Connection to tekmar Boiler Controls

## Compatibility:

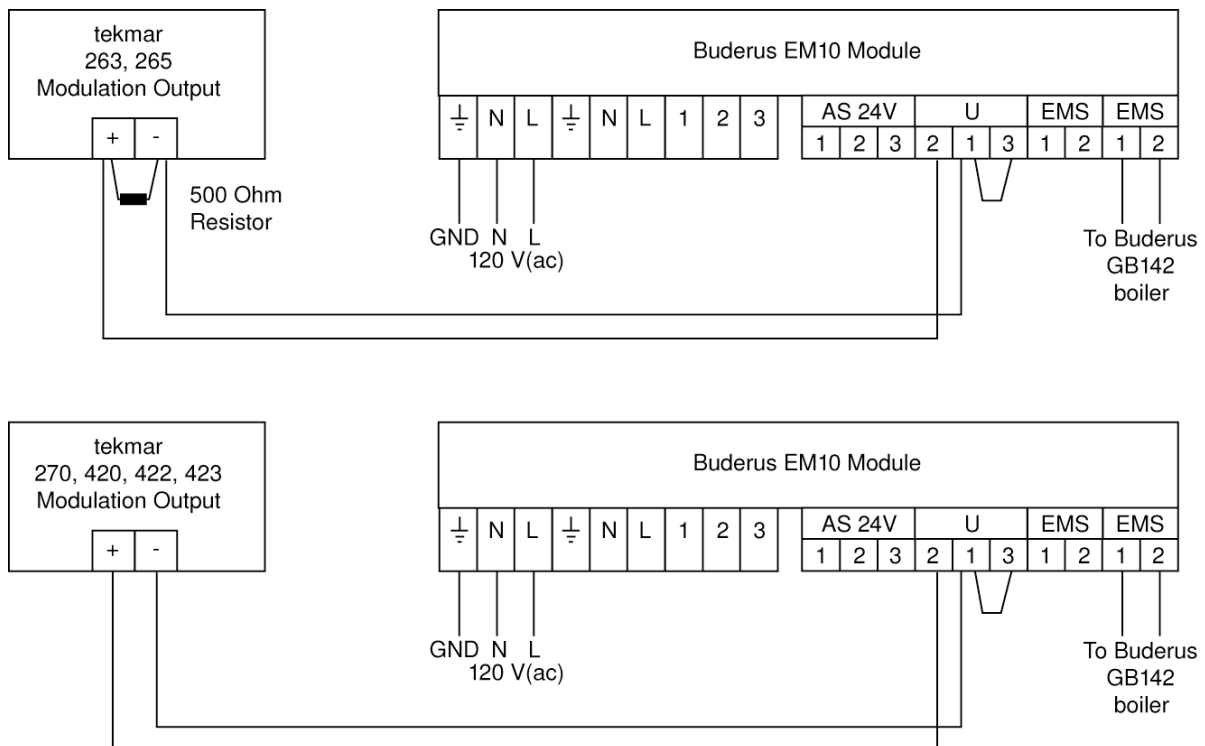
The Buderus GB142 modulating condensing boiler can be operated using any tekmar boiler control that includes a modulating output. As of June 2006 this includes the following models:

- Boiler Control 263 (1 boiler)
- Boiler Control 270 (1 boiler)
- Boiler Control 265 (up to 3 boilers, available in the US after March 1, 2007)
- tN4 Boiler Reset Module 420 (1 boiler)
- tN4 Universal Reset Module 422 (1 boiler)
- tN4 Universal Reset Module 423 (up to 2 boilers)

In order to connect to a tekmar boiler control, an EM10 Module must be purchased from Buderus for each GB142 boiler. Use the "Power" operation of the EM10 Module to operate the GB142.

## Wiring:

Wire the tekmar Boiler Control to the EM10 as per the drawing shown below:



- 1) A jumper wire must connect between EM10 Module terminal U1 to U3.
- 2) The boiler enable on-off contact on the tekmar Boiler Controls is not required.

**GB142 Settings:**

Ensure that the GB142 temperature dial setting is set to the maximum setting. If this is not set correctly, the GB142 control will prevent the boiler from operating over the entire range selectable by the tekmar boiler control.

**Essential tekmar Boiler Control Settings:****263**

<b>DIP Switches:</b>	
Soft Stop / Off	Off
<b>Adjust Menu Settings:</b>	
Mode	2 (Modulating Boiler)
Fire Delay	0:20 minutes
Boiler Mass	1 (Low Mass)
Motor Speed	30 seconds
Boiler Modulation	0:20 mA* Note: A 500 Ohm resistor is required.
Minimum Modulation	30%
Maximum Modulation	100%

**265**

<b>DIP Switches:</b>	
Soft Stop / Off	Off
<b>Adjust Menu Settings:</b>	
Fire Delay	0:20 minutes
Boiler Mass	1 (Low Mass)
Motor Speed	30 seconds
Minimum Boiler Output	Minimum BTU rating divided by 10 000 (turn down ratio is currently 3:1)
Maximum Boiler Output	Maximum BTU rating divided by 10 000
Boiler Modulation	0:20 mA* Note: A 500 Ohm resistor is required.
Minimum Modulation	30%
Maximum Modulation	100%

**270**

<b>Adjust Menu Settings:</b>	
Fire Delay	0:20 minutes
Boiler Mass	1 (Low Mass)
Motor Speed	30 seconds
Boiler Modulation	0:10 V(dc)
Minimum Modulation	30%
Maximum Modulation	100%

**420**

<b>DIP Switches:</b>	
Boil On-Off / Mod	Mod
Off / tekmar Stager	Off
<b>Adjust Menu Settings:</b>	
Fire Delay	0:20 minutes
Boiler Motor	30 seconds
Minimum Modulation	30%
Maximum Modulation	100%

**422**

<b>DIP Switches:</b>	
Boil Sens Sup / Ret	Sup (Supply)
Boiler On-Off / Mod	Mod
Off / tekmar Stager	Off
<b>Adjust Menu Settings:</b>	
Fire Delay	0:20 minutes
Boiler Motor	30 seconds
Minimum Modulation	30%
Maximum Modulation	100%

**423**

<b>DIP Switches:</b>	
Boil Sens Sup / Ret	Sup (Supply)
Off / tekmar Stager	Off
Boiler On-Off / Mod	Mod
<b>Adjust Menu Settings:</b>	
Fire Delay	0:20 minutes
Boiler Motor	30 seconds
Boiler Minimum Modulation	30%

Sincerely yours,

Jay Vath  
tekmar Control Systems Ltd.