

# Installing the Boiler Control 284 with Modulating Boilers

The following tables describe the essential settings required for the Boiler Control 284 when installed with some of the most common modulating boilers on the market. For a complete list of compatible boilers, please refer to tekmar Service Bulletin SB 032.

**Table 1: Boilers with 0-10 Vdc Modulating Input for Firing Rate**

Boiler Model	Boil Type	Mod Type	Fire Delay (min)	Mod Delay (min)	Motor Speed (sec)	Start Mod (%)	Min Mod (%)	Max Mod (%)	Required Equip.	Boiler Control Setting			Wiring
										Parameter	Setting	Reference	T-T Enable
Buderus GB142, 162, 312	Mod	0-10 Vdc	0:30	0:10	10	50	30	100	EM10 Module	None	None	None	No
HTP Elite	Mod	0-10 Vdc	0:14	0:10	24	16	16	100	None	Function 16	0-10 Volt	Pg. 57 of I/O Manual	No
										Function 17	Fan Speed		
Lochinvar Knight	Mod	0-10 Vdc	0:23	0:05	10	20	20	100	None	Control Modes	BMS = Active	Pg. 24 & 26 of Service Manual	Yes
										BMS	BMS Type = Power		
Lochinvar Sync	Mod	0-10 Vdc	0:35	0:05	10	20	20	100	None	Demand Config.	3	Pg. 19 of Service Manual	No
Peerless PureFire REV2	Mod	0-10 Vdc	0:15	0:00	50	20	20	100	Interface Adapter PFA-1	Heating Mode	5	Pg. 43 of I/O Manual	No
Triangle Tube Prestige TriMax	Mod	0-10 Vdc	0:10	0:30	30	20	20	100	None	CH Demand Type	0-10V	Pg. 46 of I/O Manual	No
Weil-McLain Ultra Series 3	Mod	0-10 Vdc	0:30	1:00	60	20	20	100	None	Additional Heat Demand	Type 4	Pg. 84 of I/O Manual	No

For further information:

- See Page 2 of this bulletin for boilers with 4-20 mA modulating input for firing rate & boilers with 0-10 Vdc modulating input for setpoint temperature.
- See Pages 3 and 4 of this bulletin for wiring connections between the 284 & boiler equipment.

**Table 2: Boilers with 4-20 mA Modulating Input for Firing Rate**

Boiler Model	Boil Type	Mod Type	Fire Delay (min)	Mod Delay (min)	Motor Speed (sec)	Start Mod (%)	Min Mod (%)	Max Mod (%)	Required Equip.	Boiler Control Setting			Wiring T-T Enable
										Parameter	Setting	Reference	
Camus DynaFlame	Mod	4-20 mA	0:30	0:10	120	20	0	100	None	Central Heat Modulation Rate Source	S2 4-20mA	Pg. 55 of I/O Manual	Yes
Laars Mascot II	Mod	4-20 mA	1:00	0:20	30	35	20	100	None	Anti Short Cycling	0 min	Pg 28/29 of I/O Manual	Yes
Laars NeoTherm	Mod	4-20 mA	1:00	0:20	30	35	20	100	None	Anti Short Cycling	0 min	Pg 45 of I/O Manual	Yes
NTI Trinity Lx	Mod	4-20 mA	0:10	0:10	30	0	0	100	None	Modulation Rate Source	S2 4-20mA	Pg. 12 of Appendix A	Yes
Slant/Fin CHS	Mod	4-20 mA	0:10	0:10	30	22	22	100	None	Mod Rate Source	4-20 mA	Pg. 11 of Appendix A	Yes

**Table 3: Boilers with 0-10 Vdc Modulating Input for Setpoint Temperature  
Applies to 284 Software Version J1220G & Older**

Boiler Model	Boil Type	Boil Max	Required Equipment	Boiler Control Setting			Wiring T-T Enable
				Parameter	Setting	Reference	
Viessmann Vitodens 100-W, WB1B 200-W, B2HA (Models 80-150)	EMS2	N/A	OpenTherm Module	Adjust Reset curve to low			No
Viessmann Vitodens 200-W, WB2B 200-W, B2HA (Models 19-60) 222-F, B2TA	EMS2	167°F	None	Adjust Reset curve to low			No

**Applies to 284 Software Version J1220H & Newer**

Boiler Model	Boil Type	EMS Temp Min	EMS Temp Max	EMS Signal Low	Required Equipment	Boiler Control Setting			Wiring T-T Enable
						Parameter	Setting	Reference	
Viessmann Vitodens 100-W, WB1B	EMS	81°F	176°F	2.2V	OpenTherm Module	Adjust Reset curve to low			No
Viessmann Vitodens 200-W, WB2B	EMS	81°F	167°F	2.2V	None	Adjust Reset curve to low			No
Viessmann Vitodens 200-W, B2HA (Models 19-60)	EMS	81°F	167°F	2.2V	None	Adjust Reset curve to low			No
Viessmann Vitodens 200-W, B2HA (Models 80-150)	EMS	81°F	176°F	2.2V	None	Adjust Reset curve to low			No

Viessmann Vitodens 222-F, B2TA	EMS	81°F	167°F	2.2V	None	Adjust Reset curve to low			No
Boiler Model	Boil Type	EMS Temp Min	EMS Temp Max	EMS Signal Low	Required Equipment	Boiler Control Setting			Wiring
						Parameter	Setting	Reference	T-T Enable
AERCO AM-B 199 - 1000	EMS	Installers Menu 16.14 Pg 107			885IF Factory Supplied 399-1000 Models	2003 CH mode:	Mode 4=CH with 0-10Vcc input	Pg. 107 Instruction No.6240357 5R07 Sect 16.14	No
	EMS	68°F	194°F	2.0V	885IF Factory Supplied 399-1000 Models	3018 Minimum CH	3018	Pg. 57 Instruction No.6240357 5R07 See Sect. 21	No
	EMS	68°F	194°F	10.0V	885IF Factory Supplied 399-1000 Models	3017 Maximum CH	3017	Pg. 57 Instruction No.6240357 5R07 See Sect. 21	No

Fig. 1: tekmar 284 to Buderus GB142/162/312

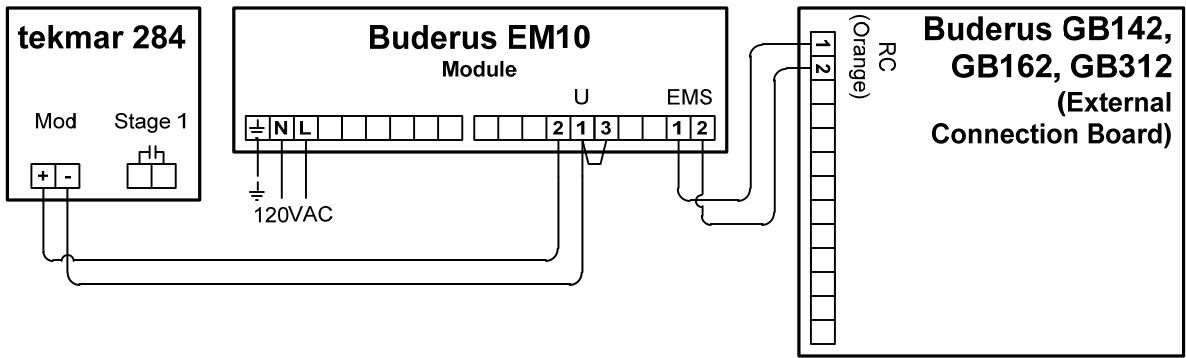


Fig. 2: tekmar 284 to Camus DynaFlame

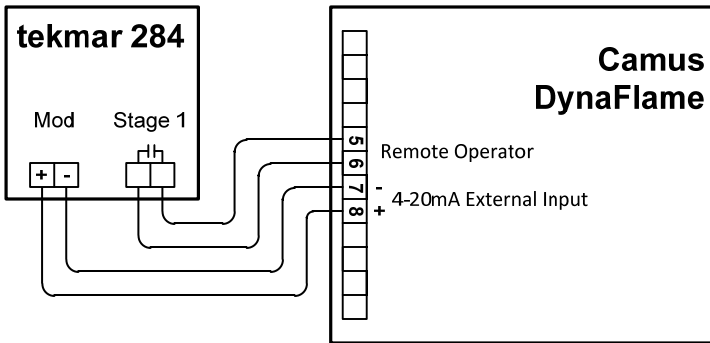


Fig. 3: tekmar 284 to HTP Elite

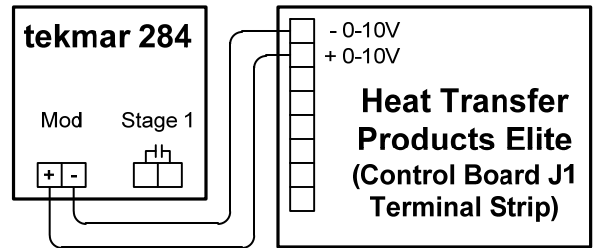


Fig. 4: tekmar 284 to Laars Mascot II

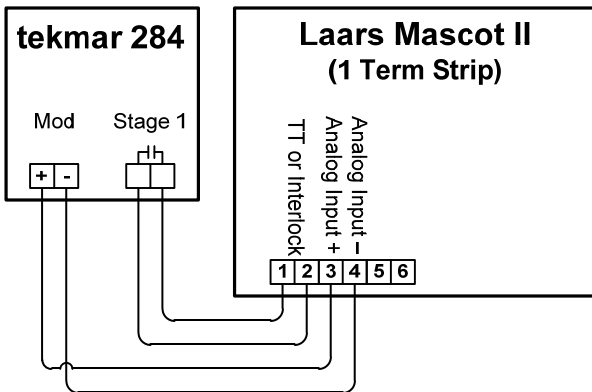


Fig. 5: tekmar 284 to Laars NeoTherm

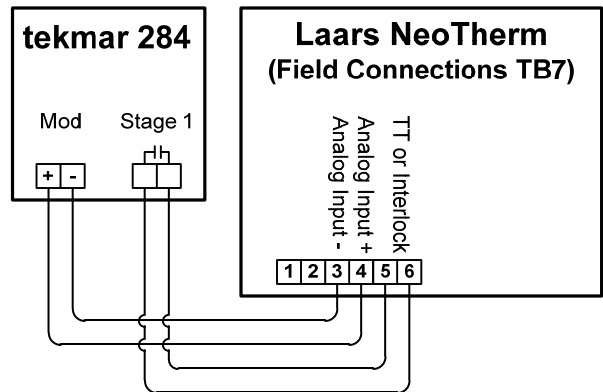


Fig. 6: tekmar 284 to Lochinvar Knight

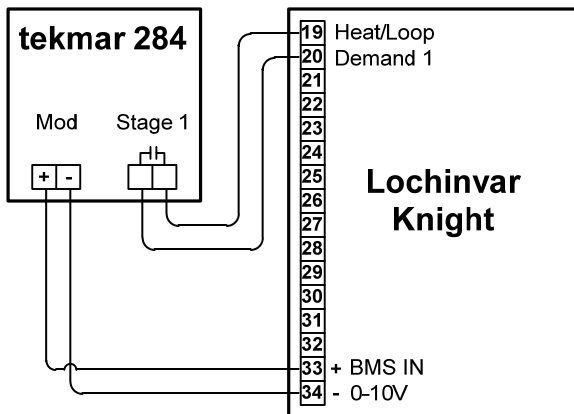


Fig. 7: tekmar 284 to Lochinvar Sync

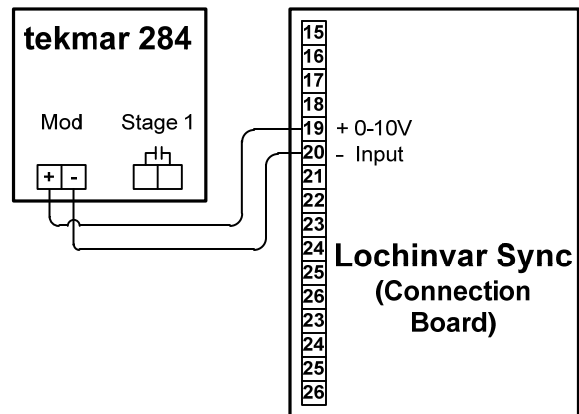


Fig. 8: tekmar 284 to NTI Trinity Lx 150-400 Models

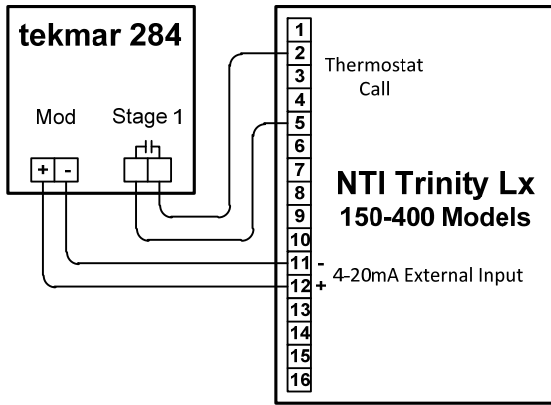


Fig. 9: tekmar 284 to Peerless PureFire

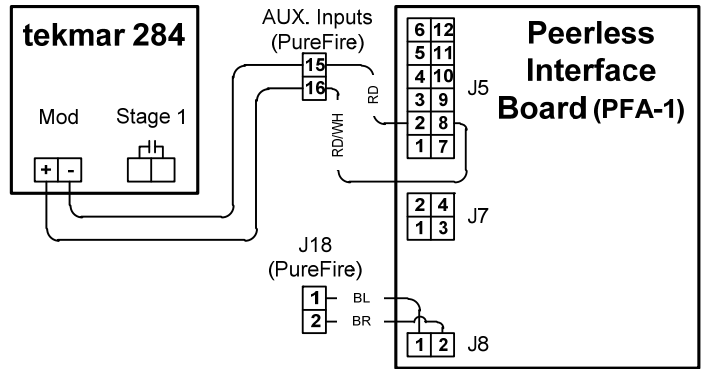


Fig. 10: tekmar 284 to Slant/Fin CHS

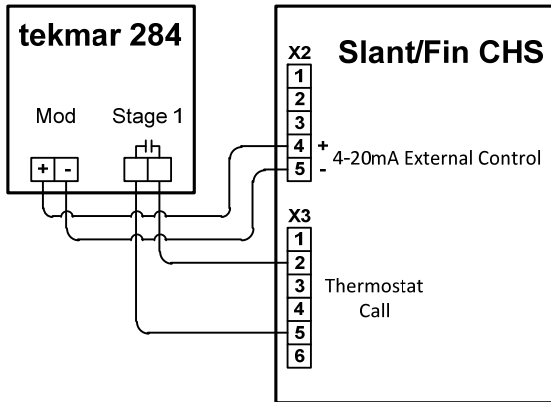


Fig. 11: tekmar 284 to Triangle Tube Trimax Solo

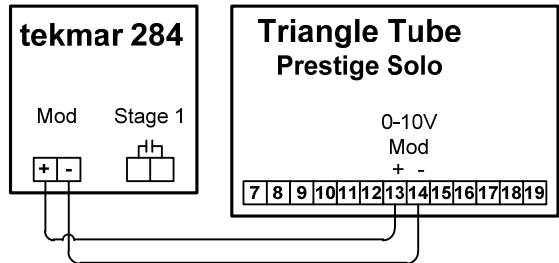


Fig. 12: tekmar 284 to Viessmann Vitodens 100

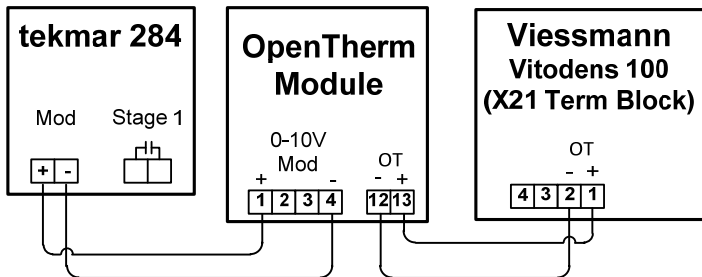


Fig. 13: tekmar 284 to Viessmann Vitodens 200 WB2B Models

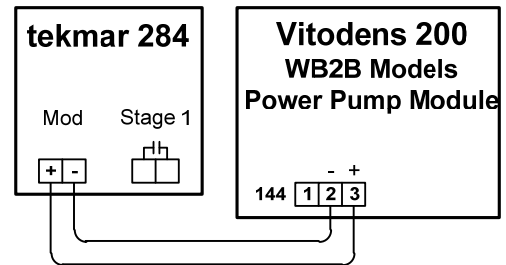


Fig. 14: tekmar 284 to Viessmann Vitodens 200 B2HA Models

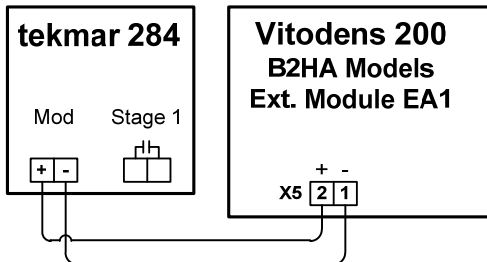


Fig. 15: tekmar 284 to Weil-McLain Ultra Series 3

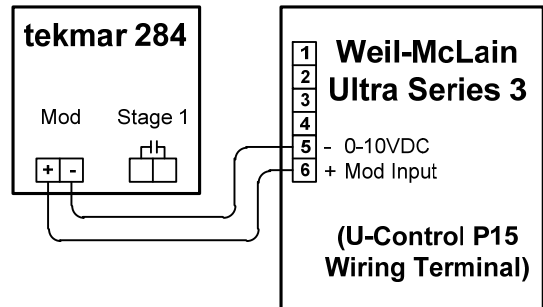
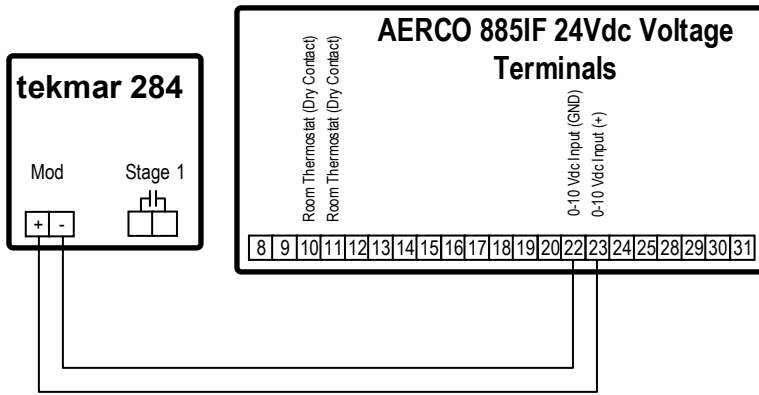


Fig. 16: tekmar 284 to AERCO AM - B 199 - 1000



**REMINDER:** Due to published changes made without notice by Boiler Manufacturers to their specifications and capabilities, tekmar Control Systems does not assume any responsibility for boiler manufacturers' amendments, modifications, deletions or changes nor does tekmar Control Systems accept any responsibility for the damage or personal injury due to unsafe and improper boiler operation that is guided by this "Reminder" and by the manufacturer's installation and operating instructions.