

TrimPAK

Linkage control with O2 Trim option for jackshaft boilers

Installation & Maintenance Savings

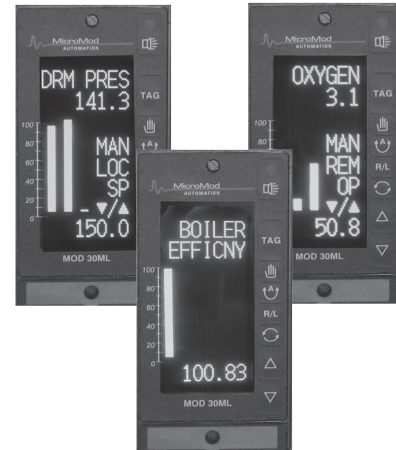
- Uses existing linkages while compensating seasonal changes
- Pre-programmed controller reduces startup time
- Configuration-sensitive setup menus and operating displays
- Eliminates frequent manual combustion tests and nuisance adjustments
- 2-year Warranty

Field-Flexible Options

- O2 indication and/or trim control with VFD output
- Local Drum Pressure or Plant Master Demand input
- Online, instantaneous efficiency calculation
- Stack temperature indication
- Bias Ramp option
- FGR control
- User-selectable retransmission
- Automatic recycle

Safety First

- Air and Jackshaft position feedback with deviation trip
- High stack temperature trip
- O2 Trim limits and Low-low O2 trip
- Automatic mode switching on loss of signal
- Mode interlocks for operational safety
- BMS interface



TrimPAK offers unique flexibility for small to medium jackshaft boilers. It provides the benefits of linkageless control at a fraction of the cost, and allows you to turn on energy-saving options in the field as you purchase the necessary field equipment, without paying for additional control hardware. With TrimPAK you can add O2 trim to your jackshaft boiler without the expense of dismantling the linkages and installing independent valves and actuators.

The basic TrimPAK is a modulating pressure controller with built-in alarms and the option to enable a jackshaft position feedback input with a deviation alarm. The controller can receive the firing rate input from either a drum pressure transmitter or a plant master controller and provides a dual-mode feature that allows switching between the plant master and drum pressure signals, so you can start with local pressure control and add a plant master as your budget permits. A special dual-mode feature provides the ability to change from remote to local control if necessary. The Bias Ramp option works with a plant master signal to bring the boiler bumplessly up to the plant demand when switching from manual to automatic control.

All available options are already included in the program and can be turned on and set up with a few keystrokes, including O2 analyzer input and VFD output. With the addition of a stack temperature signal the Efficiency calculation option can be enabled.

An Auto Recycle function allows the boiler to start, stop and remain at low-fire until the pressure reaches a percentage of setpoint, then switch to automatic and begin modulating.

All setup parameters can be entered through the controller faceplate or using the free TunePAK software. Configuration-sensitive setup and operating displays show only enabled options for ease of commissioning and operation.

Standard Features

Right out of the box, TrimPAK is ready to perform. A few installation-specific parameters are all you need to enter.

- Modulating pressure control with demand output to the jackshaft actuator
- Integral display for setup and operation with bright, easy-to-read screen
- RS-485 Modbus communication
- Relay outputs for boiler trip and alarm horn
- Individual, isolated input and output modules
- Purge, low-fire and release-to-auto from BMS

Standard Options

TrimPAK is pre-programmed for additional features that can be enabled from the controller faceplate without adding I/O or changing the controller programming.

- Selectable drum pressure or plant master input
- O2 indication
- O2 trim control with VFD output, individual curves and separate light-off and low-fire points for gas and oil
- Automatic boiler recycle
- Jackshaft position feedback option with deviation alarm & trip
- Online, continuous efficiency calculation using the heat loss method

Additional Options

The addition of a single-point analog output module provides the option to turn on one of these pre-programmed options:

- FGR control with separate light-off and low-fire positions and independent fuel curves
- Selectable retransmission of fuel demand, drum pressure, O2, current efficiency or stack temperature as 4-20mA output

Safety First

All SteamPAK controls are designed with user safety in mind. TrimPAK includes inherent features and checks to ensure maximum safety from installation to operation:

- Minimum & maximum O2 trim limits
- Low-low O2 trip alarm
- High stack temperature trip
- Air deviation alarm and trip
- Jackshaft position deviation alarm and trip
- Data quality checks and alarms on all inputs
- Hardwire 4-20mA connection to VFD
- Password protection for combustion curves, trim limits, alarm limits, and other critical parameters

Accessories

Backup Memory Module - redundant, removable nonvolatile RAM that backs up the controller database. Left on the controller during operation, it is updated every 50ms with current process data such as output values, controller mode, tuning parameters etc. This allows immediate restart of the system after a power outage or equipment failure, with the latest values.

Remote Faceplate - the TrimPAK controller can be ordered in a flushmount package with a remote faceplate for installation in shallow panels. The faceplate can be mounted up to 8 feet (2.4 meters) from the controller body.

TunePAK - Setup and tuning software for SteamPAK controls including TrimPAK, MeterPAK and DrumPAK. TunePAK is available as a free download via MicroMod's website.

The MicroMod SteamPAK Series

TrimPAK is just one of MicroMod's pre-engineered packages for industrial and institutional boiler controls. The SteamPAK family also includes:

DrumPAK - one, two- and three-element drum level control

PlantPAK - plant master controller, with optional lead/lag sequence control

MeterPAK - Fully metered combustion control system with O2 trim

BurnerPAK - Burner Management Systems

TrimPAK-PLUS - prewired combustion control panels with color touchscreen operator interface, for one or two boilers

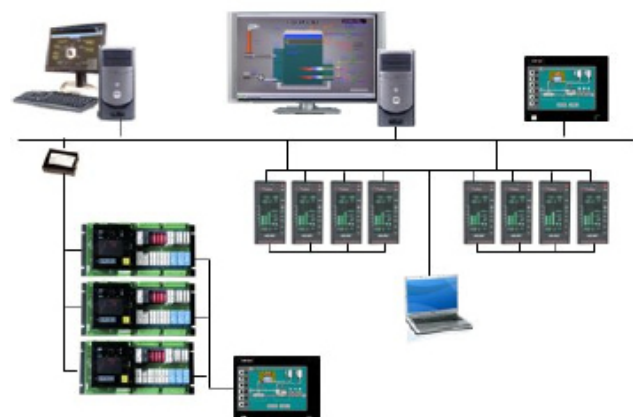
Watchman - integrated boiler control panels for combustion and drum level control, with color touchscreen operator interface

Combustion control packages are also available for High Temperature Hot Water systems and biomass boilers.

Plantwide System

All SteamPAK products can be integrated into a plantwide, Ethernet-based system with advanced operator stations, alarm/event logging and reporting.

Custom Application Engineering - if the standard DrumPAK configuration doesn't meet your application needs, MicroMod will work with you to develop a cost-effective solution to improve your boiler operation.



Inputs / Outputs:

- Analog Inputs
 - 4-20mA, isolated
 - Plant Master
 - VFD Feedback
 - Jackshaft position feedback
 - 4-20mA, isolated, with 24Vdc transmitter power
 - Drum Pressure
 - Excess O2
 - Stack Temperature
- Analog Outputs
 - 4-20mA, non isolated
 - Jackshaft Actuator (demand)
 - FD Fan motor VFD
 - 4-20mA, isolated
 - FGR Damper (with FGR option)
 - Retransmission (with Retransmission option)
- Digital Inputs (110Vac, isolated) for connection to BMS
 - Low Fire
 - Purge
 - Release-to-Auto
 - Fuel Select (Gas, Oil)
- Relay Output (110Vac, isolated)
 - Alarm Horn
 - Boiler trip (to BMS)

General Specifications

- Power Supply:**
 - AC option: 85-250V rms, 50-400Hz
 - DC option: 20-50V dc
- Power Consumption (120V rms, 60Hz, Full load):** 50W maximum
- Operating temperature:** 0 to +50°C
- Storage Temperature:** -40 to +75°C
- Humidity:** 5 to 95% RH, noncondensing
- Approvals:**
 - FM/CSA Class 1, Div 2 groups A,B,C,D
 - IEC 61010-1 / EN 61010-1
 - EMC Directive 2004/108/EC
- Data Retention:** Typically 10 years with instrument unpowered

Warranty: 2 years from date of manufacture

ORDERING INFORMATION

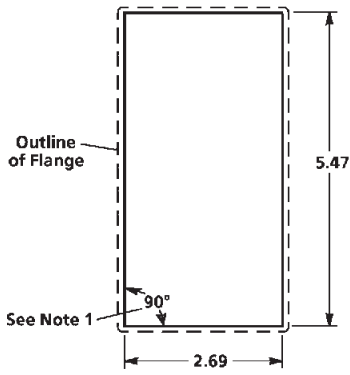
TrimPAK is a licensed package. The following end-user information must be supplied with each order:

- End-user company name
- Complete address
- Telephone and fax number
- Contact name
- Email address (if available)

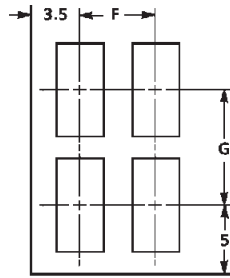
	TRM	0	—	—	—	C
	01 - 03	04	05	06	07	08
TrimPAK Single-Point Positioning with O2 Trim	TRM					
Power Supply 24V dc 85 to 250V ac		0 1				
Additional Options None User-Selectable Output			0 2			
Mounting Standard Remote Faceplate				0 1		
Operator Language English Spanish					E S	
Design Level Design Level						C

Available Options (please specify on order):
 Backup Memory Module (blank) 2010PZ10000B
 Field Instruments (pressure measurement / transmitter, O2 analyzer, VFD)
 Custom Application Engineering - per hour

MOUNTING DIMENSIONS

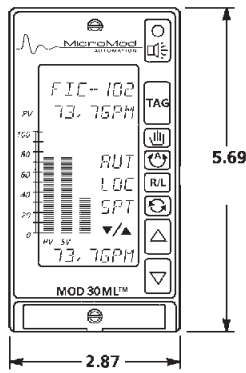


PANEL CUTOUT

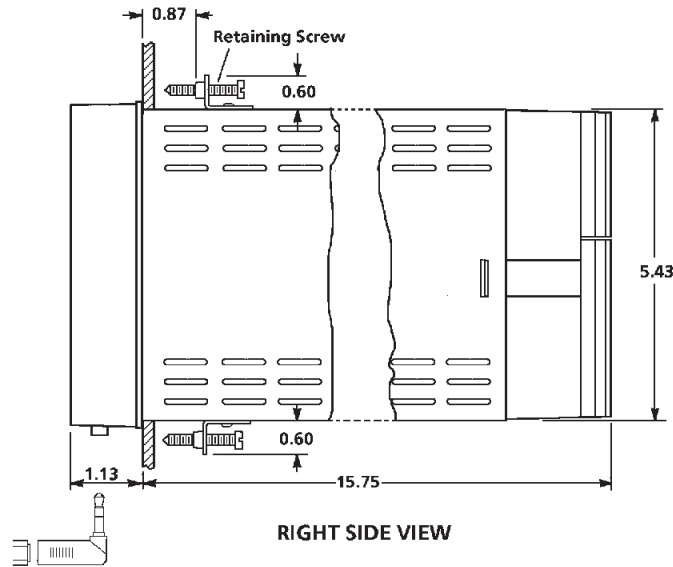


Center-to-Center Distance	F	G
Recommended	4	8
Minimum	3.5	7

inches	mm	inches	mm
0.60	15.2	5.43	137.9
0.87	22.1	5.47	138.9
1.13	28.7	5.69	144.5
2.69	68.3	7.00	177.8
2.87	72.9	8.00	203.2
3.50	88.9	15.75	400.0
4.00	101.6		



FRONT VIEW



RIGHT SIDE VIEW

The Company's policy is one of continuous product improvement and the right is reserved to modify the information contained herein without notice.

Printed in USA april 2019

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